

GDCM

2.2.3

Generated by Doxygen 1.8.4

Tue Jul 30 2013 22:32:05

Contents

1	GDCM Documentation	1
2	off-screen rendering of DICOM images	3
2.1	SYNOPSIS	3
2.2	DESCRIPTION	3
2.3	PARAMETERS	3
2.4	options	3
2.4.1	options	3
2.4.2	general options	3
2.5	Simple usage	4
2.6	SEE ALSO	4
2.7	COPYRIGHT	4
3	Convert a file supported by VTK into DICOM.	5
3.1	SYNOPSIS	5
3.2	DESCRIPTION	5
3.3	PARAMETERS	5
3.4	options	5
3.4.1	options	5
3.4.2	compression options	6
3.4.3	general options	6
3.4.4	environment variable	6
3.5	DESCRIPTION	6
3.5.1	CONVERT Metalmage (mhd, mha)	6
3.5.2	CONVERT MHA/MHD	7
3.5.3	CONVERT VTI	7
3.5.4	CONVERT VTK	7
3.6	CONVERT DICOM	7
3.7	RoundTrip DICOM to MHD to DICOM	7

3.8	gdcm2vtk notes	7
3.9	SEE ALSO	8
3.10	COPYRIGHT	8
4	Tool to anonymize a DICOM file.	9
4.1	SYNOPSIS	9
4.2	DESCRIPTION	9
4.3	PARAMETERS	9
4.4	options	10
4.4.1	Required parameters	10
4.4.2	options	10
4.4.3	encryption options	10
4.4.4	dumb mode options	10
4.4.5	general options	10
4.4.6	environment variable	11
4.5	Typical usage	11
4.5.1	De-identification (anonymization, encrypt)	11
4.5.2	Re-identification (de-anonymization, decrypt)	11
4.5.3	Multiple files caveat	11
4.5.4	Dumb mode	11
4.5.4.1	Irreversible Anonymization	12
4.6	OpenSSL	12
4.6.1	Generating a Private Key	12
4.6.2	Generating a Certificate	13
4.7	DICOM Standard:	13
4.8	Warnings	13
4.9	SEE ALSO	13
4.10	COPYRIGHT	13
5	Tool to convert DICOM to DICOM.	15
5.1	SYNOPSIS	15
5.2	DESCRIPTION	15
5.3	PARAMETERS	15
5.4	options	15
5.4.1	PARAMETERS	15
5.4.2	options	15
5.4.3	image options	16
5.4.4	JPEG options	16

5.4.5	JPEG-LS options	16
5.4.6	J2K options	16
5.4.7	general options	16
5.4.8	special options	16
5.4.9	environment variable	17
5.5	Simple usage	17
5.6	Typical usage	17
5.6.1	File Meta Header	17
5.6.2	Conversion to Explicit Transfer Syntax	18
5.6.3	Compressing to lossless JPEG	18
5.6.4	Compressing to lossy JPEG	18
5.6.5	Compressing to lossless JPEG-LS	18
5.6.6	Compressing to lossy JPEG-LS	18
5.6.7	Compressing to lossless J2K	18
5.6.8	Compressing to lossy J2K	18
5.6.9	Compressing to lossless RLE	19
5.6.10	Split encapsulated DICOM:	19
5.6.11	Forcing (re)compression	19
5.6.12	Decompressing a Compressed DICOM	19
5.6.13	Compressing an uncompressed Icon	19
5.6.14	Generating an Icon	20
5.6.15	Changing the planar Configuration	20
5.7	Lossless Conversion	20
5.8	Quality Control	20
5.8.1	DCMTK / dicom3tools	20
5.8.2	VIM: vimdiff	21
5.8.3	vbindiff	21
5.9	SEE ALSO	21
5.10	COPYRIGHT	21
6	dumps differences of two DICOM files	23
6.1	SYNOPSIS	23
6.2	DESCRIPTION	23
6.3	PARAMETERS	23
6.4	options	23
6.4.1	options	23
6.4.2	general options	23

6.5	Simple usage	24
6.6	SEE ALSO	24
6.7	COPYRIGHT	24
7	dumps a DICOM file, it will display the structure and values contained in the specified DICOM file.	25
7.1	SYNOPSIS	25
7.2	DESCRIPTION	25
7.3	PARAMETERS	25
7.4	options	25
7.4.1	options	25
7.4.2	general options	26
7.4.3	special options	26
7.5	Typical usage	26
7.5.1	Printing Implicit Transfer Syntax	26
7.5.2	Print Private Attributes	27
7.5.3	SIEMENS CSA Header	27
7.5.4	GEMS Protocol Data Block	27
7.5.5	ELSCINT Protocol Information	28
7.5.6	VEPRO Protocol Information	28
7.5.7	Philips Private MR Series Data Storage (1.3.46.670589.11.0.0.12.2)	29
7.5.8	Encapsulated ASN1 Structure	30
7.6	SEE ALSO	31
7.7	COPYRIGHT	31
8	Tool to generate a DICOMDIR file from a File-Set.	33
8.1	SYNOPSIS	33
8.2	DESCRIPTION	33
8.3	PARAMETERS	33
8.4	options	33
8.4.1	Parameters	33
8.4.2	options	33
8.4.3	general options	33
8.4.4	environment variable	34
8.5	Typical usage	34
8.6	NOTE	34
8.7	SEE ALSO	34
8.8	COPYRIGHT	34

9	Manipulate DICOM image file.	35
9.1	SYNOPSIS	35
9.2	DESCRIPTION	35
9.3	PARAMETERS	35
9.4	options	35
9.4.1	PARAMETERS	35
9.4.2	options	35
9.4.3	fill options	36
9.4.4	general options	36
9.4.5	environment variable	36
9.5	Supported File Format (appropriate file extension) <code>gdcmimg</code>	36
9.6	Typical usage	37
9.6.1	Remove a rectangular part of the image	37
9.6.2	Convert RAW to DICOM	37
9.6.3	Convert PGM/PNM/PPM to DICOM	37
9.6.4	Convert RLE to DICOM	38
9.6.5	Convert JPEG to DICOM	38
9.6.6	Convert J2K to DICOM	38
9.6.7	Specifying a SOP Class UID	38
9.7	Multiple Files	38
9.8	Warning	38
9.9	SEE ALSO	39
9.10	COPYRIGHT	39
10	Display meta info about the input DICOM file.	41
10.1	SYNOPSIS	41
10.2	DESCRIPTION	41
10.3	PARAMETERS	41
10.4	options	41
10.4.1	options	41
10.4.2	general options	41
10.4.3	environment variable	42
10.5	Simple usage	42
10.5.1	<code>gdcmData</code>	42
10.5.2	Davie Clunie datasets:	42
10.5.3	Checking the md5sum of the Pixel Data	43
10.5.4	Checking if Pixel Data is lossless	43

10.6 SEE ALSO	43
10.7 COPYRIGHT	43
11 Tool to convert PDF to PDF/DICOM.	45
11.1 SYNOPSIS	45
11.2 DESCRIPTION	45
11.3 PARAMETERS	45
11.4 options	45
11.4.1 general options	45
11.5 Usage Example	46
11.6 PDF Info Mapping	46
11.7 SEE ALSO	47
11.8 COPYRIGHT	47
12 Extract Data Element Value Field.	49
12.1 SYNOPSIS	49
12.2 DESCRIPTION	49
12.3 PARAMETERS	49
12.4 options	49
12.4.1 PARAMETERS	49
12.4.2 options	49
12.4.3 general options	49
12.5 Typical usage	50
12.5.1 Copy Attribute Value to file	50
12.5.2 Extract Pixel Data	50
12.5.3 Encapsulated Syntax	50
12.5.4 Extract fragments as single file	51
12.6 Footnote about JPEG files	52
12.7 SEE ALSO	52
12.8 COPYRIGHT	52
13 Scan a directory containing DICOM files.	53
13.1 SYNOPSIS	53
13.2 DESCRIPTION	53
13.2.1 PARAMETERS	53
13.2.2 options	53
13.2.3 general options	53
13.3 Typical usage	54

13.4 Simple usage	54
13.5 Complex usage	54
13.6 SEE ALSO	54
13.7 COPYRIGHT	54
14 Tool to execute a DICOM Query/Retrieve operation	55
14.1 SYNOPSIS	55
14.2 DESCRIPTION	55
14.3 PARAMETERS	55
14.4 options	55
14.4.1 options	55
14.4.2 mode options	55
14.4.3 C-STORE options	56
14.4.4 C-FIND/C-MOVE options	56
14.4.5 C-MOVE options	56
14.4.6 general options	56
14.4.7 environment variable	56
14.5 C-ECHO usage	57
14.6 C-STORE usage	57
14.7 C-FIND usage	57
14.8 C-MOVE usage	58
14.9 patientroot notes	58
14.10 Debugging	58
14.11 Port Warning	58
14.12 C-STORE Warnings	59
14.13 C-MOVE Warnings	59
14.14 C-FIND IMAGE level (Composite Object Instance)	59
14.15 Storing the Query	59
14.16 DICOM Public Servers	60
14.17 SEE ALSO	60
14.18 COPYRIGHT	60
15 Concatenate/Extract DICOM files.	61
15.1 SYNOPSIS	61
15.2 DESCRIPTION	61
15.3 PARAMETERS	61
15.4 options	61
15.4.1 options	61

15.4.2	general options	61
15.4.3	environment variable	62
15.5	Typical usage	62
15.5.1	SIEMENS Mosaic	62
15.6	SEE ALSO	63
15.7	COPYRIGHT	63
16	Simple DICOM viewer.	65
16.1	SYNOPSIS	65
16.2	DESCRIPTION	65
16.3	PARAMETERS	65
16.4	options	65
16.4.1	options	65
16.4.2	general options	65
16.5	Typical usage	66
16.6	Simple usage	66
16.7	Wiki Link	66
16.8	SEE ALSO	66
16.9	COPYRIGHT	66
17	Todo List	67
18	Deprecated List	69
19	Bug List	71
20	Namespace Index	73
20.1	Namespace List	73
21	Hierarchical Index	75
21.1	Class Hierarchy	75
22	Class Index	83
22.1	Class List	83
23	File Index	97
23.1	File List	97
24	Namespace Documentation	103
24.1	gdcm Namespace Reference	103
24.1.1	Detailed Description	117

24.1.2	Typedef Documentation	117
24.1.2.1	AEComp	117
24.1.2.2	ASComp	117
24.1.2.3	BOOL_FUNCTION_PFILE_PFILE_POINTER	117
24.1.2.4	CSComp	117
24.1.2.5	DAComp	117
24.1.2.6	DTComp	117
24.1.2.7	FileList	117
24.1.2.8	IconImage	118
24.1.2.9	LOComp	118
24.1.2.10	LTComp	118
24.1.2.11	MacroEntry	118
24.1.2.12	NestedMacroEntries	118
24.1.2.13	PNComp	118
24.1.2.14	SHComp	118
24.1.2.15	STComp	118
24.1.2.16	TMComp	118
24.1.2.17	UIComp	118
24.1.2.18	UTComp	118
24.1.3	Enumeration Type Documentation	118
24.1.3.1	CompOperators	118
24.1.3.2	ECharSet	118
24.1.3.3	EQueryLevel	119
24.1.3.4	EQueryType	119
24.1.3.5	ERootType	119
24.1.3.6	LodModeType	119
24.1.4	Function Documentation	119
24.1.4.1	backslash	119
24.1.4.2	GetVRFromTag	120
24.1.4.3	operator!=	120
24.1.4.4	operator!=	120
24.1.4.5	operator<<	120
24.1.4.6	operator<<	120
24.1.4.7	operator<<	120
24.1.4.8	operator<<	120
24.1.4.9	operator<<	120
24.1.4.10	operator<<	120

24.1.4.11 operator<<	120
24.1.4.12 operator<<	120
24.1.4.13 operator<<	120
24.1.4.14 operator<<	120
24.1.4.15 operator<<	121
24.1.4.16 operator<<	121
24.1.4.17 operator<<	121
24.1.4.18 operator<<	121
24.1.4.19 operator<<	121
24.1.4.20 operator<<	121
24.1.4.21 operator<<	121
24.1.4.22 operator<<	121
24.1.4.23 operator<<	121
24.1.4.24 operator<<	121
24.1.4.25 operator<<	121
24.1.4.26 operator<<	121
24.1.4.27 operator<<	121
24.1.4.28 operator<<	121
24.1.4.29 operator<<	121
24.1.4.30 operator<<	121
24.1.4.31 operator<<	121
24.1.4.32 operator<<	122
24.1.4.33 operator<<	122
24.1.4.34 operator<<	122
24.1.4.35 operator<<	122
24.1.4.36 operator<<	122
24.1.4.37 operator<<	122
24.1.4.38 operator<<	122
24.1.4.39 operator<<	122
24.1.4.40 operator<<	122
24.1.4.41 operator<<	122
24.1.4.42 operator<<	122
24.1.4.43 operator<<	122
24.1.4.44 operator<<	122
24.1.4.45 operator<<	122
24.1.4.46 operator<<	123
24.1.4.47 operator<<	123

24.1.4.48 operator<<	123
24.1.4.49 operator<<	123
24.1.4.50 operator<<	123
24.1.4.51 operator<<	123
24.1.4.52 operator<<	123
24.1.4.53 operator<<	123
24.1.4.54 operator<<	123
24.1.4.55 operator<<	123
24.1.4.56 operator<<	123
24.1.4.57 operator<<	123
24.1.4.58 operator<<	123
24.1.4.59 operator==	124
24.1.4.60 operator>>	124
24.1.4.61 operator>>	124
24.1.4.62 operator>>	124
24.1.4.63 to_string	124
24.1.4.64 TYPETOENCODING	124
24.1.5 Variable Documentation	124
24.1.5.1 GlobalInstance	124
24.1.5.2 VRBINARY	124
24.2 gdcm::network Namespace Reference	124
24.2.1 Enumeration Type Documentation	128
24.2.1.1 EEventID	128
24.2.1.2 EStateID	129
24.2.2 Function Documentation	129
24.2.2.1 GetStateIndex	129
24.2.3 Variable Documentation	129
24.2.3.1 cMaxEventID	129
24.2.3.2 cMaxStateID	129
24.3 gdcm::SegmentHelper Namespace Reference	130
24.4 gdcm::terminal Namespace Reference	130
24.4.1 Detailed Description	130
24.4.2 Enumeration Type Documentation	131
24.4.2.1 Attribute	131
24.4.2.2 Color	131
24.4.2.3 Mode	131
24.4.3 Function Documentation	131

24.4.3.1	setattribute	131
24.4.3.2	setbgcolor	131
24.4.3.3	setfgcolor	131
24.4.3.4	setmode	131
25	Class Documentation	133
25.1	gdcmm::network::AAabortPDU Class Reference	133
25.1.1	Detailed Description	134
25.1.2	Constructor & Destructor Documentation	134
25.1.2.1	AAabortPDU	134
25.1.3	Member Function Documentation	134
25.1.3.1	IsLastFragment	134
25.1.3.2	Print	134
25.1.3.3	Read	134
25.1.3.4	Size	135
25.1.3.5	Write	135
25.2	gdcmm::network::AAssociateACPDU Class Reference	135
25.2.1	Detailed Description	136
25.2.2	Member Typedef Documentation	137
25.2.2.1	SizeType	137
25.2.3	Constructor & Destructor Documentation	137
25.2.3.1	AAssociateACPDU	137
25.2.4	Member Function Documentation	137
25.2.4.1	AddPresentationContextAC	137
25.2.4.2	GetNumberOfPresentationContextAC	137
25.2.4.3	GetPresentationContextAC	137
25.2.4.4	GetUserInformation	137
25.2.4.5	InitFromRQ	137
25.2.4.6	IsLastFragment	137
25.2.4.7	Print	137
25.2.4.8	Read	137
25.2.4.9	SetCalledAETitle	137
25.2.4.10	SetCallingAETitle	137
25.2.4.11	Size	137
25.2.4.12	Write	137
25.2.5	Friends And Related Function Documentation	137
25.2.5.1	AAssociateRQPDU	138

25.3	gdcm::network::AAssociateRJPDU Class Reference	138
25.3.1	Detailed Description	139
25.3.2	Constructor & Destructor Documentation	139
25.3.2.1	AAssociateRJPDU	139
25.3.3	Member Function Documentation	139
25.3.3.1	IsLastFragment	139
25.3.3.2	Print	139
25.3.3.3	Read	139
25.3.3.4	Size	139
25.3.3.5	Write	139
25.4	gdcm::network::AAssociateRQPDU Class Reference	139
25.4.1	Detailed Description	141
25.4.2	Member Typedef Documentation	141
25.4.2.1	PresentationContextArrayType	141
25.4.2.2	SizeType	141
25.4.3	Constructor & Destructor Documentation	141
25.4.3.1	AAssociateRQPDU	141
25.4.3.2	AAssociateRQPDU	141
25.4.4	Member Function Documentation	141
25.4.4.1	AddPresentationContext	142
25.4.4.2	GetCalledAETitle	142
25.4.4.3	GetCallingAETitle	142
25.4.4.4	GetNumberOfPresentationContext	142
25.4.4.5	GetPresentationContext	142
25.4.4.6	GetPresentationContextByAbstractSyntax	142
25.4.4.7	GetPresentationContextByID	142
25.4.4.8	GetPresentationContexts	142
25.4.4.9	GetReserved43_74	142
25.4.4.10	IsAETitleValid	142
25.4.4.11	IsLastFragment	142
25.4.4.12	Print	142
25.4.4.13	Read	142
25.4.4.14	SetCalledAETitle	142
25.4.4.15	SetCallingAETitle	142
25.4.4.16	Size	142
25.4.4.17	Write	143
25.4.5	Friends And Related Function Documentation	143

25.4.5.1	AAssociateACPDU	143
25.5	gdcmm::AbortEvent Class Reference	143
25.6	gdcmm::network::AbstractSyntax Class Reference	144
25.6.1	Detailed Description	144
25.6.2	Constructor & Destructor Documentation	145
25.6.2.1	AbstractSyntax	145
25.6.3	Member Function Documentation	145
25.6.3.1	GetAsDataElement	145
25.6.3.2	GetName	145
25.6.3.3	operator==	145
25.6.3.4	Print	145
25.6.3.5	Read	145
25.6.3.6	SetName	145
25.6.3.7	SetNameFromUID	145
25.6.3.8	Size	145
25.6.3.9	Write	145
25.7	gdcmm::AnonymizeEvent Class Reference	145
25.7.1	Detailed Description	147
25.7.2	Member Typedef Documentation	147
25.7.2.1	Self	147
25.7.2.2	Superclass	147
25.7.3	Constructor & Destructor Documentation	147
25.7.3.1	AnonymizeEvent	147
25.7.3.2	~AnonymizeEvent	147
25.7.3.3	AnonymizeEvent	147
25.7.4	Member Function Documentation	147
25.7.4.1	CheckEvent	147
25.7.4.2	GetEventName	147
25.7.4.3	GetTag	147
25.7.4.4	MakeObject	147
25.7.4.5	SetTag	147
25.8	gdcmm::Anonymizer Class Reference	148
25.8.1	Detailed Description	149
25.8.2	Constructor & Destructor Documentation	150
25.8.2.1	Anonymizer	150
25.8.2.2	~Anonymizer	150
25.8.3	Member Function Documentation	150

25.8.3.1	BALCPPProtect	150
25.8.3.2	BasicApplicationLevelConfidentialityProfile	151
25.8.3.3	CanEmptyTag	151
25.8.3.4	Empty	151
25.8.3.5	GetBasicApplicationLevelConfidentialityProfileAttributes	151
25.8.3.6	GetCryptographicMessageSyntax	151
25.8.3.7	GetFile	151
25.8.3.8	New	151
25.8.3.9	RecurseDataSet	151
25.8.3.10	Remove	151
25.8.3.11	RemoveGroupLength	151
25.8.3.12	RemovePrivateTags	152
25.8.3.13	RemoveRetired	152
25.8.3.14	Replace	152
25.8.3.15	Replace	152
25.8.3.16	SetCryptographicMessageSyntax	152
25.8.3.17	SetFile	152
25.9	gdcmm::AnyEvent Class Reference	152
25.10	gdcmm::network::ApplicationContext Class Reference	154
25.10.1	Detailed Description	154
25.10.2	Constructor & Destructor Documentation	154
25.10.2.1	ApplicationContext	154
25.10.3	Member Function Documentation	155
25.10.3.1	GetName	155
25.10.3.2	Print	155
25.10.3.3	Read	155
25.10.3.4	SetName	155
25.10.3.5	Size	155
25.10.3.6	Write	155
25.11	gdcmm::ApplicationEntity Class Reference	155
25.11.1	Detailed Description	156
25.11.2	Member Function Documentation	156
25.11.2.1	IsValid	156
25.11.2.2	Print	156
25.11.2.3	SetBlob	156
25.11.2.4	Squeeze	156
25.11.3	Member Data Documentation	156

25.11.3.1 Internal	156
25.11.3.2 MaxLength	156
25.11.3.3 MaxNumberOfComponents	156
25.11.3.4 Padding	156
25.11.3.5 Separator	157
25.12gdcmm::network::AReleaseRPPDU Class Reference	157
25.12.1 Detailed Description	158
25.12.2 Constructor & Destructor Documentation	158
25.12.2.1 AReleaseRPPDU	158
25.12.3 Member Function Documentation	158
25.12.3.1 IsLastFragment	158
25.12.3.2 Print	158
25.12.3.3 Read	158
25.12.3.4 Size	158
25.12.3.5 Write	158
25.13gdcmm::network::AReleaseRQPDU Class Reference	158
25.13.1 Detailed Description	159
25.13.2 Constructor & Destructor Documentation	159
25.13.2.1 AReleaseRQPDU	160
25.13.3 Member Function Documentation	160
25.13.3.1 IsLastFragment	160
25.13.3.2 Print	160
25.13.3.3 Read	160
25.13.3.4 Size	160
25.13.3.5 Write	160
25.14gdcmm::network::ARTIMTimer Class Reference	160
25.14.1 Detailed Description	161
25.14.2 Constructor & Destructor Documentation	161
25.14.2.1 ARTIMTimer	161
25.14.3 Member Function Documentation	161
25.14.3.1 GetElapsedTime	161
25.14.3.2 GetHasExpired	161
25.14.3.3 GetTimeout	161
25.14.3.4 SetTimeout	161
25.14.3.5 Start	161
25.14.3.6 Stop	161
25.15gdcmm::ASN1 Class Reference	161

25.15.1 Detailed Description	162
25.15.2 Constructor & Destructor Documentation	162
25.15.2.1 ASN1	162
25.15.2.2 ~ASN1	162
25.15.3 Member Function Documentation	162
25.15.3.1 ParseDump	162
25.15.3.2 ParseDumpFile	162
25.15.3.3 TestPBKDF2	162
25.16gdcmm::network::AsynchronousOperationsWindowSub Class Reference	162
25.16.1 Detailed Description	162
25.16.2 Constructor & Destructor Documentation	163
25.16.2.1 AsynchronousOperationsWindowSub	163
25.16.3 Member Function Documentation	163
25.16.3.1 Print	163
25.16.3.2 Read	163
25.16.3.3 Size	163
25.16.3.4 Write	163
25.17gdcmm::Attribute< Group, Element, TVR, TVM > Class Template Reference	163
25.17.1 Detailed Description	165
25.17.2 Member Typedef Documentation	165
25.17.2.1 ArrayType	165
25.17.3 Member Enumeration Documentation	165
25.17.3.1 anonymous enum	165
25.17.4 Member Function Documentation	165
25.17.4.1 GDCM_STATIC_ASSERT	165
25.17.4.2 GDCM_STATIC_ASSERT	165
25.17.4.3 GDCM_STATIC_ASSERT	165
25.17.4.4 GetAsDataElement	166
25.17.4.5 GetDictVM	166
25.17.4.6 GetDictVR	166
25.17.4.7 GetNumberOfValues	166
25.17.4.8 GetTag	166
25.17.4.9 GetValue	167
25.17.4.10GetValue	167
25.17.4.11GetValues	167
25.17.4.12GetVM	167
25.17.4.13GetVR	167

25.17.4.14operator!=	167
25.17.4.15operator<	168
25.17.4.16operator==	168
25.17.4.17operator[]	168
25.17.4.18operator[]	168
25.17.4.19Print	168
25.17.4.20Set	168
25.17.4.21SetByteValue	168
25.17.4.22SetByteValueNoSwap	169
25.17.4.23SetFromDataElement	169
25.17.4.24SetFromDataSet	169
25.17.4.25SetValue	169
25.17.4.26SetValues	169
25.17.5 Member Data Documentation	170
25.17.5.1 Internal	170
25.18gdcmm::Attribute< Group, Element, TVR, VM::VM1 > Class Template Reference	170
25.18.1 Member Typedef Documentation	172
25.18.1.1 ArrayType	172
25.18.2 Member Enumeration Documentation	172
25.18.2.1 anonymous enum	172
25.18.3 Member Function Documentation	172
25.18.3.1 GDCM_STATIC_ASSERT	172
25.18.3.2 GDCM_STATIC_ASSERT	172
25.18.3.3 GDCM_STATIC_ASSERT	172
25.18.3.4 GDCM_STATIC_ASSERT	172
25.18.3.5 GetAsDataElement	172
25.18.3.6 GetDictVM	173
25.18.3.7 GetDictVR	173
25.18.3.8 GetNumberOfValues	173
25.18.3.9 GetTag	173
25.18.3.10GetValue	173
25.18.3.11GetValue	173
25.18.3.12GetValues	173
25.18.3.13GetVM	173
25.18.3.14GetVR	173
25.18.3.15operator!=	173
25.18.3.16operator<	173

25.18.3.17operator==	174
25.18.3.18Print	174
25.18.3.19Set	174
25.18.3.20SetByteValue	174
25.18.3.21SetByteValueNoSwap	174
25.18.3.22SetFromDataElement	174
25.18.3.23SetFromDataSet	174
25.18.3.24SetValue	174
25.18.4 Member Data Documentation	175
25.18.4.1 Internal	175
25.19gdcmm::Attribute< Group, Element, TVR, VM::VM1_3 > Class Template Reference	175
25.19.1 Member Function Documentation	176
25.19.1.1 GetVM	176
25.20gdcmm::Attribute< Group, Element, TVR, VM::VM1_8 > Class Template Reference	176
25.20.1 Member Function Documentation	177
25.20.1.1 GetVM	177
25.21gdcmm::Attribute< Group, Element, TVR, VM::VM1_n > Class Template Reference	177
25.21.1 Member Typedef Documentation	179
25.21.1.1 ArrayType	179
25.21.2 Constructor & Destructor Documentation	179
25.21.2.1 Attribute	179
25.21.2.2 ~Attribute	179
25.21.3 Member Function Documentation	179
25.21.3.1 GDCM_STATIC_ASSERT	179
25.21.3.2 GDCM_STATIC_ASSERT	179
25.21.3.3 GDCM_STATIC_ASSERT	179
25.21.3.4 GetAsDataElement	179
25.21.3.5 GetDictVM	179
25.21.3.6 GetDictVR	179
25.21.3.7 GetNumberOfValues	180
25.21.3.8 GetTag	180
25.21.3.9 GetValue	180
25.21.3.10GetValue	180
25.21.3.11GetValues	180
25.21.3.12GetVM	180
25.21.3.13GetVR	180
25.21.3.14operator[]	180

25.21.3.15operator[]	180
25.21.3.16Print	180
25.21.3.17Set	181
25.21.3.18SetByteValue	181
25.21.3.19SetFromDataElement	181
25.21.3.20SetFromDataSet	181
25.21.3.21SetNumberOfValues	181
25.21.3.22SetValue	181
25.21.3.23SetValue	181
25.21.3.24SetValues	182
25.22gdcmm::Attribute< Group, Element, TVR, VM::VM2_n > Class Template Reference	182
25.22.1 Member Function Documentation	183
25.22.1.1 GetVM	183
25.23gdcmm::Attribute< Group, Element, TVR, VM::VM2_n > Class Template Reference	183
25.23.1 Member Function Documentation	185
25.23.1.1 GetVM	185
25.24gdcmm::Attribute< Group, Element, TVR, VM::VM3_3n > Class Template Reference	185
25.24.1 Member Function Documentation	186
25.24.1.1 GetVM	186
25.25gdcmm::Attribute< Group, Element, TVR, VM::VM3_n > Class Template Reference	186
25.25.1 Member Function Documentation	188
25.25.1.1 GetVM	188
25.26gdcmm::AudioCodec Class Reference	188
25.26.1 Detailed Description	189
25.26.2 Constructor & Destructor Documentation	189
25.26.2.1 AudioCodec	189
25.26.2.2 ~AudioCodec	189
25.26.3 Member Function Documentation	189
25.26.3.1 CanCode	189
25.26.3.2 CanDecode	190
25.26.3.3 Decode	190
25.27gdcmm::Base64 Class Reference	190
25.27.1 Detailed Description	190
25.27.2 Constructor & Destructor Documentation	190
25.27.2.1 Base64	190
25.27.2.2 ~Base64	190
25.27.3 Member Function Documentation	191

25.27.3.1 Decode	191
25.27.3.2 Encode	192
25.27.3.3 GetDecodeLength	192
25.27.3.4 GetEncodeLength	192
25.28gdcm::network::BaseCompositeMessage Class Reference	192
25.28.1 Detailed Description	193
25.28.2 Member Function Documentation	194
25.28.2.1 ConstructPDV	194
25.29gdcm::network::BasePDU Class Reference	194
25.29.1 Detailed Description	195
25.29.2 Constructor & Destructor Documentation	195
25.29.2.1 ~BasePDU	195
25.29.3 Member Function Documentation	195
25.29.3.1 IsLastFragment	195
25.29.3.2 Print	195
25.29.3.3 Read	195
25.29.3.4 Size	196
25.29.3.5 Write	196
25.30gdcm::BaseRootQuery Class Reference	196
25.30.1 Detailed Description	198
25.30.2 Constructor & Destructor Documentation	198
25.30.2.1 BaseRootQuery	198
25.30.2.2 ~BaseRootQuery	198
25.30.3 Member Function Documentation	198
25.30.3.1 AddQueryDataSet	198
25.30.3.2 Construct	198
25.30.3.3 GetAbstractSyntaxUID	198
25.30.3.4 GetQueryDataSet	198
25.30.3.5 GetQueryDataSet	199
25.30.3.6 GetQueryLevelFromQueryRoot	199
25.30.3.7 GetQueryLevelFromString	199
25.30.3.8 GetQueryLevelString	199
25.30.3.9 GetTagListByLevel	199
25.30.3.10InitializeDataSet	199
25.30.3.11Print	199
25.30.3.12SetSearchParameter	199
25.30.3.13SetSearchParameter	199

25.30.3.14	SetSearchParameter	199
25.30.3.15	ValidateQuery	199
25.30.3.16	WriteHelpFile	199
25.30.3.17	WriteQuery	200
25.30.4	Friends And Related Function Documentation	200
25.30.4.1	QueryFactory	200
25.30.5	Member Data Documentation	200
25.30.5.1	mDataSet	200
25.30.5.2	mHelpDescription	200
25.30.5.3	mImage	200
25.30.5.4	mPatient	200
25.30.5.5	mRootType	200
25.30.5.6	mSeries	200
25.30.5.7	mStudy	200
25.31	gdcm::SegmentHelper::BasicCodedEntry Struct Reference	200
25.31.1	Detailed Description	202
25.31.2	Constructor & Destructor Documentation	202
25.31.2.1	BasicCodedEntry	202
25.31.2.2	BasicCodedEntry	202
25.31.2.3	BasicCodedEntry	202
25.31.3	Member Function Documentation	202
25.31.3.1	IsEmpty	202
25.31.4	Member Data Documentation	202
25.31.4.1	CM	202
25.31.4.2	CSD	202
25.31.4.3	CSV	202
25.31.4.4	CV	203
25.32	gdcm::BasicOffsetTable Class Reference	203
25.32.1	Detailed Description	204
25.32.2	Constructor & Destructor Documentation	204
25.32.2.1	BasicOffsetTable	204
25.32.3	Member Function Documentation	204
25.32.3.1	Read	205
25.32.4	Friends And Related Function Documentation	205
25.32.4.1	operator<<	205
25.33	gdcm::Bitmap Class Reference	205
25.33.1	Detailed Description	208

25.33.2 Member Typedef Documentation	208
25.33.2.1 LUTPtr	208
25.33.3 Constructor & Destructor Documentation	208
25.33.3.1 Bitmap	208
25.33.3.2 ~Bitmap	208
25.33.4 Member Function Documentation	208
25.33.4.1 AreOverlaysInPixelData	208
25.33.4.2 Clear	208
25.33.4.3 ComputeLossyFlag	208
25.33.4.4 GetBuffer	208
25.33.4.5 GetBuffer2	208
25.33.4.6 GetBufferLength	208
25.33.4.7 GetColumns	209
25.33.4.8 GetDataElement	209
25.33.4.9 GetDataElement	209
25.33.4.10GetDimension	209
25.33.4.11GetDimensions	209
25.33.4.12GetLUT	209
25.33.4.13GetLUT	209
25.33.4.14GetNeedByteSwap	209
25.33.4.15GetNumberOfDimensions	209
25.33.4.16GetPhotometricInterpretation	209
25.33.4.17GetPixelFormat	210
25.33.4.18GetPixelFormat	210
25.33.4.19GetPlanarConfiguration	210
25.33.4.20GetRows	210
25.33.4.21GetTransferSyntax	210
25.33.4.22IsEmpty	210
25.33.4.23IsLossy	210
25.33.4.24IsTransferSyntaxCompatible	210
25.33.4.25Print	210
25.33.4.26SetColumns	210
25.33.4.27SetDataElement	210
25.33.4.28SetDimension	211
25.33.4.29SetDimensions	211
25.33.4.30SetLossyFlag	211
25.33.4.31SetLUT	211

25.33.4.32SetNeedByteSwap	211
25.33.4.33SetNumberOfDimensions	211
25.33.4.34SetPhotometricInterpretation	211
25.33.4.35SetPixelFormat	211
25.33.4.36SetPlanarConfiguration	211
25.33.4.37SetRows	212
25.33.4.38SetTransferSyntax	212
25.33.4.39TryJPEG2000Codec	212
25.33.4.40TryJPEG2000Codec2	212
25.33.4.41TryJPEGCodec	212
25.33.4.42TryJPEGCodec2	212
25.33.4.43TryJPEGLSCodec	212
25.33.4.44TryKAKADUCodec	212
25.33.4.45TryPVRGCodec	212
25.33.4.46TryRAWCodec	212
25.33.4.47TryRLECodec	212
25.33.5 Friends And Related Function Documentation	212
25.33.5.1 ImageChangeTransferSyntax	212
25.33.5.2 PixmapReader	212
25.33.6 Member Data Documentation	212
25.33.6.1 Dimensions	212
25.33.6.2 LossyFlag	212
25.33.6.3 LUT	212
25.33.6.4 NeedByteSwap	212
25.33.6.5 NumberOfDimensions	212
25.33.6.6 PF	212
25.33.6.7 PI	212
25.33.6.8 PixelData	212
25.33.6.9 PlanarConfiguration	213
25.33.6.10TS	213
25.34gdcm::BitmapToBitmapFilter Class Reference	213
25.34.1 Detailed Description	214
25.34.2 Constructor & Destructor Documentation	214
25.34.2.1 BitmapToBitmapFilter	215
25.34.2.2 ~BitmapToBitmapFilter	215
25.34.3 Member Function Documentation	215
25.34.3.1 GetOutput	215

25.34.3.2 GetOutputAsBitmap	215
25.34.3.3 SetInput	215
25.34.4 Member Data Documentation	215
25.34.4.1 Input	215
25.34.4.2 Output	215
25.35gdcmm::BoxRegion Class Reference	215
25.35.1 Detailed Description	217
25.35.2 Constructor & Destructor Documentation	217
25.35.2.1 BoxRegion	217
25.35.2.2 ~BoxRegion	217
25.35.2.3 BoxRegion	217
25.35.3 Member Function Documentation	217
25.35.3.1 Area	217
25.35.3.2 BoundingBox	217
25.35.3.3 Clone	217
25.35.3.4 ComputeBoundingBox	218
25.35.3.5 Empty	218
25.35.3.6 GetXMax	218
25.35.3.7 GetXMin	218
25.35.3.8 GetYMax	218
25.35.3.9 GetYMin	218
25.35.3.10GetZMax	218
25.35.3.11GetZMin	218
25.35.3.12IsValid	218
25.35.3.13operator=	218
25.35.3.14Print	218
25.35.3.15SetDomain	218
25.36gdcmm::ByteBuffer Class Reference	219
25.36.1 Detailed Description	219
25.36.2 Constructor & Destructor Documentation	219
25.36.2.1 ByteBuffer	219
25.36.3 Member Function Documentation	219
25.36.3.1 Get	219
25.36.3.2 GetStart	219
25.36.3.3 ShiftEnd	219
25.36.3.4 UpdatePosition	219
25.37gdcmm::ByteSwap< T > Class Template Reference	219

25.37.1 Detailed Description	220
25.37.2 Member Function Documentation	220
25.37.2.1 Swap	220
25.37.2.2 SwapFromSwapCodeIntoSystem	220
25.37.2.3 SwapRange	220
25.37.2.4 SwapRangeFromSwapCodeIntoSystem	220
25.37.2.5 SystemIsBigEndian	220
25.37.2.6 SystemIsLittleEndian	220
25.38gdcm::ByteSwapFilter Class Reference	221
25.38.1 Detailed Description	221
25.38.2 Constructor & Destructor Documentation	221
25.38.2.1 ByteSwapFilter	221
25.38.2.2 ~ByteSwapFilter	221
25.38.3 Member Function Documentation	221
25.38.3.1 ByteSwap	221
25.38.3.2 SetByteSwapTag	221
25.39gdcm::ByteValue Class Reference	221
25.39.1 Detailed Description	223
25.39.2 Constructor & Destructor Documentation	223
25.39.2.1 ByteValue	223
25.39.2.2 ByteValue	224
25.39.2.3 ~ByteValue	224
25.39.3 Member Function Documentation	224
25.39.3.1 Clear	224
25.39.3.2 Fill	224
25.39.3.3 GetBuffer	224
25.39.3.4 GetLength	224
25.39.3.5 GetPointer	224
25.39.3.6 IsEmpty	225
25.39.3.7 IsPrintable	225
25.39.3.8 operator const std::vector< char > &	225
25.39.3.9 operator=	225
25.39.3.10operator==	225
25.39.3.11operator==	225
25.39.3.12Print	225
25.39.3.13PrintASCII	225
25.39.3.14PrintGroupLength	225

25.39.3.15PrintHex	225
25.39.3.16Read	225
25.39.3.17Read	225
25.39.3.18SetLength	225
25.39.3.19Write	225
25.39.3.20Write	226
25.39.3.21WriteBuffer	226
25.40gdcmm::network::CEchoRQ Class Reference	226
25.40.1 Detailed Description	227
25.40.2 Member Function Documentation	227
25.40.2.1 ConstructPDV	227
25.40.3 Member Data Documentation	227
25.40.3.1 AffectedSOPClassUID	227
25.40.3.2 MessageID	227
25.41gdcmm::network::CEchoRSP Class Reference	227
25.41.1 Detailed Description	228
25.41.2 Member Function Documentation	228
25.41.2.1 ConstructPDVByDataSet	229
25.42gdcmm::network::CFind Class Reference	229
25.42.1 Detailed Description	229
25.43gdcmm::network::CFindCancelRQ Class Reference	229
25.43.1 Detailed Description	230
25.43.2 Member Function Documentation	230
25.43.2.1 ConstructPDVByDataSet	230
25.44gdcmm::network::CFindRQ Class Reference	230
25.44.1 Detailed Description	231
25.44.2 Member Function Documentation	231
25.44.2.1 ConstructPDV	232
25.45gdcmm::network::CFindRSP Class Reference	232
25.45.1 Detailed Description	233
25.45.2 Member Function Documentation	233
25.45.2.1 ConstructPDVByDataSet	233
25.46gdcmm::network::CMoveCancelRq Class Reference	233
25.46.1 Member Function Documentation	234
25.46.1.1 ConstructPDVByDataSet	234
25.47gdcmm::network::CMoveRQ Class Reference	234
25.47.1 Detailed Description	235

25.47.2 Member Function Documentation	235
25.47.2.1 ConstructPDV	236
25.48gdcm::network::CMoveRSP Class Reference	236
25.48.1 Detailed Description	237
25.48.2 Member Function Documentation	237
25.48.2.1 ConstructPDVByDataSet	237
25.49gdcm::Codec Class Reference	237
25.49.1 Detailed Description	238
25.50gdcm::Coder Class Reference	238
25.50.1 Detailed Description	239
25.50.2 Constructor & Destructor Documentation	239
25.50.2.1 ~Coder	239
25.50.3 Member Function Documentation	239
25.50.3.1 CanCode	239
25.50.3.2 Code	240
25.50.3.3 InternalCode	240
25.51gdcm::CodeString Class Reference	240
25.51.1 Detailed Description	241
25.51.2 Member Typedef Documentation	241
25.51.2.1 const_iterator	241
25.51.2.2 const_reference	241
25.51.2.3 const_reverse_iterator	241
25.51.2.4 difference_type	241
25.51.2.5 iterator	241
25.51.2.6 pointer	241
25.51.2.7 reference	241
25.51.2.8 reverse_iterator	241
25.51.2.9 size_type	242
25.51.2.10value_type	242
25.51.3 Constructor & Destructor Documentation	242
25.51.3.1 CodeString	242
25.51.3.2 CodeString	242
25.51.3.3 CodeString	242
25.51.3.4 CodeString	242
25.51.4 Member Function Documentation	242
25.51.4.1 GetAsString	242
25.51.4.2 IsValid	242

25.51.4.3 Size	242
25.51.4.4 TrimInternal	242
25.51.5 Friends And Related Function Documentation	242
25.51.5.1 operator!=	242
25.51.5.2 operator<<	242
25.51.5.3 operator==	242
25.52gdcmm::Command Class Reference	242
25.52.1 Detailed Description	244
25.52.2 Constructor & Destructor Documentation	244
25.52.2.1 Command	244
25.52.2.2 ~Command	244
25.52.3 Member Function Documentation	244
25.52.3.1 Execute	244
25.52.3.2 Execute	244
25.53gdcmm::CommandDataSet Class Reference	244
25.53.1 Detailed Description	246
25.53.2 Constructor & Destructor Documentation	246
25.53.2.1 CommandDataSet	246
25.53.2.2 ~CommandDataSet	246
25.53.3 Member Function Documentation	246
25.53.3.1 Insert	246
25.53.3.2 Read	246
25.53.3.3 Replace	246
25.53.3.4 Write	246
25.53.4 Friends And Related Function Documentation	246
25.53.4.1 operator<<	246
25.54gdcmm::network::CompositeMessageFactory Class Reference	246
25.54.1 Detailed Description	247
25.54.2 Member Function Documentation	247
25.54.2.1 ConstructCEchoRQ	247
25.54.2.2 ConstructCFindRQ	247
25.54.2.3 ConstructCMoveRQ	247
25.54.2.4 ConstructCStoreRQ	247
25.54.2.5 ConstructCStoreRSP	247
25.55gdcmm::CompositeNetworkFunctions Class Reference	247
25.55.1 Detailed Description	248
25.55.2 Member Typedef Documentation	248

25.55.2.1 KeyValuePairArrayType	248
25.55.2.2 KeyValuePairType	249
25.55.3 Member Function Documentation	249
25.55.3.1 CEcho	249
25.55.3.2 CFind	249
25.55.3.3 CMove	249
25.55.3.4 ConstructQuery	250
25.55.3.5 ConstructQuery	250
25.55.3.6 CStore	250
25.56gdcmm::ConstCharWrapper Class Reference	250
25.56.1 Detailed Description	251
25.56.2 Constructor & Destructor Documentation	251
25.56.2.1 ConstCharWrapper	251
25.56.3 Member Function Documentation	251
25.56.3.1 operator const char *	251
25.57gdcmm::CP246ExplicitDataElement Class Reference	251
25.57.1 Detailed Description	252
25.57.2 Member Function Documentation	252
25.57.2.1 GetLength	252
25.57.2.2 Read	253
25.57.2.3 ReadPreValue	253
25.57.2.4 ReadValue	253
25.57.2.5 ReadWithLength	253
25.58gdcmm::CryptographicMessageSyntax Class Reference	253
25.58.1 Detailed Description	253
25.58.2 Member Enumeration Documentation	254
25.58.2.1 CipherTypes	254
25.58.3 Constructor & Destructor Documentation	254
25.58.3.1 CryptographicMessageSyntax	254
25.58.3.2 ~CryptographicMessageSyntax	254
25.58.4 Member Function Documentation	254
25.58.4.1 Decrypt	254
25.58.4.2 Encrypt	254
25.58.4.3 GetCipherType	254
25.58.4.4 ParseCertificateFile	254
25.58.4.5 ParseKeyFile	254
25.58.4.6 SetCipherType	254

25.59gdcmm::CSAElement Class Reference	254
25.59.1 Detailed Description	256
25.59.2 Member Typedef Documentation	256
25.59.2.1 DataPtr	256
25.59.3 Constructor & Destructor Documentation	256
25.59.3.1 CSAElement	256
25.59.3.2 CSAElement	256
25.59.4 Member Function Documentation	256
25.59.4.1 GetByteValue	256
25.59.4.2 GetKey	257
25.59.4.3 GetName	257
25.59.4.4 GetNoOfItems	257
25.59.4.5 GetSyngoDT	257
25.59.4.6 GetValue	257
25.59.4.7 GetValue	257
25.59.4.8 GetVM	257
25.59.4.9 GetVR	257
25.59.4.10IsEmpty	257
25.59.4.11operator<	258
25.59.4.12operator=	258
25.59.4.13operator==	258
25.59.4.14SetByteValue	258
25.59.4.15SetKey	258
25.59.4.16SetName	258
25.59.4.17SetNoOfItems	258
25.59.4.18SetSyngoDT	258
25.59.4.19SetValue	258
25.59.4.20SetVM	258
25.59.4.21SetVR	258
25.59.5 Friends And Related Function Documentation	258
25.59.5.1 operator<<	258
25.59.6 Member Data Documentation	258
25.59.6.1 DataField	258
25.59.6.2 KeyField	258
25.59.6.3 NameField	259
25.59.6.4 NoOfItemsField	259
25.59.6.5 SyngoDTField	259

25.59.6.6 ValueMultiplicityField	259
25.59.6.7 VRField	259
25.60gdcm::CSAHeader Class Reference	259
25.60.1 Detailed Description	260
25.60.2 Member Enumeration Documentation	261
25.60.2.1 CSAHeaderType	261
25.60.3 Constructor & Destructor Documentation	261
25.60.3.1 CSAHeader	261
25.60.3.2 ~CSAHeader	261
25.60.4 Member Function Documentation	261
25.60.4.1 FindCSAElementByName	261
25.60.4.2 GetCSADataInfo	261
25.60.4.3 GetCSAEEnd	262
25.60.4.4 GetCSAElementByName	262
25.60.4.5 GetCSAImageHeaderInfoTag	262
25.60.4.6 GetCSASeriesHeaderInfoTag	262
25.60.4.7 GetDataSet	262
25.60.4.8 GetFormat	262
25.60.4.9 GetInterfile	262
25.60.4.10 LoadFromDataElement	262
25.60.4.11 Print	263
25.60.4.12 Read	263
25.60.4.13 Write	263
25.60.5 Friends And Related Function Documentation	263
25.60.5.1 operator<<	263
25.61gdcm::CSAHeaderDict Class Reference	263
25.61.1 Detailed Description	264
25.61.2 Member Typedef Documentation	264
25.61.2.1 ConstIterator	264
25.61.2.2 Iterator	264
25.61.2.3 MapCSAHeaderDictEntry	264
25.61.3 Constructor & Destructor Documentation	264
25.61.3.1 CSAHeaderDict	264
25.61.4 Member Function Documentation	264
25.61.4.1 AddCSAHeaderDictEntry	264
25.61.4.2 Begin	264
25.61.4.3 End	264

25.61.4.4 GetCSAHeaderDictEntry	264
25.61.4.5 IsEmpty	264
25.61.4.6 LoadDefault	264
25.61.5 Friends And Related Function Documentation	264
25.61.5.1 Dicts	264
25.61.5.2 operator<<	264
25.62gdcmm::CSAHeaderDictEntry Class Reference	265
25.62.1 Detailed Description	265
25.62.2 Constructor & Destructor Documentation	266
25.62.2.1 CSAHeaderDictEntry	266
25.62.3 Member Function Documentation	266
25.62.3.1 GetDescription	266
25.62.3.2 GetName	266
25.62.3.3 GetVM	266
25.62.3.4 GetVR	266
25.62.3.5 operator<	266
25.62.3.6 SetDescription	266
25.62.3.7 SetName	266
25.62.3.8 SetVM	266
25.62.3.9 SetVR	266
25.62.4 Friends And Related Function Documentation	266
25.62.4.1 operator<<	266
25.63gdcmm::CSAHeaderDictException Class Reference	266
25.64gdcmm::network::CStoreRQ Class Reference	267
25.64.1 Detailed Description	268
25.64.2 Member Function Documentation	268
25.64.2.1 ConstructPDV	269
25.65gdcmm::network::CStoreRSP Class Reference	269
25.65.1 Detailed Description	270
25.65.2 Member Function Documentation	270
25.65.2.1 ConstructPDV	270
25.66gdcmm::Curve Class Reference	270
25.66.1 Detailed Description	272
25.66.2 Constructor & Destructor Documentation	272
25.66.2.1 Curve	272
25.66.2.2 ~Curve	272
25.66.2.3 Curve	272

25.66.3 Member Function Documentation	272
25.66.3.1 Decode	272
25.66.3.2 GetAsPoints	272
25.66.3.3 GetCurveDataDescriptor	272
25.66.3.4 GetDataValueRepresentation	272
25.66.3.5 GetDimensions	272
25.66.3.6 GetGroup	272
25.66.3.7 GetNumberOfCurves	272
25.66.3.8 GetNumberOfPoints	272
25.66.3.9 GetTypeInfoOfData	272
25.66.3.10GetTypeInfoOfDataDescription	272
25.66.3.11IsEmpty	272
25.66.3.12Print	272
25.66.3.13SetCoordinateStartValue	273
25.66.3.14SetCoordinateStepValue	273
25.66.3.15SetCurve	273
25.66.3.16SetCurveDataDescriptor	273
25.66.3.17SetCurveDescription	273
25.66.3.18SetDataValueRepresentation	273
25.66.3.19SetDimensions	273
25.66.3.20SetGroup	273
25.66.3.21SetNumberOfPoints	273
25.66.3.22SetTypeInfoOfData	273
25.66.3.23Update	273
25.67gdcmm::DataElement Class Reference	273
25.67.1 Detailed Description	276
25.67.2 Member Typedef Documentation	276
25.67.2.1 ValuePtr	276
25.67.3 Constructor & Destructor Documentation	276
25.67.3.1 DataElement	276
25.67.3.2 DataElement	277
25.67.4 Member Function Documentation	277
25.67.4.1 Clear	277
25.67.4.2 Empty	277
25.67.4.3 GetByteValue	277
25.67.4.4 GetLength	277
25.67.4.5 GetSequenceOfFragments	277

25.67.4.6 GetSequenceOfItems	277
25.67.4.7 GetSequenceOfItems	278
25.67.4.8 GetTag	278
25.67.4.9 GetTag	278
25.67.4.10 GetValue	278
25.67.4.11 GetValue	278
25.67.4.12 GetValueAsSQ	278
25.67.4.13 GetVL	279
25.67.4.14 GetVL	279
25.67.4.15 GetVR	279
25.67.4.16 IsEmpty	279
25.67.4.17 IsUndefinedLength	279
25.67.4.18 operator<	279
25.67.4.19 operator=	280
25.67.4.20 operator==	280
25.67.4.21 Read	280
25.67.4.22 ReadOrSkip	280
25.67.4.23 ReadPreValue	280
25.67.4.24 ReadValue	280
25.67.4.25 ReadWithLength	280
25.67.4.26 SetByteValue	280
25.67.4.27 SetTag	280
25.67.4.28 SetValue	281
25.67.4.29 SetVL	281
25.67.4.30 SetVLToUndefined	281
25.67.4.31 SetVR	281
25.67.4.32 Write	282
25.67.5 Friends And Related Function Documentation	282
25.67.5.1 operator<<	282
25.67.6 Member Data Documentation	282
25.67.6.1 TagField	282
25.67.6.2 ValueField	282
25.67.6.3 ValueLengthField	282
25.67.6.4 VRField	282
25.68gdcm::DataElementException Class Reference	282
25.69gdcm::DataEvent Class Reference	283
25.69.1 Detailed Description	284

25.69.2 Member Typedef Documentation	284
25.69.2.1 Self	284
25.69.2.2 Superclass	284
25.69.3 Constructor & Destructor Documentation	285
25.69.3.1 DataEvent	285
25.69.3.2 ~DataEvent	285
25.69.3.3 DataEvent	285
25.69.4 Member Function Documentation	285
25.69.4.1 CheckEvent	285
25.69.4.2 GetData	285
25.69.4.3 GetDataLength	285
25.69.4.4 GetEventName	285
25.69.4.5 MakeObject	285
25.69.4.6 SetData	285
25.70gdcm::DataSet Class Reference	285
25.70.1 Detailed Description	287
25.70.2 Member Typedef Documentation	288
25.70.2.1 ConstIterator	288
25.70.2.2 DataElementSet	288
25.70.2.3 Iterator	288
25.70.2.4 SizeType	288
25.70.3 Member Function Documentation	288
25.70.3.1 Begin	288
25.70.3.2 Begin	288
25.70.3.3 Clear	288
25.70.3.4 ComputeDataElement	288
25.70.3.5 ComputeGroupLength	289
25.70.3.6 End	289
25.70.3.7 End	289
25.70.3.8 FindDataElement	289
25.70.3.9 FindDataElement	289
25.70.3.10FindNextDataElement	289
25.70.3.11GetDataElement	289
25.70.3.12GetDataElement	290
25.70.3.13GetDEEnd	290
25.70.3.14GetDES	290
25.70.3.15GetDES	290

25.70.3.16	GetLength	290
25.70.3.17	GetMediaStorage	290
25.70.3.18	GetPrivateCreator	290
25.70.3.19	Insert	290
25.70.3.20	InsertDataElement	290
25.70.3.21	IsEmpty	291
25.70.3.22	operator()	291
25.70.3.23	operator=	291
25.70.3.24	operator[]	291
25.70.3.25	Print	291
25.70.3.26	Read	291
25.70.3.27	ReadNested	291
25.70.3.28	ReadSelectedTags	291
25.70.3.29	ReadSelectedTagsWithLength	291
25.70.3.30	ReadUpToTag	291
25.70.3.31	ReadUpToTagWithLength	291
25.70.3.32	ReadWithLength	291
25.70.3.33	Remove	291
25.70.3.34	Replace	291
25.70.3.35	ReplaceEmpty	292
25.70.3.36	Size	292
25.70.3.37	Write	292
25.70.4	Friends And Related Function Documentation	292
25.70.4.1	CSAHeader	292
25.70.4.2	operator<<	292
25.71	gdcm::DataSetEvent Class Reference	292
25.71.1	Detailed Description	293
25.71.2	Member Typedef Documentation	293
25.71.2.1	Self	293
25.71.2.2	Superclass	293
25.71.3	Constructor & Destructor Documentation	294
25.71.3.1	DataSetEvent	294
25.71.3.2	~DataSetEvent	294
25.71.3.3	DataSetEvent	294
25.71.4	Member Function Documentation	294
25.71.4.1	CheckEvent	294
25.71.4.2	GetDataSet	294

25.71.4.3 GetEventName	294
25.71.4.4 MakeObject	294
25.72gdcmm::DataSetHelper Class Reference	294
25.72.1 Detailed Description	294
25.72.2 Member Function Documentation	294
25.72.2.1 ComputeVR	294
25.73gdcmm::Decoder Class Reference	295
25.73.1 Detailed Description	295
25.73.2 Constructor & Destructor Documentation	295
25.73.2.1 ~Decoder	295
25.73.3 Member Function Documentation	296
25.73.3.1 CanDecode	296
25.73.3.2 Decode	296
25.73.3.3 DecodeByStreams	296
25.74gdcmm::DefinedTerms Class Reference	296
25.74.1 Detailed Description	296
25.74.2 Constructor & Destructor Documentation	297
25.74.2.1 DefinedTerms	297
25.75gdcmm::Defs Class Reference	297
25.75.1 Detailed Description	298
25.75.2 Constructor & Destructor Documentation	298
25.75.2.1 Defs	298
25.75.2.2 ~Defs	298
25.75.3 Member Function Documentation	298
25.75.3.1 GetIODFromFile	298
25.75.3.2 GetIODNameFromMediaStorage	298
25.75.3.3 GetIODs	298
25.75.3.4 GetIODs	298
25.75.3.5 GetMacros	298
25.75.3.6 GetMacros	298
25.75.3.7 GetModules	298
25.75.3.8 GetModules	298
25.75.3.9 GetTypeFromTag	298
25.75.3.10IsEmpty	298
25.75.3.11LoadDefaults	298
25.75.3.12LoadFromFile	298
25.75.3.13Verify	299

25.75.3.14Verify	299
25.75.4 Friends And Related Function Documentation	299
25.75.4.1 Global	299
25.76gdcmm::DeltaEncodingCodec Class Reference	299
25.76.1 Detailed Description	300
25.76.2 Constructor & Destructor Documentation	300
25.76.2.1 DeltaEncodingCodec	300
25.76.2.2 ~DeltaEncodingCodec	300
25.76.3 Member Function Documentation	300
25.76.3.1 CanDecode	300
25.76.3.2 Decode	300
25.76.3.3 Decode	301
25.77gdcmm::DICOMDIR Class Reference	301
25.77.1 Detailed Description	301
25.77.2 Constructor & Destructor Documentation	301
25.77.2.1 DICOMDIR	301
25.77.2.2 DICOMDIR	301
25.78gdcmm::DICOMDIRGenerator Class Reference	301
25.78.1 Detailed Description	302
25.78.2 Member Typedef Documentation	303
25.78.2.1 FilenamesType	303
25.78.2.2 FilenameType	303
25.78.3 Constructor & Destructor Documentation	303
25.78.3.1 DICOMDIRGenerator	303
25.78.3.2 ~DICOMDIRGenerator	303
25.78.4 Member Function Documentation	303
25.78.4.1 AddImageDirectoryRecord	303
25.78.4.2 AddPatientDirectoryRecord	303
25.78.4.3 AddSeriesDirectoryRecord	303
25.78.4.4 AddStudyDirectoryRecord	303
25.78.4.5 Generate	303
25.78.4.6 GetFile	303
25.78.4.7 GetScanner	303
25.78.4.8 SetDescriptor	303
25.78.4.9 SetFile	303
25.78.4.10SetFilenames	303
25.78.4.11SetRootDirectory	303

25.79gdcmm::Dict Class Reference	304
25.79.1 Detailed Description	304
25.79.2 Member Typedef Documentation	305
25.79.2.1 ConstIterator	305
25.79.2.2 Iterator	305
25.79.2.3 MapDictEntry	305
25.79.3 Constructor & Destructor Documentation	305
25.79.3.1 Dict	305
25.79.4 Member Function Documentation	305
25.79.4.1 AddDictEntry	305
25.79.4.2 Begin	305
25.79.4.3 End	305
25.79.4.4 GetDictEntry	305
25.79.4.5 GetDictEntryByKeyword	305
25.79.4.6 GetDictEntryByName	305
25.79.4.7 GetKeywordFromTag	306
25.79.4.8 IsEmpty	306
25.79.4.9 LoadDefault	306
25.79.5 Friends And Related Function Documentation	306
25.79.5.1 Dicts	306
25.79.5.2 operator<<	306
25.80gdcmm::DictConverter Class Reference	306
25.80.1 Detailed Description	307
25.80.2 Member Enumeration Documentation	307
25.80.2.1 OutputTypes	307
25.80.3 Constructor & Destructor Documentation	307
25.80.3.1 DictConverter	307
25.80.3.2 ~DictConverter	307
25.80.4 Member Function Documentation	307
25.80.4.1 AddGroupLength	307
25.80.4.2 Convert	307
25.80.4.3 ConvertToCXX	307
25.80.4.4 ConvertToXML	308
25.80.4.5 GetDictName	308
25.80.4.6 GetInputFilename	308
25.80.4.7 GetOutputFilename	308
25.80.4.8 GetOutputType	308

25.80.4.9 Readuint16	308
25.80.4.10ReadVM	308
25.80.4.11ReadVR	308
25.80.4.12SetDictName	308
25.80.4.13SetInputFileName	308
25.80.4.14SetOutputFileName	308
25.80.4.15SetOutputType	308
25.80.4.16WriteFooter	308
25.80.4.17WriteHeader	308
25.81gdcmm::DictEntry Class Reference	308
25.81.1 Detailed Description	309
25.81.2 Constructor & Destructor Documentation	309
25.81.2.1 DictEntry	309
25.81.3 Member Function Documentation	309
25.81.3.1 GetKeyword	309
25.81.3.2 GetName	309
25.81.3.3 GetRetired	310
25.81.3.4 GetVM	310
25.81.3.5 GetVR	310
25.81.3.6 IsUnique	310
25.81.3.7 SetElementXX	310
25.81.3.8 SetGroupXX	310
25.81.3.9 SetKeyword	310
25.81.3.10SetName	310
25.81.3.11SetRetired	310
25.81.3.12SetVM	310
25.81.3.13SetVR	310
25.81.4 Friends And Related Function Documentation	311
25.81.4.1 operator<<	311
25.82gdcmm::DictPrinter Class Reference	311
25.82.1 Detailed Description	312
25.82.2 Constructor & Destructor Documentation	312
25.82.2.1 DictPrinter	312
25.82.2.2 ~DictPrinter	313
25.82.3 Member Function Documentation	313
25.82.3.1 Print	313
25.82.3.2 PrintDataElement2	313

25.82.3.3 PrintDataSet2	313
25.83gdcmm::Dicts Class Reference	313
25.83.1 Detailed Description	314
25.83.2 Member Enumeration Documentation	314
25.83.2.1 ConstructorType	314
25.83.3 Constructor & Destructor Documentation	314
25.83.3.1 Dicts	314
25.83.3.2 ~Dicts	314
25.83.4 Member Function Documentation	314
25.83.4.1 GetConstructorString	314
25.83.4.2 GetCSAHeaderDict	314
25.83.4.3 GetDictEntry	314
25.83.4.4 GetDictEntry	315
25.83.4.5 GetPrivateDict	315
25.83.4.6 GetPrivateDict	315
25.83.4.7 GetPublicDict	315
25.83.4.8 IsEmpty	315
25.83.4.9 LoadDefaults	315
25.83.5 Friends And Related Function Documentation	315
25.83.5.1 Global	315
25.83.5.2 operator<<	315
25.84gdcmm::network::DIMSE Class Reference	315
25.84.1 Detailed Description	316
25.84.2 Member Enumeration Documentation	316
25.84.2.1 CommandTypes	316
25.85gdcmm::DirectionCosines Class Reference	317
25.85.1 Detailed Description	318
25.85.2 Constructor & Destructor Documentation	318
25.85.2.1 DirectionCosines	318
25.85.2.2 DirectionCosines	318
25.85.2.3 ~DirectionCosines	318
25.85.3 Member Function Documentation	318
25.85.3.1 ComputeDistAlongNormal	318
25.85.3.2 Cross	318
25.85.3.3 CrossDot	318
25.85.3.4 Dot	318
25.85.3.5 IsValid	318

25.85.3.6 Normalize	318
25.85.3.7 operator const double *	318
25.85.3.8 Print	319
25.85.3.9 SetFromString	319
25.86gdcmm::Directory Class Reference	319
25.86.1 Detailed Description	320
25.86.2 Member Typedef Documentation	320
25.86.2.1 FilenamesType	320
25.86.2.2 FilenameType	320
25.86.3 Constructor & Destructor Documentation	320
25.86.3.1 Directory	320
25.86.3.2 ~Directory	320
25.86.4 Member Function Documentation	320
25.86.4.1 Explore	320
25.86.4.2 GetDirectories	320
25.86.4.3 GetFilenames	321
25.86.4.4 GetToplevel	321
25.86.4.5 Load	321
25.86.4.6 Print	321
25.86.5 Friends And Related Function Documentation	321
25.86.5.1 operator<<	321
25.87gdcmm::DirectoryHelper Class Reference	321
25.87.1 Detailed Description	322
25.87.2 Member Function Documentation	322
25.87.2.1 GetCTImageSeriesUIDs	322
25.87.2.2 GetFilenamesFromSeriesUIDs	322
25.87.2.3 GetFrameOfReference	322
25.87.2.4 GetMRImageSeriesUIDs	322
25.87.2.5 GetRTStructSeriesUIDs	323
25.87.2.6 GetSeriesUIDsBySOPClassUID	323
25.87.2.7 GetSOPClassUID	323
25.87.2.8 GetStringValueFromTag	323
25.87.2.9 LoadImageFromFiles	323
25.87.2.10RetrieveSOPInstanceUIDFromIndex	323
25.87.2.11RetrieveSOPInstanceUIDFromZPosition	323
25.88gdcmm::DummyValueGenerator Class Reference	323
25.88.1 Detailed Description	323

25.88.2 Member Function Documentation	323
25.88.2.1 Generate	324
25.89gdcmm::Dumper Class Reference	324
25.89.1 Detailed Description	325
25.89.2 Constructor & Destructor Documentation	325
25.89.2.1 Dumper	325
25.89.2.2 ~Dumper	325
25.90gdcmm::Element< TVR, TVM > Class Template Reference	326
25.90.1 Detailed Description	328
25.90.2 Member Typedef Documentation	328
25.90.2.1 Type	328
25.90.3 Member Function Documentation	328
25.90.3.1 GetAsDataElement	328
25.90.3.2 GetLength	328
25.90.3.3 GetValue	328
25.90.3.4 GetValue	328
25.90.3.5 GetValues	329
25.90.3.6 GetVM	329
25.90.3.7 GetVR	329
25.90.3.8 operator[]	329
25.90.3.9 Print	329
25.90.3.10Read	329
25.90.3.11Set	329
25.90.3.12SetFromDataElement	329
25.90.3.13SetNoSwap	329
25.90.3.14SetValue	329
25.90.3.15Write	329
25.90.4 Member Data Documentation	329
25.90.4.1 Internal	329
25.91gdcmm::Element< TVR, VM::VM1_2 > Class Template Reference	330
25.91.1 Member Typedef Documentation	331
25.91.1.1 Parent	331
25.91.2 Member Function Documentation	331
25.91.2.1 SetLength	331
25.92gdcmm::Element< TVR, VM::VM1_n > Class Template Reference	331
25.92.1 Member Typedef Documentation	332
25.92.1.1 Type	332

25.92.2 Constructor & Destructor Documentation	332
25.92.2.1 Element	332
25.92.2.2 ~Element	332
25.92.2.3 Element	332
25.92.3 Member Function Documentation	332
25.92.3.1 GetAsDataElement	332
25.92.3.2 GetLength	333
25.92.3.3 GetValue	333
25.92.3.4 GetValue	333
25.92.3.5 GetVM	333
25.92.3.6 GetVR	333
25.92.3.7 operator=	333
25.92.3.8 operator[]	333
25.92.3.9 Print	333
25.92.3.10 Read	333
25.92.3.11 Set	333
25.92.3.12 SetArray	333
25.92.3.13 SetFromDataElement	333
25.92.3.14 SetLength	333
25.92.3.15 SetNoSwap	334
25.92.3.16 SetValue	334
25.92.3.17 Write	334
25.92.3.18 WriteASCII	334
25.93 gdcmm::Element< TVR, VM::VM2_2n > Class Template Reference	334
25.93.1 Member Typedef Documentation	335
25.93.1.1 Parent	335
25.93.2 Member Function Documentation	335
25.93.2.1 SetLength	335
25.94 gdcmm::Element< TVR, VM::VM2_n > Class Template Reference	336
25.94.1 Member Typedef Documentation	337
25.94.1.1 Parent	337
25.94.2 Member Function Documentation	337
25.94.2.1 SetLength	337
25.95 gdcmm::Element< TVR, VM::VM3_3n > Class Template Reference	337
25.95.1 Member Typedef Documentation	338
25.95.1.1 Parent	338
25.95.2 Member Function Documentation	338

25.95.2.1 SetLength	338
25.96gdcmm::Element< TVR, VM::VM3_n > Class Template Reference	339
25.96.1 Member Typedef Documentation	340
25.96.1.1 Parent	340
25.96.2 Member Function Documentation	340
25.96.2.1 SetLength	340
25.97gdcmm::Element< VR::AS, VM::VM5 > Class Template Reference	340
25.97.1 Member Function Documentation	340
25.97.1.1 GetLength	340
25.97.1.2 Print	340
25.97.2 Member Data Documentation	340
25.97.2.1 Internal	340
25.98gdcmm::Element< VR::OB, VM::VM1 > Class Template Reference	341
25.99gdcmm::Element< VR::OW, VM::VM1 > Class Template Reference	342
25.100gdcmm::EncapsulatedDocument Class Reference	344
25.100.1 Detailed Description	345
25.100.2 Constructor & Destructor Documentation	345
25.100.2.1 EncapsulatedDocument	345
25.101gdcmm::EncodingImplementation< T > Class Template Reference	345
25.101.1 Detailed Description	345
25.102gdcmm::EncodingImplementation< VR::VRASCII > Class Template Reference	345
25.102.1 Member Function Documentation	346
25.102.1.1 Read	346
25.102.1.2 ReadComputeLength	346
25.102.1.3 ReadNoSwap	346
25.102.1.4 Write	346
25.102.1.5 Write	346
25.102.1.6 Write	346
25.103gdcmm::EncodingImplementation< VR::VRBINARY > Class Template Reference	346
25.103.1 Member Function Documentation	347
25.103.1.1 Read	347
25.103.1.2 ReadComputeLength	347
25.103.1.3 ReadNoSwap	347
25.103.1.4 Write	347
25.104gdcmm::EndEvent Class Reference	347
25.105gdcmm::EnumeratedValues Class Reference	349
25.105.1 Detailed Description	349

25.105.2	Constructor & Destructor Documentation	349
25.105.2.1	EnumeratedValues	349
25.106	dcm::Event Class Reference	349
25.106.1	Detailed Description	350
25.106.2	Constructor & Destructor Documentation	351
25.106.2.1	Event	351
25.106.2.2	~Event	351
25.106.2.3	~Event	351
25.106.3	Member Function Documentation	351
25.106.3.1	CheckEvent	351
25.106.3.2	GetEventName	351
25.106.3.3	MakeObject	351
25.106.3.4	Print	351
25.107	dcm::Exception Class Reference	351
25.107.1	Detailed Description	352
25.107.2	Constructor & Destructor Documentation	353
25.107.2.1	Exception	353
25.107.2.2	~Exception	353
25.107.3	Member Function Documentation	353
25.107.3.1	GetDescription	353
25.107.3.2	what	353
25.108	dcm::ExitEvent Class Reference	353
25.109	dcm::ExplicitDataElement Class Reference	355
25.109.1	Detailed Description	356
25.109.2	Member Function Documentation	356
25.109.2.1	GetLength	356
25.109.2.2	Read	356
25.109.2.3	ReadPreValue	356
25.109.2.4	ReadValue	356
25.109.2.5	ReadWithLength	356
25.109.2.6	Write	356
25.110	dcm::ExplicitImplicitDataElement Class Reference	356
25.110.1	Detailed Description	358
25.110.2	Member Function Documentation	358
25.110.2.1	GetLength	358
25.110.2.2	Read	358
25.110.2.3	ReadPreValue	358

25.110.2.4	ReadValue	358
25.110.2.5	ReadWithLength	358
25.110	dcm::Fiducials Class Reference	358
25.111.1	Detailed Description	358
25.111.2	Constructor & Destructor Documentation	359
25.111.2.1	Fiducials	359
25.110	dcm::File Class Reference	359
25.112.1	Detailed Description	360
25.112.2	Constructor & Destructor Documentation	361
25.112.2.1	File	361
25.112.2.2	~File	361
25.112.3	Member Function Documentation	361
25.112.3.1	GetDataSet	361
25.112.3.2	GetDataSet	361
25.112.3.3	GetHeader	361
25.112.3.4	GetHeader	362
25.112.3.5	Read	362
25.112.3.6	SetDataSet	362
25.112.3.7	SetHeader	362
25.112.3.8	Write	362
25.112.4	Friends And Related Function Documentation	362
25.112.4.1	operator<<	362
25.110	dcm::FileAnonymizer Class Reference	362
25.113.1	Detailed Description	364
25.113.2	Constructor & Destructor Documentation	364
25.113.2.1	FileAnonymizer	364
25.113.2.2	~FileAnonymizer	364
25.113.3	Member Function Documentation	364
25.113.3.1	Empty	364
25.113.3.2	Remove	364
25.113.3.3	Replace	364
25.113.3.4	Replace	364
25.113.3.5	SetInputFileName	365
25.113.3.6	SetOutputFileName	365
25.113.3.7	Write	365
25.110	dcm::FileDerivation Class Reference	365
25.114.1	Detailed Description	366

25.114.2	Constructor & Destructor Documentation	366
25.114.2.1	FileDerivation	366
25.114.2.2	~FileDerivation	366
25.114.3	Member Function Documentation	366
25.114.3.1	AddDerivationDescription	366
25.114.3.2	AddPurposeOfReferenceCodeSequence	366
25.114.3.3	AddReference	366
25.114.3.4	AddSourceImageSequence	366
25.114.3.5	Derive	366
25.114.3.6	GetFile	367
25.114.3.7	GetFile	367
25.114.3.8	SetDerivationCodeSequenceCodeValue	367
25.114.3.9	SetDerivationDescription	367
25.114.3.10	SetFile	367
25.114.3.11	SetPurposeOfReferenceCodeSequenceCodeValue	367
25.115	dcm::FileExplicitFilter Class Reference	367
25.115.1	Detailed Description	368
25.115.2	Constructor & Destructor Documentation	368
25.115.2.1	FileExplicitFilter	368
25.115.2.2	~FileExplicitFilter	368
25.115.3	Member Function Documentation	368
25.115.3.1	Change	369
25.115.3.2	ChangeFMI	369
25.115.3.3	GetFile	369
25.115.3.4	ProcessDataSet	369
25.115.3.5	SetChangePrivateTags	369
25.115.3.6	SetFile	369
25.115.3.7	SetRecomputeItemLength	369
25.115.3.8	SetRecomputeSequenceLength	369
25.115.3.9	SetUseVRUN	369
25.116	dcm::FileMetaInformation Class Reference	369
25.116.1	Detailed Description	372
25.116.2	Constructor & Destructor Documentation	372
25.116.2.1	FileMetaInformation	372
25.116.2.2	~FileMetaInformation	372
25.116.2.3	FileMetaInformation	372
25.116.3	Member Function Documentation	372

25.116.3.1AppendImplementationClassUID	372
25.116.3.2ComputeDataSetMediaStorageSOPClass	372
25.116.3.3ComputeDataSetTransferSyntax	372
25.116.3.4Default	372
25.116.3.5FillFromDataSet	372
25.116.3.6GetDataSetTransferSyntax	372
25.116.3.7GetFileMetaInformationVersion	373
25.116.3.8GetFullLength	373
25.116.3.9GetGDCMImplementationClassUID	373
25.116.3.10GetGDCMImplementationVersionName	373
25.116.3.11GetGDCMSourceApplicationEntityTitle	373
25.116.3.12GetImplementationClassUID	373
25.116.3.13GetImplementationVersionName	373
25.116.3.14GetMediaStorage	373
25.116.3.15GetMetaInformationTS	373
25.116.3.16GetPreamble	373
25.116.3.17GetPreamble	373
25.116.3.18GetSourceApplicationEntityTitle	373
25.116.3.19Insert	373
25.116.3.20Valid	373
25.116.3.21Read	373
25.116.3.22ReadCompat	373
25.116.3.23ReadCompatInternal	373
25.116.3.24Replace	374
25.116.3.25SetDataSetTransferSyntax	374
25.116.3.26SetImplementationClassUID	374
25.116.3.27SetImplementationVersionName	374
25.116.3.28SetPreamble	374
25.116.3.29SetSourceApplicationEntityTitle	374
25.116.3.30Write	374
25.116.4Friends And Related Function Documentation	374
25.116.4.1operator<<	374
25.116.5Member Data Documentation	374
25.116.5.1DataSetMS	374
25.116.5.2DataSetTS	374
25.116.5.3MetaInformationTS	375
25.117dcm::Filename Class Reference	375

25.117.1Detailed Description	375
25.117.2Constructor & Destructor Documentation	376
25.117.2.1Filename	376
25.117.3Member Function Documentation	376
25.117.3.1EndWith	376
25.117.3.2GetExtension	376
25.117.3.3GetFileName	376
25.117.3.4GetName	376
25.117.3.5GetPath	376
25.117.3.6IsEmpty	376
25.117.3.7IsIdentical	376
25.117.3.8Join	376
25.117.3.9operator const char *	376
25.117.3.10ToUnixSlashes	376
25.117.3.11ToWindowsSlashes	377
25.118dcm::FilenameGenerator Class Reference	377
25.118.1Detailed Description	377
25.118.2Member Typedef Documentation	378
25.118.2.1FileNamesType	378
25.118.2.2FilenameType	378
25.118.2.3SizeType	378
25.118.3Constructor & Destructor Documentation	378
25.118.3.1FilenameGenerator	378
25.118.3.2~FilenameGenerator	378
25.118.4Member Function Documentation	378
25.118.4.1Generate	378
25.118.4.2GetFilename	378
25.118.4.3GetFileNames	378
25.118.4.4GetNumberOfFileNames	378
25.118.4.5GetPattern	379
25.118.4.6GetPrefix	379
25.118.4.7SetNumberOfFileNames	379
25.118.4.8SetPattern	379
25.118.4.9SetPrefix	379
25.119dcm::FileSet Class Reference	379
25.119.1Detailed Description	380
25.119.2Member Typedef Documentation	380

25.119.2.1FileType	380
25.119.2.2FileType	380
25.119.3Constructor & Destructor Documentation	380
25.119.3.1FileSet	380
25.119.4Member Function Documentation	380
25.119.4.1AddFile	380
25.119.4.2AddFile	380
25.119.4.3GetFiles	380
25.119.4.4SetFiles	380
25.119.5Friends And Related Function Documentation	380
25.119.5.1operator<<	380
25.120dcm::FileWithName Class Reference	380
25.120.1Detailed Description	382
25.120.2Constructor & Destructor Documentation	382
25.120.2.1FileWithName	382
25.120.3Member Data Documentation	382
25.120.3.1filename	382
25.121dcm::FindPatientRootQuery Class Reference	382
25.121.1Detailed Description	383
25.121.2Constructor & Destructor Documentation	383
25.121.2.1FindPatientRootQuery	383
25.121.3Member Function Documentation	383
25.121.3.1GetAbstractSyntaxUID	383
25.121.3.2GetTagListByLevel	383
25.121.3.3InitializeDataSet	384
25.121.3.4ValidateQuery	384
25.121.4Friends And Related Function Documentation	384
25.121.4.1QueryFactory	384
25.122dcm::FindStudyRootQuery Class Reference	384
25.122.1Detailed Description	386
25.122.2Constructor & Destructor Documentation	386
25.122.2.1FindStudyRootQuery	386
25.122.3Member Function Documentation	386
25.122.3.1GetAbstractSyntaxUID	386
25.122.3.2GetTagListByLevel	386
25.122.3.3InitializeDataSet	386
25.122.3.4ValidateQuery	386

25.122.4	Friends And Related Function Documentation	386
25.122.4.1	QueryFactory	386
25.123	dcm::Fragment Class Reference	386
25.123.1	Detailed Description	388
25.123.2	Constructor & Destructor Documentation	388
25.123.2.1	Fragment	388
25.123.3	Member Function Documentation	388
25.123.3.1	GetLength	388
25.123.3.2	Read	388
25.123.3.3	ReadBacktrack	388
25.123.3.4	ReadPreValue	388
25.123.3.5	ReadValue	388
25.123.3.6	Write	389
25.123.4	Friends And Related Function Documentation	389
25.123.4.1	operator<<	389
25.124	dcm::Global Class Reference	389
25.124.1	Detailed Description	390
25.124.2	Constructor & Destructor Documentation	390
25.124.2.1	Global	390
25.124.2.2	~Global	390
25.124.3	Member Function Documentation	390
25.124.3.1	Append	390
25.124.3.2	GetDefs	390
25.124.3.3	GetDicts	390
25.124.3.4	GetDicts	390
25.124.3.5	GetInstance	390
25.124.3.6	LoadResourcesFiles	391
25.124.3.7	Locate	391
25.124.3.8	Prepend	391
25.124.4	Friends And Related Function Documentation	391
25.124.4.1	operator<<	391
25.125	dcm::GroupDict Class Reference	391
25.125.1	Detailed Description	392
25.125.2	Member Typedef Documentation	392
25.125.2.1	GroupStringVector	392
25.125.3	Constructor & Destructor Documentation	392
25.125.3.1	GroupDict	392

25.125.3.2~GroupDict	392
25.125.4Member Function Documentation	392
25.125.4.1Add	392
25.125.4.2GetAbbreviation	392
25.125.4.3GetName	392
25.125.4.4Insert	393
25.125.4.5Size	393
25.125.5Friends And Related Function Documentation	393
25.125.5.1operator<<	393
25.126dcm::IconImageFilter Class Reference	393
25.126.1Detailed Description	393
25.126.2Constructor & Destructor Documentation	394
25.126.2.1IconImageFilter	394
25.126.2.2~IconImageFilter	394
25.126.3Member Function Documentation	394
25.126.3.1Extract	394
25.126.3.2ExtractIconImages	394
25.126.3.3ExtractVeprolIconImages	394
25.126.3.4GetFile	394
25.126.3.5GetFile	394
25.126.3.6GetIconImage	395
25.126.3.7GetNumberOfIconImages	395
25.126.3.8SetFile	395
25.127dcm::IconImageGenerator Class Reference	395
25.127.1Detailed Description	396
25.127.2Constructor & Destructor Documentation	396
25.127.2.1IconImageGenerator	396
25.127.2.2~IconImageGenerator	396
25.127.3Member Function Documentation	396
25.127.3.1AutoPixelMinMax	396
25.127.3.2ConvertRGBToPaletteColor	396
25.127.3.3Generate	396
25.127.3.4GetIconImage	397
25.127.3.5GetPixmap	397
25.127.3.6GetPixmap	397
25.127.3.7SetOutputDimensions	397
25.127.3.8SetOutsideValuePixel	397

25.127.3.9SetPixelMinMax	397
25.127.3.10SetPixmap	397
25.128.0dcm::ignore_char Struct Reference	397
25.128.1Constructor & Destructor Documentation	398
25.128.1.1ignore_char	398
25.128.2Member Data Documentation	398
25.128.2.1m_char	398
25.129.0dcm::Image Class Reference	398
25.129.1Detailed Description	399
25.129.2Constructor & Destructor Documentation	400
25.129.2.1Image	400
25.129.2.2~Image	400
25.129.3Member Function Documentation	400
25.129.3.1GetDirectionCosines	400
25.129.3.2GetDirectionCosines	400
25.129.3.3GetIntercept	400
25.129.3.4GetOrigin	400
25.129.3.5GetOrigin	401
25.129.3.6GetSlope	401
25.129.3.7GetSpacing	401
25.129.3.8GetSpacing	401
25.129.3.9Print	401
25.129.3.10SetDirectionCosines	401
25.129.3.11SetDirectionCosines	401
25.129.3.12SetDirectionCosines	401
25.129.3.13SetIntercept	401
25.129.3.14SetOrigin	401
25.129.3.15SetOrigin	401
25.129.3.16SetOrigin	401
25.129.3.17SetSlope	401
25.129.3.18SetSpacing	401
25.129.3.19SetSpacing	402
25.130.0dcm::ImageApplyLookupTable Class Reference	402
25.130.1Detailed Description	404
25.130.2Constructor & Destructor Documentation	404
25.130.2.1ImageApplyLookupTable	404
25.130.2.2~ImageApplyLookupTable	404

25.130.3	Member Function Documentation	404
25.130.3.1	Apply	404
25.131	dcm::ImageChangePhotometricInterpretation Class Reference	404
25.131.1	Detailed Description	407
25.131.2	Constructor & Destructor Documentation	407
25.131.2.1	ImageChangePhotometricInterpretation	407
25.131.2.2	~ImageChangePhotometricInterpretation	407
25.131.3	Member Function Documentation	407
25.131.3.1	Change	407
25.131.3.2	ChangeMonochrome	407
25.131.3.3	GetPhotometricInterpretation	407
25.131.3.4	RGB2YBR	407
25.131.3.5	RGB2YBR	408
25.131.3.6	SetPhotometricInterpretation	408
25.131.3.7	YBR2RGB	408
25.131.3.8	YBR2RGB	408
25.132	dcm::ImageChangePlanarConfiguration Class Reference	408
25.132.1	Detailed Description	410
25.132.2	Constructor & Destructor Documentation	410
25.132.2.1	ImageChangePlanarConfiguration	410
25.132.2.2	~ImageChangePlanarConfiguration	410
25.132.3	Member Function Documentation	410
25.132.3.1	Change	410
25.132.3.2	GetPlanarConfiguration	410
25.132.3.3	RGBPixelsToRGBPlanes	410
25.132.3.4	RGBPixelsToRGBPlanes	410
25.132.3.5	RGBPlanesToRGBPixels	411
25.132.3.6	RGBPlanesToRGBPixels	411
25.132.3.7	SetPlanarConfiguration	411
25.133	dcm::ImageChangeTransferSyntax Class Reference	411
25.133.1	Detailed Description	413
25.133.2	Constructor & Destructor Documentation	413
25.133.2.1	ImageChangeTransferSyntax	413
25.133.2.2	~ImageChangeTransferSyntax	413
25.133.3	Member Function Documentation	413
25.133.3.1	Change	413
25.133.3.2	GetTransferSyntax	413

25.133.3.3SetCompressIconImage	414
25.133.3.4SetForce	414
25.133.3.5SetTransferSyntax	414
25.133.3.6SetUserCodec	414
25.133.3.7TryJPEG2000Codec	414
25.133.3.8TryJPEGCodec	414
25.133.3.9TryJPEGLSCodec	414
25.133.3.10TryRAWCodec	414
25.133.3.11TryRLECodec	414
25.134dcm::ImageCodec Class Reference	415
25.134.1Detailed Description	417
25.134.2Member Typedef Documentation	417
25.134.2.1LUTPtr	417
25.134.3Constructor & Destructor Documentation	417
25.134.3.1ImageCodec	417
25.134.3.2~ImageCodec	417
25.134.4Member Function Documentation	417
25.134.4.1CanCode	417
25.134.4.2CanDecode	417
25.134.4.3Decode	417
25.134.4.4DecodeByStreams	418
25.134.4.5DoByteSwap	418
25.134.4.6DoInvertMonochrome	418
25.134.4.7DoOverlayCleanup	418
25.134.4.8DoPaddedCompositePixelCode	418
25.134.4.9DoPlanarConfiguration	418
25.134.4.10DoSimpleCopy	418
25.134.4.11DoYBR	418
25.134.4.12GetDimensions	418
25.134.4.13GetHeaderInfo	418
25.134.4.14GetLossyFlag	418
25.134.4.15GetLUT	418
25.134.4.16GetNeedByteSwap	418
25.134.4.17GetNumberOfDimensions	418
25.134.4.18GetPhotometricInterpretation	418
25.134.4.19GetPixelFormat	418
25.134.4.20GetPixelFormat	418

25.134.4.20	GetPlanarConfiguration	. . . . .	418
25.134.4.21	Lossy	. . . . .	418
25.134.4.22	Valid	. . . . .	419
25.134.4.23	SetDimensions	. . . . .	419
25.134.4.24	SetDimensions	. . . . .	419
25.134.4.25	SetLossyFlag	. . . . .	419
25.134.4.26	SetLUT	. . . . .	419
25.134.4.27	SetNeedByteSwap	. . . . .	419
25.134.4.28	SetNeedOverlayCleanup	. . . . .	419
25.134.4.29	SetNumberOfDimensions	. . . . .	419
25.134.4.30	SetPhotometricInterpretation	. . . . .	419
25.134.4.31	SetPixelFormat	. . . . .	419
25.134.4.32	SetPlanarConfiguration	. . . . .	419
25.134.5	Friends And Related Function Documentation	. . . . .	419
25.134.5.1	ImageChangePhotometricInterpretation	. . . . .	419
25.134.6	Member Data Documentation	. . . . .	419
25.134.6.1	Dimensions	. . . . .	420
25.134.6.2	LossyFlag	. . . . .	420
25.134.6.3	LUT	. . . . .	420
25.134.6.4	NeedByteSwap	. . . . .	420
25.134.6.5	NeedOverlayCleanup	. . . . .	420
25.134.6.6	NumberOfDimensions	. . . . .	420
25.134.6.7	PF	. . . . .	420
25.134.6.8	PI	. . . . .	420
25.134.6.9	PlanarConfiguration	. . . . .	420
25.134.6.10	RequestPaddedCompositePixelCode	. . . . .	420
25.134.6.11	RequestPlanarConfiguration	. . . . .	420
25.135	dcm::ImageConverter Class Reference	. . . . .	420
25.135.1	Detailed Description	. . . . .	420
25.135.2	Constructor & Destructor Documentation	. . . . .	421
25.135.2.1	ImageConverter	. . . . .	421
25.135.2.2	~ImageConverter	. . . . .	421
25.135.3	Member Function Documentation	. . . . .	421
25.135.3.1	Convert	. . . . .	421
25.135.3.2	GetOutput	. . . . .	421
25.135.3.3	SetInput	. . . . .	421
25.136	dcm::ImageFragmentSplitter Class Reference	. . . . .	421

25.136.1	Detailed Description	423
25.136.2	Constructor & Destructor Documentation	423
25.136.2.1	ImageFragmentSplitter	423
25.136.2.2	~ImageFragmentSplitter	423
25.136.3	Member Function Documentation	423
25.136.3.1	GetFragmentSizeMax	423
25.136.3.2	SetForce	423
25.136.3.3	SetFragmentSizeMax	423
25.136.3.4	Split	423
25.137	gdcm::ImageHelper Class Reference	423
25.137.1	Detailed Description	424
25.137.2	Member Function Documentation	424
25.137.2.1	ComputeSpacingFromImagePositionPatient	424
25.137.2.2	GetDimensionsValue	425
25.137.2.3	GetDirectionCosinesFromDataSet	425
25.137.2.4	GetDirectionCosinesValue	425
25.137.2.5	GetForcePixelSpacing	425
25.137.2.6	GetForceRescaleInterceptSlope	425
25.137.2.7	GetLUT	425
25.137.2.8	GetOriginValue	425
25.137.2.9	GetPhotometricInterpretationValue	425
25.137.2.10	GetPixelFormatValue	425
25.137.2.11	GetPlanarConfigurationValue	425
25.137.2.12	GetPointerFromElement	425
25.137.2.13	GetRescaleInterceptSlopeValue	425
25.137.2.14	GetSpacingTagFromMediaStorage	426
25.137.2.15	GetSpacingValue	426
25.137.2.16	GetZSpacingTagFromMediaStorage	426
25.137.2.17	SetDimensionsValue	426
25.137.2.18	SetDirectionCosinesValue	426
25.137.2.19	SetForcePixelSpacing	426
25.137.2.20	SetForceRescaleInterceptSlope	426
25.137.2.21	SetOriginValue	426
25.137.2.22	SetRescaleInterceptSlopeValue	426
25.137.2.23	SetSpacingValue	426
25.138	gdcm::ImageReader Class Reference	426
25.138.1	Detailed Description	429

25.138.2	Constructor & Destructor Documentation	429
25.138.2.1	ImageReader	429
25.138.2.2	~ImageReader	429
25.138.3	Member Function Documentation	429
25.138.3.1	GetImage	429
25.138.3.2	GetImage	429
25.138.3.3	Read	429
25.138.3.4	ReadACRNEMAIImage	430
25.138.3.5	ReadImage	430
25.139	dcm::ImageRegionReader Class Reference	430
25.139.1	Detailed Description	432
25.139.2	Constructor & Destructor Documentation	432
25.139.2.1	ImageRegionReader	432
25.139.2.2	~ImageRegionReader	432
25.139.3	Member Function Documentation	432
25.139.3.1	ComputeBufferLength	432
25.139.3.2	GetRegion	432
25.139.3.3	Read	432
25.139.3.4	ReadInformation	432
25.139.3.5	ReadIntoBuffer	433
25.139.3.6	SetRegion	433
25.140	dcm::ImageToImageFilter Class Reference	433
25.140.1	Detailed Description	434
25.140.2	Constructor & Destructor Documentation	435
25.140.2.1	ImageToImageFilter	435
25.140.2.2	~ImageToImageFilter	435
25.140.3	Member Function Documentation	435
25.140.3.1	GetInput	435
25.140.3.2	GetOutput	435
25.141	dcm::ImageWriter Class Reference	435
25.141.1	Detailed Description	437
25.141.2	Constructor & Destructor Documentation	437
25.141.2.1	ImageWriter	437
25.141.2.2	~ImageWriter	437
25.141.3	Member Function Documentation	437
25.141.3.1	GetImage	437
25.141.3.2	GetImage	437

25.141.3.3Write	437
25.142dcm::network::ImplementationClassUIDSub Class Reference	438
25.142.1Detailed Description	438
25.142.2Constructor & Destructor Documentation	438
25.142.2.1ImplementationClassUIDSub	438
25.142.3Member Function Documentation	438
25.142.3.1Print	438
25.142.3.2Read	438
25.142.3.3Size	438
25.142.3.4Write	438
25.143dcm::network::ImplementationUIDSub Class Reference	438
25.143.1Detailed Description	439
25.143.2Constructor & Destructor Documentation	439
25.143.2.1ImplementationUIDSub	439
25.143.3Member Function Documentation	439
25.143.3.1Write	439
25.144dcm::network::ImplementationVersionNameSub Class Reference	439
25.144.1Detailed Description	439
25.144.2Constructor & Destructor Documentation	439
25.144.2.1ImplementationVersionNameSub	439
25.144.3Member Function Documentation	439
25.144.3.1Print	439
25.144.3.2Read	439
25.144.3.3Size	439
25.144.3.4Write	440
25.145dcm::ImplicitDataElement Class Reference	440
25.145.1Detailed Description	441
25.145.2Member Function Documentation	441
25.145.2.1GetLength	441
25.145.2.2Read	441
25.145.2.3ReadPreValue	441
25.145.2.4ReadValue	441
25.145.2.5ReadWithLength	441
25.145.2.6Write	441
25.146dcm::InitializeEvent Class Reference	441
25.147dcm::IOD Class Reference	443
25.147.1Detailed Description	443

25.147.2	Member Typedef Documentation	443
25.147.2.1	MapIODEntry	443
25.147.2.2	SizeType	443
25.147.3	Constructor & Destructor Documentation	443
25.147.3.1	IOD	443
25.147.4	Member Function Documentation	444
25.147.4.1	AddIODEntry	444
25.147.4.2	Clear	444
25.147.4.3	GetIODEntry	444
25.147.4.4	GetNumberOfIODs	444
25.147.4.5	GetTypeFromTag	444
25.147.5	Friends And Related Function Documentation	444
25.147.5.1	operator<<	444
25.148	dcm::IODEntry Class Reference	444
25.148.1	Detailed Description	445
25.148.2	Constructor & Destructor Documentation	445
25.148.2.1	IODEntry	445
25.148.3	Member Function Documentation	445
25.148.3.1	GetIE	445
25.148.3.2	GetName	445
25.148.3.3	GetRef	445
25.148.3.4	GetUsage	446
25.148.3.5	GetUsageType	446
25.148.3.6	SetIE	446
25.148.3.7	SetName	446
25.148.3.8	SetRef	446
25.148.3.9	SetUsage	446
25.148.4	Friends And Related Function Documentation	446
25.148.4.1	operator<<	446
25.149	dcm::IODs Class Reference	446
25.149.1	Detailed Description	447
25.149.2	Member Typedef Documentation	447
25.149.2.1	IODMapType	447
25.149.2.2	IODMapTypeConstIterator	447
25.149.2.3	IODName	447
25.149.3	Constructor & Destructor Documentation	447
25.149.3.1	IODs	447

25.149.4	Member Function Documentation	447
25.149.4.1	AddIOD	447
25.149.4.2	Begin	447
25.149.4.3	Clear	447
25.149.4.4	End	447
25.149.4.5	GetIOD	447
25.149.5	Friends And Related Function Documentation	447
25.149.5.1	operator<<	447
25.150	dcm::IPPSorter Class Reference	447
25.150.1	Detailed Description	449
25.150.2	Constructor & Destructor Documentation	449
25.150.2.1	IPPSorter	449
25.150.2.2	~IPPSorter	449
25.150.3	Member Function Documentation	449
25.150.3.1	GetDirectionCosinesTolerance	449
25.150.3.2	GetZSpacing	449
25.150.3.3	GetZSpacingTolerance	450
25.150.3.4	SetComputeZSpacing	450
25.150.3.5	SetDirectionCosinesTolerance	450
25.150.3.6	SetZSpacingTolerance	450
25.150.3.7	Sort	450
25.150.4	Member Data Documentation	451
25.150.4.1	ComputeZSpacing	451
25.150.4.2	DirCosTolerance	451
25.150.4.3	ZSpacing	451
25.150.4.4	ZTolerance	451
25.151	dcm::Item Class Reference	451
25.151.1	Detailed Description	453
25.151.2	Constructor & Destructor Documentation	453
25.151.2.1	Item	453
25.151.2.2	Item	453
25.151.3	Member Function Documentation	453
25.151.3.1	Clear	453
25.151.3.2	FindDataElement	453
25.151.3.3	GetDataElement	453
25.151.3.4	GetLength	453
25.151.3.5	GetNestedDataSet	453

25.151.3.6GetNestedDataSet	454
25.151.3.7InsertDataElement	454
25.151.3.8Read	454
25.151.3.9SetNestedDataSet	454
25.151.3.10Write	454
25.151.4Friends And Related Function Documentation	454
25.151.4.operator<<	454
25.152dcm::IterationEvent Class Reference	454
25.153dcm::JPEG12Codec Class Reference	456
25.153.1Detailed Description	457
25.153.2Constructor & Destructor Documentation	457
25.153.2.1JPEG12Codec	457
25.153.2.2~JPEG12Codec	457
25.153.3Member Function Documentation	457
25.153.3.1DecodeByStreams	457
25.153.3.2GetHeaderInfo	457
25.153.3.3InternalCode	457
25.153.3.4sStateSuspension	457
25.154dcm::JPEG16Codec Class Reference	458
25.154.1Detailed Description	459
25.154.2Constructor & Destructor Documentation	459
25.154.2.1JPEG16Codec	459
25.154.2.2~JPEG16Codec	459
25.154.3Member Function Documentation	459
25.154.3.1DecodeByStreams	459
25.154.3.2GetHeaderInfo	459
25.154.3.3InternalCode	459
25.154.3.4sStateSuspension	459
25.155dcm::JPEG2000Codec Class Reference	460
25.155.1Detailed Description	461
25.155.2Constructor & Destructor Documentation	461
25.155.2.1JPEG2000Codec	461
25.155.2.2~JPEG2000Codec	461
25.155.3Member Function Documentation	461
25.155.3.1CanCode	461
25.155.3.2CanDecode	462
25.155.3.3Code	462

25.155.3.4	Decode	. 462
25.155.3.5	DecodeByStreams	. 462
25.155.3.6	DecodeExtent	. 462
25.155.3.7	GetHeaderInfo	. 462
25.155.3.8	GetQuality	. 462
25.155.3.9	GetRate	. 462
25.155.3.10	SetNumberOfResolutions	. 462
25.155.3.11	SetQuality	. 462
25.155.3.12	SetRate	. 462
25.155.3.13	SetReversible	. 462
25.155.3.14	SetTileSize	. 462
25.155.4	Friends And Related Function Documentation	. 462
25.155.4.1	Bitmap	. 462
25.155.4.2	ImageRegionReader	. 462
25.156	dcm::JPEG8Codec Class Reference	. 463
25.156.1	Detailed Description	. 464
25.156.2	Constructor & Destructor Documentation	. 464
25.156.2.1	JPEG8Codec	. 464
25.156.2.2	~JPEG8Codec	. 464
25.156.3	Member Function Documentation	. 464
25.156.3.1	DecodeByStreams	. 464
25.156.3.2	GetHeaderInfo	. 464
25.156.3.3	InternalCode	. 464
25.156.3.4	IsStateSuspension	. 464
25.157	dcm::JPEGCodec Class Reference	. 465
25.157.1	Detailed Description	. 466
25.157.2	Constructor & Destructor Documentation	. 467
25.157.2.1	JPEGCodec	. 467
25.157.2.2	~JPEGCodec	. 467
25.157.3	Member Function Documentation	. 467
25.157.3.1	CanCode	. 467
25.157.3.2	CanDecode	. 467
25.157.3.3	Code	. 467
25.157.3.4	ComputeOffsetTable	. 467
25.157.3.5	Decode	. 467
25.157.3.6	DecodeByStreams	. 467
25.157.3.7	DecodeExtent	. 468

25.157.3.8GetHeaderInfo	468
25.157.3.9GetLossless	468
25.157.3.10GetQuality	468
25.157.3.11StateSuspension	468
25.157.3.12Valid	468
25.157.3.13SetBitSample	468
25.157.3.14SetLossless	468
25.157.3.15SetPixelFormat	468
25.157.3.16SetQuality	468
25.157.4Friends And Related Function Documentation	468
25.157.4.1ImageRegionReader	468
25.157.5Member Data Documentation	468
25.157.5.1BitSample	468
25.157.5.2Lossless	468
25.157.5.3Quality	469
25.158dcm::JPEGLSCodec Class Reference	469
25.158.1Detailed Description	470
25.158.2Constructor & Destructor Documentation	471
25.158.2.1JPEGLSCodec	471
25.158.2.2~JPEGLSCodec	471
25.158.3Member Function Documentation	471
25.158.3.1CanCode	471
25.158.3.2CanDecode	471
25.158.3.3Code	471
25.158.3.4Decode	471
25.158.3.5Decode	471
25.158.3.6DecodeExtent	471
25.158.3.7GetBufferLength	471
25.158.3.8GetHeaderInfo	471
25.158.3.9GetLossless	471
25.158.3.10SetBufferLength	471
25.158.3.11SetLossless	471
25.158.3.12SetLossyError	472
25.158.4Friends And Related Function Documentation	472
25.158.4.1ImageRegionReader	472
25.159dcm::KAKADUCodec Class Reference	472
25.159.1Detailed Description	473

25.159.2	Constructor & Destructor Documentation	473
25.159.2.1	KAKADUCodec	473
25.159.2.2	~KAKADUCodec	473
25.159.3	Member Function Documentation	473
25.159.3.1	CanCode	473
25.159.3.2	CanDecode	473
25.159.3.3	Code	474
25.159.3.4	Decode	474
25.160	dcm::LO Class Reference	474
25.160.1	Detailed Description	475
25.160.2	Member Typedef Documentation	476
25.160.2.1	const_iterator	476
25.160.2.2	const_reference	476
25.160.2.3	const_reverse_iterator	476
25.160.2.4	difference_type	476
25.160.2.5	iterator	476
25.160.2.6	pointer	476
25.160.2.7	reference	476
25.160.2.8	reverse_iterator	476
25.160.2.9	size_type	476
25.160.2.10	Superclass	476
25.160.2.11	value_type	476
25.160.3	Constructor & Destructor Documentation	476
25.160.3.1	LO	476
25.160.3.2	LO	476
25.160.3.3	LO	476
25.160.3.4	LO	476
25.160.4	Member Function Documentation	476
25.160.4.1	IsValid	476
25.161	dcm::LookupTable Class Reference	476
25.161.1	Detailed Description	478
25.161.2	Member Enumeration Documentation	479
25.161.2.1	LookupTableType	479
25.161.3	Constructor & Destructor Documentation	479
25.161.3.1	LookupTable	479
25.161.3.2	~LookupTable	479
25.161.3.3	LookupTable	479

25.161.4	Member Function Documentation	. 479
25.161.4.1	Allocate	. 479
25.161.4.2	Clear	. 479
25.161.4.3	Decode	. 479
25.161.4.4	GetBitSample	. 479
25.161.4.5	GetBufferAsRGBA	. 479
25.161.4.6	GetLUT	. 479
25.161.4.7	GetLUTDescriptor	. 479
25.161.4.8	GetLUTLength	. 480
25.161.4.9	GetPointer	. 480
25.161.4.10	InitializeBlueLUT	. 480
25.161.4.11	Initialized	. 480
25.161.4.12	InitializeGreenLUT	. 480
25.161.4.13	InitializeLUT	. 480
25.161.4.14	InitializeRedLUT	. 480
25.161.4.15	Print	. 480
25.161.4.16	SetBlueLUT	. 480
25.161.4.17	SetGreenLUT	. 480
25.161.4.18	SetLUT	. 480
25.161.4.19	SetRedLUT	. 480
25.161.4.20	WriteBufferAsRGBA	. 480
25.161.5	Member Data Documentation	. 480
25.161.5.1	BitSample	. 480
25.161.5.2	IncompleteLUT	. 481
25.161.5.3	Internal	. 481
25.162	dcm::Scanner::ltstr Struct Reference	. 481
25.162.1	Member Function Documentation	. 481
25.162.1.1	operator()	. 481
25.163	dcm::Macro Class Reference	. 481
25.163.1	Detailed Description	. 482
25.163.2	Member Typedef Documentation	. 482
25.163.2.1	ArrayIncludeMacrosType	. 482
25.163.2.2	MapModuleEntry	. 482
25.163.3	Constructor & Destructor Documentation	. 482
25.163.3.1	Macro	. 482
25.163.4	Member Function Documentation	. 482
25.163.4.1	AddMacroEntry	. 482

25.163.4.2Clear	. 482
25.163.4.3FindMacroEntry	. 482
25.163.4.4GetMacroEntry	. 482
25.163.4.5GetName	. 482
25.163.4.6SetName	. 482
25.163.4.7Verify	. 482
25.163.5Friends And Related Function Documentation	. 482
25.163.5.1operator<<	. 483
25.164dcm::Macros Class Reference	. 483
25.164.1Detailed Description	. 483
25.164.2Member Typedef Documentation	. 484
25.164.2.1ModuleMapType	. 484
25.164.3Constructor & Destructor Documentation	. 484
25.164.3.1Macros	. 484
25.164.4Member Function Documentation	. 484
25.164.4.1AddMacro	. 484
25.164.4.2Clear	. 484
25.164.4.3GetMacro	. 484
25.164.4.4IsEmpty	. 484
25.164.5Friends And Related Function Documentation	. 484
25.164.5.1operator<<	. 484
25.165dcm::network::MaximumLengthSub Class Reference	. 484
25.165.1Detailed Description	. 484
25.165.2Constructor & Destructor Documentation	. 485
25.165.2.1MaximumLengthSub	. 485
25.165.3Member Function Documentation	. 485
25.165.3.1GetMaximumLength	. 485
25.165.3.2Print	. 485
25.165.3.3Read	. 485
25.165.3.4SetMaximumLength	. 485
25.165.3.5Size	. 485
25.165.3.6Write	. 485
25.166dcm::MD5 Class Reference	. 485
25.166.1Detailed Description	. 485
25.166.2Constructor & Destructor Documentation	. 486
25.166.2.1MD5	. 486
25.166.2.2~MD5	. 486

25.166.3	Member Function Documentation	486
25.166.3.1	Compute	486
25.166.3.2	ComputeFile	486
25.167	dcm::MediaStorage Class Reference	486
25.167.1	Detailed Description	489
25.167.2	Member Enumeration Documentation	489
25.167.2.1	MSType	489
25.167.2.2	ObjectType	491
25.167.3	Constructor & Destructor Documentation	491
25.167.3.1	MediaStorage	491
25.167.4	Member Function Documentation	491
25.167.4.1	GetModality	491
25.167.4.2	GetModalityDimension	492
25.167.4.3	GetMSString	492
25.167.4.4	GetMSType	492
25.167.4.5	GetNumberOfModality	492
25.167.4.6	GetNumberOfMSString	492
25.167.4.7	GetNumberOfMSType	492
25.167.4.8	GetString	492
25.167.4.9	GuessFromModality	492
25.167.4.10	Image	492
25.167.4.11	Undefined	492
25.167.4.12	operator MSType	493
25.167.4.13	SetFromDataSet	493
25.167.4.14	SetFromFile	493
25.167.4.15	SetFromHeader	493
25.167.4.16	SetFromModality	493
25.167.4.17	SetFromSourceImageSequence	493
25.167.5	Friends And Related Function Documentation	493
25.167.5.1	operator <<	493
25.168	dcm::MemberCommand< T > Class Template Reference	493
25.168.1	Detailed Description	495
25.168.2	Member Typedef Documentation	495
25.168.2.1	Self	495
25.168.2.2	TCnstMemberFunctionPointer	496
25.168.2.3	TMemberFunctionPointer	496
25.168.3	Constructor & Destructor Documentation	496

25.168.3.1MemberCommand	496
25.168.3.2~MemberCommand	496
25.168.4Member Function Documentation	496
25.168.4.1Execute	496
25.168.4.2Execute	496
25.168.4.3New	496
25.168.4.4SetCallbackFunction	496
25.168.4.5SetCallbackFunction	497
25.168.5Member Data Documentation	497
25.168.5.1m_ConstMemberFunction	497
25.168.5.2m_MemberFunction	497
25.168.5.3m_This	497
25.169dcm::MeshPrimitive Class Reference	497
25.169.1Detailed Description	499
25.169.2Member Typedef Documentation	499
25.169.2.1PrimitivesData	499
25.169.3Member Enumeration Documentation	499
25.169.3.1MPType	499
25.169.4Constructor & Destructor Documentation	500
25.169.4.1MeshPrimitive	500
25.169.4.2~MeshPrimitive	500
25.169.5Member Function Documentation	500
25.169.5.1AddPrimitiveData	500
25.169.5.2GetMPType	500
25.169.5.3GetMPTypeString	500
25.169.5.4GetNumberOfPrimitivesData	500
25.169.5.5GetPrimitiveData	500
25.169.5.6GetPrimitiveData	500
25.169.5.7GetPrimitiveData	500
25.169.5.8GetPrimitiveData	500
25.169.5.9GetPrimitivesData	500
25.169.5.10GetPrimitivesData	500
25.169.5.11GetPrimitiveType	500
25.169.5.12SetPrimitiveData	500
25.169.5.13SetPrimitiveData	500
25.169.5.14SetPrimitivesData	500
25.169.5.15SetPrimitiveType	500

25.169.6	Member Data Documentation	500
25.169.6.1	PrimitiveData	500
25.169.6.2	PrimitiveType	500
25.170	dcm::ModifiedEvent Class Reference	500
25.171	dcm::Module Class Reference	502
25.171.1	Detailed Description	502
25.171.2	Member Typedef Documentation	503
25.171.2.1	ArrayIncludeMacrosType	503
25.171.2.2	MapModuleEntry	503
25.171.3	Constructor & Destructor Documentation	503
25.171.3.1	Module	503
25.171.4	Member Function Documentation	503
25.171.4.1	AddMacro	503
25.171.4.2	AddModuleEntry	503
25.171.4.3	Clear	503
25.171.4.4	FindModuleEntryInMacros	503
25.171.4.5	GetModuleEntryInMacros	503
25.171.4.6	GetName	503
25.171.4.7	SetName	503
25.171.4.8	Verify	503
25.171.5	Friends And Related Function Documentation	503
25.171.5.1	operator<<	503
25.172	dcm::ModuleEntry Class Reference	504
25.172.1	Detailed Description	505
25.172.2	Member Typedef Documentation	505
25.172.2.1	Description	505
25.172.3	Constructor & Destructor Documentation	505
25.172.3.1	ModuleEntry	505
25.172.3.2	~ModuleEntry	506
25.172.4	Member Function Documentation	506
25.172.4.1	GetDescription	506
25.172.4.2	GetName	506
25.172.4.3	GetType	506
25.172.4.4	SetDescription	506
25.172.4.5	SetName	506
25.172.4.6	SetType	506
25.172.5	Friends And Related Function Documentation	506

25.172.5.1operator<<	506
25.172.6Member Data Documentation	506
25.172.6.1DataElementType	506
25.172.6.2DescriptionField	506
25.172.6.3Name	506
25.173dcm::Modules Class Reference	506
25.173.1Detailed Description	507
25.173.2Member Typedef Documentation	507
25.173.2.1ModuleMapType	507
25.173.3Constructor & Destructor Documentation	507
25.173.3.1Modules	507
25.173.4Member Function Documentation	507
25.173.4.1AddModule	507
25.173.4.2Clear	507
25.173.4.3GetModule	507
25.173.4.4IsEmpty	507
25.173.5Friends And Related Function Documentation	508
25.173.5.1operator<<	508
25.174dcm::MovePatientRootQuery Class Reference	508
25.174.1Detailed Description	509
25.174.2Constructor & Destructor Documentation	509
25.174.2.1MovePatientRootQuery	509
25.174.3Member Function Documentation	509
25.174.3.1GetAbstractSyntaxUID	509
25.174.3.2GetTagListByLevel	509
25.174.3.3InitializeDataSet	509
25.174.3.4ValidateQuery	509
25.174.4Friends And Related Function Documentation	510
25.174.4.1QueryFactory	510
25.175dcm::MoveStudyRootQuery Class Reference	510
25.175.1Detailed Description	511
25.175.2Constructor & Destructor Documentation	511
25.175.2.1MoveStudyRootQuery	511
25.175.3Member Function Documentation	511
25.175.3.1GetAbstractSyntaxUID	511
25.175.3.2GetTagListByLevel	511
25.175.3.3InitializeDataSet	512

25.175.3.4	ValidateQuery	512
25.175.4	Friends And Related Function Documentation	512
25.175.4.1	QueryFactory	512
25.176	dcm::NestedModuleEntries Class Reference	512
25.176.1	Detailed Description	514
25.176.2	Member Typedef Documentation	514
25.176.2.1	SizeType	514
25.176.3	Constructor & Destructor Documentation	514
25.176.3.1	NestedModuleEntries	514
25.176.4	Member Function Documentation	514
25.176.4.1	AddModuleEntry	514
25.176.4.2	GetModuleEntry	514
25.176.4.3	GetModuleEntry	514
25.176.4.4	GetNumberOfModuleEntries	514
25.176.5	Friends And Related Function Documentation	514
25.176.5.1	operator<<	514
25.177	dcm::NoEvent Class Reference	514
25.177.1	Detailed Description	515
25.178	dcm::Object Class Reference	515
25.178.1	Detailed Description	517
25.178.2	Constructor & Destructor Documentation	517
25.178.2.1	Object	517
25.178.2.2	~Object	517
25.178.2.3	Object	517
25.178.3	Member Function Documentation	517
25.178.3.1	operator=	517
25.178.3.2	Print	517
25.178.3.3	Register	517
25.178.3.4	UnRegister	517
25.178.4	Friends And Related Function Documentation	517
25.178.4.1	operator<<	517
25.178.4.2	SmartPointer	517
25.179	dcm::Orientation Class Reference	518
25.179.1	Detailed Description	518
25.179.2	Member Enumeration Documentation	519
25.179.2.1	OrientationType	519
25.179.3	Constructor & Destructor Documentation	519

25.179.3.1Orientation	519
25.179.3.2~Orientation	519
25.179.4Member Function Documentation	519
25.179.4.1GetLabel	519
25.179.4.2GetMajorAxisFromPatientRelativeDirectionCosine	519
25.179.4.3GetObliquityThresholdCosineValue	519
25.179.4.4GetType	519
25.179.4.5Print	519
25.179.4.6SetObliquityThresholdCosineValue	519
25.179.5Friends And Related Function Documentation	519
25.179.5.1operator<<	519
25.180dcm::Overlay Class Reference	520
25.180.1Detailed Description	522
25.180.2Member Enumeration Documentation	522
25.180.2.1OverlayType	522
25.180.3Constructor & Destructor Documentation	523
25.180.3.1Overlay	523
25.180.3.2~Overlay	523
25.180.3.3Overlay	523
25.180.4Member Function Documentation	523
25.180.4.1Decode	523
25.180.4.2Decompress	523
25.180.4.3GetBitPosition	523
25.180.4.4GetBitsAllocated	523
25.180.4.5GetBuffer	523
25.180.4.6GetColumns	523
25.180.4.7GetDescription	523
25.180.4.8GetGroup	523
25.180.4.9GetOrigin	523
25.180.4.10GetOverlayData	524
25.180.4.11GetOverlayTypeAsString	524
25.180.4.12GetOverlayTypeFromString	524
25.180.4.13GetRows	524
25.180.4.14GetType	524
25.180.4.15GetTypeAsEnum	524
25.180.4.16GetUnpackBuffer	524
25.180.4.17GetUnpackBuffer	524

25.180.4.10	GetUnpackBufferLength	. . . . .	524
25.180.4.10	GrabOverlayFromPixelData	. . . . .	524
25.180.4.20	Empty	. . . . .	524
25.180.4.21	InPixelData	. . . . .	524
25.180.4.22	InPixelData	. . . . .	524
25.180.4.23	Zero	. . . . .	524
25.180.4.24	Print	. . . . .	525
25.180.4.25	SetBitPosition	. . . . .	525
25.180.4.26	SetBitsAllocated	. . . . .	525
25.180.4.27	SetColumns	. . . . .	525
25.180.4.28	SetDescription	. . . . .	525
25.180.4.29	SetFrameOrigin	. . . . .	525
25.180.4.30	SetGroup	. . . . .	525
25.180.4.31	SetNumberOfFrames	. . . . .	525
25.180.4.32	SetOrigin	. . . . .	525
25.180.4.33	SetOverlay	. . . . .	525
25.180.4.34	SetRows	. . . . .	525
25.180.4.35	SetType	. . . . .	526
25.180.4.36	Update	. . . . .	526
25.181	dcm::ParseException Class Reference	. . . . .	526
25.181.1	Detailed Description	. . . . .	527
25.181.2	Constructor & Destructor Documentation	. . . . .	527
25.181.2.1	ParseException	. . . . .	527
25.181.2.2	~ParseException	. . . . .	527
25.181.3	Member Function Documentation	. . . . .	527
25.181.3.1	GetLastElement	. . . . .	527
25.181.3.2	operator=	. . . . .	527
25.181.3.3	SetLastElement	. . . . .	528
25.182	dcm::Parser Class Reference	. . . . .	528
25.182.1	Detailed Description	. . . . .	529
25.182.2	Member Typedef Documentation	. . . . .	529
25.182.2.1	EndElementHandler	. . . . .	529
25.182.2.2	StartElementHandler	. . . . .	529
25.182.3	Member Enumeration Documentation	. . . . .	529
25.182.3.1	ErrorType	. . . . .	529
25.182.4	Constructor & Destructor Documentation	. . . . .	529
25.182.4.1	Parser	. . . . .	529

25.182.4.2~Parser	529
25.182.5Member Function Documentation	529
25.182.5.1GetBuffer	529
25.182.5.2GetCurrentByteIndex	529
25.182.5.3GetErrorCode	529
25.182.5.4GetErrorString	529
25.182.5.5GetUserData	529
25.182.5.6Parse	530
25.182.5.7ParseBuffer	530
25.182.5.8Process	530
25.182.5.9SetElementHandler	530
25.182.5.10SetUserData	530
25.183dcm::Patient Class Reference	530
25.183.1Detailed Description	530
25.183.2Constructor & Destructor Documentation	530
25.183.2.1Patient	530
25.184dcm::network::PDataTFPDU Class Reference	530
25.184.1Detailed Description	532
25.184.2Member Typedef Documentation	532
25.184.2.1SizeType	532
25.184.3Constructor & Destructor Documentation	532
25.184.3.1PDataTFPDU	532
25.184.4Member Function Documentation	532
25.184.4.1AddPresentationDataValue	532
25.184.4.2GetNumberOfPresentationDataValues	532
25.184.4.3GetPresentationDataValue	532
25.184.4.4IsLastFragment	532
25.184.4.5Print	532
25.184.4.6Read	532
25.184.4.7ReadInto	532
25.184.4.8Size	532
25.184.4.9Write	532
25.185dcm::PDBElement Class Reference	533
25.185.1Detailed Description	534
25.185.2Constructor & Destructor Documentation	534
25.185.2.1PDBElement	534
25.185.3Member Function Documentation	534

25.185.3.1GetName	534
25.185.3.2GetValue	534
25.185.3.3operator==	534
25.185.3.4SetName	534
25.185.3.5SetValue	534
25.185.4Friends And Related Function Documentation	534
25.185.4.1operator<<	534
25.185.5Member Data Documentation	534
25.185.5.1NameField	534
25.185.5.2ValueField	534
25.186dcm::PDBHeader Class Reference	535
25.186.1Detailed Description	535
25.186.2Constructor & Destructor Documentation	536
25.186.2.1PDBHeader	536
25.186.2.2~PDBHeader	536
25.186.3Member Function Documentation	536
25.186.3.1FindPDBElementByName	536
25.186.3.2GetPDBEEnd	536
25.186.3.3GetPDBElementByName	536
25.186.3.4GetPDBInfoTag	536
25.186.3.5LoadFromDataElement	536
25.186.3.6Print	536
25.186.4Friends And Related Function Documentation	536
25.186.4.1operator<<	536
25.187dcm::PDFCodec Class Reference	537
25.187.1Detailed Description	538
25.187.2Constructor & Destructor Documentation	538
25.187.2.1PDFCodec	538
25.187.2.2~PDFCodec	538
25.187.3Member Function Documentation	538
25.187.3.1CanCode	538
25.187.3.2CanDecode	538
25.187.3.3Decode	538
25.188dcm::network::PDUFactory Class Reference	538
25.188.1Detailed Description	539
25.188.2Member Function Documentation	539
25.188.2.1ConstructAbortPDU	539

25.188.2.2ConstructPDU	539
25.188.2.3ConstructReleasePDU	539
25.188.2.4CreateCEchoPDU	539
25.188.2.5CreateCFindPDU	539
25.188.2.6CreateCMovePDU	539
25.188.2.7CreateCStoreRQPDU	539
25.188.2.8CreateCStoreRSPPDU	539
25.188.2.9DetermineEventByPDU	539
25.188.2.10GetPDVs	539
25.189dcm::PersonName Class Reference	540
25.189.1Detailed Description	540
25.189.2Member Function Documentation	540
25.189.2.1GetMaxLength	540
25.189.2.2GetNumberOfComponents	540
25.189.2.3Print	540
25.189.2.4SetBlob	540
25.189.2.5SetComponents	540
25.189.2.6SetComponents	540
25.189.3Member Data Documentation	540
25.189.3.1Component	541
25.189.3.2MaxLength	541
25.189.3.3MaxNumberOfComponents	541
25.189.3.4Padding	541
25.189.3.5Separator	541
25.190dcm::PGXCodec Class Reference	541
25.190.1Detailed Description	542
25.190.2Constructor & Destructor Documentation	542
25.190.2.1PGXCodec	542
25.190.2.2~PGXCodec	542
25.190.3Member Function Documentation	542
25.190.3.1CanCode	542
25.190.3.2CanDecode	542
25.190.3.3GetHeaderInfo	543
25.190.3.4Read	543
25.190.3.5Write	543
25.191dcm::PhotometricInterpretation Class Reference	543
25.191.1Detailed Description	544

25.191.2	Member Enumeration Documentation	544
25.191.2.1	PIType	544
25.191.3	Constructor & Destructor Documentation	544
25.191.3.1	PhotometricInterpretation	544
25.191.4	Member Function Documentation	544
25.191.4.1	GetPIString	544
25.191.4.2	GetPIType	545
25.191.4.3	GetSamplesPerPixel	545
25.191.4.4	GetString	545
25.191.4.5	GetType	545
25.191.4.6	IsLossless	545
25.191.4.7	IsLossy	545
25.191.4.8	IsRetired	545
25.191.4.9	IsSameColorSpace	545
25.191.4.10	operator PIType	545
25.191.5	Friends And Related Function Documentation	545
25.191.5.1	operator <<	545
25.192	gdcm::PixelFormat Class Reference	545
25.192.1	Detailed Description	547
25.192.2	Member Enumeration Documentation	547
25.192.2.1	ScalarType	547
25.192.3	Constructor & Destructor Documentation	547
25.192.3.1	PixelFormat	547
25.192.3.2	PixelFormat	547
25.192.3.3	~PixelFormat	547
25.192.4	Member Function Documentation	547
25.192.4.1	GetBitsAllocated	548
25.192.4.2	GetBitsStored	548
25.192.4.3	GetHighBit	548
25.192.4.4	GetMax	548
25.192.4.5	GetMin	548
25.192.4.6	GetPixelRepresentation	548
25.192.4.7	GetPixelSize	548
25.192.4.8	GetSamplesPerPixel	549
25.192.4.9	GetScalarType	549
25.192.4.10	GetScalarTypeAsString	549
25.192.4.11	IsValid	549

25.192.4.10operator ScalarType	549
25.192.4.10operator!=	549
25.192.4.10operator!=	549
25.192.4.10operator==	549
25.192.4.10operator==	549
25.192.4.10Print	549
25.192.4.18SetBitsAllocated	549
25.192.4.19SetBitsStored	549
25.192.4.20SetHighBit	549
25.192.4.23SetPixelRepresentation	549
25.192.4.28SetSamplesPerPixel	549
25.192.4.29SetScalarType	550
25.192.4.24Validate	550
25.192.5Friends And Related Function Documentation	550
25.192.5.1Bitmap	550
25.192.5.2operator<<	550
25.193gdcm::Pixmap Class Reference	550
25.193.1Detailed Description	552
25.193.2Constructor & Destructor Documentation	552
25.193.2.1Pixmap	552
25.193.2.2~Pixmap	552
25.193.3Member Function Documentation	552
25.193.3.1AreOverlaysInPixelData	552
25.193.3.2GetCurve	552
25.193.3.3GetCurve	553
25.193.3.4GetIconImage	553
25.193.3.5GetIconImage	553
25.193.3.6GetNumberOfCurves	553
25.193.3.7GetNumberOfOverlays	553
25.193.3.8GetOverlay	553
25.193.3.9GetOverlay	553
25.193.3.10Print	553
25.193.3.11RemoveOverlay	553
25.193.3.12SetIconImage	553
25.193.3.13SetNumberOfCurves	553
25.193.3.14SetNumberOfOverlays	553
25.193.4Member Data Documentation	553

25.193.4.1Curves	553
25.193.4.2Icon	553
25.193.4.3Overlays	553
25.194dcm::PixmapReader Class Reference	553
25.194.1Detailed Description	556
25.194.2Constructor & Destructor Documentation	556
25.194.2.1PixmapReader	556
25.194.2.2~PixmapReader	556
25.194.3Member Function Documentation	556
25.194.3.1GetPixmap	556
25.194.3.2GetPixmap	556
25.194.3.3Read	556
25.194.3.4ReadACRNEMAImage	556
25.194.3.5ReadImage	556
25.194.4Member Data Documentation	557
25.194.4.1PixelData	557
25.195dcm::PixmapToPixmapFilter Class Reference	557
25.195.1Detailed Description	558
25.195.2Constructor & Destructor Documentation	558
25.195.2.1PixmapToPixmapFilter	559
25.195.2.2~PixmapToPixmapFilter	559
25.195.3Member Function Documentation	559
25.195.3.1GetInput	559
25.195.3.2GetOutput	559
25.195.3.3GetOutputAsPixmap	559
25.196dcm::PixmapWriter Class Reference	559
25.196.1Detailed Description	561
25.196.2Constructor & Destructor Documentation	561
25.196.2.1PixmapWriter	561
25.196.2.2~PixmapWriter	561
25.196.3Member Function Documentation	561
25.196.3.1DolconImage	561
25.196.3.2GetImage	561
25.196.3.3GetImage	561
25.196.3.4GetPixmap	561
25.196.3.5GetPixmap	561
25.196.3.6PrepareWrite	561

25.196.3.7SetImage	562
25.196.3.8SetPixmap	562
25.196.3.9Write	562
25.196.4Member Data Documentation	562
25.196.4.1PixelData	562
25.197dcm::PNMCodec Class Reference	562
25.197.1Detailed Description	564
25.197.2Constructor & Destructor Documentation	564
25.197.2.1PNMCodec	564
25.197.2.2~PNMCodec	564
25.197.3Member Function Documentation	564
25.197.3.1CanCode	564
25.197.3.2CanDecode	564
25.197.3.3GetBufferLength	564
25.197.3.4GetHeaderInfo	564
25.197.3.5Read	564
25.197.3.6SetBufferLength	564
25.197.3.7Write	564
25.198dcm::Preamble Class Reference	565
25.198.1Detailed Description	565
25.198.2Constructor & Destructor Documentation	565
25.198.2.1Preamble	565
25.198.2.2~Preamble	565
25.198.2.3Preamble	565
25.198.3Member Function Documentation	566
25.198.3.1Clear	566
25.198.3.2Create	566
25.198.3.3GetInternal	566
25.198.3.4GetLength	566
25.198.3.5IsEmpty	566
25.198.3.6IsValid	566
25.198.3.7operator=	566
25.198.3.8Print	566
25.198.3.9Read	566
25.198.3.10Remove	566
25.198.3.11Valid	566
25.198.3.12Write	566

25.198.4	Friends And Related Function Documentation	566
25.198.4.1	operator<<	566
25.199	dcm::PresentationContext Class Reference	566
25.199.1	Detailed Description	567
25.199.2	Member Typedef Documentation	567
25.199.2.1	SizeType	567
25.199.2.2	TransferSyntaxArrayType	567
25.199.3	Constructor & Destructor Documentation	567
25.199.3.1	PresentationContext	567
25.199.3.2	PresentationContext	567
25.199.4	Member Function Documentation	567
25.199.4.1	AddTransferSyntax	567
25.199.4.2	GetAbstractSyntax	567
25.199.4.3	GetNumberOfTransferSyntaxes	567
25.199.4.4	GetPresentationContextID	567
25.199.4.5	GetTransferSyntax	567
25.199.4.6	operator==	567
25.199.4.7	Print	568
25.199.4.8	SetAbstractSyntax	568
25.199.4.9	SetPresentationContextID	568
25.200	dcm::network::PresentationContextAC Class Reference	568
25.200.1	Detailed Description	568
25.200.2	Constructor & Destructor Documentation	568
25.200.2.1	PresentationContextAC	568
25.200.3	Member Function Documentation	568
25.200.3.1	GetPresentationContextID	568
25.200.3.2	GetReason	568
25.200.3.3	GetTransferSyntax	568
25.200.3.4	Print	569
25.200.3.5	Read	569
25.200.3.6	SetPresentationContextID	569
25.200.3.7	SetReason	569
25.200.3.8	SetTransferSyntax	569
25.200.3.9	Size	569
25.200.3.10	Write	569
25.201	dcm::PresentationContextGenerator Class Reference	569
25.201.1	Detailed Description	570

25.201.2	Member Typedef Documentation	570
25.201.2.1	PresentationContextArrayType	570
25.201.2.2	SizeType	570
25.201.3	Constructor & Destructor Documentation	570
25.201.3.1	PresentationContextGenerator	570
25.201.4	Member Function Documentation	570
25.201.4.1	AddPresentationContext	570
25.201.4.2	GenerateFromFilenames	570
25.201.4.3	GenerateFromUID	570
25.201.4.4	GetDefaultTransferSyntax	571
25.201.4.5	GetPresentationContexts	571
25.201.4.6	SetDefaultTransferSyntax	571
25.201.4.7	SetMergeModeToAbstractSyntax	571
25.201.4.8	SetMergeModeToTransferSyntax	571
25.202	gdcm::network::PresentationContextRQ Class Reference	571
25.202.1	Detailed Description	572
25.202.2	Member Typedef Documentation	572
25.202.2.1	SizeType	572
25.202.3	Constructor & Destructor Documentation	572
25.202.3.1	PresentationContextRQ	572
25.202.3.2	PresentationContextRQ	572
25.202.3.3	PresentationContextRQ	572
25.202.4	Member Function Documentation	572
25.202.4.1	AddTransferSyntax	572
25.202.4.2	GetAbstractSyntax	572
25.202.4.3	GetAbstractSyntax	572
25.202.4.4	GetNumberOfTransferSyntaxes	572
25.202.4.5	GetPresentationContextID	572
25.202.4.6	GetTransferSyntax	572
25.202.4.7	GetTransferSyntax	572
25.202.4.8	GetTransferSyntaxes	572
25.202.4.9	operator==	573
25.202.4.10	Print	573
25.202.4.11	Read	573
25.202.4.12	SetAbstractSyntax	573
25.202.4.13	SetPresentationContextID	573
25.202.4.14	Size	573

25.202.4.1Write	573
25.203dcm::network::PresentationDataValue Class Reference	573
25.203.1Detailed Description	574
25.203.2Constructor & Destructor Documentation	574
25.203.2.1PresentationDataValue	574
25.203.3Member Function Documentation	574
25.203.3.1ConcatenatePDVBlobs	574
25.203.3.2GetBlob	574
25.203.3.3GetIsCommand	574
25.203.3.4GetIsLastFragment	574
25.203.3.5GetMessageHeader	574
25.203.3.6GetPresentationContextID	574
25.203.3.7Print	574
25.203.3.8Read	574
25.203.3.9ReadInto	574
25.203.3.10SetBlob	574
25.203.3.11SetCommand	574
25.203.3.12DataSet	574
25.203.3.13SetLastFragment	574
25.203.3.14SetMessageHeader	574
25.203.3.15SetPresentationContextID	575
25.203.3.16Size	575
25.203.3.17Write	575
25.204dcm::Printer Class Reference	575
25.204.1Detailed Description	577
25.204.2Member Enumeration Documentation	577
25.204.2.1PrintStyles	577
25.204.3Constructor & Destructor Documentation	577
25.204.3.1Printer	577
25.204.3.2~Printer	577
25.204.4Member Function Documentation	577
25.204.4.1GetPrintStyle	577
25.204.4.2Print	577
25.204.4.3PrintDataElement	577
25.204.4.4PrintDataSet	577
25.204.4.5PrintSQ	578
25.204.4.6SetColor	578

25.204.4.7SetFile	578
25.204.4.8SetStyle	578
25.204.5Member Data Documentation	578
25.204.5.1F	578
25.204.5.2MaxPrintLength	578
25.204.5.3PrintStyle	578
25.205dcm::PrivateDict Class Reference	578
25.205.1Detailed Description	579
25.205.2Constructor & Destructor Documentation	579
25.205.2.1PrivateDict	579
25.205.2.2~PrivateDict	579
25.205.3Member Function Documentation	579
25.205.3.1AddDictEntry	579
25.205.3.2FindDictEntry	579
25.205.3.3GetDictEntry	579
25.205.3.4IsEmpty	579
25.205.3.5LoadDefault	579
25.205.3.6PrintXML	579
25.205.3.7RemoveDictEntry	579
25.205.4Friends And Related Function Documentation	579
25.205.4.1Dicts	579
25.205.4.2operator<<	579
25.206dcm::PrivateTag Class Reference	580
25.206.1Detailed Description	581
25.206.2Constructor & Destructor Documentation	581
25.206.2.1PrivateTag	581
25.206.3Member Function Documentation	581
25.206.3.1GetOwner	581
25.206.3.2operator<	581
25.206.3.3ReadFromCommaSeparatedString	581
25.206.3.4SetOwner	581
25.206.4Friends And Related Function Documentation	581
25.206.4.1operator<<	581
25.207dcm::ProgressEvent Class Reference	581
25.207.1Detailed Description	583
25.207.2Member Typedef Documentation	583
25.207.2.1Self	583

25.207.2.2Superclass	583
25.207.3Constructor & Destructor Documentation	583
25.207.3.1ProgressEvent	583
25.207.3.2~ProgressEvent	583
25.207.3.3ProgressEvent	583
25.207.4Member Function Documentation	583
25.207.4.1CheckEvent	583
25.207.4.2GetEventName	583
25.207.4.3GetProgress	583
25.207.4.4MakeObject	583
25.207.4.5SetProgress	583
25.208gdcmm::PVRGCodec Class Reference	584
25.208.1Detailed Description	585
25.208.2Constructor & Destructor Documentation	585
25.208.2.1PVRGCodec	585
25.208.2.2~PVRGCodec	585
25.208.3Member Function Documentation	585
25.208.3.1CanCode	585
25.208.3.2CanDecode	585
25.208.3.3Code	585
25.208.3.4Decode	586
25.209gdcmm::PythonFilter Class Reference	586
25.209.1Detailed Description	586
25.209.2Constructor & Destructor Documentation	586
25.209.2.1PythonFilter	586
25.209.2.2~PythonFilter	586
25.209.3Member Function Documentation	586
25.209.3.1GetFile	586
25.209.3.2GetFile	586
25.209.3.3SetDicts	586
25.209.3.4SetFile	586
25.209.3.5ToPyObject	586
25.209.3.6UseDictAlways	587
25.210gdcmm::QueryBase Class Reference	587
25.210.1Detailed Description	587
25.210.2Constructor & Destructor Documentation	588
25.210.2.1~QueryBase	588

25.210.3	Member Function Documentation	588
25.210.3.1	GetAllRequiredTags	588
25.210.3.2	GetAllTags	588
25.210.3.3	GetHierachicalSearchTags	588
25.210.3.4	GetName	588
25.210.3.5	GetOptionalTags	588
25.210.3.6	GetQueryLevel	588
25.210.3.7	GetRequiredTags	588
25.210.3.8	GetUniqueTags	589
25.211	dcm::QueryFactory Class Reference	589
25.211.1	Detailed Description	589
25.211.2	Member Function Documentation	589
25.211.2.1	GetCharacterFromCurrentLocale	589
25.211.2.2	ListCharSets	589
25.211.2.3	ProduceCharacterSetDataElement	590
25.211.2.4	ProduceQuery	590
25.212	dcm::QueryImage Class Reference	590
25.212.1	Detailed Description	591
25.212.2	Member Function Documentation	591
25.212.2.1	GetHierachicalSearchTags	591
25.212.2.2	GetName	591
25.212.2.3	GetOptionalTags	591
25.212.2.4	GetQueryLevel	592
25.212.2.5	GetRequiredTags	592
25.212.2.6	GetUniqueTags	592
25.213	dcm::QueryPatient Class Reference	592
25.213.1	Detailed Description	593
25.213.2	Member Function Documentation	593
25.213.2.1	GetHierachicalSearchTags	593
25.213.2.2	GetName	593
25.213.2.3	GetOptionalTags	593
25.213.2.4	GetQueryLevel	594
25.213.2.5	GetRequiredTags	594
25.213.2.6	GetUniqueTags	594
25.214	dcm::QuerySeries Class Reference	594
25.214.1	Detailed Description	595
25.214.2	Member Function Documentation	595

25.214.2.1	GetHierarchicalSearchTags	595
25.214.2.2	GetName	595
25.214.2.3	GetOptionalTags	595
25.214.2.4	GetQueryLevel	596
25.214.2.5	GetRequiredTags	596
25.214.2.6	GetUniqueTags	596
25.215	dcm::QueryStudy Class Reference	596
25.215.1	Detailed Description	597
25.215.2	Member Function Documentation	597
25.215.2.1	GetHierarchicalSearchTags	597
25.215.2.2	GetName	597
25.215.2.3	GetOptionalTags	597
25.215.2.4	GetQueryLevel	598
25.215.2.5	GetRequiredTags	598
25.215.2.6	GetUniqueTags	598
25.216	dcm::RAWCodec Class Reference	598
25.216.1	Detailed Description	599
25.216.2	Constructor & Destructor Documentation	599
25.216.2.1	RAWCodec	599
25.216.2.2	~RAWCodec	599
25.216.3	Member Function Documentation	599
25.216.3.1	CanCode	599
25.216.3.2	CanDecode	600
25.216.3.3	Code	600
25.216.3.4	Decode	600
25.216.3.5	DecodeByStreams	600
25.216.3.6	DecodeBytes	600
25.216.3.7	GetHeaderInfo	600
25.217	dcm::Reader Class Reference	600
25.217.1	Detailed Description	602
25.217.2	Constructor & Destructor Documentation	603
25.217.2.1	Reader	603
25.217.2.2	~Reader	603
25.217.3	Member Function Documentation	603
25.217.3.1	CanRead	603
25.217.3.2	GetFile	603
25.217.3.3	GetFile	604

25.217.3.4	GetStreamPtr	604
25.217.3.5	Read	604
25.217.3.6	ReadDataSet	604
25.217.3.7	ReadMetaInformation	604
25.217.3.8	ReadPreamble	604
25.217.3.9	ReadSelectedTags	604
25.217.3.10	ReadUpToTag	604
25.217.3.11	SetFile	604
25.217.3.12	SetFileName	604
25.217.3.13	SetStream	605
25.217.4	Friends And Related Function Documentation	605
25.217.4.1	StreamImageReader	605
25.217.5	Member Data Documentation	605
25.217.5.1	F	605
25.218	gdcm::Region Class Reference	605
25.218.1	Detailed Description	606
25.218.2	Constructor & Destructor Documentation	606
25.218.2.1	Region	606
25.218.2.2	~Region	606
25.218.3	Member Function Documentation	606
25.218.3.1	Area	606
25.218.3.2	Clone	607
25.218.3.3	ComputeBoundingBox	607
25.218.3.4	Empty	607
25.218.3.5	IsValid	607
25.218.3.6	Print	607
25.219	gdcm::Rescaler Class Reference	607
25.219.1	Detailed Description	608
25.219.2	Constructor & Destructor Documentation	609
25.219.2.1	Rescaler	609
25.219.2.2	~Rescaler	609
25.219.3	Member Function Documentation	609
25.219.3.1	ComputeInterceptSlopePixelType	609
25.219.3.2	ComputePixelTypeFromMinMax	609
25.219.3.3	GetIntercept	609
25.219.3.4	GetSlope	609
25.219.3.5	InverseRescale	609

25.219.3.6InverseRescaleFunctionIntoBestFit	609
25.219.3.7Rescale	609
25.219.3.8RescaleFunctionIntoBestFit	609
25.219.3.9SetIntercept	609
25.219.3.10SetMinMaxForPixelType	609
25.219.3.11SetPixelFormat	610
25.219.3.12SetSlope	610
25.219.3.13SetTargetPixelType	610
25.219.3.14SetUseTargetPixelType	610
25.220dcm::RLECodec Class Reference	610
25.220.1Detailed Description	612
25.220.2Constructor & Destructor Documentation	612
25.220.2.1RLECodec	612
25.220.2.2~RLECodec	612
25.220.3Member Function Documentation	612
25.220.3.1CanCode	612
25.220.3.2CanDecode	612
25.220.3.3Code	613
25.220.3.4Decode	613
25.220.3.5DecodeByStreams	613
25.220.3.6DecodeExtent	613
25.220.3.7GetBufferLength	613
25.220.3.8GetHeaderInfo	613
25.220.3.9SetBufferLength	613
25.220.3.10SetLength	613
25.220.4Friends And Related Function Documentation	613
25.220.4.1ImageRegionReader	613
25.221dcm::network::RoleSelectionSub Class Reference	613
25.221.1Detailed Description	614
25.221.2Constructor & Destructor Documentation	614
25.221.2.1RoleSelectionSub	614
25.221.3Member Function Documentation	614
25.221.3.1Print	614
25.221.3.2Read	614
25.221.3.3SetTuple	614
25.221.3.4Size	614
25.221.3.5Write	614

25.222.0dcm::SerieHelper::Rule Struct Reference	614
25.222.1Member Data Documentation	615
25.222.1.1elem	615
25.222.1.2group	615
25.222.1.3op	615
25.222.1.4value	615
25.223.0dcm::Scanner Class Reference	615
25.223.1Detailed Description	618
25.223.2Member Typedef Documentation	618
25.223.2.1ConstIterator	618
25.223.2.2MappingType	618
25.223.2.3TagToValue	618
25.223.2.4TagToValueValueType	619
25.223.2.5ValuesType	619
25.223.3Constructor & Destructor Documentation	619
25.223.3.1Scanner	619
25.223.3.2~Scanner	619
25.223.4Member Function Documentation	619
25.223.4.1AddPrivateTag	619
25.223.4.2AddSkipTag	619
25.223.4.3AddTag	619
25.223.4.4Begin	619
25.223.4.5ClearSkipTags	619
25.223.4.6ClearTags	619
25.223.4.7End	619
25.223.4.8GetAllFileNamesFromTagToValue	619
25.223.4.9GetFilenameFromTagToValue	619
25.223.4.10GetFileNames	619
25.223.4.11GetKeys	619
25.223.4.12GetMapping	620
25.223.4.13GetMappingFromTagToValue	620
25.223.4.14GetMappings	620
25.223.4.15GetOrderedValues	620
25.223.4.16GetValue	620
25.223.4.17GetValues	620
25.223.4.18GetValues	620
25.223.4.19Key	621

25.223.4.2New	621
25.223.4.2Print	621
25.223.4.2ProcessPublicTag	621
25.223.4.2Scan	621
25.223.5Friends And Related Function Documentation	621
25.223.5.1operator<<	621
25.224dcm::Segment Class Reference	621
25.224.1Detailed Description	623
25.224.2Member Typedef Documentation	624
25.224.2.1SurfaceVector	624
25.224.3Member Enumeration Documentation	624
25.224.3.1ALGOType	624
25.224.4Constructor & Destructor Documentation	624
25.224.4.1Segment	624
25.224.4.2~Segment	624
25.224.5Member Function Documentation	624
25.224.5.1AddSurface	624
25.224.5.2GetALGOType	624
25.224.5.3GetALGOTypeString	624
25.224.5.4GetAnatomicRegion	624
25.224.5.5GetAnatomicRegion	624
25.224.5.6GetPropertyCategory	624
25.224.5.7GetPropertyCategory	624
25.224.5.8GetPropertyType	624
25.224.5.9GetPropertyType	624
25.224.5.10GetSegmentAlgorithmName	624
25.224.5.10GetSegmentAlgorithmType	624
25.224.5.10GetSegmentDescription	624
25.224.5.10GetSegmentLabel	624
25.224.5.10GetSegmentNumber	624
25.224.5.10GetSurface	624
25.224.5.10GetSurfaceCount	625
25.224.5.10GetSurfaces	625
25.224.5.10GetSurfaces	625
25.224.5.10SetAnatomicRegion	625
25.224.5.20SetPropertyCategory	625
25.224.5.20SetPropertyType	625

25.224.5.2	SetSegmentAlgorithmName	625
25.224.5.2	SetSegmentAlgorithmType	625
25.224.5.2	SetSegmentAlgorithmType	625
25.224.5.2	SetSegmentDescription	625
25.224.5.2	SetSegmentLabel	625
25.224.5.2	SetSegmentNumber	625
25.224.5.2	SetSurfaceCount	625
25.224.6	Member Data Documentation	625
25.224.6.1	AnatomicRegion	625
25.224.6.2	PropertyCategory	625
25.224.6.3	PropertyType	625
25.224.6.4	SegmentAlgorithmName	625
25.224.6.5	SegmentAlgorithmType	625
25.224.6.6	SegmentDescription	625
25.224.6.7	SegmentLabel	625
25.224.6.8	SegmentNumber	625
25.224.6.9	SurfaceCount	625
25.224.6.10	Surfaces	625
25.225	dcm::SegmentedPaletteColorLookupTable Class Reference	626
25.225.1	Detailed Description	627
25.225.2	Constructor & Destructor Documentation	627
25.225.2.1	SegmentedPaletteColorLookupTable	627
25.225.2.2	~SegmentedPaletteColorLookupTable	627
25.225.3	Member Function Documentation	627
25.225.3.1	Print	627
25.225.3.2	SetLUT	627
25.226	dcm::SegmentReader Class Reference	627
25.226.1	Detailed Description	629
25.226.2	Member Typedef Documentation	629
25.226.2.1	SegmentMap	629
25.226.2.2	SegmentVector	629
25.226.3	Constructor & Destructor Documentation	629
25.226.3.1	SegmentReader	629
25.226.3.2	~SegmentReader	629
25.226.4	Member Function Documentation	629
25.226.4.1	GetSegments	629
25.226.4.2	GetSegments	630

25.226.4.3Read	630
25.226.4.4ReadSegment	630
25.226.4.5ReadSegments	630
25.226.5Member Data Documentation	630
25.226.5.1Segments	630
25.227dcm::SegmentWriter Class Reference	630
25.227.1Detailed Description	631
25.227.2Member Typedef Documentation	632
25.227.2.1SegmentVector	632
25.227.3Constructor & Destructor Documentation	632
25.227.3.1SegmentWriter	632
25.227.3.2~SegmentWriter	632
25.227.4Member Function Documentation	632
25.227.4.1AddSegment	632
25.227.4.2GetNumberOfSegments	632
25.227.4.3GetSegment	632
25.227.4.4GetSegments	632
25.227.4.5GetSegments	632
25.227.4.6PrepareWrite	632
25.227.4.7SetNumberOfSegments	632
25.227.4.8SetSegments	632
25.227.4.9Write	632
25.227.5Member Data Documentation	632
25.227.5.1Segments	632
25.228dcm::SequenceOfFragments Class Reference	632
25.228.1Detailed Description	634
25.228.2Member Typedef Documentation	635
25.228.2.1ConstIterator	635
25.228.2.2FragmentVector	635
25.228.2.3Iterator	635
25.228.2.4SizeType	635
25.228.3Constructor & Destructor Documentation	635
25.228.3.1SequenceOfFragments	635
25.228.4Member Function Documentation	635
25.228.4.1AddFragment	635
25.228.4.2Begin	635
25.228.4.3Begin	635

25.228.4.4	Clear	635
25.228.4.5	ComputeByteLength	635
25.228.4.6	ComputeLength	635
25.228.4.7	End	635
25.228.4.8	End	635
25.228.4.9	GetBuffer	635
25.228.4.10	GetFragBuffer	635
25.228.4.10	GetFragment	636
25.228.4.10	GetLength	636
25.228.4.10	GetNumberOfFragments	636
25.228.4.10	GetTable	636
25.228.4.10	GetTable	636
25.228.4.10	New	636
25.228.4.10	operator==	636
25.228.4.10	Print	636
25.228.4.10	Read	636
25.228.4.20	ReadPreValue	636
25.228.4.20	ReadValue	636
25.228.4.20	SetLength	637
25.228.4.20	Write	637
25.228.4.20	WriteBuffer	637
25.229	gdcmm::SequenceOfItems Class Reference	637
25.229.1	Detailed Description	639
25.229.2	Member Typedef Documentation	640
25.229.2.1	ConstIterator	640
25.229.2.2	ItemVector	640
25.229.2.3	Iterator	640
25.229.2.4	SizeType	640
25.229.3	Constructor & Destructor Documentation	640
25.229.3.1	SequenceOfItems	640
25.229.4	Member Function Documentation	640
25.229.4.1	AddItem	640
25.229.4.2	Begin	640
25.229.4.3	Begin	640
25.229.4.4	Clear	640
25.229.4.5	ComputeLength	640
25.229.4.6	End	640

25.229.4.7End	641
25.229.4.8FindDataElement	641
25.229.4.9GetItem	641
25.229.4.10GetItem	641
25.229.4.11GetLength	641
25.229.4.12GetNumberOfItems	641
25.229.4.13UndefinedLength	641
25.229.4.14New	641
25.229.4.15operator=	641
25.229.4.16operator==	641
25.229.4.17Print	641
25.229.4.18Read	642
25.229.4.19SetLength	642
25.229.4.20SetLengthToUndefined	642
25.229.4.21SetNumberOfItems	642
25.229.4.22Write	642
25.229.5Member Data Documentation	642
25.229.5.1Items	642
25.229.5.2SequenceLengthField	642
25.230dcm::SerieHelper Class Reference	643
25.230.1Detailed Description	644
25.230.2Member Typedef Documentation	644
25.230.2.1SerieRestrictions	644
25.230.2.2SingleSerieUIDFileSetmap	644
25.230.3Constructor & Destructor Documentation	644
25.230.3.1SerieHelper	644
25.230.3.2~SerieHelper	644
25.230.4Member Function Documentation	644
25.230.4.1AddFile	645
25.230.4.2AddFileName	645
25.230.4.3AddRestriction	645
25.230.4.4AddRestriction	645
25.230.4.5AddRestriction	645
25.230.4.6Clear	645
25.230.4.7CreateDefaultUniqueSeriesIdentifier	645
25.230.4.8CreateUniqueSeriesIdentifier	645
25.230.4.9FileNameOrdering	645

25.230.4.10	GetFirstSingleSerieUIDFileSet	645
25.230.4.10	GetNextSingleSerieUIDFileSet	645
25.230.4.10	ImagePositionPatientOrdering	645
25.230.4.10	OrderFileList	645
25.230.4.10	SetDirectory	645
25.230.4.10	SetLoadMode	645
25.230.4.10	SetUseSeriesDetails	645
25.230.4.10	UserOrdering	645
25.230.5	Member Data Documentation	645
25.230.5.1	FileSetHt	645
25.230.5.2	SingleSerieUIDFileSetHT	645
25.230	dcm::Series Class Reference	645
25.231.1	Detailed Description	646
25.231.2	Constructor & Destructor Documentation	646
25.231.2.1	Series	646
25.230	dcm::network::ServiceClassApplicationInformation Class Reference	646
25.232.1	Detailed Description	646
25.232.2	Constructor & Destructor Documentation	646
25.232.2.1	ServiceClassApplicationInformation	646
25.232.3	Member Function Documentation	646
25.232.3.1	Print	646
25.232.3.2	Read	646
25.232.3.3	SetTuple	646
25.232.3.4	Size	647
25.232.3.5	Write	647
25.230	dcm::ServiceClassUser Class Reference	647
25.233.1	Detailed Description	649
25.233.2	Constructor & Destructor Documentation	649
25.233.2.1	ServiceClassUser	649
25.233.2.2	~ServiceClassUser	649
25.233.3	Member Function Documentation	649
25.233.3.1	GetAETitle	649
25.233.3.2	GetCalledAETitle	649
25.233.3.3	GetTimeout	649
25.233.3.4	InitializeConnection	649
25.233.3.5	IsPresentationContextAccepted	650
25.233.3.6	SendEcho	650

25.233.3.7SendFind	650
25.233.3.8SendMove	650
25.233.3.9SendMove	650
25.233.3.10SendMove	650
25.233.3.11SendStore	650
25.233.3.12SendStore	650
25.233.3.13SendStore	650
25.233.3.14SetAETitle	650
25.233.3.15SetCalledAETitle	651
25.233.3.16SetHostname	651
25.233.3.17SetPort	651
25.233.3.18SetPortSCP	651
25.233.3.19SetPresentationContexts	651
25.233.3.20SetTimeout	651
25.233.3.21StartAssociation	651
25.233.3.22StopAssociation	652
25.234dcm::SHA1 Class Reference	652
25.234.1Detailed Description	652
25.234.2Constructor & Destructor Documentation	652
25.234.2.1SHA1	652
25.234.2.2~SHA1	652
25.234.3Member Function Documentation	652
25.234.3.1Compute	652
25.234.3.2ComputeFile	653
25.235dcm::SimpleMemberCommand< T > Class Template Reference	653
25.235.1Detailed Description	655
25.235.2Member Typedef Documentation	655
25.235.2.1Self	655
25.235.2.2TMemberFunctionPointer	655
25.235.3Constructor & Destructor Documentation	655
25.235.3.1SimpleMemberCommand	655
25.235.3.2~SimpleMemberCommand	655
25.235.4Member Function Documentation	655
25.235.4.1Execute	655
25.235.4.2~Execute	655
25.235.4.3New	656
25.235.4.4SetCallbackFunction	656

25.235.5	Member Data Documentation	656
25.235.5.1	m_MemberFunction	656
25.235.5.2	m_This	656
25.236	dcm::SimpleSubjectWatcher Class Reference	656
25.236.1	Detailed Description	657
25.236.2	Constructor & Destructor Documentation	657
25.236.2.1	SimpleSubjectWatcher	657
25.236.2.2	~SimpleSubjectWatcher	657
25.236.3	Member Function Documentation	657
25.236.3.1	EndFilter	657
25.236.3.2	ShowAbort	657
25.236.3.3	ShowAnonymization	657
25.236.3.4	ShowData	657
25.236.3.5	ShowDataSet	657
25.236.3.6	ShowIteration	657
25.236.3.7	ShowProgress	657
25.236.3.8	StartFilter	657
25.236.3.9	TestAbortOff	657
25.236.3.10	TestAbortOn	657
25.237	dcm::SmartPointer< ObjectType > Class Template Reference	658
25.237.1	Detailed Description	659
25.237.2	Constructor & Destructor Documentation	659
25.237.2.1	SmartPointer	659
25.237.2.2	SmartPointer	659
25.237.2.3	SmartPointer	659
25.237.2.4	SmartPointer	659
25.237.2.5	~SmartPointer	660
25.237.3	Member Function Documentation	660
25.237.3.1	GetPointer	660
25.237.3.2	operator ObjectType *	660
25.237.3.3	operator*	660
25.237.3.4	operator->	660
25.237.3.5	operator=	660
25.237.3.6	operator=	660
25.237.3.7	operator=	660
25.238	dcm::network::SOPClassExtendedNegotiationSub Class Reference	660
25.238.1	Detailed Description	661

25.238.2	Constructor & Destructor Documentation	661
25.238.2.1	SOPClassExtendedNegociationSub	661
25.238.3	Member Function Documentation	661
25.238.3.1	Print	661
25.238.3.2	Read	661
25.238.3.3	SetTuple	661
25.238.3.4	Size	661
25.238.3.5	Write	661
25.239	gdcm::SOPClassUIDToIOD Class Reference	661
25.239.1	Detailed Description	662
25.239.2	Member Typedef Documentation	662
25.239.2.1	const	662
25.239.3	Member Function Documentation	662
25.239.3.1	GetIOD	662
25.239.3.2	GetIODFromSOPClassUID	662
25.239.3.3	GetNumberOfSOPClassToIOD	662
25.239.3.4	GetSOPClassUIDFromIOD	662
25.239.3.5	GetSOPClassUIDToIOD	662
25.239.3.6	GetSOPClassUIDToIODs	662
25.240	gdcm::Sorter Class Reference	662
25.240.1	Detailed Description	664
25.240.2	Member Typedef Documentation	664
25.240.2.1	SelectionMap	664
25.240.2.2	SortFunction	664
25.240.3	Constructor & Destructor Documentation	665
25.240.3.1	Sorter	665
25.240.3.2	~Sorter	665
25.240.4	Member Function Documentation	665
25.240.4.1	AddSelect	665
25.240.4.2	GetFileNames	665
25.240.4.3	Print	665
25.240.4.4	SetSortFunction	665
25.240.4.5	Sort	665
25.240.4.6	StableSort	665
25.240.5	Friends And Related Function Documentation	666
25.240.5.1	operator<<	666
25.240.6	Member Data Documentation	666

25.240.6.1	FileNames	666
25.240.6.2	Selection	666
25.240.6.3	SortFunc	666
25.241	dcm::Spacing Class Reference	666
25.241.1	Detailed Description	666
25.241.2	Member Enumeration Documentation	667
25.241.2.1	SpacingType	667
25.241.3	Constructor & Destructor Documentation	667
25.241.3.1	Spacing	667
25.241.3.2	~Spacing	667
25.241.4	Member Function Documentation	667
25.241.4.1	ComputePixelAspectRatioFromPixelSpacing	668
25.242	dcm::Spectroscopy Class Reference	668
25.242.1	Detailed Description	668
25.242.2	Constructor & Destructor Documentation	668
25.242.2.1	Spectroscopy	668
25.243	dcm::SplitMosaicFilter Class Reference	668
25.243.1	Detailed Description	669
25.243.2	Constructor & Destructor Documentation	669
25.243.2.1	SplitMosaicFilter	669
25.243.2.2	~SplitMosaicFilter	669
25.243.3	Member Function Documentation	669
25.243.3.1	ComputeMOSAICDimensions	669
25.243.3.2	GetFile	669
25.243.3.3	GetFile	669
25.243.3.4	GetImage	669
25.243.3.5	GetImage	669
25.243.3.6	SetFile	669
25.243.3.7	SetImage	669
25.243.3.8	Split	669
25.244	dcm::StartEvent Class Reference	669
25.245	dcm::static_assert_test< x > Struct Template Reference	671
25.246	dcm::STATIC_ASSERTION_FAILURE< x > Struct Template Reference	671
25.247	dcm::STATIC_ASSERTION_FAILURE< true > Struct Template Reference	671
25.247.1	Member Enumeration Documentation	671
25.247.1.1	anonymous enum	671
25.248	dcm::StreamImageReader Class Reference	671

25.248.1Detailed Description	672
25.248.2Constructor & Destructor Documentation	672
25.248.2.1StreamImageReader	672
25.248.2.2~StreamImageReader	672
25.248.3Member Function Documentation	672
25.248.3.1CanReadImage	672
25.248.3.2DefinePixelExtent	672
25.248.3.3DefineProperBufferLength	673
25.248.3.4GetDimensionsValueForResolution	673
25.248.3.5GetFile	673
25.248.3.6Read	673
25.248.3.7ReadImageInformation	673
25.248.3.8SetFileName	674
25.248.3.9SetStream	674
25.249dcm::StreamImageWriter Class Reference	674
25.249.1Detailed Description	676
25.249.2Constructor & Destructor Documentation	676
25.249.2.1StreamImageWriter	676
25.249.2.2~StreamImageWriter	676
25.249.3Member Function Documentation	677
25.249.3.1CanWriteFile	677
25.249.3.2DefinePixelExtent	677
25.249.3.3DefineProperBufferLength	677
25.249.3.4SetFile	677
25.249.3.5SetFileName	677
25.249.3.6SetStream	677
25.249.3.7Write	678
25.249.3.8WriteImageInformation	678
25.249.3.9WriteImageSubregionRAW	678
25.249.3.10WriteRawHeader	678
25.249.4Member Data Documentation	678
25.249.4.1mElementOffsets	678
25.249.4.2mElementOffsets1	679
25.249.4.3mspFile	679
25.249.4.4mWriter	679
25.249.4.5mXMax	679
25.249.4.6mXMin	679

25.249.4.7mYMax	679
25.249.4.8mYMin	679
25.249.4.9mZMax	679
25.249.4.10mZMin	679
25.250dcm::String< TDelimiter, TMaxLength, TPadChar > Class Template Reference	679
25.250.1Detailed Description	681
25.250.2Member Typedef Documentation	681
25.250.2.1const_iterator	681
25.250.2.2const_reference	681
25.250.2.3const_reverse_iterator	681
25.250.2.4difference_type	681
25.250.2.5iterator	681
25.250.2.6pointer	681
25.250.2.7reference	681
25.250.2.8reverse_iterator	681
25.250.2.9size_type	681
25.250.2.10value_type	682
25.250.3Constructor & Destructor Documentation	682
25.250.3.1String	682
25.250.3.2String	682
25.250.3.3String	682
25.250.3.4String	682
25.250.4Member Function Documentation	682
25.250.4.1IsValid	682
25.250.4.2operator const char *	682
25.250.4.3Trim	682
25.250.4.4Trim	682
25.250.4.5Truncate	682
25.251dcm::StringFilter Class Reference	683
25.251.1Detailed Description	683
25.251.2Constructor & Destructor Documentation	683
25.251.2.1StringFilter	683
25.251.2.2~StringFilter	683
25.251.3Member Function Documentation	683
25.251.3.1ExecuteQuery	684
25.251.3.2ExecuteQuery	684
25.251.3.3FromString	684

25.251.3.4	FromString	. . . . .	684
25.251.3.5	GetFile	. . . . .	684
25.251.3.6	GetFile	. . . . .	684
25.251.3.7	SetDicts	. . . . .	684
25.251.3.8	SetFile	. . . . .	684
25.251.3.9	ToString	. . . . .	684
25.251.3.10	ToStringPair	. . . . .	684
25.251.3.11	ToStringPair	. . . . .	685
25.251.3.12	UseDictAlways	. . . . .	685
25.252	dcm::Study Class Reference	. . . . .	685
25.252.1	Detailed Description	. . . . .	685
25.252.2	Constructor & Destructor Documentation	. . . . .	685
25.252.2.1	Study	. . . . .	685
25.253	dcm::Subject Class Reference	. . . . .	685
25.253.1	Detailed Description	. . . . .	686
25.253.2	Constructor & Destructor Documentation	. . . . .	687
25.253.2.1	Subject	. . . . .	687
25.253.2.2	~Subject	. . . . .	687
25.253.3	Member Function Documentation	. . . . .	687
25.253.3.1	AddObserver	. . . . .	687
25.253.3.2	AddObserver	. . . . .	687
25.253.3.3	GetCommand	. . . . .	687
25.253.3.4	HasObserver	. . . . .	687
25.253.3.5	InvokeEvent	. . . . .	687
25.253.3.6	InvokeEvent	. . . . .	687
25.253.3.7	RemoveAllObservers	. . . . .	687
25.253.3.8	RemoveObserver	. . . . .	687
25.254	dcm::Surface Class Reference	. . . . .	688
25.254.1	Detailed Description	. . . . .	690
25.254.2	Member Enumeration Documentation	. . . . .	691
25.254.2.1	STATES	. . . . .	691
25.254.2.2	VIEWType	. . . . .	691
25.254.3	Constructor & Destructor Documentation	. . . . .	691
25.254.3.1	Surface	. . . . .	691
25.254.3.2	~Surface	. . . . .	691
25.254.4	Member Function Documentation	. . . . .	691
25.254.4.1	GetAlgorithmFamily	. . . . .	691

25.254.4.2GetAlgorithmFamily	691
25.254.4.3GetAlgorithmName	691
25.254.4.4GetAlgorithmVersion	691
25.254.4.5GetAxisOfRotation	691
25.254.4.6GetCenterOfRotation	692
25.254.4.7GetFiniteVolume	692
25.254.4.8GetManifold	692
25.254.4.9GetMaximumPointDistance	692
25.254.4.10GetMeanPointDistance	692
25.254.4.10GetMeshPrimitive	692
25.254.4.10GetMeshPrimitive	692
25.254.4.10GetNumberOfSurfacePoints	692
25.254.4.10GetNumberOfVectors	692
25.254.4.10GetPointCoordinatesData	692
25.254.4.10GetPointCoordinatesData	692
25.254.4.10GetPointPositionAccuracy	692
25.254.4.10GetPointsBoundingBoxCoordinates	692
25.254.4.10GetProcessingAlgorithm	692
25.254.4.20GetProcessingAlgorithm	692
25.254.4.20GetRecommendedDisplayCIELabValue	692
25.254.4.20GetRecommendedDisplayCIELabValue	692
25.254.4.23GetRecommendedDisplayGrayscaleValue	692
25.254.4.23GetRecommendedPresentationOpacity	692
25.254.4.25GetRecommendedPresentationType	693
25.254.4.26GetSTATES	693
25.254.4.27GetSTATESString	693
25.254.4.28GetSurfaceComments	693
25.254.4.29GetSurfaceNumber	693
25.254.4.30GetSurfaceProcessing	693
25.254.4.30GetSurfaceProcessingDescription	693
25.254.4.30GetSurfaceProcessingRatio	693
25.254.4.33GetVectorAccuracy	693
25.254.4.33GetVectorCoordinateData	693
25.254.4.35GetVectorCoordinateData	693
25.254.4.36GetVectorDimensionality	693
25.254.4.37GetVIEWType	693
25.254.4.38GetVIEWTypeString	693

25.254.4.39	SetAlgorithmFamily	693
25.254.4.40	SetAlgorithmName	693
25.254.4.41	SetAlgorithmVersion	693
25.254.4.42	SetAxisOfRotation	693
25.254.4.43	SetCenterOfRotation	693
25.254.4.44	SetFiniteVolume	693
25.254.4.45	SetManifold	693
25.254.4.46	SetMaximumPointDistance	693
25.254.4.47	SetMeanPointDistance	693
25.254.4.48	SetMeshPrimitive	693
25.254.4.49	SetNumberOfSurfacePoints	693
25.254.4.50	SetNumberOfVectors	693
25.254.4.51	SetPointCoordinatesData	694
25.254.4.52	SetPointPositionAccuracy	694
25.254.4.53	SetPointsBoundingBoxCoordinates	694
25.254.4.54	SetProcessingAlgorithm	694
25.254.4.55	SetRecommendedDisplayCIELabValue	694
25.254.4.56	SetRecommendedDisplayCIELabValue	694
25.254.4.57	SetRecommendedDisplayCIELabValue	694
25.254.4.58	SetRecommendedDisplayGrayscaleValue	694
25.254.4.59	SetRecommendedPresentationOpacity	694
25.254.4.60	SetRecommendedPresentationType	694
25.254.4.61	SetSurfaceComments	694
25.254.4.62	SetSurfaceNumber	694
25.254.4.63	SetSurfaceProcessing	694
25.254.4.64	SetSurfaceProcessingDescription	694
25.254.4.65	SetSurfaceProcessingRatio	694
25.254.4.66	SetVectorAccuracy	694
25.254.4.67	SetVectorCoordinateData	694
25.254.4.68	SetVectorDimensionality	694
25.255	dcm::SurfaceHelper Class Reference	694
25.255.1	Detailed Description	695
25.255.2	Member Typedef Documentation	695
25.255.2.1	ColorArray	695
25.255.3	Member Function Documentation	695
25.255.3.1	RecommendedDisplayCIELabToRGB	695
25.255.3.2	RecommendedDisplayCIELabToRGB	696

25.255.3.3RecommendedDisplayCIELabToRGB	696
25.255.3.4RecommendedDisplayCIELabToRGB	696
25.255.3.5RGBToRecommendedDisplayCIELab	696
25.255.3.6RGBToRecommendedDisplayCIELab	697
25.255.3.7RGBToRecommendedDisplayGrayscale	697
25.255.3.8RGBToRecommendedDisplayGrayscale	697
25.256dcm::SurfaceReader Class Reference	697
25.256.1Detailed Description	699
25.256.2Constructor & Destructor Documentation	699
25.256.2.1SurfaceReader	699
25.256.2.2~SurfaceReader	699
25.256.3Member Function Documentation	699
25.256.3.1GetNumberOfSurfaces	699
25.256.3.2Read	699
25.256.3.3ReadPointMacro	699
25.256.3.4ReadSurface	699
25.256.3.5ReadSurfaces	699
25.257dcm::SurfaceWriter Class Reference	700
25.257.1Detailed Description	701
25.257.2Constructor & Destructor Documentation	701
25.257.2.1SurfaceWriter	701
25.257.2.2~SurfaceWriter	701
25.257.3Member Function Documentation	701
25.257.3.1ComputeNumberOfSurfaces	701
25.257.3.2GetNumberOfSurfaces	701
25.257.3.3PrepareWrite	701
25.257.3.4PrepareWritePointMacro	701
25.257.3.5SetNumberOfSurfaces	701
25.257.3.6Write	701
25.257.4Member Data Documentation	701
25.257.4.1NumberOfSurfaces	701
25.258dcm::SwapCode Class Reference	701
25.258.1Detailed Description	702
25.258.2Member Enumeration Documentation	702
25.258.2.1SwapCodeType	702
25.258.3Constructor & Destructor Documentation	703
25.258.3.1SwapCode	703

25.258.4	Member Function Documentation	703
25.258.4.1	GetIndex	703
25.258.4.2	GetSwapCodeString	703
25.258.4.3	operator SwapCode::SwapCodeType	703
25.258.5	Friends And Related Function Documentation	703
25.258.5.1	operator<<	703
25.259	dcm::SwapperDoOp Class Reference	703
25.259.1	Member Function Documentation	703
25.259.1.1	Swap	703
25.259.1.2	SwapArray	703
25.260	dcm::SwapperNoOp Class Reference	704
25.260.1	Detailed Description	704
25.260.2	Member Function Documentation	704
25.260.2.1	Swap	704
25.260.2.2	SwapArray	704
25.261	dcm::System Class Reference	704
25.261.1	Detailed Description	705
25.261.2	Member Function Documentation	705
25.261.2.1	DeleteDirectory	705
25.261.2.2	EncodeBytes	705
25.261.2.3	FileExists	706
25.261.2.4	FilesDirectory	706
25.261.2.5	FilesSymlink	706
25.261.2.6	FileSize	706
25.261.2.7	FileTime	706
25.261.2.8	FormatDateTime	706
25.261.2.9	GetCurrentDateTime	706
25.261.2.10	GetCurrentModuleFileName	707
25.261.2.11	GetCurrentProcessFileName	707
25.261.2.12	GetCurrentResourcesDirectory	707
25.261.2.13	GetCWD	707
25.261.2.14	GetHostName	707
25.261.2.15	GetLastSystemError	707
25.261.2.16	GetLocaleCharset	707
25.261.2.17	GetPermissions	707
25.261.2.18	GetTimezoneOffsetFromUTC	707
25.261.2.19	MakeDirectory	707

25.261.2.20	ParseDateTime	. . . . .	708
25.261.2.21	ParseDateTime	. . . . .	708
25.261.2.22	RemoveFile	. . . . .	708
25.261.2.23	SetPermissions	. . . . .	708
25.261.2.24	StrCaseCmp	. . . . .	708
25.261.2.25	StrNCaseCmp	. . . . .	708
25.261.2.26	StrTokR	. . . . .	708
25.262	dcm::Table Class Reference	. . . . .	708
25.262.1	Detailed Description	. . . . .	709
25.262.2	Member Typedef Documentation	. . . . .	709
25.262.2.1	MapTableEntry	. . . . .	709
25.262.3	Constructor & Destructor Documentation	. . . . .	709
25.262.3.1	Table	. . . . .	709
25.262.3.2	~Table	. . . . .	709
25.262.4	Member Function Documentation	. . . . .	709
25.262.4.1	GetTableEntry	. . . . .	709
25.262.4.2	InsertEntry	. . . . .	709
25.262.5	Friends And Related Function Documentation	. . . . .	709
25.262.5.1	operator<<	. . . . .	709
25.263	dcm::TableEntry Class Reference	. . . . .	709
25.263.1	Detailed Description	. . . . .	710
25.263.2	Constructor & Destructor Documentation	. . . . .	710
25.263.2.1	TableEntry	. . . . .	710
25.263.2.2	~TableEntry	. . . . .	710
25.264	dcm::TableReader Class Reference	. . . . .	710
25.264.1	Detailed Description	. . . . .	711
25.264.2	Constructor & Destructor Documentation	. . . . .	711
25.264.2.1	TableReader	. . . . .	711
25.264.2.2	~TableReader	. . . . .	711
25.264.3	Member Function Documentation	. . . . .	711
25.264.3.1	CharacterDataHandler	. . . . .	711
25.264.3.2	EndElement	. . . . .	711
25.264.3.3	GetDefs	. . . . .	711
25.264.3.4	GetFilename	. . . . .	711
25.264.3.5	HandleIOD	. . . . .	711
25.264.3.6	HandleIODEntry	. . . . .	711
25.264.3.7	HandleMacro	. . . . .	711

25.264.3.8	HandleMacroEntry	. . . . .	711
25.264.3.9	HandleMacroEntryDescription	. . . . .	711
25.264.3.10	HandleModule	. . . . .	711
25.264.3.11	HandleModuleEntry	. . . . .	711
25.264.3.12	HandleModuleEntryDescription	. . . . .	712
25.264.3.13	HandleModuleInclude	. . . . .	712
25.264.3.14	Read	. . . . .	712
25.264.3.15	SetFilename	. . . . .	712
25.264.3.16	StartElement	. . . . .	712
25.265	dcm::network::TableRow Class Reference	. . . . .	712
25.265.1	Constructor & Destructor Documentation	. . . . .	713
25.265.1.1	TableRow	. . . . .	713
25.265.1.2	~TableRow	. . . . .	713
25.265.2	Member Data Documentation	. . . . .	713
25.265.2.1	transitions	. . . . .	713
25.266	dcm::Tag Class Reference	. . . . .	713
25.266.1	Detailed Description	. . . . .	715
25.266.2	Constructor & Destructor Documentation	. . . . .	715
25.266.2.1	Tag	. . . . .	715
25.266.2.2	Tag	. . . . .	715
25.266.2.3	Tag	. . . . .	715
25.266.3	Member Function Documentation	. . . . .	715
25.266.3.1	GetElement	. . . . .	715
25.266.3.2	GetElementTag	. . . . .	716
25.266.3.3	GetGroup	. . . . .	716
25.266.3.4	GetLength	. . . . .	716
25.266.3.5	GetPrivateCreator	. . . . .	716
25.266.3.6	IsGroupLength	. . . . .	716
25.266.3.7	IsGroupXX	. . . . .	716
25.266.3.8	IsIllegal	. . . . .	716
25.266.3.9	IsPrivate	. . . . .	716
25.266.3.10	IsPrivateCreator	. . . . .	717
25.266.3.11	IsPublic	. . . . .	717
25.266.3.12	operator!=	. . . . .	717
25.266.3.13	operator<	. . . . .	717
25.266.3.14	operator<=	. . . . .	717
25.266.3.15	operator=	. . . . .	717

25.266.3.1operator==	717
25.266.3.1operator[]	717
25.266.3.1operator[]	717
25.266.3.1PrintAsPipeSeparatedString	718
25.266.3.2Read	718
25.266.3.2ReadFromCommaSeparatedString	718
25.266.3.2ReadFromPipeSeparatedString	718
25.266.3.2SetElement	718
25.266.3.2SetElementTag	718
25.266.3.2SetElementTag	718
25.266.3.2SetGroup	718
25.266.3.2SetPrivateCreator	719
25.266.3.2Write	719
25.266.4Friends And Related Function Documentation	719
25.266.4.1operator<<	719
25.266.4.2operator>>	719
25.266.5Member Data Documentation	719
25.266.5.1bytes	719
25.266.5.2tag	719
25.266.5.3tags	719
25.267dcm::TagPath Class Reference	719
25.267.1Detailed Description	720
25.267.2Constructor & Destructor Documentation	720
25.267.2.1TagPath	720
25.267.2.2~TagPath	720
25.267.3Member Function Documentation	720
25.267.3.1ConstructFromString	720
25.267.3.2ConstructFromTagList	720
25.267.3.3IsValid	720
25.267.3.4Print	720
25.267.3.5Push	720
25.267.3.6Push	720
25.268dcm::Testing Class Reference	721
25.268.1Detailed Description	722
25.268.2Member Typedef Documentation	722
25.268.2.1MD5DataImagesType	722
25.268.2.2MediaStorageDataFilesType	722

25.268.3	Constructor & Destructor Documentation	722
25.268.3.1	Testing	722
25.268.3.2	~Testing	722
25.268.4	Member Function Documentation	722
25.268.4.1	ComputeFileMD5	722
25.268.4.2	ComputeMD5	722
25.268.4.3	GetDataExtraRoot	722
25.268.4.4	GetDataRoot	723
25.268.4.5	GetFileName	723
25.268.4.6	GetFileNames	723
25.268.4.7	GetLossyFlagFromFile	723
25.268.4.8	GetMD5DataImage	723
25.268.4.9	GetMD5DataImages	723
25.268.4.10	GetMD5FromBrokenFile	723
25.268.4.11	GetMD5FromFile	723
25.268.4.12	GetMediaStorageDataFile	723
25.268.4.13	GetMediaStorageDataFiles	723
25.268.4.14	GetMediaStorageFromFile	723
25.268.4.15	GetNumberOfFileNames	723
25.268.4.16	GetNumberOfMD5DataImages	723
25.268.4.17	GetNumberOfMediaStorageDataFiles	724
25.268.4.18	GetPixelSpacingDataRoot	724
25.268.4.19	GetSelectedTagsOffsetFromFile	724
25.268.4.20	GetSourceDirectory	724
25.268.4.21	GetStreamOffsetFromFile	724
25.268.4.22	GetTempDirectory	724
25.268.4.23	GetTempDirectoryW	724
25.268.4.24	GetTempFilename	724
25.268.4.25	GetTempFilenameW	724
25.268.4.26	Print	724
25.269	dcmm::Trace Class Reference	724
25.269.1	Detailed Description	725
25.269.2	Constructor & Destructor Documentation	726
25.269.2.1	Trace	726
25.269.2.2	~Trace	726
25.269.3	Member Function Documentation	726
25.269.3.1	DebugOff	726

25.269.3.2	DebugOn	. 726
25.269.3.3	ErrorOff	. 726
25.269.3.4	ErrorOn	. 726
25.269.3.5	GetDebugFlag	. 726
25.269.3.6	GetDebugStream	. 726
25.269.3.7	GetErrorFlag	. 726
25.269.3.8	GetErrorStream	. 726
25.269.3.9	GetStream	. 726
25.269.3.10	GetWarningFlag	. 726
25.269.3.10	GetWarningStream	. 726
25.269.3.12	SetDebug	. 726
25.269.3.13	SetDebugStream	. 726
25.269.3.13	SetError	. 727
25.269.3.13	SetErrorStream	. 727
25.269.3.13	SetStream	. 727
25.269.3.13	SetStreamToFile	. 727
25.269.3.13	SetWarning	. 727
25.269.3.13	SetWarningStream	. 727
25.269.3.20	WarningOff	. 727
25.269.3.20	WarningOn	. 727
25.270	dcm::TransferSyntax Class Reference	. 728
25.270.1	Detailed Description	. 729
25.270.2	Member Enumeration Documentation	. 729
25.270.2.1	NegotiatedType	. 729
25.270.2.2	TSType	. 729
25.270.3	Constructor & Destructor Documentation	. 730
25.270.3.1	TransferSyntax	. 730
25.270.4	Member Function Documentation	. 730
25.270.4.1	CanStoreLossy	. 730
25.270.4.2	GetNegotiatedType	. 730
25.270.4.3	GetString	. 730
25.270.4.4	GetSwapCode	. 730
25.270.4.5	GetTSString	. 731
25.270.4.6	GetTSType	. 731
25.270.4.7	IsEncapsulated	. 731
25.270.4.8	IsEncoded	. 731
25.270.4.9	IsExplicit	. 731

25.270.4.10Implicit	731
25.270.4.11Lossless	731
25.270.4.12Lossy	731
25.270.4.13Valid	731
25.270.4.14operator TType	731
25.270.5Friends And Related Function Documentation	731
25.270.5.1operator<<	731
25.271dcm::network::TransferSyntaxSub Class Reference	731
25.271.1Detailed Description	732
25.271.2Constructor & Destructor Documentation	732
25.271.2.1TransferSyntaxSub	732
25.271.3Member Function Documentation	732
25.271.3.1GetName	732
25.271.3.2operator==	732
25.271.3.3Print	732
25.271.3.4Read	732
25.271.3.5SetName	732
25.271.3.6SetNameFromUID	732
25.271.3.7Size	732
25.271.3.8Write	732
25.272dcm::network::Transition Struct Reference	732
25.272.1Constructor & Destructor Documentation	733
25.272.1.1Transition	733
25.272.1.2~Transition	733
25.272.1.3Transition	733
25.272.2Member Function Documentation	734
25.272.2.1MakeNew	734
25.272.3Member Data Documentation	734
25.272.3.1mAction	734
25.272.3.2mEnd	734
25.273dcm::Type Class Reference	734
25.273.1Detailed Description	735
25.273.2Member Enumeration Documentation	735
25.273.2.1TypeType	735
25.273.3Constructor & Destructor Documentation	735
25.273.3.1Type	735
25.273.4Member Function Documentation	735

25.273.4.1	GetTypeString	735
25.273.4.2	GetTypeType	735
25.273.4.3	operator TypeType	736
25.273.5	Friends And Related Function Documentation	736
25.273.5.1	operator <<	736
25.274	dcm::UI Struct Reference	736
25.274.1	Friends And Related Function Documentation	736
25.274.1.1	operator <<	736
25.274.2	Member Data Documentation	736
25.274.2.1	Internal	736
25.275	dcm::UIDGenerator Class Reference	736
25.275.1	Detailed Description	737
25.275.2	Constructor & Destructor Documentation	737
25.275.2.1	UIDGenerator	737
25.275.3	Member Function Documentation	737
25.275.3.1	Generate	737
25.275.3.2	GenerateUUID	737
25.275.3.3	GetGDCMUID	737
25.275.3.4	GetRoot	738
25.275.3.5	IsValid	738
25.275.3.6	SetRoot	738
25.276	dcm::UIDs Class Reference	738
25.276.1	Detailed Description	743
25.276.2	Member Typedef Documentation	743
25.276.2.1	TransferSyntaxStringsType	743
25.276.3	Member Enumeration Documentation	743
25.276.3.1	TSName	743
25.276.3.2	TSType	750
25.276.4	Member Function Documentation	756
25.276.4.1	GetName	756
25.276.4.2	GetNumberOfTransferSyntaxStrings	757
25.276.4.3	GetString	757
25.276.4.4	GetTransferSyntaxString	757
25.276.4.5	GetTransferSyntaxStrings	757
25.276.4.6	GetUIDName	757
25.276.4.7	GetUIDString	757
25.276.4.8	operator TSType	757

25.276.4.9	SetFromUID	. 757
25.277	dcm::network::ULAction Class Reference	. 757
25.277.1	Detailed Description	. 759
25.277.2	Constructor & Destructor Documentation	. 759
25.277.2.1	ULAction	. 759
25.277.2.2	~ULAction	. 759
25.277.3	Member Function Documentation	. 759
25.277.3.1	PerformAction	. 759
25.278	dcm::network::ULActionAA1 Class Reference	. 760
25.278.1	Member Function Documentation	. 760
25.278.1.1	PerformAction	. 760
25.279	dcm::network::ULActionAA2 Class Reference	. 761
25.279.1	Member Function Documentation	. 761
25.279.1.1	PerformAction	. 762
25.280	dcm::network::ULActionAA3 Class Reference	. 762
25.280.1	Member Function Documentation	. 763
25.280.1.1	PerformAction	. 763
25.281	dcm::network::ULActionAA4 Class Reference	. 763
25.281.1	Member Function Documentation	. 764
25.281.1.1	PerformAction	. 764
25.282	dcm::network::ULActionAA5 Class Reference	. 764
25.282.1	Member Function Documentation	. 765
25.282.1.1	PerformAction	. 765
25.283	dcm::network::ULActionAA6 Class Reference	. 765
25.283.1	Member Function Documentation	. 766
25.283.1.1	PerformAction	. 766
25.284	dcm::network::ULActionAA7 Class Reference	. 767
25.284.1	Member Function Documentation	. 767
25.284.1.1	PerformAction	. 767
25.285	dcm::network::ULActionAA8 Class Reference	. 768
25.285.1	Member Function Documentation	. 768
25.285.1.1	PerformAction	. 769
25.286	dcm::network::ULActionAE1 Class Reference	. 769
25.286.1	Member Function Documentation	. 770
25.286.1.1	PerformAction	. 770
25.287	dcm::network::ULActionAE2 Class Reference	. 770
25.287.1	Member Function Documentation	. 771

25.287.1.1PerformAction	771
25.288dcm::network::ULActionAE3 Class Reference	771
25.288.1Member Function Documentation	772
25.288.1.1PerformAction	772
25.289dcm::network::ULActionAE4 Class Reference	772
25.289.1Member Function Documentation	773
25.289.1.1PerformAction	773
25.290dcm::network::ULActionAE5 Class Reference	774
25.290.1Member Function Documentation	774
25.290.1.1PerformAction	774
25.291dcm::network::ULActionAE6 Class Reference	775
25.291.1Member Function Documentation	775
25.291.1.1PerformAction	776
25.292dcm::network::ULActionAE7 Class Reference	776
25.292.1Member Function Documentation	777
25.292.1.1PerformAction	777
25.293dcm::network::ULActionAE8 Class Reference	777
25.293.1Member Function Documentation	778
25.293.1.1PerformAction	778
25.294dcm::network::ULActionAR1 Class Reference	778
25.294.1Member Function Documentation	779
25.294.1.1PerformAction	779
25.295dcm::network::ULActionAR10 Class Reference	779
25.295.1Member Function Documentation	780
25.295.1.1PerformAction	780
25.296dcm::network::ULActionAR2 Class Reference	781
25.296.1Member Function Documentation	781
25.296.1.1PerformAction	781
25.297dcm::network::ULActionAR3 Class Reference	782
25.297.1Member Function Documentation	782
25.297.1.1PerformAction	783
25.298dcm::network::ULActionAR4 Class Reference	783
25.298.1Member Function Documentation	784
25.298.1.1PerformAction	784
25.299dcm::network::ULActionAR5 Class Reference	784
25.299.1Member Function Documentation	785
25.299.1.1PerformAction	785

25.300	dcm::network::ULActionAR6 Class Reference	785
25.300.1	Member Function Documentation	786
25.300.1.1	PerformAction	786
25.301	dcm::network::ULActionAR7 Class Reference	786
25.301.1	Member Function Documentation	787
25.301.1.1	PerformAction	787
25.302	dcm::network::ULActionAR8 Class Reference	788
25.302.1	Member Function Documentation	788
25.302.1.1	PerformAction	788
25.303	dcm::network::ULActionAR9 Class Reference	789
25.303.1	Member Function Documentation	789
25.303.1.1	PerformAction	790
25.304	dcm::network::ULActionDT1 Class Reference	790
25.304.1	Member Function Documentation	791
25.304.1.1	PerformAction	791
25.305	dcm::network::ULActionDT2 Class Reference	791
25.305.1	Member Function Documentation	792
25.305.1.1	PerformAction	792
25.306	dcm::network::ULBasicCallback Class Reference	792
25.306.1	Detailed Description	793
25.306.2	Constructor & Destructor Documentation	793
25.306.2.1	ULBasicCallback	793
25.306.2.2	~ULBasicCallback	793
25.306.3	Member Function Documentation	793
25.306.3.1	GetDataSets	793
25.306.3.2	GetResponses	793
25.306.3.3	HandleDataSet	794
25.306.3.4	HandleResponse	794
25.307	dcm::network::ULConnection Class Reference	794
25.307.1	Detailed Description	795
25.307.2	Constructor & Destructor Documentation	795
25.307.2.1	ULConnection	795
25.307.2.2	~ULConnection	795
25.307.3	Member Function Documentation	795
25.307.3.1	AddAcceptedPresentationContext	795
25.307.3.2	FindContext	795
25.307.3.3	GetAcceptedPresentationContexts	795

25.307.3.4	GetAcceptedPresentationContexts	. . . . .	795
25.307.3.5	GetConnectionInfo	. . . . .	795
25.307.3.6	GetMaxPDUSize	. . . . .	795
25.307.3.7	GetPresentationContextACByID	. . . . .	795
25.307.3.8	GetPresentationContextIDFromPresentationContext	. . . . .	795
25.307.3.9	GetPresentationContextRQByID	. . . . .	795
25.307.3.10	GetPresentationContexts	. . . . .	795
25.307.3.10	GetProtocol	. . . . .	795
25.307.3.10	GetState	. . . . .	795
25.307.3.10	GetTimer	. . . . .	796
25.307.3.11	InitializeConnection	. . . . .	796
25.307.3.11	InitializeIncomingConnection	. . . . .	796
25.307.3.11	SetMaxPDUSize	. . . . .	796
25.307.3.11	SetPresentationContexts	. . . . .	796
25.307.3.11	SetPresentationContexts	. . . . .	796
25.307.3.11	SetState	. . . . .	796
25.307.3.11	StopProtocol	. . . . .	796
25.308	dcm::network::ULConnectionCallback Class Reference	. . . . .	796
25.308.1	Detailed Description	. . . . .	797
25.308.2	Constructor & Destructor Documentation	. . . . .	797
25.308.2.1	ULConnectionCallback	. . . . .	797
25.308.2.2	~ULConnectionCallback	. . . . .	797
25.308.3	Member Function Documentation	. . . . .	797
25.308.3.1	DataSetHandled	. . . . .	797
25.308.3.2	DataSetHandles	. . . . .	797
25.308.3.3	HandleDataSet	. . . . .	797
25.308.3.4	HandleResponse	. . . . .	797
25.308.3.5	ResetHandledDataSet	. . . . .	797
25.309	dcm::network::ULConnectionInfo Class Reference	. . . . .	798
25.309.1	Detailed Description	. . . . .	798
25.309.2	Constructor & Destructor Documentation	. . . . .	798
25.309.2.1	ULConnectionInfo	. . . . .	798
25.309.3	Member Function Documentation	. . . . .	798
25.309.3.1	GetCalledAETitle	. . . . .	798
25.309.3.2	GetCalledComputerName	. . . . .	798
25.309.3.3	GetCalledIPAddress	. . . . .	798
25.309.3.4	GetCalledIPPort	. . . . .	798

25.309.3.5GetCallingAETitle	798
25.309.3.6GetMaxPDULength	798
25.309.3.7Initialize	798
25.309.3.8SetMaxPDULength	799
25.310dcm::network::ULConnectionManager Class Reference	799
25.310.1Detailed Description	801
25.310.2Constructor & Destructor Documentation	801
25.310.2.1ULConnectionManager	801
25.310.2.2~ULConnectionManager	801
25.310.3Member Function Documentation	801
25.310.3.1BreakConnection	801
25.310.3.2BreakConnectionNow	801
25.310.3.3EstablishConnection	801
25.310.3.4EstablishConnectionMove	801
25.310.3.5SendEcho	801
25.310.3.6SendFind	801
25.310.3.7SendFind	801
25.310.3.8SendMove	801
25.310.3.9SendMove	801
25.310.3.10SendStore	801
25.310.3.11SendStore	802
25.311dcm::network::ULEvent Class Reference	802
25.311.1Detailed Description	802
25.311.2Constructor & Destructor Documentation	802
25.311.2.1ULEvent	802
25.311.2.2ULEvent	802
25.311.2.3~ULEvent	802
25.311.3Member Function Documentation	802
25.311.3.1GetEvent	802
25.311.3.2GetPDUs	802
25.311.3.3SetEvent	802
25.311.3.4SetPDU	803
25.312dcm::network::ULTransitionTable Class Reference	803
25.312.1Detailed Description	803
25.312.2Constructor & Destructor Documentation	803
25.312.2.1ULTransitionTable	803
25.312.3Member Function Documentation	803

25.312.3.1	HandleEvent	803
25.312.3.2	PrintTable	803
25.313	dcm::network::ULWritingCallback Class Reference	803
25.313.1	Constructor & Destructor Documentation	804
25.313.1.1	ULWritingCallback	805
25.313.1.2	~ULWritingCallback	805
25.313.2	Member Function Documentation	805
25.313.2.1	HandleDataSet	805
25.313.2.2	HandleResponse	805
25.313.2.3	SetDirectory	805
25.314	dcm::UNExplicitDataElement Class Reference	805
25.314.1	Detailed Description	806
25.314.2	Member Function Documentation	806
25.314.2.1	GetLength	806
25.314.2.2	Read	807
25.314.2.3	ReadPreValue	807
25.314.2.4	ReadValue	807
25.314.2.5	ReadWithLength	807
25.315	dcm::UNExplicitImplicitDataElement Class Reference	807
25.315.1	Detailed Description	808
25.315.2	Member Function Documentation	808
25.315.2.1	GetLength	808
25.315.2.2	Read	809
25.315.2.3	ReadPreValue	809
25.315.2.4	ReadValue	809
25.316	dcm::Unpacker12Bits Class Reference	809
25.316.1	Detailed Description	809
25.316.2	Member Function Documentation	809
25.316.2.1	Pack	809
25.316.2.2	Unpack	809
25.317	dcm::Usage Class Reference	810
25.317.1	Detailed Description	810
25.317.2	Member Enumeration Documentation	811
25.317.2.1	UsageType	811
25.317.3	Constructor & Destructor Documentation	811
25.317.3.1	Usage	811
25.317.4	Member Function Documentation	811

25.317.4.1	GetUsageString	811
25.317.4.2	GetUsageType	811
25.317.4.3	operator UsageType	811
25.317.5	Friends And Related Function Documentation	811
25.317.5.1	operator<<	811
25.318	gdcm::UserEvent Class Reference	811
25.319	gdcm::network::UserInformation Class Reference	813
25.319.1	Detailed Description	813
25.319.2	Constructor & Destructor Documentation	813
25.319.2.1	UserInformation	813
25.319.2.2	~UserInformation	813
25.319.3	Member Function Documentation	813
25.319.3.1	GetMaximumLengthSub	813
25.319.3.2	GetMaximumLengthSub	813
25.319.3.3	operator=	813
25.319.3.4	Print	813
25.319.3.5	Read	813
25.319.3.6	Size	813
25.319.3.7	Write	813
25.320	gdcm::Validate Class Reference	814
25.320.1	Detailed Description	814
25.320.2	Constructor & Destructor Documentation	814
25.320.2.1	Validate	814
25.320.2.2	~Validate	815
25.320.3	Member Function Documentation	815
25.320.3.1	GetValidatedFile	815
25.320.3.2	SetFile	815
25.320.3.3	Validation	815
25.320.4	Member Data Documentation	815
25.320.4.1	F	815
25.320.4.2	V	815
25.321	gdcm::Value Class Reference	815
25.321.1	Detailed Description	816
25.321.2	Constructor & Destructor Documentation	816
25.321.2.1	Value	816
25.321.2.2	~Value	816
25.321.3	Member Function Documentation	816

25.321.3.1Clear	816
25.321.3.2GetLength	817
25.321.3.3operator==	817
25.321.3.4SetLength	817
25.322dcm::ValueIO< TDE, TSwap, TType > Class Template Reference	817
25.322.1Detailed Description	817
25.322.2Member Function Documentation	817
25.322.2.1Read	817
25.322.2.2Write	817
25.323dcm::Version Class Reference	818
25.323.1Detailed Description	818
25.323.2Constructor & Destructor Documentation	818
25.323.2.1Version	818
25.323.2.2~Version	818
25.323.3Member Function Documentation	818
25.323.3.1GetBuildVersion	818
25.323.3.2GetMajorVersion	818
25.323.3.3GetMinorVersion	818
25.323.3.4GetVersion	818
25.323.3.5Print	818
25.323.4Friends And Related Function Documentation	819
25.323.4.1operator<<	819
25.324dcm::VL Class Reference	819
25.324.1Detailed Description	820
25.324.2Member Typedef Documentation	820
25.324.2.1Type	820
25.324.3Constructor & Destructor Documentation	820
25.324.3.1VL	820
25.324.4Member Function Documentation	820
25.324.4.1GetLength	820
25.324.4.2GetVL16Max	820
25.324.4.3GetVL32Max	820
25.324.4.4sOdd	820
25.324.4.5sUndefined	820
25.324.4.6operator uint32_t	820
25.324.4.7operator++	820
25.324.4.8operator++	820

25.324.4.9operator+=	820
25.324.4.10Read	821
25.324.4.11Read16	821
25.324.4.12SetToUndefined	821
25.324.4.13Write	821
25.324.4.14Write16	821
25.324.5Friends And Related Function Documentation	821
25.324.5.1operator<<	821
25.325gdcmm::VM Class Reference	821
25.325.1Detailed Description	823
25.325.2Member Enumeration Documentation	823
25.325.2.1VMType	823
25.325.3Constructor & Destructor Documentation	824
25.325.3.1VM	824
25.325.4Member Function Documentation	824
25.325.4.1Compatible	824
25.325.4.2GetIndex	824
25.325.4.3GetLength	824
25.325.4.4GetNumberOfElementsFromArray	824
25.325.4.5GetVMString	824
25.325.4.6GetVMType	825
25.325.4.7GetVMTypeFromLength	825
25.325.4.8IsValid	825
25.325.4.9operator VMType	825
25.325.5Friends And Related Function Documentation	825
25.325.5.1operator<<	825
25.326gdcmm::VMToLength< T > Struct Template Reference	825
25.327gdcmm::VR Class Reference	825
25.327.1Detailed Description	827
25.327.2Member Enumeration Documentation	827
25.327.2.1VRType	827
25.327.3Constructor & Destructor Documentation	828
25.327.3.1VR	828
25.327.4Member Function Documentation	828
25.327.4.1CanDisplay	828
25.327.4.2Compatible	828
25.327.4.3GetLength	829

25.327.4.4	GetLength	829
25.327.4.5	GetSize	829
25.327.4.6	GetSizeof	829
25.327.4.7	GetVRString	829
25.327.4.8	GetVRStringFromFile	829
25.327.4.9	GetVRType	829
25.327.4.10	GetVRTypeFromFile	829
25.327.4.11	ASCII	829
25.327.4.12	ASCII2	829
25.327.4.13	Binary	829
25.327.4.14	Binary2	829
25.327.4.15	Dual	829
25.327.4.16	Swap	829
25.327.4.17	Valid	829
25.327.4.18	Valid	829
25.327.4.19	VRFile	829
25.327.4.20	operator VRType	829
25.327.4.21	Read	829
25.327.4.22	Write	829
25.327.5	Friends And Related Function Documentation	830
25.327.5.1	operator<<	830
25.328	dcm::VR16ExplicitDataElement Class Reference	830
25.328.1	Detailed Description	831
25.328.2	Member Function Documentation	831
25.328.2.1	GetLength	831
25.328.2.2	Read	832
25.328.2.3	ReadPreValue	832
25.328.2.4	ReadValue	832
25.328.2.5	ReadWithLength	832
25.329	dcm::VRToEncoding< T > Struct Template Reference	832
25.330	dcm::VRToType< T > Struct Template Reference	832
25.330.1	Detailed Description	832
25.331	dcm::VRVLSIZE< T > Class Template Reference	833
25.332	dcm::VRVLSIZE< 0 > Class Template Reference	833
25.332.1	Member Function Documentation	833
25.332.1.1	Read	833
25.332.1.2	Write	833

25.333.0	gdcm::VRVLSize< 1 > Class Template Reference	833
25.333.1	Member Function Documentation	833
25.333.1.1	Read	833
25.333.1.2	Write	833
25.334.0	vtkGDCMImageReader Class Reference	834
25.334.1	Detailed Description	836
25.334.2	Constructor & Destructor Documentation	836
25.334.2.1	vtkGDCMImageReader	836
25.334.2.2	~vtkGDCMImageReader	837
25.334.3	Member Function Documentation	837
25.334.3.1	CanReadFile	837
25.334.3.2	ExecuteData	837
25.334.3.3	ExecuteInformation	837
25.334.3.4	FillMedicalImageInformation	837
25.334.3.5	GetDescriptiveName	837
25.334.3.6	GetFileExtensions	837
25.334.3.7	GetIconImage	837
25.334.3.8	GetOverlay	837
25.334.3.9	LoadSingleFile	837
25.334.3.10	New	837
25.334.3.11	PrintSelf	837
25.334.3.12	RequestDataCompat	837
25.334.3.13	RequestInformationCompat	837
25.334.3.14	SetCurve	837
25.334.3.15	SetFileNames	838
25.334.3.16	SetFilePattern	838
25.334.3.17	SetFilePrefix	838
25.334.3.18	SetMedicalImageProperties	838
25.334.3.19	UseBooleanMacro	838
25.334.3.20	UseBooleanMacro	838
25.334.3.21	UseBooleanMacro	838
25.334.3.22	UseBooleanMacro	838
25.334.3.23	UseBooleanMacro	838
25.334.3.24	UseBooleanMacro	838
25.334.3.25	UseBooleanMacro	838
25.334.3.26	UseBooleanMacro	838
25.334.3.27	UseBooleanMacro	838
25.334.3.28	UseBooleanMacro	838
25.334.3.29	UseBooleanMacro	838
25.334.3.30	UseBooleanMacro	838
25.334.3.31	UseBooleanMacro	838
25.334.3.32	UseBooleanMacro	838
25.334.3.33	UseBooleanMacro	838
25.334.3.34	UseBooleanMacro	838
25.334.3.35	UseBooleanMacro	838
25.334.3.36	UseBooleanMacro	838
25.334.3.37	UseBooleanMacro	838
25.334.3.38	UseBooleanMacro	838
25.334.3.39	UseBooleanMacro	838
25.334.3.40	UseBooleanMacro	838
25.334.3.41	UseBooleanMacro	838
25.334.3.42	UseBooleanMacro	838
25.334.3.43	UseBooleanMacro	838
25.334.3.44	UseBooleanMacro	838
25.334.3.45	UseBooleanMacro	838
25.334.3.46	UseBooleanMacro	838
25.334.3.47	UseBooleanMacro	838
25.334.3.48	UseBooleanMacro	838
25.334.3.49	UseBooleanMacro	838
25.334.3.50	UseBooleanMacro	838
25.334.3.51	UseBooleanMacro	838
25.334.3.52	UseBooleanMacro	838
25.334.3.53	UseBooleanMacro	838
25.334.3.54	UseBooleanMacro	838
25.334.3.55	UseBooleanMacro	838
25.334.3.56	UseBooleanMacro	838
25.334.3.57	UseBooleanMacro	838
25.334.3.58	UseBooleanMacro	838
25.334.3.59	UseBooleanMacro	838
25.334.3.60	UseBooleanMacro	838
25.334.3.61	UseBooleanMacro	838
25.334.3.62	UseBooleanMacro	838
25.334.3.63	UseBooleanMacro	838
25.334.3.64	UseBooleanMacro	838
25.334.3.65	UseBooleanMacro	838
25.334.3.66	UseBooleanMacro	838
25.334.3.67	UseBooleanMacro	838
25.334.3.68	UseBooleanMacro	838
25.334.3.69	UseBooleanMacro	838
25.334.3.70	UseBooleanMacro	838
25.334.3.71	UseBooleanMacro	838
25.334.3.72	UseBooleanMacro	838
25.334.3.73	UseBooleanMacro	838
25.334.3.74	UseBooleanMacro	838
25.334.3.75	UseBooleanMacro	838
25.334.3.76	UseBooleanMacro	838
25.334.3.77	UseBooleanMacro	838
25.334.3.78	UseBooleanMacro	838
25.334.3.79	UseBooleanMacro	838
25.334.3.80	UseBooleanMacro	838
25.334.3.81	UseBooleanMacro	838
25.334.3.82	UseBooleanMacro	838
25.334.3.83	UseBooleanMacro	838
25.334.3.84	UseBooleanMacro	838
25.334.3.85	UseBooleanMacro	838
25.334.3.86	UseBooleanMacro	838
25.334.3.87	UseBooleanMacro	838
25.334.3.88	UseBooleanMacro	838
25.334.3.89	UseBooleanMacro	838
25.334.3.90	UseBooleanMacro	838
25.334.3.91	UseBooleanMacro	838
25.334.3.92	UseBooleanMacro	838
25.334.3.93	UseBooleanMacro	838
25.334.3.94	UseBooleanMacro	838
25.334.3.95	UseBooleanMacro	838
25.334.3.96	UseBooleanMacro	838
25.334.3.97	UseBooleanMacro	838
25.334.3.98	UseBooleanMacro	838
25.334.3.99	UseBooleanMacro	838

25.334.3.28kGetMacro	838
25.334.3.29kGetMacro	838
25.334.3.30kGetMacro	838
25.334.3.31kGetMacro	838
25.334.3.32kGetMacro	838
25.334.3.33kGetMacro	838
25.334.3.34kGetMacro	838
25.334.3.35kGetObjectMacro	838
25.334.3.36kGetObjectMacro	838
25.334.3.37kGetObjectMacro	838
25.334.3.38kGetObjectMacro	839
25.334.3.39kGetStringMacro	839
25.334.3.40kGetStringMacro	839
25.334.3.41kGetVector3Macro	839
25.334.3.42kGetVector6Macro	839
25.334.3.43kSetMacro	839
25.334.3.44kSetMacro	839
25.334.3.45kSetMacro	839
25.334.3.46kSetMacro	839
25.334.3.47kSetVector6Macro	839
25.334.3.48kTypeRevisionMacro	839
25.334.4 Member Data Documentation	839
25.334.4.1ApplyInverseVideo	839
25.334.4.2ApplyLookupTable	839
25.334.4.3ApplyPlanarConfiguration	839
25.334.4.4ApplyShiftScale	839
25.334.4.5ApplyYBRToRGB	839
25.334.4.6Curve	839
25.334.4.7DirectionCosines	839
25.334.4.8FileNames	839
25.334.4.9ForceRescale	839
25.334.4.10onDataScalarType	839
25.334.4.11onImageDataExtent	839
25.334.4.12onNumberOfScalarComponents	839
25.334.4.13ImageFormat	839
25.334.4.14ImageOrientationPatient	839
25.334.4.15ImagePositionPatient	840

25.334.4.16	LoadIconImage	840
25.334.4.17	LoadOverlays	840
25.334.4.18	LossyFlag	840
25.334.4.19	MedicalImageProperties	840
25.334.4.20	NumberOfIconImages	840
25.334.4.21	NumberOfOverlays	840
25.334.4.22	PlanarConfiguration	840
25.334.4.23	Scale	840
25.334.4.24	Shift	840
25.335	vtkGDCMImageWriter Class Reference	840
25.335.1	Detailed Description	842
25.335.2	Member Enumeration Documentation	842
25.335.2.1	CompressionTypes	842
25.335.3	Constructor & Destructor Documentation	842
25.335.3.1	vtkGDCMImageWriter	842
25.335.3.2	~vtkGDCMImageWriter	842
25.335.4	Member Function Documentation	842
25.335.4.1	GetDescriptiveName	843
25.335.4.2	GetFileExtensions	843
25.335.4.3	GetFileName	843
25.335.4.4	New	843
25.335.4.5	PrintSelf	843
25.335.4.6	SetDirectionCosines	843
25.335.4.7	SetDirectionCosinesFromImageOrientationPatient	843
25.335.4.8	SetFileNames	843
25.335.4.9	SetMedicalImageProperties	843
25.335.4.10	BooleanMacro	843
25.335.4.11	BooleanMacro	843
25.335.4.12	GetMacro	843
25.335.4.13	GetMacro	843
25.335.4.14	GetMacro	843
25.335.4.15	GetMacro	844
25.335.4.16	GetMacro	844
25.335.4.17	GetMacro	844
25.335.4.18	GetMacro	844
25.335.4.19	GetObjectMacro	844
25.335.4.20	GetObjectMacro	844

25.335.4.21tkGetObjectMacro	844
25.335.4.22tkGetStringMacro	844
25.335.4.23tkGetStringMacro	844
25.335.4.24tkSetMacro	844
25.335.4.25tkSetMacro	844
25.335.4.26tkSetMacro	844
25.335.4.27tkSetMacro	844
25.335.4.28tkSetMacro	844
25.335.4.29tkSetMacro	844
25.335.4.30tkSetMacro	844
25.335.4.31tkSetStringMacro	844
25.335.4.32tkSetStringMacro	844
25.335.4.33tkTypeRevisionMacro	844
25.335.4.34Write	844
25.335.4.35WriteGDCMData	844
25.335.4.36WriteSlice	844
25.336.vtkGDCMMedicalImageProperties Class Reference	845
25.336.1 Constructor & Destructor Documentation	846
25.336.1.1 vtkGDCMMedicalImageProperties	846
25.336.1.2 ~vtkGDCMMedicalImageProperties	846
25.336.2 Member Function Documentation	846
25.336.2.1 Clear	846
25.336.2.2 GetFile	846
25.336.2.3 New	846
25.336.2.4 PrintSelf	846
25.336.2.5 PushBackFile	846
25.336.2.6 vtkTypeRevisionMacro	846
25.336.3 Friends And Related Function Documentation	846
25.336.3.1 vtkGDCMImageReader	846
25.336.3.2 vtkGDCMImageWriter	846
25.337.vtkGDCMPolyDataReader Class Reference	846
25.337.1 Detailed Description	848
25.337.2 Constructor & Destructor Documentation	848
25.337.2.1 vtkGDCMPolyDataReader	848
25.337.2.2 ~vtkGDCMPolyDataReader	848
25.337.3 Member Function Documentation	848
25.337.3.1 FillMedicalImageInformation	848

25.337.3.2New	848
25.337.3.3PrintSelf	848
25.337.3.4RequestData	848
25.337.3.5RequestData_HemodynamicWaveformStorage	848
25.337.3.6RequestData_RTStructureSetStorage	849
25.337.3.7RequestInformation	849
25.337.3.8RequestInformation_HemodynamicWaveformStorage	849
25.337.3.9RequestInformation_RTStructureSetStorage	849
25.337.3.10tkGetObjectMacro	849
25.337.3.11tkGetObjectMacro	849
25.337.3.12tkGetStringMacro	849
25.337.3.13tkSetStringMacro	849
25.337.3.14tkTypeRevisionMacro	849
25.337.4Member Data Documentation	849
25.337.4.1FileName	849
25.337.4.2MedicalImageProperties	849
25.337.4.3RTStructSetProperties	849
25.338tkGDCMPolyDataWriter Class Reference	849
25.338.1Detailed Description	851
25.338.2Constructor & Destructor Documentation	851
25.338.2.1tkGDCMPolyDataWriter	851
25.338.2.2~vtkGDCMPolyDataWriter	851
25.338.3Member Function Documentation	851
25.338.3.1InitializeRTStructSet	851
25.338.3.2New	851
25.338.3.3PrintSelf	851
25.338.3.4SetMedicalImageProperties	851
25.338.3.5SetNumberOfInputPorts	852
25.338.3.6SetRTStructSetProperties	852
25.338.3.7tkTypeRevisionMacro	852
25.338.3.8WriteData	852
25.338.3.9WriteRTSTRUCTData	852
25.338.3.10WriteRTSTRUCTInfo	852
25.338.4Member Data Documentation	852
25.338.4.1MedicalImageProperties	852
25.338.4.2RTStructSetProperties	852
25.339tkGDCMTesting Class Reference	852

25.339.1	Detailed Description	853
25.339.2	Member Typedef Documentation	854
25.339.2.1	MD5MetalImagesType	854
25.339.3	Constructor & Destructor Documentation	854
25.339.3.1	vtkGDCMTesting	854
25.339.3.2	~vtkGDCMTesting	854
25.339.4	Member Function Documentation	854
25.339.4.1	GetGDCMDataRoot	854
25.339.4.2	GetMD5MetalImage	854
25.339.4.3	GetMHDMD5FromFile	854
25.339.4.4	GetNumberOfMD5MetalImages	854
25.339.4.5	GetRAWMD5FromFile	854
25.339.4.6	GetVTKDataRoot	854
25.339.4.7	New	854
25.339.4.8	PrintSelf	855
25.339.4.9	vtkTypeRevisionMacro	855
25.340	vtkGDCMThreadedImageReader Class Reference	855
25.340.1	Constructor & Destructor Documentation	856
25.340.1.1	vtkGDCMThreadedImageReader	857
25.340.1.2	~vtkGDCMThreadedImageReader	857
25.340.2	Member Function Documentation	857
25.340.2.1	ExecuteData	857
25.340.2.2	ExecuteInformation	857
25.340.2.3	New	857
25.340.2.4	PrintSelf	857
25.340.2.5	ReadFiles	857
25.340.2.6	RequestDataCompat	857
25.340.2.7	vtkBooleanMacro	857
25.340.2.8	vtkGetMacro	857
25.340.2.9	vtkSetMacro	857
25.340.2.10	vtkSetMacro	857
25.340.2.11	vtkSetMacro	857
25.340.2.12	vtkTypeRevisionMacro	857
25.341	vtkGDCMThreadedImageReader2 Class Reference	857
25.341.1	Constructor & Destructor Documentation	859
25.341.1.1	vtkGDCMThreadedImageReader2	859
25.341.1.2	~vtkGDCMThreadedImageReader2	859

25.341.2 Member Function Documentation	859
25.341.2.1 GetFileName	859
25.341.2.2 New	859
25.341.2.3 PrintSelf	859
25.341.2.4 RequestInformation	859
25.341.2.5 SetFileName	859
25.341.2.6 SetFileNames	860
25.341.2.7 SplitExtent	860
25.341.2.8 ThreadedRequestData	860
25.341.2.9 vtkBooleanMacro	860
25.341.2.10 vtkBooleanMacro	860
25.341.2.11 vtkBooleanMacro	860
25.341.2.12 vtkGetMacro	860
25.341.2.13 vtkGetMacro	860
25.341.2.14 vtkGetMacro	860
25.341.2.15 vtkGetMacro	860
25.341.2.16 vtkGetMacro	860
25.341.2.17 vtkGetMacro	860
25.341.2.18 vtkGetMacro	860
25.341.2.19 vtkGetMacro	860
25.341.2.20 vtkGetObjectMacro	860
25.341.2.21 vtkGetVector3Macro	860
25.341.2.22 vtkGetVector3Macro	860
25.341.2.23 vtkGetVector6Macro	860
25.341.2.24 vtkSetMacro	860
25.341.2.25 vtkSetMacro	860
25.341.2.26 vtkSetMacro	860
25.341.2.27 vtkSetMacro	860
25.341.2.28 vtkSetMacro	860
25.341.2.29 vtkSetMacro	860
25.341.2.30 vtkSetMacro	860
25.341.2.31 vtkSetVector3Macro	861
25.341.2.32 vtkSetVector3Macro	861
25.341.2.33 vtkSetVector6Macro	861
25.341.2.34 vtkTypeRevisionMacro	861
25.342 vtkImageColorViewer Class Reference	861
25.342.1 Detailed Description	864

25.342.2 Member Enumeration Documentation	864
25.342.2.1 anonymous enum	864
25.342.3 Constructor & Destructor Documentation	864
25.342.3.1 vtkImageColorViewer	864
25.342.3.2 ~vtkImageColorViewer	864
25.342.4 Member Function Documentation	864
25.342.4.1 AddInput	864
25.342.4.2 AddInputConnection	864
25.342.4.3 GetColorLevel	864
25.342.4.4 GetColorWindow	864
25.342.4.5 GetInput	864
25.342.4.6 GetOffScreenRendering	864
25.342.4.7 GetOverlayVisibility	864
25.342.4.8 GetPosition	865
25.342.4.9 GetSize	865
25.342.4.10 GetSliceMax	865
25.342.4.11 GetSliceMin	865
25.342.4.12 GetSliceRange	865
25.342.4.13 GetSliceRange	865
25.342.4.14 GetSliceRange	865
25.342.4.15 GetWindowName	865
25.342.4.16 InstallPipeline	865
25.342.4.17 New	865
25.342.4.18 PrintSelf	865
25.342.4.19 Render	865
25.342.4.20 SetColorLevel	865
25.342.4.21 SetColorWindow	865
25.342.4.22 SetDisplayId	865
25.342.4.23 SetInput	865
25.342.4.24 SetInputConnection	865
25.342.4.25 SetOffScreenRendering	865
25.342.4.26 SetOverlayVisibility	865
25.342.4.27 SetParentId	866
25.342.4.28 SetPosition	866
25.342.4.29 SetPosition	866
25.342.4.30 SetRenderer	866
25.342.4.31 SetRenderWindow	866

25.342.4.38	SetSize	. 866
25.342.4.39	SetSize	. 866
25.342.4.39	SetSlice	. 866
25.342.4.39	SetSliceOrientation	. 866
25.342.4.39	SetSliceOrientationToXY	. 866
25.342.4.39	SetSliceOrientationToXZ	. 866
25.342.4.39	SetSliceOrientationToYZ	. 866
25.342.4.39	SetupInteractor	. 866
25.342.4.40	SetWindowId	. 867
25.342.4.41	InstallPipeline	. 867
25.342.4.41	UpdateDisplayExtent	. 867
25.342.4.41	UpdateOrientation	. 867
25.342.4.47	TK_LEGACY	. 867
25.342.4.47	TK_LEGACY	. 867
25.342.4.47	TK_LEGACY	. 867
25.342.4.47	TK_LEGACY	. 867
25.342.4.48	BooleanMacro	. 867
25.342.4.48	GetMacro	. 867
25.342.4.50	GetMacro	. 867
25.342.4.51	GetObjectMacro	. 867
25.342.4.52	GetObjectMacro	. 867
25.342.4.53	GetObjectMacro	. 867
25.342.4.54	GetObjectMacro	. 867
25.342.4.55	GetObjectMacro	. 867
25.342.4.56	TypeRevisionMacro	. 867
25.342.5	Member Data Documentation	. 867
25.342.5.1	FirstRender	. 867
25.342.5.2	ImageActor	. 867
25.342.5.3	Interactor	. 867
25.342.5.4	InteractorStyle	. 867
25.342.5.5	OverlayImageActor	. 867
25.342.5.6	Renderer	. 867
25.342.5.7	RenderWindow	. 867
25.342.5.8	Slice	. 867
25.342.5.9	SliceOrientation	. 868
25.342.5.10	WindowLevel	. 868
25.342.9	tkImageMapToColors16 Class Reference	. 868

25.343. Constructor & Destructor Documentation	869
25.343.1. vtkImageMapToColors16	869
25.343.1.2 ~vtkImageMapToColors16	869
25.343.2 Member Function Documentation	869
25.343.2.1 GetMTime	869
25.343.2.2 New	869
25.343.2.3 PrintSelf	870
25.343.2.4 RequestData	870
25.343.2.5 RequestInformation	870
25.343.2.6 SetLookupTable	870
25.343.2.7 SetOutputFormatToLuminance	870
25.343.2.8 SetOutputFormatToLuminanceAlpha	870
25.343.2.9 SetOutputFormatToRGB	870
25.343.2.10 SetOutputFormatToRGBA	870
25.343.2.11 ThreadedRequestData	870
25.343.2.12 vtkBooleanMacro	870
25.343.2.13 vtkGetMacro	870
25.343.2.14 vtkGetMacro	870
25.343.2.15 vtkGetMacro	870
25.343.2.16 vtkGetObjectMacro	870
25.343.2.17 vtkSetMacro	870
25.343.2.18 vtkSetMacro	870
25.343.2.19 vtkSetMacro	870
25.343.2.20 vtkTypeRevisionMacro	870
25.343.3 Member Data Documentation	870
25.343.3.1 ActiveComponent	870
25.343.3.2 DataWasPassed	870
25.343.3.3 LookupTable	870
25.343.3.4 OutputFormat	870
25.343.3.5 PassAlphaToOutput	871
25.344. vtkImageMapToWindowLevelColors2 Class Reference	871
25.344. Constructor & Destructor Documentation	872
25.344.1. vtkImageMapToWindowLevelColors2	872
25.344.1.2 ~vtkImageMapToWindowLevelColors2	872
25.344.2 Member Function Documentation	872
25.344.2.1 New	872
25.344.2.2 PrintSelf	872

25.344.2.3	RequestData	. . . . .	872
25.344.2.4	RequestInformation	. . . . .	872
25.344.2.5	ThreadedRequestData	. . . . .	872
25.344.2.6	vtkGetMacro	. . . . .	872
25.344.2.7	vtkGetMacro	. . . . .	873
25.344.2.8	vtkSetMacro	. . . . .	873
25.344.2.9	vtkSetMacro	. . . . .	873
25.344.2.10	vtkTypeRevisionMacro	. . . . .	873
25.344.3	Member Data Documentation	. . . . .	873
25.344.3.1	Level	. . . . .	873
25.344.3.2	Window	. . . . .	873
25.345	vtkImagePlanarComponentsToComponents Class Reference	. . . . .	873
25.345.1	Constructor & Destructor Documentation	. . . . .	874
25.345.1.1	vtkImagePlanarComponentsToComponents	. . . . .	874
25.345.1.2	~vtkImagePlanarComponentsToComponents	. . . . .	874
25.345.2	Member Function Documentation	. . . . .	874
25.345.2.1	New	. . . . .	874
25.345.2.2	PrintSelf	. . . . .	874
25.345.2.3	RequestData	. . . . .	875
25.345.2.4	vtkTypeRevisionMacro	. . . . .	875
25.346	vtkImageRGBToYBR Class Reference	. . . . .	875
25.346.1	Constructor & Destructor Documentation	. . . . .	876
25.346.1.1	vtkImageRGBToYBR	. . . . .	876
25.346.1.2	~vtkImageRGBToYBR	. . . . .	876
25.346.2	Member Function Documentation	. . . . .	876
25.346.2.1	New	. . . . .	876
25.346.2.2	PrintSelf	. . . . .	876
25.346.2.3	ThreadedExecute	. . . . .	876
25.346.2.4	vtkTypeRevisionMacro	. . . . .	876
25.347	vtkImageYBRToRGB Class Reference	. . . . .	876
25.347.1	Constructor & Destructor Documentation	. . . . .	878
25.347.1.1	vtkImageYBRToRGB	. . . . .	878
25.347.1.2	~vtkImageYBRToRGB	. . . . .	878
25.347.2	Member Function Documentation	. . . . .	878
25.347.2.1	New	. . . . .	878
25.347.2.2	PrintSelf	. . . . .	878
25.347.2.3	ThreadedExecute	. . . . .	878

25.347.2.4	vtkTypeRevisionMacro	878
25.348	vtkLookupTable16 Class Reference	878
25.348.1	Constructor & Destructor Documentation	879
25.348.1.1	vtkLookupTable16	879
25.348.1.2	~vtkLookupTable16	879
25.348.2	Member Function Documentation	879
25.348.2.1	Build	880
25.348.2.2	GetPointer	880
25.348.2.3	MapScalarsThroughTable2	880
25.348.2.4	New	880
25.348.2.5	PrintSelf	880
25.348.2.6	SetNumberOfTableValues	880
25.348.2.7	vtkTypeRevisionMacro	880
25.348.2.8	WritePointer	880
25.348.3	Member Data Documentation	880
25.348.3.1	Table16	880
25.349	vtkRTStructSetProperties Class Reference	880
25.349.1	Detailed Description	882
25.349.2	Constructor & Destructor Documentation	882
25.349.2.1	vtkRTStructSetProperties	882
25.349.2.2	~vtkRTStructSetProperties	882
25.349.3	Member Function Documentation	882
25.349.3.1	AddContourReferencedFrameOfReference	882
25.349.3.2	AddReferencedFrameOfReference	883
25.349.3.3	AddStructureSetROI	883
25.349.3.4	AddStructureSetROIObservation	883
25.349.3.5	Clear	883
25.349.3.6	DeepCopy	883
25.349.3.7	GetContourReferencedFrameOfReferenceClassUID	883
25.349.3.8	GetContourReferencedFrameOfReferenceInstanceUID	883
25.349.3.9	GetNumberOfContourReferencedFrameOfReferences	883
25.349.3.10	GetNumberOfContourReferencedFrameOfReferences	883
25.349.3.11	GetNumberOfReferencedFrameOfReferences	883
25.349.3.12	GetNumberOfStructureSetROIs	883
25.349.3.13	GetReferencedFrameOfReferenceClassUID	883
25.349.3.14	GetReferencedFrameOfReferenceInstanceUID	883
25.349.3.15	GetStructureSetObservationNumber	883

25.349.3.16	GetStructureSetROIGenerationAlgorithm	883
25.349.3.16	GetStructureSetROIName	883
25.349.3.16	GetStructureSetROINumber	883
25.349.3.16	GetStructureSetROIRefFrameRefUID	883
25.349.3.20	GetStructureSetRTROIInterpretedType	883
25.349.3.21	New	883
25.349.3.22	PrintSelf	883
25.349.3.23	GetStringMacro	883
25.349.3.24	GetStringMacro	884
25.349.3.25	GetStringMacro	884
25.349.3.26	GetStringMacro	884
25.349.3.27	GetStringMacro	884
25.349.3.28	GetStringMacro	884
25.349.3.29	GetStringMacro	884
25.349.3.30	GetStringMacro	884
25.349.3.31	GetStringMacro	884
25.349.3.32	SetStringMacro	884
25.349.3.33	SetStringMacro	884
25.349.3.34	SetStringMacro	884
25.349.3.35	SetStringMacro	884
25.349.3.36	SetStringMacro	884
25.349.3.37	SetStringMacro	884
25.349.3.38	SetStringMacro	884
25.349.3.39	SetStringMacro	884
25.349.3.40	SetStringMacro	884
25.349.3.41	TypeRevisionMacro	884
25.349.4	Member Data Documentation	884
25.349.4.1	Internals	884
25.349.4.2	ReferenceFrameOfReferenceUID	884
25.349.4.3	ReferenceSeriesInstanceUID	884
25.349.4.4	SeriesInstanceUID	884
25.349.4.5	SOPInstanceUID	884
25.349.4.6	StructureSetDate	884
25.349.4.7	StructureSetLabel	884
25.349.4.8	StructureSetName	885
25.349.4.9	StructureSetTime	885
25.349.4.10	StudyInstanceUID	885

25.350	dcm::Waveform Class Reference	885
25.350.1	Detailed Description	885
25.350.2	Constructor & Destructor Documentation	885
25.350.2.1	Waveform	885
25.351	dcm::Writer Class Reference	885
25.351.1	Detailed Description	888
25.351.2	Constructor & Destructor Documentation	889
25.351.2.1	Writer	889
25.351.2.2	~Writer	889
25.351.3	Member Function Documentation	889
25.351.3.1	CheckFileMetaInformationOff	889
25.351.3.2	CheckFileMetaInformationOn	889
25.351.3.3	GetFile	889
25.351.3.4	GetStreamPtr	889
25.351.3.5	SetCheckFileMetaInformation	889
25.351.3.6	SetFile	889
25.351.3.7	SetFileName	890
25.351.3.8	SetStream	890
25.351.3.9	SetWriteDataSetOnly	890
25.351.3.10	Write	890
25.351.4	Friends And Related Function Documentation	890
25.351.4.1	StreamImageWriter	890
25.351.5	Member Data Documentation	890
25.351.5.1	Ofstream	890
25.351.5.2	Stream	890
25.352	dcm::XMLDictReader Class Reference	891
25.352.1	Detailed Description	892
25.352.2	Constructor & Destructor Documentation	892
25.352.2.1	XMLDictReader	892
25.352.2.2	~XMLDictReader	892
25.352.3	Member Function Documentation	892
25.352.3.1	CharacterDataHandler	892
25.352.3.2	EndElement	892
25.352.3.3	GetDict	892
25.352.3.4	HandleDescription	892
25.352.3.5	HandleEntry	892
25.352.3.6	StartElement	892

25.353gdcm::XMLPrivateDictReader Class Reference	892
25.353.1Detailed Description	893
25.353.2Constructor & Destructor Documentation	894
25.353.2.1XMLPrivateDictReader	894
25.353.2.2~XMLPrivateDictReader	894
25.353.3Member Function Documentation	894
25.353.3.1CharacterDataHandler	894
25.353.3.2EndElement	894
25.353.3.3GetPrivateDict	894
25.353.3.4HandleDescription	894
25.353.3.5HandleEntry	894
25.353.3.6StartElement	894
26 File Documentation	895
26.1 gdcm2pnm.man File Reference	895
26.2 gdcm2vtk.man File Reference	895
26.3 gdcmAAbortPDU.h File Reference	895
26.4 gdcmAAssociateACPDU.h File Reference	896
26.5 gdcmAAssociateRJPDU.h File Reference	897
26.6 gdcmAAssociateRQPDU.h File Reference	898
26.7 gdcmAbstractSyntax.h File Reference	898
26.8 gdcmanon.man File Reference	900
26.9 gdcmAnonymizeEvent.h File Reference	900
26.10gdcmAnonymizer.h File Reference	901
26.11gdcmApplicationContext.h File Reference	902
26.12gdcmApplicationEntity.h File Reference	903
26.13gdcmAReleaseRPPDU.h File Reference	903
26.14gdcmAReleaseRQPDU.h File Reference	904
26.15gdcmARTIMTimer.h File Reference	906
26.16gdcmASN1.h File Reference	907
26.17gdcmAsynchronousOperationsWindowSub.h File Reference	908
26.18gdcmAttribute.h File Reference	909
26.19gdcmAudioCodec.h File Reference	910
26.20gdcmBase64.h File Reference	911
26.21gdcmBaseCompositeMessage.h File Reference	911
26.22gdcmBasePDU.h File Reference	913
26.23gdcmBaseRootQuery.h File Reference	914

26.24gdcmbasicOffsetTable.h File Reference	915
26.25gdcmbitmap.h File Reference	916
26.26gdcmbitmapToBitmapFilter.h File Reference	917
26.27gdcmbboxRegion.h File Reference	918
26.28gdcmbuffer.h File Reference	919
26.29gdcmbyteswap.h File Reference	921
26.30gdcmbyteswapFilter.h File Reference	921
26.31gdcmbyteValue.h File Reference	922
26.32gdcmcEchoMessages.h File Reference	923
26.33gdcmcFindMessages.h File Reference	924
26.34gdcmcMoveMessages.h File Reference	925
26.35gdcmcCodec.h File Reference	926
26.36gdcmcCoder.h File Reference	927
26.37gdcmcCodeString.h File Reference	929
26.38gdcmcCommand.h File Reference	929
26.39gdcmcCommandDataSet.h File Reference	931
26.40gdcmcCompositeMessageFactory.h File Reference	932
26.41gdcmcCompositeNetworkFunctions.h File Reference	932
26.42gdcmcConstCharWrapper.h File Reference	933
26.43gdcmcconv.man File Reference	934
26.44gdcmcCP246ExplicitDataElement.h File Reference	934
26.45gdcmcCryptographicMessageSyntax.h File Reference	934
26.46gdcmcCSAElement.h File Reference	935
26.47gdcmcCSAHeader.h File Reference	937
26.48gdcmcCSAHeaderDict.h File Reference	938
26.49gdcmcCSAHeaderDictEntry.h File Reference	939
26.50gdcmcCStoreMessages.h File Reference	940
26.51gdcmcCurve.h File Reference	941
26.52gdcmcDataElement.h File Reference	943
26.53gdcmcDataEvent.h File Reference	944
26.54gdcmcDataSet.h File Reference	945
26.55gdcmcDataSetEvent.h File Reference	946
26.56gdcmcDataSetHelper.h File Reference	946
26.57gdcmcDecoder.h File Reference	947
26.58gdcmcDefinedTerms.h File Reference	949
26.59gdcmcDeflateStream.h File Reference	949
26.60gdcmcDefs.h File Reference	950

26.61gdcmdeltaEncodingCodec.h File Reference	951
26.62gdcmdicomDir.h File Reference	952
26.63gdcmdicomDirGenerator.h File Reference	953
26.64gdcmdict.h File Reference	954
26.65gdcmdictConverter.h File Reference	956
26.66gdcmdictEntry.h File Reference	956
26.67gdcmdictPrinter.h File Reference	958
26.68gdcmdicts.h File Reference	958
26.69gdcmdiff.man File Reference	960
26.70gdcmdimse.h File Reference	960
26.71gdcmdirectionCosines.h File Reference	961
26.72gdcmdirectory.h File Reference	961
26.73gdcmdirectoryHelper.h File Reference	962
26.74gdcmdummyValueGenerator.h File Reference	963
26.75gdcmdump.man File Reference	964
26.76gdcmdumper.h File Reference	964
26.77gdcmdocument.h File Reference	965
26.78gdcmdocument.h File Reference	967
26.79gdcmdenumeratedValues.h File Reference	967
26.80gdcmevent.h File Reference	968
26.80.1 Macro Definition Documentation	970
26.80.1.1 gdcmeventMacro	970
26.81gdcmdexception.h File Reference	970
26.82gdcmdexplicitDataElement.h File Reference	971
26.83gdcmdexplicitImplicitDataElement.h File Reference	972
26.84gdcmdfiducials.h File Reference	973
26.85gdcmdfile.h File Reference	974
26.86gdcmdfileAnonymizer.h File Reference	975
26.87gdcmdfileDerivation.h File Reference	976
26.88gdcmdfileExplicitFilter.h File Reference	976
26.89gdcmdfileMetaInformation.h File Reference	977
26.90gdcmdfilename.h File Reference	978
26.91gdcmdfilenameGenerator.h File Reference	979
26.92gdcmdfileSet.h File Reference	980
26.93gdcmdfindPatientRootQuery.h File Reference	982
26.94gdcmdfindStudyRootQuery.h File Reference	983
26.95gdcmdfragment.h File Reference	983

26.96gdcmgendir.man File Reference	985
26.97gdcmglobal.h File Reference	985
26.98gdcmgroudict.h File Reference	986
26.99gdcmiconimage.h File Reference	987
26.100gdcmiconimagefilter.h File Reference	988
26.101gdcmiconimagegenerator.h File Reference	988
26.102gdcmimage.h File Reference	989
26.103gdcmimageapplylookuptable.h File Reference	991
26.104gdcmimagechangephotometricinterpretation.h File Reference	991
26.105gdcmimagechangeplanarconfiguration.h File Reference	992
26.106gdcmimagechangetransfersyntax.h File Reference	993
26.107gdcmimagecodec.h File Reference	994
26.108gdcmimageconverter.h File Reference	995
26.109gdcmimagefragmentsplitter.h File Reference	996
26.110gdcmimagehelper.h File Reference	997
26.111gdcmimagereader.h File Reference	998
26.112gdcmimageregionreader.h File Reference	1000
26.113gdcmimagetolimagefilter.h File Reference	1000
26.114gdcmimagewriter.h File Reference	1001
26.115gdcming.man File Reference	1002
26.116gdcmimplementationclassuidsub.h File Reference	1002
26.117gdcmimplementationuidsub.h File Reference	1004
26.118gdcmimplementationversionnamesub.h File Reference	1004
26.119gdcmimplicitdataelement.h File Reference	1006
26.120gdcminfo.man File Reference	1006
26.121gdcmiod.h File Reference	1007
26.122gdcmiodentry.h File Reference	1009
26.123gdcmiods.h File Reference	1011
26.124gdcmippsorter.h File Reference	1012
26.125gdcmitem.h File Reference	1013
26.126gdcmjpeg12codec.h File Reference	1014
26.127gdcmjpeg16codec.h File Reference	1015
26.128gdcmjpeg2000codec.h File Reference	1016
26.129gdcmjpeg8codec.h File Reference	1016
26.130gdcmjpegcodec.h File Reference	1017
26.131gdcmjpeglscodec.h File Reference	1019
26.132gdcmkakaducodec.h File Reference	1019

26.133dcmLegacyMacro.h File Reference	1020
26.133.1Macro Definition Documentation	1021
26.133.1.1GDCM_LEGACY	1021
26.133.1.2GDCM_LEGACY_BODY	1021
26.133.1.3GDCM_LEGACY_REPLACED_BODY	1021
26.134dcmLO.h File Reference	1021
26.135dcmLookupTable.h File Reference	1022
26.136dcmMacro.h File Reference	1023
26.137dcmMacroEntry.h File Reference	1026
26.137.1Macro Definition Documentation	1027
26.137.1.1GDCMMACROENTRY_H	1027
26.138dcmMacros.h File Reference	1027
26.139dcmMaximumLengthSub.h File Reference	1029
26.140dcmMD5.h File Reference	1030
26.141dcmMediaStorage.h File Reference	1031
26.142dcmMeshPrimitive.h File Reference	1033
26.143dcmModule.h File Reference	1034
26.144dcmModuleEntry.h File Reference	1036
26.145dcmModules.h File Reference	1038
26.146dcmMovePatientRootQuery.h File Reference	1039
26.147dcmMoveStudyRootQuery.h File Reference	1040
26.148dcmNestedModuleEntries.h File Reference	1041
26.149dcmNetworkEvents.h File Reference	1043
26.150dcmNetworkStateID.h File Reference	1044
26.151dcmObject.h File Reference	1045
26.152dcmOrientation.h File Reference	1046
26.153dcmOverlay.h File Reference	1047
26.154dcmParseException.h File Reference	1048
26.155dcmParser.h File Reference	1049
26.156dcmPatient.h File Reference	1050
26.157dcmPDataTFPDU.h File Reference	1050
26.158dcmPDBElement.h File Reference	1051
26.159dcmPDBHeader.h File Reference	1053
26.160dcmpdf.man File Reference	1053
26.161dcmPDFCodec.h File Reference	1054
26.162dcmPDUFactory.h File Reference	1054
26.163dcmPersonName.h File Reference	1055

26.164dcmPGXCodec.h File Reference	1056
26.165dcmPhotometricInterpretation.h File Reference	1057
26.166dcmPixelFormat.h File Reference	1058
26.167dcmPixmap.h File Reference	1060
26.168dcmPixmapReader.h File Reference	1061
26.169dcmPixmapToPixmapFilter.h File Reference	1062
26.170dcmPixmapWriter.h File Reference	1063
26.171dcmPNMCodec.h File Reference	1064
26.172dcmPreamble.h File Reference	1065
26.173dcmPresentationContext.h File Reference	1066
26.174dcmPresentationContextAC.h File Reference	1067
26.175dcmPresentationContextGenerator.h File Reference	1068
26.176dcmPresentationContextRQ.h File Reference	1069
26.177dcmPresentationDataValue.h File Reference	1070
26.178dcmPrinter.h File Reference	1071
26.179dcmPrivateTag.h File Reference	1072
26.180dcmProgressEvent.h File Reference	1073
26.181dcmPVRGCodec.h File Reference	1074
26.182dcmPythonFilter.h File Reference	1075
26.183dcmQueryBase.h File Reference	1076
26.184dcmQueryFactory.h File Reference	1078
26.185dcmQueryImage.h File Reference	1079
26.186dcmQueryPatient.h File Reference	1080
26.187dcmQuerySeries.h File Reference	1081
26.188dcmQueryStudy.h File Reference	1082
26.189dcmraw.man File Reference	1083
26.190dcmRAWCodec.h File Reference	1083
26.191dcmReader.h File Reference	1084
26.192dcmRegion.h File Reference	1085
26.193dcmRescaler.h File Reference	1086
26.194dcmRLECodec.h File Reference	1087
26.195dcmRoleSelectionSub.h File Reference	1088
26.196dcmScanner.h File Reference	1088
26.197dcmscanner.man File Reference	1089
26.198dcmscu.man File Reference	1090
26.199dcmSegment.h File Reference	1090
26.200dcmSegmentedPaletteColorLookupTable.h File Reference	1091

26.201dcmSegmentHelper.h File Reference	1092
26.202dcmSegmentReader.h File Reference	1093
26.203dcmSegmentWriter.h File Reference	1094
26.204dcmSequenceOfFragments.h File Reference	1096
26.205dcmSequenceOfItems.h File Reference	1096
26.206dcmSerieHelper.h File Reference	1097
26.207dcmSeries.h File Reference	1099
26.208dcmServiceClassApplicationInformation.h File Reference	1100
26.209dcmServiceClassUser.h File Reference	1102
26.210dcmSHA1.h File Reference	1102
26.211dcmSimpleSubjectWatcher.h File Reference	1103
26.212dcmSmartPointer.h File Reference	1104
26.213dcmSOPClassExtendedNegociationSub.h File Reference	1105
26.214dcmSOPClassUIDToIOD.h File Reference	1106
26.215dcmSorter.h File Reference	1107
26.216dcmSpacing.h File Reference	1109
26.217dcmSpectroscopy.h File Reference	1109
26.218dcmSplitMosaicFilter.h File Reference	1110
26.219dcmStaticAssert.h File Reference	1111
26.219.1Macro Definition Documentation	1112
26.219.1.1GDCM_DO_JOIN	1112
26.219.1.2GDCM_DO_JOIN2	1112
26.219.1.3GDCM_JOIN	1112
26.219.1.4GDCM_STATIC_ASSERT	1112
26.220dcmStreamImageReader.h File Reference	1113
26.221dcmStreamImageWriter.h File Reference	1113
26.222dcmString.h File Reference	1114
26.223dcmStringFilter.h File Reference	1115
26.224dcmStudy.h File Reference	1116
26.225dcmSubject.h File Reference	1118
26.226dcmSurface.h File Reference	1119
26.227dcmSurfaceHelper.h File Reference	1120
26.228dcmSurfaceReader.h File Reference	1121
26.229dcmSurfaceWriter.h File Reference	1121
26.230dcmSwapCode.h File Reference	1122
26.231dcmSwapper.h File Reference	1123
26.232dcmSystem.h File Reference	1124

26.233	dcmTable.h File Reference	1125
26.234	dcmTableEntry.h File Reference	1126
26.235	dcmTableReader.h File Reference	1128
26.236	dcmTag.h File Reference	1129
26.237	dcmTagPath.h File Reference	1130
26.238	dcmTagToVR.h File Reference	1131
26.239	dcmtar.man File Reference	1131
26.240	dcmTerminal.h File Reference	1131
26.241	dcmTestDriver.h File Reference	1132
26.242	dcmTesting.h File Reference	1133
26.243	dcmTrace.h File Reference	1134
26.243.1	Macro Definition Documentation	1135
26.243.1.1	GDCM_FUNCTION	1135
26.243.1.2	dcmAssertAlwaysMacro	1135
26.243.1.3	dcmAssertMacro	1135
26.243.1.4	dcmDebugMacro	1136
26.243.1.5	dcmErrorMacro	1136
26.243.1.6	dcmWarningMacro	1136
26.244	dcmTransferSyntax.h File Reference	1137
26.245	dcmTransferSyntaxSub.h File Reference	1138
26.246	dcmType.h File Reference	1139
26.247	dcmTypes.h File Reference	1141
26.248	dcmUIDGenerator.h File Reference	1141
26.249	dcmUIDs.h File Reference	1142
26.250	dcmULAction.h File Reference	1144
26.251	dcmULActionAA.h File Reference	1145
26.252	dcmULActionAE.h File Reference	1145
26.253	dcmULActionAR.h File Reference	1146
26.254	dcmULActionDT.h File Reference	1147
26.255	dcmULBasicCallback.h File Reference	1148
26.256	dcmULConnection.h File Reference	1149
26.257	dcmULConnectionCallback.h File Reference	1150
26.258	dcmULConnectionInfo.h File Reference	1151
26.259	dcmULConnectionManager.h File Reference	1153
26.260	dcmULEvent.h File Reference	1154
26.261	dcmULTransitionTable.h File Reference	1155
26.262	dcmULWritingCallback.h File Reference	1156

26.263	dcmUNExplicitDataElement.h File Reference	1157
26.264	dcmUNExplicitImplicitDataElement.h File Reference	1157
26.265	dcmUnpacker12Bits.h File Reference	1158
26.266	dcmUsage.h File Reference	1159
26.267	dcmUserInformation.h File Reference	1161
26.268	dcmValidate.h File Reference	1162
26.269	dcmValue.h File Reference	1163
26.270	dcmValueIO.h File Reference	1163
26.271	dcmVersion.h File Reference	1164
26.272	dcmviewer.man File Reference	1165
26.273	dcmVL.h File Reference	1165
26.274	dcmVM.h File Reference	1166
26.274.1	Macro Definition Documentation	1168
26.274.1.1	TYPETOLENGTH	1168
26.275	dcmVR.h File Reference	1168
26.275.1	Macro Definition Documentation	1170
26.275.1.1	TYPETOENCODING	1170
26.275.1.2	VRTypeTemplateCase	1170
26.276	dcmVR16ExplicitDataElement.h File Reference	1170
26.277	dcmWaveform.h File Reference	1171
26.278	dcmWin32.h File Reference	1171
26.278.1	Macro Definition Documentation	1172
26.278.1.1	IGDCM_EXPORT	1172
26.279	dcmWriter.h File Reference	1172
26.280	dcmXMLDictReader.h File Reference	1173
26.281	dcmXMLPrivateDictReader.h File Reference	1173
26.282	README.txt File Reference	1174
26.283	TestsList.txt File Reference	1174
26.284	tkGDCMImageReader.h File Reference	1174
26.284.1	Macro Definition Documentation	1176
26.284.1.1	VTK_CMYK	1176
26.284.1.2	VTK_INVERSE_LUMINANCE	1176
26.284.1.3	VTK_LOOKUP_TABLE	1176
26.284.1.4	VTK_YBR	1176
26.285	tkGDCMImageWriter.h File Reference	1176
26.286	tkGDCMMedicalImageProperties.h File Reference	1176
26.287	tkGDCMPolyDataReader.h File Reference	1177

26.288	tkGDCMPolyDataWriter.h File Reference	1178
26.289	tkGDCMTesting.h File Reference	1179
26.290	tkGDCMThreadedImageReader.h File Reference	1179
26.291	tkGDCMThreadedImageReader2.h File Reference	1180
26.292	tkImageColorViewer.h File Reference	1180
26.293	tkImageMapToColors16.h File Reference	1181
26.294	tkImageMapToWindowLevelColors2.h File Reference	1181
26.295	tkImagePlanarComponentsToComponents.h File Reference	1182
26.296	tkImageRGBToYBR.h File Reference	1182
26.297	tkImageYBRToRGB.h File Reference	1183
26.298	tkLookupTable16.h File Reference	1183
26.299	tkRTStructSetProperties.h File Reference	1184
27	Example Documentation	1185
27.1	AWTMedical3.java	1185
27.2	BasicAnonymizer.cs	1189
27.3	BasicImageAnonymizer.cs	1190
27.4	CastConvertPhilips.py	1192
27.5	ChangeSequenceUltrasound.cxx	1194
27.6	CheckBigEndianBug.cxx	1195
27.7	ClinicalTrialAnnotate.cxx	1197
27.8	ClinicalTrialIdentificationWorkflow.cs	1198
27.9	CompressImage.cxx	1201
27.10	CompressLossyJPEG.cs	1202
27.11	Convert16BitsTo8Bits.cxx	1203
27.12	ConvertMPL.py	1204
27.13	ConvertMultiFrameToSingleFrame.cxx	1205
27.14	ConvertNumpy.py	1206
27.15	ConvertPIL.py	1207
27.16	ConvertRGBToLuminance.cxx	1208
27.17	ConvertSingleBitTo8Bits.cxx	1209
27.18	ConvertToQImage.cxx	1210
27.19	CreateARGBImage.cxx	1212
27.20	CreateCMYKImage.cxx	1213
27.21	CreateJPIPDataSet.cxx	1214
27.22	CreateRAWStorage.py	1215
27.23	csa2img.cxx	1217

27.24CStoreQtProgress.cxx	1219
27.25DecompressImage.cs	1221
27.26DecompressImage.java	1222
27.27DecompressImage.py	1223
27.28DecompressImageMultiframe.cs	1224
27.29DecompressJPEGFile.cs	1226
27.30DecompressPixmap.java	1227
27.31DiffFile.cxx	1228
27.32DiscriminateVolume.cxx	1229
27.33DumbAnonymizer.py	1233
27.34DumpADAC.cxx	1234
27.35DumpGEMSMovieGroup.cxx	1239
27.36DumpImageHeaderInfo.cxx	1245
27.37DumpToSQLITE3.cxx	1247
27.38DuplicatePCDE.cxx	1249
27.39ELSCINT1WaveToText.cxx	1251
27.40EncapsulateFileInRawData.cxx	1253
27.41ExtractEncapsulatedFile.cs	1254
27.42ExtractEncryptedContent.cxx	1255
27.43ExtractIconFromFile.cxx	1256
27.44ExtractImageRegion.cs	1257
27.45Extracting_All_Resolution.cxx	1259
27.46ExtractOneFrame.cs	1265
27.47Fake_Image_Using_Stream_Image_Writer.cxx	1266
27.48FileAnonymize.cs	1269
27.49FileAnonymize.java	1269
27.50FindAllPatientName.py	1270
27.51FixBrokenJ2K.cxx	1271
27.52FixCommaBug.py	1273
27.53FixJAIBugJPEGLS.cxx	1274
27.54gdcmmorthoplanes.cxx	1277
27.55gdcmmreslice.cxx	1282
27.56gdcmmrtionplan.cxx	1284
27.57gdcmmrtplan.cxx	1288
27.58gdcmmscene.cxx	1292
27.59gdcmmtexture.cxx	1294
27.60gdcmmvolume.cxx	1295

27.61GenAllVR.cxx	1296
27.62GenerateDICOMDIR.cs	1299
27.63GenerateRTSTRUCT.cxx	1300
27.64GenerateStandardSOPClasses.cxx	1302
27.65GenFakeIdentifyFile.cxx	1303
27.66GenFakeImage.cxx	1306
27.67GenLongSeqs.cxx	1307
27.68GenSeqs.cxx	1309
27.69GetArray.cs	1310
27.70GetJPEGSamplePrecision.cxx	1311
27.71GetPortionCSAHeader.py	1313
27.72GetSequenceUltrasound.cxx	1314
27.73GetSubSequenceData.cxx	1315
27.74headsq2dcm.py	1318
27.75HelloActiviz.cs	1319
27.76HelloActiviz2.cs	1320
27.77HelloActiviz3.cs	1321
27.78HelloActiviz4.cs	1322
27.79HelloActiviz5.cs	1323
27.80HelloSimple.java	1324
27.81HelloVizWorld.cxx	1325
27.82HelloVTKWorld.cs	1326
27.83HelloVTKWorld.java	1327
27.84HelloVTKWorld2.cs	1328
27.85HelloWorld.cxx	1329
27.86HelloWorld.py	1330
27.87iU22tomultisc.cxx	1330
27.88LargeVRDSExplicit.cxx	1332
27.89MagnifyFile.cxx	1334
27.90ManipulateFile.cs	1335
27.91 ManipulateFile.py	1336
27.92ManipulateSequence.py	1337
27.93MergeFile.py	1338
27.94MergeTwoFiles.cxx	1339
27.95MetalImageMD5Activiz.cs	1340
27.96MIPViewer.java	1342
27.97MPRViewer.java	1344

27.98MPRViewer2.java	1346
27.99MrProtocol.cxx	1350
27.100NewSequence.cs	1357
27.10NewSequence.py	1358
27.100ffscreenimage.cxx	1359
27.100PatchFile.cxx	1360
27.100PhilipsPrivateRescaleInterceptSlope.py	1362
27.100PlaySound.py	1363
27.100pmsct_rgb1.cxx	1364
27.100PrivateDict.py	1367
27.100PublicDict.cxx	1368
27.100ReadAndDumpDICOMDIR.cxx	1369
27.110ReadAndDumpDICOMDIR.py	1372
27.110ReadAndPrintAttributes.cxx	1375
27.110ReadExplicitLengthSQIVR.cxx	1376
27.110ReadFiles.java	1377
27.110ReadGEMSSDO.cxx	1378
27.110ReadMultiTimesException.cxx	1380
27.110ReadSeriesIntoVTK.java	1381
27.110ReadUTF8QtDir.cxx	1382
27.110RefCounting.cs	1384
27.110ReformatFile.cs	1385
27.120RemovePrivateTags.py	1386
27.120RescaleImage.cs	1387
27.120Reslicesphere.cxx	1387
27.120ReWriteSCAsMR.py	1395
27.120Re2img.cxx	1396
27.120structapp.cxx	1399
27.120ScanDirectory.cs	1400
27.120ScanDirectory.java	1401
27.120ScanDirectory.py	1405
27.120SendFileSCU.cs	1406
27.130SimplePrint.cs	1406
27.130SimplePrintPatientName.cs	1407
27.130SimpleScanner.cxx	1408
27.130SortImage.cxx	1410
27.130SortImage.py	1411

27.135	SortImage2.cs	1412
27.136	StandardizeFiles.cs	1412
27.138	StreamImageReaderTest.cxx	1414
27.138	TestByteSwap.cxx	1418
27.139	TestReader.cxx	1420
27.140	TestReader.py	1421
27.141	ThreadgdcM.cxx	1421
27.142	TraverseModules.cxx	1425
27.148	id_unique.cxx	1426
27.144	VolumeSorter.cxx	1426
27.145	WriteBuffer.py	1429

Index**1431**

Chapter 1

GDCM Documentation

This is the developers documentation.

A PDF version of this doxygen documentation can be found here:

<http://gdcm.sourceforge.net/2.2/gdcm-2.2.3.pdf>

A tarball version of this HTML doxygen documentation can be found here:

<http://gdcm.sourceforge.net/2.2/gdcm-2.2.3-doc.tar.gz>

Author

Mathieu Malaterre

Chapter 2

off-screen rendering of DICOM images

2.1 SYNOPSIS

```
gdcm2pnm [options] file-in bitmap-out
```

2.2 DESCRIPTION

The **gdcm2pnm** command line program takes as input a DICOM file and produces a rendered bitmap file.

2.3 PARAMETERS

file-in DICOM input filename

bitmap-out Bitmap output filename

2.4 options

2.4.1 options

2.4.2 general options

```
-h    --help  
      print this help text and exit  
  
-v    --version  
      print version information and exit  
  
-V    --verbose  
      verbose mode (warning+error).  
  
-W    --warning  
      warning mode, print warning information
```

```
-E  --error  
    error mode, print error information  
  
-D  --debug  
    debug mode, print debug information
```

2.5 Simple usage

gdcm2pnm will take as input DICOM and render it into a bitmap file using the window/level attributes value.

```
$ gdcm2pnm input.dcm output.png
```

It is much different from the **gdcmraw** or **gdcmimg** command line tool as it will render a DICOM image. This means that the output will be rendered in 8bits ready for display.

2.6 SEE ALSO

gdcm2vtk(1), **gdcmimg(1)**

2.7 COPYRIGHT

Copyright (c) 2006-2011 Mathieu Malaterre

Chapter 3

Convert a file supported by VTK into DICOM.

3.1 SYNOPSIS

```
gdcm2vtk [options] file-in file-out
```

3.2 DESCRIPTION

The **gdcm2vtk** takes as input any file supported by VTK (including DICOM file) and will generate as output a DICOM file.

3.3 PARAMETERS

file-in input filename (DICOM or VTK supported)

file-out DICOM output filename

3.4 options

3.4.1 options

--force-rescale	force rescale.
--force-spacing	force spacing.
--palette-color	when supported generate a PALETTE COLOR file.
--argb	when supported generate a ARGB file.
--compress	when supported generate a compressed file.
--use-vtkdicom	Use vtkDICOMImageReader (instead of GDCM).
--modality	set Modality.
--lower-left	set lower left.
--shift	set shift.
--scale	set scale.
--compress	set compression (MetaIO).
-T --study-uid	Study UID.
-S --series-uid	Series UID.
--root-uid	Root UID.

3.4.2 compression options

```
-J --jpeg          Compress image in jpeg.
-K --j2k          Compress image in j2k.
-L --jpegls       Compress image in jpeg-ls.
-R --rle          Compress image in rle (lossless only).
```

3.4.3 general options

```
-h --help          print this help text and exit
-v --version       print version information and exit
-V --verbose       verbose mode (warning+error).
-W --warning       warning mode, print warning information
-E --error         error mode, print error information
-D --debug         debug mode, print debug information
```

3.4.4 environment variable

```
GDCM_ROOT_UID Root UID
```

3.5 DESCRIPTION

Convert a file supported by VTK into DICOM.

Typical usage is:

```
$ gdcmm2vtk inputfile output.dcm
```

It uses the internal factory mechanism of VTK to recognize a file (CanRead function). See VTK supported file here:

What image file formats can VTK read and write? http://www.vtk.org/Wiki/VTK_FAQ#What_image_file_formats_can_VTK

If your input file has 4 components, the 4th comp (alpha) will be removed from the output file as DICOM does not support alpha component anymore (see `--argb` option).

Special care was taken for the following file format:

1. DICOM: Direction Cosines and `vtkMedicalImageInformation` are passed to the output
2. BMP: The file can be saved with a Lookup Table (see `--palette-color`)
3. GE Signa: `vtkMedicalImageProperties` is passed to the output
4. MINC: Direction Cosines is passed to the output
5. TIFF: `vtkTIFFReader` is currently in bad shape in VTK (different behavior in VTK 5.2 and CVS). Only use it,

3.5.1 CONVERT MetaImage (mhd, mha)

```
$ gdcmm2vtk inputfile output.mha
```


This command will convert the input DICOM file: inputfile into a MetaImage .mha file. Same goes for .mhd file.

3.5.2 CONVERT MHA/MHD

```
$ gdc2vtk inputfile output.mha
```

or

```
$ gdc2vtk inputfile output.mhd
```

This command will convert the input DICOM file: inputfile into a MetaImageData .mha/.mhd file.

3.5.3 CONVERT VTI

```
$ gdc2vtk inputfile output.vti
```

This command will convert the input DICOM file: inputfile into a XML VTK ImageData .vti file.

3.5.4 CONVERT VTK

```
$ gdc2vtk inputfile output.vtk
```

This command will convert the input DICOM file: inputfile into an old VTK Structured PointSets .vtk file.

3.6 CONVERT DICOM

```
$ gdc2vtk input.dcm output.dcm
```

[vtkGDCMImageReader](#) will be used to read in a DICOM file, not the default `vtkDICOMImageReader`. See option `--use-vtkdicom` to use `vtkDICOMImageReader`.

3.7 RoundTrip DICOM to MHD to DICOM

```
$ gdc2vtk input_ybr.dcm output.mhd
$ gdc2vtk --modality US --imageformat 7 output.mhd output.dcm
```

The above section shows how to convert a DICOM using the Photometric Interpretation of YBR_FULL (or even YBR_FULL_422 is lossy) into another file format: MetaImage (mhd). Since this file format does not handle color space, we have to explicitly set it using the `--imageformat` command line option. The `--modality` command line option is required in this case since the default Secondary Capture Image Storage Class family does not allow for YBR Photometric Interpretation.

3.8 gdc2vtk notes

IMPORTANT NOTE: The internal VTK structured will be filled from the input DICOM, and then pass to the output DICOM writer. Some information might be lost during the conversion DICOM to VTK to DICOM. This option is mostly used to test the `vtkGDCMImageReader/vtkGDCMImageWriter` combination.

IMPORTANT NOTE: When converting from a lossy format such as JPEG, the information of lossiness is important. The output DICOM will contains the required Lossy Image Compression attribute that indicates that image was lossy-compressed somewhere along the pipeline. See also `gdcmimg` (better handling of JPEG in general).

IMPORTANT NOTE: When using `-use-vtkdicom` the output DICOM file will always be written as MR Image Storage as this information is not available from the reader itself. This allow setting the Image Orientation (Patient) properly.

3.9 SEE ALSO

`gdcmdump(1)`, `gdcmviewer(1)`, `gdcmimg(1)`

3.10 COPYRIGHT

Copyright (c) 2006-2011 Mathieu Malaterre

Chapter 4

Tool to anonymize a DICOM file.

4.1 SYNOPSIS

```
gdcmanon [options] file-in file-out  
gdcmanon [options] dir-in  dir-out
```

4.2 DESCRIPTION

The **gdcmanon** tool is an implementation of PS 3.15 / E.1 / Basic Application Level Confidentiality Profile (Implementation of E.1.1 De-identify & E.1.2 Re-identify)

This tool is split into two very different operating mode:

- An implementation of PS 3.15, see `-e` and `-d` flags
- A dumb mode, see `-dumb`

Dumb mode and PS 3.15 do not work well together, you should really only use one type of anonymization. In case of doubt, avoid using `-dumb`.

In order to use the PS 3.15 implementation (`-d` & `-e` flag), you'll need a certificate to do de-identification operations, and the associated private key to do the re-identification operation. If you are only doing a one-shot anonymization and do not need to properly re-identify the DICOM file, you can safely discard the private key and only keep the certificate. See OpenSSL section below for an example on how to generate the private key/certificate pair.

`gdcmanon` will exit early if OpenSSL was not configured/build properly into the library (see `GDCM_USE_SYSTEM_OPENSSL` in `CMake`).

4.3 PARAMETERS

```
file-in  DICOM input filename
```

```
file-out DICOM output filename
```

or

```
file-in  DICOM input directory
```

```
file-out DICOM output directory
```

4.4 options

You need to specify at least one operating mode, from the following list (and only one):

4.4.1 Required parameters

```
-e --de-identify      De-identify DICOM (default)
-d --re-identify      Re-identify DICOM
  --dumb              Dumb mode anonymizer
```

Warning when operating in dumb mode, you need to also specify an operation to do, such as 'remove' or 'empty' a tag, see below the dumb mode options.

4.4.2 options

```
-i --input            DICOM filename / directory
-o --output           DICOM filename / directory
-r --recursive        recursively process (sub-)directories.
  --continue          Do not stop when file found is not DICOM.
  --root-uid          Root UID.
  --resources-path    Resources path.
-k --key              Path to RSA Private Key.
-c --certificate      Path to Certificate.
```

4.4.3 encryption options

```
--des                DES.
--des3               Triple DES.
--aes128             AES 128.
--aes192             AES 192.
--aes256             AES 256.
```

4.4.4 dumb mode options

```
--empty %d,%d        DICOM tag(s) to empty
--remove %d,%d        DICOM tag(s) to remove
--replace %d,%d,%s    DICOM tag(s) to replace
```

4.4.5 general options

```
-h --help            print this help text and exit
-v --version          print version information and exit
-V --verbose         verbose mode (warning+error).
-W --warning          warning mode, print warning information
-E --error            error mode, print error information
-D --debug            debug mode, print debug information
```

4.4.6 environment variable

```
GDCM_ROOT_UID Root UID
GDCM_RESOURCES_PATH path pointing to resources files (Part3.xml, ...)
```

4.5 Typical usage

4.5.1 De-identification (anonymization, encrypt)

The only thing required for this operation is a certificate file (in PEM format).

```
$ gdcmanon --certificate certificate.pem -e original.dcm original_anonymized.dcm
```

4.5.2 Re-identification (de-anonymization, decrypt)

The only thing required for this operation is a private key (in PEM format). It is required that the private key used for the re-identification process, was the actual private key used to generate the certificate file (certificate.pem) used during the de-identification step.

```
$ gdcmanon --key privatekey.pem -d original_anonymized.dcm original_copy.dcm
```

You can then check that original.dcm and original_copy.dcm are identical.

4.5.3 Multiple files caveat

It is very important to understand the following section, when anonymizing more than one single file. When anonymizing multiple DICOM files, you are required to use the directory input. You cannot call multiple time the gdcmanon command line tool. Indeed the tool stores in memory during the process only a hash table of conversion so that each time a particular value is found it get always replaced by the same de-identified value (think: consistent Series Instance UID).

4.5.4 Dumb mode

This functionality is not described in the DICOM standard. Users are advised that improper use of that mode is not recommended, meaning that important tag can be emptied/removed/replaced resulting in illegal/invalid DICOM file. Only use when you know what you are doing. If you delete a Type 1 attribute, chance is that your DICOM file will be not accepted in most DICOM third party viewer. Unfortunately this is often this mode that is implemented in popular DICOM Viewer, always prefer what the DICOM standard describes, and avoid the dumb mode.

The following example shows how to use dumb mode and achieve 5 operations at the same time:

- Empty the tag (0010,0010) Patient's Name,
- Empty the tag (0010,0020) Patient ID,
- Remove the tag (0010,0040) Patient's Sex
- Remove the tag (0010,1010) Patient's Age
- Replace the tag (0010,1030) Patient's Weight with the value '10'

You are required to check which DICOM attribute is Type 1 and Type 1C, before trying to **'Empty'** or **'Remove'** a particular DICOM attribute. For the same reason, you are required to check what are valid value in a replace operation.

```
$ gdcmanon --dumb --empty 10,10 --empty 10,20 --remove 10,40 --remove 10,1010 --replace 10,1030,10 012345.002.050
```

Multiple operation of `--dumb` mode can take place, just reuse the output of the previous operation. Always use `gdcmdump` on the input and output file to check what was actually achieved. You can use a diff program to check only what changed (see `diff(1)` for example).

4.5.4.1 Irreversible Anonymization

In some very rare cases, one would want to anonymize using the PS 3.15 mode so as to take benefit of the automatic conversion of all content that could contain Patient related information.

In the end all Patient related information has been removed and has been secretly stored in the 0400,0500 DICOM attribute. However to make sure that no-one ever try to break that security using brute-force algorithm, one want want to remove completely this DICOM attribute. This will make the DICOM:

- Completely free of any Patient related information (as per PS 3.15 specification)
- Remove any mean of people to brute force attack the file to find out the identity of the Patient

In this case one could simply do, as a first step execute the reversible anonymizer:

```
$ gdcmanon -c certificate.pem input.dcm anonymized_reversible.dcm
```

and now completely remove the DICOM attribute containing the secretly encrypted Patient related information:

```
$ gdcmanon --dumb --remove 400,500 --remove 12,62 --remove 12,63 anonymized_reversible.dcm anonymized_irreversible.dcm
```

Remarks

As mentionned in DICOM Sup 142, this anonymization is preferred over de-identification since:

It is not required that the Encrypted Attributes Data Set be created; indeed, there may be circumstances where the Dataset is expected to be archived long enough that any contemporary encryption technology may be inadequate to provide long term protection against unauthorized recovery of identification

4.6 OpenSSL

On most system you can have access to OpenSSL to generate the Private Key/Certificate pair.

4.6.1 Generating a Private Key

Command line to generate a rsa key (512bit)

```
$ openssl genrsa -out CA_key.pem
```

Command line to generate a rsa key (2048bit)

```
$ openssl genrsa -out CA_key.pem 2048
```

Command line to generate a rsa key (2048bit) + passphrase

```
$ openssl genrsa -des3 -out CA_key.pem 2048
```

4.6.2 Generating a Certificate

From your previously generated Private Key, you can now generate a certificate in PEM (DER format is currently not supported).

```
$ openssl req -new -key CA_key.pem -x509 -days 365 -out CA_cert.cer
```

4.7 DICOM Standard:

Page to the DICOM Standard:

<http://dicom.nema.org/>

The DICOM Standard at the time of releasing gdcmanon is:

<ftp://medical.nema.org/medical/dicom/2008/>

Direct link to PS 3.15-2008:

ftp://medical.nema.org/medical/dicom/2008/08_15pu.pdf

4.8 Warnings

Certain attributes may still contain Protected Health Information (PHI) after an anonymization step. This is typically the case for Patient's Address (0010,1040). The reason is that this particular attribute is not supposed to be in the composite IODs in the first place. DICOM Supp 142 includes it (however gdcmanon does not implement it).

4.9 SEE ALSO

gdcconv(1), **gdcmdump(1)**, **gdcminfo(1)**, **openssl(1)**, **dumpasn1(1)**

4.10 COPYRIGHT

Copyright (c) 2006-2011 Mathieu Malaterre

Chapter 5

Tool to convert DICOM to DICOM.

5.1 SYNOPSIS

```
gdcmconv [options] file-in file-out
```

5.2 DESCRIPTION

The **gdcmconv** command line program takes as input a DICOM file (file-in) and process it to generate an output DICOM file (file-out). The command line option dictate the type of operation(s) gdcmconv will use to generate the output file.

5.3 PARAMETERS

```
file-in    DICOM input filename
```

```
file-out   DICOM output filename
```

5.4 options

5.4.1 PARAMETERS

```
-i --input      DICOM filename
-o --output     DICOM filename
```

5.4.2 options

```
-X --explicit      Change Transfer Syntax to explicit.
-M --implicit      Change Transfer Syntax to implicit.
-U --use-dict       Use dict for VR (only public by default).
  --with-private-dict Use private dict for VR (advanced user only).
-C --check-meta     Check File Meta Information (advanced user only).
  --root-uid        Root UID.
  --remove-gl       Remove group length (deprecated in DICOM 2008).
  --remove-private-tags Remove private tags.
  --remove-retired  Remove retired tags.
```

5.4.3 image options

```
-l --apply-lut           Apply LUT (non-standard, advanced user only).
-P --photometric-interpretation %s Change Photometric Interpretation (when possible).
-w --raw                Decompress image.
-d --deflated            Compress using deflated (gzip).
-J --jpeg               Compress image in jpeg.
-K --j2k                Compress image in j2k.
-L --jpegls             Compress image in jpeg-ls.
-R --rle                Compress image in rle (lossless only).
-F --force              Force decompression/merging before recompression/splitting.
  --generate-icon        Generate icon.
  --icon-minmax %d,%d    Min/Max value for icon.
  --icon-auto-minmax     Automatically compute best Min/Max values for icon.
  --compress-icon        Decide whether icon follows main TransferSyntax or remains uncompressed.
  --planar-configuration [01] Change planar configuration.
-Y --lossy              Use the lossy (if possible) compressor.
-S --split %d           Write 2D image with multiple fragments (using max size)
```

5.4.4 JPEG options

```
-q --quality %*f        set quality.
```

5.4.5 JPEG-LS options

```
-e --lossy-error %*i    set error.
```

5.4.6 J2K options

```
-r --rate %*f           set rate.
-q --quality %*f        set quality.
-t --tile %d,%d         set tile size.
-n --number-resolution %d set number of resolution.
  --irreversible         set irreversible.
```

5.4.7 general options

```
-h --help               print this help text and exit
-v --version            print version information and exit
-V --verbose            verbose mode (warning+error).
-W --warning            warning mode, print warning information
-E --error              error mode, print error information
-D --debug              debug mode, print debug information
```

5.4.8 special options

```
-I --ignore-errors      convert even if file is corrupted (advanced users only, see disclaimers).
```

5.4.9 environment variable

```
GDCM_ROOT_UID Root UID
```

5.5 Simple usage

gdcmmconv is a great tool to convert broken DICOM implementation into properly parsable DICOM file. Usage is simply:

```
$ gdcmmconv input.dcm output.dcm
```

or if you prefer being explicit:

```
$ gdcmmconv -i input.dcm -o output.dcm
```

Even though **gdcmmconv** can overwrite directly on the same file (`input.dcm = output.dcm`), it is recommended that user should first convert into a different file to make sure the bug is properly handled by GDCM.

Typical cases where you would want to use **gdcmmconv** in its simple form:

- convert non-cp246 conforming file into conforming cp246,
- convert implicit little endian transfer syntax file meta header into proper explicit little endian transfer syntax,
- convert the GE-13 bytes bug,
- convert dual syntax file: implicit/explicit,
- convert Philips dual Little Endian/Big Endian file,
- convert GDCM 1.2.0 broken UN-2-bytes fields,
- &...
- All other broken files listed in the supported section.

When no option other is used, only the dataset is inspected. So encapsulated Pixel Data, for instance, is not inspected for well known bugs.

When doing this kind of work, this is usually a good idea to perform some kind of quality control, see **gdcmmconv** Quality Control section (down below).

5.6 Typical usage

5.6.1 File Meta Header

Running

```
$ gdcmmconv input.dcm output.dcm
```

Is not enough to recompute file meta header, when input file is buggy. You may want to use: `--check-meta`

```
$ gdcmmconv --check-meta input.dcm output.dcm
```

See typical cases such as: `GE_DLX-8-MONO2-PrivateSyntax.dcm` or `PICKER-16-MONO2-No_DicomV3_Preamble.dcm` from `gdcmmData`.

5.6.2 Conversion to Explicit Transfer Syntax

To convert a file that was written using Implicit Transfer Syntax into Explicit Transfer Syntax simply use:

```
$ gdcconv --explicit uncompressed.dcm compressed.dcm
```

5.6.3 Compressing to lossless JPEG

To compress an uncompressed DICOM file to a JPEG Lossless encapsulated format:

```
$ gdcconv --jpeg uncompressed.dcm compressed.dcm
```

5.6.4 Compressing to lossy JPEG

To compress an uncompressed DICOM file to a JPEG Lossy encapsulated format:

```
$ gdcconv --lossy --jpeg -q 90 uncompressed.dcm compressed.dcm
```

Note:

`-q` is just one of the many way to specify lossy quality, you need to inspect the other cmd line flag to specify

5.6.5 Compressing to lossless JPEG-LS

To compress an uncompressed DICOM file to a JPEG-LS Lossless encapsulated format:

```
$ gdcconv --jpeglS uncompressed.dcm compressed.dcm
```

5.6.6 Compressing to lossy JPEG-LS

To compress an uncompressed DICOM file to a JPEG-LS Lossy encapsulated format:

```
$ gdcconv --lossy --jpeglS -e 2 uncompressed.dcm lossy_compressed.dcm
```

Note:

`-e` (or `-lossy-error`) means that the maximum tolerate error is 2 for each pixel value

5.6.7 Compressing to lossless J2K

To compress an uncompressed DICOM file to a JPEG-2000 Lossless encapsulated format:

```
$ gdcconv --j2k uncompressed.dcm compressed.dcm
```

5.6.8 Compressing to lossy J2K

To compress an uncompressed DICOM file to a JPEG-2000 Lossy encapsulated format:

```
$ gdcconv --lossy -q 55,50,45 --j2k uncompressed.dcm lossy_compressed.dcm
```

Note:

`-q` is just one of the many way to specify lossy quality, you need to inspect the other cmd line flag to specify

5.6.9 Compressing to lossless RLE

To compress an uncompressed DICOM file to a RLE Lossless encapsulated format:

```
$ gdcmmconv --rle uncompressed.dcm compressed.dcm
```

There is no such thing as lossy RLE compression.

5.6.10 Split encapsulated DICOM:

To split an encapsulated stream into smaller chunk (1024 bytes each):

```
$ gdcmmconv --split 1024 rle.dcm rle_1024.dcm
```

If an odd number of bytes is passed it will be rounded down to the next even number (eg. 1025 -> 1024) since DICOM only allow even number for Value Length.

5.6.11 Forcing (re)compression

Sometime it is necessary to use the `-force` option. By default when user specify `-j2k` and input file is already in JPEG 2000 encapsulated DICOM format then no operation takes places. By using `-force` you make sure that (re)compression operation takes places.

Real life example of why you would use `-force`:

- When Pixel Data is missing data / is padded with junk
- When you would like to make sure GDCM can handle decompression & recompression cycle

5.6.12 Decompressing a Compressed DICOM

```
$ gdcmmconv --raw compressed.dcm uncompressed.dcm
```

5.6.13 Compressing an uncompressed Icon

By default when compressing a DICOM Image file, `gdcmmconv` will not compress the icon. A user option needs to be turned on to explicitly force the compression of the Icon Image Sequence Pixel Data

For example, by default we will not compress the Icon Image Sequence Pixel Data attribute:

```
$ gdcmmconv --jpeg gdcmmData/simpleImageWithIcon.dcm uncompressed_icon.dcm
```

In the following example we will explicitly compress the Icon Image Sequence Pixel Data attribute. In that case the same Transfer Syntax is being used for both the main Pixel Data and the Pixel Data from the Icon Image Sequence:

```
$ gdcmmconv --jpeg --compress-icon gdcmmData/simpleImageWithIcon.dcm compressed_icon.dcm
```

5.6.14 Generating an Icon

For some application it might be necessary to produce a small preview of the main image to be able to quickly load that short preview instead of the main image. In that case:

```
$ gdcconv --raw --generate-icon gdcData/test.acr test_icon.dcm
```

In some cases the main Pixel Data element is expressed as pixel defined on 16bits. Since Icon can only store at most pixel of size 8bits, a rescale operation needs to take place. In order to properly select a better interval for doing the rescale operation user can specify the min max used for the rescale operation:

```
$ gdcconv --raw --generate-icon --icon-minmax 0,192 gdcData/012345.002.050.dcm icon_minmax.dcm
```

5.6.15 Changing the planar Configuration

Often RLE files are compressed using a different Planar Configuration (RRR ... GGG... BBB...) instead of the usual triplet (RGB ... RGB ... RGB). So upon decompression the Planar Configuration is 1. This is perfectly legal in DICOM, however this is unconventional, and thus it may be a good idea to also change the planar configuration and set it to the default :

```
$ gdcconv --raw --planar-configuration 0 compressed.dcm uncompressed1.dcm
```

To reinvert the planar configuration of file 'uncompressed1.dcm', simply do:

```
$ gdcconv --raw --planar-configuration 1 uncompressed1.dcm uncompressed2.dcm
```

5.7 Lossless Conversion

When talking about lossless conversion, there is an ambiguity that need to be understood. To achieve higher compression ratio, the RGB color space is usually not used, in favor of a YBR one. Changing from one color space to the other is (bit level) not lossless.

For more detail, see what are the true lossless transformations as described:

http://sourceforge.net/apps/mediawiki/gdcm/index.php?title=Color_Space_Transformations

5.8 Quality Control

One important part when using gdcconv it to have a way to quality control the output.

You can use 3rd party tool to check the output of gdcconv is correct.

5.8.1 DCMTK / dicom3tools

Using another DICOM implementation such as the one from DCMTK or dicom3tools can be a good process to check the output of gdcconv.

- For DCMTK use: dcmdump
- For dicom3tools use: dcdump

For reference, gdcconv --raw will act as dcmdjpeg +cn +px, since it never tries to convert color space.

5.8.2 VIM: vimdiff

You can setup your favorite editor to compare the output, for instance in vim:

```
autocmd BufReadPre *.dcm set ro
autocmd BufReadPost *.dcm silent %!gdcmdump -M +uc "%"
```

then simply do:

```
$ vimdiff input.dcm output.dcm
```

5.8.3 vbindiff

On UNIX you can visually compare binary file using the vbindiff command:

```
$ vbindiff input.dcm output.dcm
```

5.9 SEE ALSO

gdcmdump(1), **gdcmraw(1)**, **gdcminfo(1)**, **gdcmdiff(1)**

5.10 COPYRIGHT

Copyright (c) 2006-2011 Mathieu Malaterre

Chapter 6

dumps differences of two DICOM files

6.1 SYNOPSIS

```
gdcmdiff [options] file1 file2
```

6.2 DESCRIPTION

The **gdcmdiff** command line program takes as input two DICOM file: file1 and file2.

6.3 PARAMETERS

file1 DICOM input filename

file2 DICOM output filename

6.4 options

6.4.1 options

```
-m      --meta          Compare metainformation. Default is off.  
-t <n>  --truncate <n> String values trimmed to n characters.
```

6.4.2 general options

```
-h      --help          print this help text and exit  
  
-v      --version       print version information and exit  
  
-V      --verbose       verbose mode (warning+error).  
  
-W      --warning       warning mode, print warning information
```

```
-E  --error  
    error mode, print error information  
  
-D  --debug  
    debug mode, print debug information
```

6.5 Simple usage

gdcmdiff is a great tool to diff DICOM files. Usage is simply:

```
$ gdcmdiff input1.dcm input2.dcm
```

6.6 SEE ALSO

gdcmdump(1), **gdcminfo(1)**

6.7 COPYRIGHT

Copyright (c) 2006-2011 Mathieu Malaterre

Chapter 7

dumps a DICOM file, it will display the structure and values contained in the specified DICOM file.

7.1 SYNOPSIS

```
gdcmdump [options] dcm_file
gdcmdump [options] dcm_directory
```

7.2 DESCRIPTION

The **gdcmdump** command line program dumps a DICOM file to the console. For those familiar with dcmdump (DCMTK) output, gdcmdump has some minor differences. Namely:

- For Implicit Transfer Syntax gdcmdump will print ?? instead of the dictionary VR

gdcmdump has a limited private dictionary that is used to lookup private element whenever possible.

7.3 PARAMETERS

```
dcm_file          DICOM input filename
dcm_directory     DICOM input directory
```

7.4 options

7.4.1 options

-x --xml-dict	generate the XML dict (only private elements for now).
-r --recursive	recursive (input is a directory)
-d --dump	dump value (limited use).
-p --print	print value instead of simply dumping (default).
-c --color	print in color.
-C --csa	print SIEMENS CSA Header (0029,[12]0,SIEMENS CSA HEADER).
-P --pdb	print GEMS Protocol Data Block (0025,1b,GEMS_SERS_01).
--elscint	print ELSCINT Protocol Information (01f7,26,ELSCINT1).
--vepro	print VEPRO Protocol Information (0055,20,VEPRO VIF 3.0 DATA).

```

        or VEPRO Protocol Information (0055,20,VEPRO VIM 5.0 DATA).
--sds          print Philips MR Series Data Storage (1.3.46.670589.11.0.0.12.2) Information (2005,32,Philips)
-A --asn1      print encapsulated ASN1 structure >(0400,0520).
--map-uid-names map UID to names.

```

7.4.2 general options

```

-h --help
    print this help text and exit

-v --version
    print version information and exit

-V --verbose
    verbose mode (warning+error).

-W --warning
    warning mode, print warning information

-E --error
    error mode, print error information

-D --debug
    debug mode, print debug information

```

7.4.3 special options

```

-I --ignore-errors  dumps even if file is corrupted (advanced users only, see disclaimers).

```

7.5 Typical usage

7.5.1 Printing Implicit Transfer Syntax

The VR are not found in the file, thus are presented with a "(??)", and right next to it (if found) the correct VR.

Eg.:

```
$ gdcmdump GE_DLX-8-MONO2-PrivateSyntax.dcm
```

```

# Dicom-File-Format
\&...
(0008,0000) ?? (UL) 434 # 4,1 Generic Group Length
(0008,0005) ?? (CS) [ISO_IR 100] # 10,1-n Specific Character Set
(0008,0008) ?? (CS) [ORIGINAL\\PRIMARY\\SINGLE PLANE ] # 30,2-n Image Type
(0008,0016) ?? (UI) [1.2.840.10008.5.1.4.1.1.12.1] # 28,1 SOP Class UID
(0008,0018) ?? (UI) [1.2.840.113619.2.16.1.0.906539207.1.24207] # 42,1 SOP Instance UID
(0008,0020) ?? (DA) [19980923] # 8,1 Study Date
(0008,0021) ?? (DA) [19980923] # 8,1 Series Date
(0008,0022) ?? (DA) [19980923] # 8,1 Acquisition Date
(0008,0023) ?? (DA) [19980923] # 8,1 Content Date
(0008,0030) ?? (TM) [101229.000] # 10,1 Study Time
(0008,0031) ?? (TM) [101229.000] # 10,1 Series Time
(0008,0032) ?? (TM) [102653.000] # 10,1 Acquisition Time
(0008,0033) ?? (TM) [102653.000] # 10,1 Content Time
\&...

```

7.5.2 Print Private Attributes

GDCM has a limited private dictionary. Whenever possible, it will try to lookup the private data element.

```
$ gdcmdump 012345.002.050.dcm
```

```
\&...
(0009,0010) LO [GEMS_IDEN_01] # 12,1 Private Creator
(0009,1001) LO [GE_GENESIS_FF ] # 14,1 Full fidelity
(0009,1002) SH [MRCV] # 4,1 Suite id
(0009,1004) SH [SIGNA ] # 6,1 Product id
(0009,1027) SL 985968524 # 4,1 Image actual date
(0009,1030) SH [19356UMR2 ] # 10,1 Service id
(0009,1031) SH [999 ] # 4,1 Mobile location number
(0009,10e3) UI [1.2.840.113619.1.1.4.1762386977] # 32,1 Equipment UID
(0009,10e6) SH [08] # 2,1 Genesis Version - now
(0009,10e7) UL 2757786872 # 4,1 Exam Record checksum
(0009,10e9) SL 985968523 # 4,1 Actual series data time stamp
\&...
(0019,0000) UL 1208 # 4,1 Generic Group Length
(0019,0010) LO [GEMS_ACQU_01] # 12,1 Private Creator
(0019,100f) DS [424.399994] # 10,1 Horiz. Frame of ref.
(0019,1011) SS 0 # 2,1 Series contrast
\&...
(0019,10e0) DS [0.000000] # 8,1 User data 24 {# DTI Diffusion Dir., relea
(0019,10e2) DS [0.000000] # 8,1 Velocity Encode Scale
(0019,10f2) SS 0 # 2,1 Fast phases
(0019,10f9) DS [98] # 2,1 Transmit gain
\&...
(0021,0000) UL 372 # 4,1 Generic Group Length
(0021,0010) LO [GEMS_RELA_01] # 12,1 Private Creator
(0021,1003) SS 0 # 2,1 Series from which Prescribed
\&...
```

7.5.3 SIEMENS CSA Header

Using this option it is possible to dump as a readable text what is contained in the private attribute as found in typical SIEMENS MR DICOM file.

Eg.:

```
$ gdcmdump --csa MR_SIEMENS_forceLoad29-1010_29-1020.dcm
```

```
(0029,0010)siemens csa header
Image shadow data (0029,xx10)
```

```
0 - 'EchoLinePosition' VM 1, VR IS, SyngoDT 6, NoOfItems 6, Data '64      '
1 - 'EchoColumnPosition' VM 1, VR IS, SyngoDT 6, NoOfItems 6, Data '64      '
2 - 'EchoPartitionPosition' VM 1, VR IS, SyngoDT 6, NoOfItems 6, Data '32      '
3 - 'UsedChannelMask' VM 1, VR UL, SyngoDT 9, NoOfItems 6, Data '255      '
4 - 'Actual3DImaPartNumber' VM 1, VR IS, SyngoDT 6, NoOfItems 0, Data
5 - 'ICE_Dims' VM 1, VR LO, SyngoDT 19, NoOfItems 6, Data 'X_1_1_1_1_1_31_1_1_1_1_19'
6 - 'B_value' VM 1, VR IS, SyngoDT 6, NoOfItems 6, Data '0      '
7 - 'Filter1' VM 1, VR IS, SyngoDT 6, NoOfItems 0, Data
8 - 'Filter2' VM 1, VR IS, SyngoDT 6, NoOfItems 0, Data
\&...
```

7.5.4 GEMS Protocol Data Block

Using this option it is possible to dump as a readable text what is contained in the private attribute as found in typical GEMS MR DICOM file.

Protocol Data Block : 0025,xx1b,GEMS_SERS_01

```
$ gdcmdump --pdb GE_MR_0025xx1bProtocolDataBlock.dcm
```

```
ENTRY "Head First"
POSITION "Supine"
ANREF "NA"
COIL "HEAD"
PLANE "OBLIQUE"
SEDESCFLAG "1"
SEDESC "AX FSE T2"
IMODE "2D"
PSEQ "FSE-XL"
IOPT "FC, EDR, TRF, Fast"
PLUG "22"
FILTCHOICE "None"
BWRT "-1"
TRICKSIMG "1"
TAG_SPACE "7"
TAG_TYPE "None"
\&...
```

7.5.5 ELSCINT Protocol Information

Using this option it is possible to dump as a readable text what is contained in the private attribute as found in typical ELSCINT CT DICOM file.

ELSCINT Protocol Information: (01f7,26,ELSCINT1)

```
$ gdcmdump --elscint ELSCINT1_ProtocolInformation.dcm
```

```
ELSCINT1 Dumping info from tag (01f7,26,elscint1)
```

```
ELSCINT1/Item name: []
  ApprovedStep [yes]
  RefSurview [1\0]
  STD-first-img-pos [11.5]
  current-step [yes]
  ntimed-steps [0]
  orig-n-slices [390]
  protocol-file [Head_Multi_1032_usr.proc]
  protocol-name [FACE-TRAUMA/Head/Hx]
  protocol-path [/usr/diamond.root/spr/]
  protocol-step [1]
  protocol-version [2.51]
```

```
ELSCINT1/Item name: [doseright]
```

```
  ACS [n/a]
  ACS-bed-position [0]
  ACS-calc-mas [0]
  ACS-ig-parameter [0]
  ACS-learn-allowed [no]
  ACS-water-radius [-1.000000]
  ACS-water-radius-scan [-1]
\&...
```

7.5.6 VEPRO Protocol Information

Using this option it is possible to dump as a readable text what is contained in the private attribute as found in typical VEPRO CT DICOM file.

ELSCINT Protocol Information: (0055,20,VEPRO VIM 5.0 DATA)

```
$ gdcmdump --vepro VEPRO_ProtocolInformation.dcm

VIMDATA2: (0055,20,VEPRO VIM 5.0 DATA)
  ID: VIM
  Version: 5.0
  UserName:
  UserAdress1: Name of Institution
  UserAdress2: Street of Institution
  UserAdress3: City of Institution
  UserAdress4:
  UserAdress5:
  RecDate: 20101001
  RecTime: 211321
  RecPlace:
  RecSource: DICOM Distributor
  DF1: P-09/10-41808
  DF2: Sultana Razia
  DF3: 19411001
  DF4: F
  DF5:
  DF6:
  DF7:
  DF8: CT Scan Brain without Contrast
  DF9: 10/10-0034873
  DF10: 10/10-00348
  DF11:
  DF12:
  DF13:
  DF14: Head 0.5
  DF15: 4
  DF16:
  DF17:
  DF18:
  DF19:
  DF20:
  StudyUID: 1.2.392.200036.9116.2.6.1.48.1214228007.1285934880.206831
  SeriesUID: 1.2.392.200036.9116.2.6.1.48.1214228007.1285935201.938653
  Modality: CT
```

7.5.7 Philips Private MR Series Data Storage (1.3.46.670589.11.0.0.12.2)

Using this option it is possible to dump as a readable text what is contained in the private attribute as found in typical Philips Private MR Series Data Storage file.

PMS Series Data Storage (2005,32,Philips MR Imaging DD 002)

```
$ gdcmdump --sds PMS_SeriesDataStorage.dcm

\&...
PMS/Item name: [PDF_CONTROL_GEN_PARS/IEEE_PDF/Y ]
\&...
PMS/Item name: [PDF_CONTROL_PREP_PARS /IEEE_PDF/Y ]
\&...
PMS/Item name: [PDF_CONTROL_RECON_PARS/IEEE_PDF/Y ]
\&...
PMS/Item name: [PDF_CONTROL_SCAN_PARS /IEEE_PDF/Y ]
\&...
PMS/Item name: [PDF_EXAM_PARS /IEEE_PDF/Y ]
\&...
PMS/Item name: [PDF_HARDWARE_PARS /IEEE_PDF/Y ]
\&...
PMS/Item name: [PDF_PREP_PARS /IEEE_PDF/Y ]
\&...
PMS/Item name: [PDF_SPT_PARS/IEEE_PDF/Y ]
```

```

SP_scan_resol [256\256] # 2
SP_pda_profiles [0\0] # 2
SP_filter [324074] # 1
SP_analyse_with_iqt [0] # 1
SP_main_system_type [3] # 1
SP_gradient_system [6] # 1
SP_coil_type [2\2\0\0\0\0\0\0\0\0\0\0\0\0\0\0] # 16
SP_coil_id [2\34\0\0\0\0\0\0\0\0\0\0\0\0\0\0] # 16
SP_coil_part [0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0] # 16
SP_act_q [0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0] # 16
SP_act_coil_freq [0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0] # 16
SP_coil_m_pos [255\255\255\0\0\0\0\0\0\0\0\0\0\0\0\255] # 16
SP_coil_t_pos [255\128\255\0\0\0\0\0\0\0\0\0\0\0\0\255] # 16
SP_surface_coil_con [0\1\0\0\0\0\0\0\0\0\0\0\0\0\0\0] # 16
SP_proton_freq [127801349] # 1
SP_tm_result [2\2\2\2\2\2\2\2\2\2\2\2\2\2\2\2] # 16
SP_f0_result [0] # 1
SP_as_result [0] # 1
SP_po_result [0] # 1
SP_rg_result [0] # 1
SP_dc_result [0] # 1
SP_ph_result [0] # 1
\&...

```

7.5.8 Encapsulated ASN1 Structure

This option is mainly used for dumping the ASN1 structure of the encrypted Attribute (0040,0520)

```
$ gdcmdump encrypted.dcm
```

```

\&...
(0400,0500) SQ # u/1,1 Encrypted Attributes Sequence
  (fffe,e000) na (Item with undefined length)
    (0400,0510) UI [1.2.840.10008.1.2] # 18,1 Encrypted Content Transfer Syntax UID
    (0400,0520) OB 30\82\03\ba\06\09\2a\86\48\55\04\08\13 # 958,1 Encrypted Content
  (fffe,e00d)
(fffe,e0dd)
\&...

```

```
$ gdcmdump --asn1 encrypted.dcm
```

```

0:d=0 hl=4 l= 954 cons: SEQUENCE
4:d=1 hl=2 l= 9 prim: OBJECT :pkcs7-envelopedData
15:d=1 hl=4 l= 939 cons: cont [ 0 ]
19:d=2 hl=4 l= 935 cons: SEQUENCE
23:d=3 hl=2 l= 1 prim: INTEGER :00
26:d=3 hl=4 l= 366 cons: SET
30:d=4 hl=4 l= 362 cons: SEQUENCE
34:d=5 hl=2 l= 1 prim: INTEGER :00
37:d=5 hl=2 l= 82 cons: SEQUENCE
39:d=6 hl=2 l= 69 cons: SEQUENCE
41:d=7 hl=2 l= 11 cons: SET
43:d=8 hl=2 l= 9 cons: SEQUENCE
45:d=9 hl=2 l= 3 prim: OBJECT :countryName
50:d=9 hl=2 l= 2 prim: PRINTABLESTRING :AU
54:d=7 hl=2 l= 19 cons: SET
56:d=8 hl=2 l= 17 cons: SEQUENCE
58:d=9 hl=2 l= 3 prim: OBJECT :stateOrProvinceName
63:d=9 hl=2 l= 10 prim: PRINTABLESTRING :Some-State
75:d=7 hl=2 l= 33 cons: SET
77:d=8 hl=2 l= 31 cons: SEQUENCE
79:d=9 hl=2 l= 3 prim: OBJECT :organizationName
84:d=9 hl=2 l= 24 prim: PRINTABLESTRING :Internet Widgits Pty Ltd
110:d=6 hl=2 l= 9 prim: INTEGER :AC966D88787A51B4

```



```

121:d=5 hl=2 l= 13 cons: SEQUENCE
123:d=6 hl=2 l= 9 prim: OBJECT :rsaEncryption
134:d=6 hl=2 l= 0 prim: NULL
136:d=5 hl=4 l= 256 prim: OCTET STRING [HEX DUMP]:822368070285AD756C962ECB973514B291F946...
396:d=3 hl=4 l= 558 cons: SEQUENCE
400:d=4 hl=2 l= 9 prim: OBJECT :pkcs7-data
411:d=4 hl=2 l= 29 cons: SEQUENCE
413:d=5 hl=2 l= 9 prim: OBJECT :aes-256-cbc
424:d=5 hl=2 l= 16 prim: OCTET STRING [HEX DUMP]:3B49AFE71749F2BFF1519EBAEA95A393
442:d=4 hl=4 l= 512 prim: cont [ 0 ]

```

7.6 SEE ALSO

gdcmdump(1), gdcmrw(1), gdcmanon(1)

7.7 COPYRIGHT

Copyright (c) 2006-2011 Mathieu Malaterre

Chapter 8

Tool to generate a DICOMDIR file from a File-Set.

8.1 SYNOPSIS

```
gdcmgendir [options] file-in file-out
```

8.2 DESCRIPTION

8.3 PARAMETERS

```
file-in    DICOM input filename
```

```
file-out   DICOM output filename
```

8.4 options

8.4.1 Parameters

8.4.2 options

-i --input	DICOM filename or directory
-o --output	DICOM filename or directory
-r --recursive	recursive.
--descriptor	descriptor.
--root-uid	Root UID.

8.4.3 general options

-h --help	print this help text and exit
-v --version	print version information and exit

```
-V  --verbose
    verbose mode (warning+error).

-W  --warning
    warning mode, print warning information

-E  --error
    error mode, print error information

-D  --debug
    debug mode, print debug information
```

8.4.4 environment variable

```
GDCM_ROOT_UID Root UID
```

8.5 Typical usage

8.6 NOTE

One may have to run some preliminary steps in order to get `gdcmgendir` to generate the DICOMDIR file. Namely two steps:

- Batch renaming of the DICOM filename into something compatible with ISO 9660 filename convention
- Convert all DICOM file into the Explicit VR Little Endian Uncompressed (1.2.840.10008.1.2.1)

Step 1. can be solved in a numerous way. Eg. on UNIX environment this could either be solved using the `mkisofs` command line tool. Filenames should not contains any extension since the VR CS does not allow for the '.' character. Only upper case, digit 0-9, the space ' ' and the underscore '_' character are valid in VR CS, with a maximum of 8 bytes. Another simple tool that can be handy is 'rename' in conjunction with 'basename'.

Step 2. can simply be achieved using the `gdcconv` command line tool:

```
$ for i in `ls IMG*`; do gdcconv --raw --force $i /tmp/out/$i; done
```

8.7 SEE ALSO

`gdcconv(1)`, `gdcmanon(1)`, `rename(1)`, `mkisofs(1)`

8.8 COPYRIGHT

Copyright (c) 2006-2011 Mathieu Malaterre

Chapter 9

Manipulate DICOM image file.

gdcmimg is a low level tool to allow de-/encapsulation from/to DICOM image. This tool does not understand Transfer Syntax conversion. It will encapsulate the raw data as-is. This has some impact in some cases, see special warnings below.

9.1 SYNOPSIS

```
gdcmimg [options] file-in file-out
```

9.2 DESCRIPTION

The **gdcmimg** command line tool can be used in two fashions:

- 1. Converting a recognized file format into its encapsulated DICOM counterpart,
- 2. Anonymizing a rectangular portion of a DICOM file.

9.3 PARAMETERS

```
file-in    input filename
```

```
file-out   output filename
```

9.4 options

9.4.1 PARAMETERS

```
-i --input      Input filename  
-o --output     Output filename
```

9.4.2 options

```
--endian %s      Endianness (LSB/MSB) .
```

```

-d --depth %d      Depth (Either 8/16/32 or BitsAllocated eg. 12 when known).
--sign %s          Pixel sign (0/1).
--spp %d           Sample Per Pixel (1/3).
-s --size %d,%d    Size.
-C --sop-class-uid SOP Class UID (name or value).
-T --study-uid     Study UID.
-S --series-uid    Series UID.
--root-uid         Root UID.

```

9.4.3 fill options

```

-R --region %d,%d  Region.
-F --fill %d       Fill with pixel value specified.

```

9.4.4 general options

```

-h --help          print this help text and exit

-v --version       print version information and exit

-V --verbose       verbose mode (warning+error).

-W --warning       warning mode, print warning information

-E --error         error mode, print error information

-D --debug         debug mode, print debug information

```

9.4.5 environment variable

```
GDCM_ROOT_UID Root UID
```

9.5 Supported File Format (appropriate file extension) gdcming

will base it's conversion process based on the file extension. Follows the list of recognized file extension. When no extension is found, DICOM file is assumed.

input format

```

* RAW      (raw, rawl, gray, rgb)
* RLE      (rle)
* PNM      (pgm, pnm, ppm)
* JPEG-LS  (jls)
* JPEG 2000 (jp2, j2k, j2c, jpx, jpc)
* JPEG     (jpg, jpeg, ljpg, ljpeg)
* DICOM    ()

```

output format:

```

* PGM      (pgm, pnm, ppm)
* DICOM    ()

```

For RAW file format, you should take special care of the `--endian` option. For the (old) JPEG file format, both the lossy and lossless format are supported, user should pay attention to the `--sign` option. For file format such as RLE or RAW, user is expected to fill in information required to find the dimension and type of input data as there is no other way to find this information. For all other file format, the properties are derived from the file format itself. PNM file are supposed to be big endian (important for depth > 8)

9.6 Typical usage

9.6.1 Remove a rectangular part of the image

To fill the region $[0,100] \times [0,100]$ of a DICOM image simply do:

```
$ gdcimg --fill 0 --region 0,100,0,100 -i input.dcm -o output_black.dcm
```

Warning: if the Pixel Data is compressed, the image is first decompressed so that pixel can be set to 0, but it is not recompressed.

9.6.2 Convert RAW to DICOM

Recognized extension is `.raw`, `.rawl`, `.gray` or `.rgb` (case insensitive)

```
$ gdcimg --size 512,512 --depth 16 -i input.raw -o output.dcm
```

the image will be a Secondary Capture.

When the input is 3 component, one need to specify explicitly the Samples Per Pixel:

```
$ gdcimg --size 512,512 --spp 3 input_rgb.raw output_rgb.dcm
```

When the filename contains `.rgb` as file extension output is automatically recognized as RGB no need to specify `--spp`

```
$ gdcimg --size 512,512 input.rgb output_rgb.dcm
```

You can use the `dd` cmd line to skip any header you would like to discard, for instance, if you would like to skip the first 108 bytes, simply do:

```
$ dd skip=108 bs=1 if=input.raw of=output.raw
```

`.raw` and `.rawl` extension are equivalent. You need to explicitly specify the endianness manually:

```
$ gdcimg --endian MSB --size 512,512 --depth 16 -i input.raw -o output.dcm
```

or

```
$ gdcimg --endian LSB --size 512,512 --depth 16 -i input.raw -o output.dcm
```

9.6.3 Convert PGM/PNM/PPM to DICOM

Recognized extensions are `.pgm`, `.pnm`, `.ppm` (case insensitive)

```
$ gdcimg -i input.pgm -o output.dcm
```

the image will be a Secondary Capture

9.6.4 Convert RLE to DICOM

Recognized extension is .rle (case insensitive)

```
$ gdcming --size 512,512 --depth 16 -i input.rle -o output.dcm
```

the image will be a Secondary Capture

9.6.5 Convert JPEG to DICOM

Recognized extensions are .jpg, .jpeg, .ljpg, .ljpeg (case insensitive)

```
$ gdcming -i input.ljpeg -o output.dcm
```

the image will be a Secondary Capture

9.6.6 Convert J2K to DICOM

Recognized extensions are .j2k, .jp2, .jpc, .jpx, .j2c (case insensitive)

```
$ gdcming -i input.j2k -o output.dcm
```

the image will be a Secondary Capture.

All Pixel informations (Bits Stored/Allocated...) will be derived from the image itself, and not from the command line options.

9.6.7 Specifying a SOP Class UID

Instead of the default Secondary Capture Image Storage, one may want to specify, say VL Photographic Image Storage.

```
$ gdcming --sop-class-uid 1.2.840.10008.5.1.4.1.1.77.1.4 input.jpg output.dcm
```

9.7 Multiple Files

gdcming handle nicely a set of files (for instance jpeg):

```
$ gdcming 1.jpg 2.jpg 3.jpg 4.jpg output.dcm
```

9.8 Warning

There are a couple of issues with gdcming implementation:

For RAW file, one should pay attention that when using `-endian MSB` the Pixel Data will be encapsulated as is (not touched by gdcming). Therefore the only possible transfer syntax available is Implicit VR Big Endian DLX (G.E Private). GDCM does handle this private Transfer Syntax. So if you need to convert this Transfer Syntax to another one (and allow Pixel Data manipulation), you can use:


```
$ gdcconv --raw --force input_big_endian_dlx.raw -o output_implicit_vr_little_endian.dcm
```

For JFIF file and JP2 file (with header) the header is copied into the Pixel Data element which is illegal for JP2. Use `gdcconv` to properly re-encode a JP2/JFIF file into J2K/JPG.

```
$ gdcimg input.jp2 output_jp2.dcm
$ gdcconv --j2k --force output_jp2.dcm output_j2k.dcm
```

For RLE file, no check is done for crossing the row boundary. It is recommended to use `gdcconv -rle` to re-encode into a proper RLE file in case of doubt.

Of course if the compression is not ok with your setup, you can always de-encapsulated the DICOM file (typically JPEG) to a non-encapsulated form, using `gdcconv`:

```
$ gdcconv --raw input_jpeg.dcm output_raw.dcm
```

9.9 SEE ALSO

`gdcmdump(1)`, `gdcmdump(1)`, `gdcmrw(1)`, `convert(1)`, `dd(1)`

9.10 COPYRIGHT

Copyright (c) 2006-2011 Mathieu Malaterre

Chapter 10

Display meta info about the input DICOM file.

10.1 SYNOPSIS

```
gdcminfo [options] file-in
```

10.2 DESCRIPTION

The **gdcminfo** command line program takes as input a DICOM file, or a directory and process it to extract meta-information about the DICOM file processed.

10.3 PARAMETERS

```
file-in    DICOM input filename
```

10.4 options

10.4.1 options

-r --recursive	recursive.
-d --check-deflated	check if file is proper deflated syntax.
--resources-path	Resources path.
--md5sum	Compute md5sum of Pixel Data attribute value.
--check-compression	check the encapsulated stream compression (lossless/lossy).

10.4.2 general options

-h	--help	print this help text and exit
-v	--version	print version information and exit
-V	--verbose	verbose mode (warning+error).

```
-W  --warning
    warning mode, print warning information

-E  --error
    error mode, print error information

-D  --debug
    debug mode, print debug information
```

10.4.3 environment variable

GDCM_RESOURCES_PATH path pointing to resources files (Part3.xml, ...)

10.5 Simple usage

10.5.1 gdcmdata

Using data from gdcmdata:

```
$ gdcminfo gdcmdata/012345.002.050.dcm
```

```
MediaStorage is 1.2.840.10008.5.1.4.1.1.4 [MR Image Storage]
NumberOfDimensions: 2
Dimensions: (256,256)
Origin: (-85,21.6,108.7)
Spacing: (0.664062,0.664062,1.5)
DirectionCosines: (1,0,0,0,0,-1)
Rescale Intercept/Slope: (0,1)
SamplesPerPixel      :1
BitsAllocated        :16
BitsStored           :16
HighBit              :15
PixelRepresentation:1
Orientation Label: CORONAL
```

10.5.2 Davie Clunie datasets:

Using data from David Clunie datasets:

```
$ gdcminfo BRTUM001.dcm
```

```
MediaStorage is 1.2.840.10008.5.1.4.1.1.4.1 [Enhanced MR Image Storage]
NumberOfDimensions: 3
Dimensions: (256,256,15)
Origin: (40,-105,105)
Spacing: (0.820312,0.820312,6)
DirectionCosines: (0,1,0,0,0,-1)
Rescale Intercept/Slope: (0,1)
SamplesPerPixel      :1
BitsAllocated        :16
BitsStored           :16
HighBit              :15
PixelRepresentation:1
Orientation Label: SAGITTAL
```

10.5.3 Checking the md5sum of the Pixel Data

After compressing a DICOM file (see `gdcmconv`) using a lossless compression algorithm, it is fairly easy to compare the two files for differences at DICOM attribute level. However one operation is slightly easier to do: how to make sure the compression was actually lossless ? In this case one could use the `--md5sum` operation.

Take an uncompressed DICOM image file:

```
$ gdcminfo --md5sum SIEMENS_ImageLocationUN.dcm
```

The tool return: 0621954acd5815e0b4f7b65fcc6506b1

Now compress this file:

```
$ gdcmmconv --jpegls SIEMENS_ImageLocationUN.dcm lossless_compressed.dcm
```

and then check again the md5sum:

```
$ gdcminfo --md5sum lossless_compressed.dcm
```

The tool return: 0621954acd5815e0b4f7b65fcc6506b1

10.5.4 Checking if Pixel Data is lossless

In some environment one wish to check whether or not the DICOM file is lossless or not. It is fairly easy to do that in most cases. Only in two occasion this is not clear from the sole DICOM Attribute. When the Transfer Syntax is JPEG 2000 Image Compression (1.2.840.10008.1.2.4.91) and when the Transfer Syntax is JPEG-LS Lossy (Near-Lossless) Image Compression (1.2.840.10008.1.2.4.81).

In this case, the only solution is to open the Pixel Data element, read the specific JPEG header and check whether or not the JPEG transformation was lossless or not:

```
$ gdcminfo --check-compression gdcmmData/MAROTECH_CT_JP2Lossy.dcm
```

The tool returns: "Encapsulated Stream was found to be: lossy"

10.6 SEE ALSO

`gdcmdump(1)`, `gdcmraw(1)`, `gdcmconv(1)`

10.7 COPYRIGHT

Copyright (c) 2006-2011 Mathieu Malaterre

Chapter 11

Tool to convert PDF to PDF/DICOM.

11.1 SYNOPSIS

```
gdcmpdf [options] file-in file-out
```

11.2 DESCRIPTION

The **gdcmpdf** tool convert a PDF file (any PDF version) into an encapsulated PDF/DICOM file. By default it will try to read the PDF meta information stored in the PDF and convert this information to some specific DICOM fields (see below). However it may fails (eg. wrong password on encrypted PDF file) in which case empty value are used.

11.3 PARAMETERS

file-in PDF input filename

file-out DICOM output filename

11.4 options

11.4.1 general options

```
-h    --help  
      print this help text and exit  
  
-v    --version  
      print version information and exit  
  
-V    --verbose  
      verbose mode (warning+error).  
  
-W    --warning  
      warning mode, print warning information  
  
-E    --error  
      error mode, print error information  
  
-D    --debug
```

```
debug mode, print debug information
```

11.5 Usage Example

```
$ wget http://gdcm.sourceforge.net/gdcm.pdf
$ gdcmpdf gdcm.pdf gdcm.dcm
```

To re-extract the encapsulated pdf file:

```
$ gdcmrw -i gdcm.dcm -t 42,11 -o gdcm.dcm.pdf
$ diff gdcm.pdf gdcm.dcm.pdf
```

11.6 PDF Info Mapping

Here is how the PDF info is mapped to DICOM information (typical pdfinfo output):

```
Title:      GDCM Reference Manual
Subject:    Grassroots DICOM API reference
Keywords:   GDCM,DICOM,JPEG,Lossless JPEG,JPEG-LS,J2K,JPEG 2000,RLE
Author:     Mathieu Malaterre and co.
Creator:    LaTeX with hyperref package
Producer:   pdfTeX-1.21a
CreationDate: Tue Apr 28 15:34:26 2009
Tagged:     no
Pages:      1188
Encrypted:  no
Page size:  612 x 792 pts (letter)
File size:  13756841 bytes
Optimized:  yes
PDF version: 1.4
```

Converted to DICOM this leads to:

```
# Dicom-Data-Set
# Used TransferSyntax: Little Endian Explicit
(0008,0005) CS [ISO_IR 100] # 10, 1 SpecificCharacterSet
(0008,0012) DA [20090428] # 8, 1 InstanceCreationDate
(0008,0013) TM [182550.302631] # 14, 1 InstanceCreationTime
(0008,0016) UI =EncapsulatedPDFStorage # 30, 1 SOPClassUID
(0008,0018) UI [1.2.826.0.1.3680043.2.1143.776842935192792959289022034349197114] # 64, 1 SOPInstanceUID
(0008,0020) DA [20090428] # 8, 1 StudyDate
(0008,0023) DA [20090428] # 8, 1 ContentDate
(0008,002a) DT [20090428153437.000000] # 22, 1 AcquisitionDateTime
(0008,0030) TM [182550.302160] # 14, 1 StudyTime
(0008,0033) TM [153426.000000] # 14, 1 ContentTime
(0008,0050) SH (no value available) # 0, 0 AccessionNumber
(0008,0060) CS [OT] # 2, 1 Modality
(0008,0064) CS [WSD] # 4, 1 ConversionType
(0008,0070) LO [LaTeX with hyperref package] # 28, 1 Manufacturer
(0008,0090) PN (no value available) # 0, 0 ReferringPhysiciansName
(0010,0010) PN [Mathieu Malaterre and co.] # 26, 1 PatientsName
(0010,0020) LO (no value available) # 0, 0 PatientID
(0010,0030) DA (no value available) # 0, 0 PatientsBirthDate
(0010,0040) CS (no value available) # 0, 0 PatientsSex
(0018,1020) LO [pdfTeX-1.21a] # 14, 1 SoftwareVersions
(0020,000d) UI [1.2.826.0.1.3680043.2.1143.1868121832223417351654232480755123133] # 64, 1 StudyInstanceUID
(0020,000e) UI [1.2.826.0.1.3680043.2.1143.1330099150825746617507846107663964311] # 64, 1 SeriesInstanceUID
(0020,0010) SH (no value available) # 0, 0 StudyID
(0020,0011) IS [1] # 2, 1 SeriesNumber
```



```

(0020,0013) IS [1] # 2, 1 InstanceNumber
(0028,0301) CS [YES] # 4, 1 BurnedInAnnotation
(0040,a043) SQ (Sequence with explicit length #=0) # 0, 1 ConceptNameCodeSequence
(ffff,e0dd) na (SequenceDelimitationItem for re-encod.) # 0, 0 SequenceDelimitationItem
(0042,0010) ST [GDCM Reference Manual] # 22, 1 DocumentTitle
(0042,0011) OB 25\\50\\44\\46\\2d\\31\\2e\\34\\0a\\25\\e7\\f3\\cf\\d3\\0a\\33\\32\\30\\37\\37\\20\\30... # 137568
(0042,0012) LO [application/pdf] # 16, 1 MIMETimeTypeOfEncapsulatedDocument

```

```

$ stat gdc.m.pdf
  File: `gdc.m.pdf'
  Size: 13756841      Blocks: 26912      IO Block: 4096   regular file
Device: fe01h/65025d Inode: 2675750      Links: 1
Access: (0644/-rw-r--r--)  Uid: ( 1002/mmalaterre)   Gid: ( 1002/mmalaterre)
Access: 2009-04-28 16:05:00.000000000 +0200
Modify: 2009-04-28 15:34:37.000000000 +0200
Change: 2009-04-28 16:05:00.000000000 +0200

```

Explanation for the different Date/Time mappings:

- Study Date/Time, Instance Creation Date/Time are both equal to the current time gdc.mpdf tool was run,
- Acquisition Date Time is set to the Modify Time of the actual pdf file,
- Content Date/Time are set from the actual PDF header info: CreationDate.

11.7 SEE ALSO

gdc.mconv(1), **gdc.mraw(1)**, **pdfinfo(1)**

11.8 COPYRIGHT

Copyright (c) 2006-2011 Mathieu Malaterre

Chapter 12

Extract Data Element Value Field.

12.1 SYNOPSIS

```
gdcmmraw [options] file-in file-out
```

12.2 DESCRIPTION

The **gdcmmraw** tool is mostly used for development purpose. It is used to extract a specific binary field from a DICOM DataSet.

12.3 PARAMETERS

```
file-in    DICOM input filename
```

```
file-out    output filename
```

12.4 options

12.4.1 PARAMETERS

```
-i --input      Input filename
-o --output      Output filename
-t --tag        Specify tag to extract value from.
```

12.4.2 options

```
-S --split-frags  Split fragments into multiple files.
-p --pattern      Specify trailing file pattern (see split-frags).
-P --pixel-data   Pixel Data trailing 0.
```

12.4.3 general options

```
-h    --help
```



```
-rw-r--r-- 1 mathieu mathieu 81512 2008-08-08 22:10 jpeg03.ljpeg  
-rw-r--r-- 1 mathieu mathieu 81694 2008-08-08 22:10 jpeg02.ljpeg  
-rw-r--r-- 1 mathieu mathieu 81564 2008-08-08 22:10 jpeg01.ljpeg  
-rw-r--r-- 1 mathieu mathieu 79970 2008-08-08 22:10 jpeg00.ljpeg
```

12.6 Footnote about JPEG files

It is a common misunderstanding to interchange 'JPEG 8bits lossy' with simply JPEG file. The JPEG specification is much broader than simply the common lossy 8bits file (as found on internet).

You can have

- JPEG Lossy 8bits
- JPEG Lossy 12bits
- JPEG Lossless 2-16bits

Those are what is defined in ITU-T T.81, ISO/IEC IS 10918-1.

12.7 SEE ALSO

gdcmdump(1), **gdcmrw(1)**

12.8 COPYRIGHT

Copyright (c) 2006-2011 Mathieu Malaterre

Chapter 13

Scan a directory containing DICOM files.

13.1 SYNOPSIS

```
gdcmscanner [options] directory
```

13.2 DESCRIPTION

The **gdcmscanner** is a command line tool to quickly extract value from a set of DICOM attribute in a DICOM File-Set.

13.2.1 PARAMETERS

```
-d --dir          DICOM directory
-t --tag %d,%d    DICOM tag(s) to look for
```

13.2.2 options

```
-p --print        Print output.
-r --recursive    Recusively descend directory.
```

13.2.3 general options

```
-h --help
    print this help text and exit

-v --version
    print version information and exit

-V --verbose
    verbose mode (warning+error).

-W --warning
    warning mode, print warning information

-E --error
    error mode, print error information

-D --debug
    debug mode, print debug information
```

13.3 Typical usage

13.4 Simple usage

In order to display all the value for Patient Name (0010,0010) in the directory name **gdcmlData**, simply do:

```
$ gdcmscanner -t 10,10 -d gdcmlData -p
```

13.5 Complex usage

Because gdcmscanner does not support progress, you have to wait until all files are traversed to see any results. This is quite cumbersome, on UNIX this can be worked around with the following trick:

```
$ find gdcmlData -type d -exec gdcmscanner -t 10,10 -d {} -p ';'`
```

So all directory are locally traversed (no child directory are recursively traversed), which means results comes out much faster.

13.6 SEE ALSO

gdcmdump(1), **gdcmlraw(1)**

13.7 COPYRIGHT

Copyright (c) 2006-2011 Mathieu Malaterre

Chapter 14

Tool to execute a DICOM Query/Retrieve operation

14.1 SYNOPSIS

```
gdcmscu [OPTION]...[OPERATION]...HOSTNAME...[PORT]...
```

Execute a DICOM Q/R operation to HOSTNAME, using port PORT (104 when not specified)

14.2 DESCRIPTION

The **gdcmscu** command line program is the tool to execute DICOM Query/Retrieve operation. It supports:

- C-ECHO (SCU)
- C-FIND (SCU)
- C-STORE (SCU)
- C-MOVE (SCU/SCP) C-MOVE operation are executed using two different ports (one for the SCU and one for the SCP).

14.3 PARAMETERS

14.4 options

14.4.1 options

```
-H --hostname    %s  Hostname.  
-p --port        %d  Port number.  
    --aetitle    %s  Set calling AE Title.  
    --call       %s  Set called AE Title.
```

14.4.2 mode options

```
--echo          C-ECHO (default when none).  
--store         C-STORE.
```

```
--find      C-FIND.
--move      C-MOVE.
```

14.4.3 C-STORE options

```
-i --input      %s  DICOM filename
-r --recursive  recursively process (sub-)directories
--store-query %s  Store constructed query in file
```

14.4.4 C-FIND/C-MOVE options

```
--patientroot  C-FIND Patient Root Model.
--studyroot    C-FIND Study Root Model.

--patient      C-FIND Query on Patient Info (cannot be used with --studyroot).
--study        C-FIND Query on Study Info.
--series       C-FIND Query on Series Info.
--image        C-FIND Query on Image Info.
--key %d,%d[%s] 0123,4567=VALUE for specifying search criteria (wildcard allowed)
                With --key, leave blank (ie, --key 10,20="" or --key 10,20) to retrieve values
```

14.4.5 C-MOVE options

```
-o --output      %s  DICOM filename / directory
--port-scp %d      Port for incoming associations
--key %d,%d[%s]    0123,4567=VALUE for specifying search criteria (wildcard not allowed)
                Note that C-MOVE supports the same queries as C-FIND, but no wildcards are allowed
```

14.4.6 general options

```
-h --help
    print this help text and exit

-v --version
    print version information and exit

-V --verbose
    verbose mode (warning+error).

-W --warning
    warning mode, print warning information

-E --error
    error mode, print error information

-D --debug
    debug mode, print debug information

-L --log-file
    specify a filename where to write logs

--queryhelp
    print query help
```

14.4.7 environment variable

```
GDCM_ROOT_UID Root UID
```

14.5 C-ECHO usage

gdcmscu is a great tool to test if a DICOM server is up. For example to send a C-ECHO to server dicom.example.com using port 104, use:

```
$ gdcmscu dicom.example.com
```

or if you prefer being explicit:

```
$ gdcmscu --echo dicom.example.com 104
```

Using basic security your DICOM server might require that you set the appropriate called AE-TITLE

```
$ gdcmscu --echo dicom.example.com 11112 --call SERVSCP
```

If you want to specify your own AE-TITLE (default is GDCMSCU), simply use:

```
$ gdcmscu --echo dicom.example.com 11112 --call SERVSCP --aetitle MYSCU
```

For example you could test on the DICOM server provided by DICOMObject team:

```
$ gdcmscu www.dicomserver.co.uk 11112
```

14.6 C-STORE usage

C-STORE is the operation that allow sending a DICOM file to a remote DICOM server. For instance to send a file called myfile.dcm

```
$ gdcmscu --store dicom.example.com 104 myfile.dcm
```

or if you prefer being explicit:

```
$ gdcmscu --store dicom.example.com 104 -i myfile.dcm
```

You can even send multiple files using the same association:

```
$ gdcmscu --store dicom.example.com 104 myfile1.dcm myfile2.dcm myfile3.dcm ...
```

14.7 C-FIND usage

gdcmscu also allow querying a DICOM server. This is the C-FIND operation, for example to find all DICOM Instance where PatientsName match a particular pattern, usage is simply:

```
$ gdcmscu --find --patient dicom.example.com 11112 --patientroot --key 10,10,"A*"
```

We also support a DCMTK compatible convention:

```
$ gdcmscu --find --patient dicom.example.com 11112 --patientroot --key 10,10="A*"
```

When an attribute is set without a value it will be part of the output result:

```
$ gdcmscu --find --patient dicom.example.com 11112 --call MI2B2 --patientroot -k 10,10="A*" -k 10,20
```

14.8 C-MOVE usage

C-MOVE is the operation to retrieve a DICOM instance from a remote DICOM server. Most of the time, it is a subsequent operation after a C-FIND query. To retrieve a DICOM instance where PatientID is ABCD1234, simply execute:

```
$ gdcmscu --move --patient --aetitle ACME1 --call ACME_STORE dicom.example.com 5678 --patientroot -k 10,20="ABCD1234"
```

WARNING For this operation to work you need information from the DICOM server you are communicating with. Only the DICOM server you are sending a C-MOVE query will be responsible for sending back incoming associations (the actual C-STORE SCP). Therefore you need to make sure that your mapping of (AE-TITLE,PortNumber) is properly set on the DICOM server side as well as the port for incoming association (`--port-scp`).

gdcmscu does not currently support external C-STORE association (C-STORE request sent to an external SCP application).

14.9 patientroot notes

The flag `--patientroot` is just simply a wrapper around the syntax `--key 8,52=PATIENT`. For instance one would write using DCMTK syntax:

```
$ findscu --patient dicom.example.com 11112 --key 8,52=PATIENT --key 10,10="F*"
```

This would become using GDCM syntax:

```
$ gdcmscu --find --patient dicom.example.com 11112 --patientroot --key 10,10="F*"
```

14.10 Debugging

This is sometime difficult to investigate why a connection to a remote DICOM server cannot be done. Some recommendations follow:

Always try to do a simple C-ECHO at first. If you cannot get the C-ECHO to work none of the other operations will work. Before trying to a C-MOVE operation, make sure you can execute the C-FIND equivalent query first.

When doing a C-MOVE operation you really need to communicate with the PACS admin as the C-MOVE operation is different from the other lower level operation such as HTTP/GET. When doing a C-MOVE, the server will communicate back using another channel (could be different port) using its internal database to map an AE-TITLE back to the destination IP. Indeed the C-MOVE operation by design does not always use your incoming IP address to send back the resulting dataset. Instead it uses a mapping of AE-TITLE to IP address to send back any results. So pay particular attention to the spelling of your AE-TITLE and your incoming port (which may be different from the port to connect to the server).

14.11 Port Warning

Watch out that port ranging [1-1024] are reserved for admin and not easily accessible unless granted special privileges. Therefore the default 104 DICOM port might not be accessible to all your users.

14.12 C-STORE Warnings

When constructing a C-STORE operation, `gdcm SCU` will always use the Media Storage as found in the file to be sent. For encapsulated DICOM file (eg. RLE Lossless) the receiving SCP server might not support this compression and will legitimately refuse the C-STORE operation. In this case users have to manually convert to a non-compressed form this particular file:

```
$ gdcmconv --raw compressed.dcm non_compressed.dcm
```

14.13 C-MOVE Warnings

At the moment `gdcm SCU` only supports non-compressed transfer syntax. It will always request DataSet using Implicit VR Little Endian Transfer Syntax during a C-MOVE operation.

14.14 C-FIND IMAGE level (Composite Object Instance)

One should pay attention that `gdcm SCU` `--find` and `find SCU` are not completely equivalent. Using `gdcm SCU` `--find`, all Unique Keys will be added automatically. One can therefore execute something like this:

```
$ gdcm SCU --find --patientroot --image --key 8,18=1.2.3.4.5.6 dicom.example.com 11112
```

instead of the more explicit form

```
$ gdcm SCU --find --patientroot --image --key 8,18=1.2.3.4.5.6 dicom.example.com 11112 --key 10,20 --key 20,d --key
```

This would also be equivalent to:

```
$ find SCU --patient --key 8,52=IMAGE --key 8,18=1.2.3.4.5.6 dicom.example.com 11112 --key 10,20 --key 20,d --key
```

14.15 Storing the Query

It is also possible to store the query:

```
gdcm SCU --find --patient --patientroot dicom.example.com 11112 --key 10,20="*" --key 10,10 --store-query query.dcm
```

One can then check the DataSet values send for the query:

```
$ gdcmdump query.dcm
# Dicom-File-Format

# Dicom-Meta-Information-Header
# Used TransferSyntax:

# Dicom-Data-Set
# Used TransferSyntax: 1.2.840.10008.1.2
(0008,0005) ?? (CS) [ISO_IR 192] # 10,1-n Specific Character Set
(0008,0052) ?? (CS) [PATIENT ] # 8,1 Query/Retrieve Level
(0010,0010) ?? (PN) (no value) # 0,1 Patient's Name
(0010,0020) ?? (LO) [* ] # 2,1 Patient ID
```

The Specific Character Set was set to "ISO_IR 192" as the locale encoding of the system was found automatically by `gdcm SCU` to be UTF-8.

This means that the following command line will properly setup the Query with the appropriate Charset to be executed correctly:

```
$ gdcm SCU --find --patient --patientroot dicom.example.com 11112 --key 10,10="*Jérôme"
```

the query is always executed on the server side (SCP), some implementations does not support string matching with different Character Set.

14.16 DICOM Public Servers

An up to date list of DICOM Public Servers can be found at:

<http://www.dclunie.com/medical-image-faq/html/part8.html#DICOMPublicServers>

14.17 SEE ALSO

`gdcmconv(1)`

14.18 COPYRIGHT

Copyright Insight Software Consortium

Chapter 15

Concatenate/Extract DICOM files.

15.1 SYNOPSIS

```
gdcmtar [options] file-in file-out
```

15.2 DESCRIPTION

The **gdcmtar** is a command line tool used to tar/untar multi-frames images (including SIEMENS MOSAIC file)

15.3 PARAMETERS

file-in DICOM input filename

file-out DICOM output filename

15.4 options

15.4.1 options

```
--enhance      enhance (default)
-U --unenhance  unenhance
-M --mosaic     Split SIEMENS Mosaic image into multiple frames.
-p --pattern    Specify trailing file pattern.
--root-uid      Root UID.
```

15.4.2 general options

```
-h --help      print this help text and exit
-v --version    print version information and exit
-V --verbose    verbose mode (warning+error).
```

```
-W  --warning
    warning mode, print warning information

-E  --error
    error mode, print error information

-D  --debug
    debug mode, print debug information
```

15.4.3 environment variable

GDCM_ROOT_UID Root UID

15.5 Typical usage

15.5.1 SIEMENS Mosaic

```
$ gdcminfo MR-sonata-3D-as-Tile.dcm
```

```
MediaStorage is 1.2.840.10008.5.1.4.1.1.4 [MR Image Storage]
TransferSyntax is 1.2.840.10008.1.2.1 [Explicit VR Little Endian]
NumberOfDimensions: 2
Dimensions: (384,384,1)
\&...
```

```
$ gdcmtar --mosaic -i MR-sonata-3D-as-Tile.dcm -o mosaic --pattern %03d.dcm
```

Will output:

```
-rw-r--r-- 1 mathieu mathieu 72882 2009-08-10 11:14 mosaic000.dcm
-rw-r--r-- 1 mathieu mathieu 72886 2009-08-10 11:14 mosaic001.dcm
-rw-r--r-- 1 mathieu mathieu 72886 2009-08-10 11:14 mosaic002.dcm
-rw-r--r-- 1 mathieu mathieu 72886 2009-08-10 11:14 mosaic003.dcm
-rw-r--r-- 1 mathieu mathieu 72886 2009-08-10 11:14 mosaic004.dcm
-rw-r--r-- 1 mathieu mathieu 72886 2009-08-10 11:14 mosaic005.dcm
-rw-r--r-- 1 mathieu mathieu 72884 2009-08-10 11:14 mosaic006.dcm
-rw-r--r-- 1 mathieu mathieu 72882 2009-08-10 11:14 mosaic007.dcm
-rw-r--r-- 1 mathieu mathieu 72884 2009-08-10 11:14 mosaic008.dcm
-rw-r--r-- 1 mathieu mathieu 72884 2009-08-10 11:14 mosaic009.dcm
-rw-r--r-- 1 mathieu mathieu 72884 2009-08-10 11:14 mosaic010.dcm
-rw-r--r-- 1 mathieu mathieu 72884 2009-08-10 11:14 mosaic011.dcm
-rw-r--r-- 1 mathieu mathieu 72884 2009-08-10 11:14 mosaic012.dcm
-rw-r--r-- 1 mathieu mathieu 72884 2009-08-10 11:14 mosaic013.dcm
-rw-r--r-- 1 mathieu mathieu 72882 2009-08-10 11:14 mosaic014.dcm
-rw-r--r-- 1 mathieu mathieu 72884 2009-08-10 11:14 mosaic015.dcm
-rw-r--r-- 1 mathieu mathieu 72882 2009-08-10 11:14 mosaic016.dcm
-rw-r--r-- 1 mathieu mathieu 72884 2009-08-10 11:14 mosaic017.dcm
-rw-r--r-- 1 mathieu mathieu 72884 2009-08-10 11:14 mosaic018.dcm
-rw-r--r-- 1 mathieu mathieu 72884 2009-08-10 11:14 mosaic019.dcm
-rw-r--r-- 1 mathieu mathieu 72884 2009-08-10 11:14 mosaic020.dcm
-rw-r--r-- 1 mathieu mathieu 72884 2009-08-10 11:14 mosaic021.dcm
-rw-r--r-- 1 mathieu mathieu 72884 2009-08-10 11:14 mosaic022.dcm
-rw-r--r-- 1 mathieu mathieu 72884 2009-08-10 11:14 mosaic023.dcm
-rw-r--r-- 1 mathieu mathieu 72884 2009-08-10 11:14 mosaic024.dcm
-rw-r--r-- 1 mathieu mathieu 72884 2009-08-10 11:14 mosaic025.dcm
-rw-r--r-- 1 mathieu mathieu 72884 2009-08-10 11:14 mosaic026.dcm
-rw-r--r-- 1 mathieu mathieu 72884 2009-08-10 11:14 mosaic027.dcm
-rw-r--r-- 1 mathieu mathieu 72884 2009-08-10 11:14 mosaic028.dcm
-rw-r--r-- 1 mathieu mathieu 72884 2009-08-10 11:14 mosaic029.dcm
-rw-r--r-- 1 mathieu mathieu 72882 2009-08-10 11:14 mosaic030.dcm
```



```
$ gdcminfo mosaic000.dcm
```

```
MediaStorage is 1.2.840.10008.5.1.4.1.1.4 [MR Image Storage]  
TransferSyntax is 1.2.840.10008.1.2.1 [Explicit VR Little Endian]  
NumberOfDimensions: 2  
Dimensions: (64,64,1)  
\&...
```

15.6 SEE ALSO

gdcmdump(1), **gdcmrw(1)**, **gdcminfo(1)**

15.7 COPYRIGHT

Copyright (c) 2006-2011 Mathieu Malaterre

Chapter 16

Simple DICOM viewer.

16.1 SYNOPSIS

```
gdcviewer [options] file-in
```

16.2 DESCRIPTION

The **gdcviewer** is a simple tool that show how to use [vtkGDCMImageReader](#). The class that use gdc to make a layer to VTK. **gdcviewer** is basically only just a wrapper around VTK/GDCM.

This tool is meant for testing integration of GDCM in VTK. You should see it as a demo tool. It does compile with VTK ranging from 4.2 to 5.8, but only with VTK 5.2 (or above) can only play with the widgets (as described below).

16.3 PARAMETERS

```
file-in    DICOM input filename
```

16.4 options

16.4.1 options

```
--force-rescale    force rescale (advanced users)
--force-spacing    force spacing (advanced users)
-r --recursive     Recursively descend directory
```

16.4.2 general options

```
-h    --help
      print this help text and exit

-v    --version
      print version information and exit

-V    --verbose
      verbose mode (warning+error).
```

```
-W  --warning
    warning mode, print warning information

-E  --error
    error mode, print error information

-D  --debug
    debug mode, print debug information
```

16.5 Typical usage

16.6 Simple usage

For now `gdcmviewer` should be started from a command line prompt. The next argument should be the name of the DICOM file you wish to read. For instance:

```
$ gdcmviewer -V 012345.002.050.dcm
```

`gdcmviewer` will try to read your file, and then print the `vtk` information associated with this file. Basically what kind of image you are looking at.

- `ScalarType` is the DICOM Real World Value type
- `Dimensions` is the dimension of the image
- `Spacing` is the spacing of the image
- `NumberOfScalarComponents` should be 1 for grayscale & `PALETTE COLOR` and 3 for `RGB`, `YBR` data.

16.7 Wiki Link

The wiki page, with color pictures can be found at: <http://sourceforge.net/apps/mediawiki/gdcm/index.php?title=Gdcmviewer>

16.8 SEE ALSO

`gdcmdump(1)`, `gdcm2vtk(1)`

16.9 COPYRIGHT

Copyright (c) 2006-2011 Mathieu Malaterre

Chapter 17

Todo List

Class [gdcm::CSAHeader](#)

MrEvaProtocol in 29,1020 contains ^M that would be nice to get rid of on UNIX system...

Class [gdcm::Overlay](#)

Is there actually any way to recognize an overlay ? On images with multiple overlay I do not see any way to differentiate them (other than the group tag).

Class [gdcm::SequenceOfFragments](#)

I do not enforce that Sequence of Fragments ends with a SQ end del

Class [gdcm::TransferSyntax](#)

: The implementation is completely retarded -> see [gdcm::UIDs](#) for a replacement We need: IsSupported We need preprocess of raw/xml file We need GetFullName()

Member [gdcm::UIDGenerator::IsValid](#) (const char *uid)

: Move that in DataStructureAndEncoding (see FileMetaInformation::CheckFileMetaInformation)

Chapter 18

Deprecated List

Member `gdcm::CompositeNetworkFunctions::ConstructQuery` (`ERootType inRootType`, `EQueryLevel inQueryLevel`, `const KeyValuePairArrayType &keys`, `bool inMove=false`)

Member `gdcm::DataElement::GetSequenceOfItems` () `const`

Replaced by `DataElement::GetValueAsSQ()` as of GDCM 2.2.

Member `gdcm::FileSet::AddFile` (`File const &`)

. Does nothing

Member `gdcm::TransferSyntax::GetSwapCode` () `const`

Return the `SwapCode` associated with the Transfer Syntax. Be careful with the special GE private syntax the `DataSet` is written in little endian but the Pixel Data is in Big Endian.

Chapter 19

Bug List

Class `gdcm::DICOMDIRGenerator`

: There is a current limitation of not handling Referenced SOP Class UID / Referenced SOP Instance UID simply because the `gdcm::Scanner` does not allow us See PS 3.11 / Table D.3-2 STD-GEN Additional DICOMDIR Keys

Class `gdcm::IPPSorter`

There are currently a couple of bugs in this implementation:

Chapter 20

Namespace Index

20.1 Namespace List

Here is a list of all namespaces with brief descriptions:

gdc	103
gdc::network	124
gdc::SegmentHelper	130
gdc::terminal	
Class for Terminal Allow one to print in color in a shell	130

Chapter 21

Hierarchical Index

21.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

gdcn::network::AbstractSyntax	144
gdcn::network::ApplicationContext	154
gdcn::ApplicationEntity	155
gdcn::network::ARTIMTimer	160
gdcn::ASN1	161
gdcn::network::AsynchronousOperationsWindowSub	162
gdcn::Attribute< Group, Element, TVR, TVM >	163
gdcn::Attribute< Group, Element, TVR, VM::VM1 >	170
gdcn::Attribute< Group, Element, TVR, VM::VM1_n >	177
gdcn::Attribute< Group, Element, TVR, VM::VM1_3 >	175
gdcn::Attribute< Group, Element, TVR, VM::VM1_8 >	176
gdcn::Attribute< Group, Element, TVR, VM::VM2_n >	183
gdcn::Attribute< Group, Element, TVR, VM::VM2_2n >	182
gdcn::Attribute< Group, Element, TVR, VM::VM3_n >	186
gdcn::Attribute< Group, Element, TVR, VM::VM3_3n >	185
gdcn::Base64	190
gdcn::network::BaseCompositeMessage	192
gdcn::network::CEchoRQ	226
gdcn::network::CEchoRSP	227
gdcn::network::CFindCancelRQ	229
gdcn::network::CFindRQ	230
gdcn::network::CFindRSP	232
gdcn::network::CMoveCancelRq	233
gdcn::network::CMoveRQ	234
gdcn::network::CMoveRSP	236
gdcn::network::CStoreRQ	267
gdcn::network::CStoreRSP	269
gdcn::network::BasePDU	194
gdcn::network::AAabortPDU	133
gdcn::network::AAssociateACPDU	135
gdcn::network::AAssociateRJPDU	138
gdcn::network::AAssociateRQPDU	139
gdcn::network::AReleaseRPPDU	157

gdcmm::network::AReleaseRQPDU	158
gdcmm::network::PDataTFPDU	530
std::basic_string< Char >	
std::string	
gdcmm::String< TDelimiter, TMaxLength, TPadChar >	679
gdcmm::SegmentHelper::BasicCodedEntry	200
gdcmm::BitmapToBitmapFilter	213
gdcmm::PixmapToPixmapFilter	557
gdcmm::ImageToImageFilter	433
gdcmm::ImageApplyLookupTable	402
gdcmm::ImageChangePhotometricInterpretation	404
gdcmm::ImageChangePlanarConfiguration	408
gdcmm::ImageChangeTransferSyntax	411
gdcmm::ImageFragmentSplitter	421
gdcmm::ByteBuffer	219
gdcmm::ByteSwap< T >	219
gdcmm::ByteSwapFilter	221
gdcmm::network::CFind	229
gdcmm::Coder	238
gdcmm::Codec	237
gdcmm::AudioCodec	188
gdcmm::ImageCodec	415
gdcmm::DeltaEncodingCodec	299
gdcmm::JPEG2000Codec	460
gdcmm::JPEGCodec	465
gdcmm::JPEG12Codec	456
gdcmm::JPEG16Codec	458
gdcmm::JPEG8Codec	463
gdcmm::JPEGLSCoec	469
gdcmm::KAKADUCoec	472
gdcmm::PGXCoec	541
gdcmm::PNMCoec	562
gdcmm::PVRGCoec	584
gdcmm::RAWCoec	598
gdcmm::RLECoec	610
gdcmm::PDFCoec	537
gdcmm::CodeString	240
gdcmm::network::CompositeMessageFactory	246
gdcmm::CompositeNetworkFunctions	247
gdcmm::ConstCharWrapper	250
gdcmm::CryptographicMessageSyntax	253
gdcmm::CSAElement	254
gdcmm::CSAHeader	259
gdcmm::CSAHeaderDict	263
gdcmm::CSAHeaderDictEntry	265
gdcmm::DataElement	273
gdcmm::CP246ExplicitDataElement	251
gdcmm::ExplicitDataElement	355
gdcmm::ExplicitImplicitDataElement	356
gdcmm::Fragment	386
gdcmm::BasicOffsetTable	203
gdcmm::ImplicitDataElement	440
gdcmm::Item	451

gdcmm::UNExplicitDataElement	805
gdcmm::UNExplicitImplicitDataElement	807
gdcmm::VR16ExplicitDataElement	830
gdcmm::DataSet	285
gdcmm::CommandDataSet	244
gdcmm::FileMetaInformation	369
gdcmm::DataSetHelper	294
gdcmm::Decoder	295
gdcmm::Codec	237
gdcmm::DefinedTerms	296
gdcmm::Defs	297
gdcmm::DICOMDIR	301
gdcmm::DICOMDIRGenerator	301
gdcmm::Dict	304
gdcmm::DictConverter	306
gdcmm::DictEntry	308
gdcmm::Dicts	313
gdcmm::network::DIMSE	315
gdcmm::DirectionCosines	317
gdcmm::Directory	319
gdcmm::DirectoryHelper	321
gdcmm::DummyValueGenerator	323
gdcmm::Element< TVR, TVM >	326
gdcmm::Element< TVR, VM::VM1_n >	331
gdcmm::Element< TVR, VM::VM1_2 >	330
gdcmm::Element< TVR, VM::VM2_n >	336
gdcmm::Element< TVR, VM::VM2_2n >	334
gdcmm::Element< TVR, VM::VM3_n >	339
gdcmm::Element< TVR, VM::VM3_3n >	337
gdcmm::Element< VR::AS, VM::VM5 >	340
gdcmm::Element< VR::OB, VM::VM1_n >	326
gdcmm::Element< VR::OB, VM::VM1 >	341
gdcmm::Element< VR::OW, VM::VM1_n >	326
gdcmm::Element< VR::OW, VM::VM1 >	342
gdcmm::EncapsulatedDocument	344
gdcmm::EncodingImplementation< T >	345
gdcmm::EncodingImplementation< VR::VRASCII >	345
gdcmm::EncodingImplementation< VR::VRBINARY >	346
gdcmm::EnumeratedValues	349
gdcmm::Event	349
gdcmm::AnyEvent	152
gdcmm::AbortEvent	143
gdcmm::AnonymizeEvent	145
gdcmm::DataEvent	283
gdcmm::DataSetEvent	292
gdcmm::EndEvent	347
gdcmm::ExitEvent	353
gdcmm::InitializeEvent	441
gdcmm::IterationEvent	454
gdcmm::ModifiedEvent	500
gdcmm::ProgressEvent	581
gdcmm::StartEvent	669

gdcmm::UserEvent	811
gdcmm::NoEvent	514
std::exception	
gdcmm::CSAHeaderDictException	266
gdcmm::DataElementException	282
gdcmm::Exception	351
gdcmm::ParseException	526
gdcmm::Fiducials	358
gdcmm::FileDerivation	365
gdcmm::FileExplicitFilter	367
gdcmm::Filename	375
gdcmm::FilenameGenerator	377
gdcmm::FileSet	379
gdcmm::Global	389
gdcmm::GroupDict	391
gdcmm::IconImageFilter	393
gdcmm::IconImageGenerator	395
gdcmm::ignore_char	397
gdcmm::ImageConverter	420
gdcmm::ImageHelper	423
gdcmm::network::ImplementationClassUIDSub	438
gdcmm::network::ImplementationUIDSub	438
gdcmm::network::ImplementationVersionNameSub	439
gdcmm::IOD	443
gdcmm::IODEntry	444
gdcmm::IODs	446
gdcmm::Scanner::ltstr	481
gdcmm::Macro	481
gdcmm::Macros	483
gdcmm::network::MaximumLengthSub	484
gdcmm::MD5	485
gdcmm::MediaStorage	486
gdcmm::Module	502
gdcmm::ModuleEntry	504
gdcmm::NestedModuleEntries	512
gdcmm::Modules	506
gdcmm::Object	515
gdcmm::BaseRootQuery	196
gdcmm::FindPatientRootQuery	382
gdcmm::FindStudyRootQuery	384
gdcmm::MovePatientRootQuery	508
gdcmm::MoveStudyRootQuery	510
gdcmm::Bitmap	205
gdcmm::Pixmap	550
gdcmm::Image	398
gdcmm::Curve	270
gdcmm::File	359
gdcmm::FileWithName	380
gdcmm::LookupTable	476
gdcmm::SegmentedPaletteColorLookupTable	626
gdcmm::MeshPrimitive	497
gdcmm::Overlay	520
gdcmm::Segment	621

gdcmm::Subject	685
gdcmm::Anonymizer	148
gdcmm::Command	242
gdcmm::MemberCommand< T >	493
gdcmm::SimpleMemberCommand< T >	653
gdcmm::FileAnonymizer	362
gdcmm::network::ULConnectionManager	799
gdcmm::Scanner	615
gdcmm::ServiceClassUser	647
gdcmm::Surface	688
gdcmm::Value	815
gdcmm::ByteValue	221
gdcmm::SequenceOfFragments	632
gdcmm::SequenceOfItems	637
gdcmm::Orientation	518
gdcmm::Parser	528
gdcmm::Patient	530
gdcmm::PDBelement	533
gdcmm::PDBHeader	535
gdcmm::network::PDUFactory	538
gdcmm::PersonName	540
gdcmm::PhotometricInterpretation	543
gdcmm::PixelFormat	545
gdcmm::Preamble	565
gdcmm::PresentationContext	566
gdcmm::network::PresentationContextAC	568
gdcmm::PresentationContextGenerator	569
gdcmm::network::PresentationContextRQ	571
gdcmm::network::PresentationDataValue	573
gdcmm::Printer	575
gdcmm::DictPrinter	311
gdcmm::Dumper	324
gdcmm::PrivateDict	578
gdcmm::PythonFilter	586
gdcmm::QueryBase	587
gdcmm::QueryImage	590
gdcmm::QueryPatient	592
gdcmm::QuerySeries	594
gdcmm::QueryStudy	596
gdcmm::QueryFactory	589
gdcmm::Reader	600
gdcmm::PixmapReader	553
gdcmm::ImageReader	426
gdcmm::ImageRegionReader	430
gdcmm::SegmentReader	627
gdcmm::SurfaceReader	697
gdcmm::Region	605
gdcmm::BoxRegion	215
gdcmm::Rescaler	607
gdcmm::network::RoleSelectionSub	613
gdcmm::SerieHelper::Rule	614
gdcmm::SerieHelper	643

gdcm::Series	645
gdcm::network::ServiceClassApplicationInformation	646
gdcm::SHA1	652
gdcm::SimpleSubjectWatcher	656
gdcm::SmartPointer< ObjectType >	658
gdcm::SmartPointer< gdcm::Bitmap >	658
gdcm::SmartPointer< gdcm::File >	658
gdcm::SmartPointer< gdcm::gdcm::Subject >	658
gdcm::SmartPointer< gdcm::Image >	658
gdcm::SmartPointer< gdcm::MemberCommand >	658
gdcm::SmartPointer< gdcm::MeshPrimitive >	658
gdcm::SmartPointer< gdcm::Pixmap >	658
gdcm::SmartPointer< gdcm::SimpleMemberCommand >	658
gdcm::SmartPointer< LookupTable >	658
gdcm::SmartPointer< Segment >	658
gdcm::SmartPointer< Surface >	658
gdcm::SmartPointer< Value >	658
gdcm::network::SOPClassExtendedNegociationSub	660
gdcm::SOPClassUIDToIOD	661
gdcm::Sorter	662
gdcm::IPPSorter	447
gdcm::Spacing	666
gdcm::Spectroscopy	668
gdcm::SplitMosaicFilter	668
gdcm::static_assert_test< x >	671
gdcm::STATIC_ASSERTION_FAILURE< x >	671
gdcm::STATIC_ASSERTION_FAILURE< true >	671
gdcm::StreamImageReader	671
gdcm::StreamImageWriter	674
String<'\', 64 >	
gdcm::LO	474
gdcm::StringFilter	683
gdcm::Study	685
gdcm::SurfaceHelper	694
gdcm::SwapCode	701
gdcm::SwapperDoOp	703
gdcm::SwapperNoOp	704
gdcm::System	704
gdcm::Table	708
gdcm::TableEntry	709
gdcm::TableReader	710
gdcm::XMLDictReader	891
gdcm::XMLPrivateDictReader	892
gdcm::network::TableRow	712
gdcm::Tag	713
gdcm::PrivateTag	580
gdcm::TagPath	719
gdcm::Testing	721
gdcm::Trace	724
gdcm::TransferSyntax	728
gdcm::network::TransferSyntaxSub	731
gdcm::network::Transition	732
gdcm::Type	734

gdcmm::UI	736
gdcmm::UIDGenerator	736
gdcmm::UIDs	738
gdcmm::network::ULAction	757
gdcmm::network::ULActionAA1	760
gdcmm::network::ULActionAA2	761
gdcmm::network::ULActionAA3	762
gdcmm::network::ULActionAA4	763
gdcmm::network::ULActionAA5	764
gdcmm::network::ULActionAA6	765
gdcmm::network::ULActionAA7	767
gdcmm::network::ULActionAA8	768
gdcmm::network::ULActionAE1	769
gdcmm::network::ULActionAE2	770
gdcmm::network::ULActionAE3	771
gdcmm::network::ULActionAE4	772
gdcmm::network::ULActionAE5	774
gdcmm::network::ULActionAE6	775
gdcmm::network::ULActionAE7	776
gdcmm::network::ULActionAE8	777
gdcmm::network::ULActionAR1	778
gdcmm::network::ULActionAR10	779
gdcmm::network::ULActionAR2	781
gdcmm::network::ULActionAR3	782
gdcmm::network::ULActionAR4	783
gdcmm::network::ULActionAR5	784
gdcmm::network::ULActionAR6	785
gdcmm::network::ULActionAR7	786
gdcmm::network::ULActionAR8	788
gdcmm::network::ULActionAR9	789
gdcmm::network::ULActionDT1	790
gdcmm::network::ULActionDT2	791
gdcmm::network::ULConnection	794
gdcmm::network::ULConnectionCallback	796
gdcmm::network::ULBasicCallback	792
gdcmm::network::ULWritingCallback	803
gdcmm::network::ULConnectionInfo	798
gdcmm::network::ULEvent	802
gdcmm::network::ULTransitionTable	803
gdcmm::Unpacker12Bits	809
gdcmm::Usage	810
gdcmm::network::UserInformation	813
gdcmm::Validate	814
gdcmm::ValueIO< TDE, TSwap, TType >	817
gdcmm::Version	818
gdcmm::VL	819
gdcmm::VM	821
gdcmm::VMToLength< T >	825
gdcmm::VR	825
gdcmm::VRToEncoding< T >	832
gdcmm::VRToType< T >	832
gdcmm::VRToType< TVR >	832
gdcmm::VRVLSIZE< T >	833
gdcmm::VRVLSIZE< 0 >	833

gdcM::VRVLSize < 1 >	833
vtkImageAlgorithm	
vtkImagePlanarComponentsToComponents	873
vtkImageMapToColors	
vtkImageMapToWindowLevelColors2	871
vtkImageWriter	
vtkGDCMImageWriter	840
vtkLookupTable	
vtkLookupTable16	878
vtkMedicalImageProperties	
vtkGDCMMedicalImageProperties	845
vtkMedicalImageReader2	
vtkGDCMImageReader	834
vtkGDCMThreadedImageReader	855
vtkObject	
vtkGDCMTesting	852
vtkImageColorViewer	861
vtkRTStructSetProperties	880
vtkPolyDataAlgorithm	
vtkGDCMPolyDataReader	846
vtkPolyDataWriter	
vtkGDCMPolyDataWriter	849
vtkThreadedImageAlgorithm	
vtkGDCMThreadedImageReader2	857
vtkImageMapToColors16	868
vtkImageRGBToYBR	875
vtkImageYBRToRGB	876
gdcM::Waveform	885
gdcM::Writer	885
gdcM::PixmapWriter	559
gdcM::ImageWriter	435
gdcM::SegmentWriter	630
gdcM::SurfaceWriter	700

Chapter 22

Class Index

22.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

gdcn::network::AAabortPDU	
AAabortPDU Table 9-26 A-ABORT PDU FIELDS	133
gdcn::network::AAssociateACPDU	
AAssociateACPDU Table 9-17 ASSOCIATE-AC PDU fields	135
gdcn::network::AAssociateRJPDU	
AAssociateRJPDU Table 9-21 ASSOCIATE-RJ PDU FIELDS	138
gdcn::network::AAssociateRQPDU	
AAssociateRQPDU Table 9-11 ASSOCIATE-RQ PDU fields	139
gdcn::AbortEvent	143
gdcn::network::AbstractSyntax	
AbstractSyntax Table 9-14 ABSTRACT SYNTAX SUB-ITEM FIELDS	144
gdcn::AnonymizeEvent	
AnonymizeEvent Special type of event triggered during the Anonymization process	145
gdcn::Anonymizer	
Anonymizer This class is a multi purpose anonymizer. It can work in 2 mode:	148
gdcn::AnyEvent	152
gdcn::network::ApplicationContext	
ApplicationContext Table 9-12 APPLICATION CONTEXT ITEM FIELDS Looks like Application Con- text can only be 64 bytes at max (see Figure 9-1 / PS 3.8 - 2009)	154
gdcn::ApplicationEntity	
ApplicationEntity	155
gdcn::network::AReleaseRPPDU	
AReleaseRPPDU Table 9-25 A-RELEASE-RP PDU fields	157
gdcn::network::AReleaseRQPDU	
AReleaseRQPDU Table 9-24 A-RELEASE-RQ PDU FIELDS	158
gdcn::network::ARTIMTimer	
ARTIMTimer This file contains the code for the ARTIM timer	160
gdcn::ASN1	
Class for ASN1	161
gdcn::network::AsynchronousOperationsWindowSub	
AsynchronousOperationsWindowSub PS 3.7 Table D.3-7 ASYNCHRONOUS OPERATIONS WIND- OW SUB-ITEM FIELDS (A-ASSOCIATE-RQ)	162

gdcm::Attribute< Group, Element, TVR, TVM >	
Attribute class This class use template metaprograming tricks to let the user know when the template instantiation does not match the public dictionary	163
gdcm::Attribute< Group, Element, TVR, VM::VM1 >	170
gdcm::Attribute< Group, Element, TVR, VM::VM1_3 >	175
gdcm::Attribute< Group, Element, TVR, VM::VM1_8 >	176
gdcm::Attribute< Group, Element, TVR, VM::VM1_n >	177
gdcm::Attribute< Group, Element, TVR, VM::VM2_2n >	182
gdcm::Attribute< Group, Element, TVR, VM::VM2_n >	183
gdcm::Attribute< Group, Element, TVR, VM::VM3_3n >	185
gdcm::Attribute< Group, Element, TVR, VM::VM3_n >	186
gdcm::AudioCodec	
AudioCodec	188
gdcm::Base64	
Class for Base64	190
gdcm::network::BaseCompositeMessage	
BaseCompositeMessage The Composite events described in section 3.7-2009 of the DICOM standard all use their own messages. These messages are constructed using Presentation Data Values, from section 3.8-2009 of the standard, and then fill in appropriate values in their datasets	192
gdcm::network::BasePDU	
BasePDU base class for PDUs	194
gdcm::BaseRootQuery	
BaseRootQuery contains: a baseclass which will produce a dataset for c-find and c-move with patient/study root	196
gdcm::SegmentHelper::BasicCodedEntry	
This structure defines a basic coded entry with all of its attributes	200
gdcm::BasicOffsetTable	
Class to represent a BasicOffsetTable	203
gdcm::Bitmap	
Bitmap class A bitmap based image. Used as parent for both IconImage and the main Pixel Data Image It does not contains any World Space information (IPP, IOP)	205
gdcm::BitmapToBitmapFilter	
BitmapToBitmapFilter class Super class for all filter taking an image and producing an output image	213
gdcm::BoxRegion	
Class for manipulation box region This is a very simple implementation of the Region class. It only support 3D box type region. It assumes the 3D Box does not have a tilt Origin is as (0,0,0)	215
gdcm::ByteBuffer	
ByteBuffer	219
gdcm::ByteSwap< T >	
ByteSwap	219
gdcm::ByteSwapFilter	
ByteSwapFilter In place byte-swapping of a dataset FIXME: FL status ??	221
gdcm::ByteValue	
Class to represent binary value (array of bytes)	221
gdcm::network::CEchoRQ	
CEchoRQ this file defines the messages for the cecho action	226
gdcm::network::CEchoRSP	
CEchoRSP this file defines the messages for the cecho action	227
gdcm::network::CFind	229
gdcm::network::CFindCancelRQ	
CFindCancelRQ this file defines the messages for the cfind action	229
gdcm::network::CFindRQ	
CFindRQ this file defines the messages for the cfind action	230

gdcm::network::CFindRSP	
CFindRSP this file defines the messages for the cfind action	232
gdcm::network::CMoveCancelRq	233
gdcm::network::CMoveRQ	
CMoveRQ this file defines the messages for the cmove action	234
gdcm::network::CMoveRSP	
CMoveRSP this file defines the messages for the cmove action	236
gdcm::Codec	
Codec class	237
gdcm::Coder	
Coder	238
gdcm::CodeString	
CodeString This is an implementation of DICOM VR: CS The cstor will properly Trim so that operator== is correct	240
gdcm::Command	
Command superclass for callback/observer methods	242
gdcm::CommandDataSet	
Class to represent a Command DataSet	244
gdcm::network::CompositeMessageFactory	
CompositeMessageFactory This class constructs PDataPDUs, but that have been specifically constructed for the composite DICOM services (C-Echo, C-Find, C-Get, C-Move, and C-Store). It will also handle parsing the incoming data to determine which of the CompositePDUs the incoming data is, and so therefore allowing the scu to determine what to do with incoming data (if acting as a storescp server, for instance)	246
gdcm::CompositeNetworkFunctions	
Composite Network Functions These functions provide a generic API to the DICOM functions implemented in GDCM. Advanced users can use this code as a template for building their own versions of these functions (for instance, to provide progress bars or some other way of handling returned query information), but for most users, these functions should be sufficient to interface with a PACS to a local machine. Note that these functions are not contained within a static class or some other class-style interface, because multiple connections can be instantiated in the same program. The DICOM standard is much more function oriented rather than class oriented in this instance, so the design of this API reflects that functional approach. These functions implements the following SCU operations:	247
gdcm::ConstCharWrapper	
Do not use me	250
gdcm::CP246ExplicitDataElement	
Class to read/write a DataElement as CP246Explicit Data Element	251
gdcm::CryptographicMessageSyntax	
Class for CryptographicMessageSyntax encryption. This is just a simple wrapper around openssl PKCS7_encrypt functionalities	253
gdcm::CSAElement	
Class to represent a CSA Element	254
gdcm::CSAHeader	
Class for CSAHeader	259
gdcm::CSAHeaderDict	
Class to represent a map of CSAHeaderDictEntry	263
gdcm::CSAHeaderDictEntry	
Class to represent an Entry in the Dict Does not really exist within the DICOM definition, just a way to minimize storage and have a mapping from gdcm::Tag to the needed information	265
gdcm::CSAHeaderDictException	266
gdcm::network::CStoreRQ	
CStoreRQ this file defines the messages for the cecho action	267

gdcm::network::CStoreRSP	
CStoreRSP this file defines the messages for the cecho action	269
gdcm::Curve	
Curve class to handle element 50xx,3000 Curve Data WARNING: This is deprecated and lastly defined in PS 3.3 - 2004	270
gdcm::DataElement	
Class to represent a Data Element either Implicit or Explicit	273
gdcm::DataElementException	282
gdcm::DataEvent	
DataEvent	283
gdcm::DataSet	
Class to represent a Data Set (which contains Data Elements) A Data Set represents an instance of a real world Information Object	285
gdcm::DataSetEvent	
DataSetEvent Special type of event triggered during the DataSet store/move process	292
gdcm::DataSetHelper	
DataSetHelper (internal class, not intended for user level)	294
gdcm::Decoder	
Decoder	295
gdcm::DefinedTerms	
Defined Terms are used when the specified explicit Values may be extended by implementors to include additional new Values. These new Values shall be specified in the Conformance Statement (see PS 3.2) and shall not have the same meaning as currently defined Values in this standard. A Data Element with Defined Terms that does not contain a Value equivalent to one of the Values currently specified in this standard shall not be considered to have an invalid value. Note: Interpretation Type ID (4008,0210) is an example of a Data Element having Defined Terms. It is defined to have a Value that may be one of the set of standard Values; REPORT or AMENDMENT (see PS 3.3). Because this Data Element has Defined Terms other Interpretation Type IDs may be defined by the implementor	296
gdcm::Defs	
FIXME I do not like the name ' Defs '	297
gdcm::DeltaEncodingCodec	
DeltaEncodingCodec compression used by some private vendor	299
gdcm::DICOMDIR	
DICOMDIR class	301
gdcm::DICOMDIRGenerator	
DICOMDIRGenerator class This is a STD-GEN-CD DICOMDIR generator. ref: PS 3.11-2008 Annex D (Normative) - General Purpose CD-R and DVD Interchange Profiles	301
gdcm::Dict	
Class to represent a map of DictEntry	304
gdcm::DictConverter	
Class to convert a .dic file into something else:	306
gdcm::DictEntry	
Class to represent an Entry in the Dict Does not really exist within the DICOM definition, just a way to minimize storage and have a mapping from gdcm::Tag to the needed information	308
gdcm::DictPrinter	
DictPrinter class	311
gdcm::Dicts	
Class to manipulate the sum of knowledge (all the dict user load)	313
gdcm::network::DIMSE	
DIMSE PS 3.7 - 2009 Annex E Command Dictionary (Normative) E.1 REGISTRY OF DICOM COMMAND ELEMENTS Table E.1-1 COMMAND FIELDS (PART 1)	315
gdcm::DirectionCosines	
Class to handle DirectionCosines	317

gdcm::Directory	
Class for manipulation directories	319
gdcm::DirectoryHelper	
DirectoryHelper this class is designed to help mitigate some of the commonly performed operations on directories. namely: 1) the ability to determine the number of series in a directory by what type of series is present 2) the ability to find all ct series in a directory 3) the ability to find all mr series in a directory 4) to load a set of DataSets from a series that's already been sorted by the IPP sorter 5) For rtstruct stuff, you need to know the sopinstanceuid of each z plane, so there's a retrieval function for that 6) then a few other functions for rtstruct writeouts	321
gdcm::DummyValueGenerator	
Class for generating dummy value	323
gdcm::Dumper	
Codec class	324
gdcm::Element< TVR, TVM >	
Element class	326
gdcm::Element< TVR, VM::VM1_2 >	330
gdcm::Element< TVR, VM::VM1_n >	331
gdcm::Element< TVR, VM::VM2_2n >	334
gdcm::Element< TVR, VM::VM2_n >	336
gdcm::Element< TVR, VM::VM3_3n >	337
gdcm::Element< TVR, VM::VM3_n >	339
gdcm::Element< VR::AS, VM::VM5 >	340
gdcm::Element< VR::OB, VM::VM1 >	341
gdcm::Element< VR::OW, VM::VM1 >	342
gdcm::EncapsulatedDocument	
EncapsulatedDocument	344
gdcm::EncodingImplementation< T >	
EncodingImplementation	345
gdcm::EncodingImplementation< VR::VRASCII >	345
gdcm::EncodingImplementation< VR::VRBINARY >	346
gdcm::EndEvent	347
gdcm::EnumeratedValues	
Element. A Data Element with Enumerated Values that does not have a Value equivalent to one of the Values specified in this standard has an invalid value within the scope of a specific Information Object/SOP Class definition. Note:	349
gdcm::Event	
Superclass for callback/observer methods	349
gdcm::Exception	
Exception	351
gdcm::ExitEvent	353
gdcm::ExplicitDataElement	
Class to read/write a DataElement as Explicit Data Element	355
gdcm::ExplicitImplicitDataElement	
Class to read/write a DataElement as ExplicitImplicit Data Element	356
gdcm::Fiducials	
Fiducials	358
gdcm::File	
DICOM File See PS 3.10 File : A File is an ordered string of zero or more bytes, where the first byte is at the beginning of the file and the last byte at the end of the File . Files are identified by a unique File ID and may be written, read and/or deleted	359
gdcm::FileAnonymizer	
FileAnonymizer	362

gdcm::FileDerivation	
FileDerivation class See PS 3.16 - 2008 For the list of Code Value that can be used for in Derivation Code Sequence	365
gdcm::FileExplicitFilter	
FileExplicitFilter class After changing a file from Implicit to Explicit representation (see ImageChange-TransferSyntax) one operation is to make sure the VR of each DICOM attribute are accurate and do match the one from PS 3.6. Indeed when a file is written in Implicit representation, the VR is not stored directly in the file	367
gdcm::FileMetaInformation	
Class to represent a File Meta Information	369
gdcm::Filename	
Class to manipulate file name's	375
gdcm::FilenameGenerator	
FilenameGenerator	377
gdcm::FileSet	
File-set: A File-set is a collection of DICOM Files (and possibly non-DICOM Files) that share a common naming space within which File IDs are unique	379
gdcm::FileWithName	
FileWithName	380
gdcm::FindPatientRootQuery	
PatientRootQuery contains: the class which will produce a dataset for c-find with patient root	382
gdcm::FindStudyRootQuery	
FindStudyRootQuery contains: the class which will produce a dataset for C-FIND with study root . .	384
gdcm::Fragment	
Class to represent a Fragment	386
gdcm::Global	
Global	389
gdcm::GroupDict	
Class to represent the mapping from group number to its abbreviation and name	391
gdcm::IconImageFilter	
IconImageFilter This filter will extract icons from a gdcm::File This filter will loop over all known sequence (public and private) that may contains an IconImage and retrieve them. The filter will fails with a value of false if no icon can be found Since it handle both public and private icon type, one should not assume the icon is in uncompress form, some private vendor store private icon in JPEG8/JPEG12	393
gdcm::IconImageGenerator	
IconImageGenerator This filter will generate a valid Icon from the Pixel Data element (an instance of gdcm::Pixmap). To generate a valid Icon, one is only allowed the following Photometric Interpretation:	395
gdcm::ignore_char	397
gdcm::Image	
Image This is the container for an Image in the general sense. From this container you should be able to request information like:	398
gdcm::ImageApplyLookupTable	
ImageApplyLookupTable class It applies the LUT the PixelData (only PALETTE_COLOR images) Output will be a PhotometricInterpretation =RGB image	402
gdcm::ImageChangePhotometricInterpretation	
ImageChangePhotometricInterpretation class Class to change the Photometric Interpretation of an input DICOM	404
gdcm::ImageChangePlanarConfiguration	
ImageChangePlanarConfiguration class Class to change the Planar configuration of an input DICOM By default it will change into the more usual representation: PlanarConfiguration = 0	408
gdcm::ImageChangeTransferSyntax	
ImageChangeTransferSyntax class Class to change the transfer syntax of an input DICOM	411
gdcm::ImageCodec	
ImageCodec	415

gdcm::ImageConverter	
Image Converter	420
gdcm::ImageFragmentSplitter	
ImageFragmentSplitter class For single frame image, DICOM standard allow splitting the frame into multiple fragments	421
gdcm::ImageHelper	
ImageHelper (internal class, not intended for user level)	423
gdcm::ImageReader	
ImageReader	426
gdcm::ImageRegionReader	
ImageRegionReader	430
gdcm::ImageToImageFilter	
ImageToImageFilter class Super class for all filter taking an image and producing an output image	433
gdcm::ImageWriter	
ImageWriter	435
gdcm::network::ImplementationClassUIDSub	
ImplementationClassUIDSub PS 3.7 Table D.3-1 IMPLEMENTATION CLASS UID SUB-ITEM FIELDS (A-ASSOCIATE-RQ)	438
gdcm::network::ImplementationUIDSub	
ImplementationUIDSub Table D.3-2 IMPLEMENTATION UID SUB-ITEM FIELDS (A-ASSOCIATE--AC)	438
gdcm::network::ImplementationVersionNameSub	
ImplementationVersionNameSub Table D.3-3 IMPLEMENTATION VERSION NAME SUB-ITEM FIELDS (A-ASSOCIATE-RQ)	439
gdcm::ImplicitDataElement	
Class to represent an <i>Implicit VR</i> Data Element	440
gdcm::InitializeEvent	441
gdcm::IOD	
Class for representing a IOD	443
gdcm::IODEntry	
Class for representing a IODEntry	444
gdcm::IODs	
Class for representing a IODs	446
gdcm::IPPSorter	
IPPSorter Implement a simple Image Position (Patient) sorter, along the Image Orientation (Patient) direction. This algorithm does NOT support duplicate and will FAIL in case of duplicate IPP	447
gdcm::Item	
Class to represent an Item A component of the value of a Data Element that is of Value Representation Sequence of Items. An Item contains a Data Set . See PS 3.5 7.5.1 Item Encoding Rules Each Item of a Data Element of VR SQ shall be encoded as a DICOM Standart Data Element with a specific Data Element Tag of Value (FFFE,E000). The Item Tag is followed by a 4 byte Item Length field encoded in one of the following two ways Explicit/ Implicit	451
gdcm::IterationEvent	454
gdcm::JPEG12Codec	
Class to do JPEG 12bits (lossy & lossless)	456
gdcm::JPEG16Codec	
Class to do JPEG 16bits (lossless)	458
gdcm::JPEG2000Codec	
Class to do JPEG 2000	460
gdcm::JPEG8Codec	
Class to do JPEG 8bits (lossy & lossless)	463

gdcm::JPEGCodec	
JPEG codec Class to do JPEG (8bits, 12bits, 16bits lossy & lossless). It redispach in between the different codec implementation: gdcm::JPEG8Codec , gdcm::JPEG12Codec & gdcm::JPEG16Codec	
It also support inconsistency in between DICOM header and JPEG compressed stream ImageCodec implementation for the JPEG case	465
gdcm::JPEGLSCodec	
JPEG-LS	469
gdcm::KAKADUCodec	
KAKADUCodec	472
gdcm::LO	
LO	474
gdcm::LookupTable	
LookupTable class	476
gdcm::Scanner::ltstr	481
gdcm::Macro	
Class for representing a Macro	481
gdcm::Macros	
Class for representing a Modules	483
gdcm::network::MaximumLengthSub	
MaximumLengthSub Annex D Table D.1-1 MAXIMUM LENGTH SUB-ITEM FIELDS (A-ASSOCIAT-E-RQ)	484
gdcm::MD5	
Class for MD5	485
gdcm::MediaStorage	
MediaStorage	486
gdcm::MemberCommand< T >	
Command subclass that calls a pointer to a member function	493
gdcm::MeshPrimitive	
This class defines surface mesh primitives. It is designed from surface mesh primitives macro	497
gdcm::ModifiedEvent	500
gdcm::Module	
Class for representing a Module	502
gdcm::ModuleEntry	
Class for representing a ModuleEntry	504
gdcm::Modules	
Class for representing a Modules	506
gdcm::MovePatientRootQuery	
MovePatientRootQuery contains: the class which will produce a dataset for c-move with patient root	508
gdcm::MoveStudyRootQuery	
MoveStudyRootQuery contains: the class which will produce a dataset for C-MOVE with study root	510
gdcm::NestedModuleEntries	
Class for representing a NestedModuleEntries	512
gdcm::NoEvent	514
gdcm::Object	
Object	515
gdcm::Orientation	
Class to handle Orientation	518
gdcm::Overlay	
Overlay class	520
gdcm::ParseException	
ParseException Standard exception handling object	526
gdcm::Parser	
Parser ala XML_Parser from expat (SAX)	528

gdcm::Patient	
See PS 3.3 - 2007 DICOM MODEL OF THE REAL-WORLD, p 54	530
gdcm::network::PDataTFPDU	
PDataTFPDU Table 9-22 P-DATA-TF PDU FIELDS	530
gdcm::PDBElement	
Class to represent a PDB Element	533
gdcm::PDBHeader	
Class for PDBHeader	535
gdcm::PDFCodec	
PDFCodec class	537
gdcm::network::PDUFactory	
PDUFactory basically, given an initial byte, construct the appropriate PDU. This way, the event loop doesn't have to know about all the different PDU types	538
gdcm::PersonName	
PersonName class	540
gdcm::PGXCodec	
Class to do PGX See PGX as used in JPEG 2000 implementation and reference images	541
gdcm::PhotometricInterpretation	
Class to represent an PhotometricInterpretation	543
gdcm::PixelFormat	
PixelFormat	545
gdcm::Pixmap	
Pixmap class A bitmap based image. Used as parent for both IconImage and the main Pixel Data Image It does not contains any World Space information (IPP, IOP)	550
gdcm::PixmapReader	
PixmapReader	553
gdcm::PixmapToPixmapFilter	
PixmapToPixmapFilter class Super class for all filter taking an image and producing an output image	557
gdcm::PixmapWriter	
PixmapWriter This class will takes two inputs:	559
gdcm::PNMCodec	
Class to do PNM PNM is the Portable anmap file format. The main web page can be found at: http://netpbm.sourceforge.net/	562
gdcm::Preamble	
DICOM Preamble (Part 10)	565
gdcm::PresentationContext	
PresentationContext	566
gdcm::network::PresentationContextAC	
PresentationContextAC Table 9-18 PRESENTATION CONTEXT ITEM FIELDS	568
gdcm::PresentationContextGenerator	
PresentationContextGenerator This class is responsible for generating the proper PresentationContext that will be used in subsequent operation during a DICOM Query/Retrieve association. The step of the association is very sensible as special care need to be taken to explicitly define what instance are going to be send and how they are encoded	569
gdcm::network::PresentationContextRQ	
PresentationContextRQ Table 9-13 PRESENTATION CONTEXT ITEM FIELDS	571
gdcm::network::PresentationDataValue	
PresentationDataValue Table 9-23 PRESENTATION-DATA-VALUE ITEM FIELDS	573
gdcm::Printer	
Printer class	575
gdcm::PrivateDict	
Private Dict	578
gdcm::PrivateTag	
Class to represent a Private DICOM Data Element (Attribute) Tag (Group, Element , Owner)	580

gdcm::ProgressEvent	
ProgressEvent	Special type of event triggered during 581
gdcm::PVRGCodec	
PVRGCodec	. . . . . 584
gdcm::PythonFilter	
PythonFilter	PythonFilter is the class that make gdcm2.x looks more like gdcm1 and transform the binary blob contained in a DataElement into a string, typically this is a nice feature to have for wrapped language 586
gdcm::QueryBase	
QueryBase	contains: the base class for constructing a query dataset for a C-FIND and a C-MOVE . 587
gdcm::QueryFactory	
QueryFactory.h	. . . . . 589
gdcm::QueryImage	
QueryImage	contains: class to construct an image-based query for C-FIND and C-MOVE 590
gdcm::QueryPatient	
QueryPatient	contains: class to construct a patient-based query for c-find and c-move 592
gdcm::QuerySeries	
QuerySeries	contains: class to construct a series-based query for c-find and c-move 594
gdcm::QueryStudy	
QueryStudy.h	contains: class to construct a study-based query for C-FIND and C-MOVE 596
gdcm::RAWCodec	
RAWCodec	class 598
gdcm::Reader	
Reader	ala DOM (Document Object Model) 600
gdcm::Region	
Class for manipulation region	. . . . . 605
gdcm::Rescaler	
Rescale class	This class is meant to apply the linear transform of Stored Pixel Value to Real World Value. This is mostly found in CT or PET dataset, where the value are stored using one type, but need to be converted to another scale using a linear transform. There are basically two cases: In CT: the linear transform is generally integer based. E.g. the Stored Pixel Type is unsigned short 12bits, but to get Hounsfield unit, one need to apply the linear transform:
	$RWV = 1.*SV - 1024$
So the best scalar to store the Real World Value will be 16 bits signed type	. . . . . 607
gdcm::RLECodec	
Class to do RLE	. . . . . 610
gdcm::network::RoleSelectionSub	
RoleSelectionSub	PS 3.7 Table D.3-9 SCP/SCU ROLE SELECTION SUB-ITEM FIELDS (A-ASSOCIATE-RQ) 613
gdcm::SerieHelper::Rule	. . . . . 614
gdcm::Scanner	
Scanner	This filter is meant for quickly browsing a FileSet (a set of files on disk). Special consideration are taken so as to read the minimum amount of information in each file in order to retrieve the user specified set of DICOM Attribute 615
gdcm::Segment	
This class defines a segment. It mainly contains attributes of group 0x0062. In addition, it can be associated with surface	. . . . . 621
gdcm::SegmentedPaletteColorLookupTable	
SegmentedPaletteColorLookupTable	class 626
gdcm::SegmentReader	
This class defines a segment reader. It reads attributes of group 0x0062	. . . . . 627
gdcm::SegmentWriter	
This class defines a segment writer. It writes attributes of group 0x0062	. . . . . 630

gdcm::SequenceOfFragments	
Class to represent a Sequence Of Fragments	632
gdcm::SequenceOfItems	
Class to represent a Sequence Of Items (value representation : SQ)	637
gdcm::SerieHelper	
SerieHelper DO NOT USE this class, it is only a temporary solution for ITK migration from GDCM 1.x to GDCM 2.x It will disapear soon, you've been warned	643
gdcm::Series	
Series	645
gdcm::network::ServiceClassApplicationInformation	646
gdcm::ServiceClassUser	
ServiceClassUser	647
gdcm::SHA1	
Class for SHA1	652
gdcm::SimpleMemberCommand< T >	
Command subclass that calls a pointer to a member function	653
gdcm::SimpleSubjectWatcher	
SimpleSubjectWatcher This is a typical Subject Watcher class. It will observe all events	656
gdcm::SmartPointer< ObjectType >	
Class for Smart Pointer	658
gdcm::network::SOPClassExtendedNegociationSub	
SOPClassExtendedNegociationSub PS 3.7 Table D.3-11 SOP CLASS EXTENDED NEGOTIATION SUB-ITEM FIELDS (A-ASSOCIATE-RQ and A-ASSOCIATE-AC)	660
gdcm::SOPClassUIDToIOD	
Class convert a class SOP Class UID into IOD	661
gdcm::Sorter	
Sorter General class to do sorting using a custom function You simply need to provide a function of type: Sorter::SortFunction	662
gdcm::Spacing	
Class for Spacing	666
gdcm::Spectroscopy	
Spectroscopy class	668
gdcm::SplitMosaicFilter	
SplitMosaicFilter class Class to reshuffle bytes for a SIEMENS Mosaic image Siemens CSA Image Header CSA:= Common Siemens Architecture, sometimes also known as Common syngo Architecture	668
gdcm::StartEvent	669
gdcm::static_assert_test< x >	671
gdcm::STATIC_ASSERTION_FAILURE< x >	671
gdcm::STATIC_ASSERTION_FAILURE< true >	671
gdcm::StreamImageReader	
StreamImageReader	671
gdcm::StreamImageWriter	
StreamImageReader	674
gdcm::String< TDelimiter, TMaxLength, TPadChar >	
String	679
gdcm::StringFilter	
StringFilter StringFilter is the class that make gdcm2.x looks more like gdcm1 and transform the binary blob contained in a DataElement into a string, typically this is a nice feature to have for wrapped language	683
gdcm::Study	
Study	685
gdcm::Subject	
Subject	685

gdcm::Surface	
This class defines a SURFACE IE. This members are taken from required surface mesh module attributes	688
gdcm::SurfaceHelper	
SurfaceHelper Helper class for Surface object	694
gdcm::SurfaceReader	
This class defines a SURFACE IE reader. It reads surface mesh module attributes	697
gdcm::SurfaceWriter	
This class defines a SURFACE IE writer. It writes surface mesh module attributes	700
gdcm::SwapCode	
SwapCode representation	701
gdcm::SwapperDoOp	703
gdcm::SwapperNoOp	704
gdcm::System	
Class to do system operation	704
gdcm::Table	
Table	708
gdcm::TableEntry	
TableEntry	709
gdcm::TableReader	
Class for representing a TableReader	710
gdcm::network::TableRow	712
gdcm::Tag	
Class to represent a DICOM Data Element (Attribute) Tag (Group, Element). Basically an uint32_t which can also be expressed as two uint16_t (group and element)	713
gdcm::TagPath	
Class to handle a path of tag	719
gdcm::Testing	
Class for testing	721
gdcm::Trace	
Trace	724
gdcm::TransferSyntax	
Class to manipulate Transfer Syntax	728
gdcm::network::TransferSyntaxSub	
TransferSyntaxSub Table 9-15 TRANSFER SYNTAX SUB-ITEM FIELDS	731
gdcm::network::Transition	732
gdcm::Type	
Type	734
gdcm::UI	736
gdcm::UIDGenerator	
Class for generating unique UID	736
gdcm::UIDs	
All known uids	738
gdcm::network::ULAction	
ULAction A ULConnection in a given ULState can perform certain ULActions. This base class provides the interface for running those ULActions on a given ULConnection	757
gdcm::network::ULActionAA1	760
gdcm::network::ULActionAA2	761
gdcm::network::ULActionAA3	762
gdcm::network::ULActionAA4	763
gdcm::network::ULActionAA5	764
gdcm::network::ULActionAA6	765
gdcm::network::ULActionAA7	767
gdcm::network::ULActionAA8	768

gdcmm::network::ULActionAE1	769
gdcmm::network::ULActionAE2	770
gdcmm::network::ULActionAE3	771
gdcmm::network::ULActionAE4	772
gdcmm::network::ULActionAE5	774
gdcmm::network::ULActionAE6	775
gdcmm::network::ULActionAE7	776
gdcmm::network::ULActionAE8	777
gdcmm::network::ULActionAR1	778
gdcmm::network::ULActionAR10	779
gdcmm::network::ULActionAR2	781
gdcmm::network::ULActionAR3	782
gdcmm::network::ULActionAR4	783
gdcmm::network::ULActionAR5	784
gdcmm::network::ULActionAR6	785
gdcmm::network::ULActionAR7	786
gdcmm::network::ULActionAR8	788
gdcmm::network::ULActionAR9	789
gdcmm::network::ULActionDT1	790
gdcmm::network::ULActionDT2	791
gdcmm::network::ULBasicCallback	
ULBasicCallback This is the most basic of callbacks for how the ULConnectionManager handles incoming datasets. DataSets are just concatenated to the mDataSets vector, and the result can be pulled out of the vector by later code. Alternatives to this method include progress updates, saving to disk, etc. This class is NOT THREAD SAFE. Access the dataset vector after the entire set of datasets has been returned by the ULConnectionManager	792
gdcmm::network::ULConnection	
ULConnection This is the class that contains the socket to another machine, and passes data through itself, as well as maintaining a sense of state	794
gdcmm::network::ULConnectionCallback	796
gdcmm::network::ULConnectionInfo	
ULConnectionInfo this class contains all the information about a particular connection as established by the user. That is, it's: User Information Calling AE Title Called AE Title IP address/computer name IP Port A connection must be established with this information, that's subsequently placed into various primitives for actual communication	798
gdcmm::network::ULConnectionManager	
ULConnectionManager The ULConnectionManager performs actions on the ULConnection given inputs from the user and from the state of what's going on around the connection (ie, timeouts of the ARTIM timer, responses from the peer across the connection, etc)	799
gdcmm::network::ULError	
ULError base class for network events	802
gdcmm::network::ULTransitionTable	
ULTransitionTable The transition table of all the ULEvents, new ULActions, and ULStates	803
gdcmm::network::ULWritingCallback	803
gdcmm::UNExplicitDataElement	
Class to read/write a DataElement as UNExplicit Data Element	805
gdcmm::UNExplicitImplicitDataElement	
Class to read/write a DataElement as ExplicitImplicit Data Element This class gather two known bugs:	807
gdcmm::Unpacker12Bits	
Pack/Unpack 12 bits pixel into 16bits	809
gdcmm::Usage	
Usage	810
gdcmm::UserEvent	811

gdcm::network::UserInformation	
UserInformation Table 9-16 USER INFORMATION ITEM FIELDS	813
gdcm::Validate	
Validate class	814
gdcm::Value	
Class to represent the value of a Data Element	815
gdcm::ValueIO< TDE, TSwap, TType >	
Class to dispatch template calls	817
gdcm::Version	
Major/minor and build version	818
gdcm::VL	
Value Length	819
gdcm::VM	
Value Multiplicity Looking at the DICOMV3 dict only there is very few cases: 1 2 3 4 5 6 8 16 24 1-2 1-3 1-8 1-32 1-99 1-n 2-2n 2-n 3-3n 3-n	821
gdcm::VMToLength< T >	825
gdcm::VR	
VR class This is adapted from DICOM standard The biggest difference is the INVALID VR and the composite one that differ from standard (more like an addition) This allow us to represent all the possible case express in the DICOMV3 dict	825
gdcm::VR16ExplicitDataElement	
Class to read/write a DataElement as Explicit Data Element	830
gdcm::VRToEncoding< T >	832
gdcm::VRToType< T >	832
gdcm::VRVLSize< T >	833
gdcm::VRVLSize< 0 >	833
gdcm::VRVLSize< 1 >	833
vtkGDCMImageReader	834
vtkGDCMImageWriter	840
vtkGDCMMedicalImageProperties	845
vtkGDCMPolyDataReader	846
vtkGDCMPolyDataWriter	849
vtkGDCMTesting	852
vtkGDCMThreadedImageReader	855
vtkGDCMThreadedImageReader2	857
vtkImageColorViewer	861
vtkImageMapToColors16	868
vtkImageMapToWindowLevelColors2	871
vtkImagePlanarComponentsToComponents	873
vtkImageRGBToYBR	875
vtkImageYBRToRGB	876
vtkLookupTable16	878
vtkRTStructSetProperties	880
gdcm::Waveform	
Waveform class	885
gdcm::Writer	
Writer ala DOM (Document Object Model) This class is a non-validating writer, it will only performs well- formedness check only	885
gdcm::XMLDictReader	
Class for representing a XMLDictReader	891
gdcm::XMLPrivateDictReader	
Class for representing a XMLPrivateDictReader	892

Chapter 23

File Index

23.1 File List

Here is a list of all files with brief descriptions:

gdc2pnm.man	895
gdc2vtk.man	895
gdcmAAabortPDU.h	895
gdcmAAAssociateACPDU.h	896
gdcmAAAssociateRJPDU.h	897
gdcmAAAssociateRQPDU.h	898
gdcmAbstractSyntax.h	898
gdcmanon.man	900
gdcmAnonymizeEvent.h	900
gdcmAnonymizer.h	901
gdcmApplicationContext.h	902
gdcmApplicationEntity.h	903
gdcmAReleaseRPPDU.h	903
gdcmAReleaseRQPDU.h	904
gdcmARTIMTimer.h	906
gdcmASN1.h	907
gdcmAsynchronousOperationsWindowSub.h	908
gdcmAttribute.h	909
gdcmAudioCodec.h	910
gdcmBase64.h	911
gdcmBaseCompositeMessage.h	911
gdcmBasePDU.h	913
gdcmBaseRootQuery.h	914
gdcmBasicOffsetTable.h	915
gdcmBitmap.h	916
gdcmBitmapToBitmapFilter.h	917
gdcmBoxRegion.h	918
gdcmByteBuffer.h	919
gdcmByteSwap.h	921
gdcmByteSwapFilter.h	921
gdcmByteValue.h	922
gdcmCEchoMessages.h	923
gdcmCFindMessages.h	924
gdcmCMoveMessages.h	925

gdcmCodec.h	926
gdcmCoder.h	927
gdcmCodeString.h	929
gdcmCommand.h	929
gdcmCommandDataSet.h	931
gdcmCompositeMessageFactory.h	932
gdcmCompositeNetworkFunctions.h	932
gdcmConstCharWrapper.h	933
gdcmconv.man	934
gdcmCP246ExplicitDataElement.h	934
gdcmCryptographicMessageSyntax.h	934
gdcmCSAElement.h	935
gdcmCSAHeader.h	937
gdcmCSAHeaderDict.h	938
gdcmCSAHeaderDictEntry.h	939
gdcmCStoreMessages.h	940
gdcmCurve.h	941
gdcmDataElement.h	943
gdcmDataEvent.h	944
gdcmDataSet.h	945
gdcmDataSetEvent.h	946
gdcmDataSetHelper.h	946
gdcmDecoder.h	947
gdcmDefinedTerms.h	949
gdcmDeflateStream.h	949
gdcmDefs.h	950
gdcmDeltaEncodingCodec.h	951
gdcmDICOMDIR.h	952
gdcmDICOMDIRGenerator.h	953
gdcmDict.h	954
gdcmDictConverter.h	956
gdcmDictEntry.h	956
gdcmDictPrinter.h	958
gdcmDicts.h	958
gdcmdiff.man	960
gdcmDIMSE.h	960
gdcmDirectionCosines.h	961
gdcmDirectory.h	961
gdcmDirectoryHelper.h	962
gdcmDummyValueGenerator.h	963
gdcmdump.man	964
gdcmDumper.h	964
gdcmElement.h	965
gdcmEncapsulatedDocument.h	967
gdcmEnumeratedValues.h	967
gdcmEvent.h	968
gdcmException.h	970
gdcmExplicitDataElement.h	971
gdcmExplicitImplicitDataElement.h	972
gdcmFiducials.h	973
gdcmFile.h	974
gdcmFileAnonymizer.h	975
gdcmFileDerivation.h	976
gdcmFileExplicitFilter.h	976

gdcmFileMetaInformation.h	977
gdcmFilename.h	978
gdcmFilenameGenerator.h	979
gdcmFileSet.h	980
gdcmFindPatientRootQuery.h	982
gdcmFindStudyRootQuery.h	983
gdcmFragment.h	983
gdcmgendir.man	985
gdcmGlobal.h	985
gdcmGroupDict.h	986
gdcmIconImage.h	987
gdcmIconImageFilter.h	988
gdcmIconImageGenerator.h	988
gdcmImage.h	989
gdcmImageApplyLookupTable.h	991
gdcmImageChangePhotometricInterpretation.h	991
gdcmImageChangePlanarConfiguration.h	992
gdcmImageChangeTransferSyntax.h	993
gdcmImageCodec.h	994
gdcmImageConverter.h	995
gdcmImageFragmentSplitter.h	996
gdcmImageHelper.h	997
gdcmImageReader.h	998
gdcmImageRegionReader.h	1000
gdcmImageToImageFilter.h	1000
gdcmImageWriter.h	1001
gdcmimg.man	1002
gdcmImplementationClassUIDSub.h	1002
gdcmImplementationUIDSub.h	1004
gdcmImplementationVersionNameSub.h	1004
gdcmImplicitDataElement.h	1006
gdcminfo.man	1006
gdcmIOD.h	1007
gdcmIODEntry.h	1009
gdcmIODs.h	1011
gdcmIPPSorter.h	1012
gdcmItem.h	1013
gdcmJPEG12Codec.h	1014
gdcmJPEG16Codec.h	1015
gdcmJPEG2000Codec.h	1016
gdcmJPEG8Codec.h	1016
gdcmJPEGCodec.h	1017
gdcmJPEGLSCCodec.h	1019
gdcmKAKADUCodec.h	1019
gdcmLegacyMacro.h	1020
gdcmLO.h	1021
gdcmLookupTable.h	1022
gdcmMacro.h	1023
gdcmMacroEntry.h	1026
gdcmMacros.h	1027
gdcmMaximumLengthSub.h	1029
gdcmMD5.h	1030
gdcmMediaStorage.h	1031
gdcmMeshPrimitive.h	1033

gdcmModule.h	1034
gdcmModuleEntry.h	1036
gdcmModules.h	1038
gdcmMovePatientRootQuery.h	1039
gdcmMoveStudyRootQuery.h	1040
gdcmNestedModuleEntries.h	1041
gdcmNetworkEvents.h	1043
gdcmNetworkStateID.h	1044
gdcmObject.h	1045
gdcmOrientation.h	1046
gdcmOverlay.h	1047
gdcmParseException.h	1048
gdcmParser.h	1049
gdcmPatient.h	1050
gdcmPDataTFPDU.h	1050
gdcmPDBElement.h	1051
gdcmPDBHeader.h	1053
gdcmpdf.man	1053
gdcmPDFCodec.h	1054
gdcmPDUFactory.h	1054
gdcmPersonName.h	1055
gdcmPGXCodec.h	1056
gdcmPhotometricInterpretation.h	1057
gdcmPixelFormat.h	1058
gdcmPixmap.h	1060
gdcmPixmapReader.h	1061
gdcmPixmapToPixmapFilter.h	1062
gdcmPixmapWriter.h	1063
gdcmPNMCodec.h	1064
gdcmPreamble.h	1065
gdcmPresentationContext.h	1066
gdcmPresentationContextAC.h	1067
gdcmPresentationContextGenerator.h	1068
gdcmPresentationContextRQ.h	1069
gdcmPresentationDataValue.h	1070
gdcmPrinter.h	1071
gdcmPrivateTag.h	1072
gdcmProgressEvent.h	1073
gdcmPVRGCodec.h	1074
gdcmPythonFilter.h	1075
gdcmQueryBase.h	1076
gdcmQueryFactory.h	1078
gdcmQueryImage.h	1079
gdcmQueryPatient.h	1080
gdcmQuerySeries.h	1081
gdcmQueryStudy.h	1082
gdcmraw.man	1083
gdcmRAWCodec.h	1083
gdcmReader.h	1084
gdcmRegion.h	1085
gdcmRescaler.h	1086
gdcmRLECodec.h	1087
gdcmRoleSelectionSub.h	1088
gdcmScanner.h	1088

gdcmscanner.man	1089
gdcmscu.man	1090
gdcmSegment.h	1090
gdcmSegmentedPaletteColorLookupTable.h	1091
gdcmSegmentHelper.h	1092
gdcmSegmentReader.h	1093
gdcmSegmentWriter.h	1094
gdcmSequenceOfFragments.h	1096
gdcmSequenceOfItems.h	1096
gdcmSerieHelper.h	1097
gdcmSeries.h	1099
gdcmServiceClassApplicationInformation.h	1100
gdcmServiceClassUser.h	1102
gdcmSHA1.h	1102
gdcmSimpleSubjectWatcher.h	1103
gdcmSmartPointer.h	1104
gdcmSOPClassExtendedNegociationSub.h	1105
gdcmSOPClassUIDToIOD.h	1106
gdcmSorter.h	1107
gdcmSpacing.h	1109
gdcmSpectroscopy.h	1109
gdcmSplitMosaicFilter.h	1110
gdcmStaticAssert.h	1111
gdcmStreamImageReader.h	1113
gdcmStreamImageWriter.h	1113
gdcmString.h	1114
gdcmStringFilter.h	1115
gdcmStudy.h	1116
gdcmSubject.h	1118
gdcmSurface.h	1119
gdcmSurfaceHelper.h	1120
gdcmSurfaceReader.h	1121
gdcmSurfaceWriter.h	1121
gdcmSwapCode.h	1122
gdcmSwapper.h	1123
gdcmSystem.h	1124
gdcmTable.h	1125
gdcmTableEntry.h	1126
gdcmTableReader.h	1128
gdcmTag.h	1129
gdcmTagPath.h	1130
gdcmTagToVR.h	1131
gdcm.tar.man	1131
gdcmTerminal.h	1131
gdcmTestDriver.h	1132
gdcmTesting.h	1133
gdcmTrace.h	1134
gdcmTransferSyntax.h	1137
gdcmTransferSyntaxSub.h	1138
gdcmType.h	1139
gdcmTypes.h	1141
gdcmUIDGenerator.h	1141
gdcmUIDs.h	1142
gdcmULAction.h	1144

gdcmULActionAA.h	1145
gdcmULActionAE.h	1145
gdcmULActionAR.h	1146
gdcmULActionDT.h	1147
gdcmULBasicCallback.h	1148
gdcmULConnection.h	1149
gdcmULConnectionCallback.h	1150
gdcmULConnectionInfo.h	1151
gdcmULConnectionManager.h	1153
gdcmULEvent.h	1154
gdcmULTransitionTable.h	1155
gdcmULWritingCallback.h	1156
gdcmUNExplicitDataElement.h	1157
gdcmUNExplicitImplicitDataElement.h	1157
gdcmUnpacker12Bits.h	1158
gdcmUsage.h	1159
gdcmUserInformation.h	1161
gdcmValidate.h	1162
gdcmValue.h	1163
gdcmValueIO.h	1163
gdcmVersion.h	1164
gdcmviewer.man	1165
gdcmVL.h	1165
gdcmVM.h	1166
gdcmVR.h	1168
gdcmVR16ExplicitDataElement.h	1170
gdcmWaveform.h	1171
gdcmWin32.h	1171
gdcmWriter.h	1172
gdcmXMLDictReader.h	1173
gdcmXMLPrivateDictReader.h	1173
vtkGDCMImageReader.h	1174
vtkGDCMImageWriter.h	1176
vtkGDCMMedicalImageProperties.h	1176
vtkGDCMPolyDataReader.h	1177
vtkGDCMPolyDataWriter.h	1178
vtkGDCMTesting.h	1179
vtkGDCMThreadedImageReader.h	1179
vtkGDCMThreadedImageReader2.h	1180
vtkImageColorViewer.h	1180
vtkImageMapToColors16.h	1181
vtkImageMapToWindowLevelColors2.h	1181
vtkImagePlanarComponentsToComponents.h	1182
vtkImageRGBToYBR.h	1182
vtkImageYBRToRGB.h	1183
vtkLookupTable16.h	1183
vtkRTStructSetProperties.h	1184

Chapter 24

Namespace Documentation

24.1 gdcmm Namespace Reference

Namespaces

- [network](#)
- [SegmentHelper](#)
- [terminal](#)

Class for Terminal Allow one to print in color in a shell.

Classes

- class [AbortEvent](#)
- class [AnonymizeEvent](#)
[AnonymizeEvent](#) Special type of event triggered during the Anonymization process.
- class [Anonymizer](#)
[Anonymizer](#) This class is a multi purpose anonymizer. It can work in 2 mode:
- class [AnyEvent](#)
- class [ApplicationEntity](#)
[ApplicationEntity](#).
- class [ASN1](#)
Class for [ASN1](#).
- class [Attribute](#)
[Attribute](#) class This class use template metaprograming tricks to let the user know when the template instanciation does not match the public dictionary.
- class [Attribute< Group, Element, TVR, VM::VM1 >](#)
- class [Attribute< Group, Element, TVR, VM::VM1_3 >](#)
- class [Attribute< Group, Element, TVR, VM::VM1_8 >](#)
- class [Attribute< Group, Element, TVR, VM::VM1_n >](#)
- class [Attribute< Group, Element, TVR, VM::VM2_2n >](#)
- class [Attribute< Group, Element, TVR, VM::VM2_n >](#)
- class [Attribute< Group, Element, TVR, VM::VM3_3n >](#)
- class [Attribute< Group, Element, TVR, VM::VM3_n >](#)
- class [AudioCodec](#)

- [AudioCodec](#).
- class [Base64](#)
 - Class for [Base64](#).*
- class [BaseRootQuery](#)
 - [BaseRootQuery](#) contains: a baseclass which will produce a dataset for c-find and c-move with patient/study root.*
- class [BasicOffsetTable](#)
 - Class to represent a [BasicOffsetTable](#).*
- class [Bitmap](#)
 - [Bitmap](#) class A bitmap based image. Used as parent for both [IconImage](#) and the main Pixel Data [Image](#) It does not contains any World Space information (IPP, IOP)*
- class [BitmapToBitmapFilter](#)
 - [BitmapToBitmapFilter](#) class Super class for all filter taking an image and producing an output image.*
- class [BoxRegion](#)
 - Class for manipulation box region This is a very simple implementation of the [Region](#) class. It only support 3D box type region. It assumes the 3D Box does not have a tilt Origin is as (0,0,0)*
- class [ByteBuffer](#)
 - [ByteBuffer](#).*
- class [ByteSwap](#)
 - [ByteSwap](#).*
- class [ByteSwapFilter](#)
 - [ByteSwapFilter](#) In place byte-swapping of a dataset FIXME: FL status ??*
- class [ByteValue](#)
 - Class to represent binary value (array of bytes)*
- class [Codec](#)
 - [Codec](#) class.*
- class [Coder](#)
 - [Coder](#).*
- class [CodeString](#)
 - [CodeString](#) This is an implementation of DICOM [VR](#): CS The ctor will properly Trim so that operator== is correct.*
- class [Command](#)
 - [Command](#) superclass for callback/observer methods.*
- class [CommandDataSet](#)
 - Class to represent a [Command DataSet](#).*
- class [CompositeNetworkFunctions](#)
 - Composite Network Functions These functions provide a generic API to the DICOM functions implemented in GDCM. Advanced users can use this code as a template for building their own versions of these functions (for instance, to provide progress bars or some other way of handling returned query information), but for most users, these functions should be sufficient to interface with a PACS to a local machine. Note that these functions are not contained within a static class or some other class-style interface, because multiple connections can be instantiated in the same program. The DICOM standard is much more function oriented rather than class oriented in this instance, so the design of this API reflects that functional approach. These functions implements the following SCU operations:*
- class [ConstCharWrapper](#)
 - Do not use me.*
- class [CP246ExplicitDataElement](#)
 - Class to read/write a [DataElement](#) as CP246Explicit Data [Element](#).*
- class [CryptographicMessageSyntax](#)
 - Class for [CryptographicMessageSyntax](#) encryption. This is just a simple wrapper around openssl PKCS7_encrypt functionalities.*
- class [CSAElement](#)

- Class to represent a CSA [Element](#).*
- class [CSAHeader](#)
 - Class for [CSAHeader](#).*
- class [CSAHeaderDict](#)
 - Class to represent a map of [CSAHeaderDictEntry](#).*
- class [CSAHeaderDictEntry](#)
 - Class to represent an Entry in the [Dict](#) Does not really exist within the DICOM definition, just a way to minimize storage and have a mapping from [gdcm::Tag](#) to the needed information.*
- class [CSAHeaderDictException](#)
- class [Curve](#)
 - [Curve](#) class to handle element 50xx,3000 [Curve](#) Data WARNING: This is deprecated and lastly defined in PS 3.3 - 2004.*
- class [DataElement](#)
 - Class to represent a Data [Element](#) either Implicit or Explicit.*
- class [DataElementException](#)
- class [DataEvent](#)
 - [DataEvent](#).*
- class [DataSet](#)
 - Class to represent a Data Set (which contains Data Elements) A Data Set represents an instance of a real world Information [Object](#).*
- class [DataSetEvent](#)
 - [DataSetEvent](#) Special type of event triggered during the [DataSet](#) store/move process.*
- class [DataSetHelper](#)
 - [DataSetHelper](#) (internal class, not intended for user level)*
- class [Decoder](#)
 - [Decoder](#).*
- class [DefinedTerms](#)
 - Defined Terms are used when the specified explicit Values may be extended by implementors to include additional new Values. These new Values shall be specified in the Conformance Statement (see PS 3.2) and shall not have the same meaning as currently defined Values in this standard. A Data [Element](#) with Defined Terms that does not contain a [Value](#) equivalent to one of the Values currently specified in this standard shall not be considered to have an invalid value. Note: Interpretation [Type](#) ID (4008,0210) is an example of a Data [Element](#) having Defined Terms. It is defined to have a [Value](#) that may be one of the set of standard Values; REPORT or AMENDMENT (see PS 3.3). Because this Data [Element](#) has Defined Terms other Interpretation [Type](#) IDs may be defined by the implementor.*
- class [Defs](#)
 - FIXME I do not like the name '[Defs](#)'.*
- class [DeltaEncodingCodec](#)
 - [DeltaEncodingCodec](#) compression used by some private vendor.*
- class [DICOMDIR](#)
 - [DICOMDIR](#) class.*
- class [DICOMDIRGenerator](#)
 - [DICOMDIRGenerator](#) class This is a STD-GEN-CD [DICOMDIR](#) generator. ref: PS 3.11-2008 Annex D (Normative) - General Purpose CD-R and DVD Interchange Profiles.*
- class [Dict](#)
 - Class to represent a map of [DictEntry](#).*
- class [DictConverter](#)
 - Class to convert a .dic file into something else:*
- class [DictEntry](#)
 - Class to represent an Entry in the [Dict](#) Does not really exist within the DICOM definition, just a way to minimize storage and have a mapping from [gdcm::Tag](#) to the needed information.*

- class [DictPrinter](#)
DictPrinter class.
- class [Dicts](#)
Class to manipulate the sum of knowledge (all the dict user load)
- class [DirectionCosines](#)
class to handle DirectionCosines
- class [Directory](#)
Class for manipulation directories.
- class [DirectoryHelper](#)
DirectoryHelper this class is designed to help mitigate some of the commonly performed operations on directories. namely: 1) the ability to determine the number of series in a directory by what type of series is present 2) the ability to find all ct series in a directory 3) the ability to find all mr series in a directory 4) to load a set of DataSets from a series that's already been sorted by the IPP sorter 5) For rtstruct stuff, you need to know the sopinstanceuid of each z plane, so there's a retrieval function for that 6) then a few other functions for rtstruct writeouts.
- class [DummyValueGenerator](#)
Class for generating dummy value.
- class [Dumper](#)
Codec class.
- class [Element](#)
Element class.
- class [Element< TVR, VM::VM1_2 >](#)
- class [Element< TVR, VM::VM1_n >](#)
- class [Element< TVR, VM::VM2_2n >](#)
- class [Element< TVR, VM::VM2_n >](#)
- class [Element< TVR, VM::VM3_3n >](#)
- class [Element< TVR, VM::VM3_n >](#)
- class [Element< VR::AS, VM::VM5 >](#)
- class [Element< VR::OB, VM::VM1 >](#)
- class [Element< VR::OW, VM::VM1 >](#)
- class [EncapsulatedDocument](#)
EncapsulatedDocument.
- class [EncodingImplementation](#)
EncodingImplementation.
- class [EncodingImplementation< VR::VRASCII >](#)
- class [EncodingImplementation< VR::VRBINARY >](#)
- class [EndEvent](#)
- class [EnumeratedValues](#)
Element. A Data Element with Enumerated Values that does not have a Value equivalent to one of the Values specified in this standard has an invalid value within the scope of a specific Information Object/SOP Class definition. Note:
- class [Event](#)
superclass for callback/observer methods
- class [Exception](#)
Exception.
- class [ExitEvent](#)
- class [ExplicitDataElement](#)
Class to read/write a DataElement as Explicit Data Element.
- class [ExplicitImplicitDataElement](#)
Class to read/write a DataElement as ExplicitImplicit Data Element.
- class [Fiducials](#)

Fiducials.

- class [File](#)

a DICOM File See PS 3.10 File: A File is an ordered string of zero or more bytes, where the first byte is at the beginning of the file and the last byte at the end of the File. Files are identified by a unique File ID and may be written, read and/or deleted.

- class [FileAnonymizer](#)

FileAnonymizer.

- class [FileDerivation](#)

FileDerivation class See PS 3.16 - 2008 For the list of Code Value that can be used for in Derivation Code Sequence.

- class [FileExplicitFilter](#)

FileExplicitFilter class After changing a file from Implicit to Explicit representation (see [ImageChangeTransferSyntax](#)) one operation is to make sure the VR of each DICOM attribute are accurate and do match the one from PS 3.6. Indeed when a file is written in Implicit representation, the VR is not stored directly in the file.

- class [FileMetaInformation](#)

Class to represent a File Meta Information.

- class [Filename](#)

Class to manipulate file name's.

- class [FilenameGenerator](#)

FilenameGenerator.

- class [FileSet](#)

File-set: A File-set is a collection of DICOM Files (and possibly non-DICOM Files) that share a common naming space within which File IDs are unique.

- class [FileWithName](#)

FileWithName.

- class [FindPatientRootQuery](#)

PatientRootQuery contains: the class which will produce a dataset for c-find with patient root.

- class [FindStudyRootQuery](#)

FindStudyRootQuery contains: the class which will produce a dataset for C-FIND with study root.

- class [Fragment](#)

Class to represent a Fragment.

- class [Global](#)

Global.

- class [GroupDict](#)

Class to represent the mapping from group number to its abbreviation and name.

- class [IconImageFilter](#)

IconImageFilter This filter will extract icons from a [gdcm::File](#) This filter will loop over all known sequence (public and private) that may contains an IconImage and retrieve them. The filter will fails with a value of false if no icon can be found Since it handle both public and private icon type, one should not assume the icon is in uncompress form, some private vendor store private icon in JPEG8/JPEG12.

- class [IconImageGenerator](#)

IconImageGenerator This filter will generate a valid Icon from the Pixel Data element (an instance of [gdcm::Pixmap](#)). To generate a valid Icon, one is only allowed the following Photometric Interpretation:

- struct [ignore_char](#)

- class [Image](#)

Image This is the container for an Image in the general sense. From this container you should be able to request information like:

- class [ImageApplyLookupTable](#)

ImageApplyLookupTable class It applies the LUT the PixelData (only PALETTE_COLOR images) Output will be a PhotometricInterpretation=RGB image.

- class [ImageChangePhotometricInterpretation](#)
ImageChangePhotometricInterpretation class Class to change the Photometric Interpretation of an input DICOM.
- class [ImageChangePlanarConfiguration](#)
ImageChangePlanarConfiguration class Class to change the Planar configuration of an input DICOM By default it will change into the more usual representation: PlanarConfiguration = 0.
- class [ImageChangeTransferSyntax](#)
ImageChangeTransferSyntax class Class to change the transfer syntax of an input DICOM.
- class [ImageCodec](#)
ImageCodec.
- class [ImageConverter](#)
Image Converter.
- class [ImageFragmentSplitter](#)
ImageFragmentSplitter class For single frame image, DICOM standard allow splitting the frame into multiple fragments.
- class [ImageHelper](#)
ImageHelper (internal class, not intended for user level)
- class [ImageReader](#)
ImageReader.
- class [ImageRegionReader](#)
ImageRegionReader.
- class [ImageToImageFilter](#)
ImageToImageFilter class Super class for all filter taking an image and producing an output image.
- class [ImageWriter](#)
ImageWriter.
- class [ImplicitDataElement](#)
Class to represent an Implicit *VR* Data *Element*.
- class [InitializeEvent](#)
- class [IOD](#)
Class for representing a *IOD*.
- class [IODEntry](#)
Class for representing a *IODEntry*.
- class [IODs](#)
Class for representing a *IODs*.
- class [IPPSorter](#)
IPPSorter Implement a simple *Image* Position (*Patient*) sorter, along the *Image Orientation* (*Patient*) direction. This algorithm does NOT support duplicate and will FAIL in case of duplicate IPP.
- class [Item](#)
Class to represent an *Item* A component of the value of a Data *Element* that is of *Value* Representation Sequence of *Items*. An *Item* contains a Data Set . See PS 3.5 7.5.1 *Item* Encoding Rules Each *Item* of a Data *Element* of *VR* SQ shall be encoded as a DICOM Standart Data *Element* with a specific Data *Element* Tag of *Value* (FFFE,E000). The *Item* Tag is followed by a 4 byte *Item* Length field encoded in one of the following two ways Explicit/ Implicit.
- class [IterationEvent](#)
- class [JPEG12Codec](#)
Class to do JPEG 12bits (lossy & lossless)
- class [JPEG16Codec](#)
Class to do JPEG 16bits (lossless)
- class [JPEG2000Codec](#)
Class to do JPEG 2000.
- class [JPEG8Codec](#)

- Class to do JPEG 8bits (lossy & lossless)*

 - class [JPEGCodec](#)

JPEG codec Class to do JPEG (8bits, 12bits, 16bits lossy & lossless). It redispach in between the different codec implementation: [gdcm::JPEG8Codec](#), [gdcm::JPEG12Codec](#) & [gdcm::JPEG16Codec](#) It also support inconsistency in between DICOM header and JPEG compressed stream [ImageCodec](#) implementation for the JPEG case.
- class [JPEGLSCodec](#)

JPEG-LS.
- class [KAKADUCodec](#)

KAKADUCodec.
- class [LO](#)

LO.
- class [LookupTable](#)

LookupTable class.
- class [Macro](#)

Class for representing a [Macro](#).
- class [Macros](#)

Class for representing a [Modules](#).
- class [MD5](#)

Class for [MD5](#).
- class [MediaStorage](#)

MediaStorage.
- class [MemberCommand](#)

Command subclass that calls a pointer to a member function.
- class [MeshPrimitive](#)

This class defines surface mesh primitives. It is designed from surface mesh primitives macro.
- class [ModifiedEvent](#)
- class [Module](#)

Class for representing a [Module](#).
- class [ModuleEntry](#)

Class for representing a [ModuleEntry](#).
- class [Modules](#)

Class for representing a [Modules](#).
- class [MovePatientRootQuery](#)

[MovePatientRootQuery](#) contains: the class which will produce a dataset for c-move with patient root.
- class [MoveStudyRootQuery](#)

[MoveStudyRootQuery](#) contains: the class which will produce a dataset for C-MOVE with study root.
- class [NestedModuleEntries](#)

Class for representing a [NestedModuleEntries](#).
- class [NoEvent](#)
- class [Object](#)

Object.
- class [Orientation](#)

class to handle [Orientation](#)
- class [Overlay](#)

Overlay class.
- class [ParseException](#)

[ParseException](#) Standard exception handling object.
- class [Parser](#)

- Parser* ala XML_Parser from expat (SAX)
- class [Patient](#)
 - See PS 3.3 - 2007 DICOM MODEL OF THE REAL-WORLD, p 54.*
- class [PDBElement](#)
 - Class to represent a PDB [Element](#).*
- class [PDBHeader](#)
 - Class for [PDBHeader](#).*
- class [PDFCodec](#)
 - [PDFCodec](#) class.*
- class [PersonName](#)
 - [PersonName](#) class.*
- class [PGXCodec](#)
 - Class to do PGX See PGX as used in JPEG 2000 implementation and reference images.*
- class [PhotometricInterpretation](#)
 - Class to represent an [PhotometricInterpretation](#).*
- class [PixelFormat](#)
 - [PixelFormat](#).*
- class [Pixmap](#)
 - [Pixmap](#) class A bitmap based image. Used as parent for both [IconImage](#) and the main Pixel Data [Image](#) It does not contains any World Space information (IPP, IOP)*
- class [PixmapReader](#)
 - [PixmapReader](#).*
- class [PixmapToPixmapFilter](#)
 - [PixmapToPixmapFilter](#) class Super class for all filter taking an image and producing an output image.*
- class [PixmapWriter](#)
 - [PixmapWriter](#) This class will takes two inputs:*
- class [PNMCodec](#)
 - Class to do PNM PNM is the Portable anymap file format. The main web page can be found at: <http://netpbm.sourceforge.net/>.*
- class [Preamble](#)
 - DICOM [Preamble](#) (Part 10)*
- class [PresentationContext](#)
 - [PresentationContext](#).*
- class [PresentationContextGenerator](#)
 - [PresentationContextGenerator](#) This class is responsible for generating the proper [PresentationContext](#) that will be used in subsequent operation during a DICOM Query/Retrieve association. The step of the association is very sensible as special care need to be taken to explicitly define what instance are going to be send and how they are encoded.*
- class [Printer](#)
 - [Printer](#) class.*
- class [PrivateDict](#)
 - Private [Dict](#).*
- class [PrivateTag](#)
 - Class to represent a Private DICOM Data [Element](#) ([Attribute](#)) [Tag](#) (Group, [Element](#), Owner)*
- class [ProgressEvent](#)
 - [ProgressEvent](#) Special type of event triggered during.*
- class [PVRGCodec](#)
 - [PVRGCodec](#).*
- class [PythonFilter](#)

PythonFilter [PythonFilter](#) is the class that make `gdcM2.x` looks more like `gdcM1` and transform the binary blob contained in a [DataElement](#) into a string, typically this is a nice feature to have for wrapped language.

- class [QueryBase](#)

[QueryBase](#) contains: the base class for constructing a query dataset for a C-FIND and a C-MOVE.

- class [QueryFactory](#)

[QueryFactory.h](#).

- class [QueryImage](#)

[QueryImage](#) contains: class to construct an image-based query for C-FIND and C-MOVE.

- class [QueryPatient](#)

[QueryPatient](#) contains: class to construct a patient-based query for c-find and c-move.

- class [QuerySeries](#)

[QuerySeries](#) contains: class to construct a series-based query for c-find and c-move.

- class [QueryStudy](#)

[QueryStudy.h](#) contains: class to construct a study-based query for C-FIND and C-MOVE.

- class [RAWCodec](#)

[RAWCodec](#) class.

- class [Reader](#)

[Reader](#) ala DOM (Document [Object](#) Model)

- class [Region](#)

Class for manipulation region.

- class [Rescaler](#)

Rescale class This class is meant to apply the linear transform of Stored Pixel [Value](#) to Real World [Value](#). This is mostly found in CT or PET dataset, where the value are stored using one type, but need to be converted to another scale using a linear transform. There are basically two cases: In CT: the linear transform is generally integer based. E.g. the Stored Pixel [Type](#) is unsigned short 12bits, but to get Hounsfield unit, one need to apply the linear transform:

$$RWV = 1. * SV - 1024$$

So the best scalar to store the Real World [Value](#) will be 16 bits signed type.

- class [RLECodec](#)

Class to do RLE.

- class [Scanner](#)

[Scanner](#) This filter is meant for quickly browsing a [FileSet](#) (a set of files on disk). Special consideration are taken so as to read the minimum amount of information in each file in order to retrieve the user specified set of DICOM [Attribute](#).

- class [Segment](#)

This class defines a segment. It mainly contains attributes of group 0x0062. In addition, it can be associated with surface.

- class [SegmentedPaletteColorLookupTable](#)

[SegmentedPaletteColorLookupTable](#) class.

- class [SegmentReader](#)

This class defines a segment reader. It reads attributes of group 0x0062.

- class [SegmentWriter](#)

This class defines a segment writer. It writes attributes of group 0x0062.

- class [SequenceOfFragments](#)

Class to represent a Sequence Of Fragments.

- class [SequenceOfItems](#)

Class to represent a Sequence Of Items (value representation : SQ)

- class [SerieHelper](#)

[SerieHelper](#) DO NOT USE this class, it is only a temporary solution for ITK migration from GDCM 1.x to GDCM 2.x It will disappear soon, you've been warned.

- class [Series](#)

- [Series.](#)
- class [ServiceClassUser](#)
 - [ServiceClassUser.](#)
- class [SHA1](#)
 - [Class for SHA1.](#)
- class [SimpleMemberCommand](#)
 - [Command](#) subclass that calls a pointer to a member function.
- class [SimpleSubjectWatcher](#)
 - [SimpleSubjectWatcher](#) This is a typical [Subject](#) Watcher class. It will observe all events.
- class [SmartPointer](#)
 - [Class for Smart Pointer.](#)
- class [SOPClassUIDToIOD](#)
 - [Class](#) convert a class SOP Class UID into [IOD](#).
- class [Sorter](#)
 - [Sorter](#) General class to do sorting using a custom function You simply need to provide a function of type: [Sorter::Sort-Function](#).
- class [Spacing](#)
 - [Class for Spacing.](#)
- class [Spectroscopy](#)
 - [Spectroscopy](#) class.
- class [SplitMosaicFilter](#)
 - [SplitMosaicFilter](#) class Class to reshuffle bytes for a SIEMENS Mosaic image Siemens CSA [Image](#) Header CSA:= Common Siemens Architecture, sometimes also known as Common syngo Architecture.
- class [StartEvent](#)
- struct [static_assert_test](#)
- struct [STATIC_ASSERTION_FAILURE](#)
- struct [STATIC_ASSERTION_FAILURE< true >](#)
- class [StreamImageReader](#)
 - [StreamImageReader.](#)
- class [StreamImageWriter](#)
 - [StreamImageReader.](#)
- class [String](#)
 - [String.](#)
- class [StringFilter](#)
 - [StringFilter](#) [StringFilter](#) is the class that make gdc2.x looks more like gdc1 and transform the binary blob contained in a [DataElement](#) into a string, typically this is a nice feature to have for wrapped language.
- class [Study](#)
 - [Study.](#)
- class [Subject](#)
 - [Subject.](#)
- class [Surface](#)
 - [This class defines a SURFACE IE. This members are taken from required surface mesh module attributes.](#)
- class [SurfaceHelper](#)
 - [SurfaceHelper](#) Helper class for [Surface](#) object.
- class [SurfaceReader](#)
 - [This class defines a SURFACE IE reader. It reads surface mesh module attributes.](#)
- class [SurfaceWriter](#)
 - [This class defines a SURFACE IE writer. It writes surface mesh module attributes.](#)

- class [SwapCode](#)
SwapCode representation.
- class [SwapperDoOp](#)
- class [SwapperNoOp](#)
- class [System](#)
Class to do system operation.
- class [Table](#)
Table.
- class [TableEntry](#)
TableEntry.
- class [TableReader](#)
Class for representing a [TableReader](#).
- class [Tag](#)
Class to represent a DICOM Data [Element](#) ([Attribute](#)) [Tag](#) (Group, [Element](#)). Basically an uint32_t which can also be expressed as two uint16_t (group and element)
- class [TagPath](#)
class to handle a path of tag.
- class [Testing](#)
class for testing
- class [Trace](#)
Trace.
- class [TransferSyntax](#)
Class to manipulate Transfer Syntax.
- class [Type](#)
Type.
- struct [UI](#)
- class [UIDGenerator](#)
Class for generating unique UID.
- class [UIDs](#)
all known uids
- class [UNExplicitDataElement](#)
Class to read/write a [DataElement](#) as UNExplicit Data [Element](#).
- class [UNExplicitImplicitDataElement](#)
Class to read/write a [DataElement](#) as ExplicitImplicit Data [Element](#) This class gather two known bugs:
- class [Unpacker12Bits](#)
Pack/Unpack 12 bits pixel into 16bits.
- class [Usage](#)
Usage.
- class [UserEvent](#)
- class [Validate](#)
Validate class.
- class [Value](#)
Class to represent the value of a Data [Element](#).
- class [ValueIO](#)
Class to dispatch template calls.
- class [Version](#)
major/minor and build version

- class [VL](#)
Value Length.
- class [VM](#)
Value Multiplicity Looking at the DICOMV3 dict only there is very few cases: 1 2 3 4 5 6 8 16 24 1-2 1-3 1-8 1-32 1-99 1-n 2-2n 2-n 3-3n 3-n.
- struct [VMToLength](#)
- class [VR](#)
VR class This is adapted from DICOM standard The biggest difference is the INVALID VR and the composite one that differ from standard (more like an addition) This allow us to represent all the possible case express in the DICOMV3 dict.
- class [VR16ExplicitDataElement](#)
Class to read/write a DataElement as Explicit Data Element.
- struct [VRToEncoding](#)
- struct [VRToType](#)
- class [VRVLSize](#)
- class [VRVLSize< 0 >](#)
- class [VRVLSize< 1 >](#)
- class [Waveform](#)
Waveform class.
- class [Writer](#)
Writer ala DOM (Document Object Model) This class is a non-validating writer, it will only performs well- formedness check only.
- class [XMLDictReader](#)
Class for representing a XMLDictReader.
- class [XMLPrivateDictReader](#)
Class for representing a XMLPrivateDictReader.

Typedefs

- typedef [String<'\\', 16 >](#) [AECComp](#)
- typedef [String<'\\', 64 >](#) [ASComp](#)
- typedef [bool\(* BOOL_FUNCTION_PFILE_PFILE_POINTER \)\(File *, File *\)](#)
- typedef [String<'\\', 16 >](#) [CSCComp](#)
- typedef [String<'\\', 64 >](#) [DACComp](#)
- typedef [String<'\\', 64 >](#) [DTComp](#)
- typedef [std::vector< SmartPointer< FileWithName > >](#) [FileList](#)
- typedef [Bitmap](#) [IconImage](#)
- typedef [String<'\\', 64 >](#) [LOComp](#)
- typedef [String<'\\', 64 >](#) [LTComp](#)
- typedef [ModuleEntry](#) [MacroEntry](#)
- typedef [NestedModuleEntries](#) [NestedMacroEntries](#)
- typedef [String<'\\', 64 >](#) [PNComp](#)
- typedef [String<'\\', 64 >](#) [SHComp](#)
- typedef [String<'\\', 64 >](#) [STComp](#)
- typedef [String<'\\', 16 >](#) [TMComp](#)
- typedef [String<'\\', 64, 0 >](#) [UIComp](#)
- typedef [String<'\\', 64 >](#) [UTComp](#)

Enumerations

- enum [CompOperators](#) {
[GDCM_EQUAL](#) = 0,
[GDCM_DIFFERENT](#),
[GDCM_GREATER](#),
[GDCM_GREATEROREQUAL](#),
[GDCM_LESS](#),
[GDCM_LESSCOREQUAL](#) }
- enum [ECharSet](#) {
[eLatin1](#) = 0,
[eLatin2](#),
[eLatin3](#),
[eLatin4](#),
[eCyrillic](#),
[eArabic](#),
[eGreek](#),
[eHebrew](#),
[eLatin5](#),
[eJapanese](#),
[eThai](#),
[eJapaneseKanjiMultibyte](#),
[eJapaneseSupplementaryKanjiMultibyte](#),
[eKoreanHangulHanjaMultibyte](#),
[eUTF8](#),
[eGB18030](#) }
- enum [EQueryLevel](#) {
[ePatient](#) = 0,
[eStudy](#) = 1,
[eSeries](#) = 2,
[eImage](#) = 3 }
- enum [EQueryType](#) {
[eFind](#) = 0,
[eMove](#) }
- enum [ERootType](#) {
[ePatientRootType](#),
[eStudyRootType](#) }
- enum [LodModeType](#) {
[LD_ALL](#) = 0x00000000,
[LD_NOSEQ](#) = 0x00000001,
[LD_NOSHADOW](#) = 0x00000002,
[LD_NOSHADOWSEQ](#) = 0x00000004 }

Functions

- [ignore_char](#) const [backslash](#) ("\\")
- [VR::VRType GetVRFromTag](#) ([Tag](#) const &tag)
- bool [operator!=](#) (const [CodeString](#) &ref, const [CodeString](#) &cs)
- bool [operator!=](#) (const [DataElement](#) &lhs, const [DataElement](#) &rhs)
- std::ostream & [operator<<](#) (std::ostream &os, const [Version](#) &v)
- std::ostream & [operator<<](#) (std::ostream &_os, const [NestedModuleEntries](#) &_val)
- std::ostream & [operator<<](#) (std::ostream &os, const [SwapCode](#) &sc)
- std::ostream & [operator<<](#) (std::ostream &os, const [FileSet](#) &f)

- `std::ostream & operator<< (std::ostream &os, const Region &r)`
- `std::ostream & operator<< (std::ostream &os, Event &e)`

Generic inserter operator for [Event](#) and its subclasses.

- `std::ostream & operator<< (std::ostream &os, const PDSElement &val)`
- `std::ostream & operator<< (std::ostream &os, const CommandDataSet &val)`
- `std::ostream & operator<< (std::ostream &os, const PrivateTag &val)`
- `std::ostream & operator<< (std::ostream &os, const Orientation &o)`
- `std::ostream & operator<< (std::ostream &_os, const IODs &_val)`
- `std::ostream & operator<< (std::ostream &_os, const Macros &_val)`
- `std::ostream & operator<< (std::ostream &_os, const Modules &_val)`
- `std::ostream & operator<< (std::ostream &_os, const Type &val)`
- `std::ostream & operator<< (std::ostream &_os, const ModuleEntry &_val)`
- `std::ostream & operator<< (std::ostream &_os, const GroupDict &_val)`
- `std::ostream & operator<< (std::ostream &_os, const IOD &_val)`
- `std::ostream & operator<< (std::ostream &os, const File &val)`
- `std::ostream & operator<< (std::ostream &_os, const Usage &val)`
- `std::ostream & operator<< (std::ostream &os, const Sorter &s)`
- `std::ostream & operator<< (std::ostream &os, const CSAHeaderDictEntry &val)`
- `std::ostream & operator<< (std::ostream &os, const Preamble &val)`
- `std::ostream & operator<< (std::ostream &os, const Dicts &d)`
- `std::ostream & operator<< (std::ostream &_os, const IODEntry &_val)`
- `std::ostream & operator<< (std::ostream &_os, const Macro &_val)`
- `std::ostream & operator<< (std::ostream &os, const CSAHeaderDict &val)`
- `std::ostream & operator<< (std::ostream &os, const PDBHeader &d)`
- `std::ostream & operator<< (std::ostream &os, const CodeString &str)`
- `std::ostream & operator<< (std::ostream &_os, const Module &_val)`
- `std::ostream & operator<< (std::ostream &os, const PhotometricInterpretation &val)`
- `std::ostream & operator<< (std::ostream &os, const Directory &d)`
- `std::ostream & operator<< (std::ostream &os, const Global &g)`
- `std::ostream & operator<< (std::ostream &os, const Object &obj)`
- `std::ostream & operator<< (std::ostream &os, const BasicOffsetTable &val)`
- `std::ostream & operator<< (std::ostream &os, const DictEntry &val)`
- `std::ostream & operator<< (std::ostream &os, const CSAElement &val)`
- `std::ostream & operator<< (std::ostream &os, const CSAHeader &d)`
- `std::ostream & operator<< (std::ostream &os, const VL &val)`
- `std::ostream & operator<< (std::ostream &_os, const TransferSyntax &ts)`
- `std::ostream & operator<< (std::ostream &os, const FileMetaInformation &val)`
- `std::ostream & operator<< (std::ostream &_os, const VM &_val)`
- `std::ostream & operator<< (std::ostream &os, const Scanner &s)`
- `std::ostream & operator<< (std::ostream &os, const Dict &val)`
- `std::ostream & operator<< (std::ostream &_os, const MediaStorage &ms)`
- `std::ostream & operator<< (std::ostream &_os, const VR &val)`
- `std::ostream & operator<< (std::ostream &os, const PixelFormat &pf)`
- `std::ostream & operator<< (std::ostream &os, const Fragment &val)`
- `std::ostream & operator<< (std::ostream &_os, const UI &_val)`
- `std::ostream & operator<< (std::ostream &os, const DataElement &val)`
- `std::ostream & operator<< (std::ostream &_os, const Tag &_val)`
- `std::ostream & operator<< (std::ostream &os, const DataSet &val)`
- `std::ostream & operator<< (std::ostream &os, const Item &val)`
- `std::ostream & operator<< (std::ostream &os, const PrivateDict &val)`

- `std::ostream & operator<<` (`std::ostream &_os`, `const UIDs &uid`)
- `bool operator==` (`const CodeString &ref`, `const CodeString &cs`)
- `template<char TDelimiter, unsigned int TMaxLength, char TPadChar>`
`std::istream & operator>>` (`std::istream &is`, `String< TDelimiter, TMaxLength, TPadChar > &ms`)
- `std::istream & operator>>` (`std::istream &in`, `ignore_char const &ic`)
- `std::istream & operator>>` (`std::istream &_is`, `Tag &_val`)
- `template<typename Float >`
`std::string to_string` (`Float data`)
- `TYPETOENCODING` (`SQ`, `VRBINARY`, `unsigned char`) `TYPETOENCODING(UN`

Variables

- static `Global GlobalInstance`
- `VRBINARY`

24.1.1 Detailed Description

This header defines the classes for the AA Actions, Association Abort Related Actions ([Table 9-9 of ps 3.8-2009](#)).

Since each class is essentially a placeholder for a function pointer, I'm breaking with having each class have its own file for the sake of brevity of the number of files.

This header defines the classes for the AE Actions, Association Establishment Related Actions ([Table 9-6 of ps 3.8-2009](#)).

Since each class is essentially a placeholder for a function pointer, I'm breaking with having each class have its own file for the sake of brevity of the number of files.

This header defines the classes for the AR Actions, Association Release Related Actions ([Table 9-8 of ps 3.8-2009](#)).

Since each class is essentially a placeholder for a function pointer, I'm breaking with having each class have its own file for the sake of brevity of the number of files.

This header defines the classes for the DT Actions, Data Transfer Related Actions ([Table 9-8 of ps 3.8-2009](#)).

Since each class is essentially a placeholder for a function pointer, I'm breaking with having each class have its own file for the sake of brevity of the number of files.

24.1.2 Typedef Documentation

24.1.2.1 `typedef String<'\\',16> gdcm::AECComp`

24.1.2.2 `typedef String<'\\',64> gdcm::ASComp`

24.1.2.3 `typedef bool(* gdcm::BOOL_FUNCTION_PFILE_PFILE_POINTER)(File *, File *)`

24.1.2.4 `typedef String<'\\',16> gdcm::CSCComp`

24.1.2.5 `typedef String<'\\',64> gdcm::DACComp`

24.1.2.6 `typedef String<'\\',64> gdcm::DTComp`

24.1.2.7 `typedef std::vector< SmartPointer<FileWithName> > gdcm::FileList`

24.1.2.8 `typedef Bitmap gdcm::IconImage`

24.1.2.9 `typedef String<'\',64> gdcm::LOComp`

24.1.2.10 `typedef String<'\',64> gdcm::LTComp`

24.1.2.11 `typedef ModuleEntry gdcm::MacroEntry`

24.1.2.12 `typedef NestedModuleEntries gdcm::NestedMacroEntries`

24.1.2.13 `typedef String<'\',64> gdcm::PNComp`

24.1.2.14 `typedef String<'\',64> gdcm::SHComp`

24.1.2.15 `typedef String<'\',64> gdcm::STComp`

24.1.2.16 `typedef String<'\',16> gdcm::TMComp`

24.1.2.17 `typedef String<'\',64,0> gdcm::UIComp`

24.1.2.18 `typedef String<'\',64> gdcm::UTComp`

24.1.3 Enumeration Type Documentation

24.1.3.1 `enum gdcm::CompOperators`

Enumerator

GDCM_EQUAL

GDCM_DIFFERENT

GDCM_GREATER

GDCM_GREATEROREQUAL

GDCM_LESS

GDCM_LESOREQUAL

24.1.3.2 `enum gdcm::ECharSet`

The character sets enumerated in PS 3.3 2009 Annex C, section C.12.1.1.2 The resulting character set is stored in 0008,0005 The conversion to the data element is performed by the [QueryFactory](#) itself

Enumerator

eLatin1

eLatin2

eLatin3

eLatin4

eCyrillic

eArabic

eGreek

eHebrew
eLatin5
eJapanese
eThai
eJapaneseKanjiMultibyte
eJapaneseSupplementaryKanjiMultibyte
eKoreanHangulHanjaMultibyte
eUTF8
eGB18030

24.1.3.3 enum gdcm::EQueryLevel

Enumerator

ePatient
eStudy
eSeries
eImage

24.1.3.4 enum gdcm::EQueryType

Enumerator

eFind
eMove

24.1.3.5 enum gdcm::ERootType

Enumerator

ePatientRootType
eStudyRootType

24.1.3.6 enum gdcm::LodModeType

Enumerator

LD_ALL
LD_NOSEQ
LD_NOSHADOW
LD_NOSHADOWSEQ

24.1.4 Function Documentation

24.1.4.1 ignore_char const gdcm::backslash ('\ ')

Referenced by gdcm::EncodingImplementation< VR::VRASCII >::ReadComputeLength().

24.1.4.2 `VR::VRType gdcmm::GetVRFromTag (Tag const & tag)`

24.1.4.3 `bool gdcmm::operator!= (const CodeString & ref, const CodeString & cs)` `[inline]`

24.1.4.4 `bool gdcmm::operator!= (const DataElement & lhs, const DataElement & rhs)` `[inline]`

24.1.4.5 `std::ostream& gdcmm::operator<< (std::ostream & os, const Version & v)` `[inline]`

References `gdcmm::Version::Print()`.

24.1.4.6 `std::ostream& gdcmm::operator<< (std::ostream & _os, const NestedModuleEntries & _val)` `[inline]`

References `gdcmm::ModuleEntry::DataElementType`, `gdcmm::ModuleEntry::DescriptionField`, and `gdcmm::ModuleEntry::Name`.

24.1.4.7 `std::ostream& gdcmm::operator<< (std::ostream & os, const SwapCode & sc)` `[inline]`

References `gdcmm::SwapCode::GetSwapCodeString()`.

24.1.4.8 `std::ostream& gdcmm::operator<< (std::ostream & os, const FileSet & f)` `[inline]`

24.1.4.9 `std::ostream& gdcmm::operator<< (std::ostream & os, const Region & r)` `[inline]`

References `gdcmm::Region::Print()`.

24.1.4.10 `std::ostream& gdcmm::operator<< (std::ostream & os, Event & e)` `[inline]`

Generic inserter operator for [Event](#) and its subclasses.

References `gdcmm::Event::Print()`.

24.1.4.11 `std::ostream& gdcmm::operator<< (std::ostream & os, const PDBElement & val)` `[inline]`

References `gdcmm::PDBElement::NameField`, and `gdcmm::PDBElement::ValueField`.

24.1.4.12 `std::ostream& gdcmm::operator<< (std::ostream & os, const CommandDataSet & val)` `[inline]`

References `gdcmm::DataSet::Print()`.

24.1.4.13 `std::ostream& gdcmm::operator<< (std::ostream & os, const PrivateTag & val)` `[inline]`

24.1.4.14 `std::ostream& gdcmm::operator<< (std::ostream & os, const Orientation & o)` `[inline]`

References `gdcmm::Orientation::Print()`.

24.1.4.15 `std::ostream& gdcmm::operator<< (std::ostream & _os, const IODs & _val) [inline]`

24.1.4.16 `std::ostream& gdcmm::operator<< (std::ostream & _os, const Macros & _val) [inline]`

24.1.4.17 `std::ostream& gdcmm::operator<< (std::ostream & _os, const Modules & _val) [inline]`

24.1.4.18 `std::ostream& gdcmm::operator<< (std::ostream & _os, const Type & val) [inline]`

References `gdcmm::Type::GetTypeString()`.

24.1.4.19 `std::ostream& gdcmm::operator<< (std::ostream & _os, const ModuleEntry & _val) [inline]`

References `gdcmm::ModuleEntry::DataElementType`, `gdcmm::ModuleEntry::DescriptionField`, and `gdcmm::ModuleEntry::Name`.

24.1.4.20 `std::ostream& gdcmm::operator<< (std::ostream & _os, const GroupDict & _val) [inline]`

References `gdcmm::GroupDict::GetAbbreviation()`, `gdcmm::GroupDict::GetName()`, and `gdcmm::GroupDict::Size()`.

24.1.4.21 `std::ostream& gdcmm::operator<< (std::ostream & _os, const IOD & _val) [inline]`

24.1.4.22 `std::ostream& gdcmm::operator<< (std::ostream & os, const File & val) [inline]`

References `gdcmm::File::GetHeader()`.

24.1.4.23 `std::ostream& gdcmm::operator<< (std::ostream & _os, const Usage & val) [inline]`

References `gdcmm::Usage::GetUsageString()`.

24.1.4.24 `std::ostream& gdcmm::operator<< (std::ostream & os, const Sorter & s) [inline]`

References `gdcmm::Sorter::Print()`.

24.1.4.25 `std::ostream& gdcmm::operator<< (std::ostream & os, const CSAHeaderDictEntry & val) [inline]`

24.1.4.26 `std::ostream& gdcmm::operator<< (std::ostream & os, const Preamble & val) [inline]`

24.1.4.27 `std::ostream& gdcmm::operator<< (std::ostream & os, const Dicts & d) [inline]`

24.1.4.28 `std::ostream& gdcmm::operator<< (std::ostream & _os, const IODEntry & _val) [inline]`

24.1.4.29 `std::ostream& gdcmm::operator<< (std::ostream & _os, const Macro & _val) [inline]`

24.1.4.30 `std::ostream& gdcmm::operator<< (std::ostream & os, const CSAHeaderDict & val) [inline]`

24.1.4.31 `std::ostream& gdcmm::operator<< (std::ostream & os, const PDBHeader & d) [inline]`

References `gdcmm::PDBHeader::Print()`.

24.1.4.32 `std::ostream& gdcm::operator<< (std::ostream & os, const CodeString & str)` `[inline]`

24.1.4.33 `std::ostream& gdcm::operator<< (std::ostream & _os, const Module & _val)` `[inline]`

24.1.4.34 `std::ostream& gdcm::operator<< (std::ostream & os, const PhotometricInterpretation & val)` `[inline]`

References `gdcm::PhotometricInterpretation::GetPIString()`.

24.1.4.35 `std::ostream& gdcm::operator<< (std::ostream & os, const Directory & d)` `[inline]`

References `gdcm::Directory::Print()`.

24.1.4.36 `std::ostream& gdcm::operator<< (std::ostream & os, const Global & g)` `[inline]`

24.1.4.37 `std::ostream& gdcm::operator<< (std::ostream & os, const Object & obj)` `[inline]`

References `gdcm::Object::Print()`.

24.1.4.38 `std::ostream& gdcm::operator<< (std::ostream & os, const BasicOffsetTable & val)` `[inline]`

References `gdcm::DataElement::GetByteValue()`, `gdcm::DataElement::ValueField`, and `gdcm::DataElement::ValueLengthField`.

24.1.4.39 `std::ostream& gdcm::operator<< (std::ostream & os, const DictEntry & val)` `[inline]`

24.1.4.40 `std::ostream& gdcm::operator<< (std::ostream & os, const CSAElement & val)` `[inline]`

References `gdcm::CSAElement::DataField`, `gdcm::ByteValue::GetLength()`, `gdcm::ByteValue::GetPointer()`, `gdcm::CSAElement::KeyField`, `gdcm::CSAElement::NameField`, `gdcm::CSAElement::NoOfItemsField`, `gdcm::CSAElement::SyngoDTField`, `gdcm::CSAElement::ValueMultiplicityField`, `gdcm::VM::VM1`, and `gdcm::CSAElement::VRField`.

24.1.4.41 `std::ostream& gdcm::operator<< (std::ostream & os, const CSAHeader & d)` `[inline]`

References `gdcm::CSAHeader::Print()`.

24.1.4.42 `std::ostream& gdcm::operator<< (std::ostream & os, const VL & val)` `[inline]`

24.1.4.43 `std::ostream& gdcm::operator<< (std::ostream & _os, const TransferSyntax & ts)` `[inline]`

References `gdcm::TransferSyntax::GetTSSString()`.

24.1.4.44 `std::ostream& gdcm::operator<< (std::ostream & os, const FileMetaInformation & val)` `[inline]`

References `gdcm::FileMetaInformation::GetPreamble()`, and `gdcm::DataSet::Print()`.

24.1.4.45 `std::ostream& gdcm::operator<< (std::ostream & _os, const VM & _val)` `[inline]`

References `gdcm::VM::GetVMString()`.

24.1.4.46 `std::ostream& gdcm::operator<< (std::ostream & os, const Scanner & s)` `[inline]`

References `gdcm::Scanner::Print()`.

24.1.4.47 `std::ostream& gdcm::operator<< (std::ostream & os, const Dict & val)` `[inline]`

24.1.4.48 `std::ostream& gdcm::operator<< (std::ostream & _os, const MediaStorage & ms)` `[inline]`

References `gdcm::MediaStorage::GetMSString()`.

24.1.4.49 `std::ostream& gdcm::operator<< (std::ostream & _os, const VR & val)` `[inline]`

References `gdcm::VR::GetVRString()`.

24.1.4.50 `std::ostream& gdcm::operator<< (std::ostream & os, const PixelFormat & pf)` `[inline]`

References `gdcm::PixelFormat::Print()`.

24.1.4.51 `std::ostream& gdcm::operator<< (std::ostream & os, const Fragment & val)` `[inline]`

References `gdcm::DataElement::TagField`, `gdcm::DataElement::ValueField`, and `gdcm::DataElement::ValueLengthField`.

24.1.4.52 `std::ostream& gdcm::operator<< (std::ostream & _os, const UI & _val)` `[inline]`

References `gdcm::UI::Internal`.

24.1.4.53 `std::ostream& gdcm::operator<< (std::ostream & os, const DataElement & val)` `[inline]`

References `gdcm::Object::Print()`, `gdcm::DataElement::TagField`, `gdcm::DataElement::ValueField`, `gdcm::DataElement::ValueLengthField`, and `gdcm::DataElement::VRField`.

24.1.4.54 `std::ostream& gdcm::operator<< (std::ostream & _os, const Tag & _val)` `[inline]`

24.1.4.55 `std::ostream& gdcm::operator<< (std::ostream & os, const DataSet & val)` `[inline]`

References `gdcm::DataSet::Print()`.

24.1.4.56 `std::ostream& gdcm::operator<< (std::ostream & os, const Item & val)` `[inline]`

References `gdcm::DataSet::Print()`, `gdcm::DataElement::TagField`, and `gdcm::DataElement::ValueLengthField`.

24.1.4.57 `std::ostream& gdcm::operator<< (std::ostream & os, const PrivateDict & val)` `[inline]`

24.1.4.58 `std::ostream& gdcm::operator<< (std::ostream & _os, const UIDs & uid)` `[inline]`

References `gdcm::UIDs::GetName()`, and `gdcm::UIDs::GetString()`.

24.1.4.59 `bool gdcmm::operator== (const CodeString & ref, const CodeString & cs)` `[inline]`

24.1.4.60 `template<char TDelimiter, unsigned int TMaxLength, char TPadChar> std::istream& gdcmm::operator>> (std::istream & is, String< TDelimiter, TMaxLength, TPadChar > & ms)` `[inline]`

24.1.4.61 `std::istream& gdcmm::operator>> (std::istream & in, ignore_char const & ic)` `[inline]`

References `gdcmm::ignore_char::m_char`.

24.1.4.62 `std::istream& gdcmm::operator>> (std::istream & _is, Tag & _val)` `[inline]`

References `gdcmm::Tag::SetElement()`, and `gdcmm::Tag::SetGroup()`.

24.1.4.63 `template<typename Float > std::string gdcmm::to_string (Float data)`

Referenced by `gdcmm::EncodingImplementation< VR::VRASCII >::Write()`.

24.1.4.64 `gdcmm::TYPETOENCODING (SQ , VRBINARY , unsigned char)`

24.1.5 Variable Documentation

24.1.5.1 `Global gdcmm::GlobalInstance` `[static]`

24.1.5.2 `gdcmm::VRBINARY`

24.2 gdcmm::network Namespace Reference

Classes

- class [AAAbortPDU](#)
[AAAbortPDU Table](#) 9-26 A-ABORT PDU FIELDS.
- class [AAssociateACPDU](#)
[AAssociateACPDU Table](#) 9-17 ASSOCIATE-AC PDU fields.
- class [AAssociateRJPDU](#)
[AAssociateRJPDU Table](#) 9-21 ASSOCIATE-RJ PDU FIELDS.
- class [AAssociateRQPDU](#)
[AAssociateRQPDU Table](#) 9-11 ASSOCIATE-RQ PDU fields.
- class [AbstractSyntax](#)
[AbstractSyntax Table](#) 9-14 ABSTRACT SYNTAX SUB-ITEM FIELDS.
- class [ApplicationContext](#)
[ApplicationContext Table](#) 9-12 APPLICATION CONTEXT ITEM FIELDS Looks like Application Context can only be 64 bytes at max (see Figure 9-1 / PS 3.8 - 2009)
- class [AReleaseRPPDU](#)
[AReleaseRPPDU Table](#) 9-25 A-RELEASE-RP PDU fields.
- class [AReleaseRQPDU](#)
[AReleaseRQPDU Table](#) 9-24 A-RELEASE-RQ PDU FIELDS.
- class [ARTIMTimer](#)
[ARTIMTimer](#) This file contains the code for the ARTIM timer.

- class [AsynchronousOperationsWindowSub](#)
AsynchronousOperationsWindowSub PS 3.7 [Table D.3-7 ASYNCHRONOUS OPERATIONS WINDOW SUB-ITEM FIELDS \(A-ASSOCIATE-RQ\)](#)
- class [BaseCompositeMessage](#)
BaseCompositeMessage The Composite events described in section 3.7-2009 of the DICOM standard all use their own messages. These messages are constructed using Presentation Data Values, from section 3.8-2009 of the standard, and then fill in appropriate values in their datasets.
- class [BasePDU](#)
BasePDU base class for PDUs.
- class [CEchoRQ](#)
CEchoRQ this file defines the messages for the cecho action.
- class [CEchoRSP](#)
CEchoRSP this file defines the messages for the cecho action.
- class [CFind](#)
- class [CFindCancelRQ](#)
CFindCancelRQ this file defines the messages for the cfind action.
- class [CFindRQ](#)
CFindRQ this file defines the messages for the cfind action.
- class [CFindRSP](#)
CFindRSP this file defines the messages for the cfind action.
- class [CMoveCancelRq](#)
- class [CMoveRQ](#)
CMoveRQ this file defines the messages for the cmove action.
- class [CMoveRSP](#)
CMoveRSP this file defines the messages for the cmove action.
- class [CompositeMessageFactory](#)
CompositeMessageFactory This class constructs PDataPDUs, but that have been specifically constructed for the composite DICOM services (C-Echo, C-Find, C-Get, C-Move, and C-Store). It will also handle parsing the incoming data to determine which of the CompositePDUs the incoming data is, and so therefore allowing the scu to determine what to do with incoming data (if acting as a storescp server, for instance).
- class [CStoreRQ](#)
CStoreRQ this file defines the messages for the cecho action.
- class [CStoreRSP](#)
CStoreRSP this file defines the messages for the cecho action.
- class [DIMSE](#)
DIMSE PS 3.7 - 2009 Annex E [Command Dictionary \(Normative\) E.1 REGISTRY OF DICOM COMMAND ELEMENTS Table E.1-1 COMMAND FIELDS \(PART 1\)](#)
- class [ImplementationClassUIDSub](#)
ImplementationClassUIDSub PS 3.7 [Table D.3-1 IMPLEMENTATION CLASS UID SUB-ITEM FIELDS \(A-ASSOCIATE-RQ\)](#)
- class [ImplementationUIDSub](#)
ImplementationUIDSub [Table D.3-2 IMPLEMENTATION UID SUB-ITEM FIELDS \(A-ASSOCIATE-AC\)](#)
- class [ImplementationVersionNameSub](#)
ImplementationVersionNameSub [Table D.3-3 IMPLEMENTATION VERSION NAME SUB-ITEM FIELDS \(A-ASSOCIATE-RQ\)](#)
- class [MaximumLengthSub](#)
MaximumLengthSub Annex D [Table D.1-1 MAXIMUM LENGTH SUB-ITEM FIELDS \(A-ASSOCIATE-RQ\)](#)
- class [PDataTFPDU](#)
PDataTFPDU [Table 9-22 P-DATA-TF PDU FIELDS.](#)

- class [PDUFactory](#)
PDUFactory basically, given an initial byte, construct the appropriate PDU. This way, the event loop doesn't have to know about all the different PDU types.
- class [PresentationContextAC](#)
PresentationContextAC [Table 9-18](#) PRESENTATION CONTEXT ITEM FIELDS.
- class [PresentationContextRQ](#)
PresentationContextRQ [Table 9-13](#) PRESENTATION CONTEXT ITEM FIELDS.
- class [PresentationDataValue](#)
PresentationDataValue [Table 9-23](#) PRESENTATION-DATA-VALUE ITEM FIELDS.
- class [RoleSelectionSub](#)
RoleSelectionSub [PS 3.7 Table D.3-9](#) SCP/SCU ROLE SELECTION SUB-ITEM FIELDS (A-ASSOCIATE-RQ)
- class [ServiceClassApplicationInformation](#)
- class [SOPClassExtendedNegociationSub](#)
SOPClassExtendedNegociationSub [PS 3.7 Table D.3-11](#) SOP CLASS EXTENDED NEGOTIATION SUB-ITEM FIELDS (A-ASSOCIATE-RQ and A-ASSOCIATE-AC)
- class [TableRow](#)
- class [TransferSyntaxSub](#)
TransferSyntaxSub [Table 9-15](#) TRANSFER SYNTAX SUB-ITEM FIELDS.
- struct [Transition](#)
- class [ULAction](#)
ULAction A [ULConnection](#) in a given [ULState](#) can perform certain [ULActions](#). This base class provides the interface for running those [ULActions](#) on a given [ULConnection](#).
- class [ULActionAA1](#)
- class [ULActionAA2](#)
- class [ULActionAA3](#)
- class [ULActionAA4](#)
- class [ULActionAA5](#)
- class [ULActionAA6](#)
- class [ULActionAA7](#)
- class [ULActionAA8](#)
- class [ULActionAE1](#)
- class [ULActionAE2](#)
- class [ULActionAE3](#)
- class [ULActionAE4](#)
- class [ULActionAE5](#)
- class [ULActionAE6](#)
- class [ULActionAE7](#)
- class [ULActionAE8](#)
- class [ULActionAR1](#)
- class [ULActionAR10](#)
- class [ULActionAR2](#)
- class [ULActionAR3](#)
- class [ULActionAR4](#)
- class [ULActionAR5](#)
- class [ULActionAR6](#)
- class [ULActionAR7](#)
- class [ULActionAR8](#)
- class [ULActionAR9](#)
- class [ULActionDT1](#)
- class [ULActionDT2](#)

- class [ULBasicCallback](#)

[ULBasicCallback](#) This is the most basic of callbacks for how the [ULConnectionManager](#) handles incoming datasets. Data-Sets are just concatenated to the `mDataSets` vector, and the result can be pulled out of the vector by later code. Alternatives to this method include progress updates, saving to disk, etc. This class is NOT THREAD SAFE. Access the dataset vector after the entire set of datasets has been returned by the [ULConnectionManager](#).

- class [ULConnection](#)

[ULConnection](#) This is the class that contains the socket to another machine, and passes data through itself, as well as maintaining a sense of state.

- class [ULConnectionCallback](#)

- class [ULConnectionInfo](#)

[ULConnectionInfo](#) this class contains all the information about a particular connection as established by the user. That is, it's: User Information Calling AE Title Called AE Title IP address/computer name IP Port A connection must be established with this information, that's subsequently placed into various primitives for actual communication.

- class [ULConnectionManager](#)

[ULConnectionManager](#) The [ULConnectionManager](#) performs actions on the [ULConnection](#) given inputs from the user and from the state of what's going on around the connection (ie, timeouts of the ARTIM timer, responses from the peer across the connection, etc).

- class [ULEvent](#)

[ULEvent](#) base class for network events.

- class [ULTransitionTable](#)

[ULTransitionTable](#) The transition table of all the [ULEvents](#), new [ULActions](#), and [ULStates](#).

- class [ULWritingCallback](#)

- class [UserInformation](#)

[UserInformation](#) Table 9-16 USER INFORMATION ITEM FIELDS.

Enumerations

- enum [EEventID](#) {
[eAASSOCIATERequestLocalUser](#) = 0,
[eTransportConnConfirmLocal](#),
[eASSOCIATE_ACPDUreceived](#),
[eASSOCIATE_RJPDUreceived](#),
[eTransportConnIndicLocal](#),
[eAASSOCIATE_RQPDUREceived](#),
[eAASSOCIATEResponseAccept](#),
[eAASSOCIATEResponseReject](#),
[ePDATArequest](#),
[ePDATATFPDU](#),
[eARELEASERequest](#),
[eARELEASE_RQPDUREceivedOpen](#),
[eARELEASE_RPPDUREceived](#),
[eARELEASEResponse](#),
[eAABORTRequest](#),
[eAABORTPDUREceivedOpen](#),
[eTransportConnectionClosed](#),
[eARTIMTimerExpired](#),
[eUnrecognizedPDUREceived](#),
[eEventDoesNotExist](#) }

- enum [EStateID](#) {
[eStaDoesNotExist](#) = 0,
[eSta1Idle](#) = 1,
[eSta2Open](#) = 2,
[eSta3WaitLocalAssoc](#) = 4,
[eSta4LocalAssocDone](#) = 8,
[eSta5WaitRemoteAssoc](#) = 16,
[eSta6TransferReady](#) = 32,
[eSta7WaitRelease](#) = 64,
[eSta8WaitLocalRelease](#) = 128,
[eSta9ReleaseCollisionRqLocal](#) = 256,
[eSta10ReleaseCollisionAc](#) = 512,
[eSta11ReleaseCollisionRq](#) = 1024,
[eSta12ReleaseCollisionAcLocal](#) = 2048,
[eSta13AwaitingClose](#) = 4096 }

Functions

- int [GetStateIndex](#) ([EStateID](#) inState)

Variables

- const int [cMaxEventID](#) = [eEventDoesNotExist](#)
- const int [cMaxStateID](#) = 13

24.2.1 Enumeration Type Documentation

24.2.1.1 enum [gdcmm::network::EEventID](#)

Enumerator

eAASSOCIATERequestLocalUser
eTransportConnConfirmLocal
eASSOCIATE_ACPDUreceived
eASSOCIATE_RJPDUreceived
eTransportConnIndicLocal
eAASSOCIATE_RQPDUreceived
eAASSOCIATEResponseAccept
eAASSOCIATEResponseReject
ePDATArequest
ePDATATFPDU
eARELEASERequest
eARELEASE_RQPDUReceivedOpen
eARELEASE_RPPDUReceived
eARELEASEResponse
eAABORTRequest
eAABORTPDUReceivedOpen

eTransportConnectionClosed
eARTIMTimerExpired
eUnrecognizedPDURceived
eEventDoesNotExist

24.2.1.2 enum gdcmm::network::EStateID

Each network connection will be in a particular state at any given time. Those states have IDs as described in the standard ps3.8-2009, roughly 1-13. This enumeration lists those states. The actual ULState class will contain more information about transitions to other states.

name and date: 16 sept 2010 mmr

Enumerator

eStaDoesNotExist
eSta1Idle
eSta2Open
eSta3WaitLocalAssoc
eSta4LocalAssocDone
eSta5WaitRemoteAssoc
eSta6TransferReady
eSta7WaitRelease
eSta8WaitLocalRelease
eSta9ReleaseCollisionRqLocal
eSta10ReleaseCollisionAc
eSta11ReleaseCollisionRq
eSta12ReleaseCollisionAcLocal
eSta13AwaitingClose

24.2.2 Function Documentation

24.2.2.1 int gdcmm::network::GetStateIndex (EStateID inState) [inline]

References eSta10ReleaseCollisionAc, eSta11ReleaseCollisionRq, eSta12ReleaseCollisionAcLocal, eSta13AwaitingClose, eSta1Idle, eSta2Open, eSta3WaitLocalAssoc, eSta4LocalAssocDone, eSta5WaitRemoteAssoc, eSta6TransferReady, eSta7WaitRelease, eSta8WaitLocalRelease, eSta9ReleaseCollisionRqLocal, and eStaDoesNotExist.

24.2.3 Variable Documentation

24.2.3.1 const int gdcmm::network::cMaxEventID = eEventDoesNotExist

24.2.3.2 const int gdcmm::network::cMaxStateID = 13

Referenced by gdcmm::network::TableRow::TableRow(), and gdcmm::network::TableRow::~~TableRow().

24.3 gdcmm::SegmentHelper Namespace Reference

Classes

- struct [BasicCodedEntry](#)

This structure defines a basic coded entry with all of its attributes.

24.4 gdcmm::terminal Namespace Reference

Class for Terminal Allow one to print in color in a shell.

Enumerations

- enum [Attribute](#) {
 [reset](#) = 0,
 [bright](#) = 1,
 [dim](#) = 2,
 [underline](#) = 3,
 [blink](#) = 5,
 [reverse](#) = 7,
 [hidden](#) = 8 }
- enum [Color](#) {
 [black](#) = 0,
 [red](#),
 [green](#),
 [yellow](#),
 [blue](#),
 [magenta](#),
 [cyan](#),
 [white](#) }
- enum [Mode](#) {
 [CONSOLE](#) = 0,
 [VT100](#) }

Functions

- [GDCM_EXPORT](#) std::string [setattribute](#) ([Attribute](#) att)
- [GDCM_EXPORT](#) std::string [setbgcolor](#) ([Color](#) c)
- [GDCM_EXPORT](#) std::string [setfgcolor](#) ([Color](#) c)
- [GDCM_EXPORT](#) void [setmode](#) ([Mode](#) m)

24.4.1 Detailed Description

Class for Terminal Allow one to print in color in a shell.

- support VT100 compatible shell
- win32 console

24.4.2 Enumeration Type Documentation

24.4.2.1 enum gdcmm::terminal::Attribute

Enumerator

reset
bright
dim
underline
blink
reverse
hidden

24.4.2.2 enum gdcmm::terminal::Color

Enumerator

black
red
green
yellow
blue
magenta
cyan
white

24.4.2.3 enum gdcmm::terminal::Mode

Enumerator

CONSOLE
VT100

24.4.3 Function Documentation

24.4.3.1 GDCM_EXPORT std::string gdcmm::terminal::setattribute (Attribute *att*)

24.4.3.2 GDCM_EXPORT std::string gdcmm::terminal::setbgcolor (Color *c*)

24.4.3.3 GDCM_EXPORT std::string gdcmm::terminal::setfgcolor (Color *c*)

24.4.3.4 GDCM_EXPORT void gdcmm::terminal::setmode (Mode *m*)

Chapter 25

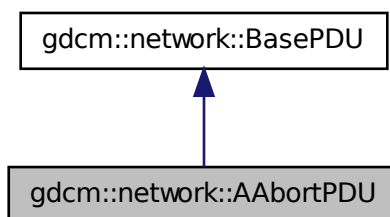
Class Documentation

25.1 gdcmm::network::AAabortPDU Class Reference

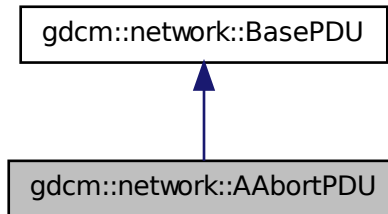
[AAabortPDU](#) [Table 9-26](#) A-ABORT PDU FIELDS.

```
#include <gdcmmAAabortPDU.h>
```

Inheritance diagram for gdcmm::network::AAabortPDU:



Collaboration diagram for `gdcm::network::AAabortPDU`:



Public Member Functions

- [AAabortPDU](#) ()
- `bool` [IsLastFragment](#) () const
- `void` [Print](#) (std::ostream &os) const
- `std::istream &` [Read](#) (std::istream &is)
- `size_t` [Size](#) () const
- `const std::ostream &` [Write](#) (std::ostream &os) const

25.1.1 Detailed Description

[AAabortPDU](#) Table 9-26 A-ABORT PDU FIELDS.

25.1.2 Constructor & Destructor Documentation

25.1.2.1 `gdcm::network::AAabortPDU::AAabortPDU ()`

25.1.3 Member Function Documentation

25.1.3.1 `bool gdcm::network::AAabortPDU::IsLastFragment () const` [inline],[virtual]

Implements [gdcm::network::BasePDU](#).

25.1.3.2 `void gdcm::network::AAabortPDU::Print (std::ostream & os) const` [virtual]

Implements [gdcm::network::BasePDU](#).

25.1.3.3 `std::istream& gdcm::network::AAabortPDU::Read (std::istream & is)` [virtual]

Implements [gdcm::network::BasePDU](#).

25.1.3.4 `size_t gdcm::network::AAbortPDU::Size () const` [virtual]

Implements [gdcm::network::BasePDU](#).

25.1.3.5 `const std::ostream& gdcm::network::AAbortPDU::Write (std::ostream & os) const` [virtual]

Implements [gdcm::network::BasePDU](#).

The documentation for this class was generated from the following file:

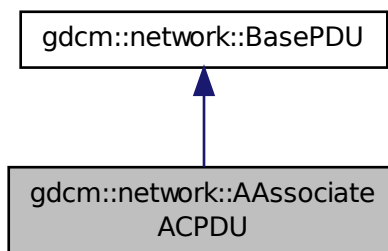
- [gdcmAAAbortPDU.h](#)

25.2 gdcm::network::AAssociateACPDU Class Reference

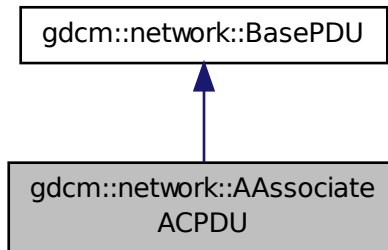
[AAssociateACPDU](#) Table 9-17 ASSOCIATE-AC PDU fields.

```
#include <gdcmAAssociateACPDU.h>
```

Inheritance diagram for `gdcm::network::AAssociateACPDU`:



Collaboration diagram for `gdcn::network::AAssociateACPDU`:



Public Types

- typedef `std::vector`
`< PresentationContextAC >`
`::size_type` [SizeType](#)

Public Member Functions

- [AAssociateACPDU](#) ()
- void [AddPresentationContextAC](#) ([PresentationContextAC](#) const &pcac)
- [SizeType](#) [GetNumberOfPresentationContextAC](#) () const
- const [PresentationContextAC](#) & [GetPresentationContextAC](#) ([SizeType](#) i)
- const [UserInformation](#) & [GetUserInformation](#) () const
- void [InitFromRQ](#) ([AAssociateRQPDU](#) const &rqpdu)
- bool [IsLastFragment](#) () const
- void [Print](#) (std::ostream &os) const
- std::istream & [Read](#) (std::istream &is)
- [SizeType](#) [Size](#) () const
- const std::ostream & [Write](#) (std::ostream &os) const

Protected Member Functions

- void [SetCalledAETitle](#) (const char calledaetitle[16])
- void [SetCallingAETitle](#) (const char callingaetitle[16])

Friends

- class [AAssociateRQPDU](#)

25.2.1 Detailed Description

[AAssociateACPDU](#) Table 9-17 ASSOCIATE-AC PDU fields.

25.2.2 Member Typedef Documentation

25.2.2.1 `typedef std::vector<PresentationContextAC>::size_type gdcmm::network::AAAssociateACPDU::SizeType`

25.2.3 Constructor & Destructor Documentation

25.2.3.1 `gdcmm::network::AAAssociateACPDU::AAAssociateACPDU ()`

25.2.4 Member Function Documentation

25.2.4.1 `void gdcmm::network::AAAssociateACPDU::AddPresentationContextAC (PresentationContextAC const & pcac)`

25.2.4.2 `SizeType gdcmm::network::AAAssociateACPDU::GetNumberOfPresentationContextAC () const [inline]`

25.2.4.3 `const PresentationContextAC& gdcmm::network::AAAssociateACPDU::GetPresentationContextAC (SizeType i) [inline]`

25.2.4.4 `const UserInformation& gdcmm::network::AAAssociateACPDU::GetUserInformation () const [inline]`

25.2.4.5 `void gdcmm::network::AAAssociateACPDU::InitFromRQ (AAAssociateRQPDU const & rqpdu)`

25.2.4.6 `bool gdcmm::network::AAAssociateACPDU::IsLastFragment () const [inline],[virtual]`

Implements [gdcmm::network::BasePDU](#).

25.2.4.7 `void gdcmm::network::AAAssociateACPDU::Print (std::ostream & os) const [virtual]`

Implements [gdcmm::network::BasePDU](#).

25.2.4.8 `std::istream& gdcmm::network::AAAssociateACPDU::Read (std::istream & is) [virtual]`

Implements [gdcmm::network::BasePDU](#).

25.2.4.9 `void gdcmm::network::AAAssociateACPDU::SetCalledAETitle (const char calledaetitle[16]) [protected]`

25.2.4.10 `void gdcmm::network::AAAssociateACPDU::SetCallingAETitle (const char callingaetitle[16]) [protected]`

25.2.4.11 `SizeType gdcmm::network::AAAssociateACPDU::Size () const [virtual]`

Implements [gdcmm::network::BasePDU](#).

25.2.4.12 `const std::ostream& gdcmm::network::AAAssociateACPDU::Write (std::ostream & os) const [virtual]`

Implements [gdcmm::network::BasePDU](#).

25.2.5 Friends And Related Function Documentation

25.2.5.1 friend class **AAssociateRQPDU** [friend]

The documentation for this class was generated from the following file:

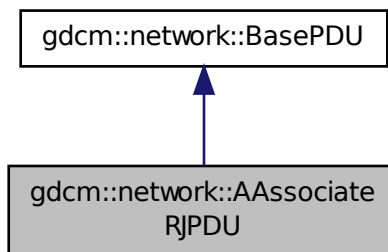
- [gdcmAAssociateACPDU.h](#)

25.3 gdcmm::network::AAssociateRJPDU Class Reference

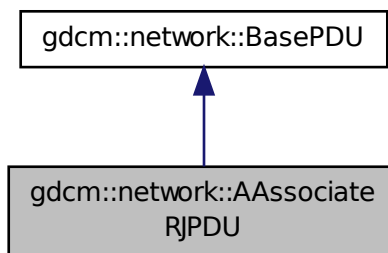
[AAssociateRJPDU Table](#) 9-21 ASSOCIATE-RJ PDU FIELDS.

```
#include <gdcmAAssociateRJPDU.h>
```

Inheritance diagram for gdcmm::network::AAssociateRJPDU:



Collaboration diagram for gdcmm::network::AAssociateRJPDU:



Public Member Functions

- [AAssociateRJPDU](#) ()

- bool [IsLastFragment](#) () const
- void [Print](#) (std::ostream &os) const
- std::istream & [Read](#) (std::istream &is)
- size_t [Size](#) () const
- const std::ostream & [Write](#) (std::ostream &os) const

25.3.1 Detailed Description

[AAssociateRJPDU Table](#) 9-21 ASSOCIATE-RJ PDU FIELDS.

25.3.2 Constructor & Destructor Documentation

25.3.2.1 `gdcm::network::AAssociateRJPDU::AAssociateRJPDU ()`

25.3.3 Member Function Documentation

25.3.3.1 `bool gdcm::network::AAssociateRJPDU::IsLastFragment () const` `[inline], [virtual]`

Implements [gdcm::network::BasePDU](#).

25.3.3.2 `void gdcm::network::AAssociateRJPDU::Print (std::ostream & os) const` `[virtual]`

Implements [gdcm::network::BasePDU](#).

25.3.3.3 `std::istream& gdcm::network::AAssociateRJPDU::Read (std::istream & is)` `[virtual]`

Implements [gdcm::network::BasePDU](#).

25.3.3.4 `size_t gdcm::network::AAssociateRJPDU::Size () const` `[virtual]`

Implements [gdcm::network::BasePDU](#).

25.3.3.5 `const std::ostream& gdcm::network::AAssociateRJPDU::Write (std::ostream & os) const` `[virtual]`

Implements [gdcm::network::BasePDU](#).

The documentation for this class was generated from the following file:

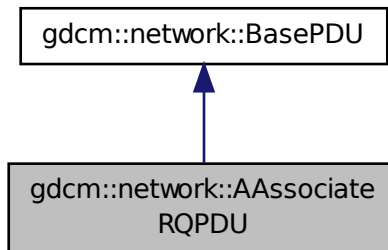
- [gdcmAAssociateRJPDU.h](#)

25.4 gdcm::network::AAssociateRQPDU Class Reference

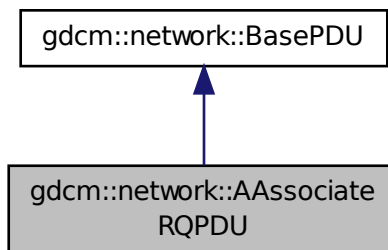
[AAssociateRQPDU Table](#) 9-11 ASSOCIATE-RQ PDU fields.

```
#include <gdcmAAssociateRQPDU.h>
```

Inheritance diagram for `gdcM::network::AAssociateRQPDU`:



Collaboration diagram for `gdcM::network::AAssociateRQPDU`:



Public Types

- `typedef std::vector< PresentationContextRQ > PresentationContextArrayType`
- `typedef std::vector< PresentationContextRQ >::size_type SizeType`

Public Member Functions

- [AAssociateRQPDU](#) ()
- [AAssociateRQPDU](#) (const [AAssociateRQPDU](#) &pdu)
- void [AddPresentationContext](#) ([PresentationContextRQ](#) const &pc)
- std::string [GetCalledAETitle](#) () const
- std::string [GetCallingAETitle](#) () const

- [SizeType GetNumberOfPresentationContext](#) () const
- [PresentationContextRQ](#) const & [GetPresentationContext](#) ([SizeType](#) i) const
- const [PresentationContextRQ](#) * [GetPresentationContextByAbstractSyntax](#) ([AbstractSyntax](#) const &as) const
- const [PresentationContextRQ](#) * [GetPresentationContextByID](#) (uint8_t i) const
- [PresentationContextArrayType](#)
const & [GetPresentationContexts](#) ()
- bool [IsLastFragment](#) () const
- void [Print](#) (std::ostream &os) const
- std::istream & [Read](#) (std::istream &is)
- void [SetCalledAETitle](#) (const char calledaetitle[16])
Set the Called AE Title.
- void [SetCallingAETitle](#) (const char callingaetitle[16])
Set the Calling AE Title.
- size_t [Size](#) () const
- const std::ostream & [Write](#) (std::ostream &os) const

Static Public Member Functions

- static bool [IsAETitleValid](#) (const char title[16])
Check whether or not the title is a valid AE title.

Protected Member Functions

- std::string [GetReserved43_74](#) () const

Friends

- class [AAssociateACPDU](#)

25.4.1 Detailed Description

[AAssociateRQPDU Table](#) 9-11 ASSOCIATE-RQ PDU fields.

25.4.2 Member Typedef Documentation

25.4.2.1 `typedef std::vector<PresentationContextRQ> gdcm::network::AAssociateRQPDU::PresentationContext-Array`
`Type`

25.4.2.2 `typedef std::vector<PresentationContextRQ>::size_type gdcm::network::AAssociateRQPDU::SizeType`

25.4.3 Constructor & Destructor Documentation

25.4.3.1 `gdcm::network::AAssociateRQPDU::AAssociateRQPDU ()`

25.4.3.2 `gdcm::network::AAssociateRQPDU::AAssociateRQPDU (const AAssociateRQPDU & pdu)` `[inline]`

25.4.4 Member Function Documentation

- 25.4.4.1 `void gdcm::network::AAssociateRQPDU::AddPresentationContext (PresentationContextRQ const & pc)`
- 25.4.4.2 `std::string gdcm::network::AAssociateRQPDU::GetCalledAETitle () const [inline]`
- 25.4.4.3 `std::string gdcm::network::AAssociateRQPDU::GetCallingAETitle () const [inline]`
- 25.4.4.4 `SizeType gdcm::network::AAssociateRQPDU::GetNumberOfPresentationContext () const [inline]`
- 25.4.4.5 `PresentationContextRQ const& gdcm::network::AAssociateRQPDU::GetPresentationContext (SizeType i) const [inline]`
- 25.4.4.6 `const PresentationContextRQ* gdcm::network::AAssociateRQPDU::GetPresentationContextByAbstractSyntax (AbstractSyntax const & as) const`
- 25.4.4.7 `const PresentationContextRQ* gdcm::network::AAssociateRQPDU::GetPresentationContextByID (uint8_t i) const`
- 25.4.4.8 `PresentationContextArrayType const& gdcm::network::AAssociateRQPDU::GetPresentationContexts () [inline]`
- 25.4.4.9 `std::string gdcm::network::AAssociateRQPDU::GetReserved43_74 () const [protected]`
- 25.4.4.10 `static bool gdcm::network::AAssociateRQPDU::IsAETitleValid (const char title[16]) [static]`

Check whether or not the title is a valid AE title.

- 25.4.4.11 `bool gdcm::network::AAssociateRQPDU::IsLastFragment () const [inline],[virtual]`

Implements [gdcm::network::BasePDU](#).

- 25.4.4.12 `void gdcm::network::AAssociateRQPDU::Print (std::ostream & os) const [virtual]`

This function will initialize an [AAssociateACPDU](#) from the fields in the [AAssociateRQPDU](#) structure

Implements [gdcm::network::BasePDU](#).

- 25.4.4.13 `std::istream& gdcm::network::AAssociateRQPDU::Read (std::istream & is) [virtual]`

Implements [gdcm::network::BasePDU](#).

- 25.4.4.14 `void gdcm::network::AAssociateRQPDU::SetCalledAETitle (const char calledaetitle[16])`

Set the Called AE Title.

- 25.4.4.15 `void gdcm::network::AAssociateRQPDU::SetCallingAETitle (const char callingaetitle[16])`

Set the Calling AE Title.

- 25.4.4.16 `size_t gdcm::network::AAssociateRQPDU::Size () const [virtual]`

Implements [gdcm::network::BasePDU](#).

25.4.4.17 `const std::ostream& gdcm::network::AAssociateRQPDU::Write (std::ostream & os) const` `[virtual]`

Implements [gdcm::network::BasePDU](#).

25.4.5 Friends And Related Function Documentation

25.4.5.1 `friend class AAssociateACPDU` `[friend]`

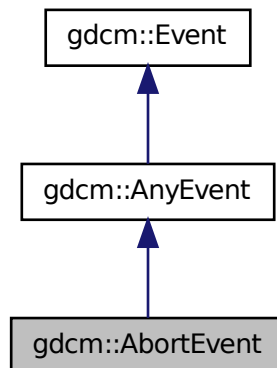
The documentation for this class was generated from the following file:

- [gdcmAAssociateRQPDU.h](#)

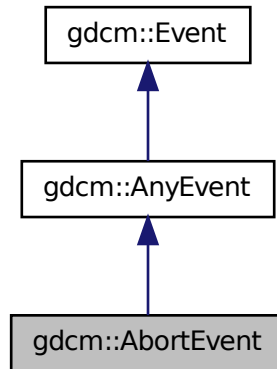
25.5 gdcm::AbortEvent Class Reference

```
#include <gdcmEvent.h>
```

Inheritance diagram for `gdcm::AbortEvent`:



Collaboration diagram for `gdcm::AbortEvent`:



Additional Inherited Members

The documentation for this class was generated from the following file:

- [gdcmEvent.h](#)

25.6 gdcm::network::AbstractSyntax Class Reference

[AbstractSyntax](#) Table 9-14 ABSTRACT SYNTAX SUB-ITEM FIELDS.

```
#include <gdcmAbstractSyntax.h>
```

Public Member Functions

- [AbstractSyntax](#) ()
- [DataElement GetAsDataElement](#) () const
- const char * [GetName](#) () const
- bool [operator==](#) (const [AbstractSyntax](#) &as) const
- void [Print](#) (std::ostream &os) const
- std::istream & [Read](#) (std::istream &is)
- void [SetName](#) (const char *name)
- void [SetNameFromUID](#) (UIDs::TSName tsname)
- size_t [Size](#) () const
- const std::ostream & [Write](#) (std::ostream &os) const

25.6.1 Detailed Description

[AbstractSyntax](#) Table 9-14 ABSTRACT SYNTAX SUB-ITEM FIELDS.

25.6.2 Constructor & Destructor Documentation

25.6.2.1 `gdcm::network::AbstractSyntax::AbstractSyntax ()`

25.6.3 Member Function Documentation

25.6.3.1 `DataElement gdcm::network::AbstractSyntax::GetAsDataElement () const`

25.6.3.2 `const char* gdcm::network::AbstractSyntax::GetName () const` `[inline]`

25.6.3.3 `bool gdcm::network::AbstractSyntax::operator== (const AbstractSyntax & as) const` `[inline]`

25.6.3.4 `void gdcm::network::AbstractSyntax::Print (std::ostream & os) const`

25.6.3.5 `std::istream& gdcm::network::AbstractSyntax::Read (std::istream & is)`

25.6.3.6 `void gdcm::network::AbstractSyntax::SetName (const char * name)` `[inline]`

25.6.3.7 `void gdcm::network::AbstractSyntax::SetNameFromUID (UIDs::TSName tsname)`

25.6.3.8 `size_t gdcm::network::AbstractSyntax::Size () const`

25.6.3.9 `const std::ostream& gdcm::network::AbstractSyntax::Write (std::ostream & os) const`

The documentation for this class was generated from the following file:

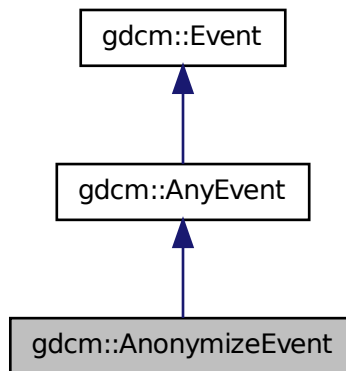
- [gdcmAbstractSyntax.h](#)

25.7 gdcm::AnonymizeEvent Class Reference

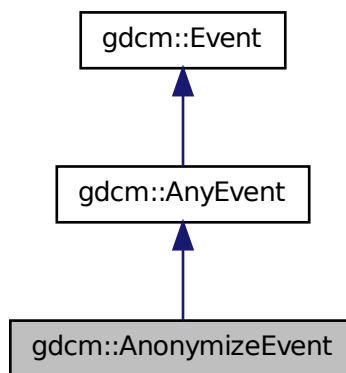
[AnonymizeEvent](#) Special type of event triggered during the Anonymization process.

```
#include <gdcmAnonymizeEvent.h>
```

Inheritance diagram for `gdc::AnonymizeEvent`:



Collaboration diagram for `gdc::AnonymizeEvent`:



Public Types

- typedef [AnonymizeEvent](#) `Self`
- typedef [AnyEvent](#) `Superclass`

Public Member Functions

- [AnonymizeEvent](#) (`Tag` const &tag=0)

- [AnonymizeEvent](#) (const [Self](#) &s)
- virtual [~AnonymizeEvent](#) ()
- virtual bool [CheckEvent](#) (const [::gdcmm::Event](#) *e) const
- virtual const char * [GetEventName](#) () const
- [Tag](#) const & [GetTag](#) () const
- virtual [::gdcmm::Event](#) * [MakeObject](#) () const
- void [SetTag](#) (const [Tag](#) &t)

25.7.1 Detailed Description

[AnonymizeEvent](#) Special type of event triggered during the Anonymization process.

See Also

[Anonymizer](#)

25.7.2 Member Typedef Documentation

25.7.2.1 typedef [AnonymizeEvent](#) [gdcmm::AnonymizeEvent::Self](#)

25.7.2.2 typedef [AnyEvent](#) [gdcmm::AnonymizeEvent::Superclass](#)

25.7.3 Constructor & Destructor Documentation

25.7.3.1 [gdcmm::AnonymizeEvent::AnonymizeEvent](#) ([Tag](#) const & *tag* = 0) [\[inline\]](#)

25.7.3.2 virtual [gdcmm::AnonymizeEvent::~~AnonymizeEvent](#) () [\[inline\]](#),[\[virtual\]](#)

25.7.3.3 [gdcmm::AnonymizeEvent::AnonymizeEvent](#) ([const Self](#) & *s*) [\[inline\]](#)

25.7.4 Member Function Documentation

25.7.4.1 virtual bool [gdcmm::AnonymizeEvent::CheckEvent](#) ([const ::gdcmm::Event](#) * *e*) const [\[inline\]](#),[\[virtual\]](#)

25.7.4.2 virtual const char* [gdcmm::AnonymizeEvent::GetEventName](#) () const [\[inline\]](#),[\[virtual\]](#)

Return the StringName associated with the event.

Implements [gdcmm::Event](#).

25.7.4.3 [Tag](#) const& [gdcmm::AnonymizeEvent::GetTag](#) () const [\[inline\]](#)

25.7.4.4 virtual [::gdcmm::Event](#)* [gdcmm::AnonymizeEvent::MakeObject](#) () const [\[inline\]](#),[\[virtual\]](#)

Create an [Event](#) of this type This method work as a Factory for creating events of each particular type.

Implements [gdcmm::Event](#).

25.7.4.5 void [gdcmm::AnonymizeEvent::SetTag](#) ([const Tag](#) & *t*) [\[inline\]](#)

The documentation for this class was generated from the following file:

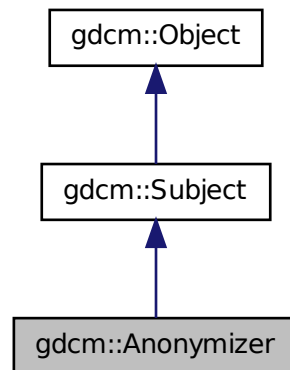
- [gdcmAnonymizeEvent.h](#)

25.8 gdcm::Anonymizer Class Reference

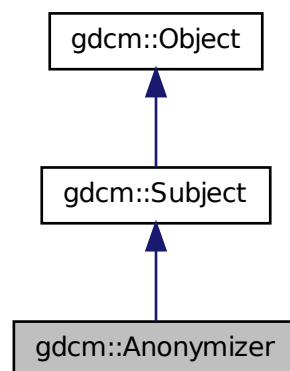
[Anonymizer](#) This class is a multi purpose anonymizer. It can work in 2 mode:

```
#include <gdcmAnonymizer.h>
```

Inheritance diagram for gdcm::Anonymizer:



Collaboration diagram for gdcm::Anonymizer:



Public Member Functions

- [Anonymizer](#) ()
- [~Anonymizer](#) ()
- bool [BasicApplicationLevelConfidentialityProfile](#) (bool deidentify=true)
- bool [Empty](#) (Tag const &t)
- const [CryptographicMessageSyntax](#) * [GetCryptographicMessageSyntax](#) () const
- [File](#) & [GetFile](#) ()
- bool [Remove](#) (Tag const &t)
- bool [RemoveGroupLength](#) ()
 - Main function that loop over all elements and remove group length.*
- bool [RemovePrivateTags](#) ()
 - Main function that loop over all elements and remove private tags.*
- bool [RemoveRetired](#) ()
 - Main function that loop over all elements and remove retired element.*
- bool [Replace](#) (Tag const &t, const char *value)
- bool [Replace](#) (Tag const &t, const char *value, [VL](#) const &vl)
- void [SetCryptographicMessageSyntax](#) ([CryptographicMessageSyntax](#) *cms)
 - Set/Get CMS key that will be used to encrypt the dataset within BasicApplicationLevelConfidentialityProfile.*
- void [SetFile](#) (const [File](#) &f)
 - Set/Get File.*

Static Public Member Functions

- static std::vector< [Tag](#) > [GetBasicApplicationLevelConfidentialityProfileAttributes](#) ()
 - Return the list of Tag that will be considered when anonymizing a DICOM file.*
- static [SmartPointer](#)< [Anonymizer](#) > [New](#) ()
 - for wrapped language: instantiate a reference counted object*

Protected Member Functions

- bool [BALCPPProtect](#) ([DataSet](#) &ds, [Tag](#) const &tag, const [IOD](#) &iod)
- bool [CanEmptyTag](#) ([Tag](#) const &tag, const [IOD](#) &iod) const
- void [RecurseDataSet](#) ([DataSet](#) &ds)

25.8.1 Detailed Description

[Anonymizer](#) This class is a multi purpose anonymizer. It can work in 2 mode:

- Full (irreversible) anonymizer (aka dumb mode)
- reversible de-identifier/re-identifier (aka smart mode). This implements the Basic Application Level Confidentiality Profile, DICOM PS 3.15-2009

1. dumb mode This is a dumb anonymizer implementation. All it allows user is simple operation such as:

[Tag](#) based functions:

- complete removal of DICOM attribute ([Remove](#))

- make a tag empty, ie make it's length 0 (Empty)
- replace with another string-based value (Replace)

[DataSet](#) based functions:

- Remove all group length attribute from a DICOM dataset (Group Length element are deprecated, DICOM 2008)
- Remove all private attributes
- Remove all retired attributes

All function calls actually execute the user specified request. Previous implementation were calling a general Anonymize function but traversing a `std::set` is $O(n)$ operation, while a simple user specified request is $O(\log(n))$ operation. So 'm' user interaction is $O(m \cdot \log(n))$ which is $< O(n)$ complexity.

1. smart mode this mode implements the Basic Application Level Confidentiality Profile (DICOM PS 3.15-2008) In this case, it is extremely important to use the same [gdcm::Anonymizer](#) class when anonymizing a [FileSet](#). Once the [gdcm::Anonymizer](#) is destroyed its memory of known (already processed) [UIDs](#) will be lost. which will make the anonymizer behaves incorrectly for attributes such as [Series](#) UID [Study](#) UID where user want some consistency. When attribute is [Type](#) 1 / [Type](#) 1C, a dummy generator will take in the existing value and produce a dummy value (a sha1 representation). sha1 algorithm is considered to be cryptographically strong (compared to md5sum) so that we meet the following two conditions:

- Produce the same dummy value for the same input value
- do not provide an easy way to retrieve the original value from the sha1 generated value

This class implement the Subject/Observer pattern trigger the following event:

- [AnonymizeEvent](#)
- [IterationEvent](#)
- [StartEvent](#)
- [EndEvent](#)

See Also

[CryptographicMessageSyntax](#)

Examples:

[ClinicalTrialAnnotate.cxx](#), [CreateJPIPDataSet.cxx](#), and [EncapsulateFileInRawData.cxx](#).

25.8.2 Constructor & Destructor Documentation

25.8.2.1 `gdcm::Anonymizer::Anonymizer ()` [`inline`]

25.8.2.2 `gdcm::Anonymizer::~~Anonymizer ()`

25.8.3 Member Function Documentation

25.8.3.1 `bool gdcm::Anonymizer::BALCPPProtect (DataSet & ds, Tag const & tag, const IOD & iod)` [`protected`]

25.8.3.2 `bool gdcm::Anonymizer::BasicApplicationLevelConfidentialityProfile (bool deidentify = true)`

PS 3.15 / E.1.1 De-Identifier An Application may claim conformance to the Basic Application Level Confidentiality Profile as a deidentifier if it protects all Attributes that might be used by unauthorized entities to identify the patient. NOT THREAD SAFE

25.8.3.3 `bool gdcm::Anonymizer::CanEmptyTag (Tag const & tag, const IOD & iod) const` [protected]

25.8.3.4 `bool gdcm::Anonymizer::Empty (Tag const & t)`

Make [Tag](#) *t* empty (if not found tag will be created) Warning: does not handle SQ element

Examples:

[CreateJPIPDataSet.cxx](#).

25.8.3.5 `static std::vector<Tag> gdcm::Anonymizer::GetBasicApplicationLevelConfidentialityProfileAttributes ()` [static]

Return the list of [Tag](#) that will be considered when anonymizing a DICOM file.

Examples:

[GenFakeIdentifyFile.cxx](#), and [TraverseModules.cxx](#).

25.8.3.6 `const CryptographicMessageSyntax* gdcm::Anonymizer::GetCryptographicMessageSyntax () const`

25.8.3.7 `File& gdcm::Anonymizer::GetFile ()` [inline]

25.8.3.8 `static SmartPointer<Anonymizer> gdcm::Anonymizer::New ()` [inline],[static]

for wrapped language: instantiate a reference counted object

25.8.3.9 `void gdcm::Anonymizer::RecurseDataSet (DataSet & ds)` [protected]

25.8.3.10 `bool gdcm::Anonymizer::Remove (Tag const & t)`

remove a tag (even a SQ can be removed) Return code is false when tag *t* cannot be found

25.8.3.11 `bool gdcm::Anonymizer::RemoveGroupLength ()`

Main function that loop over all elements and remove group length.

Examples:

[ClinicalTrialAnnotate.cxx](#).

25.8.3.12 `bool gdcm::Anonymizer::RemovePrivateTags ()`

Main function that loop over all elements and remove private tags.

Examples:

[ClinicalTrialAnnotate.cxx](#).

25.8.3.13 `bool gdcm::Anonymizer::RemoveRetired ()`

Main function that loop over all elements and remove retired element.

25.8.3.14 `bool gdcm::Anonymizer::Replace (Tag const & t, const char * value)`

Replace tag with another value, if tag is not found it will be created: WARNING: this function can only execute if tag is a VRASCI

Examples:

[ClinicalTrialAnnotate.cxx](#), [CreateJPIPDataSet.cxx](#), and [EncapsulateFileInRawData.cxx](#).

25.8.3.15 `bool gdcm::Anonymizer::Replace (Tag const & t, const char * value, VL const & vl)`

when the value contains \0, it is a good idea to specify the length. This function is required when dealing with VRBINARY tag

25.8.3.16 `void gdcm::Anonymizer::SetCryptographicMessageSyntax (CryptographicMessageSyntax * cms)`

Set/Get CMS key that will be used to encrypt the dataset within BasicApplicationLevelConfidentialityProfile.

25.8.3.17 `void gdcm::Anonymizer::SetFile (const File & f) [inline]`

Set/Get [File](#).

Examples:

[ClinicalTrialAnnotate.cxx](#), [CreateJPIPDataSet.cxx](#), and [EncapsulateFileInRawData.cxx](#).

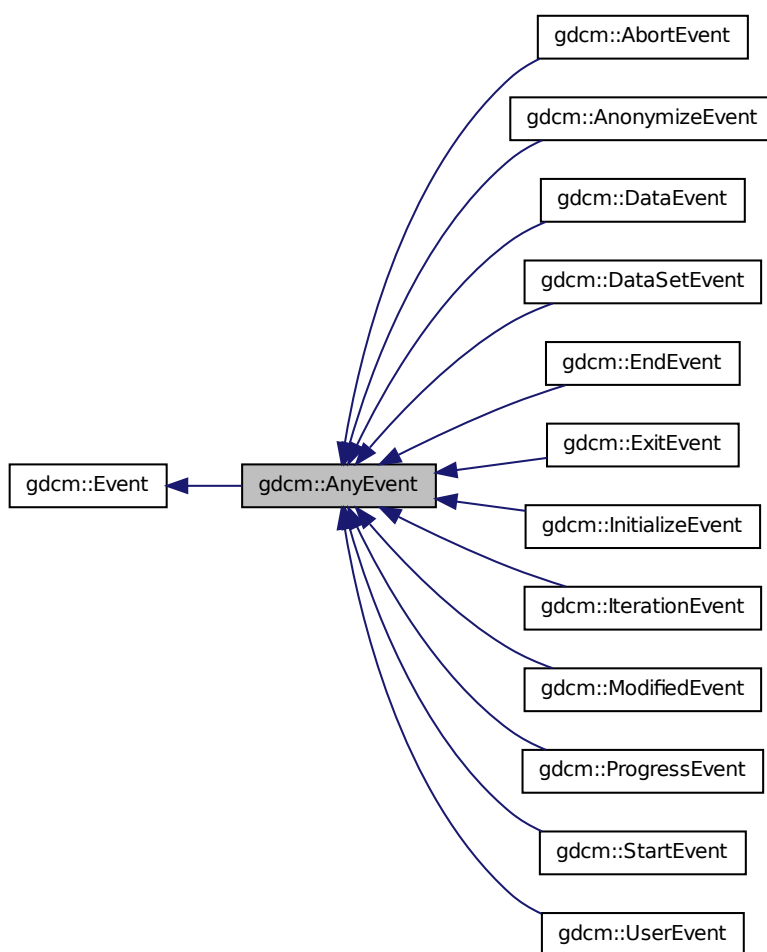
The documentation for this class was generated from the following file:

- [gdcmAnonymizer.h](#)

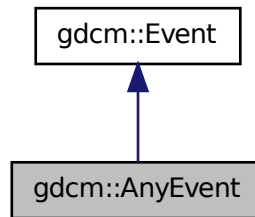
25.9 `gdcm::AnyEvent` Class Reference

```
#include <gdcmEvent.h>
```

Inheritance diagram for gdcM::AnyEvent:



Collaboration diagram for `gdcm::AnyEvent`:



Additional Inherited Members

The documentation for this class was generated from the following file:

- [gdcmEvent.h](#)

25.10 gdcm::network::ApplicationContext Class Reference

[ApplicationContext Table 9-12 APPLICATION CONTEXT ITEM FIELDS](#) Looks like Application Context can only be 64 bytes at max (see Figure 9-1 / PS 3.8 - 2009)

```
#include <gdcmApplicationContext.h>
```

Public Member Functions

- [ApplicationContext](#) ()
- `const char *` [GetName](#) () `const`
- `void` [Print](#) (`std::ostream &os`) `const`
- `std::istream &` [Read](#) (`std::istream &is`)
- `void` [SetName](#) (`const char *name`)
- `size_t` [Size](#) () `const`
- `const std::ostream &` [Write](#) (`std::ostream &os`) `const`

25.10.1 Detailed Description

[ApplicationContext Table 9-12 APPLICATION CONTEXT ITEM FIELDS](#) Looks like Application Context can only be 64 bytes at max (see Figure 9-1 / PS 3.8 - 2009)

25.10.2 Constructor & Destructor Documentation

25.10.2.1 `gdcm::network::ApplicationContext::ApplicationContext ()`

25.10.3 Member Function Documentation

25.10.3.1 `const char* gdcm::network::ApplicationContext::GetName () const` `[inline]`

25.10.3.2 `void gdcm::network::ApplicationContext::Print (std::ostream & os) const`

25.10.3.3 `std::istream& gdcm::network::ApplicationContext::Read (std::istream & is)`

25.10.3.4 `void gdcm::network::ApplicationContext::SetName (const char * name)` `[inline]`

25.10.3.5 `size_t gdcm::network::ApplicationContext::Size () const`

25.10.3.6 `const std::ostream& gdcm::network::ApplicationContext::Write (std::ostream & os) const`

The documentation for this class was generated from the following file:

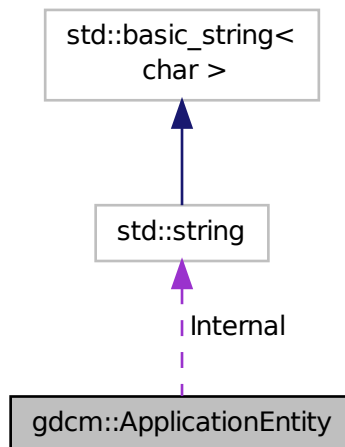
- [gdcmApplicationContext.h](#)

25.11 gdcm::ApplicationEntity Class Reference

[ApplicationEntity](#).

```
#include <gdcmApplicationEntity.h>
```

Collaboration diagram for gdcm::ApplicationEntity:



Public Member Functions

- `bool IsValid () const`

- void [Print](#) (std::ostream &os) const
- void [SetBlob](#) (const std::vector< char > &v)
- void [Squeeze](#) ()

Public Attributes

- std::string [Internal](#)

Static Public Attributes

- static const unsigned int [MaxLength](#) = 16
- static const unsigned int [MaxNumberOfComponents](#) = 1
- static const char [Padding](#) = ' '
- static const char [Separator](#) = ' '

25.11.1 Detailed Description

[ApplicationEntity](#).

- AE Application Entity
- A string of characters that identifies an Application Entity with leading and trailing spaces (20H) being non-significant. A value consisting solely of spaces shall not be used.
- Default Character Repertoire excluding character code 5CH (the BACKSLASH \ in ISO-IR 6), and control characters LF, FF, CR and ESC.
- 16 bytes maximum

25.11.2 Member Function Documentation

25.11.2.1 bool [gdcm::ApplicationEntity::IsValid](#) () const [\[inline\]](#)

25.11.2.2 void [gdcm::ApplicationEntity::Print](#) (std::ostream & os) const [\[inline\]](#)

25.11.2.3 void [gdcm::ApplicationEntity::SetBlob](#) (const std::vector< char > & v) [\[inline\]](#)

25.11.2.4 void [gdcm::ApplicationEntity::Squeeze](#) () [\[inline\]](#)

25.11.3 Member Data Documentation

25.11.3.1 std::string [gdcm::ApplicationEntity::Internal](#)

25.11.3.2 const unsigned int [gdcm::ApplicationEntity::MaxLength](#) = 16 [\[static\]](#)

25.11.3.3 const unsigned int [gdcm::ApplicationEntity::MaxNumberOfComponents](#) = 1 [\[static\]](#)

25.11.3.4 const char [gdcm::ApplicationEntity::Padding](#) = ' ' [\[static\]](#)

25.11.3.5 `const char gdcmm::ApplicationEntity::Separator = ''` [static]

The documentation for this class was generated from the following file:

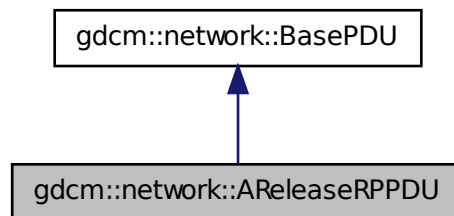
- [gdcmmApplicationEntity.h](#)

25.12 gdcmm::network::AReleaseRPPDU Class Reference

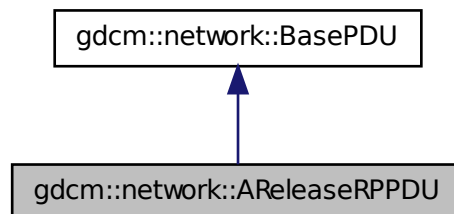
[AReleaseRPPDU](#) Table 9-25 A-RELEASE-RP PDU fields.

```
#include <gdcmmAReleaseRPPDU.h>
```

Inheritance diagram for gdcmm::network::AReleaseRPPDU:



Collaboration diagram for gdcmm::network::AReleaseRPPDU:



Public Member Functions

- [AReleaseRPPDU](#) ()
- `bool` [IsLastFragment](#) () const
- `void` [Print](#) (std::ostream &os) const

- `std::istream & Read (std::istream &is)`
- `size_t Size () const`
- `const std::ostream & Write (std::ostream &os) const`

25.12.1 Detailed Description

[AReleaseRPPDU Table](#) 9-25 A-RELEASE-RP PDU fields.

25.12.2 Constructor & Destructor Documentation

25.12.2.1 `gdcmm::network::AReleaseRPPDU::AReleaseRPPDU ()`

25.12.3 Member Function Documentation

25.12.3.1 `bool gdcmm::network::AReleaseRPPDU::IsLastFragment () const` `[inline],[virtual]`

Implements [gdcmm::network::BasePDU](#).

25.12.3.2 `void gdcmm::network::AReleaseRPPDU::Print (std::ostream & os) const` `[virtual]`

Implements [gdcmm::network::BasePDU](#).

25.12.3.3 `std::istream& gdcmm::network::AReleaseRPPDU::Read (std::istream & is)` `[virtual]`

Implements [gdcmm::network::BasePDU](#).

25.12.3.4 `size_t gdcmm::network::AReleaseRPPDU::Size () const` `[virtual]`

Implements [gdcmm::network::BasePDU](#).

25.12.3.5 `const std::ostream& gdcmm::network::AReleaseRPPDU::Write (std::ostream & os) const` `[virtual]`

Implements [gdcmm::network::BasePDU](#).

The documentation for this class was generated from the following file:

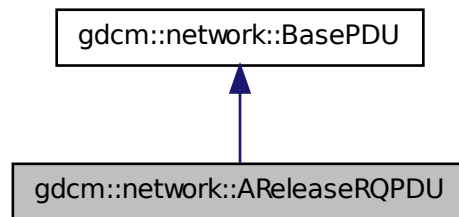
- [gdcmAReleaseRPPDU.h](#)

25.13 gdcmm::network::AReleaseRQPDU Class Reference

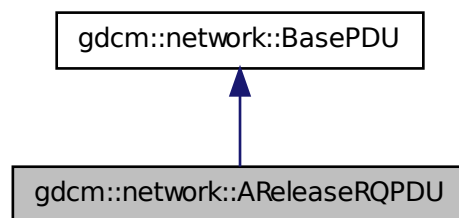
[AReleaseRQPDU Table](#) 9-24 A-RELEASE-RQ PDU FIELDS.

```
#include <gdcmAReleaseRQPDU.h>
```


Inheritance diagram for gdcmm::network::AReleaseRQPDU:



Collaboration diagram for gdcmm::network::AReleaseRQPDU:



Public Member Functions

- [AReleaseRQPDU](#) ()
- bool [IsLastFragment](#) () const
- void [Print](#) (std::ostream &os) const
- std::istream & [Read](#) (std::istream &is)
- size_t [Size](#) () const
- const std::ostream & [Write](#) (std::ostream &os) const

25.13.1 Detailed Description

[AReleaseRQPDU](#) Table 9-24 A-RELEASE-RQ PDU FIELDS.

25.13.2 Constructor & Destructor Documentation

25.13.2.1 `gdcmm::network::AReleaseRQPDU::AReleaseRQPDU ()`

25.13.3 Member Function Documentation

25.13.3.1 `bool gdcmm::network::AReleaseRQPDU::IsLastFragment () const` `[inline],[virtual]`

Implements [gdcmm::network::BasePDU](#).

25.13.3.2 `void gdcmm::network::AReleaseRQPDU::Print (std::ostream & os) const` `[virtual]`

Implements [gdcmm::network::BasePDU](#).

25.13.3.3 `std::istream& gdcmm::network::AReleaseRQPDU::Read (std::istream & is)` `[virtual]`

Implements [gdcmm::network::BasePDU](#).

25.13.3.4 `size_t gdcmm::network::AReleaseRQPDU::Size () const` `[virtual]`

Implements [gdcmm::network::BasePDU](#).

25.13.3.5 `const std::ostream& gdcmm::network::AReleaseRQPDU::Write (std::ostream & os) const` `[virtual]`

Implements [gdcmm::network::BasePDU](#).

The documentation for this class was generated from the following file:

- [gdcmmAReleaseRQPDU.h](#)

25.14 gdcmm::network::ARTIMTimer Class Reference

[ARTIMTimer](#) This file contains the code for the ARTIM timer.

```
#include <gdcmmARTIMTimer.h>
```

Public Member Functions

- [ARTIMTimer](#) ()
- double [GetElapsedTime](#) () const
- bool [GetHasExpired](#) () const
- double [GetTimeout](#) () const
- void [SetTimeout](#) (double inTimeout)
- void [Start](#) ()
- void [Stop](#) ()

25.14.1 Detailed Description

[ARTIMTimer](#) This file contains the code for the ARTIM timer.

Basically, the ARTIM timer will just get the wall time when it's started, and then can be queried for the current time, and then can be stopped (ie, the start time reset).

Because we're trying to do this without threading, we should be able to 'start' the ARTIM timer by this mechanism, and then when waiting for a particular response, tight loop that with sleep calls and determinations of when the ARTIM timer has reached its peak. As such, this isn't a strict 'timer' in the traditional sense of the word, but more of a time keeper.

There can be only one ARTIM timer per connection.

25.14.2 Constructor & Destructor Documentation

25.14.2.1 `gdcm::network::ARTIMTimer::ARTIMTimer ()`

25.14.3 Member Function Documentation

25.14.3.1 `double gdcm::network::ARTIMTimer::GetElapsedTime () const`

25.14.3.2 `bool gdcm::network::ARTIMTimer::GetHasExpired () const`

25.14.3.3 `double gdcm::network::ARTIMTimer::GetTimeout () const`

25.14.3.4 `void gdcm::network::ARTIMTimer::SetTimeout (double inTimeout)`

25.14.3.5 `void gdcm::network::ARTIMTimer::Start ()`

25.14.3.6 `void gdcm::network::ARTIMTimer::Stop ()`

The documentation for this class was generated from the following file:

- [gdcmARTIMTimer.h](#)

25.15 gdcm::ASN1 Class Reference

Class for [ASN1](#).

```
#include <gdcmASN1.h>
```

Public Member Functions

- [ASN1](#) ()
- [~ASN1](#) ()

Static Public Member Functions

- static bool [ParseDump](#) (const char *array, size_t length)
- static bool [ParseDumpFile](#) (const char *filename)

Protected Member Functions

- int [TestPBKDF2](#) ()

25.15.1 Detailed Description

Class for [ASN1](#).

25.15.2 Constructor & Destructor Documentation

25.15.2.1 `gdcmm::ASN1::ASN1 ()`

25.15.2.2 `gdcmm::ASN1::~~ASN1 ()`

25.15.3 Member Function Documentation

25.15.3.1 `static bool gdcmm::ASN1::ParseDump (const char * array, size_t length)` `[static]`

25.15.3.2 `static bool gdcmm::ASN1::ParseDumpFile (const char * filename)` `[static]`

25.15.3.3 `int gdcmm::ASN1::TestPBKDF2 ()` `[protected]`

The documentation for this class was generated from the following file:

- [gdcmmASN1.h](#)

25.16 gdcmm::network::AsynchronousOperationsWindowSub Class Reference

[AsynchronousOperationsWindowSub](#) PS 3.7 [Table D.3-7](#) ASYNCHRONOUS OPERATIONS WINDOW SUB-ITEM FIELD (A-ASSOCIATE-RQ)

```
#include <gdcmmAsynchronousOperationsWindowSub.h>
```

Public Member Functions

- [AsynchronousOperationsWindowSub](#) ()
- void [Print](#) (std::ostream &os) const
- std::istream & [Read](#) (std::istream &is)
- size_t [Size](#) () const
- const std::ostream & [Write](#) (std::ostream &os) const

25.16.1 Detailed Description

[AsynchronousOperationsWindowSub](#) PS 3.7 [Table D.3-7](#) ASYNCHRONOUS OPERATIONS WINDOW SUB-ITEM FIELD (A-ASSOCIATE-RQ)

25.16.2 Constructor & Destructor Documentation

25.16.2.1 `gdcm::network::AsynchronousOperationsWindowSub::AsynchronousOperationsWindowSub ()`

25.16.3 Member Function Documentation

25.16.3.1 `void gdcm::network::AsynchronousOperationsWindowSub::Print (std::ostream & os) const`

25.16.3.2 `std::istream& gdcm::network::AsynchronousOperationsWindowSub::Read (std::istream & is)`

25.16.3.3 `size_t gdcm::network::AsynchronousOperationsWindowSub::Size () const`

25.16.3.4 `const std::ostream& gdcm::network::AsynchronousOperationsWindowSub::Write (std::ostream & os) const`

The documentation for this class was generated from the following file:

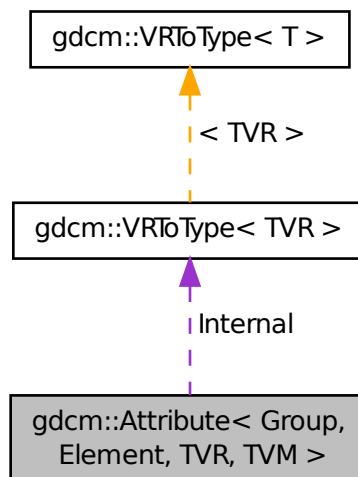
- [gdcmAsynchronousOperationsWindowSub.h](#)

25.17 gdcm::Attribute< Group, Element, TVR, TVM > Class Template Reference

[Attribute](#) class This class use template metaprograming tricks to let the user know when the template instantiation does not match the public dictionary.

```
#include <gdcmAttribute.h>
```

Collaboration diagram for `gdcm::Attribute< Group, Element, TVR, TVM >`:



Public Types

- enum { [VMType](#) = VMToLength<TVM>::Length }
- typedef [VRToType](#)< TVR >::Type [ArrayType](#)

Public Member Functions

- [GDCM_STATIC_ASSERT](#) ((([VR::VRType](#)) TVR &([VR::VRType](#))(TagToType< Group, [Element](#) >::VRType)))
- [GDCM_STATIC_ASSERT](#) ((([VM::VMType](#)) TVM &([VM::VMType](#))(TagToType< Group, [Element](#) >::VMType)))
- [GDCM_STATIC_ASSERT](#) ((((([VR::VRType](#)) TVR &[VR::VR_VM1](#))&&(([VM::VMType](#)) TVM==[VM::VM1](#)))||!(([VR::VRType](#)) TVR &[VR::VR_VM1](#))))
- [DataElement](#) [GetAsDataElement](#) () const
- unsigned int [GetNumberOfValues](#) () const
- [ArrayType](#) & [GetValue](#) (unsigned int idx=0)
- [ArrayType](#) const & [GetValue](#) (unsigned int idx=0) const
- const [ArrayType](#) * [GetValues](#) () const
- bool [operator!=](#) (const [Attribute](#) &att) const
- bool [operator<](#) (const [Attribute](#) &att) const
- bool [operator==](#) (const [Attribute](#) &att) const
- [ArrayType](#) & [operator\[\]](#) (unsigned int idx)
- [ArrayType](#) const & [operator\[\]](#) (unsigned int idx) const
- void [Print](#) (std::ostream &os) const
- void [Set](#) ([DataSet](#) const &ds)
- void [SetFromDataElement](#) ([DataElement](#) const &de)
- void [SetFromDataSet](#) ([DataSet](#) const &ds)
- void [SetValue](#) ([ArrayType](#) v, unsigned int idx=0)
- void [SetValues](#) (const [ArrayType](#) *array, unsigned int numel=[VMType](#))

Static Public Member Functions

- static [VM](#) [GetDictVM](#) ()
- static [VR](#) [GetDictVR](#) ()
- static [Tag](#) [GetTag](#) ()
- static [VM](#) [GetVM](#) ()
- static [VR](#) [GetVR](#) ()

Public Attributes

- [ArrayType](#) [Internal](#) [[VMToLength](#)< TVM >::Length]

Protected Member Functions

- void [SetByteValue](#) (const [ByteValue](#) *bv)
- void [SetByteValueNoSwap](#) (const [ByteValue](#) *bv)

25.17.1 Detailed Description

```
template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM = TagToType<Group, Element>::VMType> class gdcm::Attribute< Group, Element, TVR, TVM >
```

[Attribute](#) class This class use template metaprograming tricks to let the user know when the template instantiation does not match the public dictionary.

Typical example that compile is: `Attribute<0x0008,0x9007> a = {"ORIGINAL","PRIMARY","T1","NONE"};`

Examples that will NOT compile are:

```
Attribute<0x0018,0x1182, VR::IS, VM::VM1> fd1 = {}; // not enough parameters
Attribute<0x0018,0x1182, VR::IS, VM::VM2> fd2 = {0,1,2}; // too many initializers
Attribute<0x0018,0x1182, VR::IS, VM::VM3> fd3 = {0,1,2}; // VM3 is not valid
Attribute<0x0018,0x1182, VR::UL, VM::VM2> fd3 = {0,1}; // UL is not valid VR
```

Examples:

[CreateJIPIDataSet.cxx](#), [Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [gdcmrtionplan.cxx](#), [gdcmrtplan.cxx](#), [GenFakeIdentifyFile.cxx](#), [GetSequenceUltrasound.cxx](#), [HelloWorld.cxx](#), [LargeVRDSEExplicit.cxx](#), [PatchFile.cxx](#), [pmsct_rgb1.cxx](#), [ReadAndPrintAttributes.cxx](#), [rle2img.cxx](#), [SortImage.cxx](#), [StreamImage-ReaderTest.cxx](#), and [VolumeSorter.cxx](#).

25.17.2 Member Typedef Documentation

25.17.2.1 `template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM = TagToType<Group, Element>::VMType> typedef VRToType<TVR>::Type gdcm::Attribute< Group, Element, TVR, TVM >::ArrayType`

25.17.3 Member Enumeration Documentation

25.17.3.1 `template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM = TagToType<Group, Element>::VMType> anonymous enum`

Enumerator

VMType

25.17.4 Member Function Documentation

25.17.4.1 `template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM = TagToType<Group, Element>::VMType> gdcm::Attribute< Group, Element, TVR, TVM >::GDCM_STATIC_ASSERT (((VR::VRType) TVR &(VR::VRType)(TagToType< Group, Element >::VRType)))`

25.17.4.2 `template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM = TagToType<Group, Element>::VMType> gdcm::Attribute< Group, Element, TVR, TVM >::GDCM_STATIC_ASSERT (((VM::VMType) TVM &(VM::VMType)(TagToType< Group, Element >::VMType)))`

25.17.4.3 `template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM = TagToType<Group, Element>::VMType> gdcm::Attribute< Group, Element, TVR, TVM >::GDCM_STATIC_ASSERT ((((VR::VRType) TVR &VR::VR_VM1)&&((VM::VMType) TVM==VM::VM1))||!((VR::VRType) TVR &VR::VR_VM1)))`

```
25.17.4.4  template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM =
           TagToType<Group, Element>::VMType> DataElement gdcmm::Attribute< Group, Element, TVR, TVM
           >::GetAsDataElement ( ) const  [inline]
```

References gdcmm::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues(), gdcmm::Attribute< Group, Element, TVR, TVM >::GetTag(), gdcmm::DataElement::GetVR(), gdcmm::Attribute< Group, Element, TVR, TVM >::GetVR(), gdcmm::Attribute< Group, Element, TVR, TVM >::Internal, gdcmm::DataElement::SetByteValue(), gdcmm::DataElement::SetVR(), gdcmm::VR::SQ, gdcmm::VR::UI, and gdcmm::VR::VRASCII.

```
25.17.4.5  template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM =
           TagToType<Group, Element>::VMType> static VM gdcmm::Attribute< Group, Element, TVR, TVM >::GetDictVM ( )
           [inline], [static]
```

```
25.17.4.6  template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM =
           TagToType<Group, Element>::VMType> static VR gdcmm::Attribute< Group, Element, TVR, TVM >::GetDictVR ( )
           [inline], [static]
```

```
25.17.4.7  template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM =
           TagToType<Group, Element>::VMType> unsigned int gdcmm::Attribute< Group, Element, TVR, TVM
           >::GetNumberOfValues ( ) const  [inline]
```

Referenced by gdcmm::Attribute< Group, Element, TVR, TVM >::GetAsDataElement(), gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::GetAsDataElement(), gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::GetAsDataElement(), gdcmm::Attribute< Group, Element, TVR, TVM >::GetValue(), gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::GetValue(), gdcmm::Attribute< Group, Element, TVR, TVM >::operator!(), gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::operator!(), gdcmm::Attribute< Group, Element, TVR, TVM >::operator<(), gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::operator<(), gdcmm::Attribute< Group, Element, TVR, TVM >::operator==(), gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::operator==(), gdcmm::Attribute< Group, Element, TVR, TVM >::Print(), gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::Print(), gdcmm::Attribute< Group, Element, TVR, TVM >::SetByteValue(), gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::SetByteValue(), gdcmm::Attribute< Group, Element, TVR, TVM >::SetByteValueNoSwap(), gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::SetByteValueNoSwap(), gdcmm::Attribute< Group, Element, TVR, TVM >::SetValue(), gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::SetValue(), gdcmm::Attribute< Group, Element, TVR, TVM >::SetValues(), and gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::SetValues().

```
25.17.4.8  template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM =
           TagToType<Group, Element>::VMType> static Tag gdcmm::Attribute< Group, Element, TVR, TVM >::GetTag ( )
           [inline], [static]
```

Referenced by gdcmm::Attribute< Group, Element, TVR, TVM >::GetAsDataElement(), gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::GetAsDataElement(), gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::GetAsDataElement(), gdcmm::Attribute< Group, Element, TVR, TVM >::Print(), gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::Print(), gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::Print(), gdcmm::Attribute< Group, Element, TVR, TVM >::Set(), gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::Set(), gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::Set(), gdcmm::Attribute< Group, Element, TVR, TVM >::SetFromDataElement(), gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::SetFromDataElement(), gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::SetFromDataElement(), gdcmm::Attribute< Group, Element, TVR, TVM >::SetFromDataSet(), gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::SetFromDataSet(), and gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::SetFromDataSet().

25.17.4.9 `template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM = TagToType<Group, Element>::VMType> ArrayType& gdcm::Attribute< Group, Element, TVR, TVM >::GetValue (unsigned int idx = 0) [inline]`

References `gdcm::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues()`, and `gdcm::Attribute< Group, Element, TVR, TVM >::Internal`.

Referenced by `gdcm::Attribute< Group, Element, TVR, TVM >::operator[]()`, and `gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::operator[]()`.

25.17.4.10 `template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM = TagToType<Group, Element>::VMType> ArrayType const& gdcm::Attribute< Group, Element, TVR, TVM >::GetValue (unsigned int idx = 0) const [inline]`

References `gdcm::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues()`, and `gdcm::Attribute< Group, Element, TVR, TVM >::Internal`.

25.17.4.11 `template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM = TagToType<Group, Element>::VMType> const ArrayType* gdcm::Attribute< Group, Element, TVR, TVM >::GetValues () const [inline]`

References `gdcm::Attribute< Group, Element, TVR, TVM >::Internal`.

Referenced by `gdcm::Attribute< Group, Element, TVR, TVM >::operator!=()`, `gdcm::Attribute< Group, Element, TVR, VM::VM1 >::operator!=()`, `gdcm::Attribute< Group, Element, TVR, TVM >::operator<()`, `gdcm::Attribute< Group, Element, TVR, VM::VM1 >::operator<()`, `gdcm::Attribute< Group, Element, TVR, TVM >::operator==()`, and `gdcm::Attribute< Group, Element, TVR, VM::VM1 >::operator==()`.

25.17.4.12 `template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM = TagToType<Group, Element>::VMType> static VM gdcm::Attribute< Group, Element, TVR, TVM >::GetVM () [inline], [static]`

Referenced by `gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::GetDictVM()`, and `gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::Print()`.

25.17.4.13 `template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM = TagToType<Group, Element>::VMType> static VR gdcm::Attribute< Group, Element, TVR, TVM >::GetVR () [inline], [static]`

Referenced by `gdcm::Attribute< Group, Element, TVR, TVM >::GetAsDataElement()`, `gdcm::Attribute< Group, Element, TVR, VM::VM1 >::GetAsDataElement()`, `gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::GetAsDataElement()`, `gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::Print()`, `gdcm::Attribute< Group, Element, TVR, TVM >::SetFromDataElement()`, `gdcm::Attribute< Group, Element, TVR, VM::VM1 >::SetFromDataElement()`, and `gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::SetFromDataElement()`.

25.17.4.14 `template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM = TagToType<Group, Element>::VMType> bool gdcm::Attribute< Group, Element, TVR, TVM >::operator!= (const Attribute< Group, Element, TVR, TVM > & att) const [inline]`

References `gdcm::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues()`, `gdcm::Attribute< Group, Element, TVR, TVM >::GetValues()`, and `gdcm::Attribute< Group, Element, TVR, TVM >::Internal`.

25.17.4.15 `template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM = TagToType<Group, Element>::VMType> bool gdcM::Attribute< Group, Element, TVR, TVM >::operator< (const Attribute< Group, Element, TVR, TVM > & att) const [inline]`

References `gdcM::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues()`, `gdcM::Attribute< Group, Element, TVR, TVM >::GetValues()`, and `gdcM::Attribute< Group, Element, TVR, TVM >::Internal`.

25.17.4.16 `template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM = TagToType<Group, Element>::VMType> bool gdcM::Attribute< Group, Element, TVR, TVM >::operator==(const Attribute< Group, Element, TVR, TVM > & att) const [inline]`

References `gdcM::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues()`, `gdcM::Attribute< Group, Element, TVR, TVM >::GetValues()`, and `gdcM::Attribute< Group, Element, TVR, TVM >::Internal`.

25.17.4.17 `template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM = TagToType<Group, Element>::VMType> ArrayType& gdcM::Attribute< Group, Element, TVR, TVM >::operator[] (unsigned int idx) [inline]`

References `gdcM::Attribute< Group, Element, TVR, TVM >::GetValue()`.

25.17.4.18 `template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM = TagToType<Group, Element>::VMType> ArrayType const& gdcM::Attribute< Group, Element, TVR, TVM >::operator[] (unsigned int idx) const [inline]`

References `gdcM::Attribute< Group, Element, TVR, TVM >::GetValue()`.

25.17.4.19 `template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM = TagToType<Group, Element>::VMType> void gdcM::Attribute< Group, Element, TVR, TVM >::Print (std::ostream & os) const [inline]`

References `gdcM::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues()`, `gdcM::Attribute< Group, Element, TVR, TVM >::GetTag()`, and `gdcM::Attribute< Group, Element, TVR, TVM >::Internal`.

25.17.4.20 `template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM = TagToType<Group, Element>::VMType> void gdcM::Attribute< Group, Element, TVR, TVM >::Set (DataSet const & ds) [inline]`

References `gdcM::DataSet::GetDataElement()`, `gdcM::Attribute< Group, Element, TVR, TVM >::GetTag()`, and `gdcM::Attribute< Group, Element, TVR, TVM >::SetFromDataElement()`.

25.17.4.21 `template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM = TagToType<Group, Element>::VMType> void gdcM::Attribute< Group, Element, TVR, TVM >::SetByteValue (const ByteValue * bv) [inline], [protected]`

References `gdcM::ByteValue::GetLength()`, `gdcM::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues()`, `gdcM::ByteValue::GetPointer()`, and `gdcM::Attribute< Group, Element, TVR, TVM >::Internal`.

Referenced by `gdcM::Attribute< Group, Element, TVR, TVM >::SetFromDataElement()`, `gdcM::Attribute< Group, Element, TVR, VM::VM1 >::SetFromDataElement()`, and `gdcM::Attribute< Group, Element, TVR, VM::VM1_n >::SetFromDataElement()`.

```
25.17.4.22 template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM
= TagToType<Group, Element>::VMType> void gdcm::Attribute< Group, Element, TVR, TVM
>::SetByteValueNoSwap ( const ByteValue * bv ) [inline], [protected]
```

References gdcm::ByteValue::GetLength(), gdcm::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues(), gdcm::ByteValue::GetPointer(), and gdcm::Attribute< Group, Element, TVR, TVM >::Internal.

Referenced by gdcm::Attribute< Group, Element, TVR, TVM >::SetFromDataElement(), and gdcm::Attribute< Group, Element, TVR, VM::VM1 >::SetFromDataElement().

```
25.17.4.23 template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM
= TagToType<Group, Element>::VMType> void gdcm::Attribute< Group, Element, TVR, TVM
>::SetFromDataElement ( DataElement const & de ) [inline]
```

References gdcm::DataElement::GetByteValue(), gdcm::Tag::GetGroup(), gdcm::DataElement::GetTag(), gdcm::Attribute< Group, Element, TVR, TVM >::GetTag(), gdcm::DataElement::GetVR(), gdcm::Attribute< Group, Element, TVR, TVM >::GetVR(), gdcm::VR::INVALID, gdcm::DataElement::IsEmpty(), gdcm::Attribute< Group, Element, TVR, TVM >::SetByteValue(), gdcm::Attribute< Group, Element, TVR, TVM >::SetByteValueNoSwap(), and gdcm::VR::UN.

Referenced by gdcm::Attribute< Group, Element, TVR, TVM >::Set(), gdcm::Attribute< Group, Element, TVR, VM::VM1 >::Set(), gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::Set(), gdcm::Attribute< Group, Element, TVR, TVM >::SetFromDataSet(), gdcm::Attribute< Group, Element, TVR, VM::VM1 >::SetFromDataSet(), and gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::SetFromDataSet().

```
25.17.4.24 template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM =
TagToType<Group, Element>::VMType> void gdcm::Attribute< Group, Element, TVR, TVM >::SetFromDataSet (
DataSet const & ds ) [inline]
```

References gdcm::DataSet::FindDataElement(), gdcm::DataSet::GetDataElement(), gdcm::Attribute< Group, Element, TVR, TVM >::GetTag(), gdcm::DataElement::IsEmpty(), and gdcm::Attribute< Group, Element, TVR, TVM >::SetFromDataElement().

```
25.17.4.25 template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM =
TagToType<Group, Element>::VMType> void gdcm::Attribute< Group, Element, TVR, TVM >::SetValue (
ArrayType v, unsigned int idx = 0 ) [inline]
```

References gdcm::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues(), and gdcm::Attribute< Group, Element, TVR, TVM >::Internal.

```
25.17.4.26 template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM =
TagToType<Group, Element>::VMType> void gdcm::Attribute< Group, Element, TVR, TVM >::SetValues ( const
ArrayType * array, unsigned int numel = VMType ) [inline]
```

Examples:

[LargeVRDSExplicit.cxx](#).

References gdcm::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues(), and gdcm::Attribute< Group, Element, TVR, TVM >::Internal.

Referenced by gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::SetByteValue(), and gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::SetNumberOfValues().

25.17.5 Member Data Documentation

25.17.5.1 `template<uint16_t Group, uint16_t Element, int TVR = TagToType<Group, Element>::VRType, int TVM = TagToType<Group, Element>::VMType> ArrayType gdcmm::Attribute< Group, Element, TVR, TVM >::Internal[VMToLength< TVM >::Length]`

Referenced by `gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::Attribute()`, `gdcmm::Attribute< Group, Element, TVR, TVM >::GetAsDataElement()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::GetAsDataElement()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::GetAsDataElement()`, `gdcmm::Attribute< Group, Element, TVR, TVM >::GetAsDataElement()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::GetValue()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::GetValue()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::GetValue()`, `gdcmm::Attribute< Group, Element, TVR, TVM >::GetValues()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::GetValues()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::GetValues()`, `gdcmm::Attribute< Group, Element, TVR, TVM >::operator!=()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::operator!=()`, `gdcmm::Attribute< Group, Element, TVR, TVM >::operator<()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::operator<()`, `gdcmm::Attribute< Group, Element, TVR, TVM >::operator==()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::operator==()`, `gdcmm::Attribute< Group, Element, TVR, TVM >::Print()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::Print()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::Print()`, `gdcmm::Attribute< Group, Element, TVR, TVM >::SetByteValue()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::SetByteValue()`, `gdcmm::Attribute< Group, Element, TVR, TVM >::SetByteValueNoSwap()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::SetByteValueNoSwap()`, `gdcmm::Attribute< Group, Element, TVR, TVM >::SetValue()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::SetValue()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::SetValue()`, `gdcmm::Attribute< Group, Element, TVR, TVM >::SetValues()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::SetValues()`, and `gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::~~Attribute()`.

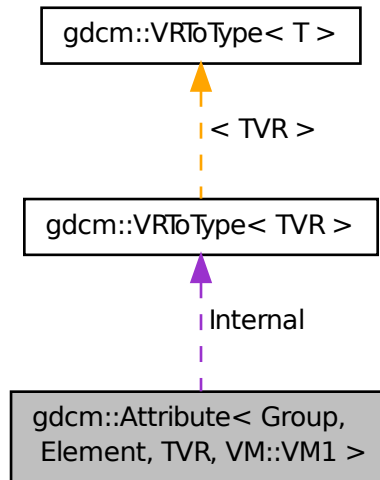
The documentation for this class was generated from the following file:

- [gdcmmAttribute.h](#)

25.18 `gdcmm::Attribute< Group, Element, TVR, VM::VM1 >` Class Template Reference

```
#include <gdcmmAttribute.h>
```

Collaboration diagram for gdcm::Attribute< Group, Element, TVR, VM::VM1 >:



Public Types

- enum { `VMType` = `VMToLength<VM::VM1>::Length` }
- typedef `VRTToType< TVR >::Type` `ArrayType`

Public Member Functions

- `GDCM_STATIC_ASSERT (VMToLength< VM::VM1 >::Length==1)`
- `GDCM_STATIC_ASSERT (((VR::VRTType) TVR &(VR::VRTType)(TagToType< Group, Element >::VRTType)))`
- `GDCM_STATIC_ASSERT (((VM::VMType) VM::VM1 &(VM::VMType)(TagToType< Group, Element >::VMType)))`
- `GDCM_STATIC_ASSERT (((((VR::VRTType) TVR &VR::VR_VM1)&&((VM::VMType) VM::VM1==VM::VM1))||!((VR::VRTType) TVR &VR::VR_VM1))))`
- `DataElement GetAsDataElement () const`
- `unsigned int GetNumberOfValues () const`
- `ArrayType & GetValue ()`
- `ArrayType const & GetValue () const`
- `const ArrayType * GetValues () const`
- `bool operator!= (const Attribute &att) const`
- `bool operator< (const Attribute &att) const`
- `bool operator== (const Attribute &att) const`
- `void Print (std::ostream &os) const`
- `void Set (DataSet const &ds)`
- `void SetFromDataElement (DataElement const &de)`
- `void SetFromDataSet (DataSet const &ds)`
- `void SetValue (ArrayType v)`

Static Public Member Functions

- static [VM GetDictVM](#) ()
- static [VR GetDictVR](#) ()
- static [Tag GetTag](#) ()
- static [VM GetVM](#) ()
- static [VR GetVR](#) ()

Public Attributes

- [ArrayType Internal](#)

Protected Member Functions

- void [SetByteValue](#) (const [ByteValue](#) *bv)
- void [SetByteValueNoSwap](#) (const [ByteValue](#) *bv)

25.18.1 Member Typedef Documentation

25.18.1.1 `template<uint16_t Group, uint16_t Element, int TVR> typedef VRToType<TVR>::Type gdcm::Attribute< Group, Element, TVR, VM::VM1 >::ArrayType`

25.18.2 Member Enumeration Documentation

25.18.2.1 `template<uint16_t Group, uint16_t Element, int TVR> anonymous enum`

Enumerator

VMType

25.18.3 Member Function Documentation

25.18.3.1 `template<uint16_t Group, uint16_t Element, int TVR> gdcm::Attribute< Group, Element, TVR, VM::VM1 >::GDCM_STATIC_ASSERT (VMTToLength< VM::VM1 >::Length ==1)`

25.18.3.2 `template<uint16_t Group, uint16_t Element, int TVR> gdcm::Attribute< Group, Element, TVR, VM::VM1 >::GDCM_STATIC_ASSERT (((VR::VRType) TVR &(VR::VRType)(TagToType< Group, Element >::VRType)))`

25.18.3.3 `template<uint16_t Group, uint16_t Element, int TVR> gdcm::Attribute< Group, Element, TVR, VM::VM1 >::GDCM_STATIC_ASSERT (((VM::VMType) VM::VM1 &(VM::VMType)(TagToType< Group, Element >::VMType)))`

25.18.3.4 `template<uint16_t Group, uint16_t Element, int TVR> gdcm::Attribute< Group, Element, TVR, VM::VM1 >::GDCM_STATIC_ASSERT ((((VR::VRType) TVR &VR::VR_VM1)&&((VM::VMType) VM::VM1==VM::VM1))||!((VR::VRType) TVR &VR::VR_VM1)))`

25.18.3.5 `template<uint16_t Group, uint16_t Element, int TVR> DataElement gdcm::Attribute< Group, Element, TVR, VM::VM1 >::GetAsDataElement () const [inline]`

References `gdcm::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues()`, `gdcm::Attribute< Group, Element, TVR, TVM >::GetTag()`, `gdcm::DataElement::GetVR()`, `gdcm::Attribute< Group, Element, TVR, TVM >::GetVR()`,

gdcm::Attribute< Group, Element, TVR, TVM >::Internal, gdcm::DataElement::SetByteValue(), gdcm::DataElement::SetVR(), gdcm::VR::SQ, gdcm::VR::UI, and gdcm::VR::VRASCII.

25.18.3.6 `template<uint16_t Group, uint16_t Element, int TVR> static VM gdcm::Attribute< Group, Element, TVR, VM::VM1 >::GetDictVM () [inline],[static]`

25.18.3.7 `template<uint16_t Group, uint16_t Element, int TVR> static VR gdcm::Attribute< Group, Element, TVR, VM::VM1 >::GetDictVR () [inline],[static]`

25.18.3.8 `template<uint16_t Group, uint16_t Element, int TVR> unsigned int gdcm::Attribute< Group, Element, TVR, VM::VM1 >::GetNumberOfValues () const [inline]`

25.18.3.9 `template<uint16_t Group, uint16_t Element, int TVR> static Tag gdcm::Attribute< Group, Element, TVR, VM::VM1 >::GetTag () [inline],[static]`

25.18.3.10 `template<uint16_t Group, uint16_t Element, int TVR> ArrayType& gdcm::Attribute< Group, Element, TVR, VM::VM1 >::GetValue () [inline]`

References gdcm::Attribute< Group, Element, TVR, TVM >::Internal.

25.18.3.11 `template<uint16_t Group, uint16_t Element, int TVR> ArrayType const& gdcm::Attribute< Group, Element, TVR, VM::VM1 >::GetValue () const [inline]`

References gdcm::Attribute< Group, Element, TVR, TVM >::Internal.

25.18.3.12 `template<uint16_t Group, uint16_t Element, int TVR> const ArrayType* gdcm::Attribute< Group, Element, TVR, VM::VM1 >::GetValues () const [inline]`

References gdcm::Attribute< Group, Element, TVR, TVM >::Internal.

25.18.3.13 `template<uint16_t Group, uint16_t Element, int TVR> static VM gdcm::Attribute< Group, Element, TVR, VM::VM1 >::GetVM () [inline],[static]`

References gdcm::VM::VM1.

25.18.3.14 `template<uint16_t Group, uint16_t Element, int TVR> static VR gdcm::Attribute< Group, Element, TVR, VM::VM1 >::GetVR () [inline],[static]`

25.18.3.15 `template<uint16_t Group, uint16_t Element, int TVR> bool gdcm::Attribute< Group, Element, TVR, VM::VM1 >::operator!=(const Attribute< Group, Element, TVR, VM::VM1 > & att) const [inline]`

References gdcm::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues(), gdcm::Attribute< Group, Element, TVR, TVM >::GetValues(), and gdcm::Attribute< Group, Element, TVR, TVM >::Internal.

25.18.3.16 `template<uint16_t Group, uint16_t Element, int TVR> bool gdcm::Attribute< Group, Element, TVR, VM::VM1 >::operator< (const Attribute< Group, Element, TVR, VM::VM1 > & att) const [inline]`

References gdcm::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues(), gdcm::Attribute< Group, Element, TVR, TVM >::GetValues(), and gdcm::Attribute< Group, Element, TVR, TVM >::Internal.

25.18.3.17 `template<uint16_t Group, uint16_t Element, int TVR> bool gdcM::Attribute< Group, Element, TVR, VM::VM1 >::operator== (const Attribute< Group, Element, TVR, VM::VM1 > & att) const [inline]`

References `gdcM::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues()`, `gdcM::Attribute< Group, Element, TVR, TVM >::GetValues()`, and `gdcM::Attribute< Group, Element, TVR, TVM >::Internal`.

25.18.3.18 `template<uint16_t Group, uint16_t Element, int TVR> void gdcM::Attribute< Group, Element, TVR, VM::VM1 >::Print (std::ostream & os) const [inline]`

References `gdcM::Attribute< Group, Element, TVR, TVM >::GetTag()`, and `gdcM::Attribute< Group, Element, TVR, TVM >::Internal`.

25.18.3.19 `template<uint16_t Group, uint16_t Element, int TVR> void gdcM::Attribute< Group, Element, TVR, VM::VM1 >::Set (DataSet const & ds) [inline]`

References `gdcM::DataSet::GetDataElement()`, `gdcM::Attribute< Group, Element, TVR, TVM >::GetTag()`, and `gdcM::Attribute< Group, Element, TVR, TVM >::SetFromDataElement()`.

25.18.3.20 `template<uint16_t Group, uint16_t Element, int TVR> void gdcM::Attribute< Group, Element, TVR, VM::VM1 >::SetByteValue (const ByteValue * bv) [inline],[protected]`

References `gdcM::ByteValue::GetLength()`, `gdcM::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues()`, `gdcM::ByteValue::GetPointer()`, and `gdcM::Attribute< Group, Element, TVR, TVM >::Internal`.

25.18.3.21 `template<uint16_t Group, uint16_t Element, int TVR> void gdcM::Attribute< Group, Element, TVR, VM::VM1 >::SetByteValueNoSwap (const ByteValue * bv) [inline],[protected]`

References `gdcM::ByteValue::GetLength()`, `gdcM::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues()`, `gdcM::ByteValue::GetPointer()`, and `gdcM::Attribute< Group, Element, TVR, TVM >::Internal`.

25.18.3.22 `template<uint16_t Group, uint16_t Element, int TVR> void gdcM::Attribute< Group, Element, TVR, VM::VM1 >::SetFromDataElement (DataElement const & de) [inline]`

References `gdcM::DataElement::GetByteValue()`, `gdcM::Tag::GetGroup()`, `gdcM::DataElement::GetTag()`, `gdcM::Attribute< Group, Element, TVR, TVM >::GetTag()`, `gdcM::DataElement::GetVR()`, `gdcM::Attribute< Group, Element, TVR, TVM >::GetVR()`, `gdcM::VR::INVALID`, `gdcM::DataElement::IsEmpty()`, `gdcM::Attribute< Group, Element, TVR, TVM >::SetByteValue()`, `gdcM::Attribute< Group, Element, TVR, TVM >::SetByteValueNoSwap()`, and `gdcM::VR::UN`.

25.18.3.23 `template<uint16_t Group, uint16_t Element, int TVR> void gdcM::Attribute< Group, Element, TVR, VM::VM1 >::SetFromDataSet (DataSet const & ds) [inline]`

References `gdcM::DataSet::FindDataElement()`, `gdcM::DataSet::GetDataElement()`, `gdcM::Attribute< Group, Element, TVR, TVM >::GetTag()`, `gdcM::DataElement::IsEmpty()`, and `gdcM::Attribute< Group, Element, TVR, TVM >::SetFromDataElement()`.

25.18.3.24 `template<uint16_t Group, uint16_t Element, int TVR> void gdcM::Attribute< Group, Element, TVR, VM::VM1 >::SetValue (ArrayType v) [inline]`

References `gdcM::Attribute< Group, Element, TVR, TVM >::Internal`.

25.18.4 Member Data Documentation

25.18.4.1 `template<uint16_t Group, uint16_t Element, int TVR> ArrayType gdcM::Attribute< Group, Element, TVR, VM::VM1 >::Internal`

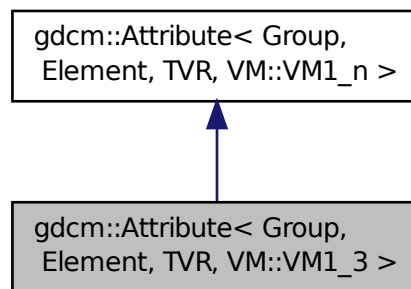
The documentation for this class was generated from the following file:

- [gdcMAttribute.h](#)

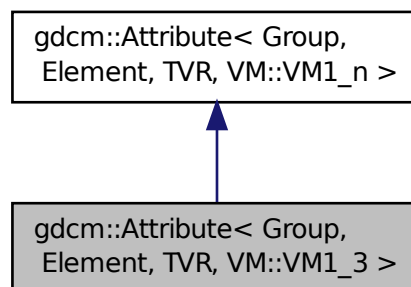
25.19 gdcM::Attribute< Group, Element, TVR, VM::VM1_3 > Class Template Reference

```
#include <gdcMAttribute.h>
```

Inheritance diagram for gdcM::Attribute< Group, Element, TVR, VM::VM1_3 >:



Collaboration diagram for gdcM::Attribute< Group, Element, TVR, VM::VM1_3 >:



Public Member Functions

- [VM GetVM \(\)](#) const

Additional Inherited Members

25.19.1 Member Function Documentation

25.19.1.1 `template<uint16_t Group, uint16_t Element, int TVR> VM gdcM::Attribute< Group, Element, TVR, VM::VM1_3 >::GetVM () const` `[inline]`

References `gdcM::VM::VM1_3`.

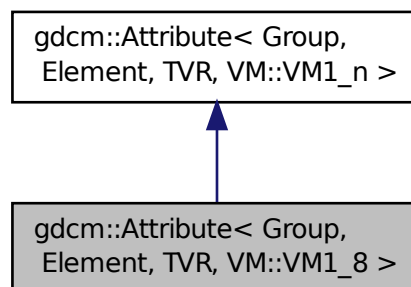
The documentation for this class was generated from the following file:

- [gdcMAttribute.h](#)

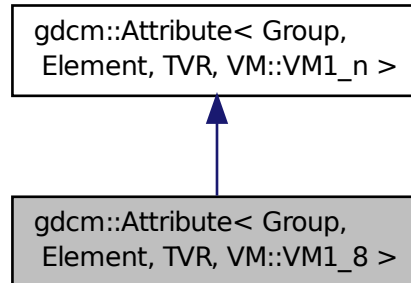
25.20 `gdcM::Attribute< Group, Element, TVR, VM::VM1_8 >` Class Template Reference

```
#include <gdcMAttribute.h>
```

Inheritance diagram for `gdcM::Attribute< Group, Element, TVR, VM::VM1_8 >`:



Collaboration diagram for gdcm::Attribute< Group, Element, TVR, VM::VM1_8 >:



Public Member Functions

- [VM GetVM](#) () const

Additional Inherited Members

25.20.1 Member Function Documentation

25.20.1.1 `template<uint16_t Group, uint16_t Element, int TVR> VM gdcm::Attribute< Group, Element, TVR, VM::VM1_8 >::GetVM () const` [inline]

References `gdcm::VM::VM1_8`.

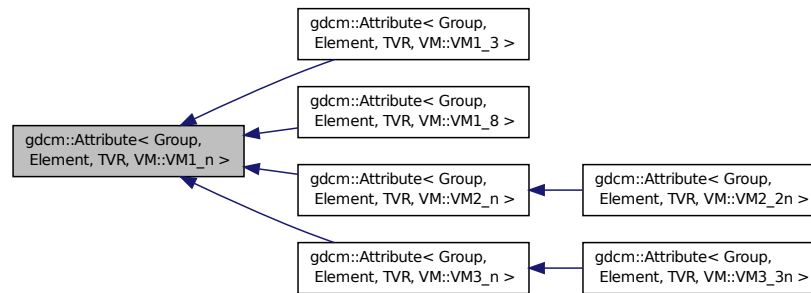
The documentation for this class was generated from the following file:

- [gdcmAttribute.h](#)

25.21 gdcm::Attribute< Group, Element, TVR, VM::VM1_n > Class Template Reference

```
#include <gdcmAttribute.h>
```

Inheritance diagram for `gdcM::Attribute< Group, Element, TVR, VM::VM1_n >`:



Public Types

- typedef `VRToType< TVR >::Type ArrayType`

Public Member Functions

- `Attribute ()`
- `~Attribute ()`
- `GDCM_STATIC_ASSERT (((VR::VRType) TVR & (VR::VRType)(TagToType< Group, Element >::VRType)))`
- `GDCM_STATIC_ASSERT ((VM::VM1_n & (VM::VMType)(TagToType< Group, Element >::VMType)))`
- `GDCM_STATIC_ASSERT (((((VR::VRType) TVR & VR::VR_VM1)&&((VM::VMType) TagToType< Group, Element >::VMType==VM::VM1))||((VR::VRType) TVR & VR::VR_VM1)))`
- `DataElement GetAsDataElement () const`
- `unsigned int GetNumberOfValues () const`
- `ArrayType & GetValue (unsigned int idx=0)`
- `ArrayType const & GetValue (unsigned int idx=0) const`
- `const ArrayType * GetValues () const`
- `ArrayType & operator[] (unsigned int idx)`
- `ArrayType const & operator[] (unsigned int idx) const`
- `void Print (std::ostream &os) const`
- `void Set (DataSet const &ds)`
- `void SetFromDataElement (DataElement const &de)`
- `void SetFromDataSet (DataSet const &ds)`
- `void SetNumberOfValues (unsigned int numel)`
- `void SetValue (unsigned int idx, ArrayType v)`
- `void SetValue (ArrayType v)`
- `void SetValues (const ArrayType *array, unsigned int numel, bool own=false)`

Static Public Member Functions

- static `VM GetDictVM ()`
- static `VR GetDictVR ()`
- static `Tag GetTag ()`
- static `VM GetVM ()`
- static `VR GetVR ()`

Protected Member Functions

- void [SetByteValue](#) (const [ByteValue](#) *bv)

25.21.1 Member Typedef Documentation

25.21.1.1 `template<uint16_t Group, uint16_t Element, int TVR> typedef VRToType<TVR>::Type gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::ArrayType`

25.21.2 Constructor & Destructor Documentation

25.21.2.1 `template<uint16_t Group, uint16_t Element, int TVR> gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::Attribute () [inline],[explicit]`

References `gdcm::Attribute< Group, Element, TVR, TVM >::Internal`.

25.21.2.2 `template<uint16_t Group, uint16_t Element, int TVR> gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::~~Attribute () [inline]`

References `gdcm::Attribute< Group, Element, TVR, TVM >::Internal`.

25.21.3 Member Function Documentation

25.21.3.1 `template<uint16_t Group, uint16_t Element, int TVR> gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::GDCM_STATIC_ASSERT (((VR::VRType) TVR &(VR::VRType)(TagToType< Group, Element >::VRType)))`

25.21.3.2 `template<uint16_t Group, uint16_t Element, int TVR> gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::GDCM_STATIC_ASSERT ((VM::VM1_n &(VM::VMType)(TagToType< Group, Element >::VMType)))`

25.21.3.3 `template<uint16_t Group, uint16_t Element, int TVR> gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::GDCM_STATIC_ASSERT ((((VR::VRType) TVR &VR::VR_VM1)&&((VM::VMType) TagToType< Group, Element >::VMType==VM::VM1))||!((VR::VRType) TVR &VR::VR_VM1)))`

25.21.3.4 `template<uint16_t Group, uint16_t Element, int TVR> DataElement gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::GetAsDataElement () const [inline]`

References `gdcm::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues()`, `gdcm::Attribute< Group, Element, TVR, TVM >::GetTag()`, `gdcm::DataElement::GetVR()`, `gdcm::Attribute< Group, Element, TVR, TVM >::GetVR()`, `gdcm::Attribute< Group, Element, TVR, TVM >::Internal`, `gdcm::DataElement::SetByteValue()`, `gdcm::DataElement::SetVR()`, `gdcm::VR::SQ`, `gdcm::VR::UI`, and `gdcm::VR::VRASCII`.

25.21.3.5 `template<uint16_t Group, uint16_t Element, int TVR> static VM gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::GetDictVM () [inline],[static]`

References `gdcm::Attribute< Group, Element, TVR, TVM >::GetVM()`.

25.21.3.6 `template<uint16_t Group, uint16_t Element, int TVR> static VR gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::GetDictVR () [inline],[static]`

25.21.3.7 `template<uint16_t Group, uint16_t Element, int TVR> unsigned int gdcM::Attribute< Group, Element, TVR, VM::VM1_n >::GetNumberOfValues () const [inline]`

25.21.3.8 `template<uint16_t Group, uint16_t Element, int TVR> static Tag gdcM::Attribute< Group, Element, TVR, VM::VM1_n >::GetTag () [inline], [static]`

25.21.3.9 `template<uint16_t Group, uint16_t Element, int TVR> ArrayType& gdcM::Attribute< Group, Element, TVR, VM::VM1_n >::GetValue (unsigned int idx = 0) [inline]`

References `gdcM::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues()`, and `gdcM::Attribute< Group, Element, TVR, TVM >::Internal`.

25.21.3.10 `template<uint16_t Group, uint16_t Element, int TVR> ArrayType const& gdcM::Attribute< Group, Element, TVR, VM::VM1_n >::GetValue (unsigned int idx = 0) const [inline]`

References `gdcM::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues()`, and `gdcM::Attribute< Group, Element, TVR, TVM >::Internal`.

25.21.3.11 `template<uint16_t Group, uint16_t Element, int TVR> const ArrayType* gdcM::Attribute< Group, Element, TVR, VM::VM1_n >::GetValues () const [inline]`

References `gdcM::Attribute< Group, Element, TVR, TVM >::Internal`.

25.21.3.12 `template<uint16_t Group, uint16_t Element, int TVR> static VM gdcM::Attribute< Group, Element, TVR, VM::VM1_n >::GetVM () [inline], [static]`

References `gdcM::VM::VM1_n`.

25.21.3.13 `template<uint16_t Group, uint16_t Element, int TVR> static VR gdcM::Attribute< Group, Element, TVR, VM::VM1_n >::GetVR () [inline], [static]`

25.21.3.14 `template<uint16_t Group, uint16_t Element, int TVR> ArrayType& gdcM::Attribute< Group, Element, TVR, VM::VM1_n >::operator[] (unsigned int idx) [inline]`

References `gdcM::Attribute< Group, Element, TVR, TVM >::GetValue()`.

25.21.3.15 `template<uint16_t Group, uint16_t Element, int TVR> ArrayType const& gdcM::Attribute< Group, Element, TVR, VM::VM1_n >::operator[] (unsigned int idx) const [inline]`

References `gdcM::Attribute< Group, Element, TVR, TVM >::GetValue()`.

25.21.3.16 `template<uint16_t Group, uint16_t Element, int TVR> void gdcM::Attribute< Group, Element, TVR, VM::VM1_n >::Print (std::ostream & os) const [inline]`

References `gdcM::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues()`, `gdcM::Attribute< Group, Element, TVR, TVM >::GetTag()`, `gdcM::Attribute< Group, Element, TVR, TVM >::GetVM()`, `gdcM::Attribute< Group, Element, TVR, TVM >::GetVR()`, and `gdcM::Attribute< Group, Element, TVR, TVM >::Internal`.

25.21.3.17 `template<uint16_t Group, uint16_t Element, int TVR> void gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::Set (DataSet const & ds) [inline]`

References `gdcm::DataSet::GetDataElement()`, `gdcm::Attribute< Group, Element, TVR, TVM >::GetTag()`, and `gdcm::Attribute< Group, Element, TVR, TVM >::SetFromDataElement()`.

25.21.3.18 `template<uint16_t Group, uint16_t Element, int TVR> void gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::SetByteValue (const ByteValue * bv) [inline], [protected]`

References `gdcm::ByteValue::GetLength()`, `gdcm::ByteValue::GetPointer()`, and `gdcm::Attribute< Group, Element, TVR, TVM >::SetValues()`.

25.21.3.19 `template<uint16_t Group, uint16_t Element, int TVR> void gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::SetFromDataElement (DataElement const & de) [inline]`

References `gdcm::DataElement::GetByteValue()`, `gdcm::Tag::GetGroup()`, `gdcm::DataElement::GetTag()`, `gdcm::Attribute< Group, Element, TVR, TVM >::GetTag()`, `gdcm::DataElement::GetVR()`, `gdcm::Attribute< Group, Element, TVR, TVM >::GetVR()`, `gdcm::DataElement::IsEmpty()`, and `gdcm::Attribute< Group, Element, TVR, TVM >::SetByteValue()`.

25.21.3.20 `template<uint16_t Group, uint16_t Element, int TVR> void gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::SetFromDataSet (DataSet const & ds) [inline]`

References `gdcm::DataSet::FindDataElement()`, `gdcm::DataSet::GetDataElement()`, `gdcm::Attribute< Group, Element, TVR, TVM >::GetTag()`, `gdcm::DataElement::IsEmpty()`, and `gdcm::Attribute< Group, Element, TVR, TVM >::SetFromDataElement()`.

25.21.3.21 `template<uint16_t Group, uint16_t Element, int TVR> void gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::SetNumberOfValues (unsigned int numel) [inline]`

References `gdcm::Attribute< Group, Element, TVR, TVM >::SetValues()`.

25.21.3.22 `template<uint16_t Group, uint16_t Element, int TVR> void gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::SetValue (unsigned int idx, ArrayType v) [inline]`

References `gdcm::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues()`, and `gdcm::Attribute< Group, Element, TVR, TVM >::Internal`.

25.21.3.23 `template<uint16_t Group, uint16_t Element, int TVR> void gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::SetValue (ArrayType v) [inline]`

References `SetValue()`.

Referenced by `SetValue()`.

25.21.3.24 `template<uint16_t Group, uint16_t Element, int TVR> void gdcM::Attribute< Group, Element, TVR, VM::VM1_n >::SetValues (const ArrayType * array, unsigned int numel, bool own = false) [inline]`

References `gdcM::Attribute< Group, Element, TVR, TVM >::GetNumberOfValues()`, and `gdcM::Attribute< Group, Element, TVR, TVM >::Internal`.

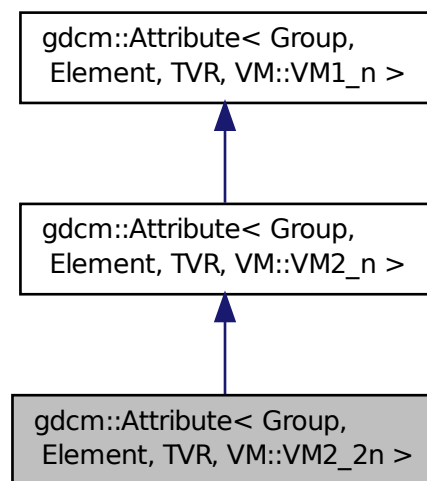
The documentation for this class was generated from the following file:

- [gdcMAttribute.h](#)

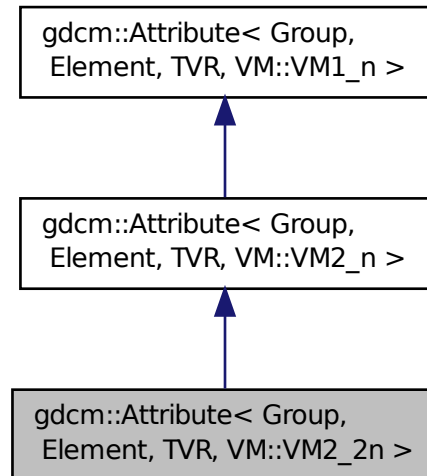
25.22 gdcM::Attribute< Group, Element, TVR, VM::VM2_2n > Class Template Reference

```
#include <gdcMAttribute.h>
```

Inheritance diagram for `gdcM::Attribute< Group, Element, TVR, VM::VM2_2n >`:



Collaboration diagram for `gdcm::Attribute< Group, Element, TVR, VM::VM2_n >`:



Static Public Member Functions

- static [VM GetVM](#) ()

Additional Inherited Members

25.22.1 Member Function Documentation

25.22.1.1 `template<uint16_t Group, uint16_t Element, int TVR> static VM gdcm::Attribute< Group, Element, TVR, VM::VM2_2n >::GetVM () [inline], [static]`

References `gdcm::VM::VM2_2n`.

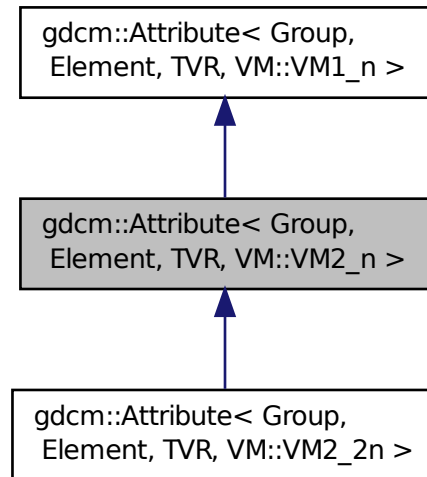
The documentation for this class was generated from the following file:

- [gdcmAttribute.h](#)

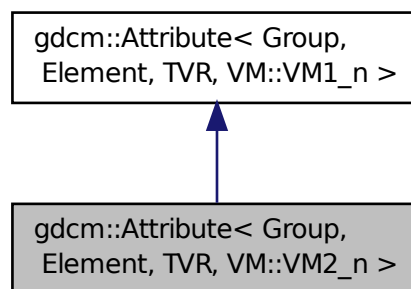
25.23 `gdcm::Attribute< Group, Element, TVR, VM::VM2_n >` Class Template Reference

```
#include <gdcmAttribute.h>
```

Inheritance diagram for `gdcM::Attribute< Group, Element, TVR, VM::VM2_n >`:



Collaboration diagram for `gdcM::Attribute< Group, Element, TVR, VM::VM2_n >`:



Public Member Functions

- [VM GetVM](#) () const

Additional Inherited Members

25.23.1 Member Function Documentation

25.23.1.1 `template<uint16_t Group, uint16_t Element, int TVR> VM gdcM::Attribute< Group, Element, TVR, VM::VM2_n >::GetVM() const [inline]`

References `gdcM::VM::VM2_n`.

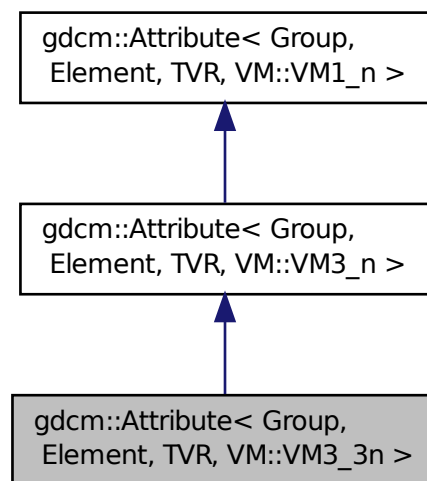
The documentation for this class was generated from the following file:

- [gdcMAttribute.h](#)

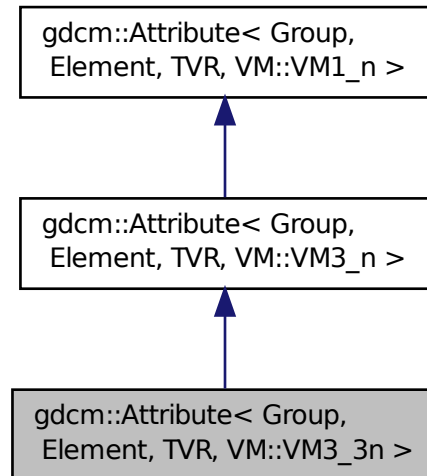
25.24 gdcM::Attribute< Group, Element, TVR, VM::VM3_3n > Class Template Reference

```
#include <gdcMAttribute.h>
```

Inheritance diagram for `gdcM::Attribute< Group, Element, TVR, VM::VM3_3n >`:



Collaboration diagram for `gdcM::Attribute< Group, Element, TVR, VM::VM3_3n >`:



Static Public Member Functions

- static [VM GetVM](#) ()

Additional Inherited Members

25.24.1 Member Function Documentation

25.24.1.1 `template<uint16_t Group, uint16_t Element, int TVR> static VM gdcM::Attribute< Group, Element, TVR, VM::VM3_3n >::GetVM () [inline], [static]`

References `gdcM::VM::VM3_3n`.

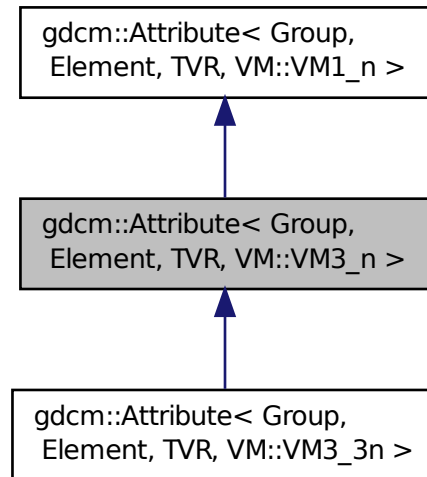
The documentation for this class was generated from the following file:

- [gdcMAttribute.h](#)

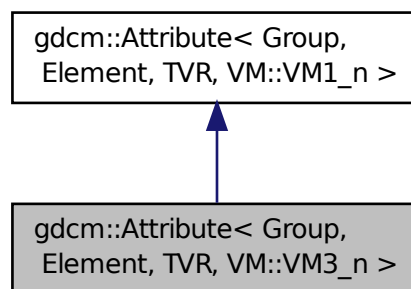
25.25 `gdcM::Attribute< Group, Element, TVR, VM::VM3_n >` Class Template Reference

```
#include <gdcMAttribute.h>
```

Inheritance diagram for gdcM::Attribute< Group, Element, TVR, VM::VM3_n >:



Collaboration diagram for gdcM::Attribute< Group, Element, TVR, VM::VM3_n >:



Static Public Member Functions

- static [VM GetVM](#) ()

Additional Inherited Members

25.25.1 Member Function Documentation

25.25.1.1 `template<uint16_t Group, uint16_t Element, int TVR> static VM gdcmm::Attribute< Group, Element, TVR, VM::VM3_n >::GetVM() [inline],[static]`

References `gdcmm::VM::VM3_n`.

The documentation for this class was generated from the following file:

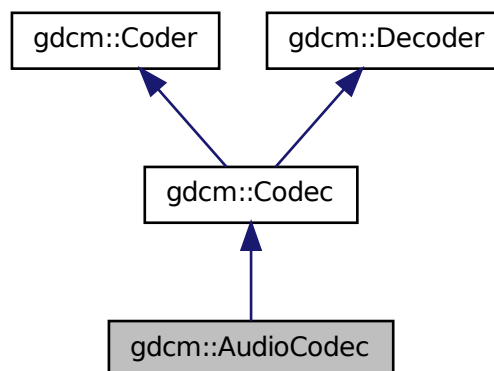
- [gdcmmAttribute.h](#)

25.26 gdcmm::AudioCodec Class Reference

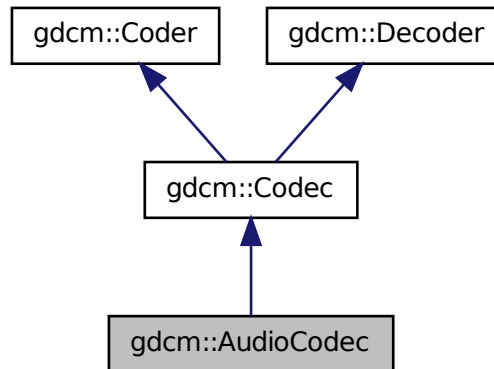
[AudioCodec](#).

```
#include <gdcmmAudioCodec.h>
```

Inheritance diagram for `gdcmm::AudioCodec`:



Collaboration diagram for gdcm::AudioCodec:



Public Member Functions

- [AudioCodec](#) ()
- [~AudioCodec](#) ()
- bool [CanCode](#) ([TransferSyntax](#) const &) const
Return whether this coder support this transfer syntax (can code it)
- bool [CanDecode](#) ([TransferSyntax](#) const &) const
Return whether this decoder support this transfer syntax (can decode it)
- bool [Decode](#) ([DataElement](#) const &is, [DataElement](#) &os)
Decode.

Additional Inherited Members

25.26.1 Detailed Description

[AudioCodec](#).

25.26.2 Constructor & Destructor Documentation

25.26.2.1 `gdcm::AudioCodec::AudioCodec ()`

25.26.2.2 `gdcm::AudioCodec::~~AudioCodec ()`

25.26.3 Member Function Documentation

25.26.3.1 `bool gdcm::AudioCodec::CanCode (TransferSyntax const &) const` `[inline], [virtual]`

Return whether this coder support this transfer syntax (can code it)

Implements [gdcm::Coder](#).

25.26.3.2 `bool gdcm::AudioCodec::CanDecode (TransferSyntax const &) const` `[inline],[virtual]`

Return whether this decoder support this transfer syntax (can decode it)

Implements [gdcm::Decoder](#).

25.26.3.3 `bool gdcm::AudioCodec::Decode (DataElement const & , DataElement &)` `[virtual]`

Decode.

Reimplemented from [gdcm::Decoder](#).

The documentation for this class was generated from the following file:

- [gdcmAudioCodec.h](#)

25.27 gdcm::Base64 Class Reference

Class for [Base64](#).

```
#include <gdcmBase64.h>
```

Public Member Functions

- [Base64](#) ()
- [~Base64](#) ()

Static Public Member Functions

- static int [Decode](#) (char *dst, int dlen, const char *src, int slen)
Decode a base64-formatted buffer.
- static int [Encode](#) (char *dst, int dlen, const char *src, int slen)
Encode a buffer into base64 format.
- static int [GetDecodeLength](#) (const char *src, int slen)
- static int [GetEncodeLength](#) (const char *src, int slen)

25.27.1 Detailed Description

Class for [Base64](#).

25.27.2 Constructor & Destructor Documentation

25.27.2.1 `gdcm::Base64::Base64 ()`

25.27.2.2 `gdcm::Base64::~~Base64 ()`

25.27.3 Member Function Documentation

25.27.3.1 `static int gdcm::Base64::Decode (char * dst, int dlen, const char * src, int slen)` `[static]`

Decode a base64-formatted buffer.

Parameters

<i>dst</i>	destination buffer
<i>dlen</i>	size of the buffer
<i>src</i>	source buffer
<i>slen</i>	amount of data to be decoded

Returns

0 if successful

25.27.3.2 `static int gdcM::Base64::Encode (char * dst, int dlen, const char * src, int slen)` `[static]`

Encode a buffer into base64 format.

Parameters

<i>dst</i>	destination buffer
<i>dlen</i>	size of the buffer
<i>src</i>	source buffer
<i>slen</i>	amount of data to be encoded

Returns

0 if successful

25.27.3.3 `static int gdcM::Base64::GetDecodeLength (const char * src, int slen)` `[static]`

Call this function with *dlen = 0 to obtain the required buffer size in *dlen

25.27.3.4 `static int gdcM::Base64::GetEncodeLength (const char * src, int slen)` `[static]`

Call this function with dlen = 0 to obtain the required buffer size in dlen

The documentation for this class was generated from the following file:

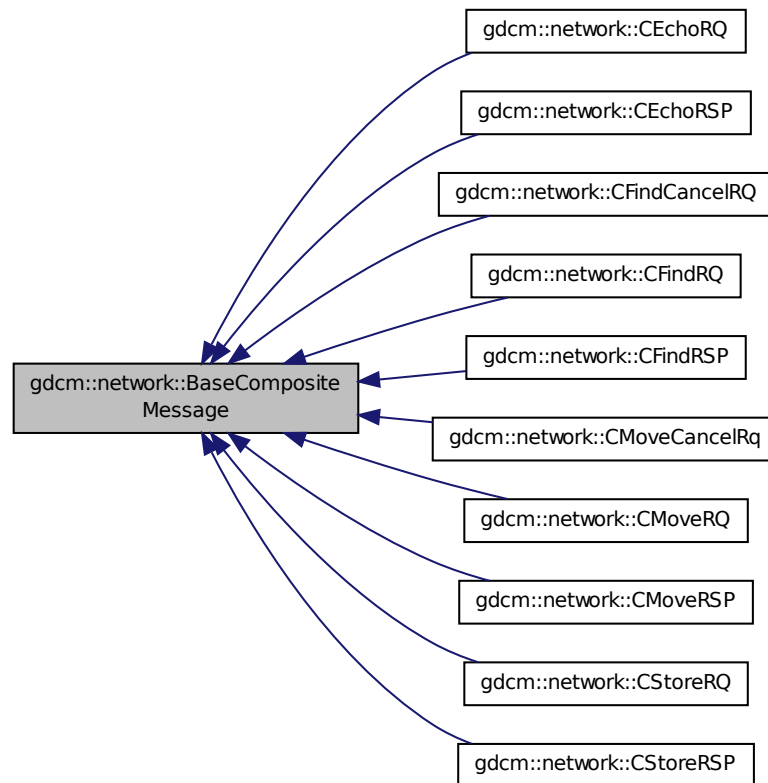
- [gdcMBase64.h](#)

25.28 gdcM::network::BaseCompositeMessage Class Reference

[BaseCompositeMessage](#) The Composite events described in section 3.7-2009 of the DICOM standard all use their own messages. These messages are constructed using Presentation Data Values, from section 3.8-2009 of the standard, and then fill in appropriate values in their datasets.

```
#include <gdcMBaseCompositeMessage.h>
```

Inheritance diagram for gdcmm::network::BaseCompositeMessage:



Public Member Functions

- virtual std::vector
< [PresentationDataValue](#) > [ConstructPDV](#) (const [ULConnection](#) &inConnection, const [BaseRootQuery](#) *inRootQuery)=0

25.28.1 Detailed Description

[BaseCompositeMessage](#) The Composite events described in section 3.7-2009 of the DICOM standard all use their own messages. These messages are constructed using Presentation Data Values, from section 3.8-2009 of the standard, and then fill in appropriate values in their datasets.

So, for the five composites:

- C-ECHO
- C-FIND
- C-MOVE
- C-GET

- C-STORE there are a series of messages. However, all of these messages are obtained as part of a PDataPDU, and all have to be placed there. Therefore, since they all have shared functionality and construction tropes, that will be put into a base class. Further, the base class will be then returned by the factory class, `gdcmCompositePDUFactory`.

This is an abstract class. It cannot be instantiated on its own.

25.28.2 Member Function Documentation

25.28.2.1 `virtual std::vector<PresentationDataValue> gdcm::network::BaseCompositeMessage::ConstructPDV (const ULConnection & inConnection, const BaseRootQuery * inRootQuery) [pure virtual]`

Implemented in [gdcm::network::CMoveRQ](#), [gdcm::network::CFindRQ](#), and [gdcm::network::CEchoRQ](#).

The documentation for this class was generated from the following file:

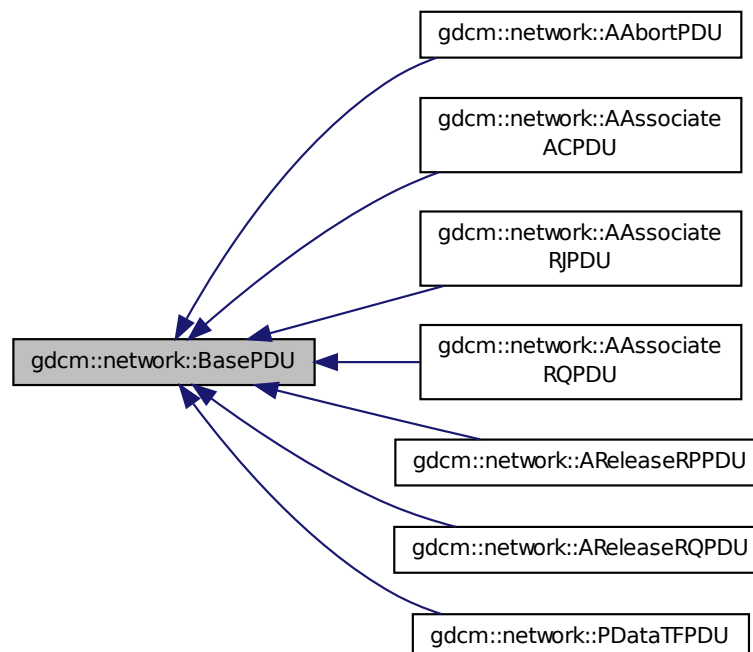
- [gdcmBaseCompositeMessage.h](#)

25.29 gdcm::network::BasePDU Class Reference

[BasePDU](#) base class for PDUs.

```
#include <gdcmBasePDU.h>
```

Inheritance diagram for `gdcm::network::BasePDU`:



Public Member Functions

- virtual [~BasePDU](#) ()
- virtual bool [IsLastFragment](#) () const =0
- virtual void [Print](#) (std::ostream &os) const =0
- virtual std::istream & [Read](#) (std::istream &is)=0
- virtual size_t [Size](#) () const =0
- virtual const std::ostream & [Write](#) (std::ostream &os) const =0

25.29.1 Detailed Description

[BasePDU](#) base class for PDUs.

all PDUs start with the first ten bytes as specified: 01 PDU type 02 reserved 3-6 PDU Length (unsigned) 7-10 variable on some, 7-10 are split (7-8 as protocol version in Associate-RQ, for instance, while associate-rj splits those four bytes differently).

Also common to all the PDUs is their ability to read and write to a stream.

So, let's just get them all bunched together into one (abstract) class, shall we?

Why? 1) so that the [ULEvent](#) can have the PDU stored in it, since the event takes PDUs and not other class structures (other class structures get converted into PDUs) 2) to make reading PDUs in the event loop cleaner

25.29.2 Constructor & Destructor Documentation

25.29.2.1 virtual gdcmm::network::BasePDU::~~BasePDU () [inline], [virtual]

25.29.3 Member Function Documentation

25.29.3.1 virtual bool gdcmm::network::BasePDU::IsLastFragment () const [pure virtual]

Implemented in [gdcmm::network::AAssociateRQPDU](#), [gdcmm::network::AAssociateACPDU](#), [gdcmm::network::PDataTFPDU](#), [gdcmm::network::AAabortPDU](#), [gdcmm::network::AAssociateRJPDU](#), [gdcmm::network::AReleaseRPPDU](#), and [gdcmm::network::AReleaseRQPDU](#).

25.29.3.2 virtual void gdcmm::network::BasePDU::Print (std::ostream & os) const [pure virtual]

Implemented in [gdcmm::network::AAssociateRQPDU](#), [gdcmm::network::AAssociateACPDU](#), [gdcmm::network::PDataTFPDU](#), [gdcmm::network::AAabortPDU](#), [gdcmm::network::AReleaseRPPDU](#), [gdcmm::network::AReleaseRQPDU](#), and [gdcmm::network::AAssociateRJPDU](#).

25.29.3.3 virtual std::istream& gdcmm::network::BasePDU::Read (std::istream & is) [pure virtual]

Implemented in [gdcmm::network::AAssociateACPDU](#), [gdcmm::network::AAssociateRQPDU](#), [gdcmm::network::PDataTFPDU](#), [gdcmm::network::AAssociateRJPDU](#), [gdcmm::network::AReleaseRPPDU](#), [gdcmm::network::AReleaseRQPDU](#), and [gdcmm::network::AAabortPDU](#).

25.29.3.4 `virtual size_t gdcmm::network::BasePDU::Size () const` `[pure virtual]`

Implemented in [gdcmm::network::AAssociateACPDU](#), [gdcmm::network::AAssociateRQPDU](#), [gdcmm::network::PDataTFPDU](#), [gdcmm::network::AAabortPDU](#), [gdcmm::network::AAssociateRJPDU](#), [gdcmm::network::AReleaseRPPDU](#), and [gdcmm::network::AReleaseRQPDU](#).

25.29.3.5 `virtual const std::ostream& gdcmm::network::BasePDU::Write (std::ostream & os) const` `[pure virtual]`

Implemented in [gdcmm::network::AAssociateACPDU](#), [gdcmm::network::AAssociateRQPDU](#), [gdcmm::network::PDataTFPDU](#), [gdcmm::network::AAssociateRJPDU](#), [gdcmm::network::AReleaseRPPDU](#), [gdcmm::network::AReleaseRQPDU](#), and [gdcmm::network::AAabortPDU](#).

The documentation for this class was generated from the following file:

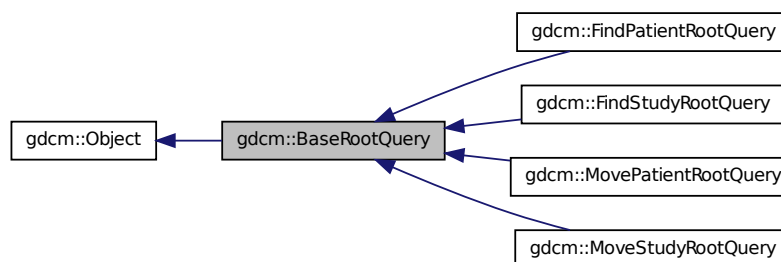
- [gdcmmBasePDU.h](#)

25.30 gdcmm::BaseRootQuery Class Reference

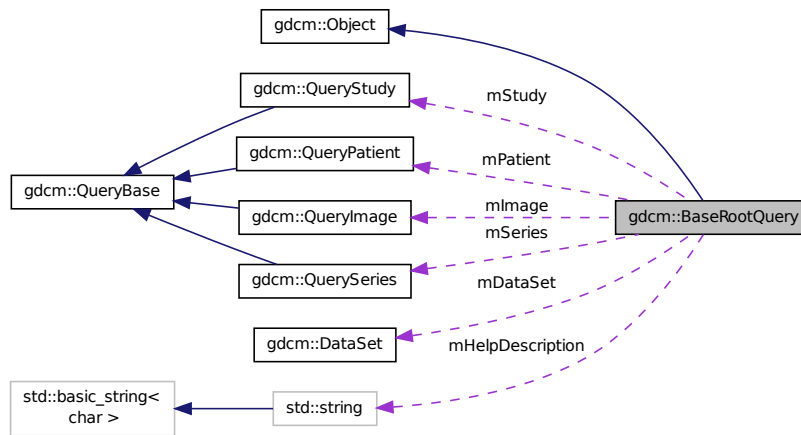
[BaseRootQuery](#) contains: a baseclass which will produce a dataset for c-find and c-move with patient/study root.

```
#include <gdcmmBaseRootQuery.h>
```

Inheritance diagram for gdcmm::BaseRootQuery:



Collaboration diagram for gdcmm::BaseRootQuery:



Public Member Functions

- virtual `~BaseRootQuery ()`
- void `AddQueryDataSet (const DataSet &ds)`
- virtual `UIDs::TSName GetAbstractSyntaxUID () const =0`
- `DataSet` const & `GetQueryDataSet () const`
Set/Get the internal representation of the query as a DataSet.
- `DataSet` & `GetQueryDataSet ()`
- `EQueryLevel` `GetQueryLevelFromQueryRoot (ERootType roottype)`
- virtual `std::vector< Tag > GetTagListByLevel (const EQueryLevel &inQueryLevel)=0`
- virtual void `InitializeDataSet (const EQueryLevel &inQueryLevel)=0`
- void `Print (std::ostream &os) const`
- void `SetSearchParameter (const Tag &inTag, const std::string &inValue)`
- void `SetSearchParameter (const std::string &inKeyword, const std::string &inValue)`
- virtual bool `ValidateQuery (bool inStrict=true) const =0`
- const `std::ostream` & `WriteHelpFile (std::ostream &os)`
- bool `WriteQuery (const std::string &inFileName)`

Static Public Member Functions

- static `QueryBase *` `Construct (ERootType inRootType, EQueryLevel qllevel)`
- static int `GetQueryLevelFromString (const char *str)`
- static const char * `GetQueryLevelString (EQueryLevel ql)`

Protected Member Functions

- `BaseRootQuery ()`
- void `SetSearchParameter (const Tag &inTag, const DictEntry &inDictEntry, const std::string &inValue)`

Protected Attributes

- [DataSet](#) `mDataSet`
- `std::string` `mHelpDescription`
- [QueryImage](#) `mImage`
- [QueryPatient](#) `mPatient`
- [ERootType](#) `mRootType`
- [QuerySeries](#) `mSeries`
- [QueryStudy](#) `mStudy`

Friends

- class [QueryFactory](#)

25.30.1 Detailed Description

[BaseRootQuery](#) contains: a baseclass which will produce a dataset for c-find and c-move with patient/study root.

This class contains the functionality used in patient c-find and c-move queries. [PatientRootQuery](#) and [StudyRootQuery](#) derive from this class.

Namely: 1) list all tags associated with a particular query type 2) produce a query dataset via tag association

Eventually, it can be used to validate a particular dataset type.

The dataset held by this object (or, really, one of its derivatives) should be passed to a c-find or c-move query.

25.30.2 Constructor & Destructor Documentation

25.30.2.1 `gdcm::BaseRootQuery::BaseRootQuery ()` [protected]

25.30.2.2 `virtual gdcm::BaseRootQuery::~~BaseRootQuery ()` [virtual]

25.30.3 Member Function Documentation

25.30.3.1 `void gdcm::BaseRootQuery::AddQueryDataSet (const DataSet & ds)`

25.30.3.2 `static QueryBase* gdcm::BaseRootQuery::Construct (ERootType inRootType, EQueryLevel qlevel)`
[static]

25.30.3.3 `virtual UIDs::TSName gdcm::BaseRootQuery::GetAbstractSyntaxUID () const` [pure virtual]

Implemented in [gdcm::FindStudyRootQuery](#), [gdcm::MovePatientRootQuery](#), [gdcm::MoveStudyRootQuery](#), and [gdcm::FindPatientRootQuery](#).

25.30.3.4 `DataSet const& gdcm::BaseRootQuery::GetQueryDataSet () const`

Set/Get the internal representation of the query as a [DataSet](#).

25.30.3.5 `DataSet& gdcm::BaseRootQuery::GetQueryDataSet ()`

25.30.3.6 `EQueryLevel gdcm::BaseRootQuery::GetQueryLevelFromQueryRoot (ERootType roottype)`

25.30.3.7 `static int gdcm::BaseRootQuery::GetQueryLevelFromString (const char * str) [static]`

25.30.3.8 `static const char* gdcm::BaseRootQuery::GetQueryLevelString (EQueryLevel ql) [static]`

25.30.3.9 `virtual std::vector<Tag> gdcm::BaseRootQuery::GetTagListByLevel (const EQueryLevel & inQueryLevel) [pure virtual]`

this function will return all tags at a given query level, so that they maybe selected for searching. The boolean forFind is true if the query is a find query, or false for a move query.

Implemented in [gdcm::FindPatientRootQuery](#), [gdcm::FindStudyRootQuery](#), [gdcm::MovePatientRootQuery](#), and [gdcm::MoveStudyRootQuery](#).

25.30.3.10 `virtual void gdcm::BaseRootQuery::InitializeDataSet (const EQueryLevel & inQueryLevel) [pure virtual]`

this function sets tag 8,52 to the appropriate value based on query level also fills in the right unique tags, as per the standard's requirements should allow for connection with dcm4k

Implemented in [gdcm::FindPatientRootQuery](#), [gdcm::FindStudyRootQuery](#), [gdcm::MovePatientRootQuery](#), and [gdcm::MoveStudyRootQuery](#).

25.30.3.11 `void gdcm::BaseRootQuery::Print (std::ostream & os) const [virtual]`

Reimplemented from [gdcm::Object](#).

25.30.3.12 `void gdcm::BaseRootQuery::SetSearchParameter (const Tag & inTag, const DictEntry & inDictEntry, const std::string & inValue) [protected]`

25.30.3.13 `void gdcm::BaseRootQuery::SetSearchParameter (const Tag & inTag, const std::string & inValue)`

25.30.3.14 `void gdcm::BaseRootQuery::SetSearchParameter (const std::string & inKeyword, const std::string & inValue)`

25.30.3.15 `virtual bool gdcm::BaseRootQuery::ValidateQuery (bool inStrict=true) const [pure virtual]`

have to be able to ensure that 0x8,0x52 is set (which will be true if InitializeDataSet is called...) that the level is appropriate (ie, not setting PATIENT for a study query that the tags in the query match the right level (either required, unique, optional) by default, this function checks to see if the query is for finding, which is more permissive than for moving. For moving, only the unique tags are allowed. 10 Jan 2011: adding in the 'strict' mode. according to the standard (at least, how I've read it), only tags for a particular level should be allowed in a particular query (ie, just series level tags in a series level query). However, it seems that dcm4chee doesn't share that interpretation. So, if 'inStrict' is false, then tags from the current level and all higher levels are now considered valid. So, if you're doing a non-strict series-level query, tags from the patient and study level can be passed along as well.

Implemented in [gdcm::FindStudyRootQuery](#), [gdcm::MovePatientRootQuery](#), [gdcm::MoveStudyRootQuery](#), and [gdcm::FindPatientRootQuery](#).

25.30.3.16 `const std::ostream& gdcm::BaseRootQuery::WriteHelpFile (std::ostream & os)`

25.30.3.17 `bool gdcm::BaseRootQuery::WriteQuery (const std::string & inFileName)`

25.30.4 Friends And Related Function Documentation

25.30.4.1 friend class `QueryFactory` `[friend]`

25.30.5 Member Data Documentation

25.30.5.1 `DataSet` `gdcm::BaseRootQuery::mDataSet` `[protected]`

25.30.5.2 `std::string` `gdcm::BaseRootQuery::mHelpDescription` `[protected]`

25.30.5.3 `QueryImage` `gdcm::BaseRootQuery::mImage` `[protected]`

25.30.5.4 `QueryPatient` `gdcm::BaseRootQuery::mPatient` `[protected]`

25.30.5.5 `ERootType` `gdcm::BaseRootQuery::mRootType` `[protected]`

25.30.5.6 `QuerySeries` `gdcm::BaseRootQuery::mSeries` `[protected]`

25.30.5.7 `QueryStudy` `gdcm::BaseRootQuery::mStudy` `[protected]`

The documentation for this class was generated from the following file:

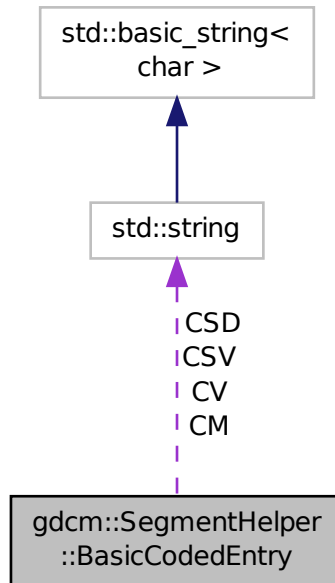
- [gdcmBaseRootQuery.h](#)

25.31 gdcm::SegmentHelper::BasicCodedEntry Struct Reference

This structure defines a basic coded entry with all of its attributes.

```
#include <gdcmSegmentHelper.h>
```

Collaboration diagram for gdcm::SegmentHelper::BasicCodedEntry:



Public Member Functions

- [BasicCodedEntry](#) ()
Constructor.
- [BasicCodedEntry](#) (const char *a_CV, const char *a_CSD, const char *a_CM)
constructor which defines type 1 attributes.
- [BasicCodedEntry](#) (const char *a_CV, const char *a_CSD, const char *a_CSV, const char *a_CM)
constructor which defines attributes.
- bool [IsEmpty](#) (const bool checkOptionalAttributes=false) const
Check if each attributes of the basic coded entry is defined.

Public Attributes

- std::string [CM](#)
Coding Scheme [Version](#) attribute.
- std::string [CSD](#)
Code [Value](#) attribute.
- std::string [CSV](#)
Coding Scheme Designator attribute.
- std::string [CV](#)

25.31.1 Detailed Description

This structure defines a basic coded entry with all of its attributes.

See Also

PS 3.3 section 8.8.

25.31.2 Constructor & Destructor Documentation

25.31.2.1 `gdcm::SegmentHelper::BasicCodedEntry::BasicCodedEntry () [inline]`

Constructor.

25.31.2.2 `gdcm::SegmentHelper::BasicCodedEntry::BasicCodedEntry (const char * a_CV, const char * a_CSD, const char * a_CM) [inline]`

constructor which defines type 1 attributes.

25.31.2.3 `gdcm::SegmentHelper::BasicCodedEntry::BasicCodedEntry (const char * a_CV, const char * a_CSD, const char * a_CSV, const char * a_CM) [inline]`

constructor which defines attributes.

25.31.3 Member Function Documentation

25.31.3.1 `bool gdcm::SegmentHelper::BasicCodedEntry::IsEmpty (const bool checkOptionalAttributes = false) const`

Check if each attributes of the basic coded entry is defined.

Parameters

<i>checkOptional-Attributes</i>	Check also type 1C attributes.
---------------------------------	--------------------------------

25.31.4 Member Data Documentation

25.31.4.1 `std::string gdcm::SegmentHelper::BasicCodedEntry::CM`

Coding Scheme [Version](#) attribute.

25.31.4.2 `std::string gdcm::SegmentHelper::BasicCodedEntry::CSD`

Code [Value](#) attribute.

25.31.4.3 `std::string gdcm::SegmentHelper::BasicCodedEntry::CSV`

Coding Scheme Designator attribute.

25.31.4.4 std::string gdcm::SegmentHelper::BasicCodedEntry::CV

The documentation for this struct was generated from the following file:

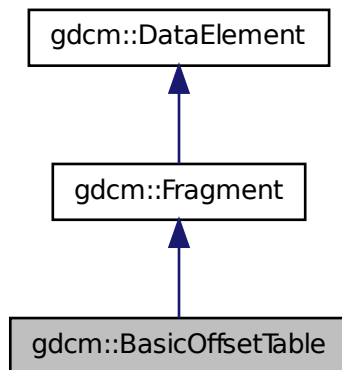
- [gdcmSegmentHelper.h](#)

25.32 gdcm::BasicOffsetTable Class Reference

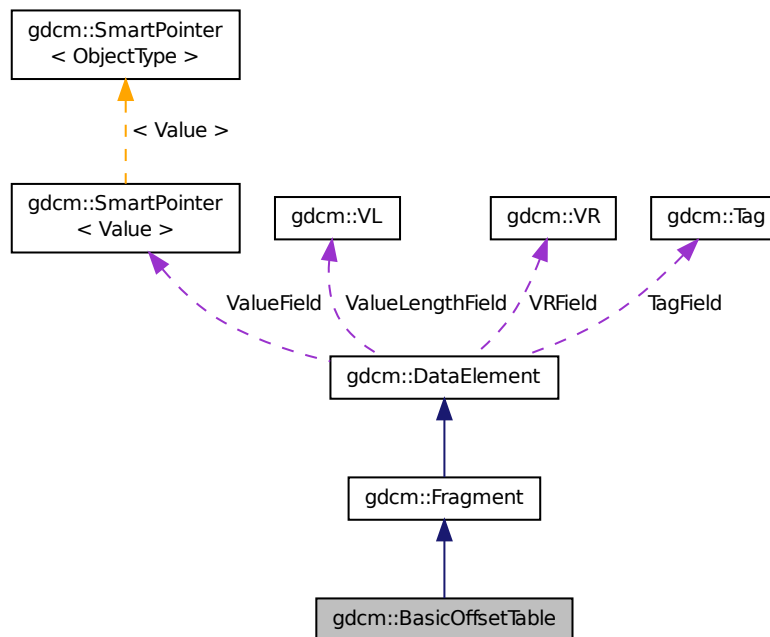
Class to represent a [BasicOffsetTable](#).

```
#include <gdcmBasicOffsetTable.h>
```

Inheritance diagram for gdcm::BasicOffsetTable:



Collaboration diagram for `gdcm::BasicOffsetTable`:



Public Member Functions

- [BasicOffsetTable](#) ()
- `template<typename TSwap >`
`std::istream & Read (std::istream &is)`

Friends

- `std::ostream & operator<< (std::ostream &os, const BasicOffsetTable &val)`

Additional Inherited Members

25.32.1 Detailed Description

Class to represent a [BasicOffsetTable](#).

25.32.2 Constructor & Destructor Documentation

25.32.2.1 `gdcm::BasicOffsetTable::BasicOffsetTable ()` [`inline`]

25.32.3 Member Function Documentation

25.32.3.1 `template<typename TSwap> std::istream& gdcm::BasicOffsetTable::Read (std::istream & is)` `[inline]`

25.32.4 Friends And Related Function Documentation

25.32.4.1 `std::ostream& operator<< (std::ostream & os, const BasicOffsetTable & val)` `[friend]`

The documentation for this class was generated from the following file:

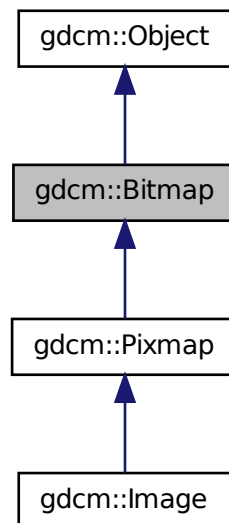
- [gdcmBasicOffsetTable.h](#)

25.33 gdcm::Bitmap Class Reference

Bitmap class A bitmap based image. Used as parent for both IconImage and the main Pixel Data **Image** It does not contains any World Space information (IPP, IOP)

```
#include <gdcmBitmap.h>
```

Inheritance diagram for gdcm::Bitmap:



- void [SetColumns](#) (unsigned int col)
- void [SetDataElement](#) ([DataElement](#) const &de)
- void [SetDimension](#) (unsigned int idx, unsigned int dim)
- void [SetDimensions](#) (const unsigned int dims[3])
- void [SetLossyFlag](#) (bool f)
Specifically set that the image was compressed using a lossy compression mechanism.
- void [SetLUT](#) ([LookupTable](#) const &lut)
Set/Get LUT.
- void [SetNeedByteSwap](#) (bool b)
- void [SetNumberOfDimensions](#) (unsigned int dim)
- void [SetPhotometricInterpretation](#) ([PhotometricInterpretation](#) const &pi)
- void [SetPixelFormat](#) ([PixelFormat](#) const &pf)
- void [SetPlanarConfiguration](#) (unsigned int pc)
- void [SetRows](#) (unsigned int rows)
- void [SetTransferSyntax](#) ([TransferSyntax](#) const &ts)
Transfer syntax.

Protected Types

- typedef [SmartPointer](#)< [LookupTable](#) > [LUTPtr](#)

Protected Member Functions

- bool [ComputeLossyFlag](#) ()
- bool [GetBuffer2](#) (std::ostream &os) const
- bool [TryJPEG2000Codec](#) (char *buffer, bool &lossyflag) const
- bool [TryJPEG2000Codec2](#) (std::ostream &os) const
- bool [TryJPEGCodec](#) (char *buffer, bool &lossyflag) const
- bool [TryJPEGCodec2](#) (std::ostream &os) const
- bool [TryJPEGLSCodec](#) (char *buffer, bool &lossyflag) const
- bool [TryKAKADUCoec](#) (char *buffer, bool &lossyflag) const
- bool [TryPVRGCodec](#) (char *buffer, bool &lossyflag) const
- bool [TryRAWCodec](#) (char *buffer, bool &lossyflag) const
- bool [TryRLECodec](#) (char *buffer, bool &lossyflag) const

Protected Attributes

- std::vector< unsigned int > [Dimensions](#)
- bool [LossyFlag](#)
- [LUTPtr](#) [LUT](#)
- bool [NeedByteSwap](#)
- unsigned int [NumberOfDimensions](#)
- [PixelFormat](#) [PF](#)
- [PhotometricInterpretation](#) [PI](#)
- [DataElement](#) [PixelData](#)
- unsigned int [PlanarConfiguration](#)
- [TransferSyntax](#) [TS](#)

Friends

- class [ImageChangeTransferSyntax](#)
- class [PixmapReader](#)

25.33.1 Detailed Description

[Bitmap](#) class A bitmap based image. Used as parent for both [IconImage](#) and the main Pixel Data [Image](#) It does not contains any World Space information (IPP, IOP)

Examples:

[ExtractIconFromFile.cxx](#).

25.33.2 Member Typedef Documentation

25.33.2.1 `typedef SmartPointer<LookupTable> gdcm::Bitmap::LUTPtr` `[protected]`

25.33.3 Constructor & Destructor Documentation

25.33.3.1 `gdcm::Bitmap::Bitmap ()`

25.33.3.2 `gdcm::Bitmap::~~Bitmap ()`

25.33.4 Member Function Documentation

25.33.4.1 `virtual bool gdcm::Bitmap::AreOverlaysInPixelData () const` `[inline],[virtual]`

Reimplemented in [gdcm::Pixmap](#).

25.33.4.2 `void gdcm::Bitmap::Clear ()`

25.33.4.3 `bool gdcm::Bitmap::ComputeLossyFlag ()` `[protected]`

25.33.4.4 `bool gdcm::Bitmap::GetBuffer (char * buffer) const`

Acces the raw data.

Examples:

[ConvertToQImage.cxx](#), [ReadMultiTimesException.cxx](#), and [threadgdcm.cxx](#).

25.33.4.5 `bool gdcm::Bitmap::GetBuffer2 (std::ostream & os) const` `[protected]`

25.33.4.6 `unsigned long gdcm::Bitmap::GetBufferLength () const`

Return the length of the image after decompression WARNING for palette color: It will NOT take into account the Palette Color thus you need to multiply this length by 3 if computing the size of equivalent RGB image

Examples:

[ConvertToQImage.cxx](#), [GenFakelImage.cxx](#), [PatchFile.cxx](#), [ReadMultiTimesException.cxx](#), and [threadgdcm.cxx](#).

25.33.4.7 `unsigned int gdcm::Bitmap::GetColumns () const [inline]`

25.33.4.8 `const DataElement& gdcm::Bitmap::GetDataElement () const [inline]`

Examples:

[ExtractIconFromFile.cxx](#).

25.33.4.9 `DataElement& gdcm::Bitmap::GetDataElement () [inline]`

25.33.4.10 `unsigned int gdcm::Bitmap::GetDimension (unsigned int idx) const`

25.33.4.11 `const unsigned int* gdcm::Bitmap::GetDimensions () const`

Return the dimension of the pixel data, first dimension (x), then 2nd (y), then 3rd (z)...

Examples:

[ConvertToQImage.cxx](#), [ExtractIconFromFile.cxx](#), [FixJAIBugJPEGLS.cxx](#), [HelloVizWorld.cxx](#), and [threadgdcm.cxx](#).

25.33.4.12 `const LookupTable& gdcm::Bitmap::GetLUT () const [inline]`

Examples:

[ExtractIconFromFile.cxx](#).

25.33.4.13 `LookupTable& gdcm::Bitmap::GetLUT () [inline]`

25.33.4.14 `bool gdcm::Bitmap::GetNeedByteSwap () const [inline]`

25.33.4.15 `unsigned int gdcm::Bitmap::GetNumberOfDimensions () const`

Return the number of dimension of the pixel data bytes; for example 2 for a 2D matrices of values.

Examples:

[HelloVizWorld.cxx](#), and [threadgdcm.cxx](#).

25.33.4.16 `const PhotometricInterpretation& gdcm::Bitmap::GetPhotometricInterpretation () const`

return the photometric interpretation

Examples:

[ConvertToQImage.cxx](#), [ExtractIconFromFile.cxx](#), and [HelloVizWorld.cxx](#).

25.33.4.17 `const PixelFormat& gdcm::Bitmap::GetPixelFormat () const` `[inline]`

Get/Set [PixelFormat](#).

Examples:

[ConvertToQImage.cxx](#), [ExtractIconFromFile.cxx](#), [FixJAI BugJPEGLS.cxx](#), [GenFakeImage.cxx](#), [GetJPEGSamplePrecision.cxx](#), and [threadgdcm.cxx](#).

25.33.4.18 `PixelFormat& gdcm::Bitmap::GetPixelFormat ()` `[inline]`

25.33.4.19 `unsigned int gdcm::Bitmap::GetPlanarConfiguration () const`

return the planar configuration

25.33.4.20 `unsigned int gdcm::Bitmap::GetRows () const` `[inline]`

25.33.4.21 `const TransferSyntax& gdcm::Bitmap::GetTransferSyntax () const` `[inline]`

Examples:

[ExtractIconFromFile.cxx](#).

25.33.4.22 `bool gdcm::Bitmap::IsEmpty () const` `[inline]`

25.33.4.23 `bool gdcm::Bitmap::IsLossy () const`

Return whether or not the image was compressed using a lossy compressor or not.

25.33.4.24 `bool gdcm::Bitmap::IsTransferSyntaxCompatible (TransferSyntax const & ts) const`

25.33.4.25 `void gdcm::Bitmap::Print (std::ostream &) const` `[virtual]`

Reimplemented from [gdcm::Object](#).

Reimplemented in [gdcm::Image](#), and [gdcm::Pixmap](#).

Examples:

[ExtractIconFromFile.cxx](#).

25.33.4.26 `void gdcm::Bitmap::SetColumns (unsigned int col)` `[inline]`

25.33.4.27 `void gdcm::Bitmap::SetDataElement (DataElement const & de)` `[inline]`

Examples:

[CreateARGBImage.cxx](#), [CreateCMYKImage.cxx](#), [csa2img.cxx](#), [GenFakeImage.cxx](#), and [iU22tomultisc.cxx](#).

25.33.4.28 void gdcm::Bitmap::SetDimension (unsigned int *idx*, unsigned int *dim*)

Examples:

[csa2img.cxx](#), [GenFakelImage.cxx](#), and [iU22tomultisc.cxx](#).

25.33.4.29 void gdcm::Bitmap::SetDimensions (const unsigned int *dims*[3])

Examples:

[CreateARGBImage.cxx](#), and [CreateCMYKImage.cxx](#).

25.33.4.30 void gdcm::Bitmap::SetLossyFlag (bool *f*) [inline]

Specifically set that the image was compressed using a lossy compression mechanism.

25.33.4.31 void gdcm::Bitmap::SetLUT (LookupTable const & *lut*) [inline]

Set/Get LUT.

25.33.4.32 void gdcm::Bitmap::SetNeedByteSwap (bool *b*) [inline]

25.33.4.33 void gdcm::Bitmap::SetNumberOfDimensions (unsigned int *dim*)

Examples:

[CreateARGBImage.cxx](#), [CreateCMYKImage.cxx](#), [csa2img.cxx](#), [GenFakelImage.cxx](#), [GetSubSequenceData.cxx](#), and [iU22tomultisc.cxx](#).

25.33.4.34 void gdcm::Bitmap::SetPhotometricInterpretation (PhotometricInterpretation const & *pi*)

Examples:

[CreateARGBImage.cxx](#), [CreateCMYKImage.cxx](#), [csa2img.cxx](#), [GenFakelImage.cxx](#), and [iU22tomultisc.cxx](#).

25.33.4.35 void gdcm::Bitmap::SetPixelFormat (PixelFormat const & *pf*) [inline]

Examples:

[CreateARGBImage.cxx](#), [CreateCMYKImage.cxx](#), [csa2img.cxx](#), and [iU22tomultisc.cxx](#).

References gdcm::PixelFormat::Validate().

25.33.4.36 void gdcm::Bitmap::SetPlanarConfiguration (unsigned int *pc*)

Warning

you need to call SetPixelFormat first (before SetPlanarConfiguration) for consistency checking

25.33.4.37 void gdcmm::Bitmap::SetRows (unsigned int *rows*) [inline]

25.33.4.38 void gdcmm::Bitmap::SetTransferSyntax (TransferSyntax const & *ts*) [inline]

Transfer syntax.

Examples:

[CreateARGBImage.cxx](#), [CreateCMYKImage.cxx](#), and [MergeTwoFiles.cxx](#).

25.33.4.39 bool gdcmm::Bitmap::TryJPEG2000Codec (char * *buffer*, bool & *lossyflag*) const [protected]

25.33.4.40 bool gdcmm::Bitmap::TryJPEG2000Codec2 (std::ostream & *os*) const [protected]

25.33.4.41 bool gdcmm::Bitmap::TryJPEGCodec (char * *buffer*, bool & *lossyflag*) const [protected]

25.33.4.42 bool gdcmm::Bitmap::TryJPEGCodec2 (std::ostream & *os*) const [protected]

25.33.4.43 bool gdcmm::Bitmap::TryJPEGLSCodec (char * *buffer*, bool & *lossyflag*) const [protected]

25.33.4.44 bool gdcmm::Bitmap::TryKAKADUCoDec (char * *buffer*, bool & *lossyflag*) const [protected]

25.33.4.45 bool gdcmm::Bitmap::TryPVRGCodec (char * *buffer*, bool & *lossyflag*) const [protected]

25.33.4.46 bool gdcmm::Bitmap::TryRAWCodec (char * *buffer*, bool & *lossyflag*) const [protected]

25.33.4.47 bool gdcmm::Bitmap::TryRLECodec (char * *buffer*, bool & *lossyflag*) const [protected]

25.33.5 Friends And Related Function Documentation

25.33.5.1 friend class ImageChangeTransferSyntax [friend]

25.33.5.2 friend class PixmapReader [friend]

25.33.6 Member Data Documentation

25.33.6.1 std::vector<unsigned int> gdcmm::Bitmap::Dimensions [protected]

25.33.6.2 bool gdcmm::Bitmap::LossyFlag [protected]

25.33.6.3 LUTPtr gdcmm::Bitmap::LUT [protected]

25.33.6.4 bool gdcmm::Bitmap::NeedByteSwap [protected]

25.33.6.5 unsigned int gdcmm::Bitmap::NumberOfDimensions [protected]

25.33.6.6 PixelFormat gdcmm::Bitmap::PF [protected]

25.33.6.7 PhotometricInterpretation gdcmm::Bitmap::PI [protected]

25.33.6.8 DataElement gdcmm::Bitmap::PixelData [protected]

25.33.6.9 `unsigned int gdcm::Bitmap::PlanarConfiguration` `[protected]`

25.33.6.10 `TransferSyntax gdcm::Bitmap::TS` `[protected]`

The documentation for this class was generated from the following file:

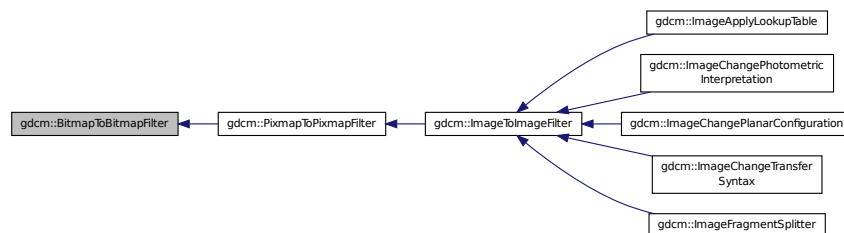
- [gdcmBitmap.h](#)

25.34 gdcm::BitmapToBitmapFilter Class Reference

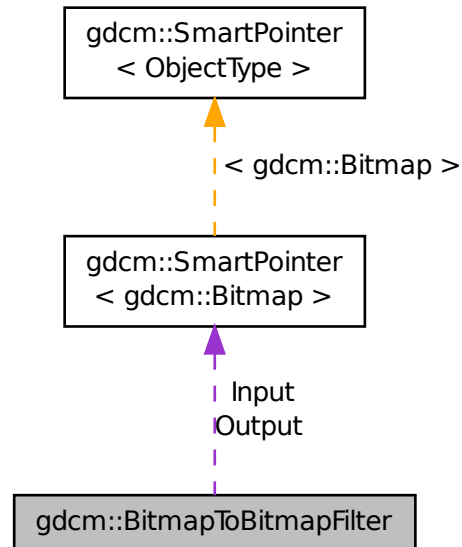
[BitmapToBitmapFilter](#) class Super class for all filter taking an image and producing an output image.

```
#include <gdcmBitmapToBitmapFilter.h>
```

Inheritance diagram for `gdcm::BitmapToBitmapFilter`:



Collaboration diagram for `gdcm::BitmapToBitmapFilter`:



Public Member Functions

- [BitmapToBitmapFilter \(\)](#)
- [~BitmapToBitmapFilter \(\)](#)
- `const Bitmap & GetOutput () const`
Get Output image.
- `const Bitmap & GetOutputAsBitmap () const`
- `void SetInput (const Bitmap &image)`
Set input image.

Protected Attributes

- [SmartPointer< Bitmap > Input](#)
- [SmartPointer< Bitmap > Output](#)

25.34.1 Detailed Description

[BitmapToBitmapFilter](#) class Super class for all filter taking an image and producing an output image.

25.34.2 Constructor & Destructor Documentation

25.34.2.1 `gdcm::BitmapToBitmapFilter::BitmapToBitmapFilter ()`

25.34.2.2 `gdcm::BitmapToBitmapFilter::~~BitmapToBitmapFilter ()` `[inline]`

25.34.3 Member Function Documentation

25.34.3.1 `const Bitmap& gdcm::BitmapToBitmapFilter::GetOutput () const` `[inline]`

Get Output image.

25.34.3.2 `const Bitmap& gdcm::BitmapToBitmapFilter::GetOutputAsBitmap () const`

25.34.3.3 `void gdcm::BitmapToBitmapFilter::SetInput (const Bitmap & image)`

Set input image.

Examples:

[CompressImage.cxx](#).

25.34.4 Member Data Documentation

25.34.4.1 `SmartPointer<Bitmap> gdcm::BitmapToBitmapFilter::Input` `[protected]`

25.34.4.2 `SmartPointer<Bitmap> gdcm::BitmapToBitmapFilter::Output` `[protected]`

The documentation for this class was generated from the following file:

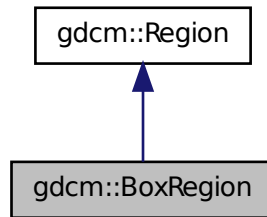
- [gdcmBitmapToBitmapFilter.h](#)

25.35 gdcm::BoxRegion Class Reference

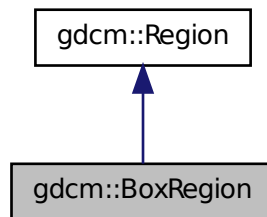
Class for manipulation box region This is a very simple implementation of the [Region](#) class. It only support 3D box type region. It assumes the 3D Box does not have a tilt Origin is as (0,0,0)

```
#include <gdcmBoxRegion.h>
```

Inheritance diagram for `gdcm::BoxRegion`:



Collaboration diagram for `gdcm::BoxRegion`:



Public Member Functions

- [BoxRegion](#) ()
- [BoxRegion](#) (const [BoxRegion](#) &)
copy/cstor and al.
- [~BoxRegion](#) ()
- `size_t` [Area](#) () const
compute the area
- [Region](#) * [Clone](#) () const
- [BoxRegion](#) [ComputeBoundingBox](#) ()
Return the Axis-Aligned minimum bounding box for all regions.
- `bool` [Empty](#) () const
return whether this domain is empty:
- `unsigned int` [GetXMax](#) () const
- `unsigned int` [GetXMin](#) () const
Get domain.

- unsigned int [GetYMax](#) () const
- unsigned int [GetYMin](#) () const
- unsigned int [GetZMax](#) () const
- unsigned int [GetZMin](#) () const
- bool [IsValid](#) () const
return whether this is valid domain
- void [operator=](#) (const [BoxRegion](#) &)
- void [Print](#) (std::ostream &os=std::cout) const
Print.
- void [SetDomain](#) (unsigned int xmin, unsigned int xmax, unsigned int ymin, unsigned int ymax, unsigned int zmin, unsigned int zmax)
Set domain.

Static Public Member Functions

- static [BoxRegion BoundingBox](#) ([BoxRegion](#) const &b1, [BoxRegion](#) const &b2)
Helper class to compute the bounding box of two [BoxRegion](#).

25.35.1 Detailed Description

Class for manipulation box region This is a very simple implementation of the [Region](#) class. It only support 3D box type region. It assumes the 3D Box does not have a tilt Origin is as (0,0,0)

25.35.2 Constructor & Destructor Documentation

25.35.2.1 `gdcmm::BoxRegion::BoxRegion ()`

25.35.2.2 `gdcmm::BoxRegion::~~BoxRegion ()`

25.35.2.3 `gdcmm::BoxRegion::BoxRegion (const BoxRegion &)`

copy/cstor and al.

25.35.3 Member Function Documentation

25.35.3.1 `size_t gdcmm::BoxRegion::Area () const` `[virtual]`

compute the area

Implements [gdcmm::Region](#).

25.35.3.2 `static BoxRegion gdcmm::BoxRegion::BoundingBox (BoxRegion const & b1, BoxRegion const & b2)`
`[static]`

Helper class to compute the bounding box of two [BoxRegion](#).

25.35.3.3 `Region* gdcmm::BoxRegion::Clone () const` `[virtual]`

Implements [gdcmm::Region](#).

25.35.3.4 **BoxRegion** gdcM::BoxRegion::ComputeBoundingBox () [virtual]

Return the Axis-Aligned minimum bounding box for all regions.

Implements [gdcM::Region](#).

25.35.3.5 **bool** gdcM::BoxRegion::Empty () const [virtual]

return whether this domain is empty:

Implements [gdcM::Region](#).

25.35.3.6 **unsigned int** gdcM::BoxRegion::GetXMax () const

25.35.3.7 **unsigned int** gdcM::BoxRegion::GetXMin () const

Get domain.

25.35.3.8 **unsigned int** gdcM::BoxRegion::GetYMax () const

25.35.3.9 **unsigned int** gdcM::BoxRegion::GetYMin () const

25.35.3.10 **unsigned int** gdcM::BoxRegion::GetZMax () const

25.35.3.11 **unsigned int** gdcM::BoxRegion::GetZMin () const

25.35.3.12 **bool** gdcM::BoxRegion::IsValid () const [virtual]

return whether this is valid domain

Implements [gdcM::Region](#).

25.35.3.13 **void** gdcM::BoxRegion::operator= (const **BoxRegion** &)

25.35.3.14 **void** gdcM::BoxRegion::Print (std::ostream & *os* = std::cout) const [virtual]

Print.

Reimplemented from [gdcM::Region](#).

25.35.3.15 **void** gdcM::BoxRegion::SetDomain (unsigned int *xmin*, unsigned int *xmax*, unsigned int *ymin*, unsigned int *ymax*, unsigned int *zmin*, unsigned int *zmax*)

Set domain.

The documentation for this class was generated from the following file:

- [gdcMBoxRegion.h](#)

25.36 gdcm::ByteBuffer Class Reference

[ByteBuffer.](#)

```
#include <gdcmByteBuffer.h>
```

Public Member Functions

- [ByteBuffer](#) ()
- char * [Get](#) (int len)
- const char * [GetStart](#) () const
- void [ShiftEnd](#) (int len)
- void [UpdatePosition](#) ()

25.36.1 Detailed Description

[ByteBuffer.](#)

Detailed description here

Note

looks like a std::streambuf or std::filebuf class with the get and peek pointer

25.36.2 Constructor & Destructor Documentation

25.36.2.1 `gdcm::ByteBuffer::ByteBuffer ()` [\[inline\]](#)

25.36.3 Member Function Documentation

25.36.3.1 `char* gdcm::ByteBuffer::Get (int len)` [\[inline\]](#)

25.36.3.2 `const char* gdcm::ByteBuffer::GetStart () const` [\[inline\]](#)

25.36.3.3 `void gdcm::ByteBuffer::ShiftEnd (int len)` [\[inline\]](#)

25.36.3.4 `void gdcm::ByteBuffer::UpdatePosition ()` [\[inline\]](#)

The documentation for this class was generated from the following file:

- [gdcmByteBuffer.h](#)

25.37 gdcm::ByteSwap< T > Class Template Reference

[ByteSwap.](#)

```
#include <gdcmByteSwap.h>
```

Static Public Member Functions

- static void [Swap](#) (T &p)
- static void [SwapFromSwapCodeIntoSystem](#) (T &p, [SwapCode](#) const &sc)
- static void [SwapRange](#) (T *p, unsigned int num)
- static void [SwapRangeFromSwapCodeIntoSystem](#) (T *p, [SwapCode](#) const &sc, std::streamoff num)
- static bool [SystemIsBigEndian](#) ()
- static bool [SystemIsLittleEndian](#) ()

25.37.1 Detailed Description

template<class T>class [gdcm::ByteSwap](#)< T >

[ByteSwap](#).

Perform machine dependent byte swaping (Little Endian, Big Endian, Bad Little Endian, Bad Big Endian). TODO: bswap_32 / bswap_64 ...

Examples:

[TestByteSwap.cxx](#).

25.37.2 Member Function Documentation

25.37.2.1 template<class T> static void [gdcm::ByteSwap](#)< T >::Swap (T & p) [static]

25.37.2.2 template<class T> static void [gdcm::ByteSwap](#)< T >::SwapFromSwapCodeIntoSystem (T & p, [SwapCode](#) const & sc) [static]

Examples:

[TestByteSwap.cxx](#).

25.37.2.3 template<class T> static void [gdcm::ByteSwap](#)< T >::SwapRange (T * p, unsigned int num) [static]

25.37.2.4 template<class T> static void [gdcm::ByteSwap](#)< T >::SwapRangeFromSwapCodeIntoSystem (T * p, [SwapCode](#) const & sc, std::streamoff num) [static]

Examples:

[TestByteSwap.cxx](#).

25.37.2.5 template<class T> static bool [gdcm::ByteSwap](#)< T >::SystemIsBigEndian () [static]

Query the machine Endian-ness.

25.37.2.6 template<class T> static bool [gdcm::ByteSwap](#)< T >::SystemIsLittleEndian () [static]

The documentation for this class was generated from the following file:

- [gdcmByteSwap.h](#)

25.38 gdcm::ByteSwapFilter Class Reference

[ByteSwapFilter](#) In place byte-swapping of a dataset FIXME: FL status ??

```
#include <gdcmByteSwapFilter.h>
```

Public Member Functions

- [ByteSwapFilter](#) ([DataSet](#) &ds)
- [~ByteSwapFilter](#) ()
- bool [ByteSwap](#) ()
- void [SetByteSwapTag](#) (bool b)

25.38.1 Detailed Description

[ByteSwapFilter](#) In place byte-swapping of a dataset FIXME: FL status ??

25.38.2 Constructor & Destructor Documentation

25.38.2.1 `gdcm::ByteSwapFilter::ByteSwapFilter (DataSet & ds) [inline]`

25.38.2.2 `gdcm::ByteSwapFilter::~~ByteSwapFilter ()`

25.38.3 Member Function Documentation

25.38.3.1 `bool gdcm::ByteSwapFilter::ByteSwap ()`

25.38.3.2 `void gdcm::ByteSwapFilter::SetByteSwapTag (bool b) [inline]`

The documentation for this class was generated from the following file:

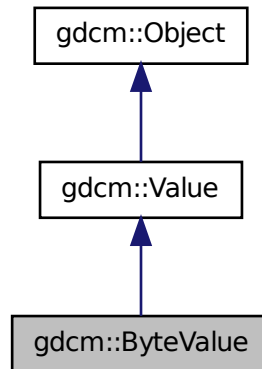
- [gdcmByteSwapFilter.h](#)

25.39 gdcm::ByteValue Class Reference

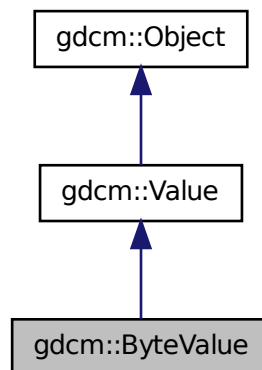
Class to represent binary value (array of bytes)

```
#include <gdcmByteValue.h>
```

Inheritance diagram for `gdcm::ByteValue`:



Collaboration diagram for `gdcm::ByteValue`:



Public Member Functions

- `ByteValue` (`const char *array=0`, `VL const &vl=0`)
- `ByteValue` (`std::vector< char > &v`)
- `~ByteValue` ()
- `void Clear` ()
- `void Fill` (`char c`)
- `bool GetBuffer` (`char *buffer`, `unsigned long length`) `const`

- [VL GetLength](#) () const
- const char * [GetPointer](#) () const
- bool [IsEmpty](#) () const
- bool [IsPrintable](#) (VL length) const

Checks whether a 'ByteValue' is printable or not (in order to avoid corrupting the terminal of invocation when printing) I dont think this function is working since it does not handle UNICODE or character set...

- [operator const std::vector< char > &](#) () const
- [ByteValue & operator=](#) (const [ByteValue](#) &val)
- bool [operator==](#) (const [ByteValue](#) &val) const
- bool [operator==](#) (const [Value](#) &val) const
- void [PrintASCII](#) (std::ostream &os, [VL](#) maxlength) const
- void [PrintGroupLength](#) (std::ostream &os)
- void [PrintHex](#) (std::ostream &os, [VL](#) maxlength) const
- template<typename TSwap , typename TType >
std::istream & [Read](#) (std::istream &is)
- template<typename TSwap >
std::istream & [Read](#) (std::istream &is)
- void [SetLength](#) (VL vl)
- template<typename TSwap , typename TType >
std::ostream const & [Write](#) (std::ostream &os) const
- template<typename TSwap >
std::ostream const & [Write](#) (std::ostream &os) const
- bool [WriteBuffer](#) (std::ostream &os) const

Protected Member Functions

- void [Print](#) (std::ostream &os) const

25.39.1 Detailed Description

Class to represent binary value (array of bytes)

Note

Examples:

[DumpADAC.cxx](#), [DumplmageHeaderInfo.cxx](#), [DuplicatePCDE.cxx](#), [ELSCINT1WaveToText.cxx](#), [ExtractEncrypted-Content.cxx](#), [ExtractIconFromFile.cxx](#), [FixBrokenJ2K.cxx](#), [FixJAIBugJPEGLS.cxx](#), [GetSubSequenceData.cxx](#), [Mr-Protocol.cxx](#), [PatchFile.cxx](#), [pmsct_rgb1.cxx](#), [ReadExplicitLengthSQIVR.cxx](#), and [rle2img.cxx](#).

25.39.2 Constructor & Destructor Documentation

25.39.2.1 gdcmm::ByteValue::ByteValue (const char * array = 0, VL const & vl = 0) [inline]

References [gdcmmDebugMacro](#).

25.39.2.2 `gdcmm::ByteValue::ByteValue (std::vector< char > & v) [inline]`

Warning

casting to `uint32_t`

25.39.2.3 `gdcmm::ByteValue::~~ByteValue () [inline]`

25.39.3 Member Function Documentation

25.39.3.1 `void gdcmm::ByteValue::Clear () [inline],[virtual]`

Implements [gdcmm::Value](#).

25.39.3.2 `void gdcmm::ByteValue::Fill (char c) [inline]`

Examples:

[DuplicatePCDE.cxx](#).

25.39.3.3 `bool gdcmm::ByteValue::GetBuffer (char * buffer, unsigned long length) const`

Examples:

[FixJAIBugJPEGLS.cxx](#).

25.39.3.4 `VL gdcmm::ByteValue::GetLength () const [inline],[virtual]`

Implements [gdcmm::Value](#).

Examples:

[DumpADAC.cxx](#), [DumpImageHeaderInfo.cxx](#), [ELSCINT1WaveToText.cxx](#), [ExtractEncryptedContent.cxx](#), [ExtractIconFromFile.cxx](#), [FixBrokenJ2K.cxx](#), [FixJAIBugJPEGLS.cxx](#), [GetSubSequenceData.cxx](#), [MrProtocol.cxx](#), [PatchFile.cxx](#), [pmsct_rgb1.cxx](#), [ReadExplicitLengthSQIVR.cxx](#), [ReadGEMSSDO.cxx](#), and [rle2img.cxx](#).

Referenced by `gdcmm::operator<<()`, `gdcmm::SequenceOfFragments::ReadValue()`, `gdcmm::Element< VR::OB, VM::VM1_n >::Set()`, `gdcmm::Element< TVR, VM::VM1_n >::Set()`, `gdcmm::Attribute< Group, Element, TVR, TVM >::SetByteValue()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::SetByteValue()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::SetByteValue()`, `gdcmm::Attribute< Group, Element, TVR, TVM >::SetByteValueNoSwap()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::SetByteValueNoSwap()`, `gdcmm::Element< VR::OB, VM::VM1_n >::SetNoSwap()`, `gdcmm::Element< TVR, VM::VM1_n >::SetNoSwap()`, and `gdcmm::Fragment::Write()`.

25.39.3.5 `const char* gdcmm::ByteValue::GetPointer () const [inline]`

Examples:

[DumpADAC.cxx](#), [DumpImageHeaderInfo.cxx](#), [ELSCINT1WaveToText.cxx](#), [ExtractEncryptedContent.cxx](#), [ExtractIconFromFile.cxx](#), [FixBrokenJ2K.cxx](#), [GetSubSequenceData.cxx](#), [MrProtocol.cxx](#), [pmsct_rgb1.cxx](#), [ReadExplicitLengthSQIVR.cxx](#), [ReadGEMSSDO.cxx](#), and [rle2img.cxx](#).

Referenced by `gdcm::operator<<()`, `gdcm::SequenceOfFragments::ReadValue()`, `gdcm::Element< VR::OB, VM::VM1_n >::Set()`, `gdcm::Element< TVR, VM::VM1_n >::Set()`, `gdcm::Attribute< Group, Element, TVR, TVM >::SetByteValue()`, `gdcm::Attribute< Group, Element, TVR, VM::VM1 >::SetByteValue()`, `gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::SetByteValue()`, `gdcm::Attribute< Group, Element, TVR, TVM >::SetByteValueNoSwap()`, `gdcm::Attribute< Group, Element, TVR, VM::VM1 >::SetByteValueNoSwap()`, `gdcm::Element< VR::OB, VM::VM1_n >::SetNoSwap()`, and `gdcm::Element< TVR, VM::VM1_n >::SetNoSwap()`.

25.39.3.6 `bool gdcm::ByteValue::IsEmpty () const [inline]`

25.39.3.7 `bool gdcm::ByteValue::IsPrintable (VL length) const [inline]`

Checks whether a 'ByteValue' is printable or not (in order to avoid corrupting the terminal of invocation when printing) I dont think this function is working since it does not handle UNICODE or character set...

25.39.3.8 `gdcm::ByteValue::operator const std::vector< char > & () const [inline]`

25.39.3.9 `ByteValue& gdcm::ByteValue::operator= (const ByteValue & val) [inline]`

25.39.3.10 `bool gdcm::ByteValue::operator== (const ByteValue & val) const [inline]`

25.39.3.11 `bool gdcm::ByteValue::operator== (const Value & val) const [inline], [virtual]`

Implements [gdcm::Value](#).

25.39.3.12 `void gdcm::ByteValue::Print (std::ostream & os) const [inline], [protected], [virtual]`

Reimplemented from [gdcm::Object](#).

25.39.3.13 `void gdcm::ByteValue::PrintASCII (std::ostream & os, VL maxlength) const`

25.39.3.14 `void gdcm::ByteValue::PrintGroupLength (std::ostream & os) [inline]`

25.39.3.15 `void gdcm::ByteValue::PrintHex (std::ostream & os, VL maxlength) const`

25.39.3.16 `template<typename TSwap, typename TType > std::istream& gdcm::ByteValue::Read (std::istream & is) [inline]`

25.39.3.17 `template<typename TSwap > std::istream& gdcm::ByteValue::Read (std::istream & is) [inline]`

25.39.3.18 `void gdcm::ByteValue::SetLength (VL vl) [inline], [virtual]`

Implements [gdcm::Value](#).

References `gdcmDebugMacro`, `gdcm::VL::IsOdd()`, and `gdcm::VL::IsUndefined()`.

25.39.3.19 `template<typename TSwap, typename TType > std::ostream const& gdcm::ByteValue::Write (std::ostream & os) const [inline]`

Referenced by `gdcm::Fragment::Write()`.

25.39.3.20 `template<typename TSwap > std::ostream const& gdcm::ByteValue::Write (std::ostream & os) const` `[inline]`

25.39.3.21 `bool gdcm::ByteValue::WriteBuffer (std::ostream & os) const` `[inline]`

The documentation for this class was generated from the following file:

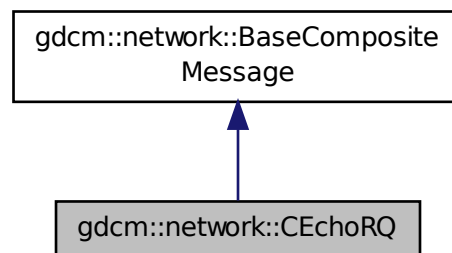
- [gdcmByteValue.h](#)

25.40 gdcm::network::CEchoRQ Class Reference

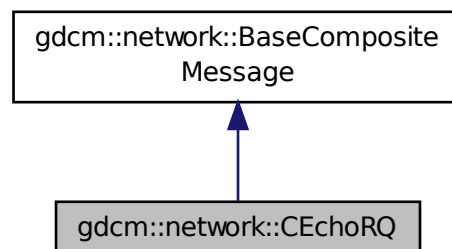
[CEchoRQ](#) this file defines the messages for the cecho action.

```
#include <gdcmCEchoMessages.h>
```

Inheritance diagram for gdcm::network::CEchoRQ:



Collaboration diagram for gdcm::network::CEchoRQ:



Public Member Functions

- `std::vector`
`< PresentationDataValue > ConstructPDV (const ULConnection &inConnection, const BaseRootQuery *inRootQuery)`

Public Attributes

- `UIComp AffectedSOPClassUID`
- `uint16_t MessageID`

25.40.1 Detailed Description

[CEchoRQ](#) this file defines the messages for the cecho action.

25.40.2 Member Function Documentation

25.40.2.1 `std::vector<PresentationDataValue> gdcm::network::CEchoRQ::ConstructPDV (const ULConnection &inConnection, const BaseRootQuery * inRootQuery)` [virtual]

Implements [gdcm::network::BaseCompositeMessage](#).

25.40.3 Member Data Documentation

25.40.3.1 `UIComp gdcm::network::CEchoRQ::AffectedSOPClassUID`

25.40.3.2 `uint16_t gdcm::network::CEchoRQ::MessageID`

The documentation for this class was generated from the following files:

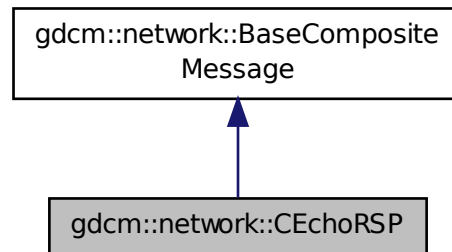
- [gdcmCEchoMessages.h](#)
- [gdcmDIMSE.h](#)

25.41 gdcm::network::CEchoRSP Class Reference

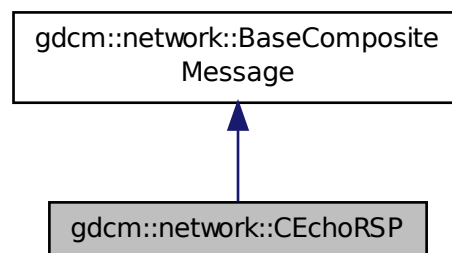
[CEchoRSP](#) this file defines the messages for the cecho action.

```
#include <gdcmCEchoMessages.h>
```

Inheritance diagram for `gdcm::network::CEchoRSP`:



Collaboration diagram for `gdcm::network::CEchoRSP`:



Public Member Functions

- `std::vector`
< `PresentationDataValue` > `ConstructPDVByDataSet` (const `DataSet` *inDataSet)

25.41.1 Detailed Description

`CEchoRSP` this file defines the messages for the cecho action.

25.41.2 Member Function Documentation

25.41.2.1 `std::vector<PresentationDataValue> gdcm::network::CEchoRSP::ConstructPDVByDataSet (const DataSet * inDataSet)`

The documentation for this class was generated from the following file:

- [gdcmCEchoMessages.h](#)

25.42 gdcm::network::CFind Class Reference

```
#include <gdcmDIMSE.h>
```

25.42.1 Detailed Description

PS 3.4 - 2009 [Table B.2-1](#) C-STORE STATUS

The documentation for this class was generated from the following file:

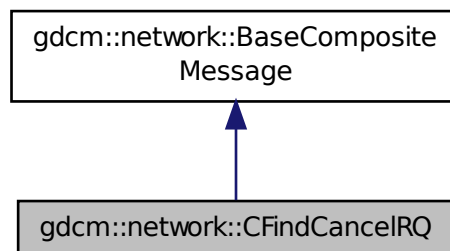
- [gdcmDIMSE.h](#)

25.43 gdcm::network::CFindCancelRQ Class Reference

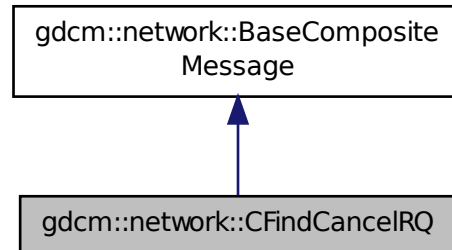
[CFindCancelRQ](#) this file defines the messages for the cfind action.

```
#include <gdcmCFindMessages.h>
```

Inheritance diagram for `gdcm::network::CFindCancelRQ`:



Collaboration diagram for `gdcm::network::CFindCancelRQ`:



Public Member Functions

- `std::vector`
`< PresentationDataValue > ConstructPDVByDataSet (const DataSet *inDataSet)`

25.43.1 Detailed Description

[CFindCancelRQ](#) this file defines the messages for the cfind action.

25.43.2 Member Function Documentation

25.43.2.1 `std::vector<PresentationDataValue> gdcm::network::CFindCancelRQ::ConstructPDVByDataSet (const DataSet *inDataSet)`

The documentation for this class was generated from the following file:

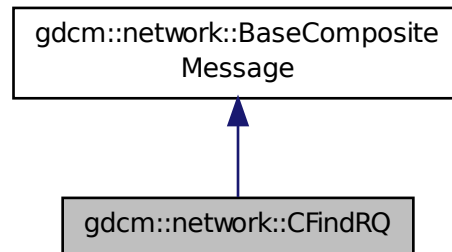
- [gdcmCFindMessages.h](#)

25.44 gdcm::network::CFindRQ Class Reference

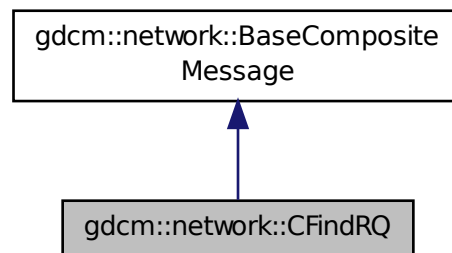
[CFindRQ](#) this file defines the messages for the cfind action.

```
#include <gdcmCFindMessages.h>
```


Inheritance diagram for gdcmm::network::CFindRQ:



Collaboration diagram for gdcmm::network::CFindRQ:



Public Member Functions

- `std::vector`
`< PresentationDataValue > ConstructPDV` (const [ULConnection](#) &inConnection, const [BaseRootQuery](#) *inRootQuery)

25.44.1 Detailed Description

[CFindRQ](#) this file defines the messages for the cfind action.

25.44.2 Member Function Documentation

25.44.2.1 `std::vector<PresentationDataValue> gdcm::network::CFindRQ::ConstructPDV (const ULConnection & inConnection, const BaseRootQuery * inRootQuery) [virtual]`

Implements [gdcm::network::BaseCompositeMessage](#).

The documentation for this class was generated from the following file:

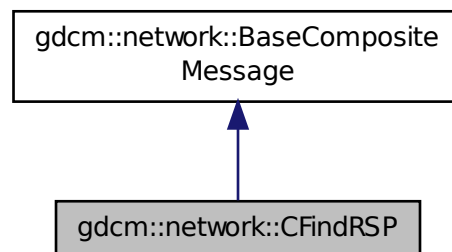
- [gdcmCFindMessages.h](#)

25.45 gdcm::network::CFindRSP Class Reference

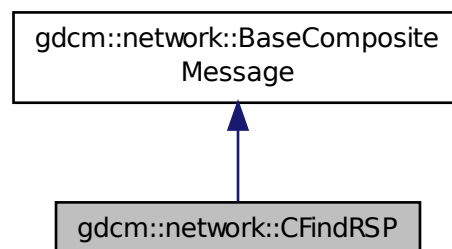
[CFindRSP](#) this file defines the messages for the cfind action.

```
#include <gdcmCFindMessages.h>
```

Inheritance diagram for `gdcm::network::CFindRSP`:



Collaboration diagram for `gdcm::network::CFindRSP`:



Public Member Functions

- `std::vector`
< [PresentationDataValue](#) > [ConstructPDVByDataSet](#) (const [DataSet](#) *inDataSet)

25.45.1 Detailed Description

[CFindRSP](#) this file defines the messages for the cfind action.

25.45.2 Member Function Documentation

25.45.2.1 `std::vector<PresentationDataValue> gdcm::network::CFindRSP::ConstructPDVByDataSet (const DataSet *inDataSet)`

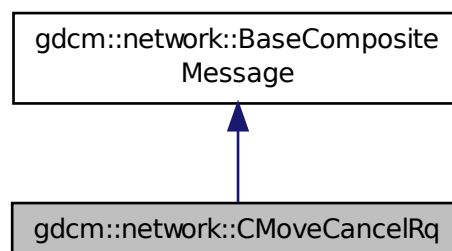
The documentation for this class was generated from the following file:

- [gdcmCFindMessages.h](#)

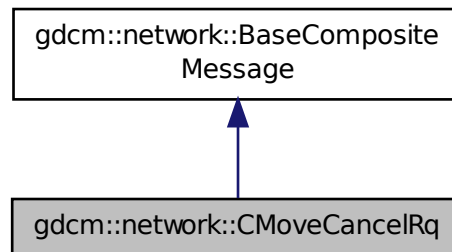
25.46 gdcm::network::CMoveCancelRq Class Reference

```
#include <gdcmCMoveMessages.h>
```

Inheritance diagram for `gdcm::network::CMoveCancelRq`:



Collaboration diagram for `gdcm::network::CMoveCancelRq`:



Public Member Functions

- `std::vector`
`< PresentationDataValue > ConstructPDVByDataSet (const DataSet *inDataSet)`

25.46.1 Member Function Documentation

25.46.1.1 `std::vector<PresentationDataValue> gdcm::network::CMoveCancelRq::ConstructPDVByDataSet (const DataSet *inDataSet)`

The documentation for this class was generated from the following file:

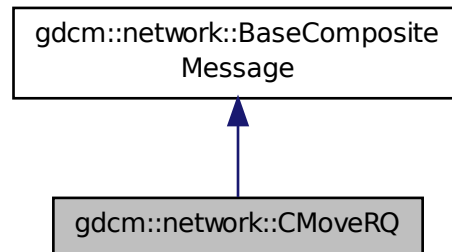
- [gdcmCMoveMessages.h](#)

25.47 `gdcm::network::CMoveRQ` Class Reference

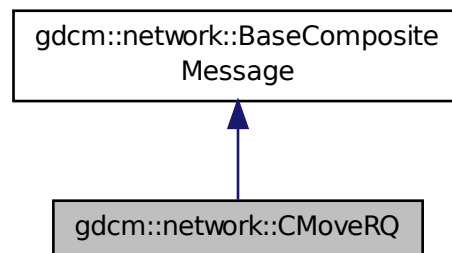
[CMoveRQ](#) this file defines the messages for the cmove action.

```
#include <gdcmCMoveMessages.h>
```

Inheritance diagram for gdcm::network::CMoveRQ:



Collaboration diagram for gdcm::network::CMoveRQ:



Public Member Functions

- `std::vector`
`< PresentationDataValue > ConstructPDV` (const [ULConnection](#) &inConnection, const [BaseRootQuery](#) *inRootQuery)

25.47.1 Detailed Description

[CMoveRQ](#) this file defines the messages for the cmove action.

25.47.2 Member Function Documentation

25.47.2.1 `std::vector<PresentationDataValue> gdcmm::network::CMoveRQ::ConstructPDV (const ULConnection & inConnection, const BaseRootQuery * inRootQuery) [virtual]`

Implements [gdcmm::network::BaseCompositeMessage](#).

The documentation for this class was generated from the following file:

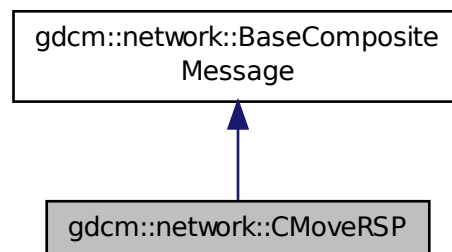
- [gdcmmCMoveMessages.h](#)

25.48 gdcmm::network::CMoveRSP Class Reference

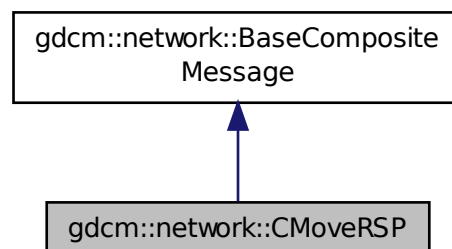
[CMoveRSP](#) this file defines the messages for the cmove action.

```
#include <gdcmmCMoveMessages.h>
```

Inheritance diagram for gdcmm::network::CMoveRSP:



Collaboration diagram for gdcmm::network::CMoveRSP:



- `std::vector`
`< PresentationDataValue > ConstructPDVByDataSet (const DataSet *inDataSet)`

CMoveRSP this file defines the messages for the cmove action.

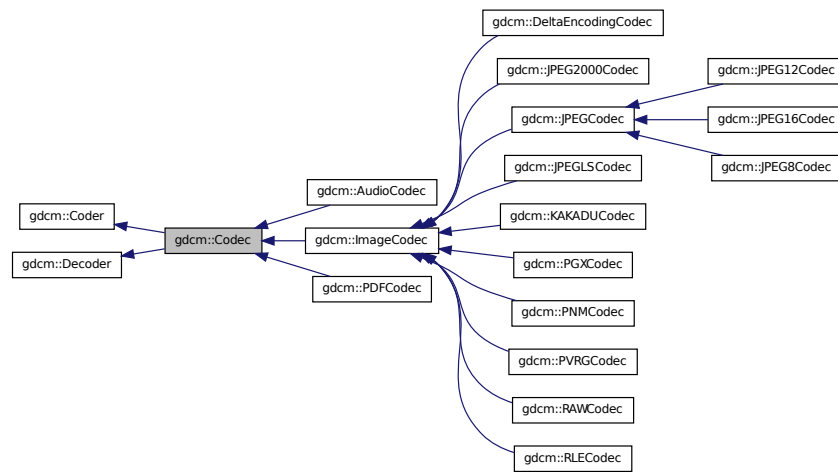
```
25.48.2.1 std::vector<PresentationDataValue> gdcmm::network::CMoveRSP::ConstructPDVByDataSet ( const DataSet *  
inDataSet )
```

- `gdcmCMoveMessages.h`

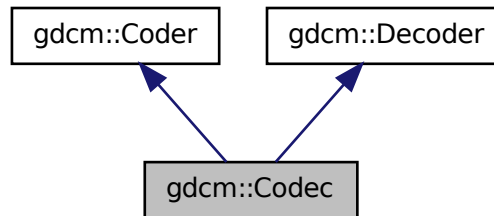
Codec class.

```
#include <gdcmCodec.h>
```

Inheritance diagram for `gdcm::Codec`:



Collaboration diagram for `gdcm::Codec`:



Additional Inherited Members

25.49.1 Detailed Description

[Codec](#) class.

The documentation for this class was generated from the following file:

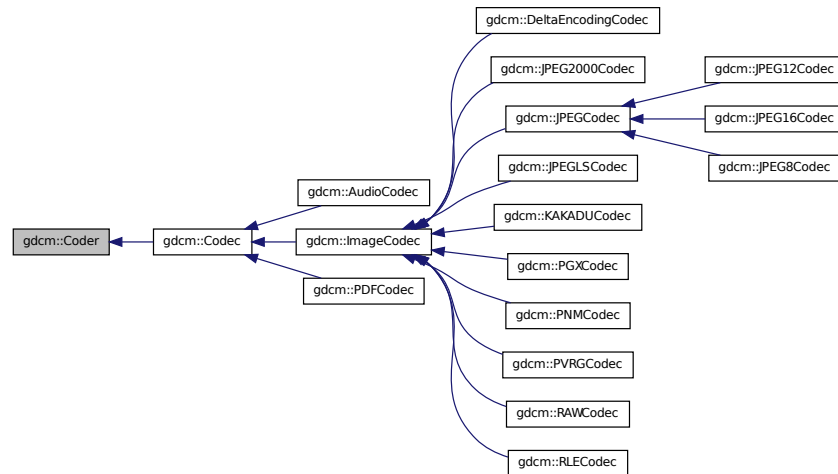
- [gdcmCodec.h](#)

25.50 `gdcm::Coder` Class Reference

[Coder](#).

```
#include <gdcmCoder.h>
```


Inheritance diagram for gdcm::Coder:



Public Member Functions

- virtual [~Coder](#) ()
- virtual bool [CanCode](#) ([TransferSyntax](#) const &) const =0
Return whether this coder support this transfer syntax (can code it)
- virtual bool [Code](#) ([DataElement](#) const &in_, [DataElement](#) &out_)
Code.

Protected Member Functions

- virtual bool [InternalCode](#) (const char *bv, unsigned long len, std::ostream &os)

25.50.1 Detailed Description

[Coder](#).

25.50.2 Constructor & Destructor Documentation

25.50.2.1 virtual gdcm::Coder::~Coder () [inline], [virtual]

25.50.3 Member Function Documentation

25.50.3.1 virtual bool gdcm::Coder::CanCode ([TransferSyntax](#) const &) const [pure virtual]

Return whether this coder support this transfer syntax (can code it)

Implemented in [gdcm::JPGCodec](#), [gdcm::RLECodec](#), [gdcm::PVRGCodec](#), [gdcm::JPG2000Codec](#), [gdcm::JPEGLSCodec](#), [gdcm::ImageCodec](#), [gdcm::PNMCodec](#), [gdcm::PGXCodec](#), [gdcm::KAKADUCoDec](#), [gdcm::RAWCodec](#), [gdcm::AudioCodec](#), and [gdcm::PDFCodec](#).

25.50.3.2 `virtual bool gdcm::Coder::Code (DataElement const & in_, DataElement & out_) [inline], [virtual]`

Code.

Reimplemented in [gdcm::JPEGCodec](#), [gdcm::RLECodec](#), [gdcm::JPEGLSCodec](#), [gdcm::PVRGCodec](#), [gdcm::JPE-G2000Codec](#), [gdcm::KAKADUCodec](#), and [gdcm::RAWCodec](#).

25.50.3.3 `virtual bool gdcm::Coder::InternalCode (const char * bv, unsigned long len, std::ostream & os) [inline], [protected], [virtual]`

Reimplemented in [gdcm::JPEG12Codec](#), [gdcm::JPEG16Codec](#), and [gdcm::JPEG8Codec](#).

The documentation for this class was generated from the following file:

- [gdcmCoder.h](#)

25.51 gdcm::CodeString Class Reference

[CodeString](#) This is an implementation of DICOM VR: CS The ctor will properly Trim so that operator== is correct.

```
#include <gdcmCodeString.h>
```

Public Types

- typedef [InternalClass::const_iterator](#) [const_iterator](#)
- typedef [InternalClass::const_reference](#) [const_reference](#)
- typedef [InternalClass::const_reverse_iterator](#) [const_reverse_iterator](#)
- typedef [InternalClass::difference_type](#) [difference_type](#)
- typedef [InternalClass::iterator](#) [iterator](#)
- typedef [InternalClass::pointer](#) [pointer](#)
- typedef [InternalClass::reference](#) [reference](#)
- typedef [InternalClass::reverse_iterator](#) [reverse_iterator](#)
- typedef [InternalClass::size_type](#) [size_type](#)
- typedef [InternalClass::value_type](#) [value_type](#)

Public Member Functions

- [CodeString](#) ()
CodeString constructors.
- [CodeString](#) (const [value_type](#) *s)
- [CodeString](#) (const [value_type](#) *s, [size_type](#) n)
- [CodeString](#) (const [InternalClass](#) &s, [size_type](#) pos=0, [size_type](#) n=[InternalClass::npos](#))
- `std::string GetAsString () const`
Return the full code string as std::string.
- `bool IsValid () const`

Check if [CodeString](#) obj is correct..

- [size_type](#) [Size](#) () const

Return the size of the string.

Protected Member Functions

- std::string [TrimInternal](#) () const

Friends

- bool [operator!=](#) (const [CodeString](#) &ref, const [CodeString](#) &cs)
- std::ostream & [operator<<](#) (std::ostream &os, const [CodeString](#) &str)
- bool [operator==](#) (const [CodeString](#) &ref, const [CodeString](#) &cs)

25.51.1 Detailed Description

[CodeString](#) This is an implementation of DICOM [VR: CS](#) The ctor will properly Trim so that [operator==](#) is correct.

Note

the ctor of [CodeString](#) will Trim the string on the fly so as to remove the extra leading and ending spaces. However it will not perform validation on the fly ([CodeString](#) obj can contains invalid char such as lower cases). This design was chosen to be a little tolerant to broken DICOM implementation, and thus allow user to compare lower case CS from there input file without the need to first rewrite them to get rid of invalid character (validation is a different operation from searching, querying).

Warning

when writing out DICOM file it is highly recommended to perform the [IsValid\(\)](#) call, at least to check that the length of the string match the definition in the standard.

25.51.2 Member Typedef Documentation

25.51.2.1 typedef InternalClass::const_iterator gdcm::CodeString::const_iterator

25.51.2.2 typedef InternalClass::const_reference gdcm::CodeString::const_reference

25.51.2.3 typedef InternalClass::const_reverse_iterator gdcm::CodeString::const_reverse_iterator

25.51.2.4 typedef InternalClass::difference_type gdcm::CodeString::difference_type

25.51.2.5 typedef InternalClass::iterator gdcm::CodeString::iterator

25.51.2.6 typedef InternalClass::pointer gdcm::CodeString::pointer

25.51.2.7 typedef InternalClass::reference gdcm::CodeString::reference

25.51.2.8 typedef InternalClass::reverse_iterator gdcm::CodeString::reverse_iterator

25.51.2.9 `typedef InternalClass::size_type gdcm::CodeString::size_type`

25.51.2.10 `typedef InternalClass::value_type gdcm::CodeString::value_type`

25.51.3 Constructor & Destructor Documentation

25.51.3.1 `gdcm::CodeString::CodeString () [inline]`

[CodeString](#) constructors.

25.51.3.2 `gdcm::CodeString::CodeString (const value_type * s) [inline]`

25.51.3.3 `gdcm::CodeString::CodeString (const value_type * s, size_type n) [inline]`

25.51.3.4 `gdcm::CodeString::CodeString (const InternalClass & s, size_type pos = 0, size_type n = InternalClass::npos) [inline]`

25.51.4 Member Function Documentation

25.51.4.1 `std::string gdcm::CodeString::GetAsString () const [inline]`

Return the full code string as std::string.

25.51.4.2 `bool gdcm::CodeString::IsValid () const`

Check if [CodeString](#) obj is correct..

25.51.4.3 `size_type gdcm::CodeString::Size () const [inline]`

Return the size of the string.

25.51.4.4 `std::string gdcm::CodeString::TrimInternal () const [inline],[protected]`

25.51.5 Friends And Related Function Documentation

25.51.5.1 `bool operator!= (const CodeString & ref, const CodeString & cs) [friend]`

25.51.5.2 `std::ostream& operator<< (std::ostream & os, const CodeString & str) [friend]`

25.51.5.3 `bool operator== (const CodeString & ref, const CodeString & cs) [friend]`

The documentation for this class was generated from the following file:

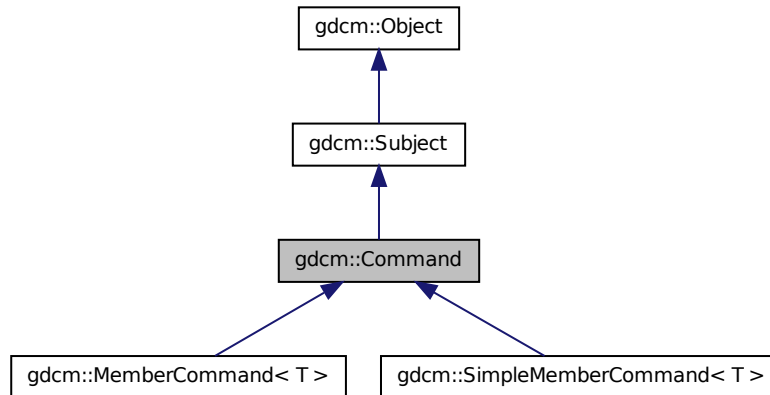
- [gdcmCodeString.h](#)

25.52 gdcm::Command Class Reference

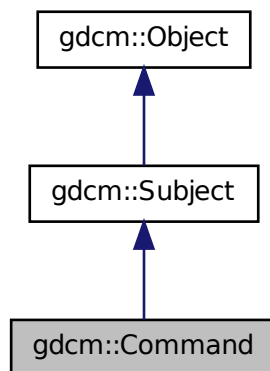
[Command](#) superclass for callback/observer methods.

```
#include <gdcmCommand.h>
```

Inheritance diagram for gdcm::Command:



Collaboration diagram for gdcm::Command:



Public Member Functions

- virtual void `Execute` (`Subject` *caller, const `Event` &event)=0
Abstract method that defines the action to be taken by the command.
- virtual void `Execute` (const `Subject` *caller, const `Event` &event)=0

Protected Member Functions

- [Command\(\)](#)
- [~Command\(\)](#)

25.52.1 Detailed Description

[Command](#) superclass for callback/observer methods.

See Also

[Subject](#)

25.52.2 Constructor & Destructor Documentation

25.52.2.1 `gdcM::Command::Command()` [protected]

25.52.2.2 `gdcM::Command::~~Command()` [protected]

25.52.3 Member Function Documentation

25.52.3.1 `virtual void gdcM::Command::Execute(Subject * caller, const Event & event)` [pure virtual]

Abstract method that defines the action to be taken by the command.

Implemented in [gdcM::SimpleMemberCommand< T >](#), and [gdcM::MemberCommand< T >](#).

25.52.3.2 `virtual void gdcM::Command::Execute(const Subject * caller, const Event & event)` [pure virtual]

Abstract method that defines the action to be taken by the command. This variant is expected to be used when requests comes from a const [Object](#)

Implemented in [gdcM::SimpleMemberCommand< T >](#), and [gdcM::MemberCommand< T >](#).

The documentation for this class was generated from the following file:

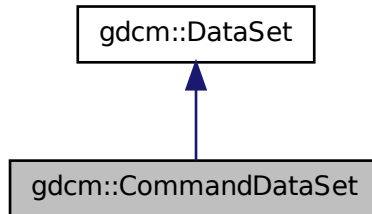
- [gdcMCommand.h](#)

25.53 gdcM::CommandDataSet Class Reference

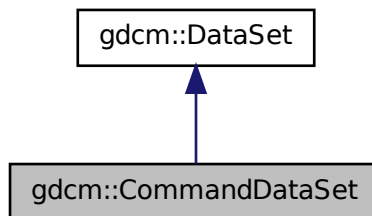
Class to represent a [Command DataSet](#).

```
#include <gdcMCommandDataSet.h>
```

Inheritance diagram for gdcm::CommandDataSet:



Collaboration diagram for gdcm::CommandDataSet:



Public Member Functions

- [CommandDataSet](#) ()
- [~CommandDataSet](#) ()
- void [Insert](#) (const [DataElement](#) &de)
- std::istream & [Read](#) (std::istream &is)
Read.
- void [Replace](#) (const [DataElement](#) &de)
- std::ostream & [Write](#) (std::ostream &os) const
Write.

Friends

- std::ostream & [operator<<](#) (std::ostream &_os, const [CommandDataSet](#) &_val)

Additional Inherited Members

25.53.1 Detailed Description

Class to represent a [Command DataSet](#).

See Also

[DataSet](#)

25.53.2 Constructor & Destructor Documentation

25.53.2.1 `gdcm::CommandDataSet::CommandDataSet ()` `[inline]`

25.53.2.2 `gdcm::CommandDataSet::~~CommandDataSet ()` `[inline]`

25.53.3 Member Function Documentation

25.53.3.1 `void gdcm::CommandDataSet::Insert (const DataElement & de)` `[inline]`

References `gdcmErrorMacro`, `gdcm::Tag::GetGroup()`, and `gdcm::DataElement::GetTag()`.

25.53.3.2 `std::istream& gdcm::CommandDataSet::Read (std::istream & is)`

Read.

25.53.3.3 `void gdcm::CommandDataSet::Replace (const DataElement & de)` `[inline]`

References `gdcm::DataElement::GetTag()`.

25.53.3.4 `std::ostream& gdcm::CommandDataSet::Write (std::ostream & os) const`

Write.

25.53.4 Friends And Related Function Documentation

25.53.4.1 `std::ostream& operator<< (std::ostream & _os, const CommandDataSet & _val)` `[friend]`

The documentation for this class was generated from the following file:

- [gdcmCommandDataSet.h](#)

25.54 gdcm::network::CompositeMessageFactory Class Reference

[CompositeMessageFactory](#) This class constructs PDataPDUs, but that have been specifically constructed for the composite DICOM services (C-Echo, C-Find, C-Get, C-Move, and C-Store). It will also handle parsing the incoming data to determine which of the CompositePDUs the incoming data is, and so therefore allowing the scu to determine what to do with incoming data (if acting as a storescp server, for instance).


```
#include <gdcmCompositeMessageFactory.h>
```

Static Public Member Functions

- static std::vector
< [PresentationDataValue](#) > [ConstructCEchoRQ](#) (const [ULConnection](#) &inConnection)
- static std::vector
< [PresentationDataValue](#) > [ConstructCFindRQ](#) (const [ULConnection](#) &inConnection, const [BaseRootQuery](#) *inRootQuery)
- static std::vector
< [PresentationDataValue](#) > [ConstructCMoveRQ](#) (const [ULConnection](#) &inConnection, const [BaseRootQuery](#) *inRootQuery)
- static std::vector
< [PresentationDataValue](#) > [ConstructCStoreRQ](#) (const [ULConnection](#) &inConnection, const [File](#) &file)
- static std::vector
< [PresentationDataValue](#) > [ConstructCStoreRSP](#) (const [DataSet](#) *inDataSet, const [BasePDU](#) *inPC)

25.54.1 Detailed Description

[CompositeMessageFactory](#) This class constructs PDataPDUs, but that have been specifically constructed for the composite DICOM services (C-Echo, C-Find, C-Get, C-Move, and C-Store). It will also handle parsing the incoming data to determine which of the CompositePDUs the incoming data is, and so therefore allowing the scu to determine what to do with incoming data (if acting as a storescp server, for instance).

25.54.2 Member Function Documentation

- 25.54.2.1 static std::vector<[PresentationDataValue](#)> gdcm::network::CompositeMessageFactory::ConstructCEchoRQ (const [ULConnection](#) & *inConnection*) [static]
- 25.54.2.2 static std::vector<[PresentationDataValue](#)> gdcm::network::CompositeMessageFactory::ConstructCFindRQ (const [ULConnection](#) & *inConnection*, const [BaseRootQuery](#) * *inRootQuery*) [static]
- 25.54.2.3 static std::vector<[PresentationDataValue](#)> gdcm::network::CompositeMessageFactory::ConstructCMoveRQ (const [ULConnection](#) & *inConnection*, const [BaseRootQuery](#) * *inRootQuery*) [static]
- 25.54.2.4 static std::vector<[PresentationDataValue](#)> gdcm::network::CompositeMessageFactory::ConstructCStoreRQ (const [ULConnection](#) & *inConnection*, const [File](#) & *file*) [static]
- 25.54.2.5 static std::vector<[PresentationDataValue](#)> gdcm::network::CompositeMessageFactory::ConstructCStoreRSP (const [DataSet](#) * *inDataSet*, const [BasePDU](#) * *inPC*) [static]

The documentation for this class was generated from the following file:

- [gdcmCompositeMessageFactory.h](#)

25.55 gdcm::CompositeNetworkFunctions Class Reference

Composite Network Functions These functions provide a generic API to the DICOM functions implemented in GDCM. Advanced users can use this code as a template for building their own versions of these functions (for instance, to

provide progress bars or some other way of handling returned query information), but for most users, these functions should be sufficient to interface with a PACS to a local machine. Note that these functions are not contained within a static class or some other class-style interface, because multiple connections can be instantiated in the same program. The DICOM standard is much more function oriented rather than class oriented in this instance, so the design of this API reflects that functional approach. These functions implements the following SCU operations:

```
#include <gdcmCompositeNetworkFunctions.h>
```

Public Types

- typedef std::vector
 < [KeyValuePairType](#) > [KeyValuePairArrayType](#)
- typedef std::pair< [Tag](#),
 std::string > [KeyValuePairType](#)

Static Public Member Functions

- static bool [CEcho](#) (const char *remote, uint16_t portno, const char *aetitle=NULL, const char *call=NULL)
- static bool [CFind](#) (const char *remote, uint16_t portno, const [BaseRootQuery](#) *query, std::vector< [DataSet](#) > &retDataSets, const char *aetitle=NULL, const char *call=NULL)
- static bool [CMove](#) (const char *remote, uint16_t portno, const [BaseRootQuery](#) *query, uint16_t portscp, const char *aetitle=NULL, const char *call=NULL, const char *outputdir=NULL)
- static [BaseRootQuery](#) * [ConstructQuery](#) ([ERootType](#) inRootType, [EQueryLevel](#) inQueryLevel, const [DataSet](#) &queryds, bool inMove=false)
- static [BaseRootQuery](#) * [ConstructQuery](#) ([ERootType](#) inRootType, [EQueryLevel](#) inQueryLevel, const [KeyValuePairArrayType](#) &keys, bool inMove=false)
- static bool [CStore](#) (const char *remote, uint16_t portno, const [Directory::FileNamesType](#) &filenames, const char *aetitle=NULL, const char *call=NULL)

25.55.1 Detailed Description

Composite Network Functions These functions provide a generic API to the DICOM functions implemented in GDCM. Advanced users can use this code as a template for building their own versions of these functions (for instance, to provide progress bars or some other way of handling returned query information), but for most users, these functions should be sufficient to interface with a PACS to a local machine. Note that these functions are not contained within a static class or some other class-style interface, because multiple connections can be instantiated in the same program. The DICOM standard is much more function oriented rather than class oriented in this instance, so the design of this API reflects that functional approach. These functions implements the following SCU operations:

- C-ECHO SCU
- C-FIND SCU
- C-STORE SCU
- C-MOVE SCU (+internal C-STORE SCP)

25.55.2 Member Typedef Documentation

25.55.2.1 typedef std::vector< [KeyValuePairType](#) > [gdcm::CompositeNetworkFunctions::KeyValuePairArrayType](#)

25.55.2.2 `typedef std::pair<Tag, std::string> gdcm::CompositeNetworkFunctions::KeyValuePairType`

25.55.3 Member Function Documentation

25.55.3.1 `static bool gdcm::CompositeNetworkFunctions::CEcho (const char * remote, uint16_t portno, const char * aetitle = NULL, const char * call = NULL) [static]`

The most basic network function. Use this function to ensure that the remote server is responding on the given IP and port number as expected.

Parameters

<i>aetitle</i>	when not set will default to 'GDCMSCU'
<i>call</i>	when not set will default to 'ANY-SCP' This is an error to set remote to NULL or portno to 0

Returns

true if it worked.

25.55.3.2 `static bool gdcm::CompositeNetworkFunctions::CFind (const char * remote, uint16_t portno, const BaseRootQuery * query, std::vector< DataSet > & retDataSets, const char * aetitle = NULL, const char * call = NULL) [static]`

This function will use the provided query to determine what files a remote server contains that match the query strings. The return is a vector of datasets that contain tags as reported by the server. If the dataset is empty, then it is possible that an error condition was encountered; in which case, the user should monitor the error and warning streams.

Parameters

<i>aetitle</i>	when not set will default to 'GDCMSCU'
<i>call</i>	when not set will default to 'ANY-SCP' This is an error to set remote to NULL or portno to 0

Returns

true if it worked.

25.55.3.3 `static bool gdcm::CompositeNetworkFunctions::CMove (const char * remote, uint16_t portno, const BaseRootQuery * query, uint16_t portscp, const char * aetitle = NULL, const char * call = NULL, const char * outputdir = NULL) [static]`

This function will use the provided query to get files from a remote server. NOTE that this functionality is essentially equivalent to C-GET in the DICOM standard; however, C-GET has been deprecated, so this function allows for the user to ask a remote server for files matching a query and return them to the local machine. Files will be written to the given output directory. If the operation succeeds, the function returns true. This function is a prime candidate for being overwritten by expert users; if the datasets should remain in memory, for instance, that behavior can be changed by creating a user-level version of this function.

Parameters

<i>aetitle</i>	when not set will default to 'GDCMSCU'
----------------	--

<i>call</i>	when not set will default to 'ANY-SCP' This is an error to set remote to NULL or portno to 0 when
<i>outputdir</i>	is not set default to current dir ('.')

Returns

true if it worked.

25.55.3.4 `static BaseRootQuery* gdcM::CompositeNetworkFunctions::ConstructQuery (ERootType inRootType, EQueryLevel inQueryLevel, const DataSet & queryds, bool inMove = false) [static]`

This function will take a list of strings and tags and fill in a query that can be used for either CFind or CMove (depending on the input boolean

Parameters

<i>inMove</i>).	Note that the caller is responsible for deleting the constructed query. This function is used to build both a move and a find query (true for inMove if it's move, false if it's find)
------------------	--

25.55.3.5 `static BaseRootQuery* gdcM::CompositeNetworkFunctions::ConstructQuery (ERootType inRootType, EQueryLevel inQueryLevel, const KeyValuePairArrayType & keys, bool inMove = false) [static]`

Deprecated

25.55.3.6 `static bool gdcM::CompositeNetworkFunctions::CStore (const char * remote, uint16_t portno, const Directory::FileNamesType & filenames, const char * aetitle = NULL, const char * call = NULL) [static]`

This function will place the provided files into the remote server. The function returns true if it worked for all files.

Warning

the server side can refuse an association on a given file

Parameters

<i>aetitle</i>	when not set will default to 'GDCMSCU'
<i>call</i>	when not set will default to 'ANY-SCP' This is an error to set remote to NULL or portno to 0

Returns

true if it worked for all files

The documentation for this class was generated from the following file:

- [gdcMCompositeNetworkFunctions.h](#)

25.56 gdcM::ConstCharWrapper Class Reference

Do not use me.

```
#include <gdcMConstCharWrapper.h>
```

Public Member Functions

- [ConstCharWrapper](#) (const char *i=0)
- [operator const char * \(\)](#) const

25.56.1 Detailed Description

Do not use me.

25.56.2 Constructor & Destructor Documentation

25.56.2.1 `gdcm::ConstCharWrapper::ConstCharWrapper (const char * i = 0)` `[inline]`

25.56.3 Member Function Documentation

25.56.3.1 `gdcm::ConstCharWrapper::operator const char * ()` const `[inline]`

The documentation for this class was generated from the following file:

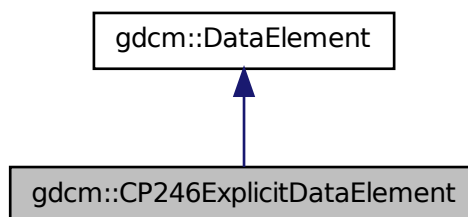
- [gdcmConstCharWrapper.h](#)

25.57 gdcm::CP246ExplicitDataElement Class Reference

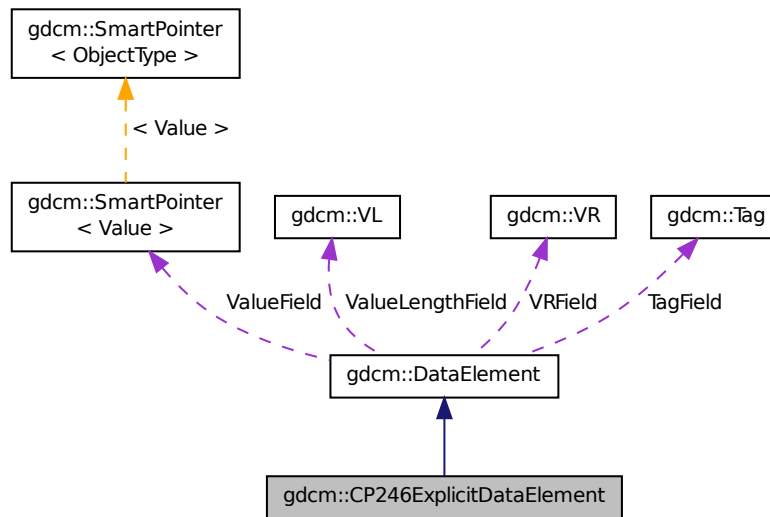
Class to read/write a [DataElement](#) as CP246Explicit Data [Element](#).

```
#include <gdcmCP246ExplicitDataElement.h>
```

Inheritance diagram for `gdcm::CP246ExplicitDataElement`:



Collaboration diagram for `gdcm::CP246ExplicitDataElement`:



Public Member Functions

- [VL GetLength](#) () const
- template<typename TSwap >
std::istream & [Read](#) (std::istream &is)
- template<typename TSwap >
std::istream & [ReadPreValue](#) (std::istream &is)
- template<typename TSwap >
std::istream & [ReadValue](#) (std::istream &is)
- template<typename TSwap >
std::istream & [ReadWithLength](#) (std::istream &is, [VL](#) &length)

Additional Inherited Members

25.57.1 Detailed Description

Class to read/write a [DataElement](#) as CP246Explicit Data [Element](#).

Note

Some system are producing SQ, declare them as UN, but encode the SQ as 'Explicit' instead of Implicit

25.57.2 Member Function Documentation

25.57.2.1 VL `gdcm::CP246ExplicitDataElement::GetLength` () const

25.57.2.2 `template<typename TSwap> std::istream& gdcm::CP246ExplicitDataElement::Read (std::istream & is)`

25.57.2.3 `template<typename TSwap> std::istream& gdcm::CP246ExplicitDataElement::ReadPreValue (std::istream & is)`

25.57.2.4 `template<typename TSwap> std::istream& gdcm::CP246ExplicitDataElement::ReadValue (std::istream & is)`

25.57.2.5 `template<typename TSwap> std::istream& gdcm::CP246ExplicitDataElement::ReadWithLength (std::istream & is, VL & length)`

The documentation for this class was generated from the following file:

- [gdcmCP246ExplicitDataElement.h](#)

25.58 gdcm::CryptographicMessageSyntax Class Reference

Class for [CryptographicMessageSyntax](#) encryption. This is just a simple wrapper around openssl PKCS7_encrypt functionalities.

```
#include <gdcmCryptographicMessageSyntax.h>
```

Public Types

- enum [CipherTypes](#) {
[DES_CIPHER](#),
[DES3_CIPHER](#),
[AES128_CIPHER](#),
[AES192_CIPHER](#),
[AES256_CIPHER](#) }

Public Member Functions

- [CryptographicMessageSyntax](#) ()
- [~CryptographicMessageSyntax](#) ()
- bool [Decrypt](#) (char *output, size_t &outlen, const char *array, size_t len) const
decrypt content from a PKCS#7 envelopedData structure
- bool [Encrypt](#) (char *output, size_t &outlen, const char *array, size_t len) const
create a PKCS#7 envelopedData structure
- [CipherTypes](#) [GetCipherType](#) () const
- bool [ParseCertificateFile](#) (const char *filename)
- bool [ParseKeyFile](#) (const char *filename)
- void [SetCipherType](#) ([CipherTypes](#) type)

25.58.1 Detailed Description

Class for [CryptographicMessageSyntax](#) encryption. This is just a simple wrapper around openssl PKCS7_encrypt functionalities.

See online documentation http://www.openssl.org/docs/crypto/PKCS7_encrypt.html

25.58.2 Member Enumeration Documentation

25.58.2.1 enum gdcm::CryptographicMessageSyntax::CipherTypes

Enumerator

DES_CIPHER
DES3_CIPHER
AES128_CIPHER
AES192_CIPHER
AES256_CIPHER

25.58.3 Constructor & Destructor Documentation

25.58.3.1 gdcm::CryptographicMessageSyntax::CryptographicMessageSyntax ()

25.58.3.2 gdcm::CryptographicMessageSyntax::~~CryptographicMessageSyntax ()

25.58.4 Member Function Documentation

25.58.4.1 bool gdcm::CryptographicMessageSyntax::Decrypt (char * *output*, size_t & *outlen*, const char * *array*, size_t *len*) const

decrypt content from a PKCS#7 envelopedData structure

25.58.4.2 bool gdcm::CryptographicMessageSyntax::Encrypt (char * *output*, size_t & *outlen*, const char * *array*, size_t *len*) const

create a PKCS#7 envelopedData structure

25.58.4.3 CipherTypes gdcm::CryptographicMessageSyntax::GetCipherType () const

25.58.4.4 bool gdcm::CryptographicMessageSyntax::ParseCertificateFile (const char * *filename*)

25.58.4.5 bool gdcm::CryptographicMessageSyntax::ParseKeyFile (const char * *filename*)

25.58.4.6 void gdcm::CryptographicMessageSyntax::SetCipherType (CipherTypes *type*)

Set Cipher [Type](#). Default is: AES256_CIPHER

The documentation for this class was generated from the following file:

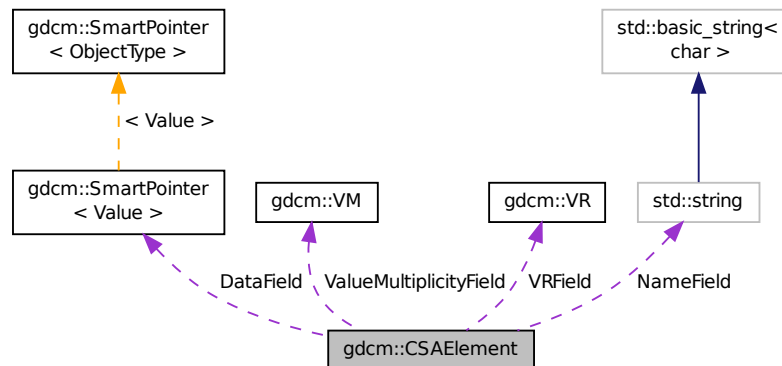
- [gdcmCryptographicMessageSyntax.h](#)

25.59 gdcm::CSAElement Class Reference

Class to represent a CSA [Element](#).

```
#include <gdcmCSAElement.h>
```


Collaboration diagram for gdcm::CSAElement:



Public Member Functions

- [CSAElement](#) (unsigned int kf=0)
- [CSAElement](#) (const [CSAElement](#) &_val)
- const [ByteValue](#) * [GetByteValue](#) () const
- unsigned int [GetKey](#) () const
Set/Get Key.
- const char * [GetName](#) () const
Set/Get Name.
- unsigned int [GetNoOfItems](#) () const
Set/Get NoOfItems.
- unsigned int [GetSyngoDT](#) () const
Set/Get SyngoDT.
- [Value](#) const & [GetValue](#) () const
Set/Get Value (bytes array, SQ of items, SQ of fragments):
- [Value](#) & [GetValue](#) ()
- const [VM](#) & [GetVM](#) () const
Set/Get VM.
- [VR](#) const & [GetVR](#) () const
Set/Get VR.
- bool [IsEmpty](#) () const
Check if CSA Element is empty.
- bool [operator<](#) (const [CSAElement](#) &de) const
- [CSAElement](#) & [operator=](#) (const [CSAElement](#) &de)
- bool [operator==](#) (const [CSAElement](#) &de) const
- void [SetByteValue](#) (const char *array, [VL](#) length)
Set.
- void [SetKey](#) (unsigned int key)
- void [SetName](#) (const char *name)
- void [SetNoOfItems](#) (unsigned int items)

- void [SetSyngoDT](#) (unsigned int syngodt)
- void [SetValue](#) ([Value](#) const &vl)
- void [SetVM](#) (const [VM](#) &vm)
- void [SetVR](#) ([VR](#) const &vr)

Protected Types

- typedef [SmartPointer](#)< [Value](#) > [DataPtr](#)

Protected Attributes

- [DataPtr](#) [DataField](#)
- unsigned int [KeyField](#)
- std::string [NameField](#)
- unsigned int [NoOfItemsField](#)
- unsigned int [SyngoDTField](#)
- [VM](#) [ValueMultiplicityField](#)
- [VR](#) [VRField](#)

Friends

- std::ostream & [operator<<](#) (std::ostream &os, const [CSAElement](#) &val)

25.59.1 Detailed Description

Class to represent a CSA [Element](#).

See Also

[CSAHeader](#)

Examples:

[csa2img.cxx](#), and [MrProtocol.cxx](#).

25.59.2 Member Typedef Documentation

25.59.2.1 typedef [SmartPointer](#)<[Value](#)> [gdcm::CSAElement::DataPtr](#) [protected]

25.59.3 Constructor & Destructor Documentation

25.59.3.1 [gdcm::CSAElement::CSAElement](#) (unsigned int *kf* = 0) [inline]

25.59.3.2 [gdcm::CSAElement::CSAElement](#) (const [CSAElement](#) &*_val*) [inline]

25.59.4 Member Function Documentation

25.59.4.1 const [ByteValue](#)* [gdcm::CSAElement::GetByteValue](#) () const [inline]

Return the [Value](#) of [CSAElement](#) as a [ByteValue](#) (if possible)

Warning

: You need to check for NULL return value

Examples:

[MrProtocol.cxx](#).

25.59.4.2 `unsigned int gdcm::CSAElement::GetKey () const [inline]`

Set/Get Key.

Referenced by operator<().

25.59.4.3 `const char* gdcm::CSAElement::GetName () const [inline]`

Set/Get Name.

25.59.4.4 `unsigned int gdcm::CSAElement::GetNoOfItems () const [inline]`

Set/Get NoOfItems.

25.59.4.5 `unsigned int gdcm::CSAElement::GetSyngoDT () const [inline]`

Set/Get SyngoDT.

25.59.4.6 `Value const& gdcm::CSAElement::GetValue () const [inline]`

Set/Get [Value](#) (bytes array, SQ of items, SQ of fragments):

Examples:

[csa2img.cxx](#).

25.59.4.7 `Value& gdcm::CSAElement::GetValue () [inline]`

25.59.4.8 `const VM& gdcm::CSAElement::GetVM () const [inline]`

Set/Get [VM](#).

25.59.4.9 `VR const& gdcm::CSAElement::GetVR () const [inline]`

Set/Get [VR](#).

25.59.4.10 `bool gdcm::CSAElement::IsEmpty () const [inline]`

Check if CSA [Element](#) is empty.

Examples:

[csa2img.cxx](#).

25.59.4.11 `bool gdcM::CSAElement::operator< (const CSAElement & de) const` `[inline]`

References `GetKey()`.

25.59.4.12 `CSAElement& gdcM::CSAElement::operator= (const CSAElement & de)` `[inline]`

References `DataField`, `KeyField`, `NameField`, `NoOfItemsField`, `SyngoDTField`, `ValueMultiplicityField`, and `VRField`.

25.59.4.13 `bool gdcM::CSAElement::operator== (const CSAElement & de) const` `[inline]`

References `KeyField`, `NameField`, `SyngoDTField`, `ValueMultiplicityField`, and `VRField`.

25.59.4.14 `void gdcM::CSAElement::SetByteValue (const char * array, VL length)` `[inline]`

Set.

25.59.4.15 `void gdcM::CSAElement::SetKey (unsigned int key)` `[inline]`

25.59.4.16 `void gdcM::CSAElement::SetName (const char * name)` `[inline]`

25.59.4.17 `void gdcM::CSAElement::SetNoOfItems (unsigned int items)` `[inline]`

25.59.4.18 `void gdcM::CSAElement::SetSyngoDT (unsigned int syngodt)` `[inline]`

25.59.4.19 `void gdcM::CSAElement::SetValue (Value const & vl)` `[inline]`

25.59.4.20 `void gdcM::CSAElement::SetVM (const VM & vm)` `[inline]`

25.59.4.21 `void gdcM::CSAElement::SetVR (VR const & vr)` `[inline]`

25.59.5 Friends And Related Function Documentation

25.59.5.1 `std::ostream& operator<< (std::ostream & os, const CSAElement & val)` `[friend]`

25.59.6 Member Data Documentation

25.59.6.1 `DataPtr gdcM::CSAElement::DataField` `[protected]`

Referenced by `gdcM::operator<<()`, and `operator=()`.

25.59.6.2 `unsigned int gdcM::CSAElement::KeyField` `[protected]`

Referenced by `gdcM::operator<<()`, `operator=()`, and `operator==()`.

25.59.6.3 `std::string gdcm::CSAElement::NameField` [protected]

Referenced by `gdcm::operator<<()`, `operator=()`, and `operator==()`.

25.59.6.4 `unsigned int gdcm::CSAElement::NoOfItemsField` [protected]

Referenced by `gdcm::operator<<()`, and `operator=()`.

25.59.6.5 `unsigned int gdcm::CSAElement::SyngoDTField` [protected]

Referenced by `gdcm::operator<<()`, `operator=()`, and `operator==()`.

25.59.6.6 `VM gdcm::CSAElement::ValueMultiplicityField` [protected]

Referenced by `gdcm::operator<<()`, `operator=()`, and `operator==()`.

25.59.6.7 `VR gdcm::CSAElement::VRField` [protected]

Referenced by `gdcm::operator<<()`, `operator=()`, and `operator==()`.

The documentation for this class was generated from the following file:

- [gdcmCSAElement.h](#)

25.60 gdcm::CSAHeader Class Reference

Class for [CSAHeader](#).

```
#include <gdcmCSAHeader.h>
```

Public Types

- enum [CSAHeaderType](#) {
`UNKNOWN` = 0,
`SV10`,
`NOMAGIC`,
`DATASET_FORMAT`,
`INTERFILE`,
`ZEROED_OUT` }

Divers format of [CSAHeader](#) as found 'in the wild'.

Public Member Functions

- [CSAHeader](#) ()
- [~CSAHeader](#) ()
- bool [FindCSAElementByName](#) (const char *name)
- const [CSAElement](#) & [GetCSAElementByName](#) (const char *name)
- const [DataSet](#) & [GetDataSet](#) () const

- Return the [DataSet](#) output (use only if Format == DATASET_FORMAT)*
- [CSAHeaderType](#) [GetFormat](#) () const
- const char * [GetInterfile](#) () const
- Return the string output (use only if Format == Interfile)*
- bool [LoadFromDataElement](#) ([DataElement](#) const &de)
- Decode the [CSAHeader](#) from element 'de'.*
- void [Print](#) (std::ostream &os) const
- Print the [CSAHeader](#) (use only if Format == SV10 or NOMAGIC)*
- template<typename TSwap >
std::istream & [Read](#) (std::istream &is)
- template<typename TSwap >
const std::ostream & [Write](#) (std::ostream &os) const

Static Public Member Functions

- static const [PrivateTag](#) & [GetCSADataInfo](#) ()
- static const [PrivateTag](#) & [GetCSAImageHeaderInfoTag](#) ()
- static const [PrivateTag](#) & [GetCSASeriesHeaderInfoTag](#) ()

Protected Member Functions

- const [CSAElement](#) & [GetCSAEEnd](#) () const

Friends

- std::ostream & [operator<<](#) (std::ostream &_os, const [CSAHeader](#) &d)

25.60.1 Detailed Description

Class for [CSAHeader](#).

SIEMENS store private information in tag (0x0029,0x10,"SIEMENS CSA HEADER") this class is meant for user wishing to access values stored within this private attribute. There are basically two main 'format' for this attribute : SV10/NOMAGIC and DATASET_FORMAT SV10 and NOMAGIC are from a user prospective identical, see [CSAHeader.xml](#) for possible name / value stored in this format. DATASET_FORMAT is in fact simply just another DICOM dataset (implicit) with -currently unknown- value. This can be only be printed for now.

Warning

Everything you do with this code is at your own risk, since decoding process was not written from specification documents.
the API of this class might change.

Todo MrEvaProtocol in 29,1020 contains ^M that would be nice to get rid of on UNIX system...

See Also

[PDBHeader](#)

External references: 5.1.3.2.4.1 MEDCOM History Information and 5.1.4.3 CSA Non-Image [Module](#) in http://tamsinfo.toshiba.com/docrequest/pdf/E.Soft_v2.0.pdf

Examples:

[csa2img.cxx](#), and [MrProtocol.cxx](#).

25.60.2 Member Enumeration Documentation

25.60.2.1 enum gdcm::CSAHeader::CSAHeaderType

Divers format of [CSAHeader](#) as found 'in the wild'.

Enumerator

UNKNOWN
SV10
NOMAGIC
DATASET_FORMAT
INTERFILE
ZEROED_OUT

25.60.3 Constructor & Destructor Documentation

25.60.3.1 gdcm::CSAHeader::CSAHeader () [inline]

25.60.3.2 gdcm::CSAHeader::~~CSAHeader () [inline]

25.60.4 Member Function Documentation

25.60.4.1 bool gdcm::CSAHeader::FindCSAElementByName (const char * *name*)

Return true if the CSA element matching 'name' is found or not

Warning

Case Sensitive

Examples:

[csa2img.cxx](#), and [MrProtocol.cxx](#).

25.60.4.2 static const PrivateTag& gdcm::CSAHeader::GetCSADatInfo () [static]

Return the private tag used by SIEMENS to store the CSA Data Info This is: [PrivateTag](#)(0x0029,0x0010,"SIEMENS CSA NON-IMAGE");

25.60.4.3 `const CSAElement& gdcm::CSAHeader::GetCSAEEnd () const` `[protected]`

25.60.4.4 `const CSAElement& gdcm::CSAHeader::GetCSAElementByName (const char * name)`

Return the [CSAElement](#) corresponding to name 'name'

Warning

Case Sensitive

Examples:

[csa2img.cxx](#), and [MrProtocol.cxx](#).

25.60.4.5 `static const PrivateTag& gdcm::CSAHeader::GetCSAImageHeaderInfoTag ()` `[static]`

Return the private tag used by SIEMENS to store the CSA [Image](#) Header This is: [PrivateTag](#)(0x0029,0x0010,"SIEMENS CSA HEADER");

Examples:

[csa2img.cxx](#), and [PublicDict.cxx](#).

25.60.4.6 `static const PrivateTag& gdcm::CSAHeader::GetCSASeriesHeaderInfoTag ()` `[static]`

Return the private tag used by SIEMENS to store the CSA [Series](#) Header This is: [PrivateTag](#)(0x0029,0x0020,"SIEMENS CSA HEADER");

Examples:

[MrProtocol.cxx](#).

25.60.4.7 `const DataSet& gdcm::CSAHeader::GetDataSet () const` `[inline]`

Return the [DataSet](#) output (use only if Format == DATASET_FORMAT)

25.60.4.8 `CSAHeaderType gdcm::CSAHeader::GetFormat () const`

return the format of the [CSAHeader](#) SV10 and NOMAGIC are equivalent.

25.60.4.9 `const char* gdcm::CSAHeader::GetInterfile () const` `[inline]`

Return the string output (use only if Format == Interfile)

25.60.4.10 `bool gdcm::CSAHeader::LoadFromDataElement (DataElement const & de)`

Decode the [CSAHeader](#) from element 'de'.

Examples:

[csa2img.cxx](#), and [MrProtocol.cxx](#).

25.60.4.11 `void gdcm::CSAHeader::Print (std::ostream & os) const`

Print the [CSAHeader](#) (use only if Format == SV10 or NOMAGIC)

Examples:

[csa2img.cxx](#).

Referenced by `gdcm::operator<<()`.

25.60.4.12 `template<typename TSwap > std::istream& gdcm::CSAHeader::Read (std::istream & is)`

25.60.4.13 `template<typename TSwap > const std::ostream& gdcm::CSAHeader::Write (std::ostream & os) const`

25.60.5 Friends And Related Function Documentation

25.60.5.1 `std::ostream& operator<< (std::ostream & _os, const CSAHeader & d)` `[friend]`

The documentation for this class was generated from the following file:

- [gdcmCSAHeader.h](#)

25.61 gdcm::CSAHeaderDict Class Reference

Class to represent a map of [CSAHeaderDictEntry](#).

```
#include <gdcmCSAHeaderDict.h>
```

Public Types

- typedef
MapCSAHeaderDictEntry::const_iterator [ConstIterator](#)
- typedef
MapCSAHeaderDictEntry::iterator [Iterator](#)
- typedef std::set
< [CSAHeaderDictEntry](#) > [MapCSAHeaderDictEntry](#)

Public Member Functions

- [CSAHeaderDict](#) ()
- void [AddCSAHeaderDictEntry](#) (const [CSAHeaderDictEntry](#) &de)
- [ConstIterator](#) [Begin](#) () const
- [ConstIterator](#) [End](#) () const
- const [CSAHeaderDictEntry](#) & [GetCSAHeaderDictEntry](#) (const char *name) const
- bool [IsEmpty](#) () const

Protected Member Functions

- void [LoadDefault](#) ()

Friends

- class [Dicts](#)
- `std::ostream & operator<< (std::ostream &_os, const CSAHeaderDict &_val)`

25.61.1 Detailed Description

Class to represent a map of [CSAHeaderDictEntry](#).

Examples:

[MrProtocol.cxx](#).

25.61.2 Member Typedef Documentation

25.61.2.1 `typedef MapCSAHeaderDictEntry::const_iterator gdcm::CSAHeaderDict::ConstIterator`

25.61.2.2 `typedef MapCSAHeaderDictEntry::iterator gdcm::CSAHeaderDict::Iterator`

25.61.2.3 `typedef std::set<CSAHeaderDictEntry> gdcm::CSAHeaderDict::MapCSAHeaderDictEntry`

25.61.3 Constructor & Destructor Documentation

25.61.3.1 `gdcm::CSAHeaderDict::CSAHeaderDict () [inline]`

25.61.4 Member Function Documentation

25.61.4.1 `void gdcm::CSAHeaderDict::AddCSAHeaderDictEntry (const CSAHeaderDictEntry & de) [inline]`

25.61.4.2 `ConstIterator gdcm::CSAHeaderDict::Begin () const [inline]`

25.61.4.3 `ConstIterator gdcm::CSAHeaderDict::End () const [inline]`

25.61.4.4 `const CSAHeaderDictEntry& gdcm::CSAHeaderDict::GetCSAHeaderDictEntry (const char * name) const [inline]`

Examples:

[MrProtocol.cxx](#).

25.61.4.5 `bool gdcm::CSAHeaderDict::IsEmpty () const [inline]`

25.61.4.6 `void gdcm::CSAHeaderDict::LoadDefault () [protected]`

25.61.5 Friends And Related Function Documentation

25.61.5.1 `friend class Dicts [friend]`

25.61.5.2 `std::ostream& operator<< (std::ostream &_os, const CSAHeaderDict &_val) [friend]`

The documentation for this class was generated from the following file:

- [gdcmCSAHeaderDict.h](#)

25.62 gdcm::CSAHeaderDictEntry Class Reference

Class to represent an Entry in the [Dict](#) Does not really exist within the DICOM definition, just a way to minimize storage and have a mapping from [gdcm::Tag](#) to the needed information.

```
#include <gdcmCSAHeaderDictEntry.h>
```

Public Member Functions

- [CSAHeaderDictEntry](#) (const char *name="", [VR](#) const &vr=[VR::INVALID](#), [VM](#) const &vm=[VM::VM0](#), const char *desc="")
- const char * [GetDescription](#) () const
Set/Get Description.
- const char * [GetName](#) () const
Set/Get Name.
- const [VM](#) & [GetVM](#) () const
Set/Get VM.
- const [VR](#) & [GetVR](#) () const
Set/Get VR.
- bool [operator<](#) (const [CSAHeaderDictEntry](#) &entry) const
- void [SetDescription](#) (const char *desc)
- void [SetName](#) (const char *name)
- void [SetVM](#) ([VM](#) const &vm)
- void [SetVR](#) (const [VR](#) &vr)

Friends

- std::ostream & [operator<<](#) (std::ostream &_os, const [CSAHeaderDictEntry](#) &_val)

25.62.1 Detailed Description

Class to represent an Entry in the [Dict](#) Does not really exist within the DICOM definition, just a way to minimize storage and have a mapping from [gdcm::Tag](#) to the needed information.

Note

bla TODO FIXME: Need a PublicCSAHeaderDictEntry...indeed [CSAHeaderDictEntry](#) has a notion of retired which does not exist in PrivateCSAHeaderDictEntry...

See Also

[gdcm::Dict](#)

Examples:

[MrProtocol.cxx](#).

25.62.2 Constructor & Destructor Documentation

25.62.2.1 `gdcm::CSAHeaderDictEntry::CSAHeaderDictEntry (const char * name = " ", VR const & vr = VR::INVALID, VM const & vm = VM::VM0, const char * desc = " ") [inline]`

25.62.3 Member Function Documentation

25.62.3.1 `const char* gdcm::CSAHeaderDictEntry::GetDescription () const [inline]`

Set/Get Description.

25.62.3.2 `const char* gdcm::CSAHeaderDictEntry::GetName () const [inline]`

Set/Get Name.

Referenced by operator<().

25.62.3.3 `const VM& gdcm::CSAHeaderDictEntry::GetVM () const [inline]`

Set/Get [VM](#).

25.62.3.4 `const VR& gdcm::CSAHeaderDictEntry::GetVR () const [inline]`

Set/Get [VR](#).

25.62.3.5 `bool gdcm::CSAHeaderDictEntry::operator< (const CSAHeaderDictEntry & entry) const [inline]`

References GetName().

25.62.3.6 `void gdcm::CSAHeaderDictEntry::SetDescription (const char * desc) [inline]`

25.62.3.7 `void gdcm::CSAHeaderDictEntry::SetName (const char * name) [inline]`

25.62.3.8 `void gdcm::CSAHeaderDictEntry::SetVM (VM const & vm) [inline]`

25.62.3.9 `void gdcm::CSAHeaderDictEntry::SetVR (const VR & vr) [inline]`

25.62.4 Friends And Related Function Documentation

25.62.4.1 `std::ostream& operator<< (std::ostream & _os, const CSAHeaderDictEntry & _val) [friend]`

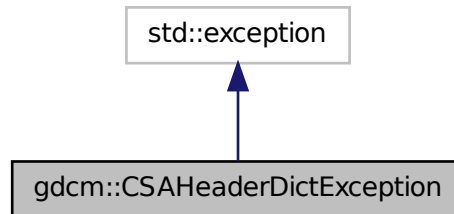
The documentation for this class was generated from the following file:

- [gdcmCSAHeaderDictEntry.h](#)

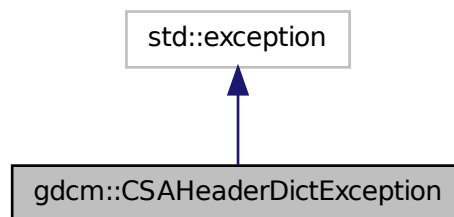
25.63 gdcm::CSAHeaderDictException Class Reference

```
#include <gdcmCSAHeaderDict.h>
```

Inheritance diagram for gdcm::CSAHeaderDictException:



Collaboration diagram for gdcm::CSAHeaderDictException:



The documentation for this class was generated from the following file:

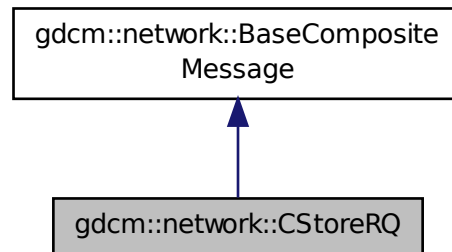
- [gdcmCSAHeaderDict.h](#)

25.64 gdcm::network::CStoreRQ Class Reference

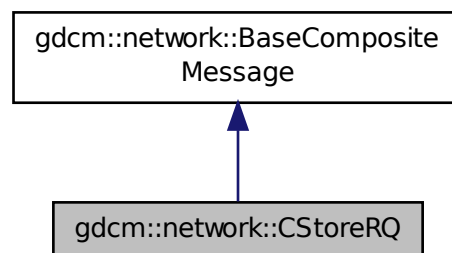
CStoreRQ this file defines the messages for the cecho action.

```
#include <gdcmCStoreMessages.h>
```

Inheritance diagram for `gdcm::network::CStoreRQ`:



Collaboration diagram for `gdcm::network::CStoreRQ`:



Public Member Functions

- `std::vector`
< [PresentationDataValue](#) > [ConstructPDV](#) (const [ULConnection](#) &inConnection, const [File](#) &file)

25.64.1 Detailed Description

[CStoreRQ](#) this file defines the messages for the cecho action.

25.64.2 Member Function Documentation

25.64.2.1 `std::vector<PresentationDataValue> gdcm::network::CStoreRQ::ConstructPDV (const ULConnection & inConnection, const File & file)`

The documentation for this class was generated from the following file:

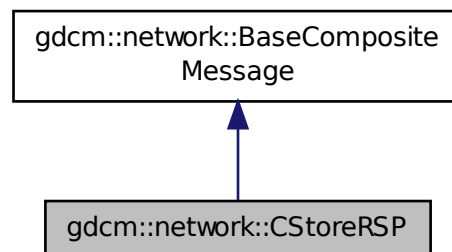
- [gdcmCStoreMessages.h](#)

25.65 gdcm::network::CStoreRSP Class Reference

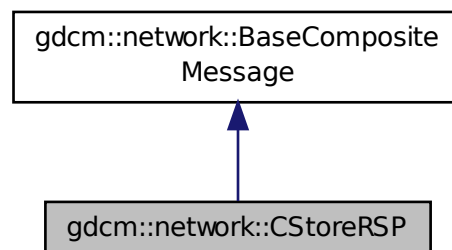
[CStoreRSP](#) this file defines the messages for the cecho action.

```
#include <gdcmCStoreMessages.h>
```

Inheritance diagram for `gdcm::network::CStoreRSP`:



Collaboration diagram for `gdcm::network::CStoreRSP`:



Public Member Functions

- `std::vector`
`< PresentationDataValue > ConstructPDV (const DataSet *inDataSet, const BasePDU *inPC)`

25.65.1 Detailed Description

`CStoreRSP` this file defines the messages for the cecho action.

25.65.2 Member Function Documentation

25.65.2.1 `std::vector<PresentationDataValue> gdcmm::network::CStoreRSP::ConstructPDV (const DataSet * inDataSet, const BasePDU * inPC)`

The documentation for this class was generated from the following file:

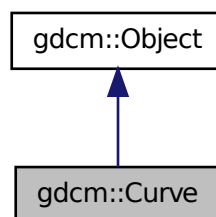
- `gdcmmCStoreMessages.h`

25.66 gdcmm::Curve Class Reference

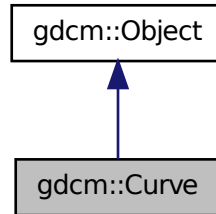
`Curve` class to handle element 50xx,3000 `Curve` Data WARNING: This is deprecated and lastly defined in PS 3.3 - 2004.

```
#include <gdcmmCurve.h>
```

Inheritance diagram for `gdcmm::Curve`:



Collaboration diagram for gdcm::Curve:



Public Member Functions

- [Curve](#) ()
- [Curve](#) ([Curve](#) const &ov)
- [~Curve](#) ()
- void [Decode](#) (std::istream &is, std::ostream &os)
- void [GetAsPoints](#) (float *array) const
- std::vector< unsigned short >
const & [GetCurveDataDescriptor](#) () const
- unsigned short [GetDataValueRepresentation](#) () const
- unsigned short [GetDimensions](#) () const
- unsigned short [GetGroup](#) () const
- unsigned short [GetNumberOfPoints](#) () const
- const char * [GetTypeOfData](#) () const
- const char * [GetTypeOfDataDescription](#) () const
- bool [IsEmpty](#) () const
- void [Print](#) (std::ostream &) const
- void [SetCoordinateStartValue](#) (unsigned short v)
- void [SetCoordinateStepValue](#) (unsigned short v)
- void [SetCurve](#) (const char *array, unsigned int length)
- void [SetCurveDataDescriptor](#) (const uint16_t *values, size_t num)
- void [SetCurveDescription](#) (const char *curvedescription)
- void [SetDataValueRepresentation](#) (unsigned short datavaluerepresentation)
- void [SetDimensions](#) (unsigned short dimensions)
- void [SetGroup](#) (unsigned short group)
- void [SetNumberOfPoints](#) (unsigned short numberofpoints)
- void [SetTypeOfData](#) (const char *typeofdata)
- void [Update](#) (const [DataElement](#) &de)

Static Public Member Functions

- static unsigned int [GetNumberOfCurves](#) ([DataSet](#) const &ds)

Additional Inherited Members

25.66.1 Detailed Description

[Curve](#) class to handle element 50xx,3000 [Curve](#) Data WARNING: This is deprecated and lastly defined in PS 3.3 - 2004.

Examples:

- GE_DLX-8-MONO2-Multiframe-Jpeg_Lossless.dcm
- GE_DLX-8-MONO2-Multiframe.dcm
- gdcmsampleData/Philips_Medical_Images/integriss_HV_5000/xa_integriss.dcm
- TOSHIBA-CurveData[1-3].dcm

25.66.2 Constructor & Destructor Documentation

25.66.2.1 `gdcms::Curve::Curve ()`

25.66.2.2 `gdcms::Curve::~~Curve ()`

25.66.2.3 `gdcms::Curve::Curve (Curve const & ov)`

25.66.3 Member Function Documentation

25.66.3.1 `void gdcms::Curve::Decode (std::istream & is, std::ostream & os)`

25.66.3.2 `void gdcms::Curve::GetAsPoints (float * array) const`

25.66.3.3 `std::vector<unsigned short> const& gdcms::Curve::GetCurveDataDescriptor () const`

25.66.3.4 `unsigned short gdcms::Curve::GetDataValueRepresentation () const`

25.66.3.5 `unsigned short gdcms::Curve::GetDimensions () const`

25.66.3.6 `unsigned short gdcms::Curve::GetGroup () const`

25.66.3.7 `static unsigned int gdcms::Curve::GetNumberOfCurves (DataSet const & ds) [static]`

25.66.3.8 `unsigned short gdcms::Curve::GetNumberOfPoints () const`

25.66.3.9 `const char* gdcms::Curve::GetTypeOfData () const`

25.66.3.10 `const char* gdcms::Curve::GetTypeOfDataDescription () const`

25.66.3.11 `bool gdcms::Curve::IsEmpty () const`

25.66.3.12 `void gdcms::Curve::Print (std::ostream &) const [virtual]`

Reimplemented from [gdcms::Object](#).

- 25.66.3.13 void gdcm::Curve::SetCoordinateStartValue (unsigned short *v*)
- 25.66.3.14 void gdcm::Curve::SetCoordinateStepValue (unsigned short *v*)
- 25.66.3.15 void gdcm::Curve::SetCurve (const char * *array*, unsigned int *length*)
- 25.66.3.16 void gdcm::Curve::SetCurveDataDescriptor (const uint16_t * *values*, size_t *num*)
- 25.66.3.17 void gdcm::Curve::SetCurveDescription (const char * *curvedescription*)
- 25.66.3.18 void gdcm::Curve::SetDataValueRepresentation (unsigned short *datavaluerepresentation*)
- 25.66.3.19 void gdcm::Curve::SetDimensions (unsigned short *dimensions*)
- 25.66.3.20 void gdcm::Curve::SetGroup (unsigned short *group*)
- 25.66.3.21 void gdcm::Curve::SetNumberOfPoints (unsigned short *numberofpoints*)
- 25.66.3.22 void gdcm::Curve::SetTypeOfData (const char * *typeofdata*)
- 25.66.3.23 void gdcm::Curve::Update (const DataElement & *de*)

The documentation for this class was generated from the following file:

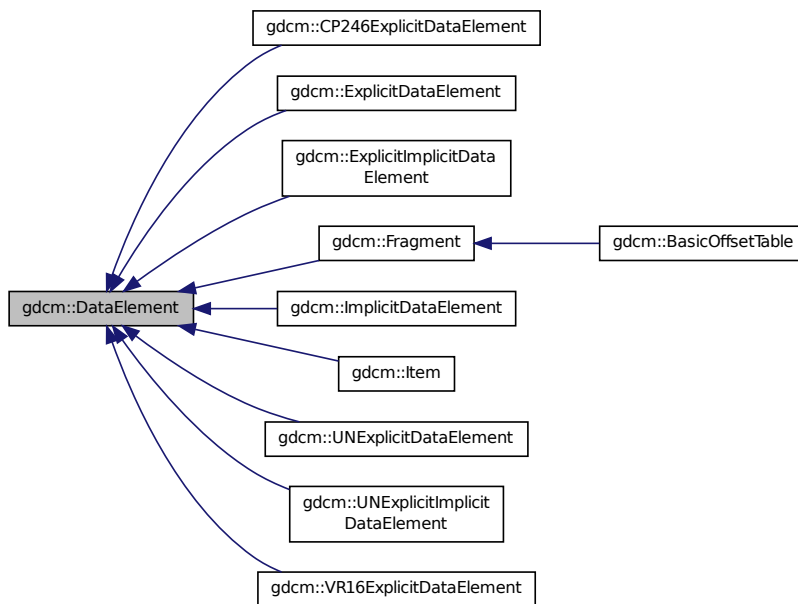
- [gdcmCurve.h](#)

25.67 gdcm::DataElement Class Reference

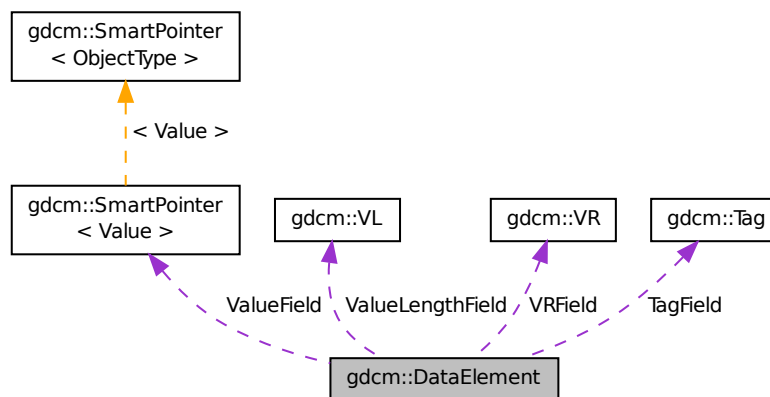
Class to represent a Data [Element](#) either Implicit or Explicit.

```
#include <gdcmDataElement.h>
```

Inheritance diagram for `gdcm::DataElement`:



Collaboration diagram for `gdcm::DataElement`:



Public Member Functions

- `DataElement` (const `Tag` &`t=Tag(0)`, const `VL` &`vl=0`, const `VR` &`vr=VR::INVALID`)
- `DataElement` (const `DataElement` &`_val`)
- void `Clear` ()

- Clear Data *Element* (make *Value* empty and invalidate *Tag* & *VR*)
- void **Empty** ()
 - Make Data *Element* empty (no *Value*)
- const *ByteValue* * **GetByteValue** () const
- template<typename TDE > **VL GetLength** () const
- const *SequenceOfFragments* * **GetSequenceOfFragments** () const
- const *SequenceOfItems* * **GetSequenceOfItems** () const
- *SequenceOfItems* * **GetSequenceOfItems** ()
- const *Tag* & **GetTag** () const
- *Get Tag.*
- *Tag* & **GetTag** ()
- *Value* const & **GetValue** () const
 - Set/Get *Value* (bytes array, SQ of items, SQ of fragments):
- *Value* & **GetValue** ()
- *SmartPointer*< *SequenceOfItems* > **GetValueAsSQ** () const
- const *VL* & **GetVL** () const
 - *Get VL.*
- *VL* & **GetVL** ()
- *VR* const & **GetVR** () const
- bool **IsEmpty** () const
 - Check if Data *Element* is empty.
- bool **IsUndefinedLength** () const
 - return if *Value* Length if of undefined length
- bool **operator<** (const *DataElement* &de) const
- *DataElement* & **operator=** (const *DataElement* &de)
- bool **operator==** (const *DataElement* &de) const
- template<typename TDE , typename TSwap >
 - std::istream & **Read** (std::istream &is)
- template<typename TDE , typename TSwap >
 - std::istream & **ReadOrSkip** (std::istream &is, std::set< *Tag* > const &skiptags)
- template<typename TDE , typename TSwap >
 - std::istream & **ReadPreValue** (std::istream &is, std::set< *Tag* > const &skiptags)
- template<typename TDE , typename TSwap >
 - std::istream & **ReadValue** (std::istream &is, std::set< *Tag* > const &skiptags)
- template<typename TDE , typename TSwap >
 - std::istream & **ReadWithLength** (std::istream &is, *VL* &length)
- void **SetByteValue** (const char *array, *VL* length)
- void **SetTag** (const *Tag* &t)
- void **SetValue** (*Value* const &vl)
- void **SetVL** (const *VL* &vl)
- void **SetVLToUndefined** ()
- void **SetVR** (*VR* const &vr)
- template<typename TDE , typename TSwap >
 - const std::ostream & **Write** (std::ostream &os) const

Protected Types

- typedef *SmartPointer*< *Value* > *ValuePtr*

Protected Attributes

- [Tag](#) [TagField](#)
- [ValuePtr](#) [ValueField](#)
- [VL](#) [ValueLengthField](#)
- [VR](#) [VRField](#)

Friends

- `std::ostream & operator<< (std::ostream &_os, const DataElement &_val)`

25.67.1 Detailed Description

Class to represent a Data [Element](#) either Implicit or Explicit.

DATA ELEMENT: A unit of information as defined by a single entry in the data dictionary. An encoded Information [Object](#) Definition (IOD) [Attribute](#) that is composed of, at a minimum, three fields: a Data [Element Tag](#), a [Value](#) Length, and a [Value](#) Field. For some specific Transfer Syntaxes, a Data [Element](#) also contains a [VR](#) Field where the [Value](#) Representation of that Data [Element](#) is specified explicitly.

Design:

- A [DataElement](#) in GDCM always store [VL](#) ([Value](#) Length) on a 32 bits integer even when [VL](#) is 16 bits
- A [DataElement](#) always store the [VR](#) even for Implicit TS, in which case [VR](#) is defaulted to [VR::INVALID](#)
- For [Item](#) start/end (See 0xfffe tags), [Value](#) is NULL

See Also

[ExplicitDataElement](#) [ImplicitDataElement](#)

Examples:

[ChangeSequenceUltrasound.cxx](#), [CreateARGBImage.cxx](#), [CreateCMYKImage.cxx](#), [csa2img.cxx](#), [DiffFile.cxx](#), [DumpADAC.cxx](#), [DumpGEMSMovieGroup.cxx](#), [DumpImageHeaderInfo.cxx](#), [DuplicatePCDE.cxx](#), [ELSCINT1WaveToText.cxx](#), [ExtractEncryptedContent.cxx](#), [ExtractIconFromFile.cxx](#), [Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [FixBrokenJ2K.cxx](#), [FixJAIBugJPEGLS.cxx](#), [gdcmrtionplan.cxx](#), [gdcmrtplan.cxx](#), [GenAllIVR.cxx](#), [GenFakelIdentifyFile.cxx](#), [GenFakelImage.cxx](#), [GenLongSeqs.cxx](#), [GenSeqs.cxx](#), [GetJPEG-SamplePrecision.cxx](#), [GetSequenceUltrasound.cxx](#), [GetSubSequenceData.cxx](#), [iU22tomultisc.cxx](#), [LargeVRDS-Explicit.cxx](#), [pmsct_rgb1.cxx](#), [ReadAndDumpDICOMDIR.cxx](#), [ReadExplicitLengthSQIVR.cxx](#), [ReadGEMSSDO.cxx](#), [rle2img.cxx](#), and [StreamImageReaderTest.cxx](#).

25.67.2 Member Typedef Documentation

25.67.2.1 `typedef SmartPointer<Value> gdcm::DataElement::ValuePtr [protected]`

25.67.3 Constructor & Destructor Documentation

25.67.3.1 `gdcm::DataElement::DataElement (const Tag & t = Tag (0), const VL & vl = 0, const VR & vr = VR::INVALID) [inline]`

25.67.3.2 `gdcm::DataElement::DataElement (const DataElement & _val) [inline]`

25.67.4 Member Function Documentation

25.67.4.1 `void gdcm::DataElement::Clear () [inline]`

Clear Data [Element](#) (make [Value](#) empty and invalidate [Tag](#) & [VR](#))

References `gdcm::VR::INVALID`.

Referenced by `gdcm::Item::Clear()`.

25.67.4.2 `void gdcm::DataElement::Empty () [inline]`

Make Data [Element](#) empty (no [Value](#))

25.67.4.3 `const ByteValue* gdcm::DataElement::GetByteValue () const [inline]`

Return the [Value](#) of [DataElement](#) as a [ByteValue](#) (if possible)

Warning

: You need to check for NULL return value

Examples:

[DumpADAC.cxx](#), [DumpImageHeaderInfo.cxx](#), [DuplicatePCDE.cxx](#), [ELSCINT1WaveToText.cxx](#), [ExtractEncryptedContent.cxx](#), [ExtractIconFromFile.cxx](#), [FixBrokenJ2K.cxx](#), [FixJAIBugJPEGLS.cxx](#), [GetSubSequenceData.cxx](#), [PatchFile.cxx](#), [pmsct_rgb1.cxx](#), [ReadExplicitLengthSQIVR.cxx](#), [ReadGEMSSDO.cxx](#), and [rle2img.cxx](#).

Referenced by `gdcm::operator<<()`, `gdcm::Element< VR::OB, VM::VM1_n >::SetFromDataElement()`, `gdcm::Attribute< Group, Element, TVR, TVM >::SetFromDataElement()`, `gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::SetFromDataElement()`, `gdcm::Element< TVR, VM::VM1_n >::SetFromDataElement()`, and `gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::SetFromDataElement()`.

25.67.4.4 `template<typename TDE> VL gdcm::DataElement::GetLength () const [inline]`

25.67.4.5 `const SequenceOfFragments* gdcm::DataElement::GetSequenceOfFragments () const`

Return the [Value](#) of [DataElement](#) as a Sequence Of Fragments (if possible)

Warning

: You need to check for NULL return value

Examples:

[FixBrokenJ2K.cxx](#), [FixJAIBugJPEGLS.cxx](#), and [GetJPEGSamplePrecision.cxx](#).

25.67.4.6 `const SequenceOfItems* gdcm::DataElement::GetSequenceOfItems () const`

Return the [Value](#) of [DataElement](#) as a Sequence Of Items (if possible)

Warning

: You need to check for NULL return value
 : In some case a [Value](#) could not have been recognized as a [SequenceOfItems](#) in those case the return of the function will be NULL, while the [Value](#) would be a valid [SequenceOfItems](#), in those case prefer `GetValueAsSQ`. In which case the code internally trigger an assert to warn developer. When in doubt do not use this function and prefer `GetValueAsSQ()`

Deprecated Replaced by `DataElement::GetValueAsSQ()` as of GDCM 2.2.

25.67.4.7 **SequenceOfItems*** `gdcm::DataElement::GetSequenceOfItems ()`

25.67.4.8 **const Tag&** `gdcm::DataElement::GetTag () const` `[inline]`

Get [Tag](#).

Examples:

[DumpGEMSMovieGroup.cxx](#), [DuplicatePCDE.cxx](#), [pmsct_rgb1.cxx](#), and [rle2img.cxx](#).

Referenced by `gdcm::CommandDataSet::Insert()`, `gdcm::FileMetaInformation::Insert()`, `gdcm::DataSet::Insert()`, `operator<()`, `gdcm::SequenceOfItems::Read()`, `gdcm::SequenceOfFragments::ReadValue()`, `gdcm::CommandDataSet::Replace()`, `gdcm::FileMetaInformation::Replace()`, `gdcm::Attribute< Group, Element, TVR, TVM >::SetFromDataElement()`, `gdcm::Attribute< Group, Element, TVR, VM::VM1 >::SetFromDataElement()`, and `gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::SetFromDataElement()`.

25.67.4.9 **Tag&** `gdcm::DataElement::GetTag ()` `[inline]`

25.67.4.10 **Value const&** `gdcm::DataElement::GetValue () const` `[inline]`

Set/Get [Value](#) (bytes array, SQ of items, SQ of fragments):

Examples:

[ReadAndDumpDICOMDIR.cxx](#).

Referenced by `gdcm::DataSet::InsertDataElement()`, `gdcm::Element< VR::OB, VM::VM1_n >::SetFromDataElement()`, and `gdcm::Element< TVR, VM::VM1_n >::SetFromDataElement()`.

25.67.4.11 **Value&** `gdcm::DataElement::GetValue ()` `[inline]`

25.67.4.12 **SmartPointer<SequenceOfItems>** `gdcm::DataElement::GetValueAsSQ () const`

Interpret the [Value](#) stored in the [DataElement](#). This is more robust (but also more expensive) to call this function rather than the simplest form: `GetSequenceOfItems()` It also return NULL when the [Value](#) is NOT of type [SequenceOfItems](#)

Warning

in case `GetSequenceOfItems()` succeed the function return this value, otherwise it creates a new [SequenceOfItems](#), you should handle that in your case, for instance: `SmartPointer<SequenceOfItems> sqi = de.GetValueAsSQ();`

Examples:

[ChangeSequenceUltrasound.cxx](#), [DumpGEMSMovieGroup.cxx](#), [ExtractEncryptedContent.cxx](#), [gdcmrtionplan.cxx](#), [gdcmrtplan.cxx](#), [GetSequenceUltrasound.cxx](#), [LargeVRDSExplicit.cxx](#), and [ReadAndDumpDICOMDIR.cxx](#).

25.67.4.13 `const VL& gdcm::DataElement::GetVL () const` `[inline]`

Get [VL](#).

Referenced by `gdcm::DataSet::InsertDataElement()`, `gdcm::SequenceOfItems::Read()`, and `gdcm::SequenceOfFragments::ReadValue()`.

25.67.4.14 `VL& gdcm::DataElement::GetVL ()` `[inline]`

25.67.4.15 `VR const& gdcm::DataElement::GetVR () const` `[inline]`

Get [VR](#) do not set [VR::SQ](#) on bytevalue data element

Examples:

[DuplicatePCDE.cxx](#), and [GenFakeIdentifyFile.cxx](#).

Referenced by `gdcm::Element< VR::OB, VM::VM1_n >::GetAsDataElement()`, `gdcm::Attribute< Group, Element, TVR, TVM >::GetAsDataElement()`, `gdcm::Attribute< Group, Element, TVR, VM::VM1 >::GetAsDataElement()`, `gdcm::Element< TVR, VM::VM1_n >::GetAsDataElement()`, `gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::GetAsDataElement()`, `gdcm::Element< VR::OB, VM::VM1_n >::SetFromDataElement()`, `gdcm::Attribute< Group, Element, TVR, TVM >::SetFromDataElement()`, `gdcm::Attribute< Group, Element, TVR, VM::VM1 >::SetFromDataElement()`, `gdcm::Element< TVR, VM::VM1_n >::SetFromDataElement()`, and `gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::SetFromDataElement()`.

25.67.4.16 `bool gdcm::DataElement::IsEmpty () const` `[inline]`

Check if Data [Element](#) is empty.

Examples:

[DumpADAC.cxx](#), [DumpGEMSMovieGroup.cxx](#), [DumpImageHeaderInfo.cxx](#), [ELSCINT1WaveToText.cxx](#), [FixJAI-BugJPEGLS.cxx](#), [pmsct_rgb1.cxx](#), and [rle2img.cxx](#).

Referenced by `gdcm::DataSet::InsertDataElement()`, `gdcm::Attribute< Group, Element, TVR, TVM >::SetFromDataElement()`, `gdcm::Attribute< Group, Element, TVR, VM::VM1 >::SetFromDataElement()`, `gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::SetFromDataElement()`, `gdcm::Attribute< Group, Element, TVR, TVM >::SetFromDataSet()`, `gdcm::Attribute< Group, Element, TVR, VM::VM1 >::SetFromDataSet()`, and `gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::SetFromDataSet()`.

25.67.4.17 `bool gdcm::DataElement::IsUndefinedLength () const` `[inline]`

return if [Value](#) Length if of undefined length

25.67.4.18 `bool gdcm::DataElement::operator< (const DataElement & de) const` `[inline]`

References `GetTag()`.

25.67.4.19 **DataElement& gdcmm::DataElement::operator= (const DataElement & de)** [inline]

References TagField, ValueField, ValueLengthField, and VRField.

25.67.4.20 **bool gdcmm::DataElement::operator== (const DataElement & de) const** [inline]

References TagField, ValueField, ValueLengthField, and VRField.

25.67.4.21 **template<typename TDE , typename TSwap > std::istream& gdcmm::DataElement::Read (std::istream & is)**
[inline]

25.67.4.22 **template<typename TDE , typename TSwap > std::istream& gdcmm::DataElement::ReadOrSkip (std::istream & is, std::set< Tag > const & skiptags)** [inline]

25.67.4.23 **template<typename TDE , typename TSwap > std::istream& gdcmm::DataElement::ReadPreValue (std::istream & is, std::set< Tag > const & skiptags)** [inline]

25.67.4.24 **template<typename TDE , typename TSwap > std::istream& gdcmm::DataElement::ReadValue (std::istream & is, std::set< Tag > const & skiptags)** [inline]

25.67.4.25 **template<typename TDE , typename TSwap > std::istream& gdcmm::DataElement::ReadWithLength (std::istream & is, VL & length)** [inline]

25.67.4.26 **void gdcmm::DataElement::SetByteValue (const char * array, VL length)** [inline]

Set the byte value

Warning

user need to read DICOM standard for an understanding of:

- even padding
- \0 vs space padding By default even padding is achieved using \0 regardless of the of [VR](#)

Examples:

[ChangeSequenceUltrasound.cxx](#), [CreateARGBImage.cxx](#), [CreateCMYKImage.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [FixBrokenJ2K.cxx](#), [FixJAIBugJPEGLS.cxx](#), [GenFakeIdentifyFile.cxx](#), [GenFakeImage.cxx](#), [GenLongSeqs.cxx](#), [GenSeqs.cxx](#), [GetSubSequenceData.cxx](#), [iU22tomultisc.cxx](#), and [StreamImageReaderTest.cxx](#).

Referenced by `gdcmm::Element< VR::OB, VM::VM1_n >::GetAsDataElement()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::GetAsDataElement()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::GetAsDataElement()`, `gdcmm::Element< TVR, VM::VM1_n >::GetAsDataElement()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::GetAsDataElement()`, and `gdcmm::SequenceOfFragments::ReadPreValue()`.

25.67.4.27 **void gdcmm::DataElement::SetTag (const Tag & t)** [inline]

Set [Tag](#) Use with cautious (need to match Part 6)

Examples:

[Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [GenFakeIdentifyFile.cxx](#), and [GetSubSequenceData.cxx](#).

25.67.4.28 void gdcm::DataElement::SetValue (Value const & v/) [inline]

Warning

you need to set the ValueLengthField explicitly

Examples:

[DuplicatePCDE.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [FixBrokenJ2K.cxx](#), [GenFakeIdentifyFile.cxx](#), [GenLongSeqs.cxx](#), and [GenSeqs.cxx](#).

References gdcm::Value::GetLength().

25.67.4.29 void gdcm::DataElement::SetVL (const VL & vl) [inline]

Set [VL](#) Use with cautious (need to match Part 6), advanced user only

See Also

[SetByteValue](#)

25.67.4.30 void gdcm::DataElement::SetVLToUndefined ()

Examples:

[Fake_Image_Using_Stream_Image_Writer.cxx](#), [GenAllVR.cxx](#), [GenFakeIdentifyFile.cxx](#), [GenLongSeqs.cxx](#), and [GenSeqs.cxx](#).

25.67.4.31 void gdcm::DataElement::SetVR (VR const & vr) [inline]

Set [VR](#) Use with cautious (need to match Part 6), advanced user only

Precondition

vr is a [VR::VRALL](#) (not a dual one such as OB_OW)

Examples:

[Fake_Image_Using_Stream_Image_Writer.cxx](#), [FixBrokenJ2K.cxx](#), [FixJAIBugJPEGLS.cxx](#), [GenFakeIdentifyFile.cxx](#), [GenLongSeqs.cxx](#), [GenSeqs.cxx](#), [GetSubSequenceData.cxx](#), [iU22tomultisc.cxx](#), and [StreamImageReader-Test.cxx](#).

References gdcm::VR::IsVRFile().

Referenced by gdcm::Element< VR::OB, VM::VM1_n >::GetAsDataElement(), gdcm::Attribute< Group, Element, TVR, VM >::GetAsDataElement(), gdcm::Attribute< Group, Element, TVR, VM::VM1 >::GetAsDataElement(), gdcm::Element< TVR, VM::VM1_n >::GetAsDataElement(), and gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::GetAsDataElement().

25.67.4.32 `template<typename TDE , typename TSwap > const std::ostream& gdcm::DataElement::Write (std::ostream & os)`
`const [inline]`

25.67.5 Friends And Related Function Documentation

25.67.5.1 `std::ostream& operator<< (std::ostream & _os, const DataElement & _val) [friend]`

25.67.6 Member Data Documentation

25.67.6.1 `Tag gdcm::DataElement::TagField [protected]`

Referenced by `gdcm::operator<<()`, `operator=()`, and `operator==()`.

25.67.6.2 `ValuePtr gdcm::DataElement::ValueField [protected]`

Referenced by `gdcm::operator<<()`, `operator=()`, and `operator==()`.

25.67.6.3 `VL gdcm::DataElement::ValueLengthField [protected]`

Referenced by `gdcm::operator<<()`, `operator=()`, and `operator==()`.

25.67.6.4 `VR gdcm::DataElement::VRField [protected]`

Referenced by `gdcm::operator<<()`, `operator=()`, and `operator==()`.

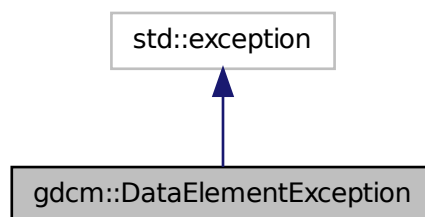
The documentation for this class was generated from the following file:

- [gdcmDataElement.h](#)

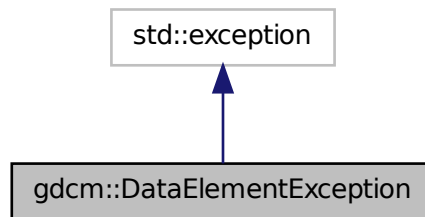
25.68 gdcm::DataElementException Class Reference

```
#include <gdcmDataSet.h>
```

Inheritance diagram for `gdcm::DataElementException`:



Collaboration diagram for gdcm::DataElementException:



The documentation for this class was generated from the following file:

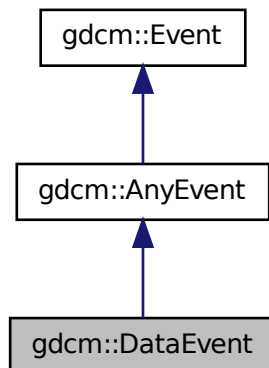
- [gdcmDataSet.h](#)

25.69 gdcm::DataEvent Class Reference

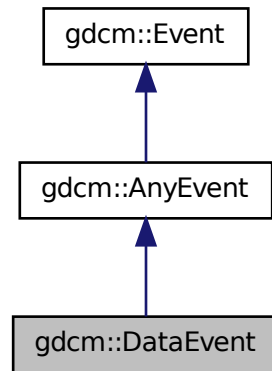
[DataEvent](#).

```
#include <gdcmDataEvent.h>
```

Inheritance diagram for gdcm::DataEvent:



Collaboration diagram for `gdcm::DataEvent`:



Public Types

- typedef [DataEvent](#) `Self`
- typedef [AnyEvent](#) `Superclass`

Public Member Functions

- [DataEvent](#) (`const char *bytes=0, size_t len=0`)
- [DataEvent](#) (`const Self &s`)
- virtual `~DataEvent ()`
- virtual `bool CheckEvent (const ::gdcm::Event *e) const`
- `const char * GetData () const`
- `size_t GetDataLength () const`
- virtual `const char * GetEventName () const`
- virtual `::gdcm::Event * MakeObject () const`
- void [SetData](#) (`const char *bytes, size_t len`)

25.69.1 Detailed Description

[DataEvent](#).

25.69.2 Member Typedef Documentation

25.69.2.1 typedef `DataEvent` `gdcm::DataEvent::Self`

25.69.2.2 typedef `AnyEvent` `gdcm::DataEvent::Superclass`

25.69.3 Constructor & Destructor Documentation

25.69.3.1 `gdcm::DataEvent::DataEvent (const char * bytes = 0, size_t len = 0)` `[inline]`

25.69.3.2 `virtual gdcm::DataEvent::~DataEvent ()` `[inline],[virtual]`

25.69.3.3 `gdcm::DataEvent::DataEvent (const Self & s)` `[inline]`

25.69.4 Member Function Documentation

25.69.4.1 `virtual bool gdcm::DataEvent::CheckEvent (const ::gdcm::Event * e) const` `[inline],[virtual]`

25.69.4.2 `const char* gdcm::DataEvent::GetData () const` `[inline]`

25.69.4.3 `size_t gdcm::DataEvent::GetDataLength () const` `[inline]`

25.69.4.4 `virtual const char* gdcm::DataEvent::GetEventName () const` `[inline],[virtual]`

Return the StringName associated with the event.

Implements [gdcm::Event](#).

25.69.4.5 `virtual ::gdcm::Event* gdcm::DataEvent::MakeObject () const` `[inline],[virtual]`

Create an [Event](#) of this type This method work as a Factory for creating events of each particular type.

Implements [gdcm::Event](#).

25.69.4.6 `void gdcm::DataEvent::SetData (const char * bytes, size_t len)` `[inline]`

The documentation for this class was generated from the following file:

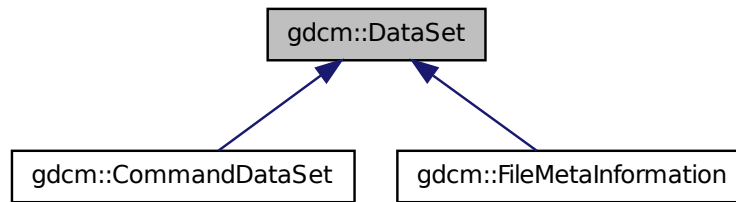
- [gdcmDataEvent.h](#)

25.70 gdcm::DataSet Class Reference

Class to represent a Data Set (which contains Data Elements) A Data Set represents an instance of a real world Information [Object](#).

```
#include <gdcmDataSet.h>
```

Inheritance diagram for `gdcm::DataSet`:



Public Types

- typedef
DataElementSet::const_iterator [ConstIterator](#)
- typedef std::set< [DataElement](#) > [DataElementSet](#)
- typedef DataElementSet::iterator [Iterator](#)
- typedef DataElementSet::size_type [SizeType](#)

Public Member Functions

- [ConstIterator Begin](#) () const
- [Iterator Begin](#) ()
- void [Clear](#) ()
- template<typename TDE >
unsigned int [ComputeGroupLength](#) ([Tag](#) const &tag) const
- [ConstIterator End](#) () const
- [Iterator End](#) ()
- bool [FindDataElement](#) (const [PrivateTag](#) &t) const
Look up if private tag 't' is present in the dataset:
- bool [FindDataElement](#) (const [Tag](#) &t) const
- const [DataElement](#) & [FindNextDataElement](#) (const [Tag](#) &t) const
- const [DataElement](#) & [GetDataElement](#) (const [Tag](#) &t) const
- const [DataElement](#) & [GetDataElement](#) (const [PrivateTag](#) &t) const
Return the dataelement.
- const [DataElementSet](#) & [GetDES](#) () const
- [DataElementSet](#) & [GetDES](#) ()
- template<typename TDE >
[VL GetLength](#) () const
- [MediaStorage GetMediaStorage](#) () const
- std::string [GetPrivateCreator](#) (const [Tag](#) &t) const
Return the private creator of the private tag 't':
- void [Insert](#) (const [DataElement](#) &de)
- bool [IsEmpty](#) () const
Returns if the dataset is empty.

- const [DataElement](#) & [operator\(\)](#) (uint16_t group, uint16_t element) const
- [DataSet](#) & [operator=](#) ([DataSet](#) const &val)
- const [DataElement](#) & [operator\[\]](#) (const [Tag](#) &t) const
- void [Print](#) (std::ostream &os, std::string const &indent="") const
- template<typename TDE , typename TSwap >
std::istream & [Read](#) (std::istream &is)
- template<typename TDE , typename TSwap >
std::istream & [ReadNested](#) (std::istream &is)
- template<typename TDE , typename TSwap >
std::istream & [ReadSelectedTags](#) (std::istream &is, const std::set< [Tag](#) > &tags)
- template<typename TDE , typename TSwap >
std::istream & [ReadSelectedTagsWithLength](#) (std::istream &is, const std::set< [Tag](#) > &tags, [VL](#) &length)
- template<typename TDE , typename TSwap >
std::istream & [ReadUpToTag](#) (std::istream &is, const [Tag](#) &t, std::set< [Tag](#) > const &skiptags)
- template<typename TDE , typename TSwap >
std::istream & [ReadUpToTagWithLength](#) (std::istream &is, const [Tag](#) &t, [VL](#) &length)
- template<typename TDE , typename TSwap >
std::istream & [ReadWithLength](#) (std::istream &is, [VL](#) &length)
- [SizeType Remove](#) (const [Tag](#) &tag)
Completely remove a dataelement from the dataset.
- void [Replace](#) (const [DataElement](#) &de)
Replace a dataelement with another one.
- void [ReplaceEmpty](#) (const [DataElement](#) &de)
Only replace a DICOM attribute when it is missing or empty.
- [SizeType Size](#) () const
- template<typename TDE , typename TSwap >
std::ostream const & [Write](#) (std::ostream &os) const

Protected Member Functions

- [Tag ComputeDataElement](#) (const [PrivateTag](#) &t) const
- const [DataElement](#) & [GetDEEnd](#) () const
- void [InsertDataElement](#) (const [DataElement](#) &de)

Friends

- class [CSAHeader](#)
- std::ostream & [operator<<](#) (std::ostream &_os, const [DataSet](#) &val)

25.70.1 Detailed Description

Class to represent a Data Set (which contains Data Elements) A Data Set represents an instance of a real world Information [Object](#).

Note

DATA SET: Exchanged information consisting of a structured set of [Attribute](#) values directly or indirectly related to Information Objects. The value of each [Attribute](#) in a Data Set is expressed as a Data [Element](#). A collection of Data Elements ordered by increasing Data [Element Tag](#) number that is an encoding of the values of Attributes of a real world object.

Implementation note. If one do: [DataSet](#) ds; ds.SetLength(0); ds.Read(is); setting length to 0 actually means try to read is as if it was a root [DataSet](#). Other value are undefined (nested dataset with undefined length) or defined length (different from 0) means nested dataset with defined length.

Warning

a [DataSet](#) does not have a Transfer Syntax type, only a [File](#) does.

Examples:

[ChangeSequenceUltrasound.cxx](#), [CreateJPIPDataSet.cxx](#), [csa2img.cxx](#), [DiffFile.cxx](#), [DumpADAC.cxx](#), [DumpGEMSMovieGroup.cxx](#), [DumpImageHeaderInfo.cxx](#), [DuplicatePCDE.cxx](#), [ELSCINT1WaveToText.cxx](#), [EncapsulateFileInRawData.cxx](#), [ExtractEncryptedContent.cxx](#), [Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [gdcmrtionplan.cxx](#), [gdcmrtplan.cxx](#), [GenAllIVR.cxx](#), [GenFakeIdentifyFile.cxx](#), [GenLongSeqs.cxx](#), [GenSeqs.cxx](#), [GetJPEGSamplePrecision.cxx](#), [GetSequenceUltrasound.cxx](#), [GetSubSequenceData.cxx](#), [HelloWorld.cxx](#), [iU22tomultisc.cxx](#), [LargeVRDSExplicit.cxx](#), [MergeTwoFiles.cxx](#), [MrProtocol.cxx](#), [PatchFile.cxx](#), [pmsct_rgb1.cxx](#), [ReadAndDumpDICOMDIR.cxx](#), [ReadAndPrintAttributes.cxx](#), [ReadExplicitLengthSQIVR.cxx](#), [ReadGEMSSD-O.cxx](#), [rle2img.cxx](#), [SortImage.cxx](#), [StreamImageReaderTest.cxx](#), and [VolumeSorter.cxx](#).

25.70.2 Member Typedef Documentation

25.70.2.1 `typedef DataElementSet::const_iterator gdcm::DataSet::ConstIterator`

25.70.2.2 `typedef std::set<DataElement> gdcm::DataSet::DataElementSet`

25.70.2.3 `typedef DataElementSet::iterator gdcm::DataSet::Iterator`

25.70.2.4 `typedef DataElementSet::size_type gdcm::DataSet::SizeType`

25.70.3 Member Function Documentation

25.70.3.1 `ConstIterator gdcm::DataSet::Begin () const [inline]`

Examples:

[DiffFile.cxx](#), [DumpGEMSMovieGroup.cxx](#), and [DuplicatePCDE.cxx](#).

25.70.3.2 `Iterator gdcm::DataSet::Begin () [inline]`

25.70.3.3 `void gdcm::DataSet::Clear () [inline]`

Referenced by `gdcm::Item::Read()`.

25.70.3.4 `Tag gdcm::DataSet::ComputeDataElement (const PrivateTag & t) const [protected]`

25.70.3.5 `template<typename TDE > unsigned int gdcm::DataSet::ComputeGroupLength (Tag const & tag) const` `[inline]`

References `gdcm::Tag::GetElement()`, and `gdcm::Tag::GetGroup()`.

25.70.3.6 `ConstIterator gdcm::DataSet::End () const` `[inline]`

Examples:

[DiffFile.cxx](#), [DumpGEMSMovieGroup.cxx](#), and [DuplicatePCDE.cxx](#).

25.70.3.7 `Iterator gdcm::DataSet::End ()` `[inline]`

25.70.3.8 `bool gdcm::DataSet::FindDataElement (const PrivateTag & t) const`

Look up if private tag 't' is present in the dataset:

Examples:

[ChangeSequenceUltrasound.cxx](#), [csa2img.cxx](#), [DumpADAC.cxx](#), [DumpGEMSMovieGroup.cxx](#), [DumpImage-HeaderInfo.cxx](#), [ELSCINT1WaveToText.cxx](#), [ExtractEncryptedContent.cxx](#), [gdcmrtionplan.cxx](#), [gdcmrtplan.cxx](#), [GetSequenceUltrasound.cxx](#), [GetSubSequenceData.cxx](#), [LargeVRDSExplicit.cxx](#), [MrProtocol.cxx](#), [pmsct_rgb1.cxx](#), [ReadAndDumpDICOMDIR.cxx](#), [ReadAndPrintAttributes.cxx](#), [ReadGEMSSDO.cxx](#), and [rle2img.cxx](#).

Referenced by `gdcm::Attribute< Group, Element, TVR, TVM >::SetFromDataSet()`, `gdcm::Attribute< Group, Element, TVR, VM::VM1 >::SetFromDataSet()`, and `gdcm::Attribute< Group, Element, TVR, VM::VM1_n >::SetFromDataSet()`.

25.70.3.9 `bool gdcm::DataSet::FindDataElement (const Tag & t) const` `[inline]`

25.70.3.10 `const DataElement& gdcm::DataSet::FindNextDataElement (const Tag & t) const` `[inline]`

Examples:

[DuplicatePCDE.cxx](#).

25.70.3.11 `const DataElement& gdcm::DataSet::GetDataElement (const Tag & t) const` `[inline]`

Return the [DataElement](#) with [Tag](#) 't'

Warning

: This only search at the 'root level' of the [DataSet](#)

Examples:

[ChangeSequenceUltrasound.cxx](#), [csa2img.cxx](#), [DumpADAC.cxx](#), [DumpGEMSMovieGroup.cxx](#), [DumpImage-HeaderInfo.cxx](#), [ELSCINT1WaveToText.cxx](#), [ExtractEncryptedContent.cxx](#), [FixBrokenJ2K.cxx](#), [FixJAIBugJPEGLS.cxx](#), [gdcmrtionplan.cxx](#), [gdcmrtplan.cxx](#), [GetJPEGSamplePrecision.cxx](#), [GetSequenceUltrasound.cxx](#), [GetSubSequenceData.cxx](#), [iU22tomultisc.cxx](#), [LargeVRDSExplicit.cxx](#), [MrProtocol.cxx](#), [PatchFile.cxx](#), [pmsct_rgb1.cxx](#), [ReadAndDumpDICOMDIR.cxx](#), [ReadExplicitLengthSQIVR.cxx](#), [ReadGEMSSDO.cxx](#), and [rle2img.cxx](#).

Referenced by `gdcmm::Attribute< Group, Element, TVR, TVM >::Set()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::Set()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::Set()`, `gdcmm::Attribute< Group, Element, TVR, TVM >::SetFromDataSet()`, `gdcmm::Attribute< Group, Element, TVR, VM::VM1 >::SetFromDataSet()`, and `gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >::SetFromDataSet()`.

25.70.3.12 `const DataElement& gdcmm::DataSet::GetDataElement (const PrivateTag & t) const`

Return the dataelement.

25.70.3.13 `const DataElement& gdcmm::DataSet::GetDEEnd () const` `[protected]`

25.70.3.14 `const DataElementSet& gdcmm::DataSet::GetDES () const` `[inline]`

Examples:

[ReadAndDumpDICOMDIR.cxx](#).

25.70.3.15 `DataElementSet& gdcmm::DataSet::GetDES ()` `[inline]`

25.70.3.16 `template<typename TDE > VL gdcmm::DataSet::GetLength () const` `[inline]`

25.70.3.17 `MediaStorage gdcmm::DataSet::GetMediaStorage () const`

25.70.3.18 `std::string gdcmm::DataSet::GetPrivateCreator (const Tag & t) const`

Return the private creator of the private tag 't':

Examples:

[DuplicatePCDE.cxx](#).

25.70.3.19 `void gdcmm::DataSet::Insert (const DataElement & de)` `[inline]`

Insert a [DataElement](#) in the [DataSet](#).

Warning

: [Tag](#) need to be `>= 0x8` to be considered valid data element

Examples:

[CreateJIPIDataSet.cxx](#), [DuplicatePCDE.cxx](#), [Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [GenAllIVR.cxx](#), [GenFakeIdentifyFile.cxx](#), [GenLongSeqs.cxx](#), [GenSeqs.cxx](#), and [StreamImageReader-Test.cxx](#).

References `gdcmmErrorMacro`, `gdcmm::Tag::GetGroup()`, and `gdcmm::DataElement::GetTag()`.

25.70.3.20 `void gdcmm::DataSet::InsertDataElement (const DataElement & de)` `[inline]`, `[protected]`

References `gdcmmWarningMacro`, `gdcmm::Value::GetLength()`, `gdcmm::DataElement::GetValue()`, `gdcmm::DataElement::GetVL()`, and `gdcmm::DataElement::IsEmpty()`.

25.70.3.21 `bool gdcm::DataSet::IsEmpty () const [inline]`

Returns if the dataset is empty.

Referenced by `gdcm::Item::Read()`.

25.70.3.22 `const DataElement& gdcm::DataSet::operator() (uint16_t group, uint16_t element) const [inline]`

25.70.3.23 `DataSet& gdcm::DataSet::operator= (DataSet const & val) [inline]`

25.70.3.24 `const DataElement& gdcm::DataSet::operator[] (const Tag & t) const [inline]`

25.70.3.25 `void gdcm::DataSet::Print (std::ostream & os, std::string const & indent = " ") const [inline]`

Referenced by `gdcm::operator<<()`.

25.70.3.26 `template<typename TDE , typename TSwap > std::istream& gdcm::DataSet::Read (std::istream & is)`

25.70.3.27 `template<typename TDE , typename TSwap > std::istream& gdcm::DataSet::ReadNested (std::istream & is)`

25.70.3.28 `template<typename TDE , typename TSwap > std::istream& gdcm::DataSet::ReadSelectedTags (std::istream & is,
const std::set< Tag > & tags)`

25.70.3.29 `template<typename TDE , typename TSwap > std::istream& gdcm::DataSet::ReadSelectedTagsWithLength (
std::istream & is, const std::set< Tag > & tags, VL & length)`

25.70.3.30 `template<typename TDE , typename TSwap > std::istream& gdcm::DataSet::ReadUpToTag (std::istream & is, const
Tag & t, std::set< Tag > const & skiptags)`

25.70.3.31 `template<typename TDE , typename TSwap > std::istream& gdcm::DataSet::ReadUpToTagWithLength (std::istream & is,
const Tag & t, VL & length)`

25.70.3.32 `template<typename TDE , typename TSwap > std::istream& gdcm::DataSet::ReadWithLength (std::istream & is, VL &
length)`

25.70.3.33 `SizeType gdcm::DataSet::Remove (const Tag & tag) [inline]`

Completely remove a dataelement from the dataset.

Examples:

[GenFakeIdentifyFile.cxx](#), [LargeVRDSExplicit.cxx](#), [MergeTwoFiles.cxx](#), [pmsct_rgb1.cxx](#), and [rle2img.cxx](#).

25.70.3.34 `void gdcm::DataSet::Replace (const DataElement & de) [inline]`

Replace a dataelement with another one.

Examples:

[ChangeSequenceUltrasound.cxx](#), [FixBrokenJ2K.cxx](#), [FixJAIBugJPEGLS.cxx](#), [GenFakeIdentifyFile.cxx](#), [Hello-World.cxx](#), [iU22tomultisc.cxx](#), [LargeVRDSExplicit.cxx](#), [PatchFile.cxx](#), [pmsct_rgb1.cxx](#), and [rle2img.cxx](#).

25.70.3.35 `void gdcm::DataSet::ReplaceEmpty (const DataElement & de) [inline]`

Only replace a DICOM attribute when it is missing or empty.

25.70.3.36 `SizeType gdcm::DataSet::Size () const [inline]`

Examples:

[DumpGEMSMovieGroup.cxx](#).

Referenced by `gdcm::SequenceOfItems::Read()`.

25.70.3.37 `template<typename TDE , typename TSwap > std::ostream const& gdcm::DataSet::Write (std::ostream & os) const`

25.70.4 Friends And Related Function Documentation

25.70.4.1 `friend class CSAHeader [friend]`

25.70.4.2 `std::ostream& operator<< (std::ostream & _os, const DataSet & val) [friend]`

The documentation for this class was generated from the following file:

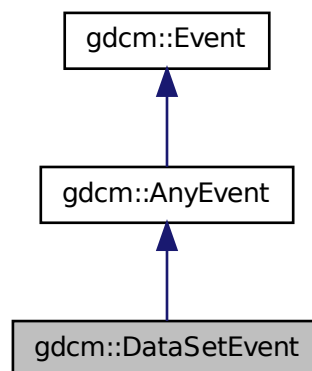
- [gdcmDataSet.h](#)

25.71 gdcm::DataSetEvent Class Reference

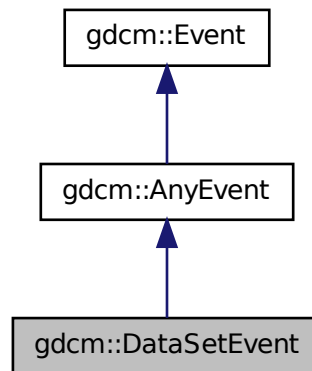
[DataSetEvent](#) Special type of event triggered during the [DataSet](#) store/move process.

```
#include <gdcmDataSetEvent.h>
```

Inheritance diagram for `gdcm::DataSetEvent`:



Collaboration diagram for gdcm::DataSetEvent:



Public Types

- typedef [DataSetEvent](#) `Self`
- typedef [AnyEvent](#) `Superclass`

Public Member Functions

- [DataSetEvent](#) ([DataSet](#) const *ds=NULL)
- [DataSetEvent](#) (const [Self](#) &s)
- virtual [~DataSetEvent](#) ()
- virtual bool [CheckEvent](#) (const ::[gdcm::Event](#) *e) const
- [DataSet](#) const & [GetDataSet](#) () const
- virtual const char * [GetEventName](#) () const
- virtual ::[gdcm::Event](#) * [MakeObject](#) () const

25.71.1 Detailed Description

[DataSetEvent](#) Special type of event triggered during the [DataSet](#) store/move process.

See Also

25.71.2 Member Typedef Documentation

25.71.2.1 typedef `DataSetEvent` `gdcm::DataSetEvent::Self`

25.71.2.2 typedef `AnyEvent` `gdcm::DataSetEvent::Superclass`

25.71.3 Constructor & Destructor Documentation

25.71.3.1 `gdcm::DataSetEvent::DataSetEvent (DataSet const * ds = NULL) [inline]`

25.71.3.2 `virtual gdcm::DataSetEvent::~~DataSetEvent () [inline],[virtual]`

25.71.3.3 `gdcm::DataSetEvent::DataSetEvent (const Self & s) [inline]`

25.71.4 Member Function Documentation

25.71.4.1 `virtual bool gdcm::DataSetEvent::CheckEvent (const ::gdcm::Event * e) const [inline],[virtual]`

25.71.4.2 `DataSet const& gdcm::DataSetEvent::GetDataSet () const [inline]`

25.71.4.3 `virtual const char* gdcm::DataSetEvent::GetEventName () const [inline],[virtual]`

Return the StringName associated with the event.

Implements [gdcm::Event](#).

25.71.4.4 `virtual ::gdcm::Event* gdcm::DataSetEvent::MakeObject () const [inline],[virtual]`

Create an [Event](#) of this type This method work as a Factory for creating events of each particular type.

Implements [gdcm::Event](#).

The documentation for this class was generated from the following file:

- [gdcmDataSetEvent.h](#)

25.72 gdcm::DataSetHelper Class Reference

[DataSetHelper](#) (internal class, not intended for user level)

```
#include <gdcmDataSetHelper.h>
```

Static Public Member Functions

- static [VR ComputeVR](#) ([File](#) const &file, [DataSet](#) const &ds, const [Tag](#) &tag)

25.72.1 Detailed Description

[DataSetHelper](#) (internal class, not intended for user level)

25.72.2 Member Function Documentation

25.72.2.1 `static VR gdcm::DataSetHelper::ComputeVR (File const & file, DataSet const & ds, const Tag & tag) [static]`

ds -> current dataset, which is not the same as the root dataset return [VR::INVALID](#) in case of error

The documentation for this class was generated from the following file:

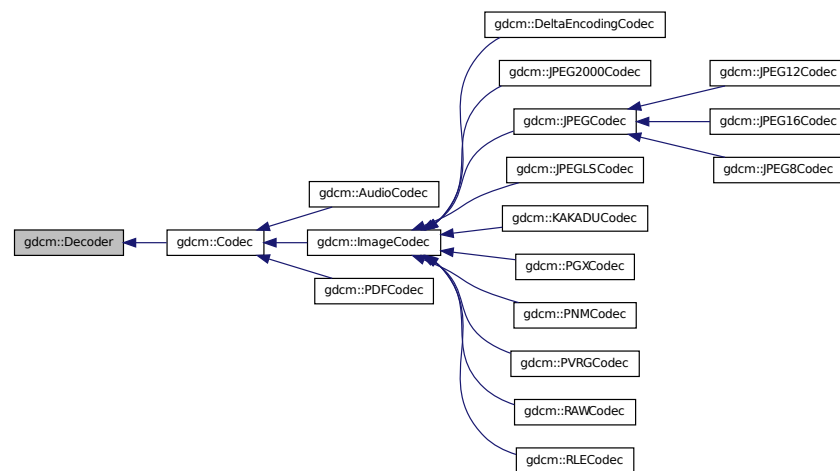
- [gdcmDataSetHelper.h](#)

25.73 gdcm::Decoder Class Reference

[Decoder.](#)

```
#include <gdcmDecoder.h>
```

Inheritance diagram for gdcm::Decoder:



Public Member Functions

- virtual [~Decoder](#) ()
- virtual bool [CanDecode](#) ([TransferSyntax](#) const &) const =0
Return whether this decoder support this transfer syntax (can decode it)
- virtual bool [Decode](#) ([DataElement](#) const &, [DataElement](#) &)
Decode.

Protected Member Functions

- virtual bool [DecodeByStreams](#) (std::istream &, std::ostream &)

25.73.1 Detailed Description

[Decoder.](#)

25.73.2 Constructor & Destructor Documentation

25.73.2.1 virtual gdcm::Decoder::~~Decoder () [inline], [virtual]

25.73.3 Member Function Documentation

25.73.3.1 `virtual bool gdcm::Decoder::CanDecode (TransferSyntax const &) const` `[pure virtual]`

Return whether this decoder support this transfer syntax (can decode it)

Implemented in [gdcm::JPEGCodec](#), [gdcm::RLECodec](#), [gdcm::PVRGCodec](#), [gdcm::JPEG2000Codec](#), [gdcm::ImageCodec](#), [gdcm::JPEGLSCodec](#), [gdcm::PNMCodec](#), [gdcm::RAWCodec](#), [gdcm::AudioCodec](#), [gdcm::PDFCodec](#), [gdcm::PGXCodec](#), and [gdcm::KAKADUCodec](#).

25.73.3.2 `virtual bool gdcm::Decoder::Decode (DataElement const & , DataElement &)` `[inline],[virtual]`

Decode.

Reimplemented in [gdcm::JPEGCodec](#), [gdcm::RLECodec](#), [gdcm::JPEGLSCodec](#), [gdcm::PVRGCodec](#), [gdcm::JPEG2000Codec](#), [gdcm::ImageCodec](#), [gdcm::DeltaEncodingCodec](#), [gdcm::KAKADUCodec](#), [gdcm::RAWCodec](#), [gdcm::AudioCodec](#), and [gdcm::PDFCodec](#).

25.73.3.3 `virtual bool gdcm::Decoder::DecodeByStreams (std::istream & , std::ostream &)` `[inline],[protected],[virtual]`

Reimplemented in [gdcm::JPEGCodec](#), [gdcm::JPEG2000Codec](#), [gdcm::RLECodec](#), [gdcm::ImageCodec](#), [gdcm::RAWCodec](#), [gdcm::JPEG12Codec](#), [gdcm::JPEG16Codec](#), and [gdcm::JPEG8Codec](#).

The documentation for this class was generated from the following file:

- [gdcmDecoder.h](#)

25.74 gdcm::DefinedTerms Class Reference

Defined Terms are used when the specified explicit Values may be extended by implementors to include additional new Values. These new Values shall be specified in the Conformance Statement (see PS 3.2) and shall not have the same meaning as currently defined Values in this standard. A Data [Element](#) with Defined Terms that does not contain a [Value](#) equivalent to one of the Values currently specified in this standard shall not be considered to have an invalid value. Note: Interpretation [Type](#) ID (4008,0210) is an example of a Data [Element](#) having Defined Terms. It is defined to have a [Value](#) that may be one of the set of standard Values; REPORT or AMENDMENT (see PS 3.3). Because this Data [Element](#) has Defined Terms other Interpretation [Type](#) IDs may be defined by the implementor.

```
#include <gdcmDefinedTerms.h>
```

Public Member Functions

- [DefinedTerms](#) ()

25.74.1 Detailed Description

Defined Terms are used when the specified explicit Values may be extended by implementors to include additional new Values. These new Values shall be specified in the Conformance Statement (see PS 3.2) and shall not have the same meaning as currently defined Values in this standard. A Data [Element](#) with Defined Terms that does not contain a [Value](#) equivalent to one of the Values currently specified in this standard shall not be considered to have an invalid value. Note: Interpretation [Type](#) ID (4008,0210) is an example of a Data [Element](#) having Defined Terms. It is defined to have a [Value](#)

that may be one of the set of standard Values; REPORT or AMENDMENT (see PS 3.3). Because this Data [Element](#) has Defined Terms other Interpretation [Type](#) IDs may be defined by the implementor.

25.74.2 Constructor & Destructor Documentation

25.74.2.1 `gdcm::DefinedTerms::DefinedTerms ()` `[inline]`

The documentation for this class was generated from the following file:

- [gdcmDefinedTerms.h](#)

25.75 gdcm::Defs Class Reference

FIXME I do not like the name 'Defs'.

```
#include <gdcmDefs.h>
```

Public Member Functions

- [Defs](#) ()
- [~Defs](#) ()
- const [IOD](#) & [GetIODFromFile](#) (const [File](#) &file) const
- const [IODs](#) & [GetIODs](#) () const
- [IODs](#) & [GetIODs](#) ()
- const [Macros](#) & [GetMacros](#) () const
- [Macros](#) & [GetMacros](#) ()
- const [Modules](#) & [GetModules](#) () const
- [Modules](#) & [GetModules](#) ()
- [Type](#) [GetTypeFromTag](#) (const [File](#) &file, const [Tag](#) &tag) const
- bool [IsEmpty](#) () const
- bool [Verify](#) (const [File](#) &file) const
- bool [Verify](#) (const [DataSet](#) &ds) const

Static Public Member Functions

- static const char * [GetIODNameFromMediaStorage](#) ([MediaStorage](#) const &ms)

Protected Member Functions

- void [LoadDefaults](#) ()
- void [LoadFromFile](#) (const char *filename)

Friends

- class [Global](#)

25.75.1 Detailed Description

FIXME I do not like the name '[Defs](#)'.

Note

bla

Examples:

[GenerateStandardSOPClasses.cxx](#), and [TraverseModules.cxx](#).

25.75.2 Constructor & Destructor Documentation

25.75.2.1 `gdcm::Defs::Defs ()`

25.75.2.2 `gdcm::Defs::~~Defs ()`

25.75.3 Member Function Documentation

25.75.3.1 `const IOD& gdcm::Defs::GetIODFromFile (const File & file) const`

25.75.3.2 `static const char* gdcm::Defs::GetIODNameFromMediaStorage (MediaStorage const & ms) [static]`

Examples:

[GenerateStandardSOPClasses.cxx](#).

25.75.3.3 `const IODs& gdcm::Defs::GetIODs () const [inline]`

25.75.3.4 `IODs& gdcm::Defs::GetIODs () [inline]`

25.75.3.5 `const Macros& gdcm::Defs::GetMacros () const [inline]`

Users should not directly use [Macro](#). [Macro](#) are simply a way for DICOM WG to re-use Tables. [Macros](#) are conveniently wrapped within [Modules](#). See [gdcm::Module](#) API directly

25.75.3.6 `Macros& gdcm::Defs::GetMacros () [inline]`

25.75.3.7 `const Modules& gdcm::Defs::GetModules () const [inline]`

25.75.3.8 `Modules& gdcm::Defs::GetModules () [inline]`

25.75.3.9 `Type gdcm::Defs::GetTypeFromTag (const File & file, const Tag & tag) const`

25.75.3.10 `bool gdcm::Defs::IsEmpty () const [inline]`

25.75.3.11 `void gdcm::Defs::LoadDefaults () [protected]`

25.75.3.12 `void gdcm::Defs::LoadFromFile (const char * filename) [protected]`

25.75.3.13 `bool gdcm::Defs::Verify (const File & file) const`

25.75.3.14 `bool gdcm::Defs::Verify (const DataSet & ds) const`

25.75.4 Friends And Related Function Documentation

25.75.4.1 `friend class Global` [*friend*]

The documentation for this class was generated from the following file:

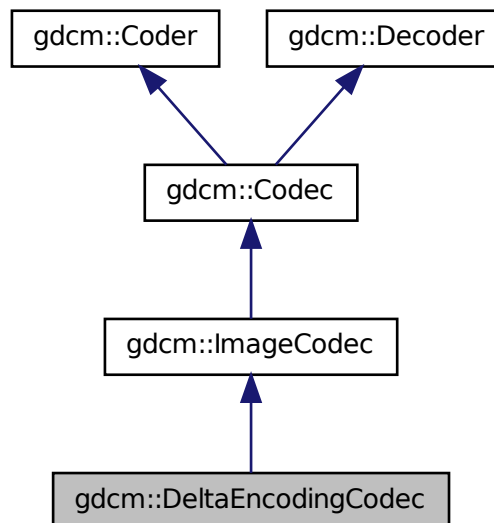
- [gdcmDefs.h](#)

25.76 gdcm::DeltaEncodingCodec Class Reference

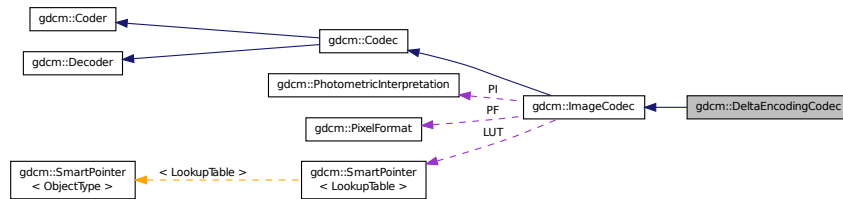
[DeltaEncodingCodec](#) compression used by some private vendor.

```
#include <gdcmDeltaEncodingCodec.h>
```

Inheritance diagram for `gdcm::DeltaEncodingCodec`:



Collaboration diagram for `gdcm::DeltaEncodingCodec`:



Public Member Functions

- [DeltaEncodingCodec](#) ()
- [~DeltaEncodingCodec](#) ()
- bool [CanDecode](#) ([TransferSyntax](#) const &ts)
- bool [Decode](#) ([DataElement](#) const &is, [DataElement](#) &os)

Decode.

Protected Member Functions

- bool [Decode](#) (std::istream &is, std::ostream &os)

Additional Inherited Members

25.76.1 Detailed Description

[DeltaEncodingCodec](#) compression used by some private vendor.

25.76.2 Constructor & Destructor Documentation

25.76.2.1 `gdcm::DeltaEncodingCodec::DeltaEncodingCodec ()`

25.76.2.2 `gdcm::DeltaEncodingCodec::~~DeltaEncodingCodec ()`

25.76.3 Member Function Documentation

25.76.3.1 `bool gdcm::DeltaEncodingCodec::CanDecode (TransferSyntax const & ts)`

25.76.3.2 `bool gdcm::DeltaEncodingCodec::Decode (DataElement const & , DataElement &)` `[virtual]`

Decode.

Reimplemented from [gdcm::Decoder](#).

25.76.3.3 `bool gdcm::DeltaEncodingCodec::Decode (std::istream & is, std::ostream & os)` [protected]

The documentation for this class was generated from the following file:

- [gdcmDeltaEncodingCodec.h](#)

25.77 gdcm::DICOMDIR Class Reference

[DICOMDIR](#) class.

```
#include <gdcmDICOMDIR.h>
```

Public Member Functions

- [DICOMDIR](#) ()
- [DICOMDIR](#) (const [FileSet](#) &fs)

25.77.1 Detailed Description

[DICOMDIR](#) class.

Structured for handling [DICOMDIR](#)

25.77.2 Constructor & Destructor Documentation

25.77.2.1 `gdcm::DICOMDIR::DICOMDIR ()` [inline]

25.77.2.2 `gdcm::DICOMDIR::DICOMDIR (const FileSet & fs)` [inline]

The documentation for this class was generated from the following file:

- [gdcmDICOMDIR.h](#)

25.78 gdcm::DICOMDIRGenerator Class Reference

[DICOMDIRGenerator](#) class This is a STD-GEN-CD [DICOMDIR](#) generator. ref: PS 3.11-2008 Annex D (Normative) - General Purpose CD-R and DVD Interchange Profiles.

```
#include <gdcmDICOMDIRGenerator.h>
```

Public Types

- typedef [Directory::FilenameType](#) [FilenameType](#)
- typedef [Directory::FilenameType](#) [FilenameType](#)

Public Member Functions

- [DICOMDIRGenerator](#) ()
- [~DICOMDIRGenerator](#) ()
- bool [Generate](#) ()

Main function to generate the [DICOMDIR](#).

- [File](#) & [GetFile](#) ()
- void [SetDescriptor](#) (const char *d)
- void [SetFile](#) (const [File](#) &f)

Set/Get file. The [DICOMDIR](#) file will be valid once a call to Generate has been done.

- void [SetFilenames](#) ([FilenamesType](#) const &fns)

Set the list of filenames from which the [DICOMDIR](#) should be generated from.

- void [SetRootDirectory](#) ([FilenameType](#) const &root)

Set the root directory from which the filenames should be considered.

Protected Member Functions

- bool [AddImageDirectoryRecord](#) ()
- bool [AddPatientDirectoryRecord](#) ()
- bool [AddSeriesDirectoryRecord](#) ()
- bool [AddStudyDirectoryRecord](#) ()
- [Scanner](#) & [GetScanner](#) ()

25.78.1 Detailed Description

[DICOMDIRGenerator](#) class This is a STD-GEN-CD [DICOMDIR](#) generator. ref: PS 3.11-2008 Annex D (Normative) - General Purpose CD-R and DVD Interchange Profiles.

Note

PS 3.11 - 2008 / D.3.2 Physical Medium And Medium Format The STD-GEN-CD and STD-GEN-SEC-CD application profiles require the 120 mm CD-R physical medium with the ISO/IEC 9660 Media Format, as defined in PS3.12. See also PS 3.12 - 2008 / Annex F 120mm CD-R Medium (Normative) and PS 3.10 - 2008 / 8 DICOM [File](#) Service / 8.1 FILE-SET

Warning

: PS 3.11 - 2008 / D.3.1 SOP Classes and Transfer Syntaxes Composite [Image](#) & Stand-alone Storage are required to be stored as Explicit [VR](#) Little Endian Uncompressed (1.2.840.10008.1.2.1). When a DICOM file is found using another Transfer Syntax the generator will simply stops.

- Input files should be Explicit [VR](#) Little Endian
- filenames should be valid [VR::CS](#) value (16 bytes, upper case ...)

Bug : There is a current limitation of not handling Referenced SOP Class UID / Referenced SOP Instance UID simply because the [gdcm::Scanner](#) does not allow us See PS 3.11 / [Table](#) D.3-2 STD-GEN Additional [DICOMDIR](#) Keys

25.78.2 Member Typedef Documentation

25.78.2.1 `typedef Directory::FileNamesType gdcm::DICOMDIRGenerator::FileNamesType`

25.78.2.2 `typedef Directory::FilenameType gdcm::DICOMDIRGenerator::FilenameType`

25.78.3 Constructor & Destructor Documentation

25.78.3.1 `gdcm::DICOMDIRGenerator::DICOMDIRGenerator ()`

25.78.3.2 `gdcm::DICOMDIRGenerator::~~DICOMDIRGenerator ()`

25.78.4 Member Function Documentation

25.78.4.1 `bool gdcm::DICOMDIRGenerator::AddImageDirectoryRecord ()` [protected]

25.78.4.2 `bool gdcm::DICOMDIRGenerator::AddPatientDirectoryRecord ()` [protected]

25.78.4.3 `bool gdcm::DICOMDIRGenerator::AddSeriesDirectoryRecord ()` [protected]

25.78.4.4 `bool gdcm::DICOMDIRGenerator::AddStudyDirectoryRecord ()` [protected]

25.78.4.5 `bool gdcm::DICOMDIRGenerator::Generate ()`

Main function to generate the [DICOMDIR](#).

25.78.4.6 `File& gdcm::DICOMDIRGenerator::GetFile ()`

25.78.4.7 `Scanner& gdcm::DICOMDIRGenerator::GetScanner ()` [protected]

25.78.4.8 `void gdcm::DICOMDIRGenerator::SetDescriptor (const char * d)`

Set the [File](#) Set ID.

Warning

 this need to be a valid [VR::CS](#) value

25.78.4.9 `void gdcm::DICOMDIRGenerator::SetFile (const File & f)`

Set/Get file. The [DICOMDIR](#) file will be valid once a call to Generate has been done.

25.78.4.10 `void gdcm::DICOMDIRGenerator::SetFileNames (FileNamesType const & fns)`

Set the list of filenames from which the [DICOMDIR](#) should be generated from.

25.78.4.11 `void gdcm::DICOMDIRGenerator::SetRootDirectory (FilenameType const & root)`

Set the root directory from which the filenames should be considered.

The documentation for this class was generated from the following file:

- [gdcmDICOmdirGenerator.h](#)

25.79 gdcm::Dict Class Reference

Class to represent a map of [DictEntry](#).

```
#include <gdcmDict.h>
```

Public Types

- typedef MapDictEntry::const_iterator [ConstIterator](#)
- typedef MapDictEntry::iterator [Iterator](#)
- typedef std::map< [Tag](#), [DictEntry](#) > [MapDictEntry](#)

Public Member Functions

- [Dict](#) ()
- void [AddDictEntry](#) (const [Tag](#) &tag, const [DictEntry](#) &de)
- [ConstIterator](#) [Begin](#) () const
- [ConstIterator](#) [End](#) () const
- const [DictEntry](#) & [GetDictEntry](#) (const [Tag](#) &tag) const
- const [DictEntry](#) & [GetDictEntryByKeyword](#) (const char *keyword, [Tag](#) &tag) const
- const [DictEntry](#) & [GetDictEntryByName](#) (const char *name, [Tag](#) &tag) const
- const char * [GetKeywordFromTag](#) ([Tag](#) const &tag) const
Function to return the Keyword from a [Tag](#).
- bool [IsEmpty](#) () const

Protected Member Functions

- void [LoadDefault](#) ()

Friends

- class [Dicts](#)
- std::ostream & [operator<<](#) (std::ostream &_os, const [Dict](#) &_val)

25.79.1 Detailed Description

Class to represent a map of [DictEntry](#).

Note

bla TODO FIXME: For [Element](#) == 0x0 need to return Name = Group Length ValueRepresentation = UL Value-Multiplicity = 1

Examples:

[GenAllVR.cxx](#), [GenFakeIdentifyFile.cxx](#), [PublicDict.cxx](#), and [ReadAndPrintAttributes.cxx](#).

25.79.2 Member Typedef Documentation

25.79.2.1 `typedef MapDictEntry::const_iterator gdcm::Dict::ConstIterator`

25.79.2.2 `typedef MapDictEntry::iterator gdcm::Dict::Iterator`

25.79.2.3 `typedef std::map<Tag, DictEntry> gdcm::Dict::MapDictEntry`

25.79.3 Constructor & Destructor Documentation

25.79.3.1 `gdcm::Dict::Dict () [inline]`

25.79.4 Member Function Documentation

25.79.4.1 `void gdcm::Dict::AddDictEntry (const Tag & tag, const DictEntry & de) [inline]`

25.79.4.2 `ConstIterator gdcm::Dict::Begin () const [inline]`

Examples:

[GenAllVR.cxx](#), and [GenFakeIdentifyFile.cxx](#).

25.79.4.3 `ConstIterator gdcm::Dict::End () const [inline]`

Examples:

[GenAllVR.cxx](#), and [GenFakeIdentifyFile.cxx](#).

25.79.4.4 `const DictEntry& gdcm::Dict::GetDictEntry (const Tag & tag) const [inline]`

Examples:

[GenFakeIdentifyFile.cxx](#), and [PublicDict.cxx](#).

25.79.4.5 `const DictEntry& gdcm::Dict::GetDictEntryByKeyword (const char * keyword, Tag & tag) const [inline]`

Lookup [DictEntry](#) by keyword. Even if DICOM standard defines keyword as being unique. The lookup table is built on [Tag](#). Therefore looking up a [DictEntry](#) by Keyword is more inefficient than looking up by [Tag](#).

25.79.4.6 `const DictEntry& gdcm::Dict::GetDictEntryByName (const char * name, Tag & tag) const [inline]`

Inefficient way of looking up tag by name. Technically DICOM does not guarantee uniqueness (and [Curve](#) / [Overlay](#) are there to prove it). But most of the time name is in fact uniq and can be uniquely link to a tag

Examples:

[ReadAndPrintAttributes.cxx](#).

25.79.4.7 `const char* gdcmm::Dict::GetKeywordFromTag (Tag const & tag) const` `[inline]`

Function to return the Keyword from a [Tag](#).

25.79.4.8 `bool gdcmm::Dict::IsEmpty () const` `[inline]`

Referenced by `gdcmm::Dicts::IsEmpty()`.

25.79.4.9 `void gdcmm::Dict::LoadDefault ()` `[protected]`

25.79.5 Friends And Related Function Documentation

25.79.5.1 `friend class Dicts` `[friend]`

25.79.5.2 `std::ostream& operator<< (std::ostream & _os, const Dict & _val)` `[friend]`

The documentation for this class was generated from the following file:

- [gdcmmDict.h](#)

25.80 gdcmm::DictConverter Class Reference

Class to convert a .dic file into something else:

```
#include <gdcmmDictConverter.h>
```

Public Types

- enum [OutputTypes](#) {
[DICT_DEFAULT](#) = 0,
[DICT_DEBUG](#),
[DICT_XML](#) }

Public Member Functions

- [DictConverter](#) ()
- [~DictConverter](#) ()
- void [Convert](#) ()
- const std::string & [GetDictName](#) () const
- const std::string & [GetInputFilename](#) () const
- const std::string & [GetOutputFilename](#) () const
- int [GetOutputType](#) () const
- void [SetDictName](#) (const char *name)
- void [SetInputFileName](#) (const char *filename)
- void [SetOutputFileName](#) (const char *filename)
- void [SetOutputType](#) (int type)

Static Public Member Functions

- static bool [Readuint16](#) (const char *raw, uint16_t &ov)
- static bool [ReadVM](#) (const char *raw, [VM::VMType](#) &type)
- static bool [ReadVR](#) (const char *raw, [VR::VRType](#) &type)

Protected Member Functions

- void [AddGroupLength](#) ()
- bool [ConvertToCXX](#) (const char *raw, std::string &cxx)
- bool [ConvertToXML](#) (const char *raw, std::string &cxx)
- void [WriteFooter](#) ()
- void [WriteHeader](#) ()

25.80.1 Detailed Description

Class to convert a .dic file into something else:

- CXX code : embeded dict into shared lib (DICT_DEFAULT)
- Debug mode (DICT_DEBUG)
- XML dict (DICT_XML)

Note

25.80.2 Member Enumeration Documentation

25.80.2.1 enum gdcm::DictConverter::OutputTypes

Enumerator

DICT_DEFAULT
DICT_DEBUG
DICT_XML

25.80.3 Constructor & Destructor Documentation

25.80.3.1 `gdcm::DictConverter::DictConverter ()`

25.80.3.2 `gdcm::DictConverter::~~DictConverter ()`

25.80.4 Member Function Documentation

25.80.4.1 `void gdcm::DictConverter::AddGroupLength ()` [protected]

25.80.4.2 `void gdcm::DictConverter::Convert ()`

25.80.4.3 `bool gdcm::DictConverter::ConvertToCXX (const char * raw, std::string & cxx)` [protected]

- 25.80.4.4 `bool gdcmm::DictConverter::ConvertToXML (const char * raw, std::string & cxx)` [protected]
- 25.80.4.5 `const std::string& gdcmm::DictConverter::GetDictName ()` const
- 25.80.4.6 `const std::string& gdcmm::DictConverter::GetInputFilename ()` const
- 25.80.4.7 `const std::string& gdcmm::DictConverter::GetOutputFilename ()` const
- 25.80.4.8 `int gdcmm::DictConverter::GetOutputType ()` const [inline]
- 25.80.4.9 `static bool gdcmm::DictConverter::Readuint16 (const char * raw, uint16_t & ov)` [static]
- 25.80.4.10 `static bool gdcmm::DictConverter::ReadVM (const char * raw, VM::VMType & type)` [static]
- 25.80.4.11 `static bool gdcmm::DictConverter::ReadVR (const char * raw, VR::VRType & type)` [static]
- 25.80.4.12 `void gdcmm::DictConverter::SetDictName (const char * name)`
- 25.80.4.13 `void gdcmm::DictConverter::SetInputFileName (const char * filename)`
- 25.80.4.14 `void gdcmm::DictConverter::SetOutputFileName (const char * filename)`
- 25.80.4.15 `void gdcmm::DictConverter::SetOutputType (int type)` [inline]
- 25.80.4.16 `void gdcmm::DictConverter::WriteFooter ()` [protected]
- 25.80.4.17 `void gdcmm::DictConverter::WriteHeader ()` [protected]

The documentation for this class was generated from the following file:

- [gdcmmDictConverter.h](#)

25.81 gdcmm::DictEntry Class Reference

Class to represent an Entry in the [Dict](#) Does not really exist within the DICOM definition, just a way to minimize storage and have a mapping from [gdcmm::Tag](#) to the needed information.

```
#include <gdcmmDictEntry.h>
```

Public Member Functions

- [DictEntry](#) (const char *name="", const char *keyword="", [VR](#) const &vr=[VR::INVALID](#), [VM](#) const &vm=[VM::VM0](#), bool ret=false)
- const char * [GetKeyword](#) () const
same as GetName but without spaces...
- const char * [GetName](#) () const
Set/Get Name.
- bool [GetRetired](#) () const
Set/Get Retired flag.
- const [VM](#) & [GetVM](#) () const

- *Set/Get VM.*
- const VR & GetVR () const
- *Set/Get VR.*
- bool IsUnique () const
- void SetElementXX (bool v)
- *Set whether element is shared in multiple elements (Source Image IDs typically)*
- void SetGroupXX (bool v)
- *Set whether element is shared in multiple groups (Curve/Overlay typically)*
- void SetKeyword (const char *keyword)
- void SetName (const char *name)
- void SetRetired (bool retired)
- void SetVM (VM const &vm)
- void SetVR (const VR &vr)

Friends

- std::ostream & operator<< (std::ostream &_os, const DictEntry &_val)

25.81.1 Detailed Description

Class to represent an Entry in the Dict Does not really exist within the DICOM definition, just a way to minimize storage and have a mapping from gdcmm::Tag to the needed information.

Note

bla TODO FIXME: Need a PublicDictEntry...indeed DictEntry has a notion of retired which does not exist in Private-DictEntry...

See Also

[gdcmm::Dict](#)

Examples:

[GenAllVR.cxx](#), [GenFakeIdentifyFile.cxx](#), [PublicDict.cxx](#), and [TraverseModules.cxx](#).

25.81.2 Constructor & Destructor Documentation

25.81.2.1 gdcmm::DictEntry::DictEntry (const char * name = " ", const char * keyword = " ", VR const & vr = VR::INVALID, VM const & vm = VM::VM0, bool ret = false) [inline]

25.81.3 Member Function Documentation

25.81.3.1 const char* gdcmm::DictEntry::GetKeyword () const [inline]

same as GetName but without spaces...

25.81.3.2 const char* gdcmm::DictEntry::GetName () const [inline]

Set/Get Name.

Referenced by gdcmm::PrivateDict::PrintXML().

25.81.3.3 `bool gdcmm::DictEntry::GetRetired () const [inline]`

Set/Get Retired flag.

Examples:

[GenAllVR.cxx](#).

25.81.3.4 `const VM& gdcmm::DictEntry::GetVM () const [inline]`

Set/Get [VM](#).

Referenced by `gdcmm::PrivateDict::AddDictEntry()`, and `gdcmm::PrivateDict::PrintXML()`.

25.81.3.5 `const VR& gdcmm::DictEntry::GetVR () const [inline]`

Set/Get [VR](#).

Examples:

[GenAllVR.cxx](#), and [GenFakeIdentifyFile.cxx](#).

Referenced by `gdcmm::PrivateDict::AddDictEntry()`, and `gdcmm::PrivateDict::PrintXML()`.

25.81.3.6 `bool gdcmm::DictEntry::IsUnique () const [inline]`

Return whether the name of the [DataElement](#) can be considered to be unique. As of 2008 all elements name were unique (except the expclitely 'XX' ones)

25.81.3.7 `void gdcmm::DictEntry::SetElementXX (bool v) [inline]`

Set whether element is shared in multiple elements (Source [Image](#) IDs typically)

25.81.3.8 `void gdcmm::DictEntry::SetGroupXX (bool v) [inline]`

Set whether element is shared in multiple groups (Curve/Overlay typically)

25.81.3.9 `void gdcmm::DictEntry::SetKeyword (const char * keyword) [inline]`

25.81.3.10 `void gdcmm::DictEntry::SetName (const char * name) [inline]`

25.81.3.11 `void gdcmm::DictEntry::SetRetired (bool retired) [inline]`

25.81.3.12 `void gdcmm::DictEntry::SetVM (VM const & vm) [inline]`

25.81.3.13 `void gdcmm::DictEntry::SetVR (const VR & vr) [inline]`

Referenced by `gdcmm::PrivateDict::AddDictEntry()`.

25.81.4 Friends And Related Function Documentation

25.81.4.1 `std::ostream& operator<< (std::ostream & _os, const DictEntry & _val)` [*friend*]

The documentation for this class was generated from the following file:

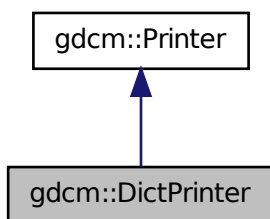
- [gdcmDictEntry.h](#)

25.82 gdcm::DictPrinter Class Reference

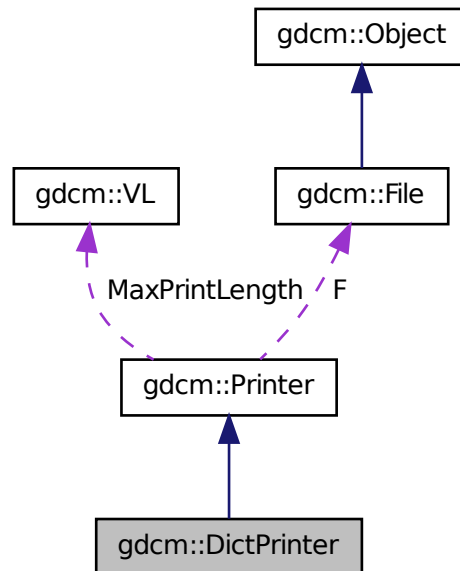
[DictPrinter](#) class.

```
#include <gdcmDictPrinter.h>
```

Inheritance diagram for `gdcm::DictPrinter`:



Collaboration diagram for `gdcm::DictPrinter`:



Public Member Functions

- [DictPrinter](#) ()
- [~DictPrinter](#) ()
- void [Print](#) (std::ostream &os)

Protected Member Functions

- void [PrintDataElement2](#) (std::ostream &os, const [DataSet](#) &ds, const [DataElement](#) &ide)
- void [PrintDataSet2](#) (std::ostream &os, const [DataSet](#) &ds)

Additional Inherited Members

25.82.1 Detailed Description

[DictPrinter](#) class.

25.82.2 Constructor & Destructor Documentation

25.82.2.1 `gdcm::DictPrinter::DictPrinter ()`

25.82.2.2 `gdcm::DictPrinter::~~DictPrinter ()`

25.82.3 Member Function Documentation

25.82.3.1 `void gdcm::DictPrinter::Print (std::ostream & os)`

25.82.3.2 `void gdcm::DictPrinter::PrintDataElement2 (std::ostream & os, const DataSet & ds, const DataElement & ide)`
[protected]

25.82.3.3 `void gdcm::DictPrinter::PrintDataSet2 (std::ostream & os, const DataSet & ds)` [protected]

The documentation for this class was generated from the following file:

- [gdcmDictPrinter.h](#)

25.83 gdcm::Dicts Class Reference

Class to manipulate the sum of knowledge (all the dict user load)

```
#include <gdcmDicts.h>
```

Public Member Functions

- [Dicts](#) ()
- [~Dicts](#) ()
- const [CSAHeaderDict](#) & [GetCSAHeaderDict](#) () const
- const [DictEntry](#) & [GetDictEntry](#) (const [Tag](#) &tag, const char *owner=NULL) const
- const [DictEntry](#) & [GetDictEntry](#) (const [PrivateTag](#) &tag) const
- const [PrivateDict](#) & [GetPrivateDict](#) () const
- [PrivateDict](#) & [GetPrivateDict](#) ()
- const [Dict](#) & [GetPublicDict](#) () const
- bool [IsEmpty](#) () const

Protected Types

- enum [ConstructorType](#) {
 [PHILIPS](#),
 [GEMS](#),
 [SIEMENS](#) }

Protected Member Functions

- void [LoadDefaults](#) ()

Static Protected Member Functions

- static const char * [GetConstructorString](#) ([ConstructorType](#) type)

Friends

- class [Global](#)
- `std::ostream & operator<< (std::ostream &_os, const Dicts &d)`

25.83.1 Detailed Description

Class to manipulate the sum of knowledge (all the dict user load)

Note

bla

Examples:

[GenAllVR.cxx](#), [GenFakeIdentifyFile.cxx](#), [PublicDict.cxx](#), [ReadAndPrintAttributes.cxx](#), and [TraverseModules.cxx](#).

25.83.2 Member Enumeration Documentation

25.83.2.1 `enum gdcm::Dicts::ConstructorType` `[protected]`

Enumerator

PHILIPS

GEMS

SIEMENS

25.83.3 Constructor & Destructor Documentation

25.83.3.1 `gdcm::Dicts::Dicts ()`

25.83.3.2 `gdcm::Dicts::~~Dicts ()`

25.83.4 Member Function Documentation

25.83.4.1 `static const char* gdcm::Dicts::GetConstructorString (ConstructorType type)` `[static], [protected]`

25.83.4.2 `const CSAHeaderDict& gdcm::Dicts::GetCSAHeaderDict () const`

Examples:

[MrProtocol.cxx](#).

25.83.4.3 `const DictEntry& gdcm::Dicts::GetDictEntry (const Tag & tag, const char * owner = NULL) const`

works for both public and private dicts: owner is null for public dict

Warning

owner need to be set to appropriate owner for call to work. see

Examples:

[PublicDict.cxx](#).

25.83.4.4 `const DictEntry& gdcmm::Dicts::GetDictEntry (const PrivateTag & tag) const`

25.83.4.5 `const PrivateDict& gdcmm::Dicts::GetPrivateDict () const`

25.83.4.6 `PrivateDict& gdcmm::Dicts::GetPrivateDict ()`

25.83.4.7 `const Dict& gdcmm::Dicts::GetPublicDict () const`

Examples:

[GenAllVR.cxx](#), [GenFakeIdentifyFile.cxx](#), [PublicDict.cxx](#), and [ReadAndPrintAttributes.cxx](#).

25.83.4.8 `bool gdcmm::Dicts::IsEmpty () const [inline]`

References `gdcmm::Dict::IsEmpty()`.

25.83.4.9 `void gdcmm::Dicts::LoadDefaults () [protected]`

25.83.5 Friends And Related Function Documentation

25.83.5.1 `friend class Global [friend]`

25.83.5.2 `std::ostream& operator<< (std::ostream & _os, const Dicts & d) [friend]`

The documentation for this class was generated from the following file:

- [gdcmmDicts.h](#)

25.84 gdcmm::network::DIMSE Class Reference

[DIMSE PS 3.7 - 2009 Annex E Command Dictionary \(Normative\) E.1 REGISTRY OF DICOM COMMAND ELEMENTS Table E.1-1 COMMAND FIELDS \(PART 1\)](#)

```
#include <gdcmmDIMSE.h>
```

Public Types

- enum [CommandTypes](#) {
[C_STORE_RQ](#) = 0x0001,
[C_STORE_RSP](#) = 0x8001,
[C_GET_RQ](#) = 0x0010,
[C_GET_RSP](#) = 0x8010,
[C_FIND_RQ](#) = 0x0020,
[C_FIND_RSP](#) = 0x8020,
[C_MOVE_RQ](#) = 0x0021,
[C_MOVE_RSP](#) = 0x8021,
[C_ECHO_RQ](#) = 0x0030,
[C_ECHO_RSP](#) = 0x8030,
[N_EVENT_REPORT_RQ](#) = 0x0100,
[N_EVENT_REPORT_RSP](#) = 0x8100,
[N_GET_RQ](#) = 0x0110,
[N_GET_RSP](#) = 0x8110,
[N_SET_RQ](#) = 0x0120,
[N_SET_RSP](#) = 0x8120,
[N_ACTION_RQ](#) = 0x0130,
[N_ACTION_RSP](#) = 0x8130,
[N_CREATE_RQ](#) = 0x0140,
[N_CREATE_RSP](#) = 0x8140,
[N_DELETE_RQ](#) = 0x0150,
[N_DELETE_RSP](#) = 0x8150,
[C_CANCEL_RQ](#) = 0x0FFF }

25.84.1 Detailed Description

[DIMSE PS 3.7 - 2009 Annex E](#) [Command Dictionary](#) (Normative) E.1 REGISTRY OF DICOM COMMAND ELEMENTS
[Table E.1-1 COMMAND FIELDS \(PART 1\)](#)

25.84.2 Member Enumeration Documentation

25.84.2.1 enum `gdcm::network::DIMSE::CommandTypes`

Enumerator

C_STORE_RQ
C_STORE_RSP
C_GET_RQ
C_GET_RSP
C_FIND_RQ
C_FIND_RSP
C_MOVE_RQ
C_MOVE_RSP
C_ECHO_RQ
C_ECHO_RSP
N_EVENT_REPORT_RQ
N_EVENT_REPORT_RSP

N_GET_RQ
N_GET_RSP
N_SET_RQ
N_SET_RSP
N_ACTION_RQ
N_ACTION_RSP
N_CREATE_RQ
N_CREATE_RSP
N_DELETE_RQ
N_DELETE_RSP
C_CANCEL_RQ

The documentation for this class was generated from the following file:

- [gdcmDIMSE.h](#)

25.85 gdcm::DirectionCosines Class Reference

class to handle [DirectionCosines](#)

```
#include <gdcmDirectionCosines.h>
```

Public Member Functions

- [DirectionCosines](#) ()
- [DirectionCosines](#) (const double dircos[6])
- [~DirectionCosines](#) ()
- double [ComputeDistAlongNormal](#) (const double ipp[3]) const
Compute the distance along the normal.
- void [Cross](#) (double z[3]) const
Compute Cross product.
- double [CrossDot](#) ([DirectionCosines](#) const &dc) const
Compute the Dot product of the two cross vector of both [DirectionCosines](#) object.
- double [Dot](#) () const
Compute Dot.
- bool [IsValid](#) () const
Return whether or not this is a valid direction cosines.
- void [Normalize](#) ()
Normalize in-place.
- [operator const double *](#) () const
*Make the class behave like a const double *.*
- void [Print](#) (std::ostream &) const
Print.
- bool [SetFromString](#) (const char *str)

25.85.1 Detailed Description

class to handle [DirectionCosines](#)

Examples:

[DiscriminateVolume.cxx](#).

25.85.2 Constructor & Destructor Documentation

25.85.2.1 `gdc::DirectionCosines::DirectionCosines ()`

25.85.2.2 `gdc::DirectionCosines::DirectionCosines (const double dircos[6])`

25.85.2.3 `gdc::DirectionCosines::~~DirectionCosines ()`

25.85.3 Member Function Documentation

25.85.3.1 `double gdc::DirectionCosines::ComputeDistAlongNormal (const double ipp[3]) const`

Compute the distance along the normal.

25.85.3.2 `void gdc::DirectionCosines::Cross (double z[3]) const`

Compute Cross product.

25.85.3.3 `double gdc::DirectionCosines::CrossDot (DirectionCosines const & dc) const`

Compute the Dot product of the two cross vector of both [DirectionCosines](#) object.

Examples:

[DiscriminateVolume.cxx](#).

25.85.3.4 `double gdc::DirectionCosines::Dot () const`

Compute Dot.

25.85.3.5 `bool gdc::DirectionCosines::IsValid () const`

Return whether or not this is a valid direction cosines.

25.85.3.6 `void gdc::DirectionCosines::Normalize ()`

Normalize in-place.

25.85.3.7 `gdc::DirectionCosines::operator const double * () const` `[inline]`

Make the class behave like a const double *.

25.85.3.8 void gdcm::DirectionCosines::Print (std::ostream &) const

Print.

25.85.3.9 bool gdcm::DirectionCosines::SetFromString (const char * str)

Initialize from string str. It requires 6 floating point separated by a backslash character.

Examples:

[DiscriminateVolume.cxx](#).

The documentation for this class was generated from the following file:

- [gdcmDirectionCosines.h](#)

25.86 gdcm::Directory Class Reference

Class for manipulation directories.

```
#include <gdcmDirectory.h>
```

Public Types

- typedef std::vector< [FilenameType](#) > [FileNamesType](#)
- typedef std::string [FilenameType](#)

Public Member Functions

- [Directory](#) ()
- [~Directory](#) ()
- [FileNamesType](#) const & [GetDirectories](#) () const
Return the Directories traversed.
- [FileNamesType](#) const & [GetFileNames](#) () const
Set/Get the file names within the directory.
- [FilenameType](#) const & [GetToplevel](#) () const
Get the name of the toplevel directory.
- unsigned int [Load](#) ([FilenameType](#) const &name, bool recursive=false)
- void [Print](#) (std::ostream &os=std::cout) const
Print.

Protected Member Functions

- unsigned int [Explore](#) ([FilenameType](#) const &name, bool recursive)
Return number of file found when 'recursive'ly exploring directory name

Friends

- `std::ostream & operator<< (std::ostream &_os, const Directory &d)`

25.86.1 Detailed Description

Class for manipulation directories.

Note

This implementation provide a cross platform implementation for manipulating diretores: basically traversing directories and harvesting files
will not take into account unix type hidden file recursive option will not look into UNIX type hidden directory (those starting with a '.')
Since python or C# provide there own equivalent implementation, in which case [gdcmm::Directory](#) does not make much sense.

Examples:

[DiscriminateVolume.cxx](#), [DumpToSQLITE3.cxx](#), [gdcmmorthoplanes.cxx](#), [GenerateRTSTRUCT.cxx](#), [ReadUTF8Qt-Dir.cxx](#), [reslicesphere.cxx](#), [SortImage.cxx](#), [threadgdcmm.cxx](#), and [VolumeSorter.cxx](#).

25.86.2 Member Typedef Documentation

25.86.2.1 `typedef std::vector<FilenameType> gdcmm::Directory::FilenamesType`

Examples:

[DiscriminateVolume.cxx](#).

25.86.2.2 `typedef std::string gdcmm::Directory::FilenameType`

25.86.3 Constructor & Destructor Documentation

25.86.3.1 `gdcmm::Directory::Directory () \[inline\]`

25.86.3.2 `gdcmm::Directory::~~Directory () \[inline\]`

25.86.4 Member Function Documentation

25.86.4.1 `unsigned int gdcmm::Directory::Explore (FilenameType const & name, bool recursive) \[protected\]`

Return number of file found when 'recursive'ly exploring directory *name*

25.86.4.2 `FilenamesType const& gdcmm::Directory::GetDirectories () const \[inline\]`

Return the Directories traversed.

25.86.4.3 `FilenameType const& gdcm::Directory::GetFilenames () const` `[inline]`

Set/Get the file names within the directory.

Examples:

[DiscriminateVolume.cxx](#), [DumpToSQLITE3.cxx](#), [gdcmorthoplanes.cxx](#), [GenerateRTSTRUCT.cxx](#), [ReadUTF8Qt-Dir.cxx](#), [reslicesphere.cxx](#), [SortImage.cxx](#), [threadgdcm.cxx](#), and [VolumeSorter.cxx](#).

25.86.4.4 `FilenameType const& gdcm::Directory::GetToplevel () const` `[inline]`

Get the name of the toplevel directory.

25.86.4.5 `unsigned int gdcm::Directory::Load (FilenameType const & name, bool recursive = false)` `[inline]`

construct a list of filenames and subdirectory beneath directory: name

Warning

: hidden file and hidden directory are not loaded.

Examples:

[DiscriminateVolume.cxx](#), [DumpToSQLITE3.cxx](#), [gdcmorthoplanes.cxx](#), [GenerateRTSTRUCT.cxx](#), [ReadUTF8Qt-Dir.cxx](#), [reslicesphere.cxx](#), [SortImage.cxx](#), [threadgdcm.cxx](#), and [VolumeSorter.cxx](#).

25.86.4.6 `void gdcm::Directory::Print (std::ostream & os = std::cout) const`

Print.

Examples:

[SortImage.cxx](#).

Referenced by `gdcm::operator<<()`.

25.86.5 Friends And Related Function Documentation

25.86.5.1 `std::ostream& operator<< (std::ostream & _os, const Directory & d)` `[friend]`

The documentation for this class was generated from the following file:

- [gdcmDirectory.h](#)

25.87 gdcm::DirectoryHelper Class Reference

[DirectoryHelper](#) this class is designed to help mitigate some of the commonly performed operations on directories. namely: 1) the ability to determine the number of series in a directory by what type of series is present 2) the ability to

find all ct series in a directory 3) the ability to find all mr series in a directory 4) to load a set of DataSets from a series that's already been sorted by the IPP sorter 5) For rtstruct stuff, you need to know the sopinstanceuid of each z plane, so there's a retrieval function for that 6) then a few other functions for rtstruct writeouts.

```
#include <gdcmDirectoryHelper.h>
```

Static Public Member Functions

- static [Directory::FilenameType GetCTImageSeriesUIDs](#) (const std::string &inDirectory)
- static [Directory::FilenameType GetFilenamesFromSeriesUIDs](#) (const std::string &inDirectory, const std::string &inSeriesUID)
- static std::string [GetFrameOfReference](#) (const std::vector< [DataSet](#) > &inDS)
- static [Directory::FilenameType GetMRImageSeriesUIDs](#) (const std::string &inDirectory)
- static [Directory::FilenameType GetRTStructSeriesUIDs](#) (const std::string &inDirectory)
- static [Directory::FilenameType GetSeriesUIDsBySOPClassUID](#) (const std::string &inDirectory, const std::string &inSOPClassUID)
- static std::string [GetSOPClassUID](#) (const std::vector< [DataSet](#) > &inDS)
- static std::string [GetStringValueFromTag](#) (const [gdcm::Tag](#) &t, const [gdcm::DataSet](#) &ds)
- static std::vector< [DataSet](#) > [LoadImageFromFiles](#) (const std::string &inDirectory, const std::string &inSeriesUID)
- static std::string [RetrieveSOPInstanceUIDFromIndex](#) (int inIndex, const std::vector< [DataSet](#) > &inDS)
- static std::string [RetrieveSOPInstanceUIDFromZPosition](#) (double inZPos, const std::vector< [DataSet](#) > &inDS)

25.87.1 Detailed Description

[DirectoryHelper](#) this class is designed to help mitigate some of the commonly performed operations on directories. namely: 1) the ability to determine the number of series in a directory by what type of series is present 2) the ability to find all ct series in a directory 3) the ability to find all mr series in a directory 4) to load a set of DataSets from a series that's already been sorted by the IPP sorter 5) For rtstruct stuff, you need to know the sopinstanceuid of each z plane, so there's a retrieval function for that 6) then a few other functions for rtstruct writeouts.

25.87.2 Member Function Documentation

25.87.2.1 static [Directory::FilenameType](#) [gdcm::DirectoryHelper::GetCTImageSeriesUIDs](#) (const std::string & *inDirectory*)
[static]

25.87.2.2 static [Directory::FilenameType](#) [gdcm::DirectoryHelper::GetFilenamesFromSeriesUIDs](#) (const std::string & *inDirectory*, const std::string & *inSeriesUID*) [static]

Examples:

[GenerateRTSTRUCT.cxx](#).

25.87.2.3 static std::string [gdcm::DirectoryHelper::GetFrameOfReference](#) (const std::vector< [DataSet](#) > & *inDS*) [static]

25.87.2.4 static [Directory::FilenameType](#) [gdcm::DirectoryHelper::GetMRImageSeriesUIDs](#) (const std::string & *inDirectory*)
[static]

25.87.2.5 `static Directory::FilenameType gdcm::DirectoryHelper::GetRTStructSeriesUIDs (const std::string & inDirectory)`
`[static]`

Examples:

[GenerateRTSTRUCT.cxx](#).

25.87.2.6 `static Directory::FilenameType gdcm::DirectoryHelper::GetSeriesUIDsBySOPClassUID (const std::string & inDirectory, const std::string & inSOPClassUID)` `[static]`

25.87.2.7 `static std::string gdcm::DirectoryHelper::GetSOPClassUID (const std::vector< DataSet > & inDS)` `[static]`

25.87.2.8 `static std::string gdcm::DirectoryHelper::GetStringValueFromTag (const gdcm::Tag & t, const gdcm::DataSet & ds)`
`[static]`

25.87.2.9 `static std::vector<DataSet> gdcm::DirectoryHelper::LoadImageFromFiles (const std::string & inDirectory, const std::string & inSeriesUID)` `[static]`

25.87.2.10 `static std::string gdcm::DirectoryHelper::RetrieveSOPInstanceUIDFromIndex (int inIndex, const std::vector< DataSet > & inDS)` `[static]`

25.87.2.11 `static std::string gdcm::DirectoryHelper::RetrieveSOPInstanceUIDFromZPosition (double inZPos, const std::vector< DataSet > & inDS)` `[static]`

The documentation for this class was generated from the following file:

- [gdcmDirectoryHelper.h](#)

25.88 gdcm::DummyValueGenerator Class Reference

Class for generating dummy value.

```
#include <gdcmDummyValueGenerator.h>
```

Static Public Member Functions

- static const char * [Generate](#) (const char *input)

25.88.1 Detailed Description

Class for generating dummy value.

See Also

[Anonymizer](#)

25.88.2 Member Function Documentation

25.88.2.1 `static const char* gdcm::DummyValueGenerator::Generate (const char * input)` `[static]`

Generate a dummy value from an input value. This is guarantee to always return the same output value when input is identical. Return an array of bytes that can be used for anonymization purpose, return NULL on error NOT THREAD SAFE

The documentation for this class was generated from the following file:

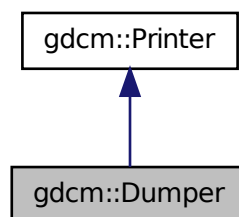
- [gdcmDummyValueGenerator.h](#)

25.89 gdcm::Dumper Class Reference

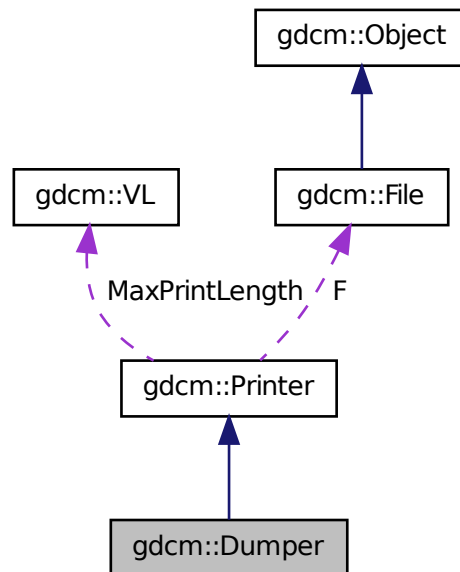
[Codec](#) class.

```
#include <gdcmDumper.h>
```

Inheritance diagram for `gdcm::Dumper`:



Collaboration diagram for gdcm::Dumper:



Public Member Functions

- [Dumper](#) ()
- [~Dumper](#) ()

Additional Inherited Members

25.89.1 Detailed Description

[Codec](#) class.

Note

Use it to simply dump value read from the file. No interpretation is done. But it is real fast ! Almost no overhead

25.89.2 Constructor & Destructor Documentation

25.89.2.1 `gdcm::Dumper::Dumper ()` `[inline]`

25.89.2.2 `gdcm::Dumper::~~Dumper ()` `[inline]`

The documentation for this class was generated from the following file:

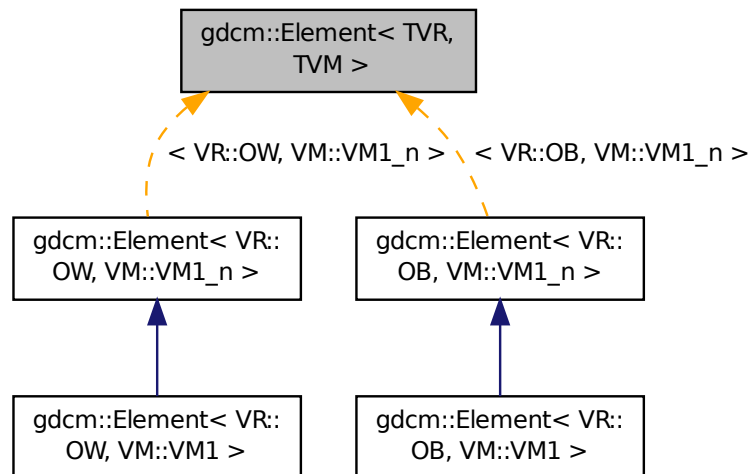
- [gdcmDumper.h](#)

25.90 gdcm::Element< TVR, TVM > Class Template Reference

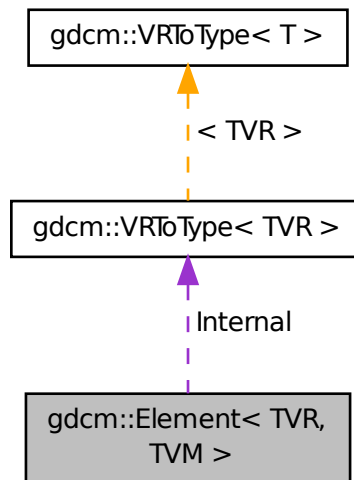
[Element](#) class.

```
#include <gdcmElement.h>
```

Inheritance diagram for `gdcm::Element< TVR, TVM >`:



Collaboration diagram for gdcm::Element< TVR, TVM >:



Public Types

- typedef `VRToType< TVR >::Type` `Type`

Public Member Functions

- `DataElement GetAsDataElement ()` const
- unsigned long `GetLength ()` const
- const `VRToType< TVR >::Type & GetValue` (unsigned int idx=0) const
- `VRToType< TVR >::Type & GetValue` (unsigned int idx=0)
- const `VRToType< TVR >::Type * GetValues ()` const
- `VRToType< TVR >::Type operator[]` (unsigned int idx) const
- void `Print` (std::ostream &_os) const
- void `Read` (std::istream &_is)
- void `Set` (Value const &v)
- void `SetFromDataElement` (DataElement const &de)
- void `SetValue` (typename `VRToType< TVR >::Type` v, unsigned int idx=0)
- void `Write` (std::ostream &_os) const

Static Public Member Functions

- static `VM GetVM ()`
- static `VR GetVR ()`

Public Attributes

- [VRToType](#)< TVR >::Type [Internal](#) [[VMToLength](#)< TVM >::Length]

Protected Member Functions

- void [SetNoSwap](#) ([Value](#) const &v)

25.90.1 Detailed Description

template<int TVR, int TVM>class gdcm::Element< TVR, TVM >

[Element](#) class.

Note

TODO

Examples:

[csa2img.cxx](#), [DumpADAC.cxx](#), [DumpGEMSMovieGroup.cxx](#), [Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [GetSubSequenceData.cxx](#), and [iU22tomultisc.cxx](#).

25.90.2 Member Typedef Documentation

25.90.2.1 template<int TVR, int TVM> typedef [VRToType](#)<TVR>::Type [gdcm::Element](#)< TVR, TVM >::Type

25.90.3 Member Function Documentation

25.90.3.1 template<int TVR, int TVM> [DataElement](#) [gdcm::Element](#)< TVR, TVM >::GetAsDataElement () const
[inline]

25.90.3.2 template<int TVR, int TVM> unsigned long [gdcm::Element](#)< TVR, TVM >::GetLength () const [inline]

Referenced by [gdcm::Element](#)< VR::OB, VM::VM1_n >::GetAsDataElement(), [gdcm::Element](#)< TVR, VM::VM1_n >::GetAsDataElement(), [gdcm::Element](#)< TVR, VM::VM1_n >::Print(), [gdcm::Element](#)< VR::OB, VM::VM1_n >::Read(), [gdcm::Element](#)< TVR, VM::VM1_n >::Read(), [gdcm::Element](#)< VR::OB, VM::VM1_n >::Set(), [gdcm::Element](#)< TVR, VM::VM1_n >::Set(), [gdcm::Element](#)< VR::OB, VM::VM1_n >::SetNoSwap(), [gdcm::Element](#)< TVR, VM::VM1_n >::SetNoSwap(), [gdcm::Element](#)< VR::OB, VM::VM1_n >::Write(), [gdcm::Element](#)< TVR, VM::VM1_n >::Write(), and [gdcm::Element](#)< TVR, VM::VM1_n >::WriteASCII().

25.90.3.3 template<int TVR, int TVM> const [VRToType](#)<TVR>::Type& [gdcm::Element](#)< TVR, TVM >::GetValue (unsigned int *idx* = 0) const [inline]

Referenced by [gdcm::Element](#)< VR::OB, VM::VM1_n >::operator[](), and [gdcm::Element](#)< TVR, VM::VM1_n >::operator[]().

25.90.3.4 template<int TVR, int TVM> [VRToType](#)<TVR>::Type& [gdcm::Element](#)< TVR, TVM >::GetValue (unsigned int *idx* = 0) [inline]

25.90.3.5 `template<int TVR, int TVM> const VRToType<TVR>::Type* gdcm::Element< TVR, TVM >::GetValues () const [inline]`

25.90.3.6 `template<int TVR, int TVM> static VM gdcm::Element< TVR, TVM >::GetVM () [inline],[static]`

25.90.3.7 `template<int TVR, int TVM> static VR gdcm::Element< TVR, TVM >::GetVR () [inline],[static]`

Referenced by `gdcm::Element< VR::OB, VM::VM1_n >::GetAsDataElement()`, and `gdcm::Element< TVR, VM::VM1_n >::GetAsDataElement()`.

25.90.3.8 `template<int TVR, int TVM> VRToType<TVR>::Type gdcm::Element< TVR, TVM >::operator[] (unsigned int idx) const [inline]`

25.90.3.9 `template<int TVR, int TVM> void gdcm::Element< TVR, TVM >::Print (std::ostream & _os) const [inline]`

25.90.3.10 `template<int TVR, int TVM> void gdcm::Element< TVR, TVM >::Read (std::istream & _is) [inline]`

Referenced by `gdcm::Element< VR::OB, VM::VM1_n >::Read()`, `gdcm::Element< TVR, VM::VM1_n >::Read()`, `gdcm::Element< VR::OB, VM::VM1_n >::Set()`, and `gdcm::Element< TVR, VM::VM1_n >::Set()`.

25.90.3.11 `template<int TVR, int TVM> void gdcm::Element< TVR, TVM >::Set (Value const & v) [inline]`

Referenced by `gdcm::Element< VR::OB, VM::VM1_n >::SetFromDataElement()`, and `gdcm::Element< TVR, VM::VM1_n >::SetFromDataElement()`.

25.90.3.12 `template<int TVR, int TVM> void gdcm::Element< TVR, TVM >::SetFromDataElement (DataElement< TVR, TVM > const & de) [inline]`

25.90.3.13 `template<int TVR, int TVM> void gdcm::Element< TVR, TVM >::SetNoSwap (Value const & v) [inline],[protected]`

Referenced by `gdcm::Element< VR::OB, VM::VM1_n >::SetFromDataElement()`, and `gdcm::Element< TVR, VM::VM1_n >::SetFromDataElement()`.

25.90.3.14 `template<int TVR, int TVM> void gdcm::Element< TVR, TVM >::SetValue (typename VRToType< TVR >::Type v, unsigned int idx=0) [inline]`

25.90.3.15 `template<int TVR, int TVM> void gdcm::Element< TVR, TVM >::Write (std::ostream & _os) const [inline]`

Referenced by `gdcm::Element< VR::OB, VM::VM1_n >::GetAsDataElement()`, `gdcm::Element< TVR, VM::VM1_n >::GetAsDataElement()`, `gdcm::Element< VR::OB, VM::VM1_n >::Write()`, and `gdcm::Element< TVR, VM::VM1_n >::Write()`.

25.90.4 Member Data Documentation

25.90.4.1 `template<int TVR, int TVM> VRToType<TVR>::Type gdcm::Element< TVR, TVM >::Internal[VMToLength< TVM >::Length]`

Referenced by `gdcm::Element< VR::OB, VM::VM1_n >::GetAsDataElement()`, `gdcm::Element< VR::OB, VM::VM1_n >::GetValue()`, `gdcm::Element< VR::OB, VM::VM1_n >::GetValues()`, `gdcm::Element< VR::OB, VM::VM1_n >::Print()`,

gdcm::Element< VR::AS, VM::VM5 >::Print(), gdcm::Element< VR::OB, VM::VM1_n >::Read(), gdcm::Element< VR::OB, VM::VM1_n >::Set(), gdcm::Element< TVR, VM::VM1_n >::SetLength(), gdcm::Element< VR::OB, VM::VM1_n >::SetNoSwap(), gdcm::Element< VR::OB, VM::VM1_n >::SetValue(), gdcm::Element< VR::OB, VM::VM1_n >::Write(), and gdcm::Element< TVR, VM::VM1_n >::~~Element().

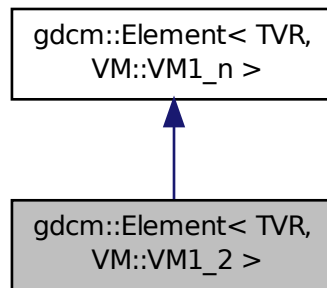
The documentation for this class was generated from the following file:

- [gdcmElement.h](#)

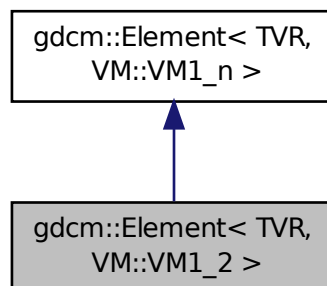
25.91 gdcm::Element< TVR, VM::VM1_2 > Class Template Reference

```
#include <gdcmElement.h>
```

Inheritance diagram for gdcm::Element< TVR, VM::VM1_2 >:



Collaboration diagram for gdcm::Element< TVR, VM::VM1_2 >:



Public Types

- typedef [Element](#)< TVR, [VM::VM1_n](#) > [Parent](#)

Public Member Functions

- void [SetLength](#) (int len)

Additional Inherited Members

25.91.1 Member Typedef Documentation

25.91.1.1 `template<int TVR> typedef Element<TVR, VM::VM1_n> gdcmm::Element< TVR, VM::VM1_2 >::Parent`

25.91.2 Member Function Documentation

25.91.2.1 `template<int TVR> void gdcmm::Element< TVR, VM::VM1_2 >::SetLength (int len)` `[inline]`

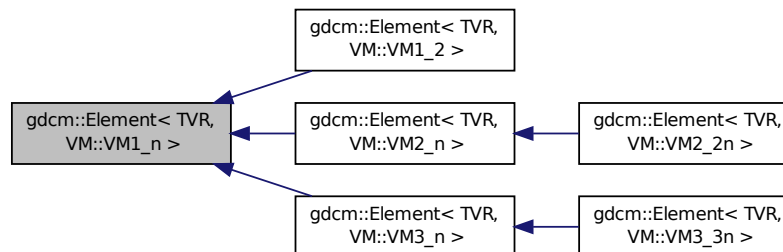
The documentation for this class was generated from the following file:

- [gdcmmElement.h](#)

25.92 gdcmm::Element< TVR, VM::VM1_n > Class Template Reference

```
#include <gdcmmElement.h>
```

Inheritance diagram for gdcmm::Element< TVR, VM::VM1_n >:



Public Types

- typedef [VRToType](#)< TVR >::Type Type

Public Member Functions

- [Element](#) ()

- [Element](#) (const [Element](#) &_val)
- [~Element](#) ()
- [DataElement](#) [GetAsDataElement](#) () const
- unsigned long [GetLength](#) () const
- const [VRToType](#)< TVR >::Type & [GetValue](#) (unsigned int idx=0) const
- [VRToType](#)< TVR >::Type & [GetValue](#) (unsigned int idx=0)
- [Element](#) & [operator=](#) (const [Element](#) &_val)
- [VRToType](#)< TVR >::Type [operator\[\]](#) (unsigned int idx) const
- void [Print](#) (std::ostream &_os) const
- void [Read](#) (std::istream &_is)
- void [Set](#) ([Value](#) const &v)
- void [SetArray](#) (const [Type](#) *array, unsigned long len, bool save=false)
- void [SetFromDataElement](#) ([DataElement](#) const &de)
- void [SetLength](#) (unsigned long len)
- void [SetValue](#) (typename [VRToType](#)< TVR >::Type v, unsigned int idx=0)
- void [Write](#) (std::ostream &_os) const
- void [WriteASCII](#) (std::ostream &os) const

Static Public Member Functions

- static [VM](#) [GetVM](#) ()
- static [VR](#) [GetVR](#) ()

Protected Member Functions

- void [SetNoSwap](#) ([Value](#) const &v)

25.92.1 Member Typedef Documentation

25.92.1.1 `template<int TVR> typedef VRToType<TVR>::Type gdcm::Element< TVR, VM::VM1_n >::Type`

25.92.2 Constructor & Destructor Documentation

25.92.2.1 `template<int TVR> gdcm::Element< TVR, VM::VM1_n >::Element () [inline], [explicit]`

25.92.2.2 `template<int TVR> gdcm::Element< TVR, VM::VM1_n >::~~Element () [inline]`

References [gdcm::Element](#)< TVR, [TVM](#) >::Internal.

25.92.2.3 `template<int TVR> gdcm::Element< TVR, VM::VM1_n >::Element (const Element< TVR, VM::VM1_n > &_val) [inline]`

25.92.3 Member Function Documentation

25.92.3.1 `template<int TVR> DataElement gdcm::Element< TVR, VM::VM1_n >::GetAsDataElement () const [inline]`

References [gdcm::Element](#)< TVR, [TVM](#) >::GetLength(), [gdcm::Element](#)< TVR, [TVM](#) >::GetVR(), [gdcm::DataElement](#)::GetVR(), [gdcm::DataElement](#)::SetByteValue(), [gdcm::DataElement](#)::SetVR(), [gdcm::VR](#)::SQ, [gdcm::VR](#)::UI, [gdcm::VR](#)::VRASCII, and [gdcm::Element](#)< TVR, [TVM](#) >::Write().

25.92.3.2 `template<int TVR> unsigned long gdcmm::Element< TVR, VM::VM1_n >::GetLength () const [inline]`

25.92.3.3 `template<int TVR> const VRToType<TVR>::Type& gdcmm::Element< TVR, VM::VM1_n >::GetValue (unsigned int idx = 0) const [inline]`

25.92.3.4 `template<int TVR> VRToType<TVR>::Type& gdcmm::Element< TVR, VM::VM1_n >::GetValue (unsigned int idx = 0) [inline]`

25.92.3.5 `template<int TVR> static VM gdcmm::Element< TVR, VM::VM1_n >::GetVM () [inline],[static]`

References gdcmm::VM::VM1_n.

25.92.3.6 `template<int TVR> static VR gdcmm::Element< TVR, VM::VM1_n >::GetVR () [inline],[static]`

25.92.3.7 `template<int TVR> Element& gdcmm::Element< TVR, VM::VM1_n >::operator= (const Element< TVR, VM::VM1_n > &_val) [inline]`

25.92.3.8 `template<int TVR> VRToType<TVR>::Type gdcmm::Element< TVR, VM::VM1_n >::operator[] (unsigned int idx) const [inline]`

References gdcmm::Element< TVR, TVM >::GetValue().

25.92.3.9 `template<int TVR> void gdcmm::Element< TVR, VM::VM1_n >::Print (std::ostream &_os) const [inline]`

References gdcmm::Element< TVR, TVM >::GetLength().

25.92.3.10 `template<int TVR> void gdcmm::Element< TVR, VM::VM1_n >::Read (std::istream &_is) [inline]`

References gdcmm::Element< TVR, TVM >::GetLength(), and gdcmm::Element< TVR, TVM >::Read().

25.92.3.11 `template<int TVR> void gdcmm::Element< TVR, VM::VM1_n >::Set (Value const & v) [inline]`

References gdcmm::Element< TVR, TVM >::GetLength(), gdcmm::ByteValue::GetLength(), gdcmm::ByteValue::GetPointer(), gdcmm::Element< TVR, TVM >::Read(), and gdcmm::VR::VRBINARY.

25.92.3.12 `template<int TVR> void gdcmm::Element< TVR, VM::VM1_n >::SetArray (const Type * array, unsigned long len, bool save = false) [inline]`

25.92.3.13 `template<int TVR> void gdcmm::Element< TVR, VM::VM1_n >::SetFromDataElement (DataElement< TVR, VM::VM1_n > const & de) [inline]`

References gdcmm::DataElement::GetByteValue(), gdcmm::DataElement::GetValue(), gdcmm::DataElement::GetVR(), gdcmm::VR::INVALID, gdcmm::Element< TVR, TVM >::Set(), gdcmm::Element< TVR, TVM >::SetNoSwap(), and gdcmm::VR::UN.

25.92.3.14 `template<int TVR> void gdcmm::Element< TVR, VM::VM1_n >::SetLength (unsigned long len) [inline]`

References gdcmm::Element< TVR, TVM >::Internal.

25.92.3.15 `template<int TVR> void gdcM::Element< TVR, VM::VM1_n >::SetNoSwap (Value const & v) [inline], [protected]`

References `gdcM::Element< TVR, TVM >::GetLength()`, `gdcM::ByteValue::GetLength()`, `gdcM::ByteValue::GetPointer()`, and `gdcM::VR::VRBINARY`.

25.92.3.16 `template<int TVR> void gdcM::Element< TVR, VM::VM1_n >::SetValue (typename VRToType< TVR >::Type v, unsigned int idx=0) [inline]`

25.92.3.17 `template<int TVR> void gdcM::Element< TVR, VM::VM1_n >::Write (std::ostream & _os) const [inline]`

References `gdcM::Element< TVR, TVM >::GetLength()`, and `gdcM::Element< TVR, TVM >::Write()`.

25.92.3.18 `template<int TVR> void gdcM::Element< TVR, VM::VM1_n >::WriteASCII (std::ostream & os) const [inline]`

References `gdcM::Element< TVR, TVM >::GetLength()`.

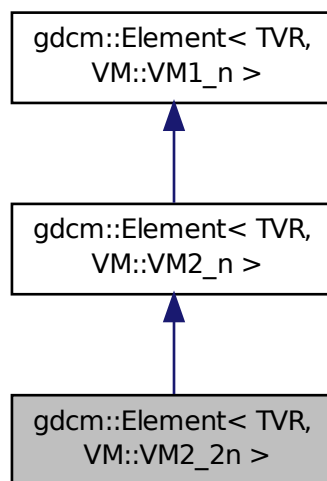
The documentation for this class was generated from the following file:

- [gdcMElement.h](#)

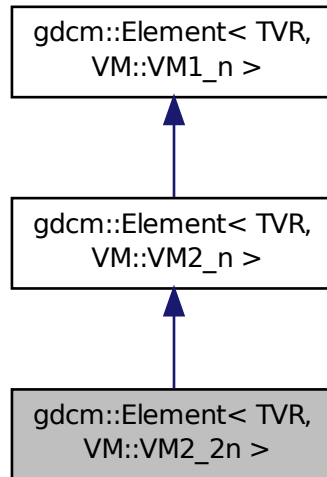
25.93 `gdcM::Element< TVR, VM::VM2_2n >` Class Template Reference

```
#include <gdcMElement.h>
```

Inheritance diagram for `gdcM::Element< TVR, VM::VM2_2n >`:



Collaboration diagram for gdcM::Element< TVR, VM::VM2_2n >:



Public Types

- typedef `Element< TVR, VM::VM2_n >` `Parent`

Public Member Functions

- void `SetLength` (int len)

Additional Inherited Members

25.93.1 Member Typedef Documentation

25.93.1.1 `template<int TVR> typedef Element<TVR, VM::VM2_n> gdcM::Element< TVR, VM::VM2_2n >::Parent`

25.93.2 Member Function Documentation

25.93.2.1 `template<int TVR> void gdcM::Element< TVR, VM::VM2_2n >::SetLength (int len) [inline]`

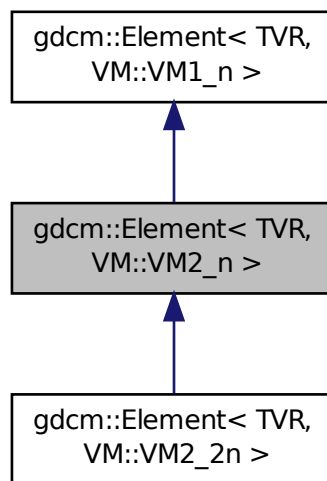
The documentation for this class was generated from the following file:

- `gdcMElement.h`

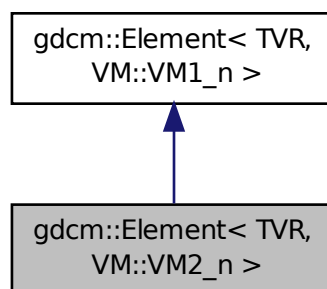
25.94 gdcmm::Element< TVR, VM::VM2_n > Class Template Reference

```
#include <gdcmmElement.h>
```

Inheritance diagram for gdcmm::Element< TVR, VM::VM2_n >:



Collaboration diagram for gdcmm::Element< TVR, VM::VM2_n >:



Public Types

- typedef [Element](#)< TVR, [VM::VM1_n](#) > [Parent](#)

Public Member Functions

- void [SetLength](#) (int len)

Additional Inherited Members

25.94.1 Member Typedef Documentation

25.94.1.1 `template<int TVR> typedef Element<TVR, VM::VM1_n> gdcM::Element< TVR, VM::VM2_n >::Parent`

25.94.2 Member Function Documentation

25.94.2.1 `template<int TVR> void gdcM::Element< TVR, VM::VM2_n >::SetLength (int len) [inline]`

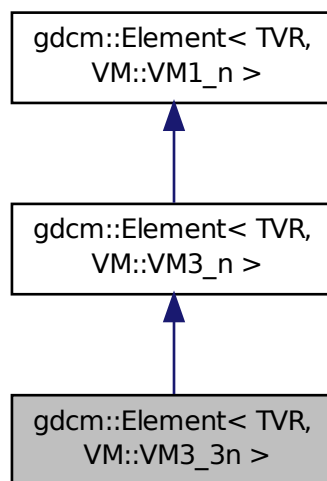
The documentation for this class was generated from the following file:

- [gdcMElement.h](#)

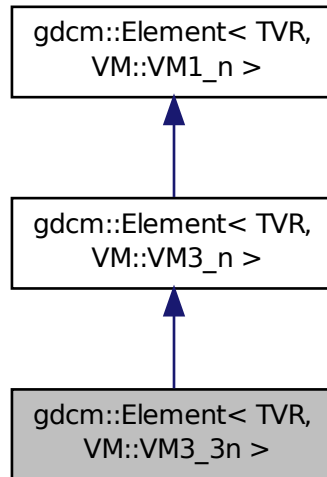
25.95 gdcM::Element< TVR, VM::VM3_3n > Class Template Reference

```
#include <gdcMElement.h>
```

Inheritance diagram for gdcM::Element< TVR, VM::VM3_3n >:



Collaboration diagram for `gdcM::Element< TVR, VM::VM3_3n >`:



Public Types

- typedef `Element< TVR, VM::VM3_n >` `Parent`

Public Member Functions

- void `SetLength` (int *len*)

Additional Inherited Members

25.95.1 Member Typedef Documentation

25.95.1.1 `template<int TVR> typedef Element<TVR, VM::VM3_n> gdcM::Element< TVR, VM::VM3_3n >::Parent`

25.95.2 Member Function Documentation

25.95.2.1 `template<int TVR> void gdcM::Element< TVR, VM::VM3_3n >::SetLength (int len) [inline]`

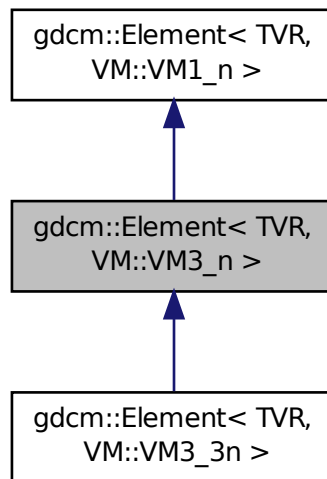
The documentation for this class was generated from the following file:

- `gdcMElement.h`

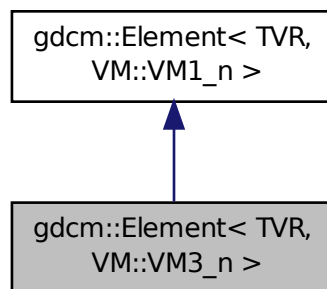
25.96 gdcm::Element< TVR, VM::VM3_n > Class Template Reference

```
#include <gdcmElement.h>
```

Inheritance diagram for gdcm::Element< TVR, VM::VM3_n >:



Collaboration diagram for gdcm::Element< TVR, VM::VM3_n >:



Public Types

- typedef [Element](#)< TVR, [VM::VM1_n](#) > [Parent](#)

Public Member Functions

- void [SetLength](#) (int len)

Additional Inherited Members

25.96.1 Member Typedef Documentation

25.96.1.1 `template<int TVR> typedef Element<TVR, VM::VM1_n> gdcmm::Element< TVR, VM::VM3_n >::Parent`

25.96.2 Member Function Documentation

25.96.2.1 `template<int TVR> void gdcmm::Element< TVR, VM::VM3_n >::SetLength (int len) [inline]`

The documentation for this class was generated from the following file:

- [gdcmmElement.h](#)

25.97 gdcmm::Element< VR::AS, VM::VM5 > Class Template Reference

```
#include <gdcmmElement.h>
```

Public Member Functions

- unsigned long [GetLength](#) () const
- void [Print](#) (std::ostream &_os) const

Public Attributes

- char [Internal](#) [VMToLength< VM::VM5 >::Length *sizeof(VRToType< VR::AS >::Type)]

25.97.1 Member Function Documentation

25.97.1.1 `unsigned long gdcmm::Element< VR::AS, VM::VM5 >::GetLength () const [inline]`

25.97.1.2 `void gdcmm::Element< VR::AS, VM::VM5 >::Print (std::ostream &_os) const [inline]`

References `gdcmm::Element< TVR, TVM >::Internal`.

25.97.2 Member Data Documentation

25.97.2.1 `char gdcmm::Element< VR::AS, VM::VM5 >::Internal[VMToLength< VM::VM5 >::Length *sizeof(VRToType< VR::AS >::Type)]`

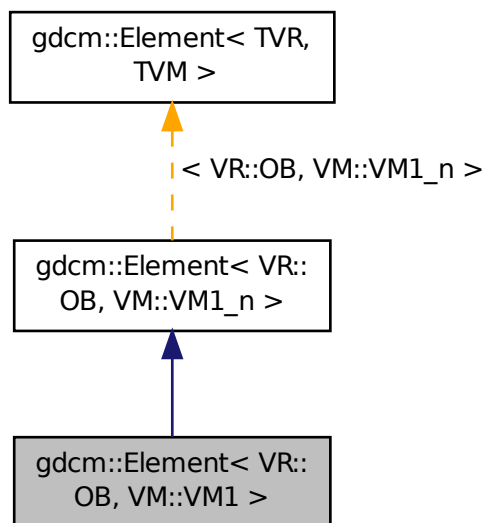
The documentation for this class was generated from the following file:

- [gdcmmElement.h](#)

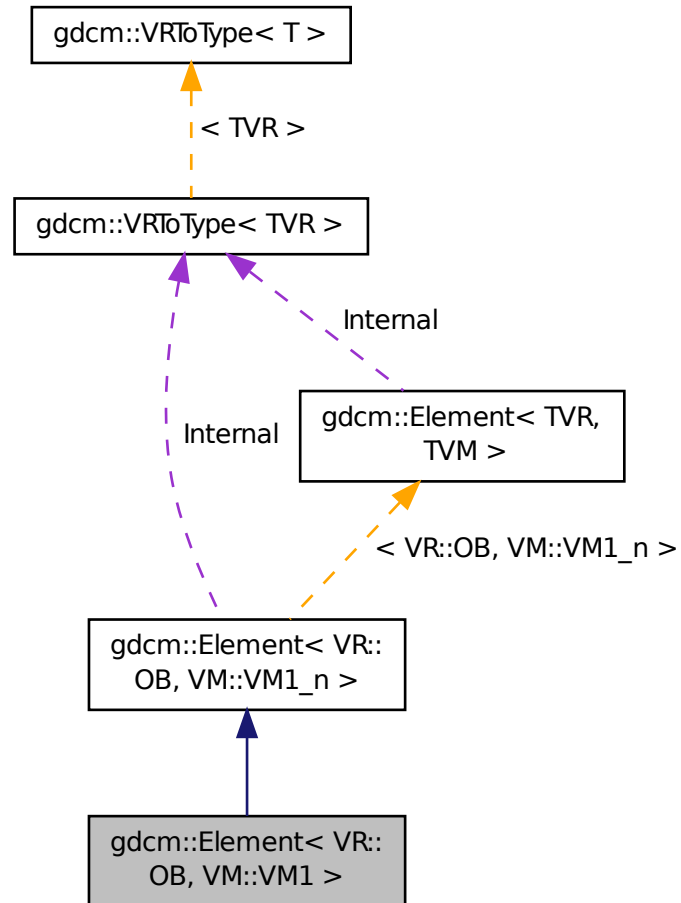
25.98 gdcm::Element< VR::OB, VM::VM1 > Class Template Reference

```
#include <gdcmElement.h>
```

Inheritance diagram for gdcm::Element< VR::OB, VM::VM1 >:



Collaboration diagram for `gdcM::Element< VR::OB, VM::VM1 >`:



Additional Inherited Members

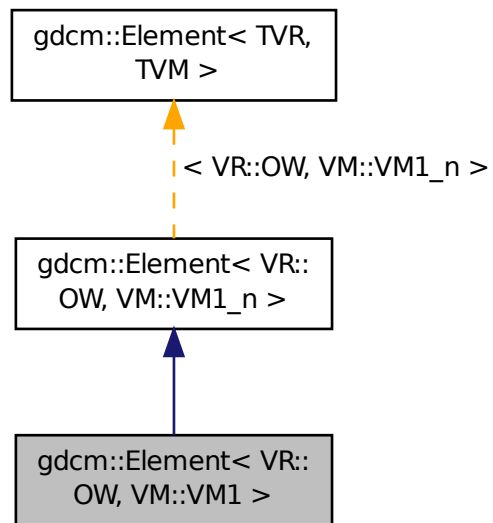
The documentation for this class was generated from the following file:

- [gdcMElement.h](#)

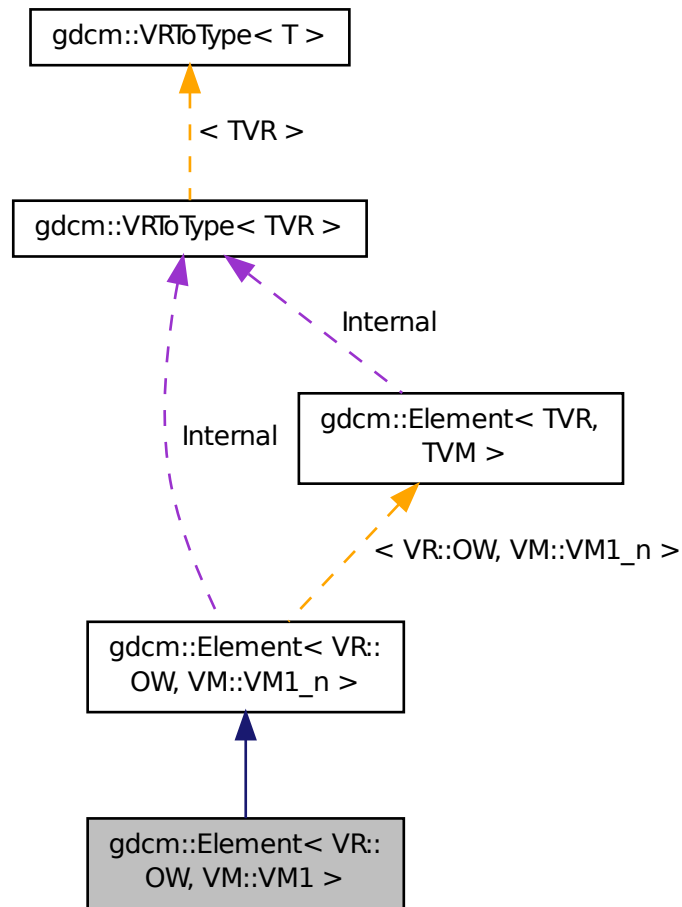
25.99 `gdcM::Element< VR::OW, VM::VM1 >` Class Template Reference

```
#include <gdcMElement.h>
```


Inheritance diagram for gdcm::Element< VR::OW, VM::VM1 >:



Collaboration diagram for `gdcm::Element< VR::OW, VM::VM1 >`:



Additional Inherited Members

The documentation for this class was generated from the following file:

- [gdcmElement.h](#)

25.100 `gdcm::EncapsulatedDocument` Class Reference

[EncapsulatedDocument.](#)

```
#include <gdcmEncapsulatedDocument.h>
```

Public Member Functions

- [EncapsulatedDocument](#) ()

25.100.1 Detailed Description

[EncapsulatedDocument](#).

25.100.2 Constructor & Destructor Documentation

25.100.2.1 `gdcm::EncapsulatedDocument::EncapsulatedDocument ()` `[inline]`

The documentation for this class was generated from the following file:

- [gdcmEncapsulatedDocument.h](#)

25.101 `gdcm::EncodingImplementation< T >` Class Template Reference

[EncodingImplementation](#).

```
#include <gdcmElement.h>
```

25.101.1 Detailed Description

```
template<int T>class gdcm::EncodingImplementation< T >
```

[EncodingImplementation](#).

Note

TODO

The documentation for this class was generated from the following file:

- [gdcmElement.h](#)

25.102 `gdcm::EncodingImplementation< VR::VRASCII >` Class Template Reference

```
#include <gdcmElement.h>
```

Public Member Functions

- `template<>`
void [Write](#) (const float *data, unsigned long length, std::ostream &_os)
- `template<>`
void [Write](#) (const double *data, unsigned long length, std::ostream &_os)

Static Public Member Functions

- `template<typename T >`
static void [Read](#) (T *data, unsigned long length, std::istream &_is)
- `template<typename T >`
static void [ReadComputeLength](#) (T *data, unsigned int &length, std::istream &_is)
- `template<typename T >`
static void [ReadNoSwap](#) (T *data, unsigned long length, std::istream &_is)
- `template<typename T >`
static void [Write](#) (const T *data, unsigned long length, std::ostream &_os)

25.102.1 Member Function Documentation

25.102.1.1 `template<typename T > static void gdcm::EncodingImplementation< VR::VRASCII >::Read (T * data, unsigned long length, std::istream &_is)` `[inline]`, `[static]`

25.102.1.2 `template<typename T > static void gdcm::EncodingImplementation< VR::VRASCII >::ReadComputeLength (T * data, unsigned int & length, std::istream &_is)` `[inline]`, `[static]`

References `gdcm::backslash()`.

25.102.1.3 `template<typename T > static void gdcm::EncodingImplementation< VR::VRASCII >::ReadNoSwap (T * data, unsigned long length, std::istream &_is)` `[inline]`, `[static]`

25.102.1.4 `template<typename T > static void gdcm::EncodingImplementation< VR::VRASCII >::Write (const T * data, unsigned long length, std::ostream &_os)` `[inline]`, `[static]`

25.102.1.5 `template<> void gdcm::EncodingImplementation< VR::VRASCII >::Write (const float * data, unsigned long length, std::ostream &_os)` `[inline]`

References `gdcm::to_string()`.

25.102.1.6 `template<> void gdcm::EncodingImplementation< VR::VRASCII >::Write (const double * data, unsigned long length, std::ostream &_os)` `[inline]`

References `gdcm::to_string()`.

The documentation for this class was generated from the following file:

- [gdcmElement.h](#)

25.103 gdcm::EncodingImplementation< VR::VRBINARY > Class Template Reference

```
#include <gdcmElement.h>
```

Static Public Member Functions

- `template<typename T >`
static void [Read](#) (T *data, unsigned long length, std::istream &_is)

- `template<typename T >`
`static void ReadComputeLength (T *data, unsigned int &length, std::istream &_is)`
- `template<typename T >`
`static void ReadNoSwap (T *data, unsigned long length, std::istream &_is)`
- `template<typename T >`
`static void Write (const T *data, unsigned long length, std::ostream &_os)`

25.103.1 Member Function Documentation

25.103.1.1 `template<typename T > static void gdcm::EncodingImplementation< VR::VRBINARY >::Read (T * data, unsigned long length, std::istream &_is)` `[inline]`, `[static]`

References `gdcm::SwapperNoOp::SwapArray()`.

25.103.1.2 `template<typename T > static void gdcm::EncodingImplementation< VR::VRBINARY >::ReadComputeLength (T * data, unsigned int & length, std::istream &_is)` `[inline]`, `[static]`

25.103.1.3 `template<typename T > static void gdcm::EncodingImplementation< VR::VRBINARY >::ReadNoSwap (T * data, unsigned long length, std::istream &_is)` `[inline]`, `[static]`

25.103.1.4 `template<typename T > static void gdcm::EncodingImplementation< VR::VRBINARY >::Write (const T * data, unsigned long length, std::ostream &_os)` `[inline]`, `[static]`

References `gdcm::SwapperNoOp::Swap()`.

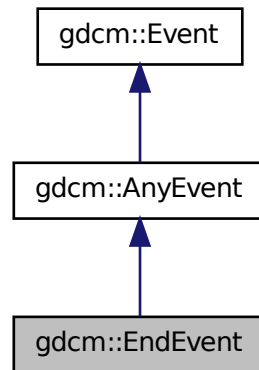
The documentation for this class was generated from the following file:

- [gdcmElement.h](#)

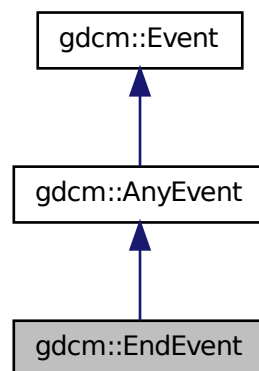
25.104 gdcm::EndEvent Class Reference

```
#include <gdcmEvent.h>
```

Inheritance diagram for `gdcm::EndEvent`:



Collaboration diagram for `gdcm::EndEvent`:



Additional Inherited Members

The documentation for this class was generated from the following file:

- [gdcmEvent.h](#)

25.105 gdcm::EnumeratedValues Class Reference

Element. A Data [Element](#) with Enumerated Values that does not have a [Value](#) equivalent to one of the Values specified in this standard has an invalid value within the scope of a specific Information Object/SOP Class definition. Note:

```
#include <gdcmEnumeratedValues.h>
```

Public Member Functions

- [EnumeratedValues](#) ()

25.105.1 Detailed Description

Element. A Data [Element](#) with Enumerated Values that does not have a [Value](#) equivalent to one of the Values specified in this standard has an invalid value within the scope of a specific Information Object/SOP Class definition. Note:

1. [Patient](#) Sex (0010, 0040) is an example of a Data [Element](#) having Enumerated Values. It is defined to have a [Value](#) that is either "M", "F", or "O" (see PS 3.3). No other [Value](#) shall be given to this Data [Element](#).
2. Future modifications of this standard may add to the set of allowed values for Data Elements with Enumerated Values. Such additions by themselves may or may not require a change in SOP Class [UIDs](#), depending on the semantics of the Data [Element](#).

25.105.2 Constructor & Destructor Documentation

25.105.2.1 [gdcm::EnumeratedValues::EnumeratedValues \(\)](#) [inline]

The documentation for this class was generated from the following file:

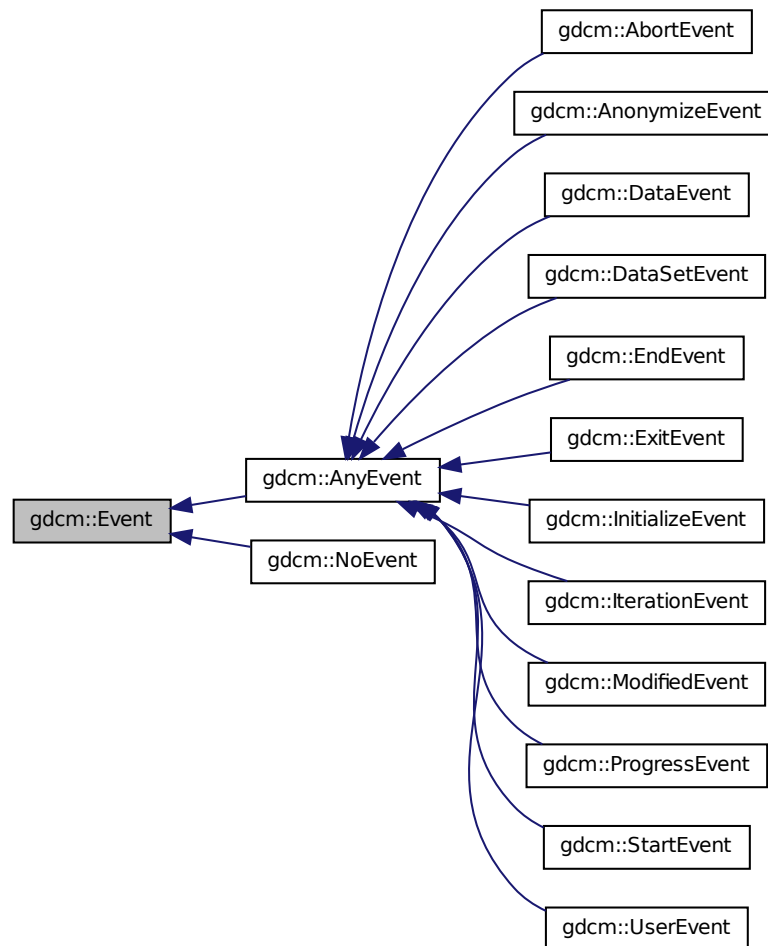
- [gdcmEnumeratedValues.h](#)

25.106 gdcm::Event Class Reference

superclass for callback/observer methods

```
#include <gdcmEvent.h>
```

Inheritance diagram for `gdcM::Event`:



Public Member Functions

- [Event](#) ()
- [Event](#) (const [Event](#) &)
- virtual [~Event](#) ()
- virtual bool [CheckEvent](#) (const [Event](#) *) const =0
- virtual const char * [GetEventName](#) (void) const =0
- virtual [Event](#) * [MakeObject](#) () const =0
- virtual void [Print](#) (std::ostream &os) const

25.106.1 Detailed Description

superclass for callback/observer methods

See Also

[Command Subject](#)

25.106.2 Constructor & Destructor Documentation

25.106.2.1 `gdcm::Event::Event ()`

25.106.2.2 `gdcm::Event::Event (const Event &)`

25.106.2.3 `virtual gdcm::Event::~~Event ()` `[virtual]`

25.106.3 Member Function Documentation

25.106.3.1 `virtual bool gdcm::Event::CheckEvent (const Event *) const` `[pure virtual]`

Check if given event matches or derives from this event.

25.106.3.2 `virtual const char* gdcm::Event::GetEventName (void) const` `[pure virtual]`

Return the StringName associated with the event.

Implemented in [gdcm::ProgressEvent](#), [gdcm::DataSetEvent](#), [gdcm::AnonymizeEvent](#), and [gdcm::DataEvent](#).

25.106.3.3 `virtual Event* gdcm::Event::MakeObject () const` `[pure virtual]`

Create an [Event](#) of this type This method work as a Factory for creating events of each particular type.

Implemented in [gdcm::ProgressEvent](#), [gdcm::DataSetEvent](#), [gdcm::AnonymizeEvent](#), and [gdcm::DataEvent](#).

25.106.3.4 `virtual void gdcm::Event::Print (std::ostream & os) const` `[virtual]`

Print [Event](#) information. This method can be overridden by specific [Event](#) subtypes. The default is to print out the type of the event.

Referenced by `gdcm::operator<<()`.

The documentation for this class was generated from the following file:

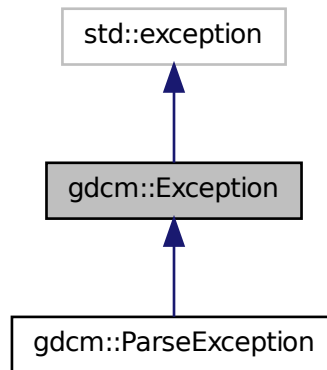
- [gdcmEvent.h](#)

25.107 gdcm::Exception Class Reference

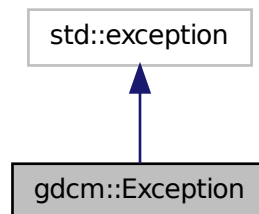
[Exception](#).

```
#include <gdcmException.h>
```

Inheritance diagram for `gdcm::Exception`:



Collaboration diagram for `gdcm::Exception`:



Public Member Functions

- [Exception](#) (const char *desc="None", const char *file=__FILE__, unsigned int lineNumber=__LINE__, const char *func="")
- virtual [~Exception](#) () throw ()
- const char * [GetDescription](#) () const
Return the Description.
- const char * [what](#) () const throw ()
what implementation

25.107.1 Detailed Description

[Exception.](#)

Standard exception handling object.

Note

Its copy-constructor and assignment operator are generated by the compiler.

25.107.2 Constructor & Destructor Documentation

25.107.2.1 `gdcm::Exception::Exception (const char * desc = "None", const char * file = __FILE__, unsigned int lineNumber = __LINE__, const char * func = " ") [inline], [explicit]`

Explicit constructor, initializing the description and the text returned by [what\(\)](#).

Note

The last parameter is ignored for the time being. It may be used to specify the function where the exception was thrown.

25.107.2.2 `virtual gdcm::Exception::~~Exception () throw) [inline], [virtual]`

25.107.3 Member Function Documentation

25.107.3.1 `const char* gdcm::Exception::GetDescription () const [inline]`

Return the Description.

Referenced by `gdcm::SequenceOfItems::Read()`.

25.107.3.2 `const char* gdcm::Exception::what () const throw) [inline]`

what implementation

Referenced by `gdcm::SequenceOfFragments::ReadValue()`.

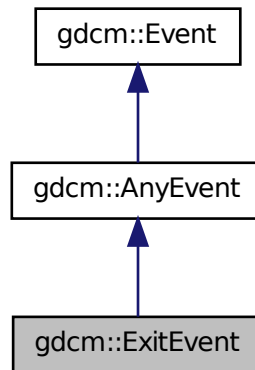
The documentation for this class was generated from the following file:

- [gdcmException.h](#)

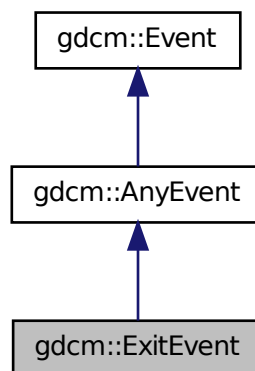
25.108 gdcm::ExitEvent Class Reference

```
#include <gdcmEvent.h>
```

Inheritance diagram for `gdcm::ExitEvent`:



Collaboration diagram for `gdcm::ExitEvent`:



Additional Inherited Members

The documentation for this class was generated from the following file:

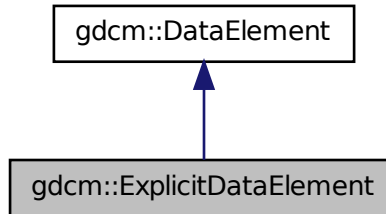
- [gdcmEvent.h](#)

25.109 gdcm::ExplicitDataElement Class Reference

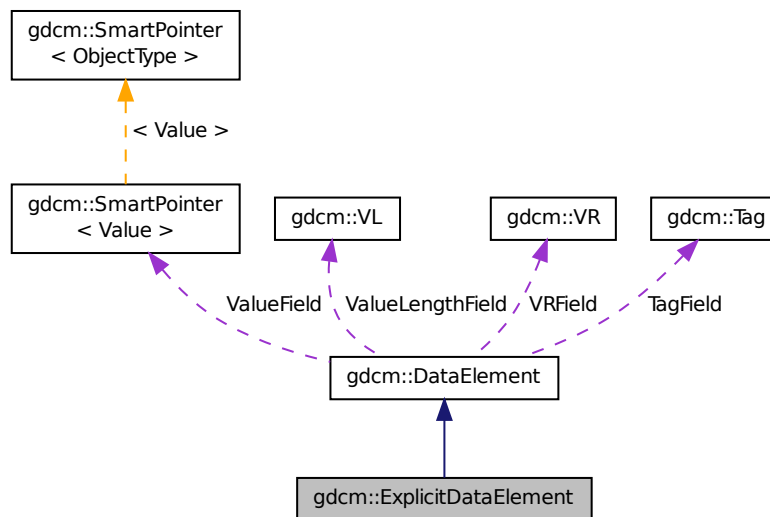
Class to read/write a [DataElement](#) as Explicit Data [Element](#).

```
#include <gdcmExplicitDataElement.h>
```

Inheritance diagram for gdcm::ExplicitDataElement:



Collaboration diagram for gdcm::ExplicitDataElement:



Public Member Functions

- [VL GetLength](#) () const
- template<typename TSwap >
std::istream & [Read](#) (std::istream &is)

- `template<typename TSwap >`
`std::istream & ReadPreValue (std::istream &is)`
- `template<typename TSwap >`
`std::istream & ReadValue (std::istream &is)`
- `template<typename TSwap >`
`std::istream & ReadWithLength (std::istream &is, VL &length)`
- `template<typename TSwap >`
`const std::ostream & Write (std::ostream &os) const`

Additional Inherited Members

25.109.1 Detailed Description

Class to read/write a [DataElement](#) as Explicit Data [Element](#).

Note

bla

25.109.2 Member Function Documentation

25.109.2.1 `VL gdcM::ExplicitDataElement::GetLength () const`

25.109.2.2 `template<typename TSwap > std::istream& gdcM::ExplicitDataElement::Read (std::istream & is)`

25.109.2.3 `template<typename TSwap > std::istream& gdcM::ExplicitDataElement::ReadPreValue (std::istream & is)`

25.109.2.4 `template<typename TSwap > std::istream& gdcM::ExplicitDataElement::ReadValue (std::istream & is)`

25.109.2.5 `template<typename TSwap > std::istream& gdcM::ExplicitDataElement::ReadWithLength (std::istream & is, VL & length)`

25.109.2.6 `template<typename TSwap > const std::ostream& gdcM::ExplicitDataElement::Write (std::ostream & os) const`

The documentation for this class was generated from the following file:

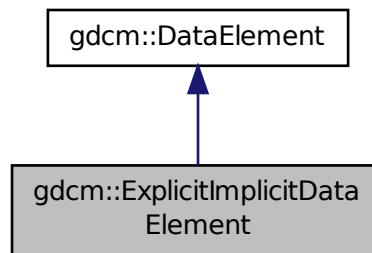
- [gdcMExplicitDataElement.h](#)

25.110 gdcM::ExplicitImplicitDataElement Class Reference

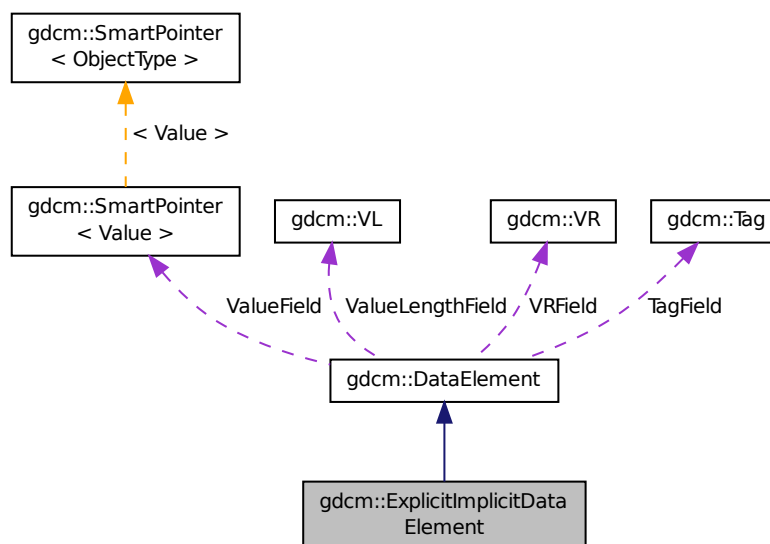
Class to read/write a [DataElement](#) as ExplicitImplicit Data [Element](#).

```
#include <gdcMExplicitImplicitDataElement.h>
```

Inheritance diagram for gdcM::ExplicitImplicitDataElement:



Collaboration diagram for gdcM::ExplicitImplicitDataElement:



Public Member Functions

- [VL GetLength](#) () const
- template<typename TSwap >
std::istream & [Read](#) (std::istream &is)
- template<typename TSwap >
std::istream & [ReadPreValue](#) (std::istream &is)
- template<typename TSwap >
std::istream & [ReadValue](#) (std::istream &is)

- `template<typename TSwap >`
`std::istream & ReadWithLength (std::istream &is, VL &length)`

Additional Inherited Members

25.110.1 Detailed Description

Class to read/write a [DataElement](#) as ExplicitImplicit Data [Element](#).

Note

This only happen for some Philips images Should I derive from [ExplicitDataElement](#) instead ? This is the class that is the closest the GDCM1.x parser. At each element we try first to read it as explicit, if this fails, then we try again as an implicit element.

25.110.2 Member Function Documentation

25.110.2.1 `VL gdcm::ExplicitImplicitDataElement::GetLength () const`

25.110.2.2 `template<typename TSwap > std::istream& gdcm::ExplicitImplicitDataElement::Read (std::istream & is)`

25.110.2.3 `template<typename TSwap > std::istream& gdcm::ExplicitImplicitDataElement::ReadPreValue (std::istream & is)`

25.110.2.4 `template<typename TSwap > std::istream& gdcm::ExplicitImplicitDataElement::ReadValue (std::istream & is)`

25.110.2.5 `template<typename TSwap > std::istream& gdcm::ExplicitImplicitDataElement::ReadWithLength (std::istream & is, VL & length) \[inline\]`

The documentation for this class was generated from the following file:

- [gdcmExplicitImplicitDataElement.h](#)

25.111 [gdcm::Fiducials](#) Class Reference

[Fiducials](#).

```
#include <gdcmFiducials.h>
```

Public Member Functions

- [Fiducials](#) ()

25.111.1 Detailed Description

[Fiducials](#).

25.111.2 Constructor & Destructor Documentation

25.111.2.1 gdcmm::Fiducials::Fiducials () [inline]

The documentation for this class was generated from the following file:

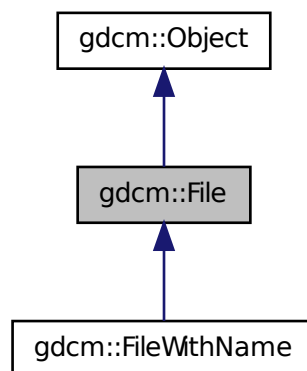
- [gdcmmFiducials.h](#)

25.112 gdcmm::File Class Reference

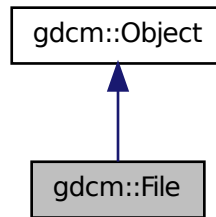
a DICOM [File](#) See PS 3.10 [File](#): A [File](#) is an ordered string of zero or more bytes, where the first byte is at the beginning of the file and the last byte at the end of the [File](#). Files are identified by a unique [File](#) ID and may be written, read and/or deleted.

```
#include <gdcmmFile.h>
```

Inheritance diagram for gdcmm::File:



Collaboration diagram for `gdcm::File`:



Public Member Functions

- [File](#) ()
- [~File](#) ()
- const [DataSet](#) & [GetDataSet](#) () const
Get Data Set.
- [DataSet](#) & [GetDataSet](#) ()
Get Data Set.
- const [FileMetaInformation](#) & [GetHeader](#) () const
Get File Meta Information.
- [FileMetaInformation](#) & [GetHeader](#) ()
Get File Meta Information.
- std::istream & [Read](#) (std::istream &is)
Read.
- void [SetDataSet](#) (const [DataSet](#) &ds)
Set Data Set.
- void [SetHeader](#) (const [FileMetaInformation](#) &fmi)
Set File Meta Information.
- std::ostream const & [Write](#) (std::ostream &os) const
Write.

Friends

- std::ostream & [operator<<](#) (std::ostream &os, const [File](#) &val)

Additional Inherited Members

25.112.1 Detailed Description

a DICOM [File](#) See PS 3.10 [File](#): A [File](#) is an ordered string of zero or more bytes, where the first byte is at the beginning of the file and the last byte at the end of the [File](#). Files are identified by a unique [File](#) ID and may be written, read and/or deleted.

See Also

[Reader Writer](#)

Examples:

[ChangeSequenceUltrasound.cxx](#), [CreateJPIPDataSet.cxx](#), [DiffFile.cxx](#), [DumpGEMSMovieGroup.cxx](#), [DuplicatePCDE.cxx](#), [EncapsulateFileInRawData.cxx](#), [ExtractEncryptedContent.cxx](#), [Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [FixBrokenJ2K.cxx](#), [GenAllVR.cxx](#), [GenFakeIdentifyFile.cxx](#), [GenFakeImage.cxx](#), [GenLongSeqs.cxx](#), [GenSeqs.cxx](#), [GetJPEGSamplePrecision.cxx](#), [GetSequenceUltrasound.cxx](#), [GetSubSequenceData.cxx](#), [HelloWorld.cxx](#), [iU22tomultisc.cxx](#), [LargeVRDSExplicit.cxx](#), [PatchFile.cxx](#), [ReadAndDumpDICOMDIR.cxx](#), [ReadAndPrintAttributes.cxx](#), [ReadGEMSSDO.cxx](#), and [StreamImageReaderTest.cxx](#).

25.112.2 Constructor & Destructor Documentation

25.112.2.1 `gdcm::File () [inline]`

25.112.2.2 `gdcm::File::~~File () [inline]`

25.112.3 Member Function Documentation

25.112.3.1 `const DataSet& gdcm::File::GetDataSet () const [inline]`

Get Data Set.

Examples:

[ChangeSequenceUltrasound.cxx](#), [CreateJPIPDataSet.cxx](#), [csa2img.cxx](#), [DiffFile.cxx](#), [DumpADAC.cxx](#), [DumpImageHeaderInfo.cxx](#), [DuplicatePCDE.cxx](#), [ELSCINT1WaveToText.cxx](#), [EncapsulateFileInRawData.cxx](#), [ExtractEncryptedContent.cxx](#), [Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [FixBrokenJ2K.cxx](#), [FixJAIBugJPEGLS.cxx](#), [gdcmrtionplan.cxx](#), [gdcmrtplan.cxx](#), [GenAllVR.cxx](#), [GenFakeIdentifyFile.cxx](#), [GenLongSeqs.cxx](#), [GenSeqs.cxx](#), [GetJPEGSamplePrecision.cxx](#), [GetSequenceUltrasound.cxx](#), [HelloWorld.cxx](#), [iU22tomultisc.cxx](#), [LargeVRDSExplicit.cxx](#), [MergeTwoFiles.cxx](#), [MrProtocol.cxx](#), [PatchFile.cxx](#), [pmsct_rgb1.cxx](#), [ReadAndDumpDICOMDIR.cxx](#), [ReadAndPrintAttributes.cxx](#), [ReadExplicitLengthSQIVR.cxx](#), [ReadGEMSSDO.cxx](#), [rle2img.cxx](#), and [StreamImageReaderTest.cxx](#).

25.112.3.2 `DataSet& gdcm::File::GetDataSet () [inline]`

Get Data Set.

25.112.3.3 `const FileMetaInformation& gdcm::File::GetHeader () const [inline]`

Get [File](#) Meta Information.

Examples:

[CreateJPIPDataSet.cxx](#), [EncapsulateFileInRawData.cxx](#), [Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [FixJAIBugJPEGLS.cxx](#), [GenAllVR.cxx](#), [GenFakeIdentifyFile.cxx](#), [GetJPEGSamplePrecision.cxx](#), [LargeVRDSExplicit.cxx](#), [MergeTwoFiles.cxx](#), [pmsct_rgb1.cxx](#), [ReadAndDumpDICOMDIR.cxx](#), [rle2img.cxx](#), and [StreamImageReaderTest.cxx](#).

Referenced by `gdcm::operator<<()`.

25.112.3.4 **FileMetaInformation& gdcmm::File::GetHeader ()** `[inline]`

Get [File](#) Meta Information.

25.112.3.5 **std::istream& gdcmm::File::Read (std::istream & *is*)**

Read.

25.112.3.6 **void gdcmm::File::SetDataSet (const DataSet & *ds*)** `[inline]`

Set Data Set.

25.112.3.7 **void gdcmm::File::SetHeader (const FileMetaInformation & *fmi*)** `[inline]`

Set [File](#) Meta Information.

25.112.3.8 **std::ostream const& gdcmm::File::Write (std::ostream & *os*) const**

Write.

25.112.4 Friends And Related Function Documentation

25.112.4.1 **std::ostream& operator<< (std::ostream & *os*, const File & *val*)** `[friend]`

The documentation for this class was generated from the following file:

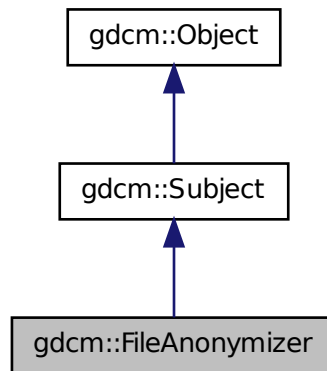
- [gdcmmFile.h](#)

25.113 gdcmm::FileAnonymizer Class Reference

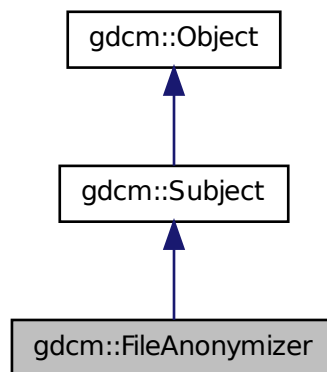
[FileAnonymizer](#).

```
#include <gdcmmFileAnonymizer.h>
```

Inheritance diagram for gdcm::FileAnonymizer:



Collaboration diagram for gdcm::FileAnonymizer:



Public Member Functions

- [FileAnonymizer](#) ()
- [~FileAnonymizer](#) ()
- void [Empty](#) ([Tag](#) const &t)
- void [Remove](#) ([Tag](#) const &t)
remove a tag (even a SQ can be removed)
- void [Replace](#) ([Tag](#) const &t, const char *value)

- void [Replace](#) ([Tag](#) const &t, const char *value, [VL](#) const &vl)
- void [SetInputFileName](#) (const char *filename_native)
Set input filename.
- void [SetOutputFileName](#) (const char *filename_native)
Set output filename.
- bool [Write](#) ()
Write the output file.

Additional Inherited Members

25.113.1 Detailed Description

[FileAnonymizer](#).

This [Anonymizer](#) is a file-based [Anonymizer](#). It requires a valid DICOM file and will use the [Value](#) Length to skip over any information.

It will not load the data into memory and should consume much less memory than [gdcm::Anonymizer](#)

caveats: This class will NOT work with unordered attributes in a DICOM [File](#).

This class does neither recompute nor update the Group Length element.

This class currently does not update the [File](#) Meta Information header

25.113.2 Constructor & Destructor Documentation

25.113.2.1 [gdcm::FileAnonymizer::FileAnonymizer](#) ()

25.113.2.2 [gdcm::FileAnonymizer::~~FileAnonymizer](#) ()

25.113.3 Member Function Documentation

25.113.3.1 void [gdcm::FileAnonymizer::Empty](#) ([Tag](#) const & t)

Make [Tag](#) t empty Warning: does not handle SQ element

25.113.3.2 void [gdcm::FileAnonymizer::Remove](#) ([Tag](#) const & t)

remove a tag (even a SQ can be removed)

25.113.3.3 void [gdcm::FileAnonymizer::Replace](#) ([Tag](#) const & t, const char * value)

Replace tag with another value, if tag is not found it will be created: WARNING: this function can only execute if tag is a VRASCII WARNING: Do not ever try to write a value in a SQ Data [Element](#) !

25.113.3.4 void [gdcm::FileAnonymizer::Replace](#) ([Tag](#) const & t, const char * value, [VL](#) const & vl)

when the value contains \0, it is a good idea to specify the length. This function is required when dealing with VRBINARY tag

25.113.3.5 void gdcm::FileAnonymizer::SetInputFileName (const char * *filename_native*)

Set input filename.

25.113.3.6 void gdcm::FileAnonymizer::SetOutputFileName (const char * *filename_native*)

Set output filename.

25.113.3.7 bool gdcm::FileAnonymizer::Write ()

Write the output file.

The documentation for this class was generated from the following file:

- [gdcmFileAnonymizer.h](#)

25.114 gdcm::FileDerivation Class Reference

[FileDerivation](#) class See PS 3.16 - 2008 For the list of Code [Value](#) that can be used for in Derivation Code Sequence.

```
#include <gdcmFileDerivation.h>
```

Public Member Functions

- [FileDerivation](#) ()
- [~FileDerivation](#) ()
- bool [AddReference](#) (const char *referencedsopclassuid, const char *referencedsopinstanceuid)
- bool [Derive](#) ()
Change.
- [File](#) & [GetFile](#) ()
- const [File](#) & [GetFile](#) () const
- void [SetDerivationCodeSequenceCodeValue](#) (unsigned int codevalue)
Specify the Derivation Code Sequence Code [Value](#). Eg 113040.
- void [SetDerivationDescription](#) (const char *dd)
Specify the Derivation Description. Eg "lossy conversion".
- void [SetFile](#) (const [File](#) &f)
Set/Get [File](#).
- void [SetPurposeOfReferenceCodeSequenceCodeValue](#) (unsigned int codevalue)
Specify the Purpose Of Reference Code [Value](#). Eg. 121320.

Protected Member Functions

- bool [AddDerivationDescription](#) ()
- bool [AddPurposeOfReferenceCodeSequence](#) ([DataSet](#) &ds)
- bool [AddSourceImageSequence](#) ()

25.114.1 Detailed Description

[FileDerivation](#) class See PS 3.16 - 2008 For the list of Code [Value](#) that can be used for in Derivation Code Sequence.

URL: http://medical.nema.org/medical/dicom/2008/08_16pu.pdf

DICOM Part 16 has two Context Groups CID 7202 and CID 7203 which contain a set of codes defining reason for a source image reference (ie. reason code for referenced image sequence) and a coded description of the derivation applied to the new image data from the original. Both these context groups are extensible.

[File](#) Derivation is compulsory when creating a lossy derived image.

Examples:

[GenFakelImage.cxx](#).

25.114.2 Constructor & Destructor Documentation

25.114.2.1 `gdcm::FileDerivation::FileDerivation ()`

25.114.2.2 `gdcm::FileDerivation::~~FileDerivation ()`

25.114.3 Member Function Documentation

25.114.3.1 `bool gdcm::FileDerivation::AddDerivationDescription ()` [protected]

25.114.3.2 `bool gdcm::FileDerivation::AddPurposeOfReferenceCodeSequence (DataSet & ds)` [protected]

25.114.3.3 `bool gdcm::FileDerivation::AddReference (const char * referencedsopclassuid, const char * referencedsopinstanceuid)`

Create the proper reference. Need to pass the original SOP Class UID and the original SOP Instance UID, so that those value can be used as Reference.

Warning

`referencedsopclassuid` and `referencedsopinstanceuid` needs to be \0 padded. This is not compatible with how `ByteValue->GetPointer` works.

Examples:

[GenFakelImage.cxx](#).

25.114.3.4 `bool gdcm::FileDerivation::AddSourceImageSequence ()` [protected]

25.114.3.5 `bool gdcm::FileDerivation::Derive ()`

Change.

Examples:

[GenFakelImage.cxx](#).

25.114.3.6 `File& gdcm::FileDerivation::GetFile () [inline]`

Examples:

[GenFakelImage.cxx](#).

25.114.3.7 `const File& gdcm::FileDerivation::GetFile () const [inline]`

25.114.3.8 `void gdcm::FileDerivation::SetDerivationCodeSequenceCodeValue (unsigned int codevalue)`

Specify the Derivation Code Sequence Code [Value](#). Eg 113040.

Examples:

[GenFakelImage.cxx](#).

25.114.3.9 `void gdcm::FileDerivation::SetDerivationDescription (const char * dd)`

Specify the Derivation Description. Eg "lossy conversion".

25.114.3.10 `void gdcm::FileDerivation::SetFile (const File & f) [inline]`

Set/Get [File](#).

Examples:

[GenFakelImage.cxx](#).

25.114.3.11 `void gdcm::FileDerivation::SetPurposeOfReferenceCodeSequenceCodeValue (unsigned int codevalue)`

Specify the Purpose Of Reference Code [Value](#). Eg. 121320.

Examples:

[GenFakelImage.cxx](#).

The documentation for this class was generated from the following file:

- [gdcmFileDerivation.h](#)

25.115 gdcm::FileExplicitFilter Class Reference

[FileExplicitFilter](#) class After changing a file from Implicit to Explicit representation (see [ImageChangeTransferSyntax](#)) one operation is to make sure the [VR](#) of each DICOM attribute are accurate and do match the one from PS 3.6. Indeed when a file is written in Implicit representation, the [VR](#) is not stored directly in the file.

```
#include <gdcmFileExplicitFilter.h>
```

Public Member Functions

- [FileExplicitFilter](#) ()
- [~FileExplicitFilter](#) ()
- bool [Change](#) ()
Set FMI Transfer Syntax.
- [File](#) & [GetFile](#) ()
- void [SetChangePrivateTags](#) (bool b)
Decide whether or not to [VR](#)ify private tags.
- void [SetFile](#) (const [File](#) &f)
Set/Get [File](#).
- void [SetRecomputeItemLength](#) (bool b)
By default set Sequence & [Item](#) length to Undefined to avoid recomputing length:
- void [SetRecomputeSequenceLength](#) (bool b)
- void [SetUseVRUN](#) (bool b)
When [VR](#)=16bits in explicit but Implicit has a 32bits length, use [VR](#)=UN.

Protected Member Functions

- bool [ChangeFMI](#) ()
- bool [ProcessDataSet](#) ([DataSet](#) &ds, [Dicts](#) const &dicts)

25.115.1 Detailed Description

[FileExplicitFilter](#) class After changing a file from Implicit to Explicit representation (see [ImageChangeTransferSyntax](#)) one operation is to make sure the [VR](#) of each DICOM attribute are accurate and do match the one from PS 3.6. Indeed when a file is written in Implicit representation, the [VR](#) is not stored directly in the file.

Warning

changing an implicit dataset to an explicit dataset is NOT a trivial task of simply changing the [VR](#) to the dict one:

- One has to make sure SQ is properly set
- One has to recompute the explicit length SQ
- One has to make sure that [VR](#) is valid for the encoding
- One has to make sure that [VR](#) 16bits can store the original value length

Examples:

[GenAllVR.cxx](#), and [LargeVRDSExplicit.cxx](#).

25.115.2 Constructor & Destructor Documentation

25.115.2.1 `gdcm::FileExplicitFilter::FileExplicitFilter () [inline]`

25.115.2.2 `gdcm::FileExplicitFilter::~~FileExplicitFilter () [inline]`

25.115.3 Member Function Documentation

25.115.3.1 `bool gdcm::FileExplicitFilter::Change ()`

Set FMI Transfer Syntax.

Change

Examples:

[GenAllVR.cxx](#), and [LargeVRDSExplicit.cxx](#).

25.115.3.2 `bool gdcm::FileExplicitFilter::ChangeFMI ()` `[protected]`

25.115.3.3 `File& gdcm::FileExplicitFilter::GetFile ()` `[inline]`

25.115.3.4 `bool gdcm::FileExplicitFilter::ProcessDataSet (DataSet & ds, Dicts const & dicts)` `[protected]`

25.115.3.5 `void gdcm::FileExplicitFilter::SetChangePrivateTags (bool b)` `[inline]`

Decide whether or not to [VR](#)ify private tags.

25.115.3.6 `void gdcm::FileExplicitFilter::SetFile (const File & f)` `[inline]`

Set/Get [File](#).

Examples:

[GenAllVR.cxx](#), and [LargeVRDSExplicit.cxx](#).

25.115.3.7 `void gdcm::FileExplicitFilter::SetRecomputeItemLength (bool b)`

By default set Sequence & [Item](#) length to Undefined to avoid recomputing length:

25.115.3.8 `void gdcm::FileExplicitFilter::SetRecomputeSequenceLength (bool b)`

25.115.3.9 `void gdcm::FileExplicitFilter::SetUseVRUN (bool b)` `[inline]`

When [VR](#)=16bits in explicit but Implicit has a 32bits length, use [VR](#)=UN.

The documentation for this class was generated from the following file:

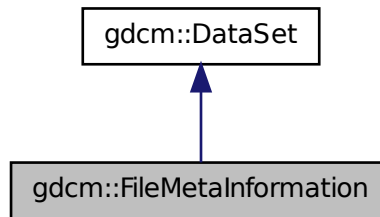
- [gdcmFileExplicitFilter.h](#)

25.116 gdcm::FileMetaInformation Class Reference

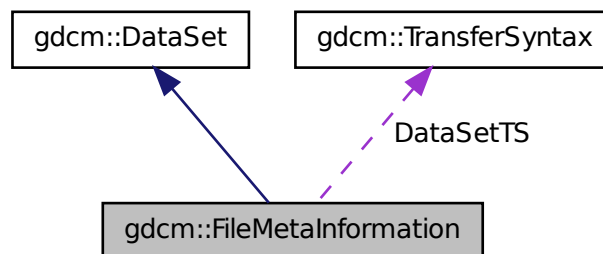
Class to represent a [File](#) Meta Information.

```
#include <gdcmFileMetaInformation.h>
```

Inheritance diagram for `gdcM::FileMetaInformation`:



Collaboration diagram for `gdcM::FileMetaInformation`:



Public Member Functions

- [FileMetaInformation](#) ()
- [FileMetaInformation](#) ([FileMetaInformation](#) const &fmi)
- [~FileMetaInformation](#) ()
- void [FillFromDataSet](#) ([DataSet](#) const &ds)
 - Construct a [FileMetaInformation](#) from an already existing [DataSet](#):*
- const [TransferSyntax](#) & [GetDataSetTransferSyntax](#) () const
- [VL](#) [GetFullLength](#) () const
- [MediaStorage](#) [GetMediaStorage](#) () const
- [TransferSyntax::NegociatedType](#) [GetMetaInformationTS](#) () const
- const [Preamble](#) & [GetPreamble](#) () const
 - Get [Preamble](#).*
- [Preamble](#) & [GetPreamble](#) ()
- void [Insert](#) (const [DataElement](#) &de)
- bool [IsValid](#) () const

- std::istream & [Read](#) (std::istream &is)
Read.
- std::istream & [ReadCompat](#) (std::istream &is)
- void [Replace](#) (const [DataElement](#) &de)
- void [SetDataSetTransferSyntax](#) (const [TransferSyntax](#) &ts)
- void [SetPreamble](#) (const [Preamble](#) &p)
- std::ostream & [Write](#) (std::ostream &os) const
Write.

Static Public Member Functions

- static void [AppendImplementationClassUID](#) (const char *imp)
- static const char * [GetImplementationClassUID](#) ()
- static const char * [GetImplementationVersionName](#) ()
- static const char * [GetSourceApplicationEntityTitle](#) ()
- static void [SetImplementationClassUID](#) (const char *imp)
Override the GDCM default values:
- static void [SetImplementationVersionName](#) (const char *version)
- static void [SetSourceApplicationEntityTitle](#) (const char *title)

Protected Member Functions

- void [ComputeDataSetMediaStorageSOPClass](#) ()
- void [ComputeDataSetTransferSyntax](#) ()
- void [Default](#) ()
- template<typename TSwap >
std::istream & [ReadCompatInternal](#) (std::istream &is)

Static Protected Member Functions

- static const char * [GetFileMetaInformationVersion](#) ()
- static const char * [GetGDCMImplementationClassUID](#) ()
- static const char * [GetGDCMImplementationVersionName](#) ()
- static const char * [GetGDCMSourceApplicationEntityTitle](#) ()

Protected Attributes

- [MediaStorage::MSType](#) DataSetMS
- [TransferSyntax](#) DataSetTS
- [TransferSyntax::NegociatedType](#) MetaInformationTS

Friends

- std::ostream & [operator<<](#) (std::ostream &_os, const [FileMetaInformation](#) &_val)

Additional Inherited Members

25.116.1 Detailed Description

Class to represent a [File](#) Meta Information.

[FileMetaInformation](#) is a Explicit Structured Set. Whenever the file contains an [ImplicitDataElement DataSet](#), a conversion will take place.

Definition: The [File](#) Meta Information includes identifying information on the encapsulated Data Set. This header consists of a 128 byte [File Preamble](#), followed by a 4 byte DICOM prefix, followed by the [File](#) Meta Elements shown in [Table 7.1-1](#). This header shall be present in every DICOM file.

See Also

[Writer Reader](#)

Examples:

[GenAllVR.cxx](#), [GenFakelIdentifyFile.cxx](#), [LargeVRDSEExplicit.cxx](#), and [ReadAndDumpDICOMDIR.cxx](#).

25.116.2 Constructor & Destructor Documentation

25.116.2.1 `gdcm::FileMetaInformation::FileMetaInformation () [inline]`

25.116.2.2 `gdcm::FileMetaInformation::~~FileMetaInformation () [inline]`

25.116.2.3 `gdcm::FileMetaInformation::FileMetaInformation (FileMetaInformation const & fmi) [inline]`

References [DataSetMS](#), [DataSetTS](#), and [MetaInformationTS](#).

25.116.3 Member Function Documentation

25.116.3.1 `static void gdcm::FileMetaInformation::AppendImplementationClassUID (const char * imp) [static]`

25.116.3.2 `void gdcm::FileMetaInformation::ComputeDataSetMediaStorageSOPClass () [protected]`

25.116.3.3 `void gdcm::FileMetaInformation::ComputeDataSetTransferSyntax () [protected]`

25.116.3.4 `void gdcm::FileMetaInformation::Default () [protected]`

25.116.3.5 `void gdcm::FileMetaInformation::FillFromDataSet (DataSet const & ds)`

Construct a [FileMetaInformation](#) from an already existing [DataSet](#):

25.116.3.6 `const TransferSyntax& gdcm::FileMetaInformation::GetDataSetTransferSyntax () const [inline]`

Examples:

[GetJPEGSamplePrecision.cxx](#), and [MergeTwoFiles.cxx](#).

25.116.3.7 `static const char* gdcm::FileMetaInformation::GetFileMetaInformationVersion () [static],[protected]`

25.116.3.8 `VL gdcm::FileMetaInformation::GetFullLength () const [inline]`

References `gdcm::VL::GetLength()`.

25.116.3.9 `static const char* gdcm::FileMetaInformation::GetGDCMImplementationClassUID () [static],[protected]`

25.116.3.10 `static const char* gdcm::FileMetaInformation::GetGDCMImplementationVersionName () [static],[protected]`

25.116.3.11 `static const char* gdcm::FileMetaInformation::GetGDCMSourceApplicationEntityTitle () [static],[protected]`

25.116.3.12 `static const char* gdcm::FileMetaInformation::GetImplementationClassUID () [static]`

25.116.3.13 `static const char* gdcm::FileMetaInformation::GetImplementationVersionName () [static]`

25.116.3.14 `MediaStorage gdcm::FileMetaInformation::GetMediaStorage () const`

25.116.3.15 `TransferSyntax::NegociatedType gdcm::FileMetaInformation::GetMetaInformationTS () const [inline]`

25.116.3.16 `const Preamble& gdcm::FileMetaInformation::GetPreamble () const [inline]`

Get [Preamble](#).

Referenced by `gdcm::operator<<()`.

25.116.3.17 `Preamble& gdcm::FileMetaInformation::GetPreamble () [inline]`

25.116.3.18 `static const char* gdcm::FileMetaInformation::GetSourceApplicationEntityTitle () [static]`

25.116.3.19 `void gdcm::FileMetaInformation::Insert (const DataElement & de) [inline]`

References `gdcmErrorMacro`, `gdcm::Tag::GetGroup()`, and `gdcm::DataElement::GetTag()`.

25.116.3.20 `bool gdcm::FileMetaInformation::IsValid () const [inline]`

25.116.3.21 `std::istream& gdcm::FileMetaInformation::Read (std::istream & is)`

Read.

25.116.3.22 `std::istream& gdcm::FileMetaInformation::ReadCompat (std::istream & is)`

25.116.3.23 `template<typename TSwap > std::istream& gdcm::FileMetaInformation::ReadCompatInternal (std::istream & is) [protected]`

25.116.3.24 `void gdcM::FileMetaInformation::Replace (const DataElement & de) [inline]`

Examples:

[LargeVRDSExplicit.cxx](#).

References `gdcM::DataElement::GetTag()`.

25.116.3.25 `void gdcM::FileMetaInformation::SetDataSetTransferSyntax (const TransferSyntax & ts)`

Examples:

[CreateJPIPDataSet.cxx](#), [EncapsulateFileInRawData.cxx](#), [Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [FixJAIBugJPEGLS.cxx](#), [GenAIIVR.cxx](#), [GenFakeIdentifyFile.cxx](#), [LargeVRDSExplicit.cxx](#), [pmsct_rgb1.cxx](#), [rle2img.cxx](#), and [StreamImageReaderTest.cxx](#).

25.116.3.26 `static void gdcM::FileMetaInformation::SetImplementationClassUID (const char * imp) [static]`

Override the GDCM default values:

25.116.3.27 `static void gdcM::FileMetaInformation::SetImplementationVersionName (const char * version) [static]`

25.116.3.28 `void gdcM::FileMetaInformation::SetPreamble (const Preamble & p) [inline]`

25.116.3.29 `static void gdcM::FileMetaInformation::SetSourceApplicationEntityTitle (const char * title) [static]`

Examples:

[FixJAIBugJPEGLS.cxx](#).

25.116.3.30 `std::ostream& gdcM::FileMetaInformation::Write (std::ostream & os) const`

Write.

25.116.4 Friends And Related Function Documentation

25.116.4.1 `std::ostream& operator<< (std::ostream & _os, const FileMetaInformation & _val) [friend]`

25.116.5 Member Data Documentation

25.116.5.1 `MediaStorage::MSType gdcM::FileMetaInformation::DataSetMS [protected]`

Referenced by `FileMetaInformation()`.

25.116.5.2 `TransferSyntax gdcM::FileMetaInformation::DataSetTS [protected]`

Referenced by `FileMetaInformation()`.

25.116.5.3 TransferSyntax::NegotiatedType gdcm::FileMetaInformation::MetaInformationTS [protected]

Referenced by FileMetaInformation().

The documentation for this class was generated from the following file:

- [gdcmFileMetaInformation.h](#)

25.117 gdcm::Filename Class Reference

Class to manipulate file name's.

```
#include <gdcmFilename.h>
```

Public Member Functions

- [Filename](#) (const char *filename="")
- bool [EndWith](#) (const char ending[]) const
Does the filename ends with a particular string ?
- const char * [GetExtension](#) ()
return only the extension part of a filename
- const char * [GetFileName](#) () const
Return the full filename.
- const char * [GetName](#) ()
return only the name part of a filename
- const char * [GetPath](#) ()
Return only the path component of a filename.
- bool [IsEmpty](#) () const
return whether the filename is empty
- bool [IsIdentical](#) ([Filename](#) const &fn) const
- operator const char * () const
- const char * [ToUnixSlashes](#) ()
Convert backslash (windows style) to UNIX style slash.
- const char * [ToWindowsSlashes](#) ()
Convert foward slash (UNIX style) to windows style slash.

Static Public Member Functions

- static const char * [Join](#) (const char *path, const char *filename)

25.117.1 Detailed Description

Class to manipulate file name's.

Note

OS independant representation of a filename (to query path, name and extension from a filename)

25.117.2 Constructor & Destructor Documentation

25.117.2.1 `gdcmm::Filename::Filename (const char * filename = " ") [inline]`

25.117.3 Member Function Documentation

25.117.3.1 `bool gdcmm::Filename::EndWith (const char ending[]) const`

Does the filename ends with a particular string ?

25.117.3.2 `const char* gdcmm::Filename::GetExtension ()`

return only the extension part of a filename

25.117.3.3 `const char* gdcmm::Filename::GetFileName () const [inline]`

Return the full filename.

25.117.3.4 `const char* gdcmm::Filename::GetName ()`

return only the name part of a filename

25.117.3.5 `const char* gdcmm::Filename::GetPath ()`

Return only the path component of a filename.

25.117.3.6 `bool gdcmm::Filename::IsEmpty () const [inline]`

return whether the filename is empty

25.117.3.7 `bool gdcmm::Filename::IsIdentical (Filename const & fn) const`

25.117.3.8 `static const char* gdcmm::Filename::Join (const char * path, const char * filename) [static]`

Join two paths NOT THREAD SAFE

25.117.3.9 `gdcmm::Filename::operator const char * () const [inline]`

Simple operator to allow `Filename myfilename("...")`; `const char * s = myfilename`;

25.117.3.10 `const char* gdcmm::Filename::ToUnixSlashes ()`

Convert backslash (windows style) to UNIX style slash.

25.117.3.11 `const char* gdcm::Filename::ToWindowsSlashes ()`

Convert forward slash (UNIX style) to windows style slash.

The documentation for this class was generated from the following file:

- [gdcmFilename.h](#)

25.118 gdcm::FilenameGenerator Class Reference

[FilenameGenerator](#).

```
#include <gdcmFilenameGenerator.h>
```

Public Types

- typedef std::vector< [FilenameType](#) > [FileNamesType](#)
- typedef std::string [FilenameType](#)
- typedef FileNamesType::size_type [SizeType](#)

Public Member Functions

- [FilenameGenerator](#) ()
- [~FilenameGenerator](#) ()
- bool [Generate](#) ()
Generate (return success)
- const char * [GetFilename](#) ([SizeType](#) n) const
Get a particular filename (call after Generate)
- [FileNamesType](#) const & [GetFileNames](#) () const
Return all filenames.
- [SizeType](#) [GetNumberOfFileNames](#) () const
- const char * [GetPattern](#) () const
- const char * [GetPrefix](#) () const
- void [SetNumberOfFileNames](#) ([SizeType](#) nfiles)
Set/Get the number of filenames to generate.
- void [SetPattern](#) (const char *pattern)
Set/Get pattern.
- void [SetPrefix](#) (const char *prefix)
Set/Get prefix.

25.118.1 Detailed Description

[FilenameGenerator](#).

class to generate filenames based on a pattern (C-style)

Output will be:

for i = 0, number of filenames: outfilename[i] = prefix + (pattern % i)

where pattern % i means C-style sprintf of Pattern using value 'i'

Examples:

[ConvertMultiFrameToSingleFrame.cxx.](#)

25.118.2 Member Typedef Documentation

25.118.2.1 `typedef std::vector<FilenameType> gdcm::FilenameGenerator::FileNamesType`

25.118.2.2 `typedef std::string gdcm::FilenameGenerator::FilenameType`

25.118.2.3 `typedef FileNamesType::size_type gdcm::FilenameGenerator::SizeType`

25.118.3 Constructor & Destructor Documentation

25.118.3.1 `gdcm::FilenameGenerator::FilenameGenerator ()` `[inline]`

25.118.3.2 `gdcm::FilenameGenerator::~~FilenameGenerator ()` `[inline]`

25.118.4 Member Function Documentation

25.118.4.1 `bool gdcm::FilenameGenerator::Generate ()`

Generate (return success)

Examples:

[ConvertMultiFrameToSingleFrame.cxx.](#)

25.118.4.2 `const char* gdcm::FilenameGenerator::GetFilename (SizeType n) const`

Get a particular filename (call after Generate)

Examples:

[ConvertMultiFrameToSingleFrame.cxx.](#)

25.118.4.3 `FileNamesType const& gdcm::FilenameGenerator::GetFileNames () const` `[inline]`

Return all filenames.

25.118.4.4 `SizeType gdcm::FilenameGenerator::GetNumberOfFileNames () const`

Examples:

[ConvertMultiFrameToSingleFrame.cxx.](#)

25.118.4.5 `const char* gdcm::FilenameGenerator::GetPattern () const` `[inline]`

25.118.4.6 `const char* gdcm::FilenameGenerator::GetPrefix () const` `[inline]`

25.118.4.7 `void gdcm::FilenameGenerator::SetNumberOfFileNames (SizeType nfiles)`

Set/Get the number of filenames to generate.

Examples:

[ConvertMultiFrameToSingleFrame.cxx](#).

25.118.4.8 `void gdcm::FilenameGenerator::SetPattern (const char * pattern)` `[inline]`

Set/Get pattern.

Examples:

[ConvertMultiFrameToSingleFrame.cxx](#).

25.118.4.9 `void gdcm::FilenameGenerator::SetPrefix (const char * prefix)` `[inline]`

Set/Get prefix.

The documentation for this class was generated from the following file:

- [gdcmFilenameGenerator.h](#)

25.119 gdcm::FileSet Class Reference

File-set: A File-set is a collection of DICOM Files (and possibly non-DICOM Files) that share a common naming space within which [File](#) IDs are unique.

```
#include <gdcmFileSet.h>
```

Public Types

- typedef std::vector< [FileType](#) > [FilesType](#)
- typedef std::string [FileType](#)

Public Member Functions

- [FileSet](#) ()
- void [AddFile](#) ([File](#) const &)
- bool [AddFile](#) (const char *filename)
- [FilesType](#) const & [GetFiles](#) () const
- void [SetFiles](#) ([FilesType](#) const &files)

Friends

- `std::ostream & operator<< (std::ostream &_os, const FileSet &d)`

25.119.1 Detailed Description

File-set: A File-set is a collection of DICOM Files (and possibly non-DICOM Files) that share a common naming space within which File IDs are unique.

25.119.2 Member Typedef Documentation

25.119.2.1 `typedef std::vector<FileType> gdcm::FileSet::FileType`

25.119.2.2 `typedef std::string gdcm::FileSet::FileType`

25.119.3 Constructor & Destructor Documentation

25.119.3.1 `gdcm::FileSet::FileSet () [inline]`

25.119.4 Member Function Documentation

25.119.4.1 `void gdcm::FileSet::AddFile (File const &) [inline]`

Deprecated . Does nothing

25.119.4.2 `bool gdcm::FileSet::AddFile (const char * filename)`

Add a file 'filename' to the list of files. Return true on success, false in case filename could not be found on system.

25.119.4.3 `FileType const& gdcm::FileSet::GetFiles () const [inline]`

25.119.4.4 `void gdcm::FileSet::SetFiles (FileType const & files)`

25.119.5 Friends And Related Function Documentation

25.119.5.1 `std::ostream& operator<< (std::ostream &_os, const FileSet &d) [friend]`

The documentation for this class was generated from the following file:

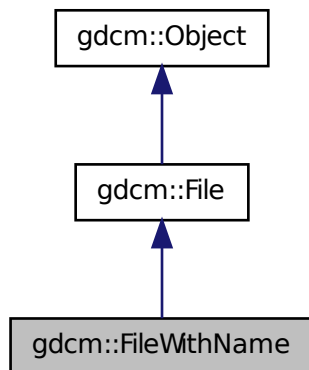
- [gdcmFileSet.h](#)

25.120 gdcm::FileWithName Class Reference

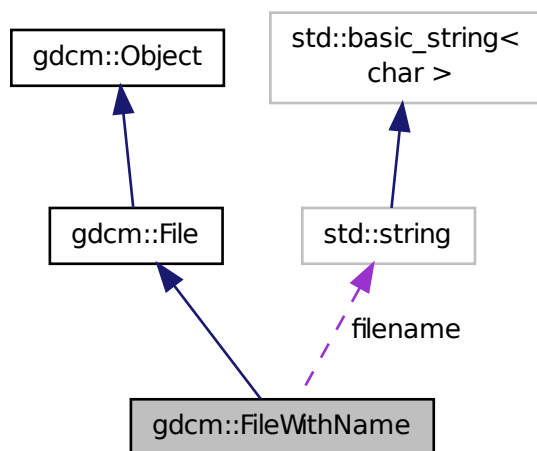
[FileWithName.](#)

```
#include <gdcmSerieHelper.h>
```

Inheritance diagram for gdcm::FileWithName:



Collaboration diagram for gdcm::FileWithName:



Public Member Functions

- [FileWithName](#) ([File](#) &f)

Public Attributes

- `std::string filename`

Additional Inherited Members

25.120.1 Detailed Description

[FileWithName.](#)

Backward only class do not use in newer code

25.120.2 Constructor & Destructor Documentation

25.120.2.1 `gdcm::FileWithName::FileWithName (File & f)` `[inline]`

25.120.3 Member Data Documentation

25.120.3.1 `std::string gdcm::FileWithName::filename`

The documentation for this class was generated from the following file:

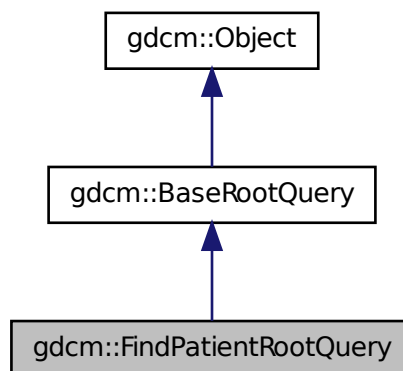
- [gdcmSerieHelper.h](#)

25.121 gdcm::FindPatientRootQuery Class Reference

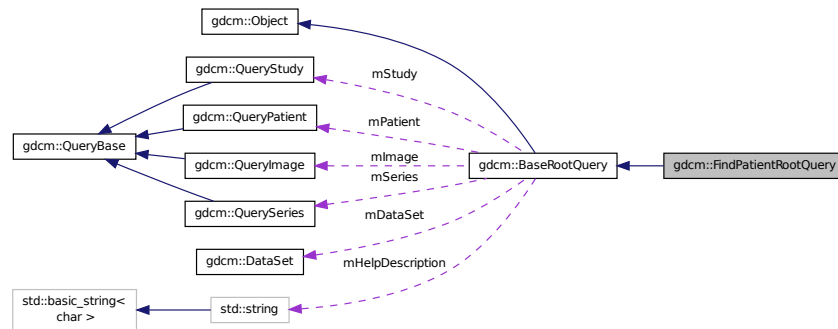
PatientRootQuery contains: the class which will produce a dataset for c-find with patient root.

```
#include <gdcmFindPatientRootQuery.h>
```

Inheritance diagram for `gdcm::FindPatientRootQuery`:



Collaboration diagram for gdcm::FindPatientRootQuery:



Public Member Functions

- [FindPatientRootQuery](#) ()
- [UIDs::TSName GetAbstractSyntaxUID](#) () const
- [std::vector< Tag > GetTagListByLevel](#) (const [EQueryLevel](#) &inQueryLevel)
- [void InitializeDataSet](#) (const [EQueryLevel](#) &inQueryLevel)
- [bool ValidateQuery](#) (bool inStrict=true) const

Friends

- class [QueryFactory](#)

Additional Inherited Members

25.121.1 Detailed Description

PatientRootQuery contains: the class which will produce a dataset for c-find with patient root.

25.121.2 Constructor & Destructor Documentation

25.121.2.1 [gdcm::FindPatientRootQuery::FindPatientRootQuery](#) ()

25.121.3 Member Function Documentation

25.121.3.1 [UIDs::TSName gdcm::FindPatientRootQuery::GetAbstractSyntaxUID](#) () const [virtual]

Implements [gdcm::BaseRootQuery](#).

25.121.3.2 [std::vector<Tag> gdcm::FindPatientRootQuery::GetTagListByLevel](#) (const [EQueryLevel](#) & *inQueryLevel*) [virtual]

this function will return all tags at a given query level, so that they maybe selected for searching. The boolean forFind is true if the query is a find query, or false for a move query.

Implements [gdcm::BaseRootQuery](#).

25.121.3.3 `void gdcm::FindPatientRootQuery::InitializeDataSet (const EQueryLevel & inQueryLevel) [virtual]`

this function sets tag 8,52 to the appropriate value based on query level also fills in the right unique tags, as per the standard's requirements should allow for connection with dcm4chee

Implements [gdcm::BaseRootQuery](#).

25.121.3.4 `bool gdcm::FindPatientRootQuery::ValidateQuery (bool inStrict = true) const [virtual]`

have to be able to ensure that 0x8,0x52 is set (which will be true if InitializeDataSet is called...) that the level is appropriate (ie, not setting PATIENT for a study query that the tags in the query match the right level (either required, unique, optional) by default, this function checks to see if the query is for finding, which is more permissive than for moving. For moving, only the unique tags are allowed. 10 Jan 2011: adding in the 'strict' mode. according to the standard (at least, how I've read it), only tags for a particular level should be allowed in a particular query (ie, just series level tags in a series level query). However, it seems that dcm4chee doesn't share that interpretation. So, if 'inStrict' is false, then tags from the current level and all higher levels are now considered valid. So, if you're doing a non-strict series-level query, tags from the patient and study level can be passed along as well.

Implements [gdcm::BaseRootQuery](#).

25.121.4 Friends And Related Function Documentation

25.121.4.1 `friend class QueryFactory [friend]`

The documentation for this class was generated from the following file:

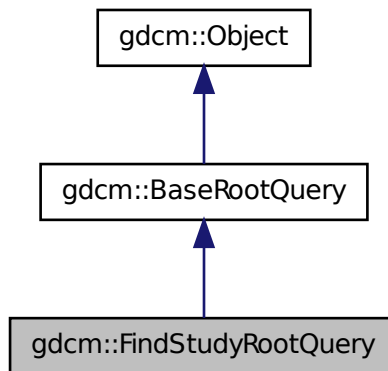
- [gdcmFindPatientRootQuery.h](#)

25.122 gdcm::FindStudyRootQuery Class Reference

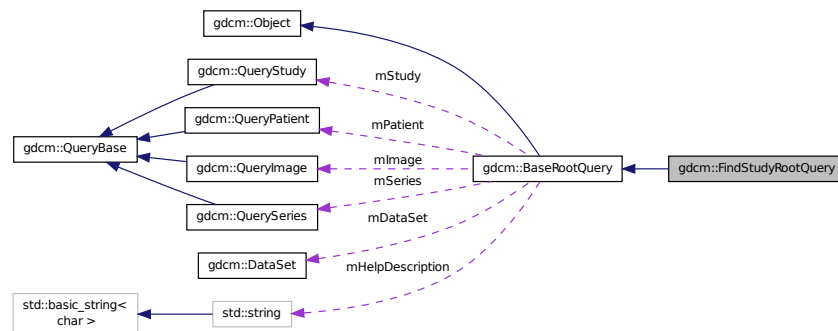
[FindStudyRootQuery](#) contains: the class which will produce a dataset for C-FIND with study root.

```
#include <gdcmFindStudyRootQuery.h>
```

Inheritance diagram for gdcm::FindStudyRootQuery:



Collaboration diagram for gdcm::FindStudyRootQuery:



Public Member Functions

- [FindStudyRootQuery](#) ()
- [UIDs::TSName GetAbstractSyntaxUID](#) () const
- `std::vector< Tag >` [GetTagListByLevel](#) (const [EQueryLevel](#) &inQueryLevel)
- void [InitializeDataSet](#) (const [EQueryLevel](#) &inQueryLevel)
- bool [ValidateQuery](#) (bool inStrict=true) const

Friends

- class [QueryFactory](#)

Additional Inherited Members

25.122.1 Detailed Description

[FindStudyRootQuery](#) contains: the class which will produce a dataset for C-FIND with study root.

25.122.2 Constructor & Destructor Documentation

25.122.2.1 `gdcM::FindStudyRootQuery::FindStudyRootQuery ()`

25.122.3 Member Function Documentation

25.122.3.1 `UIDs::TSName gdcM::FindStudyRootQuery::GetAbstractSyntaxUID () const [virtual]`

Implements [gdcM::BaseRootQuery](#).

25.122.3.2 `std::vector<Tag> gdcM::FindStudyRootQuery::GetTagListByLevel (const EQueryLevel & inQueryLevel) [virtual]`

this function will return all tags at a given query level, so that they maybe selected for searching. The boolean forFind is true if the query is a find query, or false for a move query.

Implements [gdcM::BaseRootQuery](#).

25.122.3.3 `void gdcM::FindStudyRootQuery::InitializeDataSet (const EQueryLevel & inQueryLevel) [virtual]`

this function sets tag 8,52 to the appropriate value based on query level also fills in the right unique tags, as per the standard's requirements should allow for connection with dcmTk

Implements [gdcM::BaseRootQuery](#).

25.122.3.4 `bool gdcM::FindStudyRootQuery::ValidateQuery (bool inStrict=true) const [virtual]`

have to be able to ensure that (0008,0052) is set that the level is appropriate (ie, not setting PATIENT for a study query that the tags in the query match the right level (either required, unique, optional)

Implements [gdcM::BaseRootQuery](#).

25.122.4 Friends And Related Function Documentation

25.122.4.1 `friend class QueryFactory [friend]`

The documentation for this class was generated from the following file:

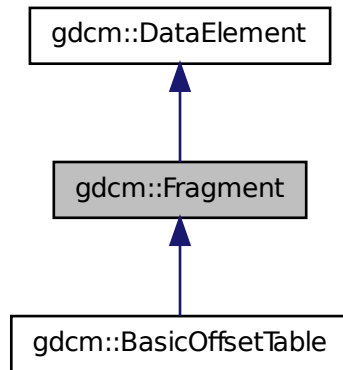
- [gdcMFindStudyRootQuery.h](#)

25.123 gdcM::Fragment Class Reference

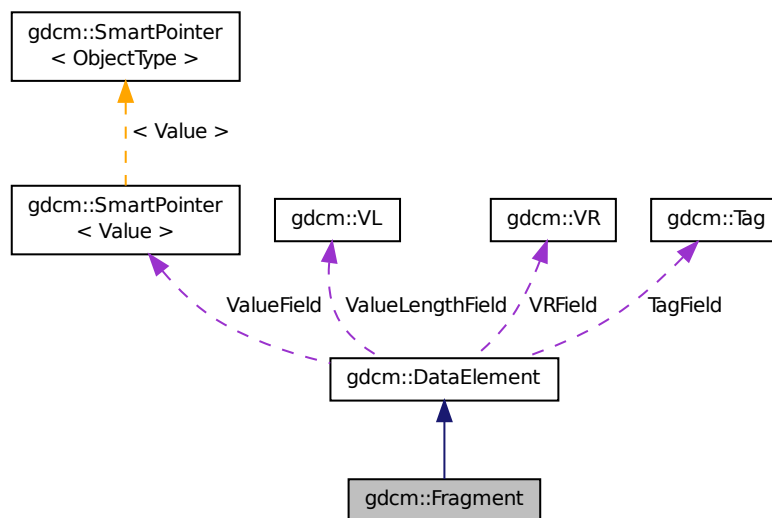
Class to represent a [Fragment](#).

```
#include <gdcMFragment.h>
```

Inheritance diagram for gdcM::Fragment:



Collaboration diagram for gdcM::Fragment:



Public Member Functions

- [Fragment](#) ()
- [VL GetLength](#) () const

- `template<typename TSwap > std::istream & Read (std::istream &is)`
- `template<typename TSwap > std::istream & ReadBacktrack (std::istream &is)`
- `template<typename TSwap > std::istream & ReadPreValue (std::istream &is)`
- `template<typename TSwap > std::istream & ReadValue (std::istream &is)`
- `template<typename TSwap > std::ostream & Write (std::ostream &os) const`

Friends

- `std::ostream & operator<< (std::ostream &os, const Fragment &val)`

Additional Inherited Members

25.123.1 Detailed Description

Class to represent a [Fragment](#).

Examples:

[FixBrokenJ2K.cxx](#), and [FixJAIBugJPEGLS.cxx](#).

25.123.2 Constructor & Destructor Documentation

25.123.2.1 `gdcm::Fragment::Fragment () \[inline\]`

25.123.3 Member Function Documentation

25.123.3.1 `VL gdcm::Fragment::GetLength () const \[inline\]`

References `gdcm::VL::GetLength()`.

25.123.3.2 `template<typename TSwap > std::istream& gdcm::Fragment::Read (std::istream & is) \[inline\]`

Referenced by `gdcm::SequenceOfFragments::ReadValue()`.

25.123.3.3 `template<typename TSwap > std::istream& gdcm::Fragment::ReadBacktrack (std::istream & is) \[inline\]`

References `gdcmErrorMacro`, `gdcmWarningMacro`, and `gdcm::ParseException::SetLastElement()`.

Referenced by `gdcm::SequenceOfFragments::ReadValue()`.

25.123.3.4 `template<typename TSwap > std::istream& gdcm::Fragment::ReadPreValue (std::istream & is) \[inline\]`

25.123.3.5 `template<typename TSwap > std::istream& gdcm::Fragment::ReadValue (std::istream & is) \[inline\]`

References `gdcmWarningMacro`, and `gdcm::ParseException::SetLastElement()`.

25.123.3.6 `template<typename TSwap > std::ostream& gdcm::Fragment::Write (std::ostream & os) const` `[inline]`

References `gdcm::ByteValue::GetLength()`, `gdcm::VL::Write()`, and `gdcm::ByteValue::Write()`.

25.123.4 Friends And Related Function Documentation

25.123.4.1 `std::ostream& operator<< (std::ostream & os, const Fragment & val)` `[friend]`

The documentation for this class was generated from the following file:

- [gdcmFragment.h](#)

25.124 gdcm::Global Class Reference

[Global](#).

```
#include <gdcmGlobal.h>
```

Public Member Functions

- [Global](#) ()
- [~Global](#) ()
- bool [Append](#) (const char *path)
- [Defs](#) const & [GetDefs](#) () const
- [Dicts](#) const & [GetDicts](#) () const
- [Dicts](#) & [GetDicts](#) ()
- bool [LoadResourcesFiles](#) ()
- bool [Prepend](#) (const char *path)

Static Public Member Functions

- static [Global](#) & [GetInstance](#) ()
return the singleton instance

Protected Member Functions

- const char * [Locate](#) (const char *resfile) const
Locate a ressource file.

Friends

- std::ostream & [operator<<](#) (std::ostream &_os, const [Global](#) &g)

25.124.1 Detailed Description

[Global](#).

Note

[Global](#) should be included in any translation unit that will use [Dict](#) or that implements the singleton pattern. It makes sure that the [Dict](#) singleton is created before and destroyed after all other singletons in GDCM.

Examples:

[GenAllVR.cxx](#), [GenerateStandardSOPClasses.cxx](#), [GenFakeIdentifyFile.cxx](#), [PublicDict.cxx](#), [ReadAndPrintAttributes.cxx](#), and [TraverseModules.cxx](#).

25.124.2 Constructor & Destructor Documentation

25.124.2.1 `gdcmm::Global::Global ()`

25.124.2.2 `gdcmm::Global::~~Global ()`

25.124.3 Member Function Documentation

25.124.3.1 `bool gdcmm::Global::Append (const char * path)`

Append path at the end of the path list

Warning

not thread safe !

25.124.3.2 `Defs const& gdcmm::Global::GetDefs () const`

retrieve the default/internal (Part 3) You need to explicitly call LoadResourcesFiles before

Examples:

[GenerateStandardSOPClasses.cxx](#).

25.124.3.3 `Dicts const& gdcmm::Global::GetDicts () const`

retrieve the default/internal dicts (Part 6) This dict is filled up at load time

Examples:

[GenAllVR.cxx](#), [GenFakeIdentifyFile.cxx](#), [MrProtocol.cxx](#), [PublicDict.cxx](#), and [ReadAndPrintAttributes.cxx](#).

25.124.3.4 `Dicts& gdcmm::Global::GetDicts ()`

25.124.3.5 `static Global& gdcmm::Global::GetInstance () [static]`

return the singleton instance

Examples:

[GenAllVR.cxx](#), [GenerateStandardSOPClasses.cxx](#), [GenFakeIdentifyFile.cxx](#), [MrProtocol.cxx](#), [PublicDict.cxx](#), [ReadAndPrintAttributes.cxx](#), and [TraverseModules.cxx](#).

25.124.3.6 bool gdcm::Global::LoadResourcesFiles ()

Load all internal XML files, ressource path need to have been set before calling this member function (see Append/-Prepend members func)

Warning

not thread safe !

Examples:

[GenerateStandardSOPClasses.cxx](#).

25.124.3.7 const char* gdcm::Global::Locate (const char * *resfile*) const [protected]

Locate a ressource file.

25.124.3.8 bool gdcm::Global::Prepend (const char * *path*)

Prepend path at the begining of the path list

Warning

not thread safe !

25.124.4 Friends And Related Function Documentation

25.124.4.1 std::ostream& operator<< (std::ostream & *_os*, const Global & *g*) [friend]

The documentation for this class was generated from the following file:

- [gdcmGlobal.h](#)

25.125 gdcm::GroupDict Class Reference

Class to represent the mapping from group number to its abbreviation and name.

```
#include <gdcmGroupDict.h>
```

Public Types

- typedef std::vector< std::string > [GroupStringVector](#)

Public Member Functions

- [GroupDict](#) ()
- [~GroupDict](#) ()
- std::string const & [GetAbbreviation](#) (uint16_t num) const
- std::string const & [GetName](#) (uint16_t num) const
- size_t [Size](#) () const

Protected Member Functions

- void [Add](#) (std::string const &abbreviation, std::string const &name)
- void [Insert](#) (uint16_t num, std::string const &abbreviation, std::string const &name)

Friends

- std::ostream & [operator<<](#) (std::ostream &_os, const [GroupDict](#) &_val)

25.125.1 Detailed Description

Class to represent the mapping from group number to its abbreviation and name.

Note

Should I rewrite this class to use a std::map instead of std::vector for problem of memory consumption ?

25.125.2 Member Typedef Documentation

25.125.2.1 typedef std::vector<std::string> [gdcmm::GroupDict::GroupStringVector](#)

25.125.3 Constructor & Destructor Documentation

25.125.3.1 [gdcmm::GroupDict::GroupDict](#) () `[inline]`

25.125.3.2 [gdcmm::GroupDict::~~GroupDict](#) () `[inline]`

25.125.4 Member Function Documentation

25.125.4.1 void [gdcmm::GroupDict::Add](#) (std::string const & *abbreviation*, std::string const & *name*) `[protected]`

25.125.4.2 std::string const& [gdcmm::GroupDict::GetAbbreviation](#) (uint16_t *num*) const

Referenced by [gdcmm::operator<<\(\)](#).

25.125.4.3 std::string const& [gdcmm::GroupDict::GetName](#) (uint16_t *num*) const

Referenced by [gdcmm::operator<<\(\)](#).

25.125.4.4 void gdcm::GroupDict::Insert (uint16_t num, std::string const & abbreviation, std::string const & name)
[protected]

25.125.4.5 size_t gdcm::GroupDict::Size () const [inline]

Referenced by gdcm::operator<<().

25.125.5 Friends And Related Function Documentation

25.125.5.1 std::ostream& operator<< (std::ostream & _os, const GroupDict & _val) [friend]

The documentation for this class was generated from the following file:

- [gdcmGroupDict.h](#)

25.126 gdcm::IconImageFilter Class Reference

[IconImageFilter](#) This filter will extract icons from a [gdcm::File](#) This filter will loop over all known sequence (public and private) that may contains an IconImage and retrieve them. The filter will fails with a value of false if no icon can be found Since it handle both public and private icon type, one should not assume the icon is in uncompress form, some private vendor store private icon in JPEG8/JPEG12.

```
#include <gdcmIconImageFilter.h>
```

Public Member Functions

- [IconImageFilter](#) ()
- [~IconImageFilter](#) ()
- bool [Extract](#) ()
Extract all Icon found in File.
- [File](#) & [GetFile](#) ()
- const [File](#) & [GetFile](#) () const
- [IconImage](#) & [GetIconImage](#) (unsigned int i) const
- unsigned int [GetNumberOfIconImages](#) () const
Retrieve extract IconImage (need to call Extract first)
- void [SetFile](#) (const [File](#) &f)
Set/Get File.

Protected Member Functions

- void [ExtractIconImages](#) ()
- void [ExtractVeprolIconImages](#) ()

25.126.1 Detailed Description

[IconImageFilter](#) This filter will extract icons from a [gdcm::File](#) This filter will loop over all known sequence (public and private) that may contains an IconImage and retrieve them. The filter will fails with a value of false if no icon can be

found Since it handle both public and private icon type, one should not assume the icon is in uncompress form, some private vendor store private icon in JPEG8/JPEG12.

Implementation details: This filter supports the following Icons:

- (0088,0200) Icon [Image](#) Sequence
- (0009,10,GEIIS) GE IIS Thumbnail Sequence
- (6003,10,GEMS_Ultrasound_ImageGroup_001) GEMS [Image](#) Thumbnail Sequence
- (0055,30,VEPRO VIF 3.0 DATA) Icon Data
- (0055,30,VEPRO VIM 5.0 DATA) ICONDATA2

Warning

the icon stored in those private attribute do not conform to definition of Icon [Image](#) Sequence (do not simply copy/paste). For example some private icon can be expressed as 12bits pixel, while the DICOM standard only allow 8bits icons.

See Also

[ImageReader](#)

Examples:

[ExtractIconFromFile.cxx](#).

25.126.2 Constructor & Destructor Documentation

25.126.2.1 `gdcm::IconImageFilter::IconImageFilter ()`

25.126.2.2 `gdcm::IconImageFilter::~~IconImageFilter ()`

25.126.3 Member Function Documentation

25.126.3.1 `bool gdcm::IconImageFilter::Extract ()`

Extract all Icon found in [File](#).

Examples:

[ExtractIconFromFile.cxx](#).

25.126.3.2 `void gdcm::IconImageFilter::ExtractIconImages ()` `[protected]`

25.126.3.3 `void gdcm::IconImageFilter::ExtractVeprolconImages ()` `[protected]`

25.126.3.4 `File& gdcm::IconImageFilter::GetFile ()` `[inline]`

25.126.3.5 `const File& gdcm::IconImageFilter::GetFile () const` `[inline]`

25.126.3.6 `IconImage& gdcm::IconImageFilter::GetIconImage (unsigned int i) const`

Examples:

[ExtractIconFromFile.cxx](#).

25.126.3.7 `unsigned int gdcm::IconImageFilter::GetNumberOfIconImages () const`

Retrieve extract IconImage (need to call Extract first)

Examples:

[ExtractIconFromFile.cxx](#).

25.126.3.8 `void gdcm::IconImageFilter::SetFile (const File & f) [inline]`

Set/Get [File](#).

Examples:

[ExtractIconFromFile.cxx](#).

The documentation for this class was generated from the following file:

- [gdcmIconImageFilter.h](#)

25.127 gdcm::IconImageGenerator Class Reference

[IconImageGenerator](#) This filter will generate a valid Icon from the Pixel Data element (an instance of [gdcm::Pixmap](#)). To generate a valid Icon, one is only allowed the following Photometric Interpretation:

```
#include <gdcmIconImageGenerator.h>
```

Public Member Functions

- [IconImageGenerator](#) ()
- [~IconImageGenerator](#) ()
- void [AutoPixelMinMax](#) (bool b)
- void [ConvertRGBToPaletteColor](#) (bool b)
- bool [Generate](#) ()
Generate Icon.
- const [IconImage](#) & [GetIconImage](#) () const
Retrieve generated Icon.
- [Pixmap](#) & [GetPixmap](#) ()
- const [Pixmap](#) & [GetPixmap](#) () const
- void [SetOutputDimensions](#) (const unsigned int dims[2])
Set Target dimension of output Icon.
- void [SetOutsideValuePixel](#) (double v)
- void [SetPixelMinMax](#) (double min, double max)
- void [SetPixmap](#) (const [Pixmap](#) &p)
Set/Get File.

25.127.1 Detailed Description

[IconImageGenerator](#) This filter will generate a valid Icon from the Pixel Data element (an instance of [gdcm::Pixmap](#)). To generate a valid Icon, one is only allowed the following Photometric Interpretation:

- MONOCHROME1
- MONOCHROME2
- PALETTE_COLOR

The Pixel Bits Allocated is restricted to 8bits, therefore 16 bits image needs to be rescaled. By default the filter will use the full scalar range of 16bits image to rescale to unsigned 8bits. This may not be ideal for some situation, in which case the API `SetPixelMinMax` can be used to overwrite the default min,max interval used.

See Also

[ImageReader](#)

Examples:

[ExtractIconFromFile.cxx](#).

25.127.2 Constructor & Destructor Documentation

25.127.2.1 `gdcm::IconImageGenerator::IconImageGenerator ()`

25.127.2.2 `gdcm::IconImageGenerator::~~IconImageGenerator ()`

25.127.3 Member Function Documentation

25.127.3.1 `void gdcm::IconImageGenerator::AutoPixelMinMax (bool b)`

Instead of explicitly specifying the min/max value for the rescale operation, let the internal mechanism compute the min/max of icon and rescale to best appropriate.

Examples:

[ExtractIconFromFile.cxx](#).

25.127.3.2 `void gdcm::IconImageGenerator::ConvertRGBToPaletteColor (bool b)`

Converting from RGB to PALETTE_COLOR can be a slow operation. However DICOM standard requires that color icon be described as palette. Set this boolean to false only if you understand the consequences. true, false generates invalid Icon [Image](#) Sequence

25.127.3.3 `bool gdcm::IconImageGenerator::Generate ()`

Generate Icon.

Examples:

[ExtractIconFromFile.cxx](#).

25.127.3.4 `const IconImage& gdcm::IconImageGenerator::GetIconImage () const` `[inline]`

Retrieve generated Icon.

Examples:

[ExtractIconFromFile.cxx](#).

25.127.3.5 `Pixmap& gdcm::IconImageGenerator::GetPixmap ()` `[inline]`

25.127.3.6 `const Pixmap& gdcm::IconImageGenerator::GetPixmap () const` `[inline]`

25.127.3.7 `void gdcm::IconImageGenerator::SetOutputDimensions (const unsigned int dims[2])`

Set Target dimension of output Icon.

Examples:

[ExtractIconFromFile.cxx](#).

25.127.3.8 `void gdcm::IconImageGenerator::SetOutsideValuePixel (double v)`

Set a pixel value that should be discarded. This happen typically for CT image, where a pixel has been used to pad outside the image (see Pixel Padding [Value](#)). Requires `AutoPixelMinMax(true)`

25.127.3.9 `void gdcm::IconImageGenerator::SetPixelMinMax (double min, double max)`

Override default min/max to compute best rescale for 16bits -> 8bits downscale. Typically those value can be read from the `SmallestImagePixelValue` `LargestImagePixelValue` DICOM attribute.

25.127.3.10 `void gdcm::IconImageGenerator::SetPixmap (const Pixmap & p)` `[inline]`

Set/Get [File](#).

Examples:

[ExtractIconFromFile.cxx](#).

The documentation for this class was generated from the following file:

- [gdcmIconImageGenerator.h](#)

25.128 gdcm::ignore_char Struct Reference

```
#include <gdcmElement.h>
```

Public Member Functions

- [ignore_char](#) (char c)

Public Attributes

- char [m_char](#)

25.128.1 Constructor & Destructor Documentation

25.128.1.1 `gdcm::ignore_char::ignore_char (char c)` [`inline`]

25.128.2 Member Data Documentation

25.128.2.1 `char gdcm::ignore_char::m_char`

Referenced by `gdcm::operator>>()`.

The documentation for this struct was generated from the following file:

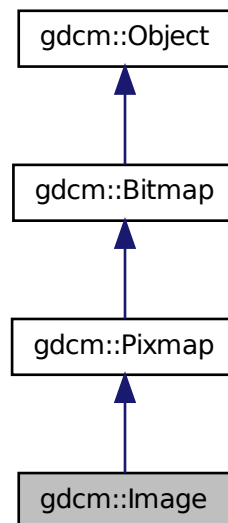
- [gdcmElement.h](#)

25.129 gdcm::Image Class Reference

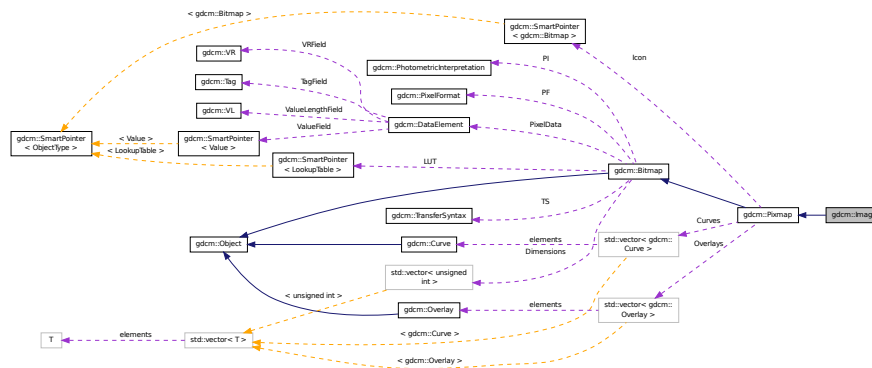
[Image](#) This is the container for an [Image](#) in the general sense. From this container you should be able to request information like:

```
#include <gdcmImage.h>
```

Inheritance diagram for `gdcm::Image`:



Collaboration diagram for `gdcm::Image`:



Public Member Functions

- `Image ()`
 - `~Image ()`
 - `const double * GetDirectionCosines () const`
 - `double GetDirectionCosines (unsigned int idx) const`
 - `double GetIntercept () const`
 - `const double * GetOrigin () const`
 - `double GetOrigin (unsigned int idx) const`
 - `double GetSlope () const`
 - `const double * GetSpacing () const`
 - `double GetSpacing (unsigned int idx) const`
 - `void Print (std::ostream &os) const`
- print*
- `void SetDirectionCosines (const float *dircos)`
 - `void SetDirectionCosines (const double *dircos)`
 - `void SetDirectionCosines (unsigned int idx, double dircos)`
 - `void SetIntercept (double intercept)`
- intercept*
- `void SetOrigin (const float *ori)`
 - `void SetOrigin (const double *ori)`
 - `void SetOrigin (unsigned int idx, double ori)`
 - `void SetSlope (double slope)`
- slope*
- `void SetSpacing (const double *spacing)`
 - `void SetSpacing (unsigned int idx, double spacing)`

Additional Inherited Members

25.129.1 Detailed Description

Image This is the container for an **Image** in the general sense. From this container you should be able to request information like:

- Origin
- Dimension
- [PixelFormat](#) ... But also to retrieve the image as a raw buffer (char *) Since we have to deal with both RAW data and JPEG stream (which internally encode all the above information) this API might seems redundant. One way to solve that would be to subclass [gdcm::Image](#) with [gdcm::JPEGImage](#) which would from the stream extract the header info and fill it to please [gdcm::Image](#)...well except origin for instance

Basically you can see it as a storage for the Pixel Data element (7fe0,0010).

Warning

This class does some heuristics to guess the [Spacing](#) but is not compatible with DICOM CP-586. In case of doubt use [PixmapReader](#) instead

See Also

[ImageReader](#) [PixmapReader](#)

Examples:

[CompressImage.cxx](#), [ConvertToQImage.cxx](#), [CreateARGBImage.cxx](#), [CreateCMYKImage.cxx](#), [csa2img.cxx](#), [ExtractIconFromFile.cxx](#), [FixJAIBugJPEGLS.cxx](#), [GenFakelImage.cxx](#), [GetJPEGSamplePrecision.cxx](#), [GetSubSequenceData.cxx](#), [HelloVizWorld.cxx](#), [iU22tomultisc.cxx](#), [PatchFile.cxx](#), [ReadMultiTimesException.cxx](#), and [threadgdcm.cxx](#).

25.129.2 Constructor & Destructor Documentation

25.129.2.1 `gdcm::Image::Image () [inline]`

25.129.2.2 `gdcm::Image::~~Image () [inline]`

25.129.3 Member Function Documentation

25.129.3.1 `const double* gdcm::Image::GetDirectionCosines () const`

Return a 6-tuples specifying the direction cosines A default value of (1,0,0,0,1,0) will be return when the direction cosines was not specified.

25.129.3.2 `double gdcm::Image::GetDirectionCosines (unsigned int idx) const`

25.129.3.3 `double gdcm::Image::GetIntercept () const [inline]`

25.129.3.4 `const double* gdcm::Image::GetOrigin () const`

Return a 3-tuples specifying the origin Will return (0,0,0) if the origin was not specified.

Examples:

[HelloVizWorld.cxx](#).

25.129.3.5 `double gdcm::Image::GetOrigin (unsigned int idx) const`

25.129.3.6 `double gdcm::Image::GetSlope () const` `[inline]`

25.129.3.7 `const double* gdcm::Image::GetSpacing () const`

Return a 3-tuples specifying the spacing NOTE: 3rd value can be an arbitrary 1 value when the spacing was not specified (ex. 2D image). WARNING: when the spacing is not specifier, a default value of 1 will be returned

25.129.3.8 `double gdcm::Image::GetSpacing (unsigned int idx) const`

25.129.3.9 `void gdcm::Image::Print (std::ostream & os) const` `[virtual]`

print

Reimplemented from [gdcm::Bitmap](#).

Examples:

[CompressImage.cxx](#), and [PatchFile.cxx](#).

25.129.3.10 `void gdcm::Image::SetDirectionCosines (const float * dircos)`

25.129.3.11 `void gdcm::Image::SetDirectionCosines (const double * dircos)`

25.129.3.12 `void gdcm::Image::SetDirectionCosines (unsigned int idx, double dircos)`

25.129.3.13 `void gdcm::Image::SetIntercept (double intercept)` `[inline]`

intercept

25.129.3.14 `void gdcm::Image::SetOrigin (const float * ori)`

25.129.3.15 `void gdcm::Image::SetOrigin (const double * ori)`

25.129.3.16 `void gdcm::Image::SetOrigin (unsigned int idx, double ori)`

25.129.3.17 `void gdcm::Image::SetSlope (double slope)` `[inline]`

slope

25.129.3.18 `void gdcm::Image::SetSpacing (const double * spacing)`

Examples:

[csa2img.cxx](#), and [iU22tomultisc.cxx](#).

25.129.3.19 void `gdcmm::Image::SetSpacing` (unsigned int *idx*, double *spacing*)

The documentation for this class was generated from the following file:

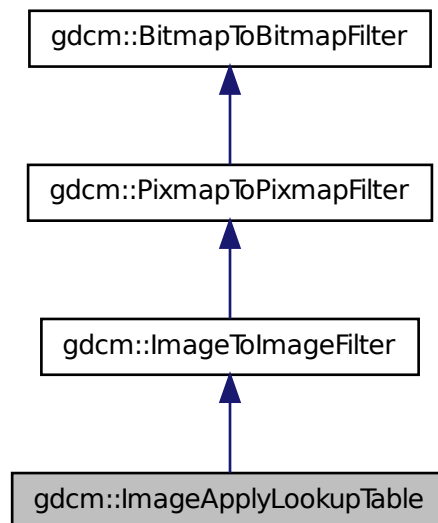
- [gdcmImage.h](#)

25.130 `gdcmm::ImageApplyLookupTable` Class Reference

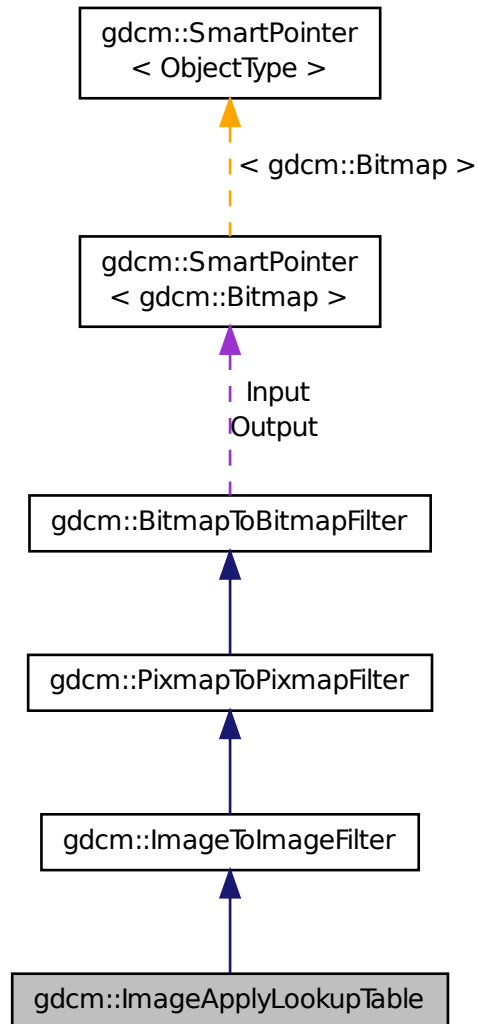
[ImageApplyLookupTable](#) class It applies the LUT the PixelData (only PALETTE_COLOR images) Output will be a [PhotometricInterpretation](#)=RGB image.

```
#include <gdcmImageApplyLookupTable.h>
```

Inheritance diagram for `gdcmm::ImageApplyLookupTable`:



Collaboration diagram for gdcm::ImageApplyLookupTable:



Public Member Functions

- [ImageApplyLookupTable](#) ()
- [~ImageApplyLookupTable](#) ()
- [bool Apply](#) ()

Apply:

Additional Inherited Members

25.130.1 Detailed Description

[ImageApplyLookupTable](#) class It applies the LUT the PixelData (only PALETTE_COLOR images) Output will be a [PhotometricInterpretation](#)=RGB image.

25.130.2 Constructor & Destructor Documentation

25.130.2.1 `gdcm::ImageApplyLookupTable::ImageApplyLookupTable ()` `[inline]`

25.130.2.2 `gdcm::ImageApplyLookupTable::~~ImageApplyLookupTable ()` `[inline]`

25.130.3 Member Function Documentation

25.130.3.1 `bool gdcm::ImageApplyLookupTable::Apply ()`

Apply.

The documentation for this class was generated from the following file:

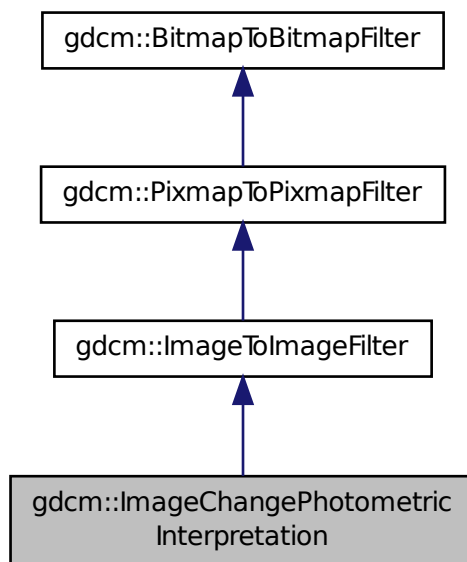
- [gdcmImageApplyLookupTable.h](#)

25.131 gdcm::ImageChangePhotometricInterpretation Class Reference

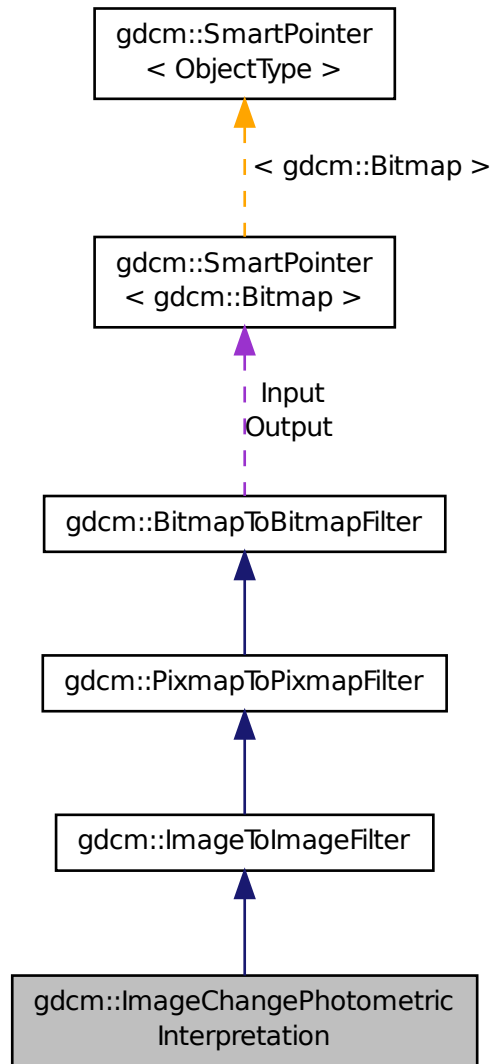
[ImageChangePhotometricInterpretation](#) class Class to change the Photometric Interpretation of an input DICOM.

```
#include <gdcmImageChangePhotometricInterpretation.h>
```

Inheritance diagram for gdcm::ImageChangePhotometricInterpretation:



Collaboration diagram for `gdcm::ImageChangePhotometricInterpretation`:



Public Member Functions

- [ImageChangePhotometricInterpretation \(\)](#)
- [~ImageChangePhotometricInterpretation \(\)](#)
- [bool Change \(\)](#)
Change.
- [const PhotometricInterpretation & GetPhotometricInterpretation \(\) const](#)
- [template<typename T > void RGB2YBR \(T ybr\[3\], const T rgb\[3\]\)](#)

- void [SetPhotometricInterpretation](#) ([PhotometricInterpretation](#) const &pi)
Set/Get requested [PhotometricInterpretation](#).
- template<typename T >
void [YBR2RGB](#) (T rgb[3], const T ybr[3])

Static Public Member Functions

- template<typename T >
static void [RGB2YBR](#) (T ybr[3], const T rgb[3])
colorspace conversion (based on CCIR Recommendation 601-2)
- template<typename T >
static void [YBR2RGB](#) (T rgb[3], const T ybr[3])

Protected Member Functions

- bool [ChangeMonochrome](#) ()

Additional Inherited Members

25.131.1 Detailed Description

[ImageChangePhotometricInterpretation](#) class Class to change the Photometric Interpretation of an input DICOM.

25.131.2 Constructor & Destructor Documentation

25.131.2.1 `gdcm::ImageChangePhotometricInterpretation::ImageChangePhotometricInterpretation ()` `[inline]`

25.131.2.2 `gdcm::ImageChangePhotometricInterpretation::~~ImageChangePhotometricInterpretation ()` `[inline]`

25.131.3 Member Function Documentation

25.131.3.1 `bool gdcm::ImageChangePhotometricInterpretation::Change ()`

Change.

25.131.3.2 `bool gdcm::ImageChangePhotometricInterpretation::ChangeMonochrome ()` `[protected]`

25.131.3.3 `const PhotometricInterpretation& gdcm::ImageChangePhotometricInterpretation::GetPhotometricInterpretation ()`
`const` `[inline]`

25.131.3.4 `template<typename T > static void gdcm::ImageChangePhotometricInterpretation::RGB2YBR (T ybr[3], const T rgb[3])`
`[static]`

colorspace conversion (based on CCIR Recommendation 601-2)

25.131.3.5 `template<typename T> void gdcmm::ImageChangePhotometricInterpretation::RGB2YBR (T ybr[3], const T rgb[3])`

25.131.3.6 `void gdcmm::ImageChangePhotometricInterpretation::SetPhotometricInterpretation (PhotometricInterpretation const & pi) [inline]`

Set/Get requested [PhotometricInterpretation](#).

25.131.3.7 `template<typename T> static void gdcmm::ImageChangePhotometricInterpretation::YBR2RGB (T rgb[3], const T ybr[3]) [static]`

25.131.3.8 `template<typename T> void gdcmm::ImageChangePhotometricInterpretation::YBR2RGB (T rgb[3], const T ybr[3])`

The documentation for this class was generated from the following file:

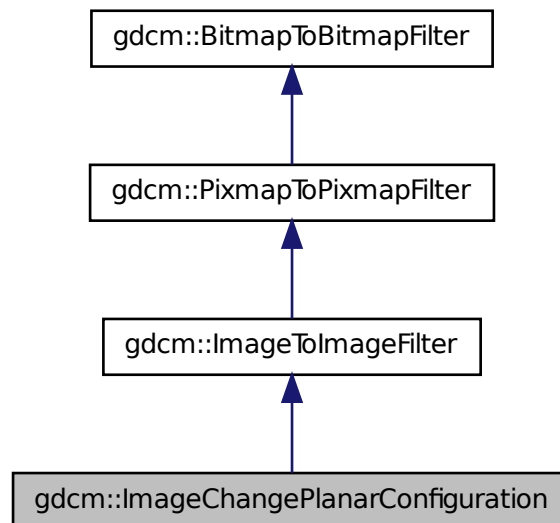
- [gdcmImageChangePhotometricInterpretation.h](#)

25.132 gdcm::ImageChangePlanarConfiguration Class Reference

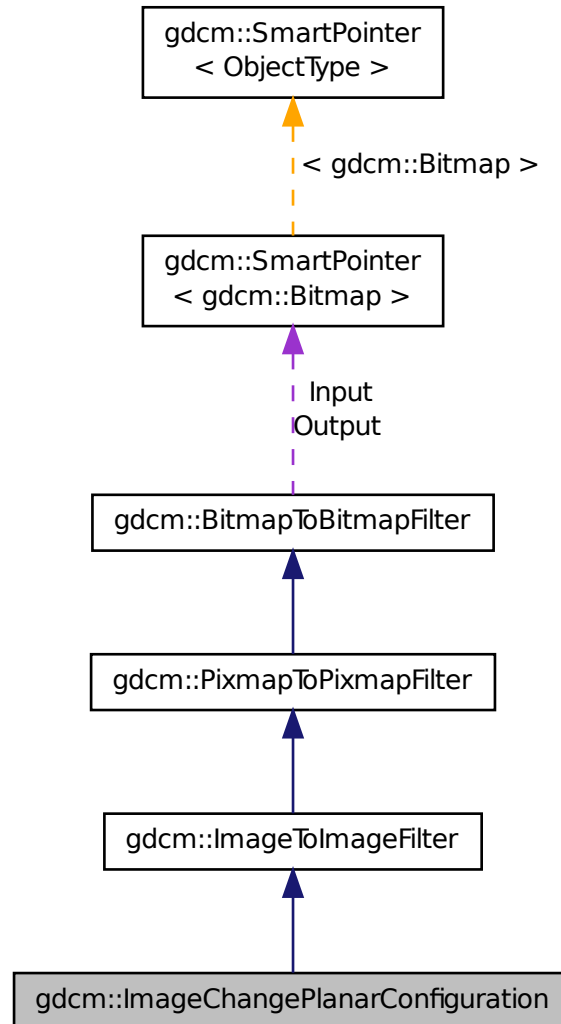
[ImageChangePlanarConfiguration](#) class Class to change the Planar configuration of an input DICOM By default it will change into the more usual representation: PlanarConfiguration = 0.

```
#include <gdcmImageChangePlanarConfiguration.h>
```

Inheritance diagram for `gdcm::ImageChangePlanarConfiguration`:



Collaboration diagram for gdcm::ImageChangePlanarConfiguration:



Public Member Functions

- [ImageChangePlanarConfiguration](#) ()
- [~ImageChangePlanarConfiguration](#) ()
- `bool` [Change](#) ()
 Change.
- `unsigned int` [GetPlanarConfiguration](#) () const
- `template<typename T >`
 `size_t` [RGBPixelsToRGBPlanes](#) (T *r, T *g, T *b, const T *rgb, `size_t` s)

- `template<typename T >`
`size_t RGBPlanesToRGBPixels (T *out, const T *r, const T *g, const T *b, size_t s)`
- `void SetPlanarConfiguration (unsigned int pc)`

Set/Get requested PlanarConfiguration.

Static Public Member Functions

- `template<typename T >`
`static size_t RGBPixelsToRGBPlanes (T *r, T *g, T *b, const T *rgb, size_t s)`
- `template<typename T >`
`static size_t RGBPlanesToRGBPixels (T *out, const T *r, const T *g, const T *b, size_t s)`

Additional Inherited Members

25.132.1 Detailed Description

[ImageChangePlanarConfiguration](#) class Class to change the Planar configuration of an input DICOM By default it will change into the more usual representation: PlanarConfiguration = 0.

25.132.2 Constructor & Destructor Documentation

25.132.2.1 `gdcm::ImageChangePlanarConfiguration::ImageChangePlanarConfiguration ()` `[inline]`

25.132.2.2 `gdcm::ImageChangePlanarConfiguration::~~ImageChangePlanarConfiguration ()` `[inline]`

25.132.3 Member Function Documentation

25.132.3.1 `bool gdcm::ImageChangePlanarConfiguration::Change ()`

Change.

25.132.3.2 `unsigned int gdcm::ImageChangePlanarConfiguration::GetPlanarConfiguration () const` `[inline]`

25.132.3.3 `template<typename T > static size_t gdcm::ImageChangePlanarConfiguration::RGBPixelsToRGBPlanes (T * r, T * g, T * b, const T * rgb, size_t s)` `[static]`

Convert a regular RGB pixel image (R,G,B,R,G,B...) into a planar R,G,B image (R,R...,G,G...B,B)

Warning

this works on a frame basis, you need to loop over all frames in multiple frames image to apply this function

25.132.3.4 `template<typename T > size_t gdcm::ImageChangePlanarConfiguration::RGBPixelsToRGBPlanes (T * r, T * g, T * b, const T * rgb, size_t s)`

25.132.3.5 `template<typename T> static size_t gdcm::ImageChangePlanarConfiguration::RGBPlanesToRGBPixels (T * out, const T * r, const T * g, const T * b, size_t s) [static]`

s is the size of one plane (r,g or b). Thus the output buffer needs to be at least 3*s bytes long s can be seen as the number of RGB pixels in the output

25.132.3.6 `template<typename T> size_t gdcm::ImageChangePlanarConfiguration::RGBPlanesToRGBPixels (T * out, const T * r, const T * g, const T * b, size_t s)`

25.132.3.7 `void gdcm::ImageChangePlanarConfiguration::SetPlanarConfiguration (unsigned int pc) [inline]`

Set/Get requested PlanarConfiguration.

The documentation for this class was generated from the following file:

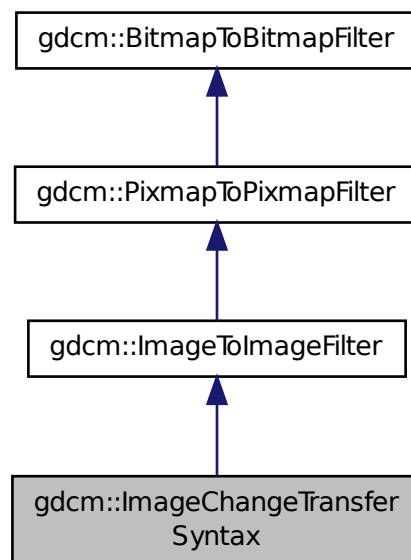
- [gdcmImageChangePlanarConfiguration.h](#)

25.133 gdcm::ImageChangeTransferSyntax Class Reference

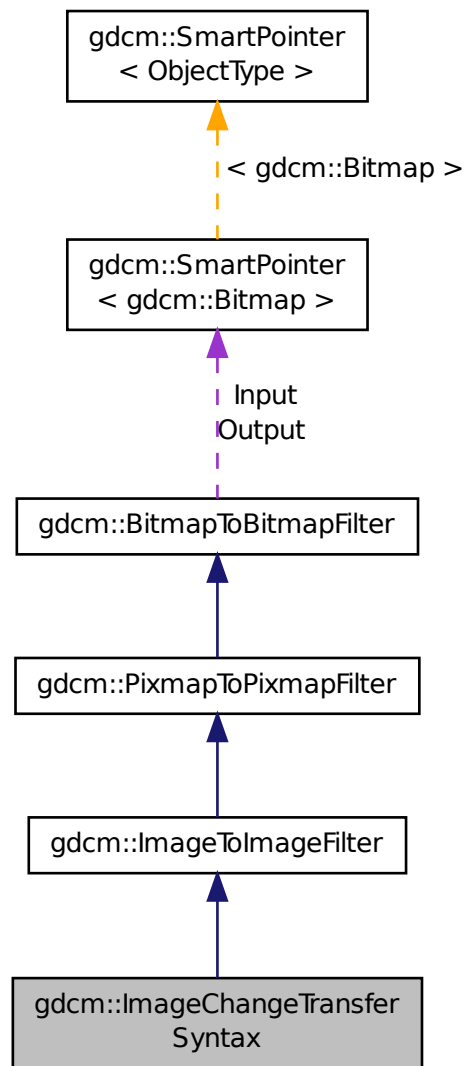
[ImageChangeTransferSyntax](#) class Class to change the transfer syntax of an input DICOM.

```
#include <gdcmImageChangeTransferSyntax.h>
```

Inheritance diagram for gdcm::ImageChangeTransferSyntax:



Collaboration diagram for `gdcM::ImageChangeTransferSyntax`:



Public Member Functions

- [ImageChangeTransferSyntax](#) ()
- [~ImageChangeTransferSyntax](#) ()
- [bool Change](#) ()
Change.
- [const TransferSyntax & GetTransferSyntax](#) () const
Get Transfer Syntax.
- [void SetCompressIconImage](#) (bool b)

- void [SetForce](#) (bool f)
- void [SetTransferSyntax](#) (const [TransferSyntax](#) &ts)
Set target Transfer Syntax.
- void [SetUserCodec](#) ([ImageCodec](#) *ic)

Protected Member Functions

- bool [TryJPEG2000Codec](#) (const [DataElement](#) &pixelde, [Bitmap](#) const &input, [Bitmap](#) &output)
- bool [TryJPEGCodec](#) (const [DataElement](#) &pixelde, [Bitmap](#) const &input, [Bitmap](#) &output)
- bool [TryJPEGLSCodec](#) (const [DataElement](#) &pixelde, [Bitmap](#) const &input, [Bitmap](#) &output)
- bool [TryRAWCodec](#) (const [DataElement](#) &pixelde, [Bitmap](#) const &input, [Bitmap](#) &output)
- bool [TryRLECodec](#) (const [DataElement](#) &pixelde, [Bitmap](#) const &input, [Bitmap](#) &output)

Additional Inherited Members

25.133.1 Detailed Description

[ImageChangeTransferSyntax](#) class Class to change the transfer syntax of an input DICOM.

If only Force param is set but no input [TransferSyntax](#) is set, it is assumed that user only wants to inspect encapsulated stream (advanced dev. option).

When using UserCodec it is very important that the [TransferSyntax](#) (as set in [SetTransferSyntax](#)) is actually understood by UserCodec (ie. `UserCodec->CanCode(TransferSyntax)`). Otherwise the behavior is to use a default codec.

See Also

[JPEGCodec](#) [JPEGLSCodec](#) [JPEG2000Codec](#)

Examples:

[CompressImage.cxx](#).

25.133.2 Constructor & Destructor Documentation

25.133.2.1 `gdcm::ImageChangeTransferSyntax::ImageChangeTransferSyntax ()` `[inline]`

25.133.2.2 `gdcm::ImageChangeTransferSyntax::~~ImageChangeTransferSyntax ()` `[inline]`

25.133.3 Member Function Documentation

25.133.3.1 `bool gdcm::ImageChangeTransferSyntax::Change ()`

Change.

Examples:

[CompressImage.cxx](#).

25.133.3.2 `const TransferSyntax& gdcm::ImageChangeTransferSyntax::GetTransferSyntax () const` `[inline]`

Get Transfer Syntax.

25.133.3.3 `void gdcmm::ImageChangeTransferSyntax::SetCompressIconImage (bool b)` `[inline]`

Decide whether or not to also compress the Icon [Image](#) using the same Transfer Syntax Default is to simply decompress icon image

25.133.3.4 `void gdcmm::ImageChangeTransferSyntax::SetForce (bool f)` `[inline]`

When target Transfer Syntax is identical to input target syntax, no operation is actually done This is an issue when someone wants to recompress using GDCM internal implementation a JPEG (for example) image

25.133.3.5 `void gdcmm::ImageChangeTransferSyntax::SetTransferSyntax (const TransferSyntax & ts)` `[inline]`

Set target Transfer Syntax.

Examples:

[CompressImage.cxx](#).

25.133.3.6 `void gdcmm::ImageChangeTransferSyntax::SetUserCodec (ImageCodec * ic)` `[inline]`

Allow user to specify exactly which codec to use. this is needed to specify special qualities or compression option.

Warning

is the codec 'ic' is not compatible with the [TransferSyntax](#) requested, it will not be used. It is the user responsibility to check that `UserCodec->CanCode(TransferSyntax)`

25.133.3.7 `bool gdcmm::ImageChangeTransferSyntax::TryJPEG2000Codec (const DataElement & pixelde, Bitmap const & input, Bitmap & output)` `[protected]`

25.133.3.8 `bool gdcmm::ImageChangeTransferSyntax::TryJPEGCodec (const DataElement & pixelde, Bitmap const & input, Bitmap & output)` `[protected]`

25.133.3.9 `bool gdcmm::ImageChangeTransferSyntax::TryJPEGLSCodec (const DataElement & pixelde, Bitmap const & input, Bitmap & output)` `[protected]`

25.133.3.10 `bool gdcmm::ImageChangeTransferSyntax::TryRAWCodec (const DataElement & pixelde, Bitmap const & input, Bitmap & output)` `[protected]`

25.133.3.11 `bool gdcmm::ImageChangeTransferSyntax::TryRLECodec (const DataElement & pixelde, Bitmap const & input, Bitmap & output)` `[protected]`

The documentation for this class was generated from the following file:

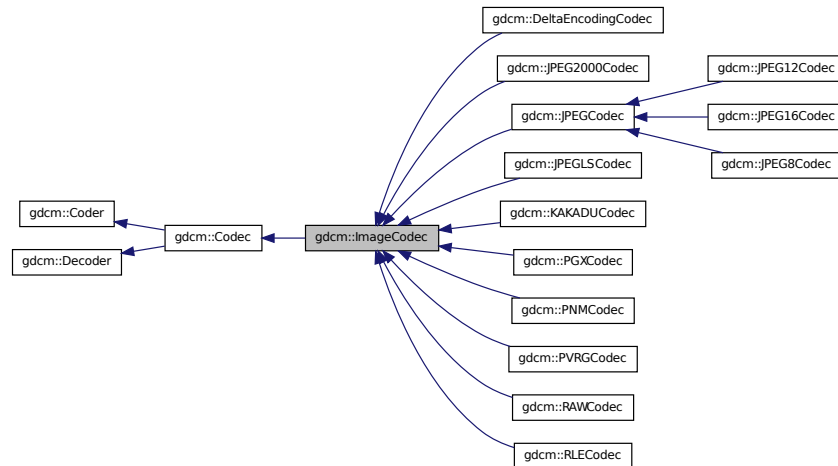
- [gdcmmImageChangeTransferSyntax.h](#)

25.134 gdcm::ImageCodec Class Reference

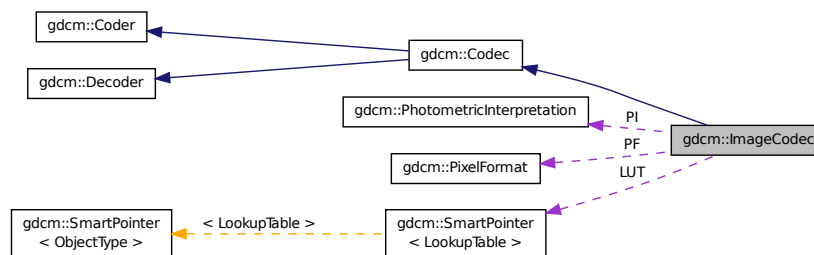
[ImageCodec](#).

```
#include <gdcmImageCodec.h>
```

Inheritance diagram for gdcm::ImageCodec:



Collaboration diagram for gdcm::ImageCodec:



Public Member Functions

- [ImageCodec](#) ()
- [~ImageCodec](#) ()
- bool [CanCode](#) ([TransferSyntax](#) const &) const
Return whether this coder support this transfer syntax (can code it)
- bool [CanDecode](#) ([TransferSyntax](#) const &) const
Return whether this decoder support this transfer syntax (can decode it)
- bool [Decode](#) ([DataElement](#) const &is_, [DataElement](#) &os)
Decode.

- const unsigned int * [GetDimensions](#) () const
- virtual bool [GetHeaderInfo](#) (std::istream &is_, [TransferSyntax](#) &ts)
- bool [GetLossyFlag](#) () const
- const [LookupTable](#) & [GetLUT](#) () const
- bool [GetNeedByteSwap](#) () const
- unsigned int [GetNumberOfDimensions](#) () const
- const [PhotometricInterpretation](#) & [GetPhotometricInterpretation](#) () const
- [PixelFormat](#) & [GetPixelFormat](#) ()
- const [PixelFormat](#) & [GetPixelFormat](#) () const
- unsigned int [GetPlanarConfiguration](#) () const
- bool [IsLossy](#) () const
- void [SetDimensions](#) (const unsigned int d[3])
- void [SetDimensions](#) (const std::vector< unsigned int > &d)
- void [SetLossyFlag](#) (bool l)
- void [SetLUT](#) ([LookupTable](#) const &lut)
- void [SetNeedByteSwap](#) (bool b)
- void [SetNeedOverlayCleanup](#) (bool b)
- void [SetNumberOfDimensions](#) (unsigned int dim)
- void [SetPhotometricInterpretation](#) ([PhotometricInterpretation](#) const &pi)
- virtual void [SetPixelFormat](#) ([PixelFormat](#) const &pf)
- void [SetPlanarConfiguration](#) (unsigned int pc)

Protected Types

- typedef [SmartPointer](#)< [LookupTable](#) > [LUTPtr](#)

Protected Member Functions

- bool [DecodeByStreams](#) (std::istream &is_, std::ostream &os)
- bool [DoByteSwap](#) (std::istream &is_, std::ostream &os)
- bool [DoInvertMonochrome](#) (std::istream &is_, std::ostream &os)
- bool [DoOverlayCleanup](#) (std::istream &is_, std::ostream &os)
- bool [DoPaddedCompositePixelCode](#) (std::istream &is_, std::ostream &os)
- bool [DoPlanarConfiguration](#) (std::istream &is_, std::ostream &os)
- bool [DoSimpleCopy](#) (std::istream &is_, std::ostream &os)
- bool [DoYBR](#) (std::istream &is_, std::ostream &os)
- virtual bool [IsValid](#) ([PhotometricInterpretation](#) const &pi)

Protected Attributes

- unsigned int [Dimensions](#) [3]
- bool [LossyFlag](#)
- [LUTPtr](#) [LUT](#)
- bool [NeedByteSwap](#)
- bool [NeedOverlayCleanup](#)
- unsigned int [NumberOfDimensions](#)
- [PixelFormat](#) [PF](#)
- [PhotometricInterpretation](#) [PI](#)
- unsigned int [PlanarConfiguration](#)
- bool [RequestPaddedCompositePixelCode](#)
- bool [RequestPlanarConfiguration](#)

Friends

- class [ImageChangePhotometricInterpretation](#)

25.134.1 Detailed Description

[ImageCodec](#).

Note

Main codec, this is a central place for all implementation

25.134.2 Member Typedef Documentation

25.134.2.1 `typedef SmartPointer<LookupTable> gdcm::ImageCodec::LUTPtr` `[protected]`

25.134.3 Constructor & Destructor Documentation

25.134.3.1 `gdcm::ImageCodec::ImageCodec ()`

25.134.3.2 `gdcm::ImageCodec::~~ImageCodec ()`

25.134.4 Member Function Documentation

25.134.4.1 `bool gdcm::ImageCodec::CanCode (TransferSyntax const &) const` `[inline], [virtual]`

Return whether this coder support this transfer syntax (can code it)

Implements [gdcm::Coder](#).

Reimplemented in [gdcm::JPEGCodec](#), [gdcm::RLECodec](#), [gdcm::PVRGCodec](#), [gdcm::JPEG2000Codec](#), [gdcm::JPEG-LSCoec](#), [gdcm::PNMCodec](#), [gdcm::PGXCodec](#), [gdcm::KAKADUCoec](#), and [gdcm::RAWCodec](#).

25.134.4.2 `bool gdcm::ImageCodec::CanDecode (TransferSyntax const &) const` `[inline], [virtual]`

Return whether this decoder support this transfer syntax (can decode it)

Implements [gdcm::Decoder](#).

Reimplemented in [gdcm::JPEGCodec](#), [gdcm::RLECodec](#), [gdcm::PVRGCodec](#), [gdcm::JPEG2000Codec](#), [gdcm::JPEG-LSCoec](#), [gdcm::PNMCodec](#), [gdcm::RAWCodec](#), [gdcm::PGXCodec](#), and [gdcm::KAKADUCoec](#).

25.134.4.3 `bool gdcm::ImageCodec::Decode (DataElement const & , DataElement &)` `[virtual]`

Decode.

Reimplemented from [gdcm::Decoder](#).

Reimplemented in [gdcm::JPEGCodec](#), [gdcm::RLECodec](#), [gdcm::JPEGLSCoec](#), [gdcm::PVRGCodec](#), [gdcm::JPEG2000Codec](#), [gdcm::KAKADUCoec](#), and [gdcm::RAWCodec](#).

25.134.4.4 `bool gdcmm::ImageCodec::DecodeByStreams (std::istream & is, std::ostream & os)` [protected],
[virtual]

Reimplemented from [gdcmm::Decoder](#).

Reimplemented in [gdcmm::JPEGCodec](#), [gdcmm::JPEG2000Codec](#), [gdcmm::RLECodec](#), [gdcmm::RAWCodec](#), [gdcmm::JPEG12Codec](#), [gdcmm::JPEG16Codec](#), and [gdcmm::JPEG8Codec](#).

25.134.4.5 `bool gdcmm::ImageCodec::DoByteSwap (std::istream & is, std::ostream & os)` [protected]

25.134.4.6 `bool gdcmm::ImageCodec::DoInvertMonochrome (std::istream & is, std::ostream & os)` [protected]

25.134.4.7 `bool gdcmm::ImageCodec::DoOverlayCleanup (std::istream & is, std::ostream & os)` [protected]

25.134.4.8 `bool gdcmm::ImageCodec::DoPaddedCompositePixelCode (std::istream & is, std::ostream & os)` [protected]

25.134.4.9 `bool gdcmm::ImageCodec::DoPlanarConfiguration (std::istream & is, std::ostream & os)` [protected]

25.134.4.10 `bool gdcmm::ImageCodec::DoSimpleCopy (std::istream & is, std::ostream & os)` [protected]

25.134.4.11 `bool gdcmm::ImageCodec::DoYBR (std::istream & is, std::ostream & os)` [protected]

25.134.4.12 `const unsigned int* gdcmm::ImageCodec::GetDimensions () const` [inline]

25.134.4.13 `virtual bool gdcmm::ImageCodec::GetHeaderInfo (std::istream & is, TransferSyntax & ts)` [virtual]

Reimplemented in [gdcmm::JPEGCodec](#), [gdcmm::RLECodec](#), [gdcmm::JPEGLSCodec](#), [gdcmm::JPEG2000Codec](#), [gdcmm::PNMCodec](#), [gdcmm::JPEG12Codec](#), [gdcmm::JPEG16Codec](#), [gdcmm::JPEG8Codec](#), [gdcmm::RAWCodec](#), and [gdcmm::PGXCodec](#).

25.134.4.14 `bool gdcmm::ImageCodec::GetLossyFlag () const`

25.134.4.15 `const LookupTable& gdcmm::ImageCodec::GetLUT () const` [inline]

25.134.4.16 `bool gdcmm::ImageCodec::GetNeedByteSwap () const` [inline]

25.134.4.17 `unsigned int gdcmm::ImageCodec::GetNumberOfDimensions () const`

25.134.4.18 `const PhotometricInterpretation& gdcmm::ImageCodec::GetPhotometricInterpretation () const`

25.134.4.19 `PixelFormat& gdcmm::ImageCodec::GetPixelFormat ()` [inline]

Examples:

[GetJPEGSamplePrecision.cxx](#).

25.134.4.20 `const PixelFormat& gdcmm::ImageCodec::GetPixelFormat () const` [inline]

25.134.4.21 `unsigned int gdcmm::ImageCodec::GetPlanarConfiguration () const` [inline]

25.134.4.22 `bool gdcmm::ImageCodec::IsLossy () const`

25.134.4.23 `virtual bool gdcm::ImageCodec::IsValid (PhotometricInterpretation const & pi)` [protected],
[virtual]

Reimplemented in [gdcm::JPEGCodec](#).

25.134.4.24 `void gdcm::ImageCodec::SetDimensions (const unsigned int d[3])`

Examples:

[ExtractIconFromFile.cxx](#).

25.134.4.25 `void gdcm::ImageCodec::SetDimensions (const std::vector< unsigned int > & d)`

25.134.4.26 `void gdcm::ImageCodec::SetLossyFlag (bool l)`

25.134.4.27 `void gdcm::ImageCodec::SetLUT (LookupTable const & lut)` [inline]

Examples:

[ExtractIconFromFile.cxx](#).

25.134.4.28 `void gdcm::ImageCodec::SetNeedByteSwap (bool b)` [inline]

25.134.4.29 `void gdcm::ImageCodec::SetNeedOverlayCleanup (bool b)` [inline]

25.134.4.30 `void gdcm::ImageCodec::SetNumberOfDimensions (unsigned int dim)`

25.134.4.31 `void gdcm::ImageCodec::SetPhotometricInterpretation (PhotometricInterpretation const & pi)`

Examples:

[ExtractIconFromFile.cxx](#).

25.134.4.32 `virtual void gdcm::ImageCodec::SetPixelFormat (PixelFormat const & pf)` [inline],[virtual]

Reimplemented in [gdcm::JPEGCodec](#).

Examples:

[ExtractIconFromFile.cxx](#).

25.134.4.33 `void gdcm::ImageCodec::SetPlanarConfiguration (unsigned int pc)` [inline]

25.134.5 Friends And Related Function Documentation

25.134.5.1 `friend class ImageChangePhotometricInterpretation` [friend]

25.134.6 Member Data Documentation

- 25.134.6.1 `unsigned int gdcm::ImageCodec::Dimensions[3]` [protected]
- 25.134.6.2 `bool gdcm::ImageCodec::LossyFlag` [protected]
- 25.134.6.3 `LUTPtr gdcm::ImageCodec::LUT` [protected]
- 25.134.6.4 `bool gdcm::ImageCodec::NeedByteSwap` [protected]
- 25.134.6.5 `bool gdcm::ImageCodec::NeedOverlayCleanup` [protected]
- 25.134.6.6 `unsigned int gdcm::ImageCodec::NumberOfDimensions` [protected]
- 25.134.6.7 `PixelFormat gdcm::ImageCodec::PF` [protected]
- 25.134.6.8 `PhotometricInterpretation gdcm::ImageCodec::PI` [protected]
- 25.134.6.9 `unsigned int gdcm::ImageCodec::PlanarConfiguration` [protected]
- 25.134.6.10 `bool gdcm::ImageCodec::RequestPaddedCompositePixelCode` [protected]
- 25.134.6.11 `bool gdcm::ImageCodec::RequestPlanarConfiguration` [protected]

The documentation for this class was generated from the following file:

- [gdcmImageCodec.h](#)

25.135 gdcm::ImageConverter Class Reference

[Image](#) Converter.

```
#include <gdcmImageConverter.h>
```

Public Member Functions

- [ImageConverter](#) ()
- [~ImageConverter](#) ()
- void [Convert](#) ()
- const [Image](#) & [GetOutput](#) () const
- void [SetInput](#) ([Image](#) const &input)

25.135.1 Detailed Description

[Image](#) Converter.

Note

This is the class used to convert from on [gdcm::Image](#) to another This is typically used to convert let say YBR JPEG compressed [gdcm::Image](#) to a RAW RGB [gdcm::Image](#). So that the buffer can be directly pass to third party application. This filter is application level and not integrated directly in GDCM

25.135.2 Constructor & Destructor Documentation

25.135.2.1 `gdcm::ImageConverter::ImageConverter ()`

25.135.2.2 `gdcm::ImageConverter::~~ImageConverter ()`

25.135.3 Member Function Documentation

25.135.3.1 `void gdcm::ImageConverter::Convert ()`

25.135.3.2 `const Image& gdcm::ImageConverter::GetOutput () const`

25.135.3.3 `void gdcm::ImageConverter::SetInput (Image const & input)`

The documentation for this class was generated from the following file:

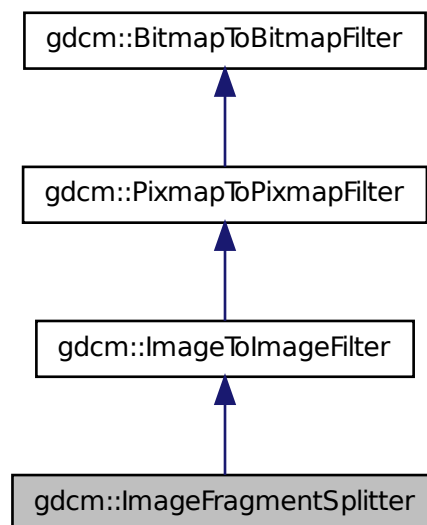
- [gdcmImageConverter.h](#)

25.136 gdcm::ImageFragmentSplitter Class Reference

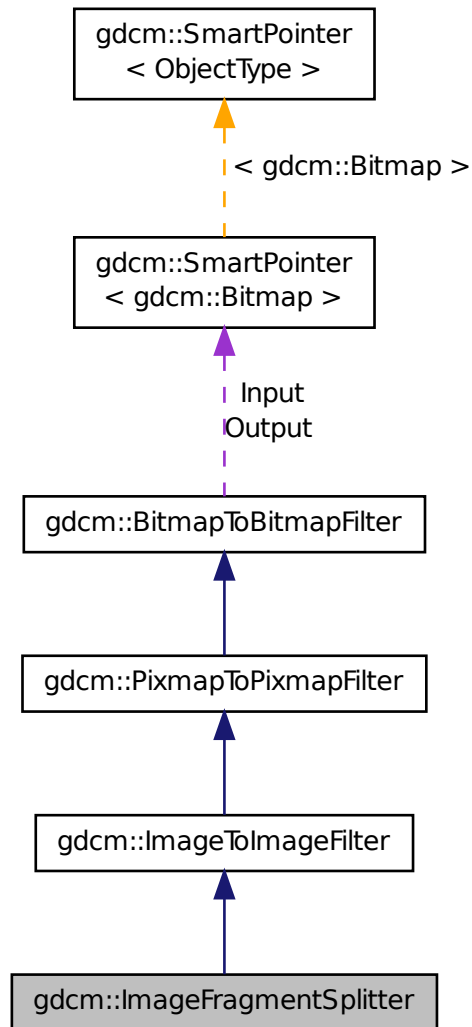
[ImageFragmentSplitter](#) class For single frame image, DICOM standard allow splitting the frame into multiple fragments.

```
#include <gdcmImageFragmentSplitter.h>
```

Inheritance diagram for `gdcm::ImageFragmentSplitter`:



Collaboration diagram for `gdcm::ImageFragmentSplitter`:



Public Member Functions

- `ImageFragmentSplitter ()`
- `~ImageFragmentSplitter ()`
- `unsigned int GetFragmentSizeMax () const`
- `void SetForce (bool f)`
- `void SetFragmentSizeMax (unsigned int fragsize)`
FragmentSizeMax needs to be an even number.
- `bool Split ()`
Split.

Additional Inherited Members

25.136.1 Detailed Description

[ImageFragmentSplitter](#) class For single frame image, DICOM standard allow splitting the frame into multiple fragments.

25.136.2 Constructor & Destructor Documentation

25.136.2.1 `gdcm::ImageFragmentSplitter::ImageFragmentSplitter ()` `[inline]`

25.136.2.2 `gdcm::ImageFragmentSplitter::~~ImageFragmentSplitter ()` `[inline]`

25.136.3 Member Function Documentation

25.136.3.1 `unsigned int gdcm::ImageFragmentSplitter::GetFragmentSizeMax () const` `[inline]`

25.136.3.2 `void gdcm::ImageFragmentSplitter::SetForce (bool f)` `[inline]`

When file already has all it's segment < FragmentSizeMax there is not need to run the filter. Unless the user explicitly say 'force' recomputation !

25.136.3.3 `void gdcm::ImageFragmentSplitter::SetFragmentSizeMax (unsigned int fragsize)`

FragmentSizeMax needs to be an even number.

25.136.3.4 `bool gdcm::ImageFragmentSplitter::Split ()`

Split.

The documentation for this class was generated from the following file:

- [gdcmImageFragmentSplitter.h](#)

25.137 gdcm::ImageHelper Class Reference

[ImageHelper](#) (internal class, not intended for user level)

```
#include <gdcmImageHelper.h>
```

Static Public Member Functions

- static bool [ComputeSpacingFromImagePositionPatient](#) (const std::vector< double > &imageposition, std::vector< double > &spacing)
DO NOT USE.
- static std::vector< unsigned int > [GetDimensionsValue](#) (const [File](#) &f)
- static bool [GetDirectionCosinesFromDataSet](#) ([DataSet](#) const &ds, std::vector< double > &dircos)
- static std::vector< double > [GetDirectionCosinesValue](#) ([File](#) const &f)
- static bool [GetForcePixelSpacing](#) ()
- static bool [GetForceRescaleInterceptSlope](#) ()

- static [SmartPointer](#)< [LookupTable](#) > [GetLUT](#) ([File](#) const &f)
- static std::vector< double > [GetOriginValue](#) ([File](#) const &f)
Set/Get Origin (IPP) from/to a file.
- static [PhotometricInterpretation](#) [GetPhotometricInterpretationValue](#) ([File](#) const &f)
- static [PixelFormat](#) [GetPixelFormatValue](#) (const [File](#) &f)
- static unsigned int [GetPlanarConfigurationValue](#) (const [File](#) &f)
- static const [ByteValue](#) * [GetPointerFromElement](#) ([Tag](#) const &tag, [File](#) const &f)
Moved from PixampReader to here. Generally used for photometric interpretation.
- static std::vector< double > [GetRescaleInterceptSlopeValue](#) ([File](#) const &f)
- static std::vector< double > [GetSpacingValue](#) ([File](#) const &f)
Set/Get [Spacing](#) from/to a [File](#).
- static void [SetDimensionsValue](#) ([File](#) &f, const [Image](#) &img)
- static void [SetDirectionCosinesValue](#) ([DataSet](#) &ds, const std::vector< double > &dircos)
- static void [SetForcePixelSpacing](#) (bool)
- static void [SetForceRescaleInterceptSlope](#) (bool)
- static void [SetOriginValue](#) ([DataSet](#) &ds, const [Image](#) &img)
- static void [SetRescaleInterceptSlopeValue](#) ([File](#) &f, const [Image](#) &img)
- static void [SetSpacingValue](#) ([DataSet](#) &ds, const std::vector< double > &spacing)

Static Protected Member Functions

- static [Tag](#) [GetSpacingTagFromMediaStorage](#) ([MediaStorage](#) const &ms)
- static [Tag](#) [GetZSpacingTagFromMediaStorage](#) ([MediaStorage](#) const &ms)

25.137.1 Detailed Description

[ImageHelper](#) (internal class, not intended for user level)

Helper for writing World images in DICOM. DICOM has a 'template' approach to image where MR [Image](#) Storage are distinct object from Enhanced MR [Image](#) Storage. For example the Pixel [Spacing](#) in one object is not at the same position (ie [Tag](#)) as in the other this class is the central (read: fragile) place where all the dispatching is done from a unified view of a world image (typically VTK or ITK point of view) down to the low level DICOM point of view.

Warning

: do not expect the API of this class to be maintained at any point, since as Modalities are added the API might have to be augmented or behavior changed to cope with new modalities.

25.137.2 Member Function Documentation

- 25.137.2.1 static bool [gdcmm::ImageHelper::ComputeSpacingFromImagePositionPatient](#) (const std::vector< double > & *imageposition*, std::vector< double > & *spacing*) [static]

DO NOT USE.

25.137.2.2 `static std::vector<unsigned int> gdcm::ImageHelper::GetDimensionsValue (const File & f) [static]`

This function checks tags (0x0028, 0x0010) and (0x0028, 0x0011) for the rows and columns of the image in pixels (as opposed to actual distances). The output is {col , row}

Examples:

[Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), and [StreamImageReaderTest.cxx](#).

25.137.2.3 `static bool gdcm::ImageHelper::GetDirectionCosinesFromDataSet (DataSet const & ds, std::vector< double > & dircos) [static]`

25.137.2.4 `static std::vector<double> gdcm::ImageHelper::GetDirectionCosinesValue (File const & f) [static]`

Get Direction Cosines (IOP) from/to a file Requires a file because mediastorage must be known

25.137.2.5 `static bool gdcm::ImageHelper::GetForcePixelSpacing () [static]`

25.137.2.6 `static bool gdcm::ImageHelper::GetForceRescaleInterceptSlope () [static]`

25.137.2.7 `static SmartPointer<LookupTable> gdcm::ImageHelper::GetLUT (File const & f) [static]`

25.137.2.8 `static std::vector<double> gdcm::ImageHelper::GetOriginValue (File const & f) [static]`

Set/Get Origin (IPP) from/to a file.

25.137.2.9 `static PhotometricInterpretation gdcm::ImageHelper::GetPhotometricInterpretationValue (File const & f) [static]`

25.137.2.10 `static PixelFormat gdcm::ImageHelper::GetPixelFormatValue (const File & f) [static]`

This function returns pixel information about an image from its dataset That includes samples per pixel and bit depth (in that order)

25.137.2.11 `static unsigned int gdcm::ImageHelper::GetPlanarConfigurationValue (const File & f) [static]`

25.137.2.12 `static const ByteValue* gdcm::ImageHelper::GetPointerFromElement (Tag const & tag, File const & f) [static]`

Moved from PixampReader to here. Generally used for photometric interpretation.

25.137.2.13 `static std::vector<double> gdcm::ImageHelper::GetRescaleInterceptSlopeValue (File const & f) [static]`

Set/Get shift/scale from/to a file

Warning

this function reads/sets the Slope/Intercept in appropriate class storage, but also Grid Scaling in RT Dose Storage Can't take a dataset because the mediastorage of the file must be known

25.137.2.14 `static Tag gdcmm::ImageHelper::GetSpacingTagFromMediaStorage (MediaStorage const & ms) [static], [protected]`

25.137.2.15 `static std::vector<double> gdcmm::ImageHelper::GetSpacingValue (File const & f) [static]`

Set/Get [Spacing](#) from/to a [File](#).

25.137.2.16 `static Tag gdcmm::ImageHelper::GetZSpacingTagFromMediaStorage (MediaStorage const & ms) [static], [protected]`

25.137.2.17 `static void gdcmm::ImageHelper::SetDimensionsValue (File & f, const Image & img) [static]`

25.137.2.18 `static void gdcmm::ImageHelper::SetDirectionCosinesValue (DataSet & ds, const std::vector< double > & dircos) [static]`

Set Direction Cosines (IOP) from/to a file When [IOD](#) does not defines what is IOP (eg. typically Secondary Capture [Image](#) Storage) this call will simply remove the IOP attribute. Else in case of MR/CT image storage, this call will properly lookup the correct attribute to store the IOP.

25.137.2.19 `static void gdcmm::ImageHelper::SetForcePixelSpacing (bool) [static]`

GDCM 1.x compatibility issue: When using ReWrite an MR [Image](#) Storage would be rewritten as Secondary Capture [Object](#) while still having a Pixel [Spacing](#) tag (0028,0030). If you have deal with those files, use this very special flag to handle them Unless explicitly set elsewhere by the standard, it will use value from 0028,0030 / 0018,0088 for the Pixel [Spacing](#) of the [Image](#)

25.137.2.20 `static void gdcmm::ImageHelper::SetForceRescaleInterceptSlope (bool) [static]`

GDCM 1.x compatibility issue: when using ReWrite an MR [Image](#) Storage would be rewritten with a Rescale Slope/- Intercept while the standard would prohibit this (Philips Medical [System](#) is still doing that) Unless explicitly set elsewhere by the standard, it will use value from 0028,1052 / 0028,1053 for the Rescale Slope & Rescale Intercept values

25.137.2.21 `static void gdcmm::ImageHelper::SetOriginValue (DataSet & ds, const Image & img) [static]`

25.137.2.22 `static void gdcmm::ImageHelper::SetRescaleInterceptSlopeValue (File & f, const Image & img) [static]`

25.137.2.23 `static void gdcmm::ImageHelper::SetSpacingValue (DataSet & ds, const std::vector< double > & spacing) [static]`

The documentation for this class was generated from the following file:

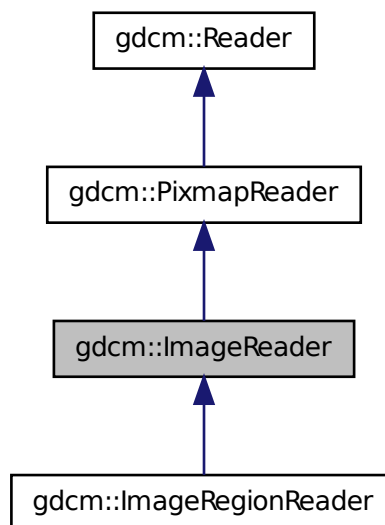
- [gdcmmImageHelper.h](#)

25.138 gdcmm::ImageReader Class Reference

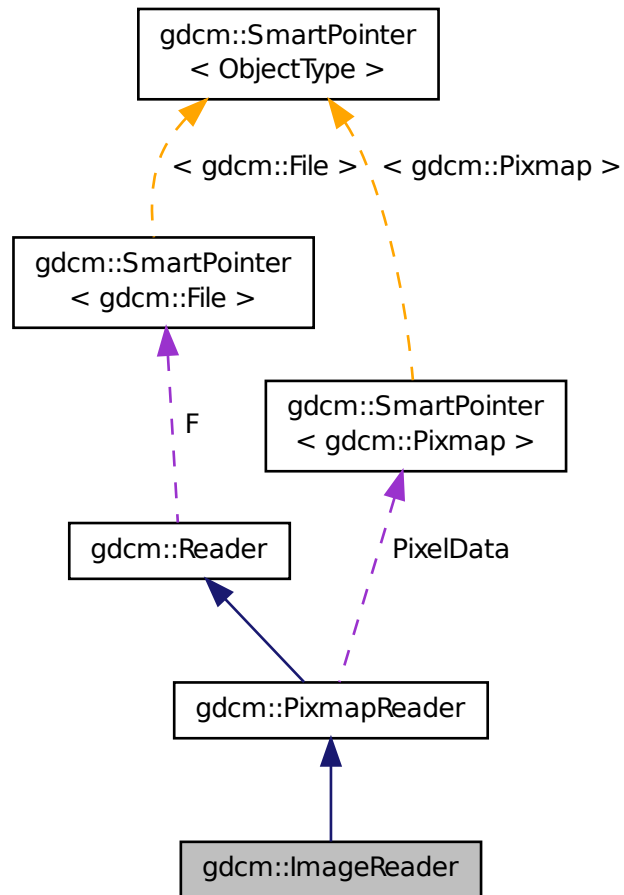
[ImageReader](#).

```
#include <gdcmmImageReader.h>
```

Inheritance diagram for gdcm::ImageReader:



Collaboration diagram for `gdcm::ImageReader`:



Public Member Functions

- `ImageReader ()`
- `virtual ~ImageReader ()`
- `const Image & GetImage () const`
Return the read image.
- `Image & GetImage ()`
- `virtual bool Read ()`

Protected Member Functions

- `bool ReadACRNEMAIImage ()`
- `bool ReadImage (MediaStorage const &ms)`

Additional Inherited Members

25.138.1 Detailed Description

[ImageReader](#).

Note

its role is to convert the DICOM [DataSet](#) into a [gdcm::Image](#) representation [Image](#) is different from [Pixmap](#) has it has a position and a direction in Space.

See Also

[Image](#)

Examples:

[CheckBigEndianBug.cxx](#), [CompressImage.cxx](#), [ConvertToQImage.cxx](#), [ExtractIconFromFile.cxx](#), [FixBrokenJ2K.cxx](#), [FixJAIBugJPEGLS.cxx](#), [GetJPEGSamplePrecision.cxx](#), [HelloVizWorld.cxx](#), [MergeTwoFiles.cxx](#), [MrProtocol.cxx](#), [PatchFile.cxx](#), [ReadMultiTimesException.cxx](#), and [threadgdcm.cxx](#).

25.138.2 Constructor & Destructor Documentation

25.138.2.1 `gdcm::ImageReader::ImageReader ()`

25.138.2.2 `virtual gdcm::ImageReader::~~ImageReader ()` [virtual]

25.138.3 Member Function Documentation

25.138.3.1 `const Image& gdcm::ImageReader::GetImage () const`

Return the read image.

Examples:

[CompressImage.cxx](#), [ConvertToQImage.cxx](#), [ExtractIconFromFile.cxx](#), [FixJAIBugJPEGLS.cxx](#), [GetJPEGSamplePrecision.cxx](#), [HelloVizWorld.cxx](#), [MergeTwoFiles.cxx](#), [PatchFile.cxx](#), [ReadMultiTimesException.cxx](#), and [threadgdcm.cxx](#).

25.138.3.2 `Image& gdcm::ImageReader::GetImage ()`

25.138.3.3 `virtual bool gdcm::ImageReader::Read ()` [virtual]

Read the DICOM image. There are two reason for failure:

1. The input filename is not DICOM
2. The input DICOM file does not contains an [Image](#).

Reimplemented from [gdcm::PixmapReader](#).

Reimplemented in [gdcm::ImageRegionReader](#).

Examples:

[CheckBigEndianBug.cxx](#), [CompressImage.cxx](#), [ConvertToQImage.cxx](#), [ExtractIconFromFile.cxx](#), [FixBrokenJ2K.cxx](#), [FixJAIBugJPEGs.cxx](#), [GetJPEGSamplePrecision.cxx](#), [HelloVizWorld.cxx](#), [MergeTwoFiles.cxx](#), [MrProtocol.cxx](#), [PatchFile.cxx](#), [ReadMultiTimesException.cxx](#), and [threadgdcm.cxx](#).

25.138.3.4 `bool gdcm::ImageReader::ReadACRNEMAImage ()` [protected],[virtual]

Reimplemented from [gdcm::PixmapReader](#).

25.138.3.5 `bool gdcm::ImageReader::ReadImage (MediaStorage const & ms)` [protected],[virtual]

Reimplemented from [gdcm::PixmapReader](#).

The documentation for this class was generated from the following file:

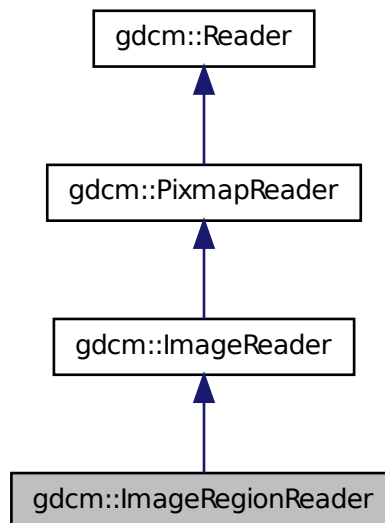
- [gdcmImageReader.h](#)

25.139 gdcm::ImageRegionReader Class Reference

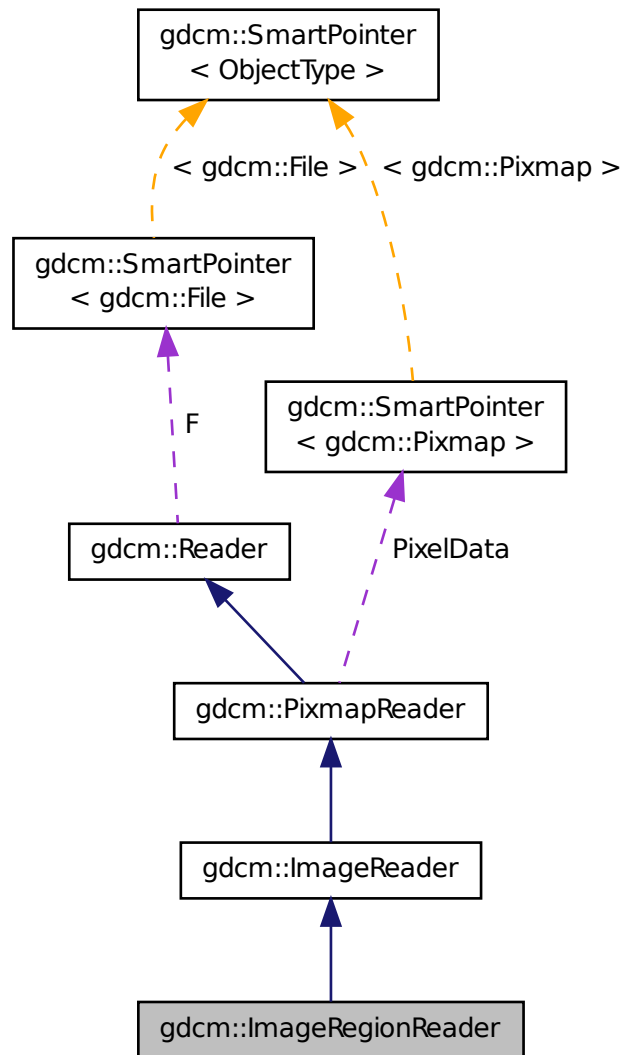
[ImageRegionReader](#).

```
#include <gdcmImageRegionReader.h>
```

Inheritance diagram for `gdcm::ImageRegionReader`:



Collaboration diagram for gdcm::ImageRegionReader:



Public Member Functions

- [ImageRegionReader](#) ()
- [~ImageRegionReader](#) ()
- [size_t ComputeBufferLength](#) () const
- [Region](#) const & [GetRegion](#) () const
- bool [ReadInformation](#) ()
- bool [ReadIntoBuffer](#) (char *inreadbuffer, size_t buflen)
- void [SetRegion](#) ([Region](#) const ®ion)

Set/Get [Region](#) to be read.

Protected Member Functions

- bool [Read](#) ()

To prevent user from calling super class [Read\(\)](#) function.

Additional Inherited Members

25.139.1 Detailed Description

[ImageRegionReader](#).

See Also

[ImageReader](#)

25.139.2 Constructor & Destructor Documentation

25.139.2.1 `gdcm::ImageRegionReader::ImageRegionReader ()`

25.139.2.2 `gdcm::ImageRegionReader::~~ImageRegionReader ()`

25.139.3 Member Function Documentation

25.139.3.1 `size_t gdcm::ImageRegionReader::ComputeBufferLength () const`

Explicit call which will compute the minimal buffer length that can hold the whole uncompressed image as defined by [Region](#) region.

Returns

0 upon error

25.139.3.2 `Region const& gdcm::ImageRegionReader::GetRegion () const`

25.139.3.3 `bool gdcm::ImageRegionReader::Read () [protected],[virtual]`

To prevent user from calling super class [Read\(\)](#) function.

Reimplemented from [gdcm::ImageReader](#).

25.139.3.4 `bool gdcm::ImageRegionReader::ReadInformation ()`

Read meta information (not Pixel Data) from the DICOM file.

Returns

false upon error

25.139.3.5 `bool gdcm::ImageRegionReader::ReadIntoBuffer (char * inreadbuffer, size_t buflen)`

Read into buffer:

Returns

false upon error

25.139.3.6 `void gdcm::ImageRegionReader::SetRegion (Region const & region)`

Set/Get [Region](#) to be read.

The documentation for this class was generated from the following file:

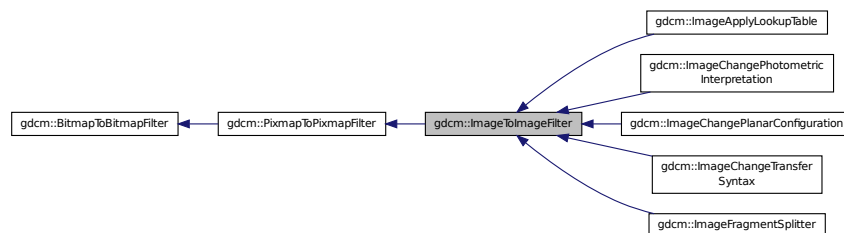
- [gdcmImageRegionReader.h](#)

25.140 gdcm::ImageToImageFilter Class Reference

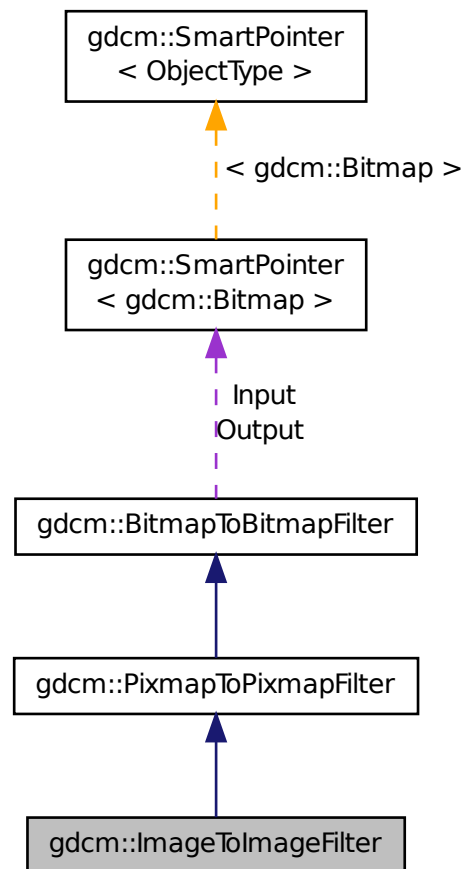
[ImageToImageFilter](#) class Super class for all filter taking an image and producing an output image.

```
#include <gdcmImageToImageFilter.h>
```

Inheritance diagram for `gdcm::ImageToImageFilter`:



Collaboration diagram for `gdcm::ImageToImageFilter`:



Public Member Functions

- [ImageToImageFilter \(\)](#)
- [~ImageToImageFilter \(\)](#)
- [Image & GetInput \(\)](#)
- [const Image & GetOutput \(\) const](#)

Get Output image.

Additional Inherited Members

25.140.1 Detailed Description

[ImageToImageFilter](#) class Super class for all filter taking an image and producing an output image.

25.140.2 Constructor & Destructor Documentation

25.140.2.1 `gdcm::ImageToImageFilter::ImageToImageFilter ()`

25.140.2.2 `gdcm::ImageToImageFilter::~~ImageToImageFilter ()` `[inline]`

25.140.3 Member Function Documentation

25.140.3.1 `Image& gdcm::ImageToImageFilter::GetInput ()`

25.140.3.2 `const Image& gdcm::ImageToImageFilter::GetOutput () const`

Get Output image.

Examples:

[CompressImage.cxx](#).

The documentation for this class was generated from the following file:

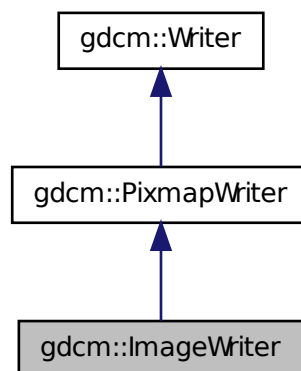
- [gdcmImageToImageFilter.h](#)

25.141 gdcm::ImageWriter Class Reference

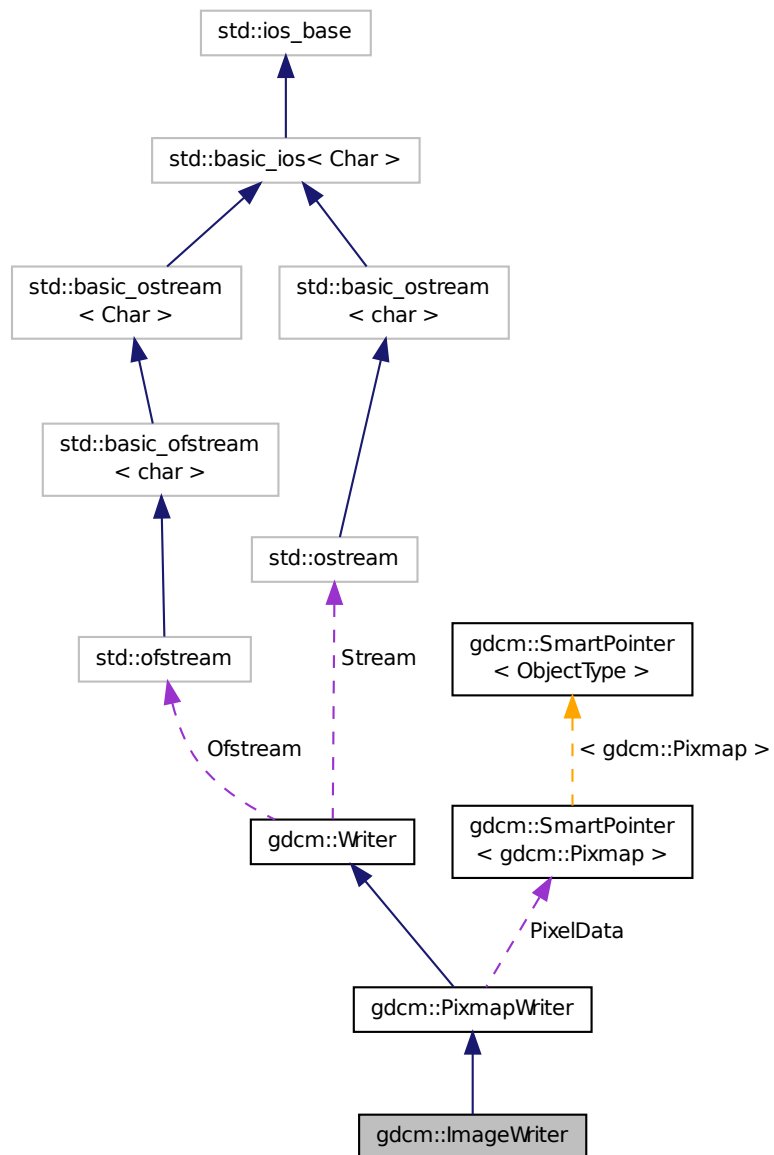
[ImageWriter](#).

```
#include <gdcmImageWriter.h>
```

Inheritance diagram for `gdcm::ImageWriter`:



Collaboration diagram for `gdcm::ImageWriter`:



Public Member Functions

- [ImageWriter](#) ()
- [~ImageWriter](#) ()
- const [Image](#) & [GetImage](#) () const
- [Image](#) & [GetImage](#) ()
- bool [Write](#) ()

Write.

Additional Inherited Members

25.141.1 Detailed Description

[ImageWriter](#).

Examples:

[CompressImage.cxx](#), [CreateARGBImage.cxx](#), [CreateCMYKImage.cxx](#), [csa2img.cxx](#), [GenFakeImage.cxx](#), [GetSubSequenceData.cxx](#), [HelloVizWorld.cxx](#), [iU22tomultisc.cxx](#), and [MergeTwoFiles.cxx](#).

25.141.2 Constructor & Destructor Documentation

25.141.2.1 `gdcm::ImageWriter::ImageWriter ()`

25.141.2.2 `gdcm::ImageWriter::~~ImageWriter ()`

25.141.3 Member Function Documentation

25.141.3.1 `const Image& gdcm::ImageWriter::GetImage () const` `[inline],[virtual]`

Set/Get [Image](#) to be written It will overwrite anything [Image](#) infos found in [DataSet](#) (see parent class to see how to pass dataset)

Reimplemented from [gdcm::PixmapWriter](#).

Examples:

[CreateARGBImage.cxx](#), [CreateCMYKImage.cxx](#), [csa2img.cxx](#), and [iU22tomultisc.cxx](#).

25.141.3.2 `Image& gdcm::ImageWriter::GetImage ()` `[inline],[virtual]`

Reimplemented from [gdcm::PixmapWriter](#).

25.141.3.3 `bool gdcm::ImageWriter::Write ()` `[virtual]`

Write.

Reimplemented from [gdcm::Writer](#).

Examples:

[CompressImage.cxx](#), [CreateARGBImage.cxx](#), [CreateCMYKImage.cxx](#), [csa2img.cxx](#), [GenFakeImage.cxx](#), [HelloVizWorld.cxx](#), [iU22tomultisc.cxx](#), and [MergeTwoFiles.cxx](#).

The documentation for this class was generated from the following file:

- [gdcmImageWriter.h](#)

25.142 gdcm::network::ImplementationClassUIDSub Class Reference

[ImplementationClassUIDSub](#) PS 3.7 [Table D.3-1](#) IMPLEMENTATION CLASS UID SUB-ITEM FIELDS (A-ASSOCIATE-RQ)

```
#include <gdcmImplementationClassUIDSub.h>
```

Public Member Functions

- [ImplementationClassUIDSub](#) ()
- void [Print](#) (std::ostream &os) const
- std::istream & [Read](#) (std::istream &is)
- size_t [Size](#) () const
- const std::ostream & [Write](#) (std::ostream &os) const

25.142.1 Detailed Description

[ImplementationClassUIDSub](#) PS 3.7 [Table D.3-1](#) IMPLEMENTATION CLASS UID SUB-ITEM FIELDS (A-ASSOCIATE-RQ)

25.142.2 Constructor & Destructor Documentation

25.142.2.1 `gdcm::network::ImplementationClassUIDSub::ImplementationClassUIDSub ()`

25.142.3 Member Function Documentation

25.142.3.1 `void gdcm::network::ImplementationClassUIDSub::Print (std::ostream & os) const`

25.142.3.2 `std::istream& gdcm::network::ImplementationClassUIDSub::Read (std::istream & is)`

25.142.3.3 `size_t gdcm::network::ImplementationClassUIDSub::Size () const`

25.142.3.4 `const std::ostream& gdcm::network::ImplementationClassUIDSub::Write (std::ostream & os) const`

The documentation for this class was generated from the following file:

- [gdcmImplementationClassUIDSub.h](#)

25.143 gdcm::network::ImplementationUIDSub Class Reference

[ImplementationUIDSub](#) [Table D.3-2](#) IMPLEMENTATION UID SUB-ITEM FIELDS (A-ASSOCIATE-AC)

```
#include <gdcmImplementationUIDSub.h>
```

Public Member Functions

- [ImplementationUIDSub](#) ()
- const std::ostream & [Write](#) (std::ostream &os) const

25.143.1 Detailed Description

[ImplementationUIDSub Table](#) D.3-2 IMPLEMENTATION UID SUB-ITEM FIELDS (A-ASSOCIATE-AC)

25.143.2 Constructor & Destructor Documentation

25.143.2.1 `gdcm::network::ImplementationUIDSub::ImplementationUIDSub ()`

25.143.3 Member Function Documentation

25.143.3.1 `const std::ostream& gdcm::network::ImplementationUIDSub::Write (std::ostream & os) const`

The documentation for this class was generated from the following file:

- [gdcmImplementationUIDSub.h](#)

25.144 `gdcm::network::ImplementationVersionNameSub` Class Reference

[ImplementationVersionNameSub Table](#) D.3-3 IMPLEMENTATION VERSION NAME SUB-ITEM FIELDS (A-ASSOCIATE-RQ)

```
#include <gdcmImplementationVersionNameSub.h>
```

Public Member Functions

- [ImplementationVersionNameSub](#) ()
- void [Print](#) (std::ostream &os) const
- std::istream & [Read](#) (std::istream &is)
- size_t [Size](#) () const
- const std::ostream & [Write](#) (std::ostream &os) const

25.144.1 Detailed Description

[ImplementationVersionNameSub Table](#) D.3-3 IMPLEMENTATION VERSION NAME SUB-ITEM FIELDS (A-ASSOCIATE-RQ)

25.144.2 Constructor & Destructor Documentation

25.144.2.1 `gdcm::network::ImplementationVersionNameSub::ImplementationVersionNameSub ()`

25.144.3 Member Function Documentation

25.144.3.1 `void gdcm::network::ImplementationVersionNameSub::Print (std::ostream & os) const`

25.144.3.2 `std::istream& gdcm::network::ImplementationVersionNameSub::Read (std::istream & is)`

25.144.3.3 `size_t gdcm::network::ImplementationVersionNameSub::Size () const`

25.144.3.4 `const std::ostream& gdcm::network::ImplementationVersionNameSub::Write (std::ostream & os) const`

The documentation for this class was generated from the following file:

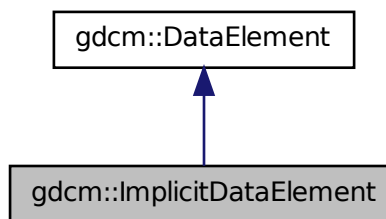
- [gdcmImplementationVersionNameSub.h](#)

25.145 gdcm::ImplicitDataElement Class Reference

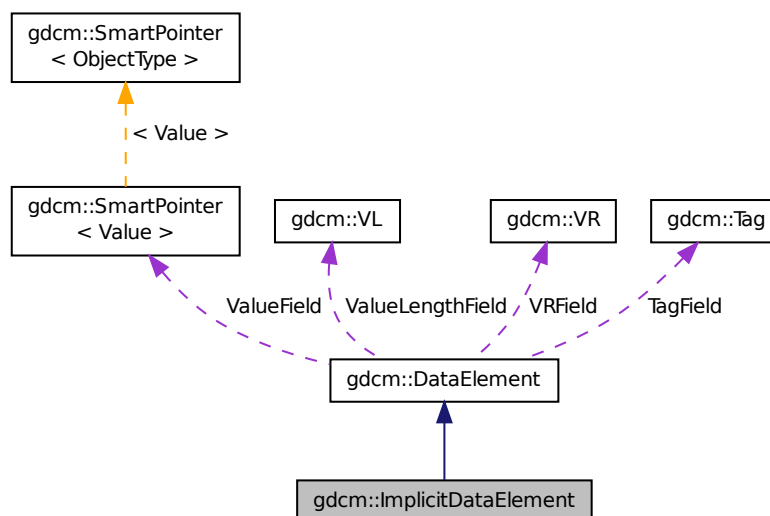
Class to represent an *Implicit VR Data Element*.

```
#include <gdcmImplicitDataElement.h>
```

Inheritance diagram for gdcm::ImplicitDataElement:



Collaboration diagram for gdcm::ImplicitDataElement:



Public Member Functions

- [VL GetLength](#) () const
- template<typename TSwap > std::istream & [Read](#) (std::istream &is)
- template<typename TSwap > std::istream & [ReadPreValue](#) (std::istream &is)
- template<typename TSwap > std::istream & [ReadValue](#) (std::istream &is)
- template<typename TSwap > std::istream & [ReadWithLength](#) (std::istream &is, [VL](#) &length)
- template<typename TSwap > const std::ostream & [Write](#) (std::ostream &os) const

Additional Inherited Members

25.145.1 Detailed Description

Class to represent an *Implicit VR Data Element*.

Note

bla

Examples:

[ReadExplicitLengthSQIVR.cxx](#).

25.145.2 Member Function Documentation

25.145.2.1 [VL gdcm::ImplicitDataElement::GetLength \(\) const](#)

25.145.2.2 [template<typename TSwap > std::istream& gdcm::ImplicitDataElement::Read \(std::istream & is \)](#)

25.145.2.3 [template<typename TSwap > std::istream& gdcm::ImplicitDataElement::ReadPreValue \(std::istream & is \)](#)

25.145.2.4 [template<typename TSwap > std::istream& gdcm::ImplicitDataElement::ReadValue \(std::istream & is \)](#)

25.145.2.5 [template<typename TSwap > std::istream& gdcm::ImplicitDataElement::ReadWithLength \(std::istream & is, \[VL\]\(#\) & length \)](#)

25.145.2.6 [template<typename TSwap > const std::ostream& gdcm::ImplicitDataElement::Write \(std::ostream & os \) const](#)

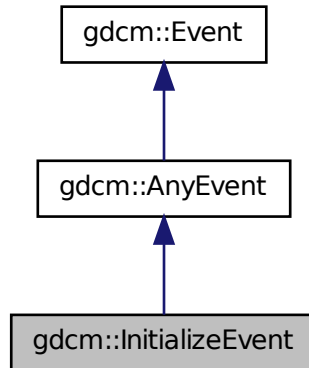
The documentation for this class was generated from the following file:

- [gdcmImplicitDataElement.h](#)

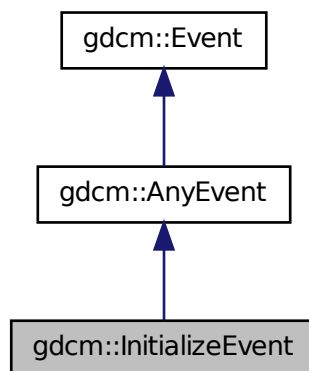
25.146 gdcm::InitializeEvent Class Reference

```
#include <gdcmEvent.h>
```

Inheritance diagram for `gdcM::InitializeEvent`:



Collaboration diagram for `gdcM::InitializeEvent`:



Additional Inherited Members

The documentation for this class was generated from the following file:

- [gdcMEvent.h](#)

25.147 gdcm::IOD Class Reference

Class for representing a [IOD](#).

```
#include <gdcmIOD.h>
```

Public Types

- typedef std::vector< [IODEntry](#) > [MapIODEntry](#)
- typedef MapIODEntry::size_type [SizeType](#)

Public Member Functions

- [IOD](#) ()
- void [AddIODEntry](#) (const [IODEntry](#) &iode)
- void [Clear](#) ()
- const [IODEntry](#) & [GetIODEntry](#) ([SizeType](#) idx) const
- [SizeType](#) [GetNumberOfIODs](#) () const
- [Type](#) [GetTypeFromTag](#) (const [Defs](#) &defs, const [Tag](#) &tag) const

Friends

- std::ostream & [operator<<](#) (std::ostream &_os, const [IOD](#) &_val)

25.147.1 Detailed Description

Class for representing a [IOD](#).

Note

bla

See Also

[Dict](#)

Examples:

[TraverseModules.cxx](#).

25.147.2 Member Typedef Documentation

25.147.2.1 typedef std::vector<[IODEntry](#)> [gdcm::IOD::MapIODEntry](#)

25.147.2.2 typedef MapIODEntry::size_type [gdcm::IOD::SizeType](#)

25.147.3 Constructor & Destructor Documentation

25.147.3.1 [gdcm::IOD::IOD](#) () `[inline]`

25.147.4 Member Function Documentation

25.147.4.1 `void gdcmm::IOD::AddIODEntry (const IODEntry & iode)` `[inline]`

25.147.4.2 `void gdcmm::IOD::Clear ()` `[inline]`

25.147.4.3 `const IODEntry& gdcmm::IOD::GetIODEntry (SizeType idx) const` `[inline]`

Examples:

[TraverseModules.cxx](#).

25.147.4.4 `SizeType gdcmm::IOD::GetNumberOfIODs () const` `[inline]`

Examples:

[TraverseModules.cxx](#).

25.147.4.5 `Type gdcmm::IOD::GetTypeFromTag (const Defs & defs, const Tag & tag) const`

25.147.5 Friends And Related Function Documentation

25.147.5.1 `std::ostream& operator<< (std::ostream & _os, const IOD & _val)` `[friend]`

The documentation for this class was generated from the following file:

- [gdcmmIOD.h](#)

25.148 gdcmm::IODEntry Class Reference

Class for representing a [IODEntry](#).

```
#include <gdcmmIODEntry.h>
```

Public Member Functions

- [IODEntry](#) (const char **name*="", const char **ref*="", const char **usag*="")
- const char * [GetIE](#) () const
- const char * [GetName](#) () const
- const char * [GetRef](#) () const
- const char * [GetUsage](#) () const
- [Usage::UsageType](#) [GetUsageType](#) () const
- void [SetIE](#) (const char **ie*)
- void [SetName](#) (const char **name*)
- void [SetRef](#) (const char **ref*)
- void [SetUsage](#) (const char **usag*)

Friends

- `std::ostream & operator<< (std::ostream &_os, const IODEntry &_val)`

25.148.1 Detailed Description

Class for representing a [IODEntry](#).

Note

A.1.3 [IOD Module Table](#) and Functional Group [Macro Table](#) This Section of each [IOD](#) defines in a tabular form the [Modules](#) comprising the [IOD](#). The following information must be specified for each [Module](#) in the table:

- The name of the [Module](#) or Functional Group
- A reference to the Section in Annex C which defines the [Module](#) or Functional Group
- The usage of the [Module](#) or Functional Group; whether it is:
 - Mandatory (see A.1.3.1) , abbreviated M
 - Conditional (see A.1.3.2) , abbreviated C
 - User Option (see A.1.3.3) , abbreviated U
- The [Modules](#) referenced are defined in Annex C. A.1.3.1 MANDATORY MODULES For each [IOD](#), Mandatory [Modules](#) shall be supported per the definitions, semantics and requirements defined in Annex C. PS 3.3 - 2008 Page 96
- Standard - A.1.3.2 CONDITIONAL MODULES Conditional [Modules](#) are Mandatory [Modules](#) if specific conditions are met. If the specified conditions are not met, this [Module](#) shall not be supported; that is, no information defined in that [Module](#) shall be sent. A.1.3.3 USER OPTION MODULES User Option [Modules](#) may or may not be supported. If an optional [Module](#) is supported, the [Attribute](#) Types specified in the [Modules](#) in Annex C shall be supported.

See Also

[DictEntry](#)

Examples:

[TraverseModules.cxx](#).

25.148.2 Constructor & Destructor Documentation

25.148.2.1 `gdcm::IODEntry::IODEntry (const char * name = " ", const char * ref = " ", const char * usag = " ") [inline]`

25.148.3 Member Function Documentation

25.148.3.1 `const char* gdcm::IODEntry::GetIE () const [inline]`

25.148.3.2 `const char* gdcm::IODEntry::GetName () const [inline]`

25.148.3.3 `const char* gdcm::IODEntry::GetRef () const [inline]`

Examples:

[TraverseModules.cxx](#).

25.148.3.4 `const char* gdcm::IODEntry::GetUsage () const` `[inline]`

25.148.3.5 `Usage::UsageType gdcm::IODEntry::GetUsageType () const`

25.148.3.6 `void gdcm::IODEntry::SetIE (const char * ie)` `[inline]`

25.148.3.7 `void gdcm::IODEntry::SetName (const char * name)` `[inline]`

25.148.3.8 `void gdcm::IODEntry::SetRef (const char * ref)` `[inline]`

25.148.3.9 `void gdcm::IODEntry::SetUsage (const char * usag)` `[inline]`

25.148.4 Friends And Related Function Documentation

25.148.4.1 `std::ostream& operator<< (std::ostream & _os, const IODEntry & _val)` `[friend]`

The documentation for this class was generated from the following file:

- [gdcmIODEntry.h](#)

25.149 gdcm::IODs Class Reference

Class for representing a [IODs](#).

```
#include <gdcmIODs.h>
```

Public Types

- typedef std::map< [IODName](#), [IOD](#) > [IODMapType](#)
- typedef IODMapType::const_iterator [IODMapTypeConstIterator](#)
- typedef std::string [IODName](#)

Public Member Functions

- [IODs](#) ()
- void [AddIOD](#) (const char *name, const [IOD](#) &module)
- [IODMapTypeConstIterator](#) [Begin](#) () const
- void [Clear](#) ()
- [IODMapTypeConstIterator](#) [End](#) () const
- const [IOD](#) & [GetIOD](#) (const char *name) const

Friends

- std::ostream & [operator<<](#) (std::ostream & *_os*, const [IODs](#) & *_val*)

25.149.1 Detailed Description

Class for representing a [IODs](#).

Note

bla

See Also

[IOD](#)

Examples:

[TraverseModules.cxx](#).

25.149.2 Member Typedef Documentation

25.149.2.1 `typedef std::map<IODName, IOD> gdcm::IODs::IODMapType`

25.149.2.2 `typedef IODMapType::const_iterator gdcm::IODs::IODMapTypeConstIterator`

25.149.2.3 `typedef std::string gdcm::IODs::IODName`

25.149.3 Constructor & Destructor Documentation

25.149.3.1 `gdcm::IODs::IODs ()` `[inline]`

25.149.4 Member Function Documentation

25.149.4.1 `void gdcm::IODs::AddIOD (const char * name, const IOD & module)` `[inline]`

25.149.4.2 `IODMapTypeConstIterator gdcm::IODs::Begin () const` `[inline]`

25.149.4.3 `void gdcm::IODs::Clear ()` `[inline]`

25.149.4.4 `IODMapTypeConstIterator gdcm::IODs::End () const` `[inline]`

25.149.4.5 `const IOD& gdcm::IODs::GetIOD (const char * name) const` `[inline]`

25.149.5 Friends And Related Function Documentation

25.149.5.1 `std::ostream& operator<< (std::ostream & _os, const IODs & _val)` `[friend]`

The documentation for this class was generated from the following file:

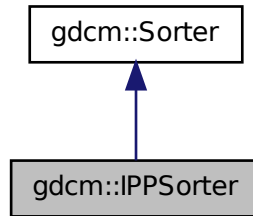
- [gdcmIODs.h](#)

25.150 gdcm::IPPSorter Class Reference

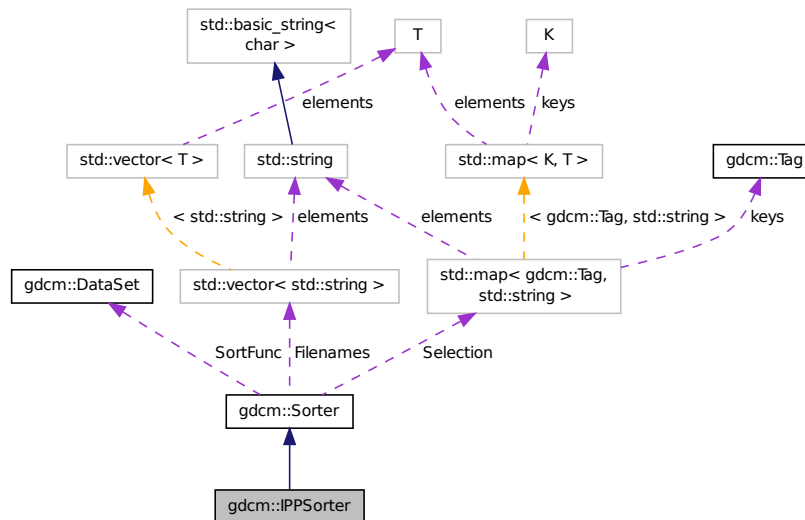
[IPPSorter](#) Implement a simple [Image](#) Position ([Patient](#)) sorter, along the [Image Orientation](#) ([Patient](#)) direction. This algorithm does NOT support duplicate and will FAIL in case of duplicate IPP.

```
#include <gdcmIPPSorter.h>
```

Inheritance diagram for gdcm::IPPSorter:



Collaboration diagram for gdcm::IPPSorter:



Public Member Functions

- [IPPSorter \(\)](#)
- [~IPPSorter \(\)](#)
- double [GetDirectionCosinesTolerance \(\)](#) const
- double [GetZSpacing \(\)](#) const
- double [GetZSpacingTolerance \(\)](#) const
- void [SetComputeZSpacing \(bool b\)](#)
- void [SetDirectionCosinesTolerance \(double tol\)](#)

- void [SetZSpacingTolerance](#) (double tol)
- virtual bool [Sort](#) (std::vector< std::string > const &filenames)

Protected Attributes

- bool [ComputeZSpacing](#)
- double [DirCosTolerance](#)
- double [ZSpacing](#)
- double [ZTolerance](#)

Additional Inherited Members

25.150.1 Detailed Description

[IPPSorter](#) Implement a simple [Image](#) Position ([Patient](#)) sorter, along the [Image Orientation](#) ([Patient](#)) direction. This algorithm does NOT support duplicate and will FAIL in case of duplicate IPP.

Warning

See special note for [SetZSpacingTolerance](#) when computing the ZSpacing from the IPP of each DICOM files (default tolerance for constant spacing is: 1e-6mm)

For more information on [Spacing](#), and how it is defined in DICOM, advanced users may refer to:

http://sourceforge.net/apps/mediawiki/gdcm/index.php?title=Imager_Pixel_Spacing

Bug There are currently a couple of bugs in this implementation:

- Gantry Tilt is not considered

Examples:

[gdcmorthoplanes.cxx](#), [reslicesphere.cxx](#), and [VolumeSorter.cxx](#).

25.150.2 Constructor & Destructor Documentation

25.150.2.1 `gdcm::IPPSorter::IPPSorter ()`

25.150.2.2 `gdcm::IPPSorter::~~IPPSorter ()`

25.150.3 Member Function Documentation

25.150.3.1 `double gdcm::IPPSorter::GetDirectionCosinesTolerance () const` `[inline]`

25.150.3.2 `double gdcm::IPPSorter::GetZSpacing () const` `[inline]`

Read-only function to provide access to the computed value for the Z-Spacing The [ComputeZSpacing](#) must have been set to true before execution of sort algorithm. Call this function *after* calling [Sort\(\)](#); Z-Spacing will be 0 on 2 occasions:

- Sorting simply failed, potentially duplicate IPP => ZSpacing = 0

- ZSpacing could not be computed (Z-Spacing is not constant, or ZTolerance is too low)

Examples:

[gdcmorthoplanes.cxx](#), and [reslicesphere.cxx](#).

```
25.150.3.3 double gdcm::IPPSorter::GetZSpacingTolerance ( ) const [inline]
```

```
25.150.3.4 void gdcm::IPPSorter::SetComputeZSpacing ( bool b ) [inline]
```

Functions related to Z-Spacing computation Set to true when sort algorithm should also perform a regular Z-Spacing computation using the [Image](#) Position ([Patient](#)) Potential reason for failure:

1. ALL slices are taken into account, if one slice is missing then ZSpacing will be set to 0 since the spacing will not be found to be regular along the [Series](#)

Examples:

[gdcmorthoplanes.cxx](#), [reslicesphere.cxx](#), and [VolumeSorter.cxx](#).

```
25.150.3.5 void gdcm::IPPSorter::SetDirectionCosinesTolerance ( double tol ) [inline]
```

Sometimes IOP along a series is slightly changing for example: "0.999081\\0.0426953\\0.00369272\\-0.0419025\\0.955059\\0.293439", "0.999081\\0.0426953\\0.00369275\\-0.0419025\\0.955059\\0.293439", "0.999081\\0.0426952\\0.00369272\\-0.0419025\\0.955059\\0.293439", We need an API to define the tolerance which is allowed. Internally the cross vector of each direction cosines is computed. The tolerance then define the the distance in between 1. to the dot product of those cross vectors. In a perfect world this dot product is of course 1.0 which imply a [DirectionCosines](#) tolerance of exactly 0.0 (default).

```
25.150.3.6 void gdcm::IPPSorter::SetZSpacingTolerance ( double tol ) [inline]
```

1. Another reason for failure is that that Z-Spacing is only slightly changing (eg 1e-3) along the serie, a human can determine that this is ok and change the tolerance from its default value: 1e-6

Examples:

[gdcmorthoplanes.cxx](#), and [reslicesphere.cxx](#).

```
25.150.3.7 virtual bool gdcm::IPPSorter::Sort ( std::vector< std::string > const & filenames ) [virtual]
```

Main entry point to the sorter. It will execute the filter, option should be set before running this function (SetZSpacingTolerance, ...) Return value indicate if sorting could be achived. Warning this does *NOT* imply that spacing is consistant, it only means the file are sorted according to IPP You should check if ZSpacing is 0 or not to deduce if file are actually a 3D volume

Reimplemented from [gdcm::Sorter](#).

Examples:

[gdcmorthoplanes.cxx](#), [reslicesphere.cxx](#), and [VolumeSorter.cxx](#).

25.150.4 Member Data Documentation

25.150.4.1 `bool gdcm::IPPSorter::ComputeZSpacing` `[protected]`

25.150.4.2 `double gdcm::IPPSorter::DirCosTolerance` `[protected]`

25.150.4.3 `double gdcm::IPPSorter::ZSpacing` `[protected]`

25.150.4.4 `double gdcm::IPPSorter::ZTolerance` `[protected]`

The documentation for this class was generated from the following file:

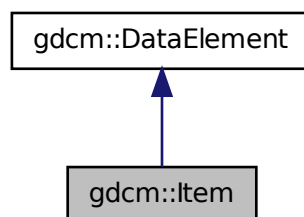
- [gdcmIPPSorter.h](#)

25.151 gdcm::Item Class Reference

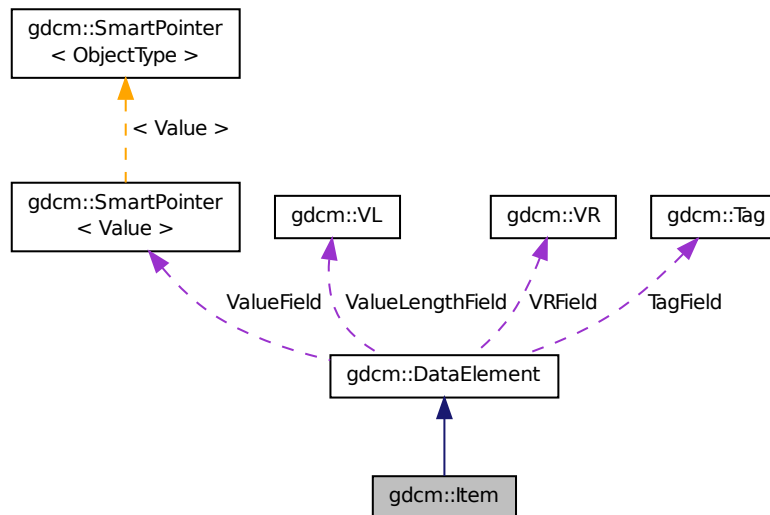
Class to represent an [Item](#) A component of the value of a Data [Element](#) that is of [Value](#) Representation Sequence of Items. An [Item](#) contains a Data Set . See PS 3.5 7.5.1 [Item](#) Encoding Rules Each [Item](#) of a Data [Element](#) of [VR](#) SQ shall be encoded as a DICOM Standart Data [Element](#) with a specific Data [Element](#) Tag of [Value](#) (FFFE,E000). The [Item](#) [Tag](#) is followed by a 4 byte [Item](#) Length field encoded in one of the following two ways Explicit/ Implicit.

```
#include <gdcmItem.h>
```

Inheritance diagram for `gdcm::Item`:



Collaboration diagram for `gdcm::Item`:



Public Member Functions

- `Item ()`
- `Item (Item const &val)`
- `void Clear ()`
- `bool FindDataElement (const Tag &t) const`
- `const DataElement & GetDataElement (const Tag &t) const`
- `template<typename TDE >`
`VL GetLength () const`
- `const DataSet & GetNestedDataSet () const`
- `DataSet & GetNestedDataSet ()`
- `void InsertDataElement (const DataElement &de)`
- `template<typename TDE , typename TSwap >`
`std::istream & Read (std::istream &is)`
- `void SetNestedDataSet (const DataSet &nested)`
- `template<typename TDE , typename TSwap >`
`const std::ostream & Write (std::ostream &os) const`

Friends

- `std::ostream & operator<< (std::ostream &os, const Item &val)`

Additional Inherited Members

25.151.1 Detailed Description

Class to represent an [Item](#) A component of the value of a Data [Element](#) that is of [Value](#) Representation Sequence of Items. An [Item](#) contains a Data Set . See PS 3.5 7.5.1 [Item](#) Encoding Rules Each [Item](#) of a Data [Element](#) of [VR](#) SQ shall be encoded as a DICOM Standard Data [Element](#) with a specific Data [Element](#) Tag of [Value](#) (FFFE,E000). The [Item](#) Tag is followed by a 4 byte [Item](#) Length field encoded in one of the following two ways Explicit/ Implicit.

Note

ITEM: A component of the [Value](#) of a Data [Element](#) that is of [Value](#) Representation Sequence of Items. An [Item](#) contains a Data Set.

Examples:

[ChangeSequenceUltrasound.cxx](#), [DumpGEMSMovieGroup.cxx](#), [ExtractEncryptedContent.cxx](#), [Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [gdcmrtionplan.cxx](#), [gdcmrtplan.cxx](#), [GenAllVR.cxx](#), [GenFakeIdentifyFile.cxx](#), [GenLongSeqs.cxx](#), [GenSeqs.cxx](#), [GetSequenceUltrasound.cxx](#), [GetSubSequenceData.cxx](#), and [LargeVRDSExplicit.cxx](#).

25.151.2 Constructor & Destructor Documentation

25.151.2.1 `gdcm::Item::Item ()` `[inline]`

25.151.2.2 `gdcm::Item::Item (Item const & val)` `[inline]`

25.151.3 Member Function Documentation

25.151.3.1 `void gdcm::Item::Clear ()` `[inline]`

References `gdcm::DataElement::Clear()`.

Referenced by `gdcm::SequenceOfItems::Read()`.

25.151.3.2 `bool gdcm::Item::FindDataElement (const Tag & t) const` `[inline]`

Examples:

[ReadAndDumpDICOMDIR.cxx](#).

25.151.3.3 `const DataElement& gdcm::Item::GetDataElement (const Tag & t) const` `[inline]`

Examples:

[ReadAndDumpDICOMDIR.cxx](#).

25.151.3.4 `template<typename TDE > VL gdcm::Item::GetLength () const`

25.151.3.5 `const DataSet& gdcm::Item::GetNestedDataSet () const` `[inline]`

Examples:

[ChangeSequenceUltrasound.cxx](#), [DumpGEMSMovieGroup.cxx](#), [ExtractEncryptedContent.cxx](#), [Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [gdcmrtionplan.cxx](#), [gdcmrtplan.cxx](#), [GenAllVR-](#)

[R.cxx](#), [GenFakeIdentifyFile.cxx](#), [GenSeqs.cxx](#), [GetSequenceUltrasound.cxx](#), [GetSubSequenceData.cxx](#), and [LargeVRDSExplicit.cxx](#).

Referenced by `gdcmm::SequenceOfItems::Read()`.

25.151.3.6 `DataSet& gdcmm::Item::GetNestedDataSet ()` `[inline]`

25.151.3.7 `void gdcmm::Item::InsertDataElement (const DataElement & de)` `[inline]`

25.151.3.8 `template<typename TDE , typename TSwap > std::istream& gdcmm::Item::Read (std::istream & is)` `[inline]`

References `gdcmm::DataSet::Clear()`, `gdcmmDebugMacro`, `gdcmmErrorMacro`, `gdcmmWarningMacro`, `gdcmm::DataSet::IsEmpty()`, and `gdcmm::SwapperDoOp::Swap()`.

Referenced by `gdcmm::SequenceOfItems::Read()`.

25.151.3.9 `void gdcmm::Item::SetNestedDataSet (const DataSet & nested)` `[inline]`

25.151.3.10 `template<typename TDE , typename TSwap > const std::ostream& gdcmm::Item::Write (std::ostream & os)` `const` `[inline]`

References `gdcmmWarningMacro`, `gdcmm::VL::GetLength()`, `gdcmm::VL::Write()`, and `gdcmm::Tag::Write()`.

25.151.4 Friends And Related Function Documentation

25.151.4.1 `std::ostream& operator<< (std::ostream & os, const Item & val)` `[friend]`

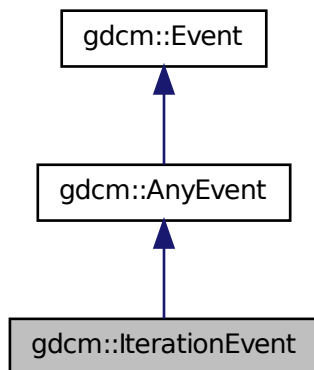
The documentation for this class was generated from the following file:

- [gdcmmItem.h](#)

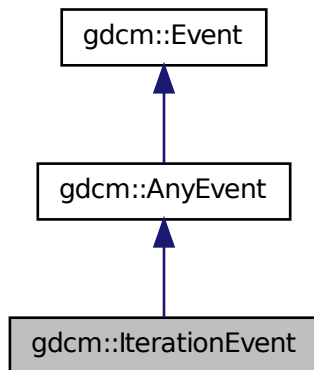
25.152 gdcmm::IterationEvent Class Reference

```
#include <gdcmmEvent.h>
```


Inheritance diagram for gdcm::IterationEvent:



Collaboration diagram for gdcm::IterationEvent:



Additional Inherited Members

The documentation for this class was generated from the following file:

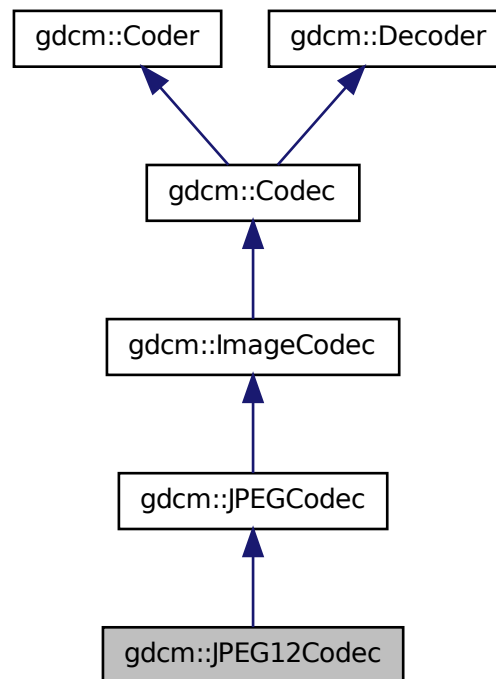
- [gdcmEvent.h](#)

25.153 gdcm::JPEG12Codec Class Reference

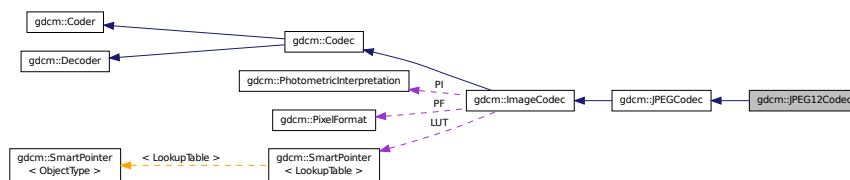
Class to do JPEG 12bits (lossy & lossless)

```
#include <gdcmJPEG12Codec.h>
```

Inheritance diagram for gdcm::JPEG12Codec:



Collaboration diagram for gdcm::JPEG12Codec:



Public Member Functions

- [JPEG12Codec\(\)](#)
- [~JPEG12Codec\(\)](#)

- bool [DecodeByStreams](#) (std::istream &is, std::ostream &os)
- bool [GetHeaderInfo](#) (std::istream &is, [TransferSyntax](#) &ts)
- bool [InternalCode](#) (const char *input, unsigned long len, std::ostream &os)

Protected Member Functions

- bool [IsStateSuspension](#) () const

Additional Inherited Members

25.153.1 Detailed Description

Class to do JPEG 12bits (lossy & lossless)

Note

internal class

25.153.2 Constructor & Destructor Documentation

25.153.2.1 [gdcm::JPEG12Codec::JPEG12Codec \(\)](#)

25.153.2.2 [gdcm::JPEG12Codec::~~JPEG12Codec \(\)](#)

25.153.3 Member Function Documentation

25.153.3.1 [bool gdcm::JPEG12Codec::DecodeByStreams \(std::istream & is, std::ostream & os \)](#) [virtual]

Reimplemented from [gdcm::ImageCodec](#).

25.153.3.2 [bool gdcm::JPEG12Codec::GetHeaderInfo \(std::istream & is, \[TransferSyntax\]\(#\) & ts \)](#) [virtual]

Reimplemented from [gdcm::JPEGCodec](#).

25.153.3.3 [bool gdcm::JPEG12Codec::InternalCode \(const char * input, unsigned long len, std::ostream & os \)](#) [virtual]

Reimplemented from [gdcm::Coder](#).

25.153.3.4 [bool gdcm::JPEG12Codec::IsStateSuspension \(\) const](#) [protected],[virtual]

Reimplemented from [gdcm::JPEGCodec](#).

The documentation for this class was generated from the following file:

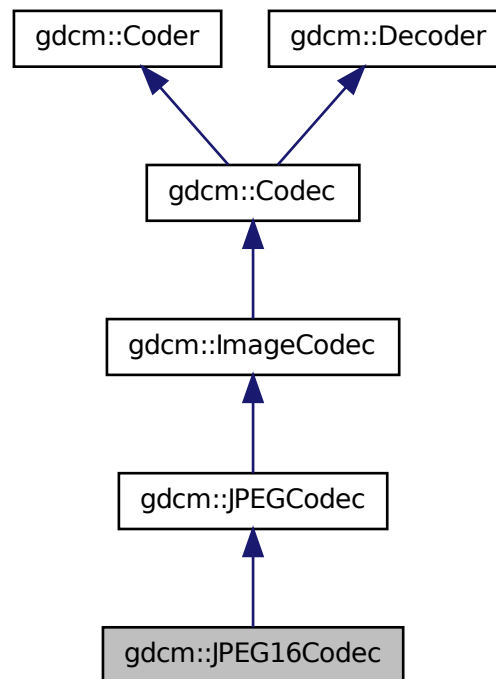
- [gdcmJPEG12Codec.h](#)

25.154 gdcm::JPEG16Codec Class Reference

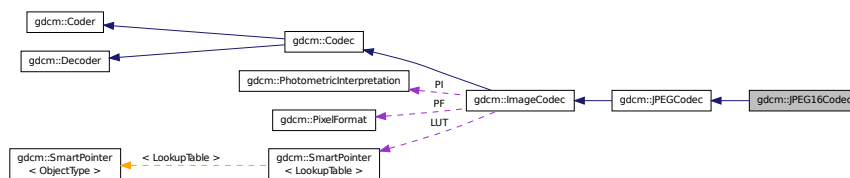
Class to do JPEG 16bits (lossless)

```
#include <gdcmJPEG16Codec.h>
```

Inheritance diagram for gdcm::JPEG16Codec:



Collaboration diagram for gdcm::JPEG16Codec:



Public Member Functions

- [JPEG16Codec](#) ()
- [~JPEG16Codec](#) ()

- bool [DecodeByStreams](#) (std::istream &is, std::ostream &os)
- bool [GetHeaderInfo](#) (std::istream &is, [TransferSyntax](#) &ts)
- bool [InternalCode](#) (const char *input, unsigned long len, std::ostream &os)

Protected Member Functions

- bool [IsStateSuspension](#) () const

Additional Inherited Members

25.154.1 Detailed Description

Class to do JPEG 16bits (lossless)

Note

internal class

25.154.2 Constructor & Destructor Documentation

25.154.2.1 [gdcm::JPEG16Codec::JPEG16Codec \(\)](#)

25.154.2.2 [gdcm::JPEG16Codec::~~JPEG16Codec \(\)](#)

25.154.3 Member Function Documentation

25.154.3.1 [bool gdcm::JPEG16Codec::DecodeByStreams \(std::istream & is, std::ostream & os \)](#) [virtual]

Reimplemented from [gdcm::ImageCodec](#).

25.154.3.2 [bool gdcm::JPEG16Codec::GetHeaderInfo \(std::istream & is, \[TransferSyntax\]\(#\) & ts \)](#) [virtual]

Reimplemented from [gdcm::JPEGCodec](#).

25.154.3.3 [bool gdcm::JPEG16Codec::InternalCode \(const char * input, unsigned long len, std::ostream & os \)](#) [virtual]

Reimplemented from [gdcm::Coder](#).

25.154.3.4 [bool gdcm::JPEG16Codec::IsStateSuspension \(\) const](#) [protected],[virtual]

Reimplemented from [gdcm::JPEGCodec](#).

The documentation for this class was generated from the following file:

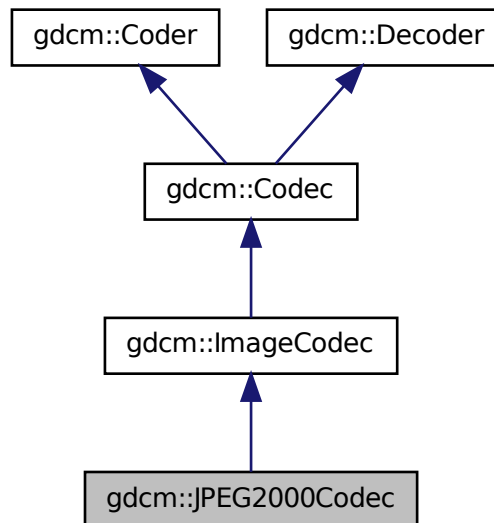
- [gdcmJPEG16Codec.h](#)

25.155 gdcm::JPEG2000Codec Class Reference

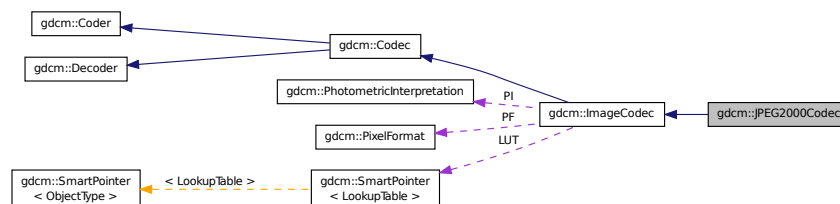
Class to do JPEG 2000.

```
#include <gdcmJPEG2000Codec.h>
```

Inheritance diagram for gdcm::JPEG2000Codec:



Collaboration diagram for gdcm::JPEG2000Codec:



Public Member Functions

- [JPEG2000Codec](#) ()
- [~JPEG2000Codec](#) ()
- bool [CanCode](#) ([TransferSyntax](#) const &ts) const
Return whether this coder support this transfer syntax (can code it)
- bool [CanDecode](#) ([TransferSyntax](#) const &ts) const

Return whether this decoder support this transfer syntax (can decode it)

- bool [Code](#) ([DataElement](#) const &in, [DataElement](#) &out)

Code.

- bool [Decode](#) ([DataElement](#) const &is, [DataElement](#) &os)

Decode.

- virtual bool [GetHeaderInfo](#) (std::istream &is, [TransferSyntax](#) &ts)
- double [GetQuality](#) (unsigned int idx=0) const
- double [GetRate](#) (unsigned int idx=0) const
- void [SetNumberOfResolutions](#) (unsigned int nres)
- void [SetQuality](#) (unsigned int idx, double q)
- void [SetRate](#) (unsigned int idx, double rate)
- void [SetReversible](#) (bool res)
- void [SetTileSize](#) (unsigned int tx, unsigned int ty)

Protected Member Functions

- bool [DecodeByStreams](#) (std::istream &is, std::ostream &os)
- bool [DecodeExtent](#) (char *buffer, unsigned int xmin, unsigned int xmax, unsigned int ymin, unsigned int ymax, unsigned int zmin, unsigned int zmax, std::istream &is)

Friends

- class [Bitmap](#)
- class [ImageRegionReader](#)

Additional Inherited Members

25.155.1 Detailed Description

Class to do JPEG 2000.

Note

the class will produce JPC (JPEG 2000 codestream), since some private implementor are using full jp2 file the decoder tolerate jp2 input this is an implementation of an [ImageCodec](#)

25.155.2 Constructor & Destructor Documentation

25.155.2.1 `gdcm::JPEG2000Codec::JPEG2000Codec ()`

25.155.2.2 `gdcm::JPEG2000Codec::~~JPEG2000Codec ()`

25.155.3 Member Function Documentation

25.155.3.1 `bool gdcm::JPEG2000Codec::CanCode (TransferSyntax const &) const` [virtual]

Return whether this coder support this transfer syntax (can code it)

Reimplemented from [gdcm::ImageCodec](#).

25.155.3.2 `bool gdcmm::JPEG2000Codec::CanDecode (TransferSyntax const &) const` [virtual]

Return whether this decoder support this transfer syntax (can decode it)

Reimplemented from [gdcmm::ImageCodec](#).

25.155.3.3 `bool gdcmm::JPEG2000Codec::Code (DataElement const & in_, DataElement & out_)` [virtual]

Code.

Reimplemented from [gdcmm::Coder](#).

25.155.3.4 `bool gdcmm::JPEG2000Codec::Decode (DataElement const &, DataElement &)` [virtual]

Decode.

Reimplemented from [gdcmm::ImageCodec](#).

25.155.3.5 `bool gdcmm::JPEG2000Codec::DecodeByStreams (std::istream & is, std::ostream & os)` [protected],
[virtual]

Reimplemented from [gdcmm::ImageCodec](#).

25.155.3.6 `bool gdcmm::JPEG2000Codec::DecodeExtent (char * buffer, unsigned int xmin, unsigned int xmax, unsigned int ymin,
unsigned int ymax, unsigned int zmin, unsigned int zmax, std::istream & is)` [protected]

25.155.3.7 `virtual bool gdcmm::JPEG2000Codec::GetHeaderInfo (std::istream & is, TransferSyntax & ts)` [virtual]

Reimplemented from [gdcmm::ImageCodec](#).

25.155.3.8 `double gdcmm::JPEG2000Codec::GetQuality (unsigned int idx = 0) const`

25.155.3.9 `double gdcmm::JPEG2000Codec::GetRate (unsigned int idx = 0) const`

25.155.3.10 `void gdcmm::JPEG2000Codec::SetNumberOfResolutions (unsigned int nres)`

25.155.3.11 `void gdcmm::JPEG2000Codec::SetQuality (unsigned int idx, double q)`

25.155.3.12 `void gdcmm::JPEG2000Codec::SetRate (unsigned int idx, double rate)`

25.155.3.13 `void gdcmm::JPEG2000Codec::SetReversible (bool res)`

25.155.3.14 `void gdcmm::JPEG2000Codec::SetTileSize (unsigned int tx, unsigned int ty)`

25.155.4 Friends And Related Function Documentation

25.155.4.1 `friend class Bitmap` [friend]

25.155.4.2 `friend class ImageRegionReader` [friend]

The documentation for this class was generated from the following file:

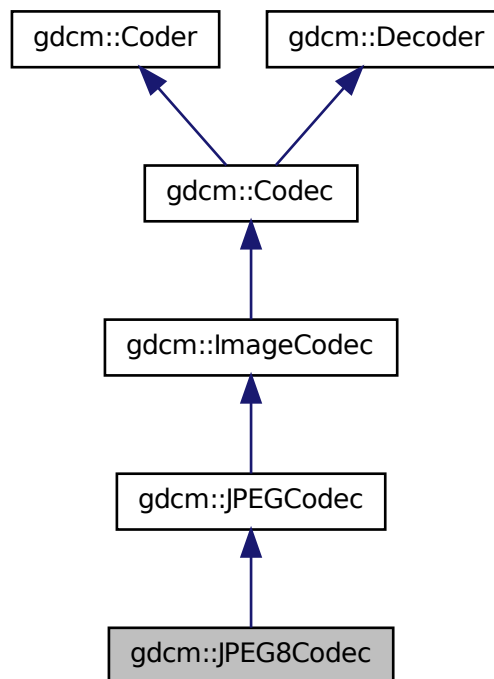
- [gdcmJPEG2000Codec.h](#)

25.156 gdcm::JPEG8Codec Class Reference

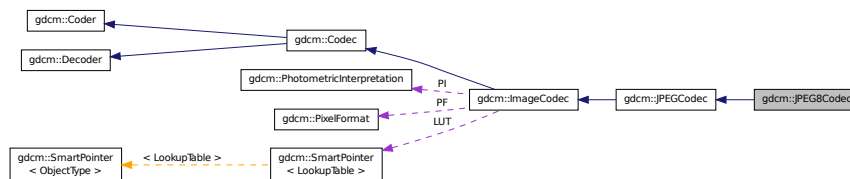
Class to do JPEG 8bits (lossy & lossless)

```
#include <gdcmJPEG8Codec.h>
```

Inheritance diagram for gdcm::JPEG8Codec:



Collaboration diagram for gdcm::JPEG8Codec:



Public Member Functions

- [JPEG8Codec](#) ()
- [~JPEG8Codec](#) ()
- bool [DecodeByStreams](#) (std::istream &is, std::ostream &os)
- bool [GetHeaderInfo](#) (std::istream &is, [TransferSyntax](#) &ts)
- bool [InternalCode](#) (const char *input, unsigned long len, std::ostream &os)

Protected Member Functions

- bool [IsStateSuspension](#) () const

Additional Inherited Members

25.156.1 Detailed Description

Class to do JPEG 8bits (lossy & lossless)

Note

internal class

25.156.2 Constructor & Destructor Documentation

25.156.2.1 `gdcm::JPEG8Codec::JPEG8Codec ()`

25.156.2.2 `gdcm::JPEG8Codec::~~JPEG8Codec ()`

25.156.3 Member Function Documentation

25.156.3.1 `bool gdcm::JPEG8Codec::DecodeByStreams (std::istream & is, std::ostream & os)` [virtual]

Reimplemented from [gdcm::ImageCodec](#).

25.156.3.2 `bool gdcm::JPEG8Codec::GetHeaderInfo (std::istream & is, TransferSyntax & ts)` [virtual]

Reimplemented from [gdcm::JPEGCodec](#).

25.156.3.3 `bool gdcm::JPEG8Codec::InternalCode (const char * input, unsigned long len, std::ostream & os)` [virtual]

Reimplemented from [gdcm::Coder](#).

25.156.3.4 `bool gdcm::JPEG8Codec::IsStateSuspension () const` [protected],[virtual]

Reimplemented from [gdcm::JPEGCodec](#).

The documentation for this class was generated from the following file:

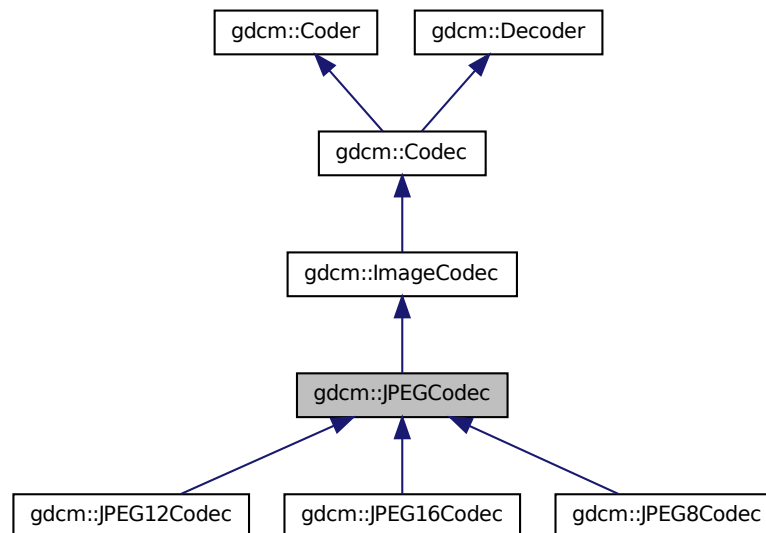
- [gdcmJPEG8Codec.h](#)

25.157 gdcm::JPEGCodec Class Reference

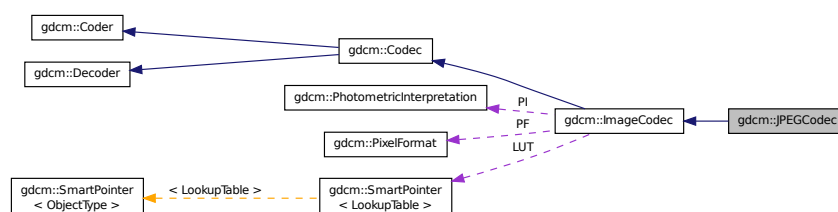
JPEG codec Class to do JPEG (8bits, 12bits, 16bits lossy & lossless). It redispatch in between the different codec implementation: [gdcm::JPEG8Codec](#), [gdcm::JPEG12Codec](#) & [gdcm::JPEG16Codec](#). It also support inconsistency in between DICOM header and JPEG compressed stream [ImageCodec](#) implementation for the JPEG case.

```
#include <gdcmJPEGCodec.h>
```

Inheritance diagram for gdcm::JPEGCodec:



Collaboration diagram for gdcm::JPEGCodec:



Public Member Functions

- [JPEGCodec](#) ()
- [~JPEGCodec](#) ()
- bool [CanCode](#) ([TransferSyntax](#) const &ts) const

Return whether this coder support this transfer syntax (can code it)

- bool [CanDecode](#) ([TransferSyntax](#) const &ts) const
Return whether this decoder support this transfer syntax (can decode it)
- bool [Code](#) ([DataElement](#) const &in, [DataElement](#) &out)
Compress into JPEG.
- void [ComputeOffsetTable](#) (bool b)
Compute the offset table:
- bool [Decode](#) ([DataElement](#) const &is, [DataElement](#) &os)
Decode.
- virtual bool [GetHeaderInfo](#) (std::istream &is, [TransferSyntax](#) &ts)
- bool [GetLossless](#) () const
- double [GetQuality](#) () const
- void [SetLossless](#) (bool l)
- void [SetPixelFormat](#) ([PixelFormat](#) const &pf)
- void [SetQuality](#) (double q)

Protected Member Functions

- bool [DecodeByStreams](#) (std::istream &is, std::ostream &os)
- bool [DecodeExtent](#) (char *buffer, unsigned int xmin, unsigned int xmax, unsigned int ymin, unsigned int ymax, unsigned int zmin, unsigned int zmax, std::istream &is)
- virtual bool [IsStateSuspension](#) () const
- bool [IsValid](#) ([PhotometricInterpretation](#) const &pi)
- void [SetBitSample](#) (int bit)

Protected Attributes

- int [BitSample](#)
- bool [Lossless](#)
- int [Quality](#)

Friends

- class [ImageRegionReader](#)

Additional Inherited Members

25.157.1 Detailed Description

JPEG codec Class to do JPEG (8bits, 12bits, 16bits lossy & lossless). It redispach in between the different codec implementation: [gdcm::JPEG8Codec](#), [gdcm::JPEG12Codec](#) & [gdcm::JPEG16Codec](#) It also support inconsistency in between DICOM header and JPEG compressed stream [ImageCodec](#) implementation for the JPEG case.

Note

Things you should know if you ever want to dive into DICOM/JPEG world (among other):

- http://groups.google.com/group/comp.protocols.dicom/browse_thread/thread/625e46919f
- http://groups.google.com/group/comp.protocols.dicom/browse_thread/thread/75fdfccc65
- http://groups.google.com/group/comp.protocols.dicom/browse_thread/thread/2d525ef6a2
- http://groups.google.com/group/comp.protocols.dicom/browse_thread/thread/6b93af410f

Examples:

[GetJPEGSamplePrecision.cxx](#).

25.157.2 Constructor & Destructor Documentation

25.157.2.1 `gdcm::JPEGCodec::JPEGCodec ()`

25.157.2.2 `gdcm::JPEGCodec::~~JPEGCodec ()`

25.157.3 Member Function Documentation

25.157.3.1 `bool gdcm::JPEGCodec::CanCode (TransferSyntax const &) const` [virtual]

Return whether this coder support this transfer syntax (can code it)

Reimplemented from [gdcm::ImageCodec](#).

25.157.3.2 `bool gdcm::JPEGCodec::CanDecode (TransferSyntax const &) const` [virtual]

Return whether this decoder support this transfer syntax (can decode it)

Reimplemented from [gdcm::ImageCodec](#).

25.157.3.3 `bool gdcm::JPEGCodec::Code (DataElement const & in, DataElement & out)` [virtual]

Compress into JPEG.

Reimplemented from [gdcm::Coder](#).

25.157.3.4 `void gdcm::JPEGCodec::ComputeOffsetTable (bool b)`

Compute the offset table:

25.157.3.5 `bool gdcm::JPEGCodec::Decode (DataElement const & , DataElement &)` [virtual]

Decode.

Reimplemented from [gdcm::ImageCodec](#).

25.157.3.6 `bool gdcm::JPEGCodec::DecodeByStreams (std::istream & is, std::ostream & os)` [protected], [virtual]

Reimplemented from [gdcm::ImageCodec](#).

25.157.3.7 `bool gdcM::JPEGCodec::DecodeExtent (char * buffer, unsigned int xmin, unsigned int xmax, unsigned int ymin, unsigned int ymax, unsigned int zmin, unsigned int zmax, std::istream & is)` [protected]

25.157.3.8 `virtual bool gdcM::JPEGCodec::GetHeaderInfo (std::istream & is, TransferSyntax & ts)` [virtual]

Reimplemented from [gdcM::ImageCodec](#).

Reimplemented in [gdcM::JPEG12Codec](#), [gdcM::JPEG16Codec](#), and [gdcM::JPEG8Codec](#).

Examples:

[GetJPEGSamplePrecision.cxx](#).

25.157.3.9 `bool gdcM::JPEGCodec::GetLossless ()` const

25.157.3.10 `double gdcM::JPEGCodec::GetQuality ()` const

25.157.3.11 `virtual bool gdcM::JPEGCodec::IsStateSuspension ()` const [protected],[virtual]

Reimplemented in [gdcM::JPEG12Codec](#), [gdcM::JPEG16Codec](#), and [gdcM::JPEG8Codec](#).

25.157.3.12 `bool gdcM::JPEGCodec::IsValid (PhotometricInterpretation const & pi)` [protected],[virtual]

Reimplemented from [gdcM::ImageCodec](#).

25.157.3.13 `void gdcM::JPEGCodec::SetBitSample (int bit)` [protected]

25.157.3.14 `void gdcM::JPEGCodec::SetLossless (bool l)`

25.157.3.15 `void gdcM::JPEGCodec::SetPixelFormat (PixelFormat const & pf)` [virtual]

Reimplemented from [gdcM::ImageCodec](#).

Examples:

[GetJPEGSamplePrecision.cxx](#).

25.157.3.16 `void gdcM::JPEGCodec::SetQuality (double q)`

25.157.4 Friends And Related Function Documentation

25.157.4.1 `friend class ImageRegionReader` [friend]

25.157.5 Member Data Documentation

25.157.5.1 `int gdcM::JPEGCodec::BitSample` [protected]

25.157.5.2 `bool gdcM::JPEGCodec::Lossless` [protected]

25.157.5.3 `int gdcm::JPEGCodec::Quality` `[protected]`

The documentation for this class was generated from the following file:

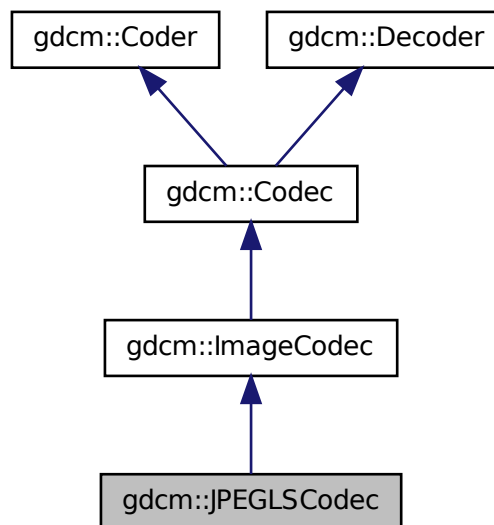
- [gdcmJPEGCodec.h](#)

25.158 gdcm::JPEGLSCodec Class Reference

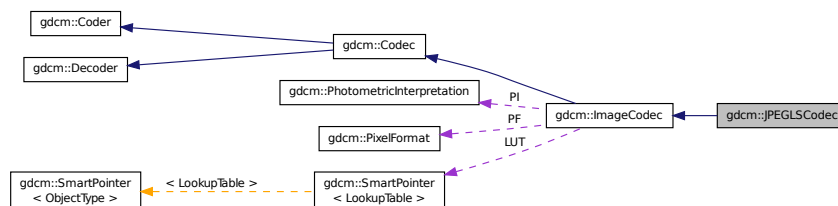
JPEG-LS.

```
#include <gdcmJPEGLSCodec.h>
```

Inheritance diagram for `gdcm::JPEGLSCodec`:



Collaboration diagram for `gdcm::JPEGLSCodec`:



Public Member Functions

- [JPEGLSCodec](#) ()
- [~JPEGLSCodec](#) ()
- bool [CanCode](#) ([TransferSyntax](#) const &ts) const
Return whether this coder support this transfer syntax (can code it)
- bool [CanDecode](#) ([TransferSyntax](#) const &ts) const
Return whether this decoder support this transfer syntax (can decode it)
- bool [Code](#) ([DataElement](#) const &in, [DataElement](#) &out)
Code.
- bool [Decode](#) ([DataElement](#) const &is, [DataElement](#) &os)
Decode.
- bool [Decode](#) ([DataElement](#) const &in, char *outBuffer, size_t inBufferLength, uint32_t inXMin, uint32_t inXMax, uint32_t inYMin, uint32_t inYMax, uint32_t inZMin, uint32_t inZMax)
- unsigned long [GetBufferLength](#) () const
- bool [GetHeaderInfo](#) (std::istream &is, [TransferSyntax](#) &ts)
- bool [GetLossless](#) () const
- void [SetBufferLength](#) (unsigned long l)
- void [SetLossless](#) (bool l)
- void [SetLossyError](#) (int error)
[0-3] generally

Protected Member Functions

- bool [DecodeExtent](#) (char *buffer, unsigned int xmin, unsigned int xmax, unsigned int ymin, unsigned int ymax, unsigned int zmin, unsigned int zmax, std::istream &is)

Friends

- class [ImageRegionReader](#)

Additional Inherited Members

25.158.1 Detailed Description

JPEG-LS.

Note

codec that implement the JPEG-LS compression this is an implementation of [ImageCodec](#) for JPEG-LS

It uses the CharLS JPEG-LS implementation <http://charls.codeplex.com>

25.158.2 Constructor & Destructor Documentation

25.158.2.1 `gdcm::JPEGLSCodec::JPEGLSCodec ()`

25.158.2.2 `gdcm::JPEGLSCodec::~~JPEGLSCodec ()`

25.158.3 Member Function Documentation

25.158.3.1 `bool gdcm::JPEGLSCodec::CanCode (TransferSyntax const &) const` [virtual]

Return whether this coder support this transfer syntax (can code it)

Reimplemented from [gdcm::ImageCodec](#).

25.158.3.2 `bool gdcm::JPEGLSCodec::CanDecode (TransferSyntax const &) const` [virtual]

Return whether this decoder support this transfer syntax (can decode it)

Reimplemented from [gdcm::ImageCodec](#).

25.158.3.3 `bool gdcm::JPEGLSCodec::Code (DataElement const & in_, DataElement & out_)` [virtual]

Code.

Reimplemented from [gdcm::Coder](#).

25.158.3.4 `bool gdcm::JPEGLSCodec::Decode (DataElement const &, DataElement &)` [virtual]

Decode.

Reimplemented from [gdcm::ImageCodec](#).

25.158.3.5 `bool gdcm::JPEGLSCodec::Decode (DataElement const & in, char * outBuffer, size_t inBufferLength, uint32_t inXMin, uint32_t inXMax, uint32_t inYMin, uint32_t inYMax, uint32_t inZMin, uint32_t inZMax)`

25.158.3.6 `bool gdcm::JPEGLSCodec::DecodeExtent (char * buffer, unsigned int xmin, unsigned int xmax, unsigned int ymin, unsigned int ymax, unsigned int zmin, unsigned int zmax, std::istream & is)` [protected]

25.158.3.7 `unsigned long gdcm::JPEGLSCodec::GetBufferLength () const` [inline]

25.158.3.8 `bool gdcm::JPEGLSCodec::GetHeaderInfo (std::istream & is, TransferSyntax & ts)` [virtual]

Reimplemented from [gdcm::ImageCodec](#).

25.158.3.9 `bool gdcm::JPEGLSCodec::GetLossless () const`

25.158.3.10 `void gdcm::JPEGLSCodec::SetBufferLength (unsigned long l)` [inline]

25.158.3.11 `void gdcm::JPEGLSCodec::SetLossless (bool l)`

25.158.3.12 `void gdcm::JPEGLSCodec::SetLossyError (int error)`

[0-3] generally

25.158.4 Friends And Related Function Documentation

25.158.4.1 `friend class ImageRegionReader` [friend]

The documentation for this class was generated from the following file:

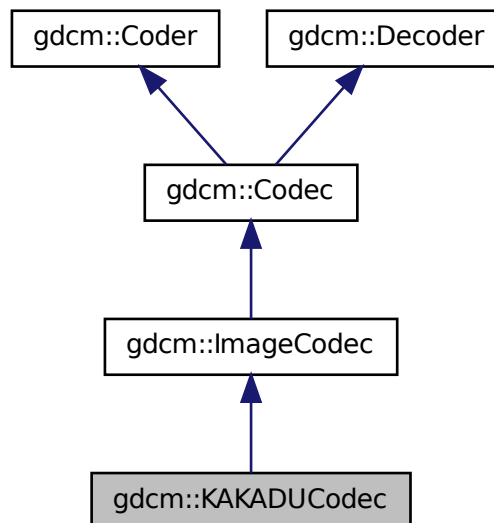
- [gdcmJPEGLSCodec.h](#)

25.159 gdcm::KAKADUCodec Class Reference

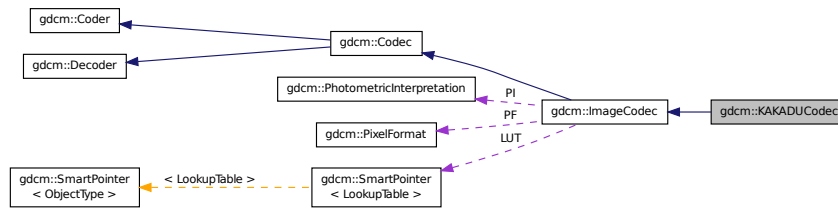
[KAKADUCodec](#).

```
#include <gdcmKAKADUCodec.h>
```

Inheritance diagram for `gdcm::KAKADUCodec`:



Collaboration diagram for gdcm::KAKADUCodec:



Public Member Functions

- [KAKADUCodec](#) ()
- [~KAKADUCodec](#) ()
- bool [CanCode](#) ([TransferSyntax](#) const &ts) const
Return whether this coder support this transfer syntax (can code it)
- bool [CanDecode](#) ([TransferSyntax](#) const &ts) const
Return whether this decoder support this transfer syntax (can decode it)
- bool [Code](#) ([DataElement](#) const &in, [DataElement](#) &out)
Code.
- bool [Decode](#) ([DataElement](#) const &is, [DataElement](#) &os)
Decode.

Additional Inherited Members

25.159.1 Detailed Description

[KAKADUCodec](#).

25.159.2 Constructor & Destructor Documentation

25.159.2.1 `gdcm::KAKADUCodec::KAKADUCodec ()`

25.159.2.2 `gdcm::KAKADUCodec::~~KAKADUCodec ()`

25.159.3 Member Function Documentation

25.159.3.1 `bool gdcm::KAKADUCodec::CanCode (TransferSyntax const &) const` `[virtual]`

Return whether this coder support this transfer syntax (can code it)

Reimplemented from [gdcm::ImageCodec](#).

25.159.3.2 `bool gdcm::KAKADUCodec::CanDecode (TransferSyntax const &) const` `[virtual]`

Return whether this decoder support this transfer syntax (can decode it)

Reimplemented from [gdcm::ImageCodec](#).

25.159.3.3 `bool gdcM::KAKADUCodec::Code (DataElement const & in_, DataElement & out_) [virtual]`

Code.

Reimplemented from [gdcM::Coder](#).

25.159.3.4 `bool gdcM::KAKADUCodec::Decode (DataElement const &, DataElement &) [virtual]`

Decode.

Reimplemented from [gdcM::ImageCodec](#).

The documentation for this class was generated from the following file:

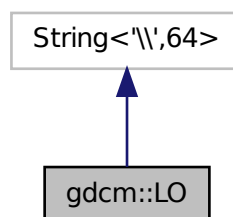
- [gdcMKAKADUCodec.h](#)

25.160 gdcM::LO Class Reference

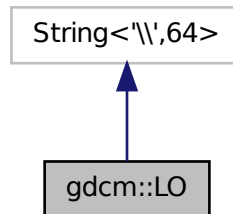
[LO](#).

```
#include <gdcMLO.h>
```

Inheritance diagram for gdcM::LO:



Collaboration diagram for gdcm::LO:



Public Types

- typedef Superclass::const_iterator [const_iterator](#)
- typedef Superclass::const_reference [const_reference](#)
- typedef Superclass::const_reverse_iterator [const_reverse_iterator](#)
- typedef Superclass::difference_type [difference_type](#)
- typedef Superclass::iterator [iterator](#)
- typedef Superclass::pointer [pointer](#)
- typedef Superclass::reference [reference](#)
- typedef Superclass::reverse_iterator [reverse_iterator](#)
- typedef Superclass::size_type [size_type](#)
- typedef [String<'\\', 64 >](#) [Superclass](#)
- typedef Superclass::value_type [value_type](#)

Public Member Functions

- [LO](#) ()
- [LO](#) (const [value_type](#) *s)
- [LO](#) (const [value_type](#) *s, [size_type](#) n)
- [LO](#) (const [Superclass](#) &s, [size_type](#) pos=0, [size_type](#) n=npos)
- bool [IsValid](#) () const

25.160.1 Detailed Description

[LO](#).

Note

TODO

25.160.2 Member Typedef Documentation

25.160.2.1 `typedef Superclass::const_iterator gdcmm::LO::const_iterator`

25.160.2.2 `typedef Superclass::const_reference gdcmm::LO::const_reference`

25.160.2.3 `typedef Superclass::const_reverse_iterator gdcmm::LO::const_reverse_iterator`

25.160.2.4 `typedef Superclass::difference_type gdcmm::LO::difference_type`

25.160.2.5 `typedef Superclass::iterator gdcmm::LO::iterator`

25.160.2.6 `typedef Superclass::pointer gdcmm::LO::pointer`

25.160.2.7 `typedef Superclass::reference gdcmm::LO::reference`

25.160.2.8 `typedef Superclass::reverse_iterator gdcmm::LO::reverse_iterator`

25.160.2.9 `typedef Superclass::size_type gdcmm::LO::size_type`

25.160.2.10 `typedef String<'\',64> gdcmm::LO::Superclass`

25.160.2.11 `typedef Superclass::value_type gdcmm::LO::value_type`

25.160.3 Constructor & Destructor Documentation

25.160.3.1 `gdcmm::LO::LO()` `[inline]`

25.160.3.2 `gdcmm::LO::LO(const value_type * s)` `[inline]`

25.160.3.3 `gdcmm::LO::LO(const value_type * s, size_type n)` `[inline]`

25.160.3.4 `gdcmm::LO::LO(const Superclass & s, size_type pos = 0, size_type n = npos)` `[inline]`

25.160.4 Member Function Documentation

25.160.4.1 `bool gdcmm::LO::IsValid()` `const` `[inline]`

The documentation for this class was generated from the following file:

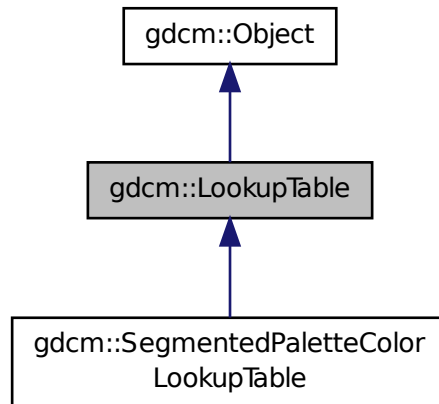
- [gdcmmLO.h](#)

25.161 gdcmm::LookupTable Class Reference

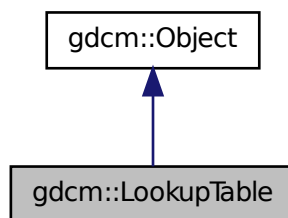
[LookupTable](#) class.

```
#include <gdcmmLookupTable.h>
```

Inheritance diagram for gdcm::LookupTable:



Collaboration diagram for gdcm::LookupTable:



Public Types

- enum `LookupTableType` {
 RED = 0,
 GREEN,
 BLUE,
 GRAY,
 UNKNOWN }

Public Member Functions

- `LookupTable` ()

- [LookupTable](#) ([LookupTable](#) const &lut)
- [~LookupTable](#) ()
- void [Allocate](#) (unsigned short bitsample=8)
Allocate the LUT.
- void [Clear](#) ()
Clear the LUT.
- void [Decode](#) (std::istream &is, std::ostream &os) const
Decode the LUT.
- unsigned short [GetBitSample](#) () const
return the bit sample
- bool [GetBufferAsRGBA](#) (unsigned char *rgba) const
return the LUT as RGBA buffer
- void [GetLUT](#) ([LookupTableType](#) type, unsigned char *array, unsigned int &length) const
- void [GetLUTDescriptor](#) ([LookupTableType](#) type, unsigned short &length, unsigned short &subscript, unsigned short &bitsize) const
- unsigned int [GetLUTLength](#) ([LookupTableType](#) type) const
- const unsigned char * [GetPointer](#) () const
return a raw pointer to the LUT
- void [InitializeBlueLUT](#) (unsigned short length, unsigned short subscript, unsigned short bitsize)
- bool [Initialized](#) () const
return whether the LUT has been initialized
- void [InitializeGreenLUT](#) (unsigned short length, unsigned short subscript, unsigned short bitsize)
- void [InitializeLUT](#) ([LookupTableType](#) type, unsigned short length, unsigned short subscript, unsigned short bitsize)
Generic interface:
- void [InitializeRedLUT](#) (unsigned short length, unsigned short subscript, unsigned short bitsize)
RED / GREEN / BLUE specific:
- void [Print](#) (std::ostream &) const
- void [SetBlueLUT](#) (const unsigned char *blue, unsigned int length)
- void [SetGreenLUT](#) (const unsigned char *green, unsigned int length)
- virtual void [SetLUT](#) ([LookupTableType](#) type, const unsigned char *array, unsigned int length)
- void [SetRedLUT](#) (const unsigned char *red, unsigned int length)
- bool [WriteBufferAsRGBA](#) (const unsigned char *rgba)
Write the LUT as RGBA.

Protected Attributes

- unsigned short [BitSample](#)
- bool [IncompleteLUT](#):1
- [LookupTableInternal](#) * [Internal](#)

Additional Inherited Members

25.161.1 Detailed Description

[LookupTable](#) class.

25.161.2 Member Enumeration Documentation

25.161.2.1 enum gdcm::LookupTable::LookupTableType

Enumerator

RED

GREEN

BLUE

GRAY

UNKNOWN

25.161.3 Constructor & Destructor Documentation

25.161.3.1 gdcm::LookupTable::LookupTable ()

25.161.3.2 gdcm::LookupTable::~~LookupTable ()

25.161.3.3 gdcm::LookupTable::LookupTable (LookupTable const & lut) [inline]

25.161.4 Member Function Documentation

25.161.4.1 void gdcm::LookupTable::Allocate (unsigned short bitsample = 8)

Allocate the LUT.

25.161.4.2 void gdcm::LookupTable::Clear ()

Clear the LUT.

25.161.4.3 void gdcm::LookupTable::Decode (std::istream & is, std::ostream & os) const

Decode the LUT.

25.161.4.4 unsigned short gdcm::LookupTable::GetBitSample () const [inline]

return the bit sample

25.161.4.5 bool gdcm::LookupTable::GetBufferAsRGBA (unsigned char * rgba) const

return the LUT as RGBA buffer

25.161.4.6 void gdcm::LookupTable::GetLUT (LookupTableType type, unsigned char * array, unsigned int & length) const

25.161.4.7 void gdcm::LookupTable::GetLUTDescriptor (LookupTableType type, unsigned short & length, unsigned short & subscript, unsigned short & bitsize) const

25.161.4.8 unsigned int gdcM::LookupTable::GetLUTLength (LookupTableType *type*) const

25.161.4.9 const unsigned char* gdcM::LookupTable::GetPointer () const

return a raw pointer to the LUT

25.161.4.10 void gdcM::LookupTable::InitializeBlueLUT (unsigned short *length*, unsigned short *subscript*, unsigned short *bitsize*)

25.161.4.11 bool gdcM::LookupTable::Initialized () const

return whether the LUT has been initialized

25.161.4.12 void gdcM::LookupTable::InitializeGreenLUT (unsigned short *length*, unsigned short *subscript*, unsigned short *bitsize*)

25.161.4.13 void gdcM::LookupTable::InitializeLUT (LookupTableType *type*, unsigned short *length*, unsigned short *subscript*, unsigned short *bitsize*)

Generic interface:

25.161.4.14 void gdcM::LookupTable::InitializeRedLUT (unsigned short *length*, unsigned short *subscript*, unsigned short *bitsize*)

RED / GREEN / BLUE specific:

25.161.4.15 void gdcM::LookupTable::Print (std::ostream &) const [inline],[virtual]

Reimplemented from [gdcM::Object](#).

Reimplemented in [gdcM::SegmentedPaletteColorLookupTable](#).

25.161.4.16 void gdcM::LookupTable::SetBlueLUT (const unsigned char * *blue*, unsigned int *length*)

25.161.4.17 void gdcM::LookupTable::SetGreenLUT (const unsigned char * *green*, unsigned int *length*)

25.161.4.18 virtual void gdcM::LookupTable::SetLUT (LookupTableType *type*, const unsigned char * *array*, unsigned int *length*) [virtual]

Reimplemented in [gdcM::SegmentedPaletteColorLookupTable](#).

25.161.4.19 void gdcM::LookupTable::SetRedLUT (const unsigned char * *red*, unsigned int *length*)

25.161.4.20 bool gdcM::LookupTable::WriteBufferAsRGBA (const unsigned char * *rgba*)

Write the LUT as RGBA.

25.161.5 Member Data Documentation

25.161.5.1 unsigned short gdcM::LookupTable::BitSample [protected]

25.161.5.2 `bool gdcm::LookupTable::IncompleteLUT` `[protected]`

25.161.5.3 `LookupTableInternal* gdcm::LookupTable::Internal` `[protected]`

The documentation for this class was generated from the following file:

- [gdcmLookupTable.h](#)

25.162 gdcm::Scanner::Itstr Struct Reference

```
#include <gdcmScanner.h>
```

Public Member Functions

- `bool operator()` (`const char *s1`, `const char *s2`) `const`

25.162.1 Member Function Documentation

25.162.1.1 `bool gdcm::Scanner::Itstr::operator()` (`const char * s1`, `const char * s2`) `const` `[inline]`

The documentation for this struct was generated from the following file:

- [gdcmScanner.h](#)

25.163 gdcm::Macro Class Reference

Class for representing a [Macro](#).

```
#include <gdcmMacro.h>
```

Public Types

- `typedef std::vector< std::string >` [ArrayIncludeMacrosType](#)
- `typedef std::map< Tag, MacroEntry >` [MapModuleEntry](#)

Public Member Functions

- [Macro](#) ()
- `void AddMacroEntry` (`const Tag &tag`, `const MacroEntry &module`)
Will add a [ModuleEntry](#) directly at root-level. See [Macro](#) for nested-included level.
- `void Clear` ()
- `bool FindMacroEntry` (`const Tag &tag`) `const`
- `const MacroEntry & GetMacroEntry` (`const Tag &tag`) `const`
- `const char * GetName` () `const`
- `void SetName` (`const char *name`)
- `bool Verify` (`const DataSet &ds`, `Usage const &usage`) `const`

Friends

- `std::ostream & operator<< (std::ostream &_os, const Macro &_val)`

25.163.1 Detailed Description

Class for representing a [Macro](#).

Note

[Attribute Macro](#): a set of Attributes that are described in a single table that is referenced by multiple [Module](#) or other tables.

See Also

[Module](#)

25.163.2 Member Typedef Documentation

25.163.2.1 `typedef std::vector<std::string> gdcmmacro::Macro::ArrayIncludeMacroType`

25.163.2.2 `typedef std::map<Tag, MacroEntry> gdcmmacro::Macro::MapModuleEntry`

25.163.3 Constructor & Destructor Documentation

25.163.3.1 `gdcmmacro::Macro::Macro () [inline]`

25.163.4 Member Function Documentation

25.163.4.1 `void gdcmmacro::Macro::AddMacroEntry (const Tag & tag, const MacroEntry & module) [inline]`

Will add a [ModuleEntry](#) directly at root-level. See [Macro](#) for nested-included level.

25.163.4.2 `void gdcmmacro::Macro::Clear () [inline]`

25.163.4.3 `bool gdcmmacro::Macro::FindMacroEntry (const Tag & tag) const`

Find or Get a [ModuleEntry](#). [ModuleEntry](#) are either search are root-level or within nested-macro included in module.

25.163.4.4 `const MacroEntry& gdcmmacro::Macro::GetMacroEntry (const Tag & tag) const`

25.163.4.5 `const char* gdcmmacro::Macro::GetName () const [inline]`

25.163.4.6 `void gdcmmacro::Macro::SetName (const char * name) [inline]`

25.163.4.7 `bool gdcmmacro::Macro::Verify (const DataSet & ds, Usage const & usage) const`

25.163.5 Friends And Related Function Documentation

25.163.5.1 `std::ostream& operator<< (std::ostream &_os, const Macro &_val)` [*friend*]

The documentation for this class was generated from the following file:

- [gdcmMacro.h](#)

25.164 gdcm::Macros Class Reference

Class for representing a [Modules](#).

```
#include <gdcmMacros.h>
```

Public Types

- `typedef std::map< std::string, Macro > ModuleMapType`

Public Member Functions

- [Macros](#) ()
- `void AddMacro (const char *ref, const Macro &module)`
- `void Clear ()`
- `const Macro & GetMacro (const char *name) const`
- `bool IsEmpty () const`

Friends

- `std::ostream & operator<< (std::ostream &_os, const Macros &_val)`

25.164.1 Detailed Description

Class for representing a [Modules](#).

Note

bla

See Also

[Module](#)

Examples:

[TraverseModules.cxx](#).

25.164.2 Member Typedef Documentation

25.164.2.1 `typedef std::map<std::string, Macro> gdcmmacros::ModuleMapType`

25.164.3 Constructor & Destructor Documentation

25.164.3.1 `gdcmmacros::Macros () [inline]`

25.164.4 Member Function Documentation

25.164.4.1 `void gdcmmacros::AddMacro (const char * ref, const Macro & module) [inline]`

25.164.4.2 `void gdcmmacros::Clear () [inline]`

25.164.4.3 `const Macro& gdcmmacros::GetMacro (const char * name) const [inline]`

25.164.4.4 `bool gdcmmacros::IsEmpty () const [inline]`

25.164.5 Friends And Related Function Documentation

25.164.5.1 `std::ostream& operator<< (std::ostream & _os, const Macros & _val) [friend]`

The documentation for this class was generated from the following file:

- [gdcmmacros.h](#)

25.165 gdcmmacros::network::MaximumLengthSub Class Reference

[MaximumLengthSub](#) Annex D [Table D.1-1](#) MAXIMUM LENGTH SUB-ITEM FIELDS (A-ASSOCIATE-RQ)

```
#include <gdcmmacrosMaximumLengthSub.h>
```

Public Member Functions

- [MaximumLengthSub](#) ()
- `uint32_t` [GetMaximumLength](#) () const
- `void` [Print](#) (std::ostream &os) const
- `std::istream &` [Read](#) (std::istream &is)
- `void` [SetMaximumLength](#) (uint32_t maximumlength)
- `size_t` [Size](#) () const
- `const std::ostream &` [Write](#) (std::ostream &os) const

25.165.1 Detailed Description

[MaximumLengthSub](#) Annex D [Table D.1-1](#) MAXIMUM LENGTH SUB-ITEM FIELDS (A-ASSOCIATE-RQ)

or

[Table D.1-2](#) Maximum length sub-item fields (A-ASSOCIATE-AC)

25.165.2 Constructor & Destructor Documentation

25.165.2.1 `gdcm::network::MaximumLengthSub::MaximumLengthSub ()`

25.165.3 Member Function Documentation

25.165.3.1 `uint32_t gdcm::network::MaximumLengthSub::GetMaximumLength () const` `[inline]`

25.165.3.2 `void gdcm::network::MaximumLengthSub::Print (std::ostream & os) const`

25.165.3.3 `std::istream& gdcm::network::MaximumLengthSub::Read (std::istream & is)`

25.165.3.4 `void gdcm::network::MaximumLengthSub::SetMaximumLength (uint32_t maxlength)` `[inline]`

25.165.3.5 `size_t gdcm::network::MaximumLengthSub::Size () const`

25.165.3.6 `const std::ostream& gdcm::network::MaximumLengthSub::Write (std::ostream & os) const`

The documentation for this class was generated from the following file:

- [gdcmMaximumLengthSub.h](#)

25.166 gdcm::MD5 Class Reference

Class for [MD5](#).

```
#include <gdcmMD5.h>
```

Public Member Functions

- [MD5](#) ()
- [~MD5](#) ()

Static Public Member Functions

- static bool [Compute](#) (const char *buffer, unsigned long buf_len, char digest_str[33])
- static bool [ComputeFile](#) (const char *filename, char digest_str[33])

25.166.1 Detailed Description

Class for [MD5](#).

Warning

this class is able to pick from two implementations:

1. a lightweight md5 implementation (when GDCM_BUILD_TESTING is turned ON)
2. the one from OpenSSL (when GDCM_USE_SYSTEM_OPENSSL is turned ON)

In all other cases it will return an error

25.166.2 Constructor & Destructor Documentation

25.166.2.1 `gdcM::MD5::MD5 ()`

25.166.2.2 `gdcM::MD5::~~MD5 ()`

25.166.3 Member Function Documentation

25.166.3.1 `static bool gdcM::MD5::Compute (const char * buffer, unsigned long buf_len, char digest_str[33])` `[static]`

25.166.3.2 `static bool gdcM::MD5::ComputeFile (const char * filename, char digest_str[33])` `[static]`

The documentation for this class was generated from the following file:

- [gdcMMD5.h](#)

25.167 gdcM::MediaStorage Class Reference

[MediaStorage](#).

```
#include <gdcMMediaStorage.h>
```


Public Types

- enum `MSType` {
 - `MediaStorageDirectoryStorage` = 0,
 - `ComputedRadiographyImageStorage`,
 - `DigitalXRayImageStorageForPresentation`,
 - `DigitalXRayImageStorageForProcessing`,
 - `DigitalMammographyImageStorageForPresentation`,
 - `DigitalMammographyImageStorageForProcessing`,
 - `DigitalIntraoralXRayImageStorageForPresentation`,
 - `DigitalIntraoralXRayImageStorageForProcessing`,
 - `CTImageStorage`,
 - `EnhancedCTImageStorage`,
 - `UltrasoundImageStorageRetired`,
 - `UltrasoundImageStorage`,
 - `UltrasoundMultiFrameImageStorageRetired`,
 - `UltrasoundMultiFrameImageStorage`,
 - `MRImageStorage`,
 - `EnhancedMRImageStorage`,
 - `MRSpectroscopyStorage`,
 - `NuclearMedicineImageStorageRetired`,
 - `SecondaryCaptureImageStorage`,
 - `MultiframeSingleBitSecondaryCaptureImageStorage`,
 - `MultiframeGrayscaleByteSecondaryCaptureImageStorage`,
 - `MultiframeGrayscaleWordSecondaryCaptureImageStorage`,
 - `MultiframeTrueColorSecondaryCaptureImageStorage`,
 - `StandaloneOverlayStorage`,
 - `StandaloneCurveStorage`,
 - `LeadECGWaveformStorage`,
 - `GeneralECGWaveformStorage`,
 - `AmbulatoryECGWaveformStorage`,
 - `HemodynamicWaveformStorage`,
 - `CardiacElectrophysiologyWaveformStorage`,
 - `BasicVoiceAudioWaveformStorage`,
 - `StandaloneModalityLUTStorage`,
 - `StandaloneVOILUTStorage`,
 - `GrayscaleSoftcopyPresentationStateStorageSOPClass`,
 - `XRayAngiographicImageStorage`,
 - `XRayRadiofluoroscopicImageStorage`,
 - `XRayAngiographicBiPlaneImageStorageRetired`,
 - `NuclearMedicineImageStorage`,
 - `RawDataStorage`,
 - `SpacialRegistrationStorage`,
 - `SpacialFiducialsStorage`,
 - `PETImageStorage`,
 - `RTImageStorage`,
 - `RTDoseStorage`,
 - `RTStructureSetStorage`,
 - `RTPlanStorage`,
 - `CSANonImageStorage`,
 - `Philips3D`,
 - `EnhancedSR`,
 - `BasicTextSR`,
 - `HardcopyGrayscaleImageStorage`,
 - `ComprehensiveSR`,
 - `DetachedStudyManagementSOPClass`,
 - `EncapsulatedCDStorage`,
 - `EncapsulatedCDAStorage`,
 - `StudyComponentManagementSOPClass`,
 - `DetachedVisitManagementSOPClass`,
 - `DetachedPatientManagementSOPClass`,

`MS_END }`

- enum `ObjectType` {
`NoObject` = 0,
`Video`,
`Waveform`,
`Audio`,
`PDF`,
`URI`,
`Segmentation`,
`ObjectEnd` }

Public Member Functions

- `MediaStorage` (`MSType` type=`MS_END`)
- const char * `GetModality` () const
- unsigned int `GetModalityDimension` () const
- const char * `GetString` () const
Return the Media [String](#) of the object.
- void `GuessFromModality` (const char *modality, unsigned int dimension=2)
- bool `IsUndefined` () const
- operator `MSType` () const
- bool `SetFromDataSet` (`DataSet` const &ds)
- bool `SetFromFile` (`File` const &file)
- bool `SetFromHeader` (`FileMetaInformation` const &fmi)
- bool `SetFromModality` (`DataSet` const &ds)

Static Public Member Functions

- static const char * `GetMSString` (`MSType` ts)
Return the Media [String](#) associated. Will return NULL for `MS_END`.
- static `MSType` `GetMSType` (const char *str)
- static unsigned int `GetNumberOfModality` ()
- static unsigned int `GetNumberOfMSString` ()
- static unsigned int `GetNumberOfMSType` ()
- static bool `IsImage` (`MSType` ts)

Protected Member Functions

- void `SetFromSourceImageSequence` (`DataSet` const &ds)

Friends

- std::ostream & `operator<<` (std::ostream &os, const `MediaStorage` &ms)

25.167.1 Detailed Description

[MediaStorage](#).

Note

FIXME There should not be any notion of [Image](#) and/or PDF at that point Only the codec can answer yes I support this Media Storage or not... For instance an [ImageCodec](#) will answer yes to most of them while a [PDFCodec](#) will answer only for the Encapsulated PDF

See Also

[UIDs](#)

Examples:

[CreateJPIPDataSet.cxx](#), [EncapsulateFileInRawData.cxx](#), [Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [gdcmrtionplan.cxx](#), [gdcmrtplan.cxx](#), [GenAllVR.cxx](#), [GenerateStandardSOPClasses.cxx](#), [GenFakeIdentifyFile.cxx](#), [GetSubSequenceData.cxx](#), [iU22tomultisc.cxx](#), [ReadAndDumpDICOMDIR.cxx](#), [Stream-ImageReaderTest.cxx](#), and [TestReader.cxx](#).

25.167.2 Member Enumeration Documentation

25.167.2.1 enum gdcm::MediaStorage::MSType

Enumerator

MediaStorageDirectoryStorage
ComputedRadiographylImageStorage
DigitalXRayImageStorageForPresentation
DigitalXRayImageStorageForProcessing
DigitalMammographylImageStorageForPresentation
DigitalMammographylImageStorageForProcessing
DigitalIntraoralXrayImageStorageForPresentation
DigitalIntraoralXRayImageStorageForProcessing
CTImageStorage
EnhancedCTImageStorage
UltrasoundImageStorageRetired
UltrasoundImageStorage
UltrasoundMultiFrameImageStorageRetired
UltrasoundMultiFrameImageStorage
MRIImageStorage
EnhancedMRIImageStorage
MRSpectroscopyStorage
NuclearMedicineImageStorageRetired
SecondaryCaptureImageStorage
MultiframeSingleBitSecondaryCaptureImageStorage
MultiframeGrayscaleByteSecondaryCaptureImageStorage

MultiframeGrayscaleWordSecondaryCaptureImageStorage

MultiframeTrueColorSecondaryCaptureImageStorage

StandaloneOverlayStorage

StandaloneCurveStorage

LeadECGWaveformStorage

GeneralECGWaveformStorage

AmbulatoryECGWaveformStorage

HemodynamicWaveformStorage

CardiacElectrophysiologyWaveformStorage

BasicVoiceAudioWaveformStorage

StandaloneModalityLUTStorage

StandaloneVOILUTStorage

GrayscaleSoftcopyPresentationStateStorageSOPClass

XRayAngiographicImageStorage

XRayRadiofluoroscopicImageStorage

XRayAngiographicBiPlaneImageStorageRetired

NuclearMedicineImageStorage

RawDataStorage

SpacialRegistrationStorage

SpacialFiducialsStorage

PETImageStorage

RTImageStorage

RTDoseStorage

RTStructureSetStorage

RTPlanStorage

CSANonImageStorage

Philips3D

EnhancedSR

BasicTextSR

HardcopyGrayscaleImageStorage

ComprehensiveSR

DetachedStudyManagementSOPClass

EncapsulatedPDFStorage

EncapsulatedCDASStorage

StudyComponentManagementSOPClass

DetachedVisitManagementSOPClass

DetachedPatientManagementSOPClass

VideoEndoscopicImageStorage

GeneralElectricMagneticResonanceImageStorage

GEPrivate3DModelStorage

ToshibaPrivateDataStorage

MammographyCADSR

KeyObjectSelectionDocument
HangingProtocolStorage
ModalityPerformedProcedureStepSOPClass
PhilipsPrivateMRSyntheticImageStorage
VLPhotographicImageStorage
SegmentationStorage
RTIonPlanStorage
XRay3DAngiographicImageStorage
EnhancedXAImageStorage
RTIonBeamsTreatmentRecordStorage
SurfaceSegmentationStorage
VLWholeSlideMicroscopyImageStorage
RTTreatmentSummaryRecordStorage
EnhancedUSVolumeStorage
XRayRadiationDoseSR
VLEndoscopicImageStorage
BreastTomosynthesisImageStorage
FujiPrivateCRImageStorage
MS_END

Examples:

[GenerateStandardSOPClasses.cxx](#).

25.167.2.2 enum gdcmm::MediaStorage::ObjectType

Enumerator

NoObject
Video
Waveform
Audio
PDF
URI
Segmentation
ObjectEnd

25.167.3 Constructor & Destructor Documentation

25.167.3.1 gdcmm::MediaStorage::MediaStorage (MStype type = MS_END) [inline]

25.167.4 Member Function Documentation

25.167.4.1 const char* gdcmm::MediaStorage::GetModality () const

25.167.4.2 `unsigned int gdcm::MediaStorage::GetModalityDimension () const`

25.167.4.3 `static const char* gdcm::MediaStorage::GetMSString (MType ts) [static]`

Return the Media [String](#) associated. Will return NULL for MS_END.

Examples:

[GenerateStandardSOPClasses.cxx](#).

Referenced by `gdcm::operator<<()`.

25.167.4.4 `static MType gdcm::MediaStorage::GetMSType (const char * str) [static]`

Examples:

[TestReader.cxx](#).

25.167.4.5 `static unsigned int gdcm::MediaStorage::GetNumberOfModality () [static]`

25.167.4.6 `static unsigned int gdcm::MediaStorage::GetNumberOfMSString () [static]`

25.167.4.7 `static unsigned int gdcm::MediaStorage::GetNumberOfMSType () [static]`

25.167.4.8 `const char* gdcm::MediaStorage::GetString () const`

Return the Media [String](#) of the object.

Examples:

[CreateJPIPDataSet.cxx](#), [EncapsulateFileInRawData.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [GetSubSequenceData.cxx](#), [iU22tomultisc.cxx](#), and [StreamImageReaderTest.cxx](#).

25.167.4.9 `void gdcm::MediaStorage::GuessFromModality (const char * modality, unsigned int dimension = 2)`

25.167.4.10 `static bool gdcm::MediaStorage::IsImage (MType ts) [static]`

Returns whether DICOM has a Pixel Data element (7fe0,0010)

Warning

MRSpectroscopyStorage could be image but are not

25.167.4.11 `bool gdcm::MediaStorage::IsUndefined () const [inline]`

Examples:

[TestReader.cxx](#).

25.167.4.12 `gdcm::MediaStorage::operator MType () const` `[inline]`

25.167.4.13 `bool gdcm::MediaStorage::SetFromDataSet (DataSet const & ds)`

Advanced user only (functions should be protected level...) Those function are lower level than SetFromFile

25.167.4.14 `bool gdcm::MediaStorage::SetFromFile (File const & file)`

Attempt to set the [MediaStorage](#) from a file: WARNING: When no [MediaStorage](#) & Modality are found BUT a PixelData element is found then [MediaStorage](#) is set to the default SecondaryCaptureImageStorage (return value is false in this case)

Examples:

[gdcmrtionplan.cxx](#), [gdcmrtplan.cxx](#), [ReadAndDumpDICOMDIR.cxx](#), and [TestReader.cxx](#).

25.167.4.15 `bool gdcm::MediaStorage::SetFromHeader (FileMetaInformation const & fmi)`

25.167.4.16 `bool gdcm::MediaStorage::SetFromModality (DataSet const & ds)`

25.167.4.17 `void gdcm::MediaStorage::SetFromSourceImageSequence (DataSet const & ds)` `[protected]`

25.167.5 Friends And Related Function Documentation

25.167.5.1 `std::ostream& operator<< (std::ostream & os, const MediaStorage & ms)` `[friend]`

The documentation for this class was generated from the following file:

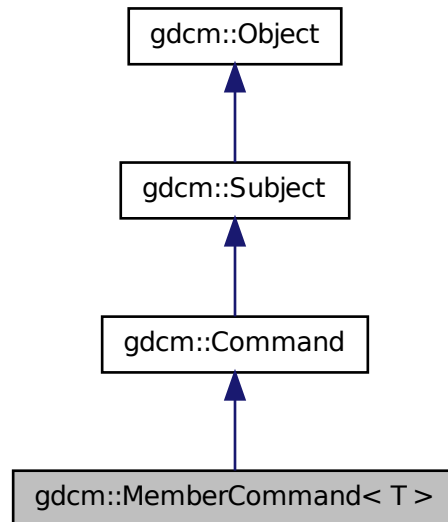
- [gdcmMediaStorage.h](#)

25.168 gdcm::MemberCommand< T > Class Template Reference

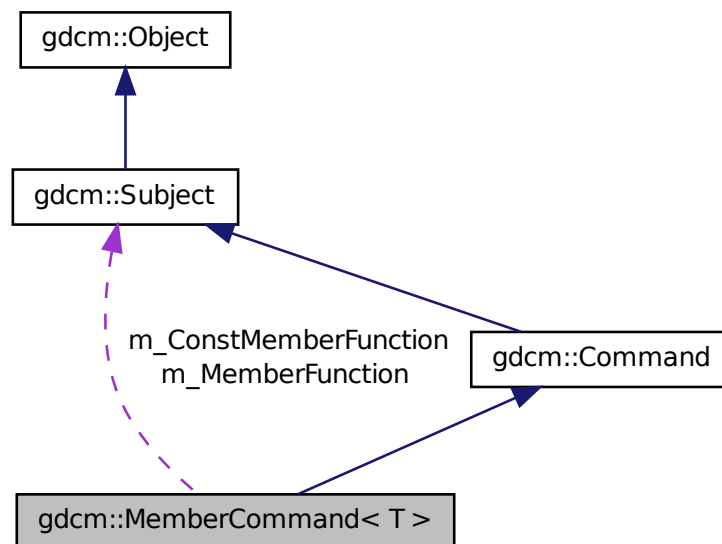
[Command](#) subclass that calls a pointer to a member function.

```
#include <gdcmCommand.h>
```

Inheritance diagram for `gdcM::MemberCommand< T >`:



Collaboration diagram for `gdcM::MemberCommand< T >`:



Public Types

- typedef [MemberCommand Self](#)
- typedef void(T::* [TConstMemberFunctionPointer](#))(const [Subject](#) *, const [Event](#) &)
- typedef void(T::* [TMemberFunctionPointer](#))(Subject *, const [Event](#) &)

Public Member Functions

- virtual void [Execute](#) ([Subject](#) *caller, const [Event](#) &event)
- virtual void [Execute](#) (const [Subject](#) *caller, const [Event](#) &event)
- void [SetCallbackFunction](#) (T *object, [TMemberFunctionPointer](#) memberFunction)
- void [SetCallbackFunction](#) (T *object, [TConstMemberFunctionPointer](#) memberFunction)

Static Public Member Functions

- static [SmartPointer](#)
 < [MemberCommand](#) > [New](#) ()

Protected Member Functions

- [MemberCommand](#) ()
- virtual [~MemberCommand](#) ()

Protected Attributes

- [TConstMemberFunctionPointer](#) m_ConstMemberFunction
- [TMemberFunctionPointer](#) m_MemberFunction
- T * [m_This](#)

25.168.1 Detailed Description

template<class T>class gdcmm::MemberCommand< T >

[Command](#) subclass that calls a pointer to a member function.

[MemberCommand](#) calls a pointer to a member function with the same arguments as [Execute](#) on [Command](#).

25.168.2 Member Typedef Documentation

25.168.2.1 template<class T > typedef [MemberCommand](#) gdcmm::MemberCommand< T >::Self

Standard class typedefs.

25.168.2.2 `template<class T> typedef void(T::* gdcM::MemberCommand< T>::TConstMemberFunctionPointer)(const Subject *, const Event &)`

25.168.2.3 `template<class T> typedef void(T::* gdcM::MemberCommand< T>::TMemberFunctionPointer)(Subject *, const Event &)`

pointer to a member function that takes a Subject* and the event

25.168.3 Constructor & Destructor Documentation

25.168.3.1 `template<class T> gdcM::MemberCommand< T>::MemberCommand () [inline], [protected]`

Referenced by gdcM::MemberCommand< T>::New().

25.168.3.2 `template<class T> virtual gdcM::MemberCommand< T>::~MemberCommand () [inline], [protected], [virtual]`

25.168.4 Member Function Documentation

25.168.4.1 `template<class T> virtual void gdcM::MemberCommand< T>::Execute (Subject * caller, const Event & event) [inline], [virtual]`

Invoke the member function.

Implements [gdcM::Command](#).

References gdcM::MemberCommand< T>::m_MemberFunction.

25.168.4.2 `template<class T> virtual void gdcM::MemberCommand< T>::Execute (const Subject * caller, const Event & event) [inline], [virtual]`

Invoke the member function with a const object.

Implements [gdcM::Command](#).

References gdcM::MemberCommand< T>::m_ConstMemberFunction.

25.168.4.3 `template<class T> static SmartPointer<MemberCommand> gdcM::MemberCommand< T>::New () [inline], [static]`

Method for creation through the object factory.

References gdcM::MemberCommand< T>::MemberCommand().

25.168.4.4 `template<class T> void gdcM::MemberCommand< T>::SetCallbackFunction (T * object, TMemberFunctionPointer memberFunction) [inline]`

Run-time type information (and related methods). Set the callback function along with the object that it will be invoked on.

References gdcM::MemberCommand< T>::m_MemberFunction, and gdcM::MemberCommand< T>::m_This.

25.168.4.5 `template<class T> void gdcm::MemberCommand< T >::SetCallbackFunction (T * object, TConstMemberFunctionPointer memberFunction) [inline]`

References `gdcm::MemberCommand< T >::m_ConstMemberFunction`, and `gdcm::MemberCommand< T >::m_This`.

25.168.5 Member Data Documentation

25.168.5.1 `template<class T> TConstMemberFunctionPointer gdcm::MemberCommand< T >::m_ConstMemberFunction [protected]`

Referenced by `gdcm::MemberCommand< T >::Execute()`, and `gdcm::MemberCommand< T >::SetCallbackFunction()`.

25.168.5.2 `template<class T> TMemberFunctionPointer gdcm::MemberCommand< T >::m_MemberFunction [protected]`

Referenced by `gdcm::MemberCommand< T >::Execute()`, and `gdcm::MemberCommand< T >::SetCallbackFunction()`.

25.168.5.3 `template<class T> T* gdcm::MemberCommand< T >::m_This [protected]`

Referenced by `gdcm::MemberCommand< T >::SetCallbackFunction()`.

The documentation for this class was generated from the following file:

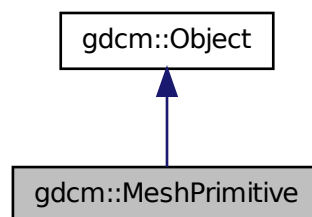
- [gdcmCommand.h](#)

25.169 gdcm::MeshPrimitive Class Reference

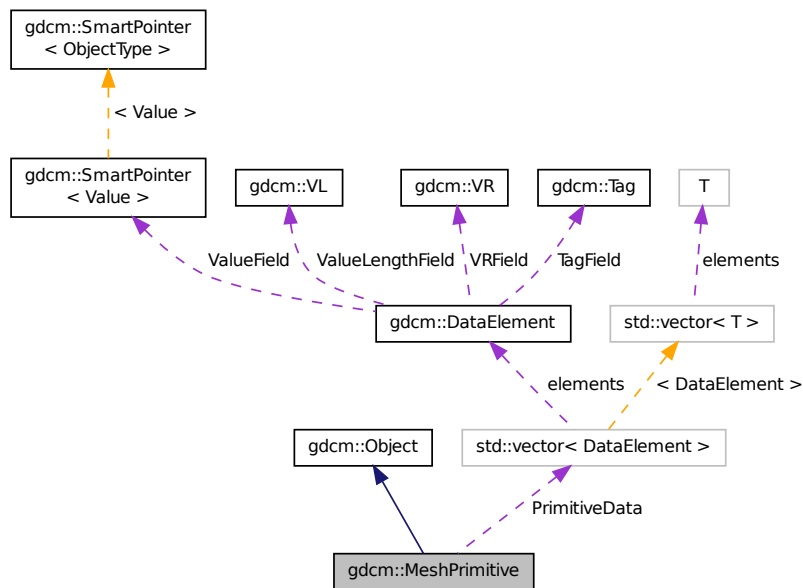
This class defines surface mesh primitives. It is designed from surface mesh primitives macro.

```
#include <gdcmMeshPrimitive.h>
```

Inheritance diagram for `gdcm::MeshPrimitive`:



Collaboration diagram for `gdcM::MeshPrimitive`:



Public Types

- enum `MPTType` {
`VERTEX` = 0,
`EDGE`,
`TRIANGLE`,
`TRIANGLE_STRIP`,
`TRIANGLE_FAN`,
`LINE`,
`FACET`,
`MPTType_END` }
- This enumeration defines primitive types.*
- typedef `std::vector< DataElement >` `PrimitivesData`

Public Member Functions

- `MeshPrimitive` ()
- virtual `~MeshPrimitive` ()
- void `AddPrimitiveData` (`DataElement` const &de)
- unsigned int `GetNumberOfPrimitivesData` () const
- const `DataElement` & `GetPrimitiveData` () const
- `DataElement` & `GetPrimitiveData` ()
- const `DataElement` & `GetPrimitiveData` (const unsigned int idx) const
- `DataElement` & `GetPrimitiveData` (const unsigned int idx)
- const `PrimitivesData` & `GetPrimitivesData` () const

- [PrimitivesData](#) & [GetPrimitivesData](#) ()
- [MPTType](#) [GetPrimitiveType](#) () const
- void [SetPrimitiveData](#) ([DataElement](#) const &de)
- void [SetPrimitiveData](#) (const unsigned int idx, [DataElement](#) const &de)
- void [SetPrimitivesData](#) ([PrimitivesData](#) const &DEs)
- void [SetPrimitiveType](#) (const [MPTType](#) type)

Static Public Member Functions

- static [MPTType](#) [GetMPTType](#) (const char *type)
- static const char * [GetMPTTypeString](#) (const [MPTType](#) type)

Protected Attributes

- [PrimitivesData](#) [PrimitiveData](#)
- [MPTType](#) [PrimitiveType](#)

Additional Inherited Members

25.169.1 Detailed Description

This class defines surface mesh primitives. It is designed from surface mesh primitives macro.

See Also

PS 3.3 C.27.4

25.169.2 Member Typedef Documentation

25.169.2.1 `typedef std::vector< DataElement > gdcm::MeshPrimitive::PrimitivesData`

25.169.3 Member Enumeration Documentation

25.169.3.1 `enum gdcm::MeshPrimitive::MPTType`

This enumeration defines primitive types.

See Also

PS 3.3 C.27.4.1

Enumerator

VERTEX
EDGE
TRIANGLE
TRIANGLE_STRIP
TRIANGLE_FAN
LINE
FACET
MPTType_END

25.169.4 Constructor & Destructor Documentation

25.169.4.1 `gdcM::MeshPrimitive::MeshPrimitive ()`

25.169.4.2 `virtual gdcM::MeshPrimitive::~~MeshPrimitive ()` `[virtual]`

25.169.5 Member Function Documentation

25.169.5.1 `void gdcM::MeshPrimitive::AddPrimitiveData (DataElement const & de)`

25.169.5.2 `static MPTyp gdcM::MeshPrimitive::GetMPTyp (const char * type)` `[static]`

25.169.5.3 `static const char* gdcM::MeshPrimitive::GetMPTypString (const MPTyp type)` `[static]`

25.169.5.4 `unsigned int gdcM::MeshPrimitive::GetNumberOfPrimitivesData () const`

25.169.5.5 `const DataElement& gdcM::MeshPrimitive::GetPrimitiveData () const`

25.169.5.6 `DataElement& gdcM::MeshPrimitive::GetPrimitiveData ()`

25.169.5.7 `const DataElement& gdcM::MeshPrimitive::GetPrimitiveData (const unsigned int idx) const`

25.169.5.8 `DataElement& gdcM::MeshPrimitive::GetPrimitiveData (const unsigned int idx)`

25.169.5.9 `const PrimitivesData& gdcM::MeshPrimitive::GetPrimitivesData () const`

25.169.5.10 `PrimitivesData& gdcM::MeshPrimitive::GetPrimitivesData ()`

25.169.5.11 `MPTyp gdcM::MeshPrimitive::GetPrimitiveType () const`

25.169.5.12 `void gdcM::MeshPrimitive::SetPrimitiveData (DataElement const & de)`

25.169.5.13 `void gdcM::MeshPrimitive::SetPrimitiveData (const unsigned int idx, DataElement const & de)`

25.169.5.14 `void gdcM::MeshPrimitive::SetPrimitivesData (PrimitivesData const & DEs)`

25.169.5.15 `void gdcM::MeshPrimitive::SetPrimitiveType (const MPTyp type)`

25.169.6 Member Data Documentation

25.169.6.1 `PrimitivesData gdcM::MeshPrimitive::PrimitiveData` `[protected]`

25.169.6.2 `MPTyp gdcM::MeshPrimitive::PrimitiveType` `[protected]`

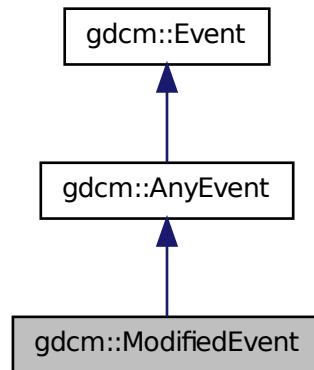
The documentation for this class was generated from the following file:

- [gdcMMeshPrimitive.h](#)

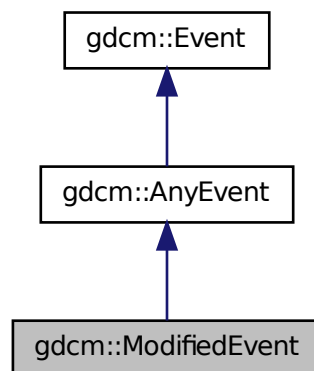
25.170 gdcM::ModifiedEvent Class Reference

```
#include <gdcMEvent.h>
```

Inheritance diagram for gdcm::ModifiedEvent:



Collaboration diagram for gdcm::ModifiedEvent:



Additional Inherited Members

The documentation for this class was generated from the following file:

- [gdcmEvent.h](#)

25.171 `gdcmmodule` Class Reference

Class for representing a [Module](#).

```
#include <gdcmmodule.h>
```

Public Types

- typedef std::vector< std::string > [ArrayIncludeMacrosType](#)
- typedef std::map< [Tag](#),
[ModuleEntry](#) > [MapModuleEntry](#)

Public Member Functions

- [Module](#) ()
- void [AddMacro](#) (const char *include)
- void [AddModuleEntry](#) (const [Tag](#) &tag, const [ModuleEntry](#) &module)
Will add a [ModuleEntry](#) directly at root-level. See [Macro](#) for nested-included level.
- void [Clear](#) ()
- bool [FindModuleEntryInMacros](#) ([Macros](#) const ¯os, const [Tag](#) &tag) const
- const [ModuleEntry](#) & [GetModuleEntryInMacros](#) ([Macros](#) const ¯os, const [Tag](#) &tag) const
- const char * [GetName](#) () const
- void [SetName](#) (const char *name)
- bool [Verify](#) (const [DataSet](#) &ds, [Usage](#) const &usage) const

Friends

- std::ostream & [operator<<](#) (std::ostream &_os, const [Module](#) &_val)

25.171.1 Detailed Description

Class for representing a [Module](#).

Note

[Module](#): A set of Attributes within an Information Entity or Normalized [IOD](#) which are logically related to each other.

See Also

[Macro](#)

Examples:

[TraverseModules.cxx](#).

25.171.2 Member Typedef Documentation

25.171.2.1 `typedef std::vector<std::string> gdcmmodule::ArrayIncludeMacrosType`

25.171.2.2 `typedef std::map<Tag, ModuleEntry> gdcmmodule::MapModuleEntry`

25.171.3 Constructor & Destructor Documentation

25.171.3.1 `gdcmmodule::Module () [inline]`

25.171.4 Member Function Documentation

25.171.4.1 `void gdcmmodule::AddMacro (const char * include) [inline]`

25.171.4.2 `void gdcmmodule::AddModuleEntry (const Tag & tag, const ModuleEntry & module) [inline]`

Will add a [ModuleEntry](#) directly at root-level. See [Macro](#) for nested-included level.

25.171.4.3 `void gdcmmodule::Clear () [inline]`

25.171.4.4 `bool gdcmmodule::FindModuleEntryInMacros (Macros const & macros, const Tag & tag) const`

Find or Get a [ModuleEntry](#). [ModuleEntry](#) are either search are root-level or within nested-macro included in module.

Examples:

[TraverseModules.cxx](#).

25.171.4.5 `const ModuleEntry& gdcmmodule::GetModuleEntryInMacros (Macros const & macros, const Tag & tag) const`

Examples:

[TraverseModules.cxx](#).

25.171.4.6 `const char* gdcmmodule::GetName () const [inline]`

25.171.4.7 `void gdcmmodule::SetName (const char * name) [inline]`

25.171.4.8 `bool gdcmmodule::Verify (const DataSet & ds, Usage const & usage) const`

25.171.5 Friends And Related Function Documentation

25.171.5.1 `std::ostream& operator<< (std::ostream & _os, const Module & _val) [friend]`

The documentation for this class was generated from the following file:

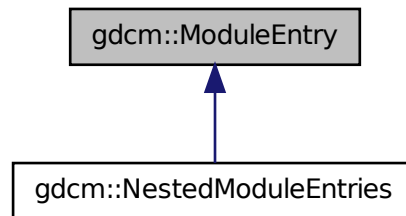
- [gdcmmodule.h](#)

25.172 gdcm::ModuleEntry Class Reference

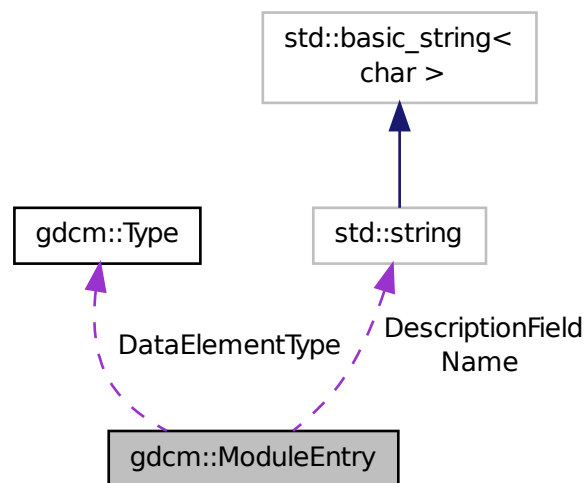
Class for representing a [ModuleEntry](#).

```
#include <gdcmModuleEntry.h>
```

Inheritance diagram for gdcm::ModuleEntry:



Collaboration diagram for gdcm::ModuleEntry:



Public Types

- typedef std::string [Description](#)

Public Member Functions

- [ModuleEntry](#) (const char *name="", const char *type="3", const char *description="")
- virtual [~ModuleEntry](#) ()
- const [Description](#) & [GetDescription](#) () const
- const char * [GetName](#) () const
- const [Type](#) & [GetType](#) () const
- void [SetDescription](#) (const char *d)
- void [SetName](#) (const char *name)
- void [SetType](#) (const [Type](#) &type)

Protected Attributes

- [Type](#) [DataElementType](#)
- [Description](#) [DescriptionField](#)
- std::string [Name](#)

Friends

- std::ostream & [operator<<](#) (std::ostream &_os, const [ModuleEntry](#) &_val)

25.172.1 Detailed Description

Class for representing a [ModuleEntry](#).

Note

bla

See Also

[DictEntry](#)

Examples:

[TraverseModules.cxx](#).

25.172.2 Member Typedef Documentation

25.172.2.1 typedef std::string gdcm::ModuleEntry::Description

25.172.3 Constructor & Destructor Documentation

25.172.3.1 gdcm::ModuleEntry::ModuleEntry (const char * *name* = " ", const char * *type* = "3", const char * *description* = " ") [inline]

References [gdcm::Type::GetTypeType\(\)](#).

25.172.3.2 `virtual gdcmmoduleentry::~~ModuleEntry () [inline],[virtual]`

25.172.4 Member Function Documentation

25.172.4.1 `const Description& gdcmmoduleentry::GetDescription () const [inline]`

25.172.4.2 `const char* gdcmmoduleentry::GetName () const [inline]`

25.172.4.3 `const Type& gdcmmoduleentry::GetType () const [inline]`

Examples:

[TraverseModules.cxx](#).

25.172.4.4 `void gdcmmoduleentry::SetDescription (const char * d) [inline]`

25.172.4.5 `void gdcmmoduleentry::SetName (const char * name) [inline]`

25.172.4.6 `void gdcmmoduleentry::SetType (const Type & type) [inline]`

25.172.5 Friends And Related Function Documentation

25.172.5.1 `std::ostream& operator<< (std::ostream & _os, const ModuleEntry & _val) [friend]`

25.172.6 Member Data Documentation

25.172.6.1 `Type gdcmmoduleentry::DataElementType [protected]`

Referenced by `gdcmmoduleentry::operator<<()`.

25.172.6.2 `Description gdcmmoduleentry::DescriptionField [protected]`

Referenced by `gdcmmoduleentry::operator<<()`.

25.172.6.3 `std::string gdcmmoduleentry::Name [protected]`

Referenced by `gdcmmoduleentry::operator<<()`.

The documentation for this class was generated from the following file:

- [gdcmmoduleentry.h](#)

25.173 gdcmmoduleentry Class Reference

Class for representing a [Modules](#).

```
#include <gdcmmoduleentry.h>
```

Public Types

- typedef std::map< std::string, [Module](#) > [ModuleMapType](#)

Public Member Functions

- [Modules](#) ()
- void [AddModule](#) (const char *ref, const [Module](#) &module)
- void [Clear](#) ()
- const [Module](#) & [GetModule](#) (const char *name) const
- bool [IsEmpty](#) () const

Friends

- std::ostream & [operator<<](#) (std::ostream &_os, const [Modules](#) &_val)

25.173.1 Detailed Description

Class for representing a [Modules](#).

Note

bla

See Also

[Module](#)

Examples:

[TraverseModules.cxx](#).

25.173.2 Member Typedef Documentation

25.173.2.1 typedef std::map<std::string, [Module](#)> [gdcm::Modules::ModuleMapType](#)

25.173.3 Constructor & Destructor Documentation

25.173.3.1 [gdcm::Modules::Modules](#) () [\[inline\]](#)

25.173.4 Member Function Documentation

25.173.4.1 void [gdcm::Modules::AddModule](#) (const char * *ref*, const [Module](#) & *module*) [\[inline\]](#)

25.173.4.2 void [gdcm::Modules::Clear](#) () [\[inline\]](#)

25.173.4.3 const [Module](#)& [gdcm::Modules::GetModule](#) (const char * *name*) const [\[inline\]](#)

25.173.4.4 bool [gdcm::Modules::IsEmpty](#) () const [\[inline\]](#)

25.173.5 Friends And Related Function Documentation

25.173.5.1 `std::ostream& operator<< (std::ostream &_os, const Modules &_val)` [friend]

The documentation for this class was generated from the following file:

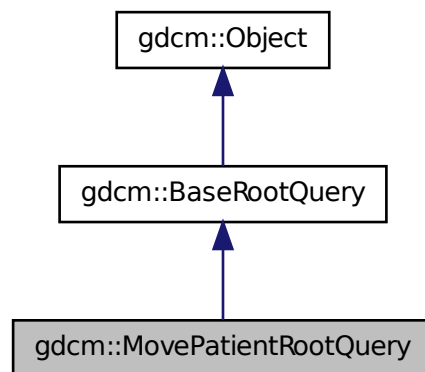
- [gdcmModules.h](#)

25.174 gdcm::MovePatientRootQuery Class Reference

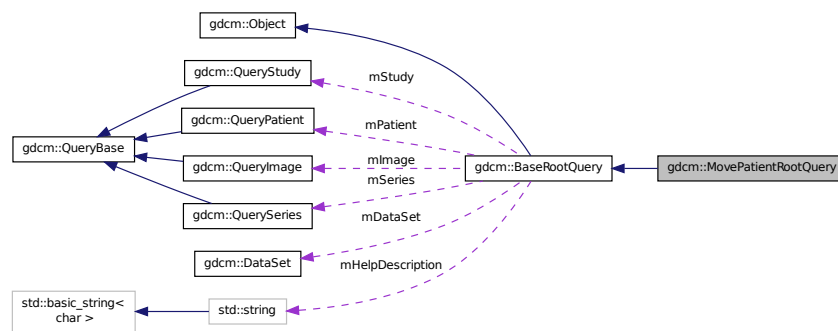
[MovePatientRootQuery](#) contains: the class which will produce a dataset for c-move with patient root.

```
#include <gdcmMovePatientRootQuery.h>
```

Inheritance diagram for `gdcm::MovePatientRootQuery`:



Collaboration diagram for `gdcm::MovePatientRootQuery`:



Public Member Functions

- [MovePatientRootQuery](#) ()
- [UIDs::TSName GetAbstractSyntaxUID](#) () const
- `std::vector< Tag > GetTagListByLevel (const EQueryLevel &inQueryLevel)`
- `void InitializeDataSet (const EQueryLevel &inQueryLevel)`
- `bool ValidateQuery (bool inStrict=true) const`

Friends

- class [QueryFactory](#)

Additional Inherited Members

25.174.1 Detailed Description

[MovePatientRootQuery](#) contains: the class which will produce a dataset for c-move with patient root.

25.174.2 Constructor & Destructor Documentation

25.174.2.1 `gdcm::MovePatientRootQuery::MovePatientRootQuery ()`

25.174.3 Member Function Documentation

25.174.3.1 `UIDs::TSName gdcm::MovePatientRootQuery::GetAbstractSyntaxUID () const` [virtual]

Implements [gdcm::BaseRootQuery](#).

25.174.3.2 `std::vector<Tag> gdcm::MovePatientRootQuery::GetTagListByLevel (const EQueryLevel & inQueryLevel)`
[virtual]

this function will return all tags at a given query level, so that they maybe selected for searching. The boolean forFind is true if the query is a find query, or false for a move query.

Implements [gdcm::BaseRootQuery](#).

25.174.3.3 `void gdcm::MovePatientRootQuery::InitializeDataSet (const EQueryLevel & inQueryLevel)` [virtual]

this function sets tag 8,52 to the appropriate value based on query level also fills in the right unique tags, as per the standard's requirements should allow for connection with dcmTk

Implements [gdcm::BaseRootQuery](#).

25.174.3.4 `bool gdcm::MovePatientRootQuery::ValidateQuery (bool inStrict =true) const` [virtual]

have to be able to ensure that 0x8,0x52 is set (which will be true if InitializeDataSet is called...) that the level is appropriate (ie, not setting PATIENT for a study query that the tags in the query match the right level (either required, unique, optional) by default, this function checks to see if the query is for finding, which is more permissive than for moving. For moving, only the unique tags are allowed. 10 Jan 2011: adding in the 'strict' mode. according to the

standard (at least, how I've read it), only tags for a particular level should be allowed in a particular query (ie, just series level tags in a series level query). However, it seems that dcm4chee doesn't share that interpretation. So, if 'inStrict' is false, then tags from the current level and all higher levels are now considered valid. So, if you're doing a non-strict series-level query, tags from the patient and study level can be passed along as well.

Implements [gdcm::BaseRootQuery](#).

25.174.4 Friends And Related Function Documentation

25.174.4.1 friend class QueryFactory [friend]

The documentation for this class was generated from the following file:

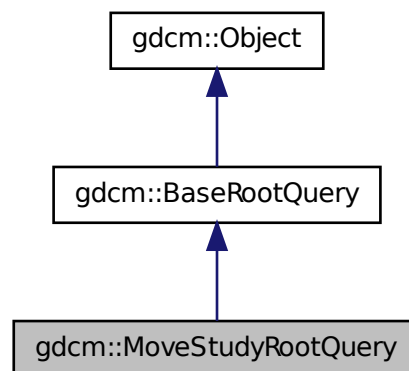
- [gdcmMovePatientRootQuery.h](#)

25.175 gdcm::MoveStudyRootQuery Class Reference

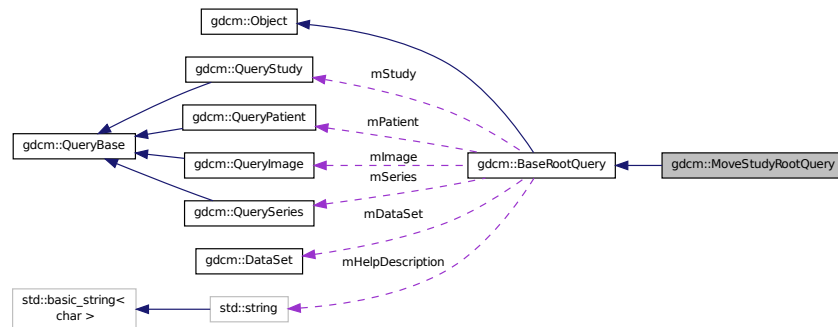
[MoveStudyRootQuery](#) contains: the class which will produce a dataset for C-MOVE with study root.

```
#include <gdcmMoveStudyRootQuery.h>
```

Inheritance diagram for `gdcm::MoveStudyRootQuery`:



Collaboration diagram for gdcm::MoveStudyRootQuery:



Public Member Functions

- [MoveStudyRootQuery](#) ()
- [UIDs::TSName GetAbstractSyntaxUID](#) () const
- [std::vector< Tag > GetTagListByLevel](#) (const [EQueryLevel](#) &inQueryLevel)
- void [InitializeDataSet](#) (const [EQueryLevel](#) &inQueryLevel)
- bool [ValidateQuery](#) (bool inStrict=true) const

Friends

- class [QueryFactory](#)

Additional Inherited Members

25.175.1 Detailed Description

[MoveStudyRootQuery](#) contains: the class which will produce a dataset for C-MOVE with study root.

25.175.2 Constructor & Destructor Documentation

25.175.2.1 [gdcm::MoveStudyRootQuery::MoveStudyRootQuery](#) ()

25.175.3 Member Function Documentation

25.175.3.1 [UIDs::TSName gdcm::MoveStudyRootQuery::GetAbstractSyntaxUID](#) () const [virtual]

Implements [gdcm::BaseRootQuery](#).

25.175.3.2 [std::vector<Tag> gdcm::MoveStudyRootQuery::GetTagListByLevel](#) (const [EQueryLevel](#) & inQueryLevel) [virtual]

this function will return all tags at a given query level, so that they maybe selected for searching. The boolean forFind is true if the query is a find query, or false for a move query.

Implements [gdcm::BaseRootQuery](#).

25.175.3.3 `void gdcm::MoveStudyRootQuery::InitializeDataSet (const EQueryLevel & inQueryLevel) [virtual]`

this function sets tag 8,52 to the appropriate value based on query level also fills in the right unique tags, as per the standard's requirements should allow for connection with dcm4che

Implements [gdcm::BaseRootQuery](#).

25.175.3.4 `bool gdcm::MoveStudyRootQuery::ValidateQuery (bool inStrict = true) const [virtual]`

have to be able to ensure that 0x8,0x52 is set (which will be true if InitializeDataSet is called...) that the level is appropriate (ie, not setting PATIENT for a study query that the tags in the query match the right level (either required, unique, optional) by default, this function checks to see if the query is for finding, which is more permissive than for moving. For moving, only the unique tags are allowed. 10 Jan 2011: adding in the 'strict' mode. according to the standard (at least, how I've read it), only tags for a particular level should be allowed in a particular query (ie, just series level tags in a series level query). However, it seems that dcm4chee doesn't share that interpretation. So, if 'inStrict' is false, then tags from the current level and all higher levels are now considered valid. So, if you're doing a non-strict series-level query, tags from the patient and study level can be passed along as well.

Implements [gdcm::BaseRootQuery](#).

25.175.4 Friends And Related Function Documentation

25.175.4.1 `friend class QueryFactory [friend]`

The documentation for this class was generated from the following file:

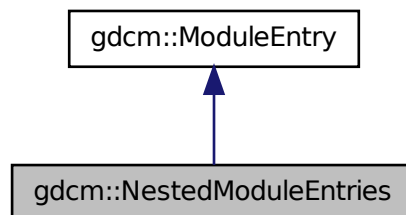
- [gdcmMoveStudyRootQuery.h](#)

25.176 gdcm::NestedModuleEntries Class Reference

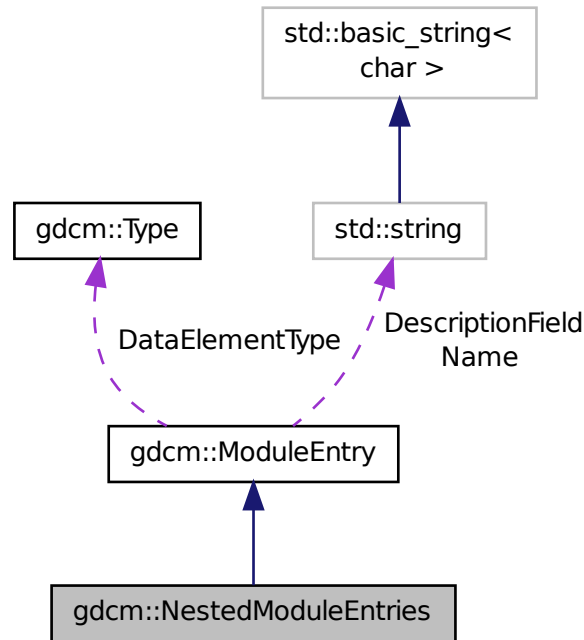
Class for representing a [NestedModuleEntries](#).

```
#include <gdcmNestedModuleEntries.h>
```

Inheritance diagram for `gdcm::NestedModuleEntries`:



Collaboration diagram for gdcm::NestedModuleEntries:



Public Types

- typedef std::vector
< [ModuleEntry](#) >::size_type [SizeType](#)

Public Member Functions

- [NestedModuleEntries](#) (const char *name="", const char *type="3", const char *description="")
- void [AddModuleEntry](#) (const [ModuleEntry](#) &me)
- const [ModuleEntry](#) & [GetModuleEntry](#) ([SizeType](#) idx) const
- [ModuleEntry](#) & [GetModuleEntry](#) ([SizeType](#) idx)
- [SizeType](#) [GetNumberOfModuleEntries](#) ()

Friends

- std::ostream & [operator<<](#) (std::ostream &_os, const [NestedModuleEntries](#) &_val)

Additional Inherited Members

25.176.1 Detailed Description

Class for representing a [NestedModuleEntries](#).

Note

bla

See Also

[ModuleEntry](#)

25.176.2 Member Typedef Documentation

25.176.2.1 `typedef std::vector<ModuleEntry>::size_type gdcmm::NestedModuleEntries::SizeType`

25.176.3 Constructor & Destructor Documentation

25.176.3.1 `gdcmm::NestedModuleEntries::NestedModuleEntries (const char * name = " ", const char * type = "3", const char * description = " ") [inline]`

25.176.4 Member Function Documentation

25.176.4.1 `void gdcmm::NestedModuleEntries::AddModuleEntry (const ModuleEntry & me) [inline]`

25.176.4.2 `const ModuleEntry& gdcmm::NestedModuleEntries::GetModuleEntry (SizeType idx) const [inline]`

25.176.4.3 `ModuleEntry& gdcmm::NestedModuleEntries::GetModuleEntry (SizeType idx) [inline]`

25.176.4.4 `SizeType gdcmm::NestedModuleEntries::GetNumberOfModuleEntries () [inline]`

25.176.5 Friends And Related Function Documentation

25.176.5.1 `std::ostream& operator<< (std::ostream & _os, const NestedModuleEntries & _val) [friend]`

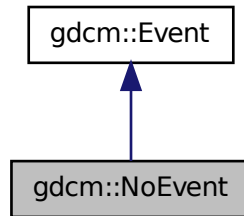
The documentation for this class was generated from the following file:

- [gdcmmNestedModuleEntries.h](#)

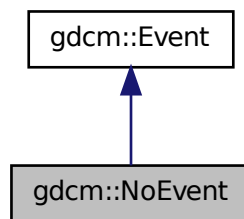
25.177 gdcmm::NoEvent Class Reference

```
#include <gdcmmEvent.h>
```

Inheritance diagram for gdcm::NoEvent:



Collaboration diagram for gdcm::NoEvent:



Additional Inherited Members

25.177.1 Detailed Description

Define some common GDCM events

The documentation for this class was generated from the following file:

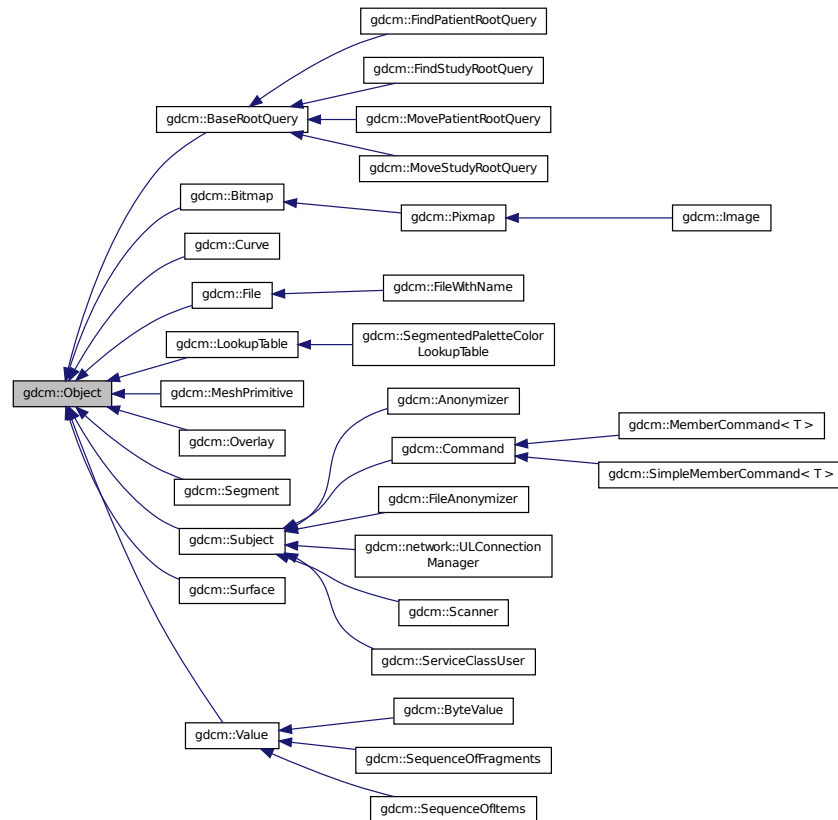
- [gdcmEvent.h](#)

25.178 gdcm::Object Class Reference

[Object.](#)

```
#include <gdcmObject.h>
```

Inheritance diagram for `gdcm::Object`:



Public Member Functions

- `Object ()`
- `Object (const Object &)`
Special requirement for copy/cstor, assignment operator.
- `virtual ~Object ()`
- `void operator= (const Object &)`
- `virtual void Print (std::ostream &) const`

Protected Member Functions

- `void Register ()`
- `void UnRegister ()`

Friends

- `std::ostream & operator<< (std::ostream &os, const Object &obj)`
- `template<class ObjectType >`
 class `SmartPointer`

25.178.1 Detailed Description

[Object](#).

Note

main superclass for object that want to use [SmartPointer](#) invasive ref counting system

See Also

[SmartPointer](#)

25.178.2 Constructor & Destructor Documentation

25.178.2.1 `gdcm::Object::Object ()` `[inline]`

25.178.2.2 `virtual gdcm::Object::~~Object ()` `[inline]`, `[virtual]`

25.178.2.3 `gdcm::Object::Object (const Object &)` `[inline]`

Special requirement for copy/cstor, assignment operator.

25.178.3 Member Function Documentation

25.178.3.1 `void gdcm::Object::operator= (const Object &)` `[inline]`

25.178.3.2 `virtual void gdcm::Object::Print (std::ostream &) const` `[inline]`, `[virtual]`

Reimplemented in [gdcm::SequenceOfFragments](#), [gdcm::ByteValue](#), [gdcm::SequenceOfItems](#), [gdcm::BaseRootQuery](#), [gdcm::Scanner](#), [gdcm::Image](#), [gdcm::Curve](#), [gdcm::Overlay](#), [gdcm::Bitmap](#), [gdcm::LookupTable](#), [gdcm::Pixmap](#), and [gdcm::SegmentedPaletteColorLookupTable](#).

Examples:

[ReadAndDumpDICOMDIR.cxx](#).

Referenced by `gdcm::operator<<()`.

25.178.3.3 `void gdcm::Object::Register ()` `[inline]`, `[protected]`

25.178.3.4 `void gdcm::Object::UnRegister ()` `[inline]`, `[protected]`

25.178.4 Friends And Related Function Documentation

25.178.4.1 `std::ostream& operator<< (std::ostream & os, const Object & obj)` `[friend]`

25.178.4.2 `template<class ObjectType > friend class SmartPointer` `[friend]`

The documentation for this class was generated from the following file:

- [gdcmObject.h](#)

25.179 gdcm::Orientation Class Reference

class to handle [Orientation](#)

```
#include <gdcmOrientation.h>
```

Public Types

- enum [OrientationType](#) {
 [UNKNOWN](#),
 [AXIAL](#),
 [CORONAL](#),
 [SAGITTAL](#),
 [OBLIQUE](#) }

Public Member Functions

- [Orientation](#) ()
- [~Orientation](#) ()
- void [Print](#) (std::ostream &) const
 Print.

Static Public Member Functions

- static const char * [GetLabel](#) ([OrientationType](#) type)
 Return the label of an Orientation.
- static double [GetObliquityThresholdCosineValue](#) ()
- static [OrientationType](#) [GetType](#) (const double dircos[6])
- static void [SetObliquityThresholdCosineValue](#) (double val)
 ObliquityThresholdCosineValue stuff.

Static Protected Member Functions

- static char [GetMajorAxisFromPatientRelativeDirectionCosine](#) (double x, double y, double z)

Friends

- std::ostream & [operator<<](#) (std::ostream &_os, const [Orientation](#) &o)

25.179.1 Detailed Description

class to handle [Orientation](#)

25.179.2 Member Enumeration Documentation

25.179.2.1 enum gdcm::Orientation::OrientationType

Enumerator

UNKNOWN
AXIAL
CORONAL
SAGITTAL
OBLIQUE

25.179.3 Constructor & Destructor Documentation

25.179.3.1 gdcm::Orientation::Orientation ()

25.179.3.2 gdcm::Orientation::~~Orientation ()

25.179.4 Member Function Documentation

25.179.4.1 static const char* gdcm::Orientation::GetLabel (OrientationType type) [static]

Return the label of an [Orientation](#).

25.179.4.2 static char gdcm::Orientation::GetMajorAxisFromPatientRelativeDirectionCosine (double x, double y, double z) [static], [protected]

25.179.4.3 static double gdcm::Orientation::GetObliquityThresholdCosineValue () [static]

25.179.4.4 static OrientationType gdcm::Orientation::GetType (const double dircos[6]) [static]

Return the type of orientation from a direction cosines Input is an array of 6 double

25.179.4.5 void gdcm::Orientation::Print (std::ostream &) const

Print.

Referenced by `gdcm::operator<<()`.

25.179.4.6 static void gdcm::Orientation::SetObliquityThresholdCosineValue (double val) [static]

ObliquityThresholdCosineValue stuff.

25.179.5 Friends And Related Function Documentation

25.179.5.1 std::ostream& operator<< (std::ostream &_os, const Orientation &o) [friend]

The documentation for this class was generated from the following file:

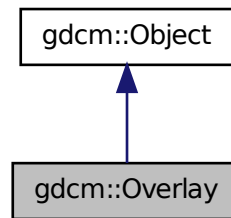
- [gdcmOrientation.h](#)

25.180 gdcm::Overlay Class Reference

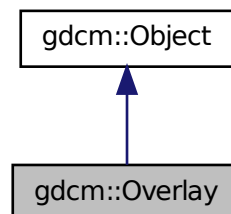
[Overlay](#) class.

```
#include <gdcmOverlay.h>
```

Inheritance diagram for gdcm::Overlay:



Collaboration diagram for gdcm::Overlay:



Public Types

- enum [OverlayType](#) {
 [Invalid](#) = 0,
 [Graphics](#) = 1,
 [ROI](#) = 2 }

Public Member Functions

- [Overlay](#) ()
- [Overlay](#) ([Overlay](#) const &ov)
- [~Overlay](#) ()

- void [Decode](#) (std::istream &is, std::ostream &os)
Do not use.
- void [Decompress](#) (std::ostream &os) const
Decode the internal OverlayData (packed bits) into unpacked representation.
- unsigned short [GetBitPosition](#) () const
return bit position
- unsigned short [GetBitsAllocated](#) () const
return bits allocated
- bool [GetBuffer](#) (char *buffer) const
Get the raw (packed bits) Overlay Data:
- unsigned short [GetColumns](#) () const
get columns
- const char * [GetDescription](#) () const
get description
- unsigned short [GetGroup](#) () const
Get Group number.
- const signed short * [GetOrigin](#) () const
get origin
- const [ByteValue](#) & [GetOverlayData](#) () const
- unsigned short [GetRows](#) () const
get rows
- const char * [GetType](#) () const
get type
- [OverlayType](#) [GetTypeAsEnum](#) () const
- bool [GetUnpackBuffer](#) (unsigned char *buffer) const
Do not use.
- bool [GetUnpackBuffer](#) (char *buffer, size_t len) const
- size_t [GetUnpackBufferLength](#) () const
- bool [GrabOverlayFromPixelData](#) ([DataSet](#) const &ds)
- bool [IsEmpty](#) () const
Return whether or not the Overlay is empty:
- bool [IsInPixelData](#) () const
return if the Overlay is stored in the pixel data or not
- void [IsInPixelData](#) (bool b)
Set whether or no the OverlayData is in the Pixel Data:
- bool [IsZero](#) () const
return true if all bits are set to 0
- void [Print](#) (std::ostream &) const
Print.
- void [SetBitPosition](#) (unsigned short bitposition)
set bit position
- void [SetBitsAllocated](#) (unsigned short bitsallocated)
set bits allocated
- void [SetColumns](#) (unsigned short columns)
set columns
- void [SetDescription](#) (const char *description)
set description

- void [SetFrameOrigin](#) (unsigned short frameorigin)
set frame origin
- void [SetGroup](#) (unsigned short group)
Set Group number.
- void [SetNumberOfFrames](#) (unsigned int numberofframes)
set number of frames
- void [SetOrigin](#) (const signed short origin[2])
set origin
- void [SetOverlay](#) (const char *array, size_t length)
set overlay from byte array + length
- void [SetRows](#) (unsigned short rows)
set rows
- void [SetType](#) (const char *type)
set type
- void [Update](#) (const [DataElement](#) &de)
Update overlay from data element de:

Static Public Member Functions

- static const char * [GetOverlayTypeAsString](#) ([OverlayType](#) ot)
- static [OverlayType](#) [GetOverlayTypeFromString](#) (const char *)

Additional Inherited Members

25.180.1 Detailed Description

[Overlay](#) class.

Note

see [AreOverlaysInPixelData](#)

Todo Is there actually any way to recognize an overlay ? On images with multiple overlay I do not see any way to differentiate them (other than the group tag).

Example:

25.180.2 Member Enumeration Documentation

25.180.2.1 enum [gdcm::Overlay::OverlayType](#)

Enumerator

Invalid

Graphics

ROI

25.180.3 Constructor & Destructor Documentation

25.180.3.1 `gdcm::Overlay::Overlay ()`

25.180.3.2 `gdcm::Overlay::~~Overlay ()`

25.180.3.3 `gdcm::Overlay::Overlay (Overlay const & ov)`

25.180.4 Member Function Documentation

25.180.4.1 `void gdcm::Overlay::Decode (std::istream & is, std::ostream & os)`

Do not use.

25.180.4.2 `void gdcm::Overlay::Decompress (std::ostream & os) const`

Decode the internal OverlayData (packed bits) into unpacked representation.

25.180.4.3 `unsigned short gdcm::Overlay::GetBitPosition () const`

return bit position

25.180.4.4 `unsigned short gdcm::Overlay::GetBitsAllocated () const`

return bits allocated

25.180.4.5 `bool gdcm::Overlay::GetBuffer (char * buffer) const`

Get the raw (packed bits) [Overlay](#) Data:

25.180.4.6 `unsigned short gdcm::Overlay::GetColumns () const`

get columns

25.180.4.7 `const char* gdcm::Overlay::GetDescription () const`

get description

25.180.4.8 `unsigned short gdcm::Overlay::GetGroup () const`

Get Group number.

25.180.4.9 `const signed short* gdcm::Overlay::GetOrigin () const`

get origin

25.180.4.10 `const ByteValue& gdcm::Overlay::GetOverlayData () const`

Return the [Overlay](#) Data as [ByteValue](#): Not thread safe

25.180.4.11 `static const char* gdcm::Overlay::GetOverlayTypeAsString (OverlayType ot) [static]`

25.180.4.12 `static OverlayType gdcm::Overlay::GetOverlayTypeFromString (const char *) [static]`

25.180.4.13 `unsigned short gdcm::Overlay::GetRows () const`

get rows

25.180.4.14 `const char* gdcm::Overlay::GetType () const`

get type

25.180.4.15 `OverlayType gdcm::Overlay::GetTypeAsEnum () const`

25.180.4.16 `bool gdcm::Overlay::GetUnpackBuffer (unsigned char * buffer) const`

Do not use.

25.180.4.17 `bool gdcm::Overlay::GetUnpackBuffer (char * buffer, size_t len) const`

Retrieve the unpack buffer for [Overlay](#). This is an error if the size if below [GetUnpackBufferLength\(\)](#)

25.180.4.18 `size_t gdcm::Overlay::GetUnpackBufferLength () const`

Retrieve the size of the buffer needed to hold the [Overlay](#) as specified by Col & Row parameters

25.180.4.19 `bool gdcm::Overlay::GrabOverlayFromPixelData (DataSet const & ds)`

25.180.4.20 `bool gdcm::Overlay::IsEmpty () const`

Return whether or not the [Overlay](#) is empty:

25.180.4.21 `bool gdcm::Overlay::IsInPixelData () const`

return if the [Overlay](#) is stored in the pixel data or not

25.180.4.22 `void gdcm::Overlay::IsInPixelData (bool b)`

Set wether or no the OverlayData is in the Pixel Data:

25.180.4.23 `bool gdcm::Overlay::IsZero () const`

return true if all bits are set to 0

25.180.4.24 void gdcmm::Overlay::Print (std::ostream &) const [virtual]

Print.

Reimplemented from [gdcmm::Object](#).

25.180.4.25 void gdcmm::Overlay::SetBitPosition (unsigned short *bitposition*)

set bit position

25.180.4.26 void gdcmm::Overlay::SetBitsAllocated (unsigned short *bitsallocated*)

set bits allocated

25.180.4.27 void gdcmm::Overlay::SetColumns (unsigned short *columns*)

set columns

25.180.4.28 void gdcmm::Overlay::SetDescription (const char * *description*)

set description

25.180.4.29 void gdcmm::Overlay::SetFrameOrigin (unsigned short *frameorigin*)

set frame origin

25.180.4.30 void gdcmm::Overlay::SetGroup (unsigned short *group*)

Set Group number.

25.180.4.31 void gdcmm::Overlay::SetNumberOfFrames (unsigned int *numberofframes*)

set number of frames

25.180.4.32 void gdcmm::Overlay::SetOrigin (const signed short *origin*[2])

set origin

25.180.4.33 void gdcmm::Overlay::SetOverlay (const char * *array*, size_t *length*)

set overlay from byte array + length

25.180.4.34 void gdcmm::Overlay::SetRows (unsigned short *rows*)

set rows

25.180.4.35 void `gdcm::Overlay::SetType` (const char * *type*)

set type

25.180.4.36 void `gdcm::Overlay::Update` (const `DataElement` & *de*)

Update overlay from data element *de*:

The documentation for this class was generated from the following file:

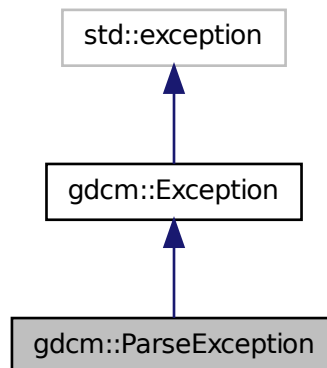
- [gdcmOverlay.h](#)

25.181 `gdcm::ParseException` Class Reference

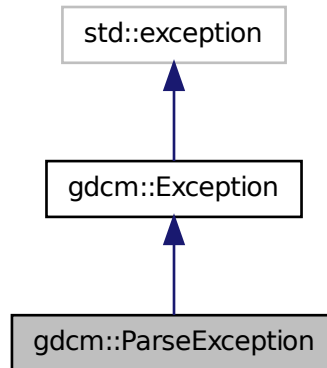
[ParseException](#) Standard exception handling object.

```
#include <gdcmParseException.h>
```

Inheritance diagram for `gdcm::ParseException`:



Collaboration diagram for gdcm::ParseException:



Public Member Functions

- [ParseException](#) ()
- virtual [~ParseException](#) () throw ()
- const [DataElement](#) & [GetLastElement](#) () const
- [ParseException](#) & [operator=](#) (const [ParseException](#) &orig)
- void [SetLastElement](#) ([DataElement](#) &de)

25.181.1 Detailed Description

[ParseException](#) Standard exception handling object.

25.181.2 Constructor & Destructor Documentation

25.181.2.1 `gdcm::ParseException::ParseException ()` `[inline]`

25.181.2.2 `virtual gdcm::ParseException::~~ParseException () throw ()` `[inline], [virtual]`

25.181.3 Member Function Documentation

25.181.3.1 `const DataElement& gdcm::ParseException::GetLastElement () const` `[inline]`

25.181.3.2 `ParseException& gdcm::ParseException::operator= (const ParseException & orig)` `[inline]`

Assignment operator.

25.181.3.3 void `gdcmm::ParseException::SetLastElement (DataElement & de)` `[inline]`

Equivalence operator.

Referenced by `gdcmm::Fragment::ReadBacktrack()`, and `gdcmm::Fragment::ReadValue()`.

The documentation for this class was generated from the following file:

- [gdcmmParseException.h](#)

25.182 gdcmm::Parser Class Reference

[Parser](#) ala XML_Parser from expat (SAX)

```
#include <gdcmmParser.h>
```

Public Types

- typedef void(* [EndElementHandler](#))(void *userData, const [Tag](#) &name)
- enum [ErrorType](#) {
[NoError](#),
[NoMemoryError](#),
[SyntaxError](#),
[NoElementsError](#),
[TagMismatchError](#),
[DuplicateAttributeError](#),
[JunkAfterDocElementError](#),
[UndefinedEntityError](#),
[UnexpectedStateError](#) }
- typedef void(* [StartElementHandler](#))(void *userData, const [Tag](#) &tag, const char *atts[])

Public Member Functions

- [Parser](#) ()
- [~Parser](#) ()
- unsigned long [GetCurrentByteIndex](#) () const
- [ErrorType](#) [GetErrorCode](#) () const
- void * [GetUserData](#) () const
- bool [Parse](#) (const char *s, int len, bool isFinal)
- void [SetElementHandler](#) ([StartElementHandler](#) start, [EndElementHandler](#) end)
- void [SetUserData](#) (void *userData)

Static Public Member Functions

- static const char * [GetErrorString](#) ([ErrorType](#) const &err)

Protected Member Functions

- char * [GetBuffer](#) (int len)
- bool [ParseBuffer](#) (int len, bool isFinal)
- [ErrorType](#) [Process](#) ()

25.182.1 Detailed Description

[Parser](#) ala XML_Parser from expat (SAX)

Detailed description here

Note

Simple API for DICOM

25.182.2 Member Typedef Documentation

25.182.2.1 `typedef void(* gdcm::Parser::EndElementHandler)(void *userData, const Tag &name)`

25.182.2.2 `typedef void(* gdcm::Parser::StartElementHandler)(void *userData, const Tag &tag, const char *atts[])`

25.182.3 Member Enumeration Documentation

25.182.3.1 `enum gdcm::Parser::ErrorType`

Enumerator

NoError

NoMemoryError

SyntaxError

NoElementsError

TagMismatchError

DuplicateAttributeError

JunkAfterDocElementError

UndefinedEntityError

UnexpectedStateError

25.182.4 Constructor & Destructor Documentation

25.182.4.1 `gdcm::Parser::Parser () [inline]`

25.182.4.2 `gdcm::Parser::~~Parser () [inline]`

25.182.5 Member Function Documentation

25.182.5.1 `char* gdcm::Parser::GetBuffer (int len) [protected]`

25.182.5.2 `unsigned long gdcm::Parser::GetCurrentByteIndex () const`

25.182.5.3 `ErrorType gdcm::Parser::GetErrorCode () const`

25.182.5.4 `static const char* gdcm::Parser::GetErrorString (ErrorType const & err) [static]`

25.182.5.5 `void* gdcm::Parser::GetUserData () const`

25.182.5.6 `bool gdcM::Parser::Parse (const char * s, int len, bool isFinal)`

25.182.5.7 `bool gdcM::Parser::ParseBuffer (int len, bool isFinal)` [protected]

25.182.5.8 `ErrorType gdcM::Parser::Process ()` [protected]

25.182.5.9 `void gdcM::Parser::SetElementHandler (StartElementHandler start, EndElementHandler end)`

25.182.5.10 `void gdcM::Parser::SetUserData (void * userData)`

The documentation for this class was generated from the following file:

- [gdcMParser.h](#)

25.183 gdcM::Patient Class Reference

See PS 3.3 - 2007 DICOM MODEL OF THE REAL-WORLD, p 54.

```
#include <gdcMPatient.h>
```

Public Member Functions

- [Patient \(\)](#)

25.183.1 Detailed Description

See PS 3.3 - 2007 DICOM MODEL OF THE REAL-WORLD, p 54.

25.183.2 Constructor & Destructor Documentation

25.183.2.1 `gdcM::Patient::Patient ()` [inline]

The documentation for this class was generated from the following file:

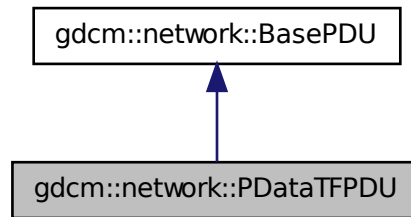
- [gdcMPatient.h](#)

25.184 gdcM::network::PDataTFPDU Class Reference

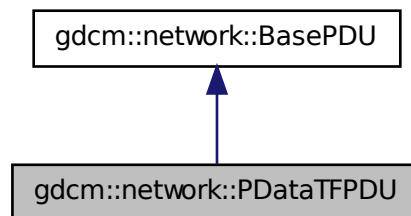
[PDataTFPDU Table](#) 9-22 P-DATA-TF PDU FIELDS.

```
#include <gdcMPDataTFPDU.h>
```

Inheritance diagram for gdcmm::network::PDataTFPDU:



Collaboration diagram for gdcmm::network::PDataTFPDU:



Public Types

- typedef std::vector
 < [PresentationDataValue](#) >
 ::size_type [SizeType](#)

Public Member Functions

- [PDataTFPDU](#) ()
- void [AddPresentationDataValue](#) ([PresentationDataValue](#) const &pdv)
- [SizeType](#) [GetNumberOfPresentationDataValues](#) () const
- [PresentationDataValue](#) const & [GetPresentationDataValue](#) ([SizeType](#) i) const
- bool [IsLastFragment](#) () const
- void [Print](#) (std::ostream &os) const
- std::istream & [Read](#) (std::istream &is)
- size_t [Size](#) () const
- const std::ostream & [Write](#) (std::ostream &os) const

Protected Member Functions

- `std::istream & ReadInto (std::istream &is, std::ostream &os)`

25.184.1 Detailed Description

[PDataTFPDU Table](#) 9-22 P-DATA-TF PDU FIELDS.

25.184.2 Member Typedef Documentation

25.184.2.1 `typedef std::vector<PresentationDataValue>::size_type gdcmm::network::PDataTFPDU::SizeType`

25.184.3 Constructor & Destructor Documentation

25.184.3.1 `gdcmm::network::PDataTFPDU::PDataTFPDU ()`

25.184.4 Member Function Documentation

25.184.4.1 `void gdcmm::network::PDataTFPDU::AddPresentationDataValue (PresentationDataValue const & pdv)`
[inline]

25.184.4.2 `SizeType gdcmm::network::PDataTFPDU::GetNumberOfPresentationDataValues () const` [inline]

25.184.4.3 `PresentationDataValue const& gdcmm::network::PDataTFPDU::GetPresentationDataValue (SizeType i) const`
[inline]

25.184.4.4 `bool gdcmm::network::PDataTFPDU::IsLastFragment () const` [virtual]

Implements [gdcmm::network::BasePDU](#).

25.184.4.5 `void gdcmm::network::PDataTFPDU::Print (std::ostream & os) const` [virtual]

Implements [gdcmm::network::BasePDU](#).

25.184.4.6 `std::istream& gdcmm::network::PDataTFPDU::Read (std::istream & is)` [virtual]

Implements [gdcmm::network::BasePDU](#).

25.184.4.7 `std::istream& gdcmm::network::PDataTFPDU::ReadInto (std::istream & is, std::ostream & os)` [protected]

25.184.4.8 `size_t gdcmm::network::PDataTFPDU::Size () const` [virtual]

Implements [gdcmm::network::BasePDU](#).

25.184.4.9 `const std::ostream& gdcmm::network::PDataTFPDU::Write (std::ostream & os) const` [virtual]

Implements [gdcmm::network::BasePDU](#).

The documentation for this class was generated from the following file:

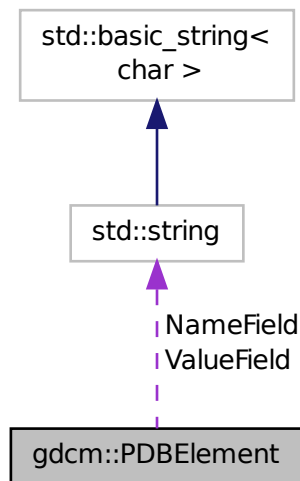
- [gdcmPDataTFPDU.h](#)

25.185 gdcm::PDBelement Class Reference

Class to represent a PDB [Element](#).

```
#include <gdcmPDBelement.h>
```

Collaboration diagram for gdcm::PDBelement:



Public Member Functions

- [PDBelement](#) ()
- const char * [GetName](#) () const
Set/Get Name.
- const char * [GetValue](#) () const
Set/Get Value.
- bool [operator==](#) (const [PDBelement](#) &de) const
- void [SetName](#) (const char *name)
- void [SetValue](#) (const char *value)

Protected Attributes

- std::string [NameField](#)
- std::string [ValueField](#)

Friends

- `std::ostream & operator<< (std::ostream &os, const PDBElement &val)`

25.185.1 Detailed Description

Class to represent a PDB [Element](#).

See Also

[PDBHeader](#)

25.185.2 Constructor & Destructor Documentation

25.185.2.1 `gdcm::PDBElement::PDBElement ()` `[inline]`

25.185.3 Member Function Documentation

25.185.3.1 `const char* gdcm::PDBElement::GetName () const` `[inline]`

Set/Get Name.

25.185.3.2 `const char* gdcm::PDBElement::GetValue () const` `[inline]`

Set/Get [Value](#).

25.185.3.3 `bool gdcm::PDBElement::operator== (const PDBElement & de) const` `[inline]`

References [NameField](#), and [ValueField](#).

25.185.3.4 `void gdcm::PDBElement::SetName (const char * name)` `[inline]`

25.185.3.5 `void gdcm::PDBElement::SetValue (const char * value)` `[inline]`

25.185.4 Friends And Related Function Documentation

25.185.4.1 `std::ostream& operator<< (std::ostream & os, const PDBElement & val)` `[friend]`

25.185.5 Member Data Documentation

25.185.5.1 `std::string gdcm::PDBElement::NameField` `[protected]`

Referenced by `gdcm::operator<<()`, and `operator==()`.

25.185.5.2 `std::string gdcm::PDBElement::ValueField` `[protected]`

Referenced by `gdcm::operator<<()`, and `operator==()`.

The documentation for this class was generated from the following file:

- [gdcmPDBElement.h](#)

25.186 gdcm::PDBHeader Class Reference

Class for [PDBHeader](#).

```
#include <gdcmPDBHeader.h>
```

Public Member Functions

- [PDBHeader](#) ()
- [~PDBHeader](#) ()
- bool [FindPDBElementByName](#) (const char *name)
Return true if the PDB element matching name is found or not.
- const [PDBElement](#) & [GetPDBElementByName](#) (const char *name)
- bool [LoadFromDataElement](#) ([DataElement](#) const &de)
Load the PDB Header from a [DataElement](#) of a [DataSet](#).
- void [Print](#) (std::ostream &os) const
Print.

Static Public Member Functions

- static const [PrivateTag](#) & [GetPDBInfoTag](#) ()
Return the Private [Tag](#) where the PDB header is stored within a DICOM [DataSet](#).

Protected Member Functions

- const [PDBElement](#) & [GetPDBEEnd](#) () const

Friends

- std::ostream & [operator<<](#) (std::ostream &_os, const [PDBHeader](#) &d)

25.186.1 Detailed Description

Class for [PDBHeader](#).

GEMS MR [Image](#) have an [Attribute](#) (0025,1b,GEMS_SERS_01) which store the Acquisition parameter of the MR [Image](#). It is compressed and can therefore not be used as is. This class de-encapsulated the Protocol Data Block and allow users to query element by name.

Warning

Everything you do with this code is at your own risk, since decoding process was not written from specification documents.

: the API of this class might change.

See Also

[CSAHeader](#)

25.186.2 Constructor & Destructor Documentation

25.186.2.1 `gdcm::PDBHeader::PDBHeader ()` `[inline]`

25.186.2.2 `gdcm::PDBHeader::~~PDBHeader ()` `[inline]`

25.186.3 Member Function Documentation

25.186.3.1 `bool gdcm::PDBHeader::FindPDBElementByName (const char * name)`

Return true if the PDB element matching name is found or not.

25.186.3.2 `const PDBElement& gdcm::PDBHeader::GetPDBEEnd () const` `[protected]`

25.186.3.3 `const PDBElement& gdcm::PDBHeader::GetPDBElementByName (const char * name)`

Lookup in the PDB header if a PDB element match the name 'name':

Warning

Case Sensitive

25.186.3.4 `static const PrivateTag& gdcm::PDBHeader::GetPDBInfoTag ()` `[static]`

Return the Private [Tag](#) where the PDB header is stored within a DICOM [DataSet](#).

25.186.3.5 `bool gdcm::PDBHeader::LoadFromDataElement (DataElement const & de)`

Load the PDB Header from a [DataElement](#) of a [DataSet](#).

25.186.3.6 `void gdcm::PDBHeader::Print (std::ostream & os) const`

Print.

Referenced by `gdcm::operator<<()`.

25.186.4 Friends And Related Function Documentation

25.186.4.1 `std::ostream& operator<< (std::ostream & _os, const PDBHeader & d)` `[friend]`

The documentation for this class was generated from the following file:

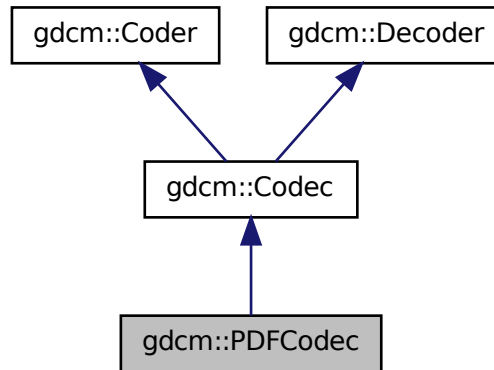
- [gdcmPDBHeader.h](#)

25.187 gdcm::PDFCodec Class Reference

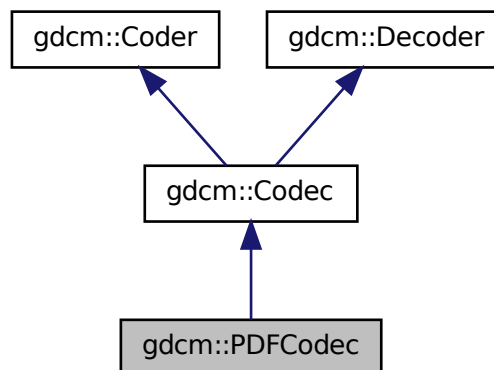
[PDFCodec](#) class.

```
#include <gdcmPDFCodec.h>
```

Inheritance diagram for gdcm::PDFCodec:



Collaboration diagram for gdcm::PDFCodec:



Public Member Functions

- [PDFCodec](#) ()

- [~PDFCodec](#) ()
- bool [CanCode](#) ([TransferSyntax](#) const &) const
Return whether this coder support this transfer syntax (can code it)
- bool [CanDecode](#) ([TransferSyntax](#) const &) const
Return whether this decoder support this transfer syntax (can decode it)
- bool [Decode](#) ([DataElement](#) const &is, [DataElement](#) &os)
Decode.

Additional Inherited Members

25.187.1 Detailed Description

[PDFCodec](#) class.

25.187.2 Constructor & Destructor Documentation

25.187.2.1 `gdcm::PDFCodec::PDFCodec ()`

25.187.2.2 `gdcm::PDFCodec::~~PDFCodec ()`

25.187.3 Member Function Documentation

25.187.3.1 `bool gdcm::PDFCodec::CanCode (TransferSyntax const &) const` `[inline], [virtual]`

Return whether this coder support this transfer syntax (can code it)

Implements [gdcm::Coder](#).

25.187.3.2 `bool gdcm::PDFCodec::CanDecode (TransferSyntax const &) const` `[inline], [virtual]`

Return whether this decoder support this transfer syntax (can decode it)

Implements [gdcm::Decoder](#).

25.187.3.3 `bool gdcm::PDFCodec::Decode (DataElement const & , DataElement &)` `[virtual]`

Decode.

Reimplemented from [gdcm::Decoder](#).

The documentation for this class was generated from the following file:

- [gdcmPDFCodec.h](#)

25.188 gdcm::network::PDUFactory Class Reference

[PDUFactory](#) basically, given an initial byte, construct the appropriate PDU. This way, the event loop doesn't have to know about all the different PDU types.

```
#include <gdcmPDUFactory.h>
```

Static Public Member Functions

- static [BasePDU](#) * [ConstructAbortPDU](#) ()
- static [BasePDU](#) * [ConstructPDU](#) (uint8_t itemtype)
- static [BasePDU](#) * [ConstructReleasePDU](#) ()
- static std::vector< [BasePDU](#) * > [CreateCEchoPDU](#) (const [ULConnection](#) &inConnection)
- static std::vector< [BasePDU](#) * > [CreateCFindPDU](#) (const [ULConnection](#) &inConnection, const [BaseRootQuery](#) *inRootQuery)
- static std::vector< [BasePDU](#) * > [CreateCMovePDU](#) (const [ULConnection](#) &inConnection, const [BaseRootQuery](#) *inRootQuery)
- static std::vector< [BasePDU](#) * > [CreateCStoreRQPDU](#) (const [ULConnection](#) &inConnection, const [File](#) &file)
- static std::vector< [BasePDU](#) * > [CreateCStoreRSPPDU](#) (const [DataSet](#) *inDataSet, const [BasePDU](#) *inPC)
- static [EEventID](#) [DetermineEventByPDU](#) (const [BasePDU](#) *inPDU)
- static std::vector< [PresentationDataValue](#) > [GetPDVs](#) (const std::vector< [BasePDU](#) * > &inDataPDUs)

25.188.1 Detailed Description

[PDUFactory](#) basically, given an initial byte, construct the appropriate PDU. This way, the event loop doesn't have to know about all the different PDU types.

25.188.2 Member Function Documentation

- 25.188.2.1 static [BasePDU](#)* [gdcn::network::PDUFactory::ConstructAbortPDU](#) () [static]
- 25.188.2.2 static [BasePDU](#)* [gdcn::network::PDUFactory::ConstructPDU](#) (uint8_t *itemtype*) [static]
- 25.188.2.3 static [BasePDU](#)* [gdcn::network::PDUFactory::ConstructReleasePDU](#) () [static]
- 25.188.2.4 static std::vector<[BasePDU](#)*> [gdcn::network::PDUFactory::CreateCEchoPDU](#) (const [ULConnection](#) & *inConnection*) [static]
- 25.188.2.5 static std::vector<[BasePDU](#)*> [gdcn::network::PDUFactory::CreateCFindPDU](#) (const [ULConnection](#) & *inConnection*, const [BaseRootQuery](#) * *inRootQuery*) [static]
- 25.188.2.6 static std::vector<[BasePDU](#)*> [gdcn::network::PDUFactory::CreateCMovePDU](#) (const [ULConnection](#) & *inConnection*, const [BaseRootQuery](#) * *inRootQuery*) [static]
- 25.188.2.7 static std::vector<[BasePDU](#)*> [gdcn::network::PDUFactory::CreateCStoreRQPDU](#) (const [ULConnection](#) & *inConnection*, const [File](#) & *file*) [static]
- 25.188.2.8 static std::vector<[BasePDU](#)*> [gdcn::network::PDUFactory::CreateCStoreRSPPDU](#) (const [DataSet](#) * *inDataSet*, const [BasePDU](#) * *inPC*) [static]
- 25.188.2.9 static [EEventID](#) [gdcn::network::PDUFactory::DetermineEventByPDU](#) (const [BasePDU](#) * *inPDU*) [static]
- 25.188.2.10 static std::vector<[PresentationDataValue](#)> [gdcn::network::PDUFactory::GetPDVs](#) (const std::vector< [BasePDU](#) * > & *inDataPDUs*) [static]

The documentation for this class was generated from the following file:

- [gdcnPDUFactory.h](#)

25.189 gdcm::PersonName Class Reference

[PersonName](#) class.

```
#include <gdcmPersonName.h>
```

Public Member Functions

- unsigned int [GetMaxLength](#) () const
- unsigned int [GetNumberOfComponents](#) () const
- void [Print](#) (std::ostream &os) const
- void [SetBlob](#) (const std::vector< char > &v)
- void [SetComponents](#) (const char *comp1="", const char *comp2="", const char *comp3="", const char *comp4="", const char *comp5="")
- void [SetComponents](#) (const char *components[])

Public Attributes

- char [Component](#) [[MaxNumberOfComponents](#)][[MaxLength](#)+1]

Static Public Attributes

- static const unsigned int [MaxLength](#) = 64
- static const unsigned int [MaxNumberOfComponents](#) = 5
- static const char [Padding](#) = ' '
- static const char [Separator](#) = '^'

25.189.1 Detailed Description

[PersonName](#) class.

25.189.2 Member Function Documentation

25.189.2.1 unsigned int gdcm::PersonName::GetMaxLength () const [\[inline\]](#)

25.189.2.2 unsigned int gdcm::PersonName::GetNumberOfComponents () const [\[inline\]](#)

25.189.2.3 void gdcm::PersonName::Print (std::ostream & os) const [\[inline\]](#)

25.189.2.4 void gdcm::PersonName::SetBlob (const std::vector< char > & v) [\[inline\]](#)

25.189.2.5 void gdcm::PersonName::SetComponents (const char * *comp1* = " ", const char * *comp2* = " ", const char * *comp3* = " ", const char * *comp4* = " ", const char * *comp5* = " ") [\[inline\]](#)

25.189.2.6 void gdcm::PersonName::SetComponents (const char * *components*[]) [\[inline\]](#)

25.189.3 Member Data Documentation

25.189.3.1 `char gdcm::PersonName::Component[MaxNumberOfComponents][MaxLength+1]`

25.189.3.2 `const unsigned int gdcm::PersonName::MaxLength = 64` `[static]`

25.189.3.3 `const unsigned int gdcm::PersonName::MaxNumberOfComponents = 5` `[static]`

25.189.3.4 `const char gdcm::PersonName::Padding = ''` `[static]`

25.189.3.5 `const char gdcm::PersonName::Separator = '^'` `[static]`

The documentation for this class was generated from the following file:

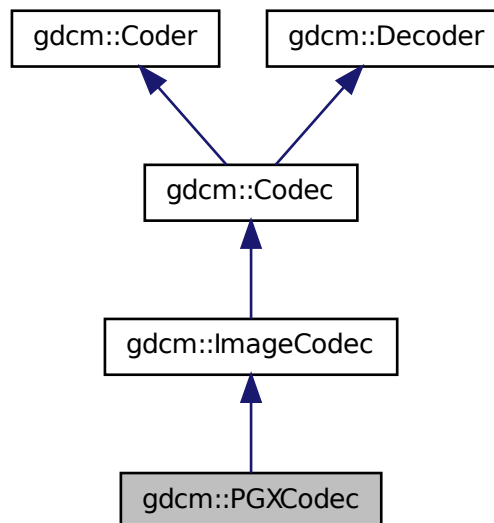
- [gdcmPersonName.h](#)

25.190 gdcm::PGXCodec Class Reference

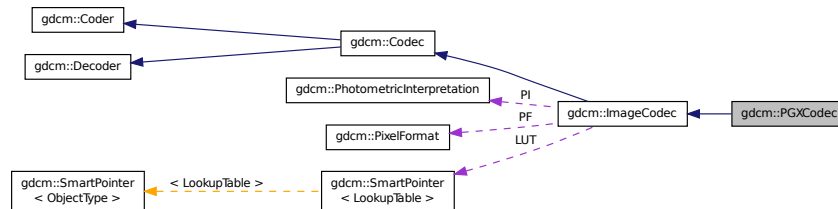
Class to do PGX See PGX as used in JPEG 2000 implementation and reference images.

```
#include <gdcmPGXCodec.h>
```

Inheritance diagram for gdcm::PGXCodec:



Collaboration diagram for `gdcm::PGXCodec`:



Public Member Functions

- [PGXCodec](#) ()
- [~PGXCodec](#) ()
- [bool CanCode](#) ([TransferSyntax](#) const &ts) const
Return whether this coder support this transfer syntax (can code it)
- [bool CanDecode](#) ([TransferSyntax](#) const &ts) const
Return whether this decoder support this transfer syntax (can decode it)
- [bool GetHeaderInfo](#) (std::istream &is, [TransferSyntax](#) &ts)
- [bool Read](#) (const char *filename, [DataElement](#) &out) const
- [bool Write](#) (const char *filename, const [DataElement](#) &out) const

Additional Inherited Members

25.190.1 Detailed Description

Class to do PGX See PGX as used in JPEG 2000 implementation and reference images.

25.190.2 Constructor & Destructor Documentation

25.190.2.1 `gdcm::PGXCodec::PGXCodec ()`

25.190.2.2 `gdcm::PGXCodec::~~PGXCodec ()`

25.190.3 Member Function Documentation

25.190.3.1 `bool gdcm::PGXCodec::CanCode (TransferSyntax const &) const` `[virtual]`

Return whether this coder support this transfer syntax (can code it)

Reimplemented from [gdcm::ImageCodec](#).

25.190.3.2 `bool gdcm::PGXCodec::CanDecode (TransferSyntax const &) const` `[virtual]`

Return whether this decoder support this transfer syntax (can decode it)

Reimplemented from [gdcm::ImageCodec](#).

25.190.3.3 `bool gdcm::PGXCodec::GetHeaderInfo (std::istream & is, TransferSyntax & ts) [virtual]`

Reimplemented from [gdcm::ImageCodec](#).

25.190.3.4 `bool gdcm::PGXCodec::Read (const char * filename, DataElement & out) const`

25.190.3.5 `bool gdcm::PGXCodec::Write (const char * filename, const DataElement & out) const`

The documentation for this class was generated from the following file:

- [gdcmPGXCodec.h](#)

25.191 gdcm::PhotometricInterpretation Class Reference

Class to represent an [PhotometricInterpretation](#).

```
#include <gdcmPhotometricInterpretation.h>
```

Public Types

- enum [PType](#) {
[UNKNOWN](#) = 0,
[MONOCHROME1](#),
[MONOCHROME2](#),
[PALETTE_COLOR](#),
[RGB](#),
[HSV](#),
[ARGB](#),
[CMYK](#),
[YBR_FULL](#),
[YBR_FULL_422](#),
[YBR_PARTIAL_422](#),
[YBR_PARTIAL_420](#),
[YBR_ICT](#),
[YBR_RCT](#),
[PI_END](#) }

Public Member Functions

- [PhotometricInterpretation](#) ([PType](#) pi=[UNKNOWN](#))
- unsigned short [GetSamplesPerPixel](#) () const
return the value for Sample Per Pixel associated with a particular Photometric Interpretation
- const char * [GetString](#) () const
- [PType](#) [GetType](#) () const
- bool [IsLossless](#) () const
- bool [IsLossy](#) () const
- bool [IsSameColorSpace](#) ([PhotometricInterpretation](#) const &pi) const
- operator [PType](#) () const

Static Public Member Functions

- static const char * [GetPIString](#) (PIType pi)
- static PIType [GetPIType](#) (const char *pi)
- static bool [IsRetired](#) (PIType pi)

Friends

- std::ostream & [operator<<](#) (std::ostream &os, const [PhotometricInterpretation](#) &pi)

25.191.1 Detailed Description

Class to represent an [PhotometricInterpretation](#).

Examples:

[CreateARGBImage.cxx](#), [CreateCMYKImage.cxx](#), [csa2img.cxx](#), [HelloVizWorld.cxx](#), and [iU22tomultisc.cxx](#).

25.191.2 Member Enumeration Documentation

25.191.2.1 enum gdcm::PhotometricInterpretation::PIType

Enumerator

```
UNKNOWN
MONOCHROME1
MONOCHROME2
PALETTE_COLOR
RGB
HSV
ARGB
CMYK
YBR_FULL
YBR_FULL_422
YBR_PARTIAL_422
YBR_PARTIAL_420
YBR_ICT
YBR_RCT
PI_END
```

25.191.3 Constructor & Destructor Documentation

25.191.3.1 `gdcm::PhotometricInterpretation::PhotometricInterpretation (PIType pi = UNKNOWN) [inline]`

25.191.4 Member Function Documentation

25.191.4.1 `static const char* gdcm::PhotometricInterpretation::GetPIString (PIType pi) [static]`

Referenced by `gdcm::operator<<()`.

25.191.4.2 static `PIType` `gdcm::PhotometricInterpretation::GetPIType (const char * pi)` `[static]`

25.191.4.3 unsigned short `gdcm::PhotometricInterpretation::GetSamplesPerPixel ()` `const`

return the value for Sample Per Pixel associated with a particular Photometric Interpretation

25.191.4.4 const char* `gdcm::PhotometricInterpretation::GetString ()` `const`

25.191.4.5 `PIType` `gdcm::PhotometricInterpretation::GetType ()` `const` `[inline]`

25.191.4.6 bool `gdcm::PhotometricInterpretation::IsLossless ()` `const`

25.191.4.7 bool `gdcm::PhotometricInterpretation::IsLossy ()` `const`

25.191.4.8 static bool `gdcm::PhotometricInterpretation::IsRetired (PIType pi)` `[static]`

25.191.4.9 bool `gdcm::PhotometricInterpretation::IsSameColorSpace (PhotometricInterpretation const & pi)` `const`

25.191.4.10 `gdcm::PhotometricInterpretation::operator PIType ()` `const` `[inline]`

25.191.5 Friends And Related Function Documentation

25.191.5.1 `std::ostream& operator<< (std::ostream & os, const PhotometricInterpretation & pi)` `[friend]`

The documentation for this class was generated from the following file:

- [gdcmPhotometricInterpretation.h](#)

25.192 gdcm::PixelFormat Class Reference

[PixelFormat](#).

```
#include <gdcmPixelFormat.h>
```

Public Types

- enum [ScalarType](#) {
[UINT8](#),
[INT8](#),
[UINT12](#),
[INT12](#),
[UINT16](#),
[INT16](#),
[UINT32](#),
[INT32](#),
[FLOAT16](#),
[FLOAT32](#),
[FLOAT64](#),
[SINGLEBIT](#),
[UNKNOWN](#) }

Public Member Functions

- [PixelFormat](#) (unsigned short samplesperpixel=1, unsigned short bitsallocated=8, unsigned short bitsstored=8, unsigned short highbit=7, unsigned short pixelrepresentation=0)
- [PixelFormat](#) ([ScalarType](#) st)
- [~PixelFormat](#) ()
- unsigned short [GetBitsAllocated](#) () const
BitsAllocated see [Tag](#) (0028,0100) US Bits Allocated.
- unsigned short [GetBitsStored](#) () const
BitsStored see [Tag](#) (0028,0101) US Bits Stored.
- unsigned short [GetHighBit](#) () const
HighBit see [Tag](#) (0028,0102) US High Bit.
- int64_t [GetMax](#) () const
return the max possible of the pixel
- int64_t [GetMin](#) () const
return the min possible of the pixel
- unsigned short [GetPixelRepresentation](#) () const
PixelRepresentation: 0 or 1, see [Tag](#) (0028,0103) US Pixel Representation.
- uint8_t [GetPixelSize](#) () const
- unsigned short [GetSamplesPerPixel](#) () const
- [ScalarType](#) [GetScalarType](#) () const
ScalarType does not take into account the sample per pixel.
- const char * [GetScalarTypeAsString](#) () const
- bool [IsValid](#) () const
return IsValid
- [operator ScalarType](#) () const
- bool [operator!=](#) ([ScalarType](#) st) const
- bool [operator!=](#) (const [PixelFormat](#) &pf) const
- bool [operator==](#) ([ScalarType](#) st) const
- bool [operator==](#) (const [PixelFormat](#) &pf) const
- void [Print](#) (std::ostream &os) const
Print.
- void [SetBitsAllocated](#) (unsigned short ba)
- void [SetBitsStored](#) (unsigned short bs)
- void [SetHighBit](#) (unsigned short hb)
- void [SetPixelRepresentation](#) (unsigned short pr)
- void [SetSamplesPerPixel](#) (unsigned short spp)
- void [SetScalarType](#) ([ScalarType](#) st)

Protected Member Functions

- bool [Validate](#) ()
When image with 24/24/23 was read, need to validate.

Friends

- class [Bitmap](#)
- std::ostream & [operator<<](#) (std::ostream &_os, const [PixelFormat](#) &pf)

25.192.1 Detailed Description

[PixelFormat](#).

Note

By default the Pixel [Type](#) will be instantiated with the following parameters:

- SamplesPerPixel : 1
- BitsAllocated : 8
- BitsStored : 8
- HighBit : 7
- PixelRepresentation : 0

Examples:

[CreateARGBImage.cxx](#), [CreateCMYKImage.cxx](#), [csa2img.cxx](#), [FixJAIBugJPEGLS.cxx](#), [GetJPEGSample-Precision.cxx](#), [iU22tomultisc.cxx](#), and [threadgdcm.cxx](#).

25.192.2 Member Enumeration Documentation

25.192.2.1 enum gdcm::PixelFormat::ScalarType

Enumerator

UINT8
INT8
UINT12
INT12
UINT16
INT16
UINT32
INT32
FLOAT16
FLOAT32
FLOAT64
SINGLEBIT
UNKNOWN

25.192.3 Constructor & Destructor Documentation

25.192.3.1 `gdcm::PixelFormat::PixelFormat (unsigned short samplesperpixel = 1, unsigned short bitsallocated = 8, unsigned short bitsstored = 8, unsigned short highbit = 7, unsigned short pixelrepresentation = 0)` `[inline]`, `[explicit]`

25.192.3.2 `gdcm::PixelFormat::PixelFormat (ScalarType st)`

25.192.3.3 `gdcm::PixelFormat::~~PixelFormat ()` `[inline]`

25.192.4 Member Function Documentation

25.192.4.1 unsigned short gdcm::PixelFormat::GetBitsAllocated () const [inline]

BitsAllocated see [Tag](#) (0028,0100) US Bits Allocated.

Examples:

[GetJPEGSamplePrecision.cxx](#).

25.192.4.2 unsigned short gdcm::PixelFormat::GetBitsStored () const [inline]

BitsStored see [Tag](#) (0028,0101) US Bits Stored.

Examples:

[GetJPEGSamplePrecision.cxx](#).

25.192.4.3 unsigned short gdcm::PixelFormat::GetHighBit () const [inline]

HighBit see [Tag](#) (0028,0102) US High Bit.

25.192.4.4 int64_t gdcm::PixelFormat::GetMax () const

return the max possible of the pixel

25.192.4.5 int64_t gdcm::PixelFormat::GetMin () const

return the min possible of the pixel

25.192.4.6 unsigned short gdcm::PixelFormat::GetPixelRepresentation () const [inline]

PixelRepresentation: 0 or 1, see [Tag](#) (0028,0103) US Pixel Representation.

25.192.4.7 uint8_t gdcm::PixelFormat::GetPixelSize () const

return the size of the pixel This is the number of words it would take to store one pixel

Warning

the return value takes into account the SamplesPerPixel
in the rare case when BitsAllocated == 12, the function assume word padding and value returned will be identical
as if BitsAllocated == 16

Examples:

[threadgdcm.cxx](#).

25.192.4.8 unsigned short gdcm::PixelFormat::GetSamplesPerPixel () const

Samples Per Pixel see (0028,0002) US Samples Per Pixel DICOM - only allows 1, 3 and 4 as valid value. Other value are undefined behavior.

Examples:

[threadgdcm.cxx](#).

25.192.4.9 ScalarType gdcm::PixelFormat::GetScalarType () const

ScalarType does not take into account the sample per pixel.

25.192.4.10 const char* gdcm::PixelFormat::GetScalarTypeAsString () const

25.192.4.11 bool gdcm::PixelFormat::IsValid () const

return IsValid

25.192.4.12 gdcm::PixelFormat::operator ScalarType () const [inline]

25.192.4.13 bool gdcm::PixelFormat::operator!= (ScalarType *st*) const [inline]

25.192.4.14 bool gdcm::PixelFormat::operator!= (const PixelFormat & *pf*) const [inline]

25.192.4.15 bool gdcm::PixelFormat::operator== (ScalarType *st*) const [inline]

25.192.4.16 bool gdcm::PixelFormat::operator== (const PixelFormat & *pf*) const [inline]

25.192.4.17 void gdcm::PixelFormat::Print (std::ostream & *os*) const

Print.

Referenced by gdcm::operator<<().

25.192.4.18 void gdcm::PixelFormat::SetBitsAllocated (unsigned short *ba*) [inline]

25.192.4.19 void gdcm::PixelFormat::SetBitsStored (unsigned short *bs*) [inline]

25.192.4.20 void gdcm::PixelFormat::SetHighBit (unsigned short *hb*) [inline]

25.192.4.21 void gdcm::PixelFormat::SetPixelRepresentation (unsigned short *pr*) [inline]

25.192.4.22 void gdcm::PixelFormat::SetSamplesPerPixel (unsigned short *spp*) [inline]

Examples:

[CreateARGBImage.cxx](#), [CreateCMYKImage.cxx](#), and [GenFakelImage.cxx](#).

References gdcmAssertMacro.

25.192.4.23 void `gdcm::PixelFormat::SetScalarType (ScalarType st)`

Set [PixelFormat](#) based only on the `ScalarType`

Warning

: You need to call `SetScalarType` *before* `SetSamplesPerPixel`

25.192.4.24 bool `gdcm::PixelFormat::Validate ()` [protected]

When image with 24/24/23 was read, need to validate.

Referenced by `gdcm::Bitmap::SetPixelFormat()`.

25.192.5 Friends And Related Function Documentation

25.192.5.1 friend class `Bitmap` [friend]

25.192.5.2 `std::ostream& operator<< (std::ostream &_os, const PixelFormat & pf)` [friend]

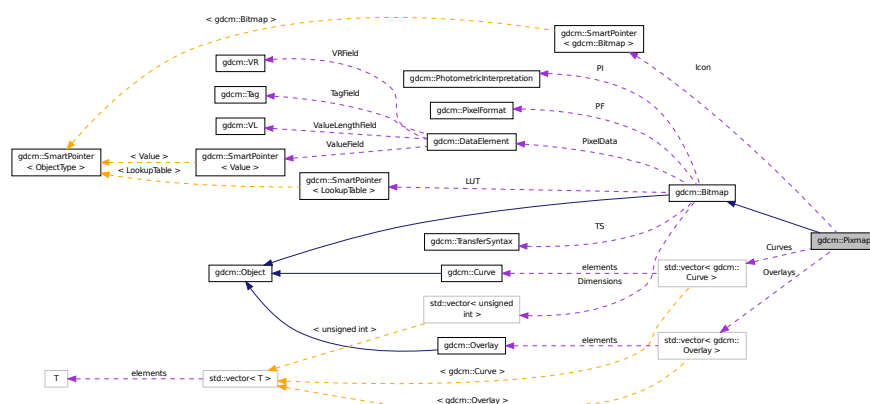
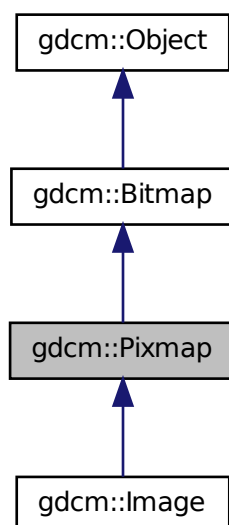
The documentation for this class was generated from the following file:

- [gdcmPixelFormat.h](#)

25.193 gdcm::Pixmap Class Reference

[Pixmap](#) class A bitmap based image. Used as parent for both `IconImage` and the main Pixel Data [Image](#) It does not contains any World Space information (IPP, IOP)

```
#include <gdcmPixmap.h>
```

- `Pixmap ()`
- `~Pixmap ()`
- `bool AreOverlaysInPixelData () const`
returns if Overlays are stored in the unused bit of the pixel data:
- `Curve & GetCurve (size_t i=0)`

Curve: group 50xx.

- const [Curve](#) & [GetCurve](#) (size_t i=0) const
- const [IconImage](#) & [GetIconImage](#) () const

Set/Get Icon Image.

- [IconImage](#) & [GetIconImage](#) ()
- size_t [GetNumberOfCurves](#) () const
- size_t [GetNumberOfOverlays](#) () const
- [Overlay](#) & [GetOverlay](#) (size_t i=0)

Overlay: group 60xx.

- const [Overlay](#) & [GetOverlay](#) (size_t i=0) const
- void [Print](#) (std::ostream &) const
- void [RemoveOverlay](#) (size_t i)
- void [SetIconImage](#) ([IconImage](#) const &ii)
- void [SetNumberOfCurves](#) (size_t n)
- void [SetNumberOfOverlays](#) (size_t n)

Protected Attributes

- std::vector< [Curve](#) > [Curves](#)
- [SmartPointer](#)< [IconImage](#) > [Icon](#)
- std::vector< [Overlay](#) > [Overlays](#)

Additional Inherited Members

25.193.1 Detailed Description

[Pixmap](#) class A bitmap based image. Used as parent for both [IconImage](#) and the main Pixel Data [Image](#) It does not contains any World Space information (IPP, IOP)

See Also

[PixmapReader](#)

25.193.2 Constructor & Destructor Documentation

25.193.2.1 `gdcm::Pixmap::Pixmap ()`

25.193.2.2 `gdcm::Pixmap::~~Pixmap ()`

25.193.3 Member Function Documentation

25.193.3.1 `bool gdcm::Pixmap::AreOverlaysInPixelData () const` `[virtual]`

returns if Overlays are stored in the unused bit of the pixel data:

Reimplemented from [gdcm::Bitmap](#).

25.193.3.2 `Curve& gdcm::Pixmap::GetCurve (size_t i = 0)` `[inline]`

[Curve](#): group 50xx.

25.193.3.3 `const Curve& gdcm::Pixmap::GetCurve (size_t i = 0) const` [inline]

25.193.3.4 `const IconImage& gdcm::Pixmap::GetIconImage () const` [inline]

Set/Get Icon [Image](#).

25.193.3.5 `IconImage& gdcm::Pixmap::GetIconImage ()` [inline]

25.193.3.6 `size_t gdcm::Pixmap::GetNumberOfCurves () const` [inline]

25.193.3.7 `size_t gdcm::Pixmap::GetNumberOfOverlays () const` [inline]

25.193.3.8 `Overlay& gdcm::Pixmap::GetOverlay (size_t i = 0)` [inline]

[Overlay](#): group 60xx.

25.193.3.9 `const Overlay& gdcm::Pixmap::GetOverlay (size_t i = 0) const` [inline]

25.193.3.10 `void gdcm::Pixmap::Print (std::ostream &) const` [virtual]

Reimplemented from [gdcm::Bitmap](#).

25.193.3.11 `void gdcm::Pixmap::RemoveOverlay (size_t i)` [inline]

25.193.3.12 `void gdcm::Pixmap::SetIconImage (IconImage const & ii)` [inline]

25.193.3.13 `void gdcm::Pixmap::SetNumberOfCurves (size_t n)` [inline]

25.193.3.14 `void gdcm::Pixmap::SetNumberOfOverlays (size_t n)` [inline]

25.193.4 Member Data Documentation

25.193.4.1 `std::vector<Curve> gdcm::Pixmap::Curves` [protected]

25.193.4.2 `SmartPointer<IconImage> gdcm::Pixmap::Icon` [protected]

25.193.4.3 `std::vector<Overlay> gdcm::Pixmap::Overlays` [protected]

The documentation for this class was generated from the following file:

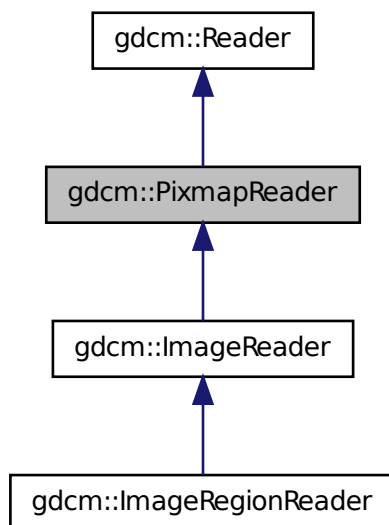
- [gdcmPixmap.h](#)

25.194 gdcm::PixmapReader Class Reference

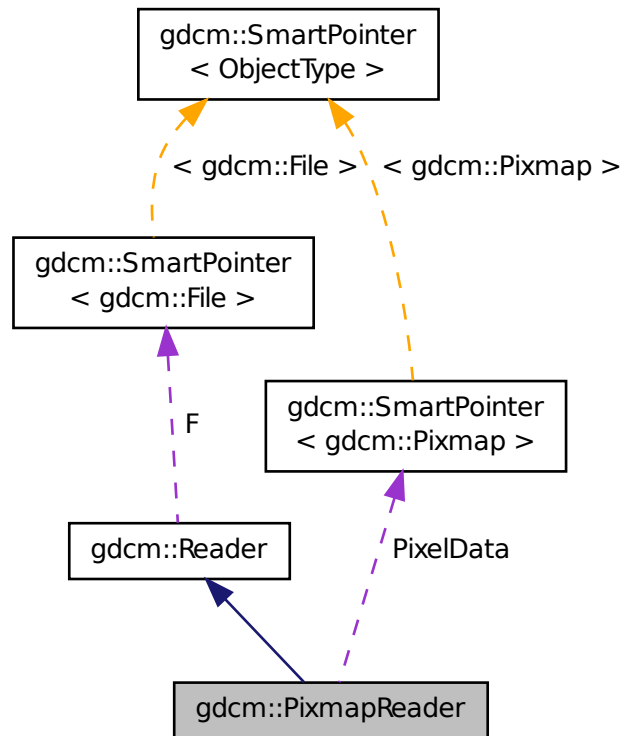
[PixmapReader](#).

```
#include <gdcmPixmapReader.h>
```

Inheritance diagram for `gdcm::PixmapReader`:



Collaboration diagram for gdcm::PixmapReader:



Public Member Functions

- [PixmapReader](#) ()
- virtual [~PixmapReader](#) ()
- const [Pixmap](#) & [GetPixmap](#) () const
Return the read image (need to call [Read\(\)](#) first)
- [Pixmap](#) & [GetPixmap](#) ()
- virtual bool [Read](#) ()

Protected Member Functions

- virtual bool [ReadACRNEMAIImage](#) ()
- virtual bool [ReadImage](#) ([MediaStorage](#) const &ms)

Protected Attributes

- [SmartPointer](#)< [Pixmap](#) > [PixelData](#)

25.194.1 Detailed Description

[PixmapReader](#).

Note

its role is to convert the DICOM [DataSet](#) into a [gdcm::Pixmap](#) representation By default it is also loading the lookup table and overlay when found as they impact the rendering of the image

See PS 3.3-2008, [Table C.7-11b](#) IMAGE PIXEL MACRO ATTRIBUTES for the list of attribute that belong to what gdcm calls a '[Pixmap](#)'

Warning

the API `ReadUpToTag` and `ReadSelectedTag`

See Also

[Pixmap](#)

25.194.2 Constructor & Destructor Documentation

25.194.2.1 `gdcm::PixmapReader::PixmapReader ()`

25.194.2.2 `virtual gdcm::PixmapReader::~~PixmapReader ()` `[virtual]`

25.194.3 Member Function Documentation

25.194.3.1 `const Pixmap& gdcm::PixmapReader::GetPixmap () const`

Return the read image (need to call [Read\(\)](#) first)

25.194.3.2 `Pixmap& gdcm::PixmapReader::GetPixmap ()`

25.194.3.3 `virtual bool gdcm::PixmapReader::Read ()` `[virtual]`

Read the DICOM image. There are two reason for failure:

1. The input filename is not DICOM
2. The input DICOM file does not contains an [Pixmap](#).

Reimplemented from [gdcm::Reader](#).

Reimplemented in [gdcm::ImageRegionReader](#), and [gdcm::ImageReader](#).

25.194.3.4 `virtual bool gdcm::PixmapReader::ReadACRNEMAIImage ()` `[protected]`, `[virtual]`

Reimplemented in [gdcm::ImageReader](#).

25.194.3.5 `virtual bool gdcm::PixmapReader::ReadImage (MediaStorage const & ms)` `[protected]`, `[virtual]`

Reimplemented in [gdcm::ImageReader](#).

25.194.4 Member Data Documentation

25.194.4.1 SmartPointer<Pixmap> gdcm::PixmapReader::PixelData [protected]

The documentation for this class was generated from the following file:

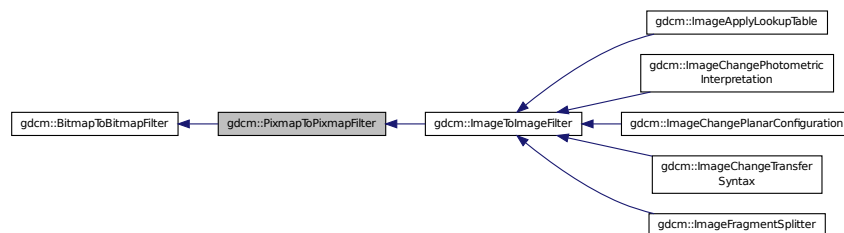
- [gdcmPixmapReader.h](#)

25.195 gdcm::PixmapToPixmapFilter Class Reference

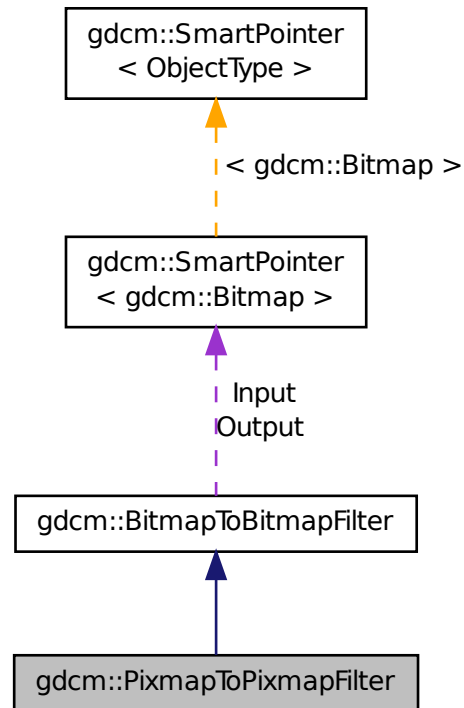
[PixmapToPixmapFilter](#) class Super class for all filter taking an image and producing an output image.

```
#include <gdcmPixmapToPixmapFilter.h>
```

Inheritance diagram for gdcm::PixmapToPixmapFilter:



Collaboration diagram for `gdcm::PixmapToPixmapFilter`:



Public Member Functions

- [PixmapToPixmapFilter \(\)](#)
- [~PixmapToPixmapFilter \(\)](#)
- [Pixmap & GetInput \(\)](#)
- [const Pixmap & GetOutput \(\) const](#)
Get Output image.
- [const Pixmap & GetOutputAsPixmap \(\) const](#)

Additional Inherited Members

25.195.1 Detailed Description

[PixmapToPixmapFilter](#) class Super class for all filter taking an image and producing an output image.

25.195.2 Constructor & Destructor Documentation

25.195.2.1 `gdcm::PixmapToPixmapFilter::PixmapToPixmapFilter ()`

25.195.2.2 `gdcm::PixmapToPixmapFilter::~~PixmapToPixmapFilter () [inline]`

25.195.3 Member Function Documentation

25.195.3.1 `Pixmap& gdcm::PixmapToPixmapFilter::GetInput ()`

25.195.3.2 `const Pixmap& gdcm::PixmapToPixmapFilter::GetOutput () const`

Get Output image.

25.195.3.3 `const Pixmap& gdcm::PixmapToPixmapFilter::GetOutputAsPixmap () const`

The documentation for this class was generated from the following file:

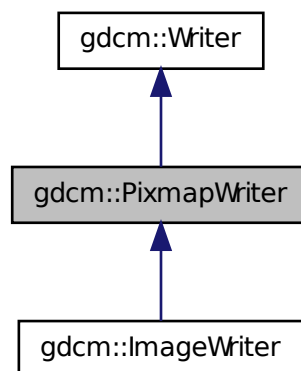
- [gdcmPixmapToPixmapFilter.h](#)

25.196 gdcm::PixmapWriter Class Reference

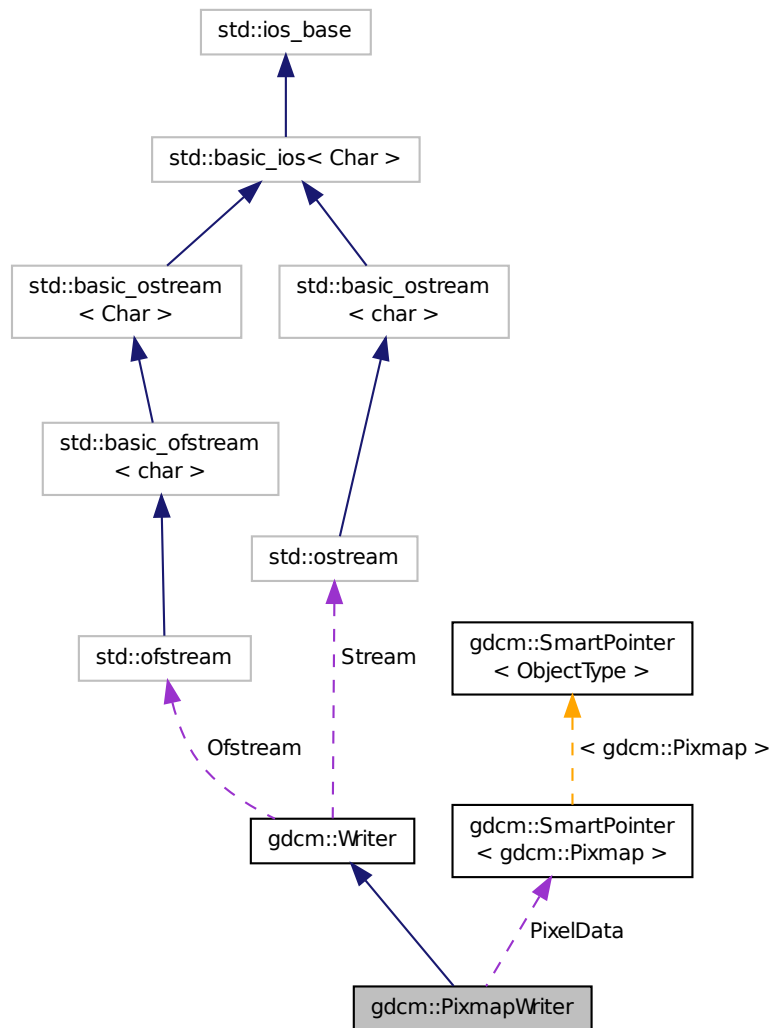
[PixmapWriter](#) This class will takes two inputs:

```
#include <gdcmPixmapWriter.h>
```

Inheritance diagram for `gdcm::PixmapWriter`:



Collaboration diagram for `gdcm::PixmapWriter`:



Public Member Functions

- `PixmapWriter ()`
- `~PixmapWriter ()`
- `virtual const Pixmap & GetImage () const`
- `virtual Pixmap & GetImage ()`
- `const Pixmap & GetPixmap () const`
- `Pixmap & GetPixmap ()`
- `virtual void SetImage (Pixmap const &img)`
- `void SetPixmap (Pixmap const &img)`
- `bool Write ()`

Write.

Protected Member Functions

- void [DolconImage](#) ([DataSet](#) &ds, [Pixmap](#) const &image)
- bool [PrepareWrite](#) ()

Protected Attributes

- [SmartPointer](#)< [Pixmap](#) > [PixelData](#)

25.196.1 Detailed Description

[PixmapWriter](#) This class will takes two inputs:

1. The DICOM [DataSet](#)
2. The [Image](#) input It will override any info from the [Image](#) over the [DataSet](#).

For instance when one read in a lossy compressed image and write out as unencapsulated (ie implicitly lossless) then some attribute are definitely needed to mark this dataset as Lossy (typically 0028,2114)

25.196.2 Constructor & Destructor Documentation

25.196.2.1 `gdcm::PixmapWriter::PixmapWriter ()`

25.196.2.2 `gdcm::PixmapWriter::~~PixmapWriter ()`

25.196.3 Member Function Documentation

25.196.3.1 `void gdcm::PixmapWriter::DolconImage (DataSet &ds, Pixmap const &image)` `[protected]`

25.196.3.2 `virtual const Pixmap& gdcm::PixmapWriter::GetImage () const` `[inline], [virtual]`

Set/Get [Pixmap](#) to be written It will overwrite anything [Pixmap](#) infos found in [DataSet](#) (see parent class to see how to pass dataset)

Reimplemented in [gdcm::ImageWriter](#).

25.196.3.3 `virtual Pixmap& gdcm::PixmapWriter::GetImage ()` `[inline], [virtual]`

Reimplemented in [gdcm::ImageWriter](#).

25.196.3.4 `const Pixmap& gdcm::PixmapWriter::GetPixmap () const` `[inline]`

25.196.3.5 `Pixmap& gdcm::PixmapWriter::GetPixmap ()` `[inline]`

25.196.3.6 `bool gdcm::PixmapWriter::PrepareWrite ()` `[protected]`

25.196.3.7 `virtual void gdcmm::PixmapWriter::SetImage (Pixmap const & img)` [virtual]

Examples:

[CompressImage.cxx](#), [GenFakeImage.cxx](#), [GetSubSequenceData.cxx](#), [HelloVizWorld.cxx](#), and [MergeTwoFiles.cxx](#).

25.196.3.8 `void gdcmm::PixmapWriter::SetPixmap (Pixmap const & img)`

25.196.3.9 `bool gdcmm::PixmapWriter::Write ()` [virtual]

Write.

Reimplemented from [gdcmm::Writer](#).

25.196.4 Member Data Documentation

25.196.4.1 `SmartPointer<Pixmap> gdcmm::PixmapWriter::PixelData` [protected]

The documentation for this class was generated from the following file:

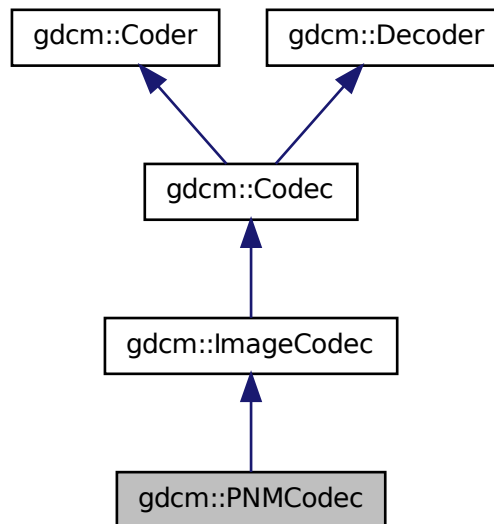
- [gdcmmPixmapWriter.h](#)

25.197 gdcmm::PNMCodec Class Reference

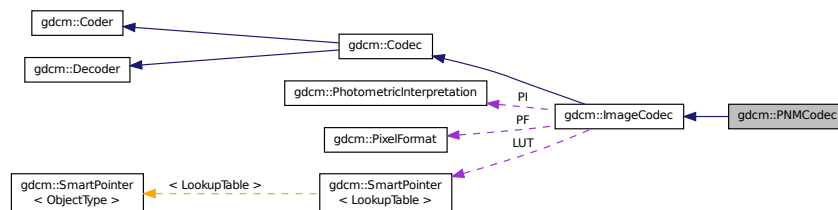
Class to do PNM PNM is the Portable anymap file format. The main web page can be found at: <http://netpbm.sourceforge.net/>.

```
#include <gdcmmPNMCodec.h>
```

Inheritance diagram for gdcm::PNMCodec:



Collaboration diagram for gdcm::PNMCodec:



Public Member Functions

- [PNMCodec](#) ()
- [~PNMCodec](#) ()
- bool [CanCode](#) ([TransferSyntax](#) const &ts) const
Return whether this coder support this transfer syntax (can code it)
- bool [CanDecode](#) ([TransferSyntax](#) const &ts) const
Return whether this decoder support this transfer syntax (can decode it)
- unsigned long [GetBufferLength](#) () const
- bool [GetHeaderInfo](#) (std::istream &is, [TransferSyntax](#) &ts)
- bool [Read](#) (const char *filename, [DataElement](#) &out) const
- void [SetBufferLength](#) (unsigned long l)

- bool [Write](#) (const char *filename, const [DataElement](#) &out) const

Additional Inherited Members

25.197.1 Detailed Description

Class to do PNM PNM is the Portable anymap file format. The main web page can be found at: <http://netpbm.sourceforge.net/>.

Note

Only support P5 & P6 PNM file (binary grayscale and binary rgb)

Examples:

[ExtractIconFromFile.cxx](#).

25.197.2 Constructor & Destructor Documentation

25.197.2.1 `gdcm::PNMCodec::PNMCodec ()`

25.197.2.2 `gdcm::PNMCodec::~~PNMCodec ()`

25.197.3 Member Function Documentation

25.197.3.1 `bool gdcm::PNMCodec::CanCode (TransferSyntax const &) const` `[virtual]`

Return whether this coder support this transfer syntax (can code it)

Reimplemented from [gdcm::ImageCodec](#).

25.197.3.2 `bool gdcm::PNMCodec::CanDecode (TransferSyntax const &) const` `[virtual]`

Return whether this decoder support this transfer syntax (can decode it)

Reimplemented from [gdcm::ImageCodec](#).

25.197.3.3 `unsigned long gdcm::PNMCodec::GetBufferLength () const` `[inline]`

25.197.3.4 `bool gdcm::PNMCodec::GetHeaderInfo (std::istream & is, TransferSyntax & ts)` `[virtual]`

Reimplemented from [gdcm::ImageCodec](#).

25.197.3.5 `bool gdcm::PNMCodec::Read (const char * filename, DataElement & out) const`

25.197.3.6 `void gdcm::PNMCodec::SetBufferLength (unsigned long l)` `[inline]`

25.197.3.7 `bool gdcm::PNMCodec::Write (const char * filename, const DataElement & out) const`

Examples:

[ExtractIconFromFile.cxx](#).

The documentation for this class was generated from the following file:

- [gdcmPNMCodec.h](#)

25.198 gdcm::Preamble Class Reference

DICOM [Preamble](#) (Part 10)

```
#include <gdcmPreamble.h>
```

Public Member Functions

- [Preamble](#) ()
- [Preamble](#) ([Preamble](#) const &)
- [~Preamble](#) ()
- void [Clear](#) ()
- void [Create](#) ()
- const char * [GetInternal](#) () const
- [VL GetLength](#) () const
- bool [IsEmpty](#) () const
- [Preamble](#) & [operator=](#) ([Preamble](#) const &)
- void [Print](#) (std::ostream &os) const
- std::istream & [Read](#) (std::istream &is)
- void [Remove](#) ()
- void [Valid](#) ()
- std::ostream const & [Write](#) (std::ostream &os) const

Protected Member Functions

- bool [IsValid](#) () const

Friends

- std::ostream & [operator<<](#) (std::ostream &_os, const [Preamble](#) &_val)

25.198.1 Detailed Description

DICOM [Preamble](#) (Part 10)

25.198.2 Constructor & Destructor Documentation

25.198.2.1 [gdcm::Preamble::Preamble](#) ()

25.198.2.2 [gdcm::Preamble::~~Preamble](#) ()

25.198.2.3 [gdcm::Preamble::Preamble](#) ([Preamble](#) const &) `[inline]`

25.198.3 Member Function Documentation

- 25.198.3.1 `void gdcM::Preamble::Clear ()`
- 25.198.3.2 `void gdcM::Preamble::Create ()`
- 25.198.3.3 `const char* gdcM::Preamble::GetInternal () const` `[inline]`
- 25.198.3.4 `VL gdcM::Preamble::GetLength () const` `[inline]`
- 25.198.3.5 `bool gdcM::Preamble::IsEmpty () const` `[inline]`
- 25.198.3.6 `bool gdcM::Preamble::IsValid () const` `[inline],[protected]`
- 25.198.3.7 `Preamble& gdcM::Preamble::operator= (Preamble const &)` `[inline]`
- 25.198.3.8 `void gdcM::Preamble::Print (std::ostream & os) const`
- 25.198.3.9 `std::istream& gdcM::Preamble::Read (std::istream & is)`
- 25.198.3.10 `void gdcM::Preamble::Remove ()`
- 25.198.3.11 `void gdcM::Preamble::Valid ()`
- 25.198.3.12 `std::ostream const& gdcM::Preamble::Write (std::ostream & os) const`

25.198.4 Friends And Related Function Documentation

- 25.198.4.1 `std::ostream& operator<< (std::ostream & _os, const Preamble & _val)` `[friend]`

The documentation for this class was generated from the following file:

- [gdcM_Preamble.h](#)

25.199 gdcM::PresentationContext Class Reference

[PresentationContext](#).

```
#include <gdcM_PresentationContext.h>
```

Public Types

- typedef
TransferSyntaxArrayType::size_type [SizeType](#)
- typedef std::vector< std::string > [TransferSyntaxArrayType](#)

Public Member Functions

- [PresentationContext](#) ()

- [PresentationContext](#) ([UIDs::TSName](#) asname, [UIDs::TSName](#) tsname=[UIDs::ImplicitVRLittleEndianDefaultTransferSyntaxforDICOM](#))
- void [AddTransferSyntax](#) (const char *tsstr)
- const char * [GetAbstractSyntax](#) () const
- [SizeType](#) [GetNumberOfTransferSyntaxes](#) () const
- uint8_t [GetPresentationContextID](#) () const
- const char * [GetTransferSyntax](#) ([SizeType](#) i) const
- bool [operator==](#) (const [PresentationContext](#) &pc) const
- void [Print](#) (std::ostream &os) const
- void [SetAbstractSyntax](#) (const char *as)
- void [SetPresentationContextID](#) (uint8_t id)

25.199.1 Detailed Description

[PresentationContext](#).

See Also

[PresentationContextAC](#) [PresentationContextRQ](#)

25.199.2 Member Typedef Documentation

25.199.2.1 `typedef TransferSyntaxArrayType::size_type gdcm::PresentationContext::SizeType`

25.199.2.2 `typedef std::vector<std::string> gdcm::PresentationContext::TransferSyntaxArrayType`

25.199.3 Constructor & Destructor Documentation

25.199.3.1 `gdcm::PresentationContext::PresentationContext ()`

25.199.3.2 `gdcm::PresentationContext::PresentationContext (UIDs::TSName asname, UIDs::TSName tsname = UIDs::ImplicitVRLittleEndianDefaultTransferSyntaxforDICOM)`

Initialize Presentation Context with AbstractSyntax set to asname and with a single [TransferSyntax](#) set to tsname (default to Implicit [VR](#) LittleEndian when not specified).

25.199.4 Member Function Documentation

25.199.4.1 `void gdcm::PresentationContext::AddTransferSyntax (const char * tsstr)`

25.199.4.2 `const char* gdcm::PresentationContext::GetAbstractSyntax () const` `[inline]`

25.199.4.3 `SizeType gdcm::PresentationContext::GetNumberOfTransferSyntaxes () const` `[inline]`

25.199.4.4 `uint8_t gdcm::PresentationContext::GetPresentationContextID () const`

25.199.4.5 `const char* gdcm::PresentationContext::GetTransferSyntax (SizeType i) const` `[inline]`

25.199.4.6 `bool gdcm::PresentationContext::operator== (const PresentationContext & pc) const` `[inline]`

25.199.4.7 void gdcmm::PresentationContext::Print (std::ostream & os) const

25.199.4.8 void gdcmm::PresentationContext::SetAbstractSyntax (const char * as) [inline]

25.199.4.9 void gdcmm::PresentationContext::SetPresentationContextID (uint8_t id)

The documentation for this class was generated from the following file:

- [gdcmmPresentationContext.h](#)

25.200 gdcmm::network::PresentationContextAC Class Reference

[PresentationContextAC](#) Table 9-18 PRESENTATION CONTEXT ITEM FIELDS.

```
#include <gdcmmPresentationContextAC.h>
```

Public Member Functions

- [PresentationContextAC](#) ()
- uint8_t [GetPresentationContextID](#) () const
- uint8_t [GetReason](#) () const
- [TransferSyntaxSub](#) const & [GetTransferSyntax](#) () const
- void [Print](#) (std::ostream &os) const
- std::istream & [Read](#) (std::istream &is)
- void [SetPresentationContextID](#) (uint8_t id)
- void [SetReason](#) (uint8_t r)
- void [SetTransferSyntax](#) ([TransferSyntaxSub](#) const &ts)
- size_t [Size](#) () const
- const std::ostream & [Write](#) (std::ostream &os) const

25.200.1 Detailed Description

[PresentationContextAC](#) Table 9-18 PRESENTATION CONTEXT ITEM FIELDS.

See Also

[PresentationContext](#)

25.200.2 Constructor & Destructor Documentation

25.200.2.1 gdcmm::network::PresentationContextAC::PresentationContextAC ()

25.200.3 Member Function Documentation

25.200.3.1 uint8_t gdcmm::network::PresentationContextAC::GetPresentationContextID () const [inline]

25.200.3.2 uint8_t gdcmm::network::PresentationContextAC::GetReason () const [inline]

25.200.3.3 [TransferSyntaxSub](#) const& gdcmm::network::PresentationContextAC::GetTransferSyntax () const [inline]

- 25.200.3.4 void gdcm::network::PresentationContextAC::Print (std::ostream & os) const
- 25.200.3.5 std::istream& gdcm::network::PresentationContextAC::Read (std::istream & is)
- 25.200.3.6 void gdcm::network::PresentationContextAC::SetPresentationContextID (uint8_t id)
- 25.200.3.7 void gdcm::network::PresentationContextAC::SetReason (uint8_t r) [inline]
- 25.200.3.8 void gdcm::network::PresentationContextAC::SetTransferSyntax (TransferSyntaxSub const & ts)
- 25.200.3.9 size_t gdcm::network::PresentationContextAC::Size () const
- 25.200.3.10 const std::ostream& gdcm::network::PresentationContextAC::Write (std::ostream & os) const

The documentation for this class was generated from the following file:

- [gdcmPresentationContextAC.h](#)

25.201 gdcm::PresentationContextGenerator Class Reference

[PresentationContextGenerator](#) This class is responsible for generating the proper [PresentationContext](#) that will be used in subsequent operation during a DICOM Query/Retrieve association. The step of the association is very sensible as special care need to be taken to explicitly define what instance are going to be send and how they are encoded.

```
#include <gdcmPresentationContextGenerator.h>
```

Public Types

- typedef std::vector
 < [PresentationContext](#) > [PresentationContextArrayType](#)
- typedef
 PresentationContextArrayType::size_type [SizeType](#)

Public Member Functions

- [PresentationContextGenerator](#) ()
- bool [GenerateFromFileNames](#) (const [Directory::FileNamesType](#) &files)
- bool [GenerateFromUID](#) ([UIDs::TSName](#) asname)
 Generate the [PresentationContext](#) array from a UID (eg. VerificationSOPClass)
- [PresentationContextArrayType](#)
 const & [GetPresentationContexts](#) ()
- void [SetDefaultTransferSyntax](#) (const [TransferSyntax](#) &ts)
 Not implemented for now. GDCM internally uses Implicit Little Endian.
- void [SetMergeModeToAbstractSyntax](#) ()
- void [SetMergeModeToTransferSyntax](#) ()

Protected Member Functions

- bool [AddPresentationContext](#) (const char *as, const char *ts)
- const char * [GetDefaultTransferSyntax](#) () const

25.201.1 Detailed Description

[PresentationContextGenerator](#) This class is responsible for generating the proper [PresentationContext](#) that will be used in subsequent operation during a DICOM Query/Retrieve association. The step of the association is very sensible as special care need to be taken to explicitly define what instance are going to be send and how they are encoded.

For example a [PresentationContext](#) will express that negotiation requires that CT [Image](#) Storage are send using JPEG Lossless, while US [Image](#) Storage are sent using RLE Transfer Syntax.

Two very different API are exposed one which will always default to little endian transfer syntax see [GenerateFromUID\(\)](#) This API is used for C-ECHO, C-FIND and C-MOVE (SCU). Another API: [GenerateFromFileNames\(\)](#) is used for C-STORE (SCU) as it will loop over all filenames argument to detect the actual encoding. and therefore find the proper encoding to be used.

Two modes are available. The default mode (SetMergeModeToAbstractSyntax) append [PresentationContext](#) (one AbstractSyntax and one [TransferSyntax](#)), as long a they are different. Eg MR [Image](#) Storage/JPEG2000 and MR [Image](#) Storage/JPEGLossless would be considered different. the other mode SetMergeModeToTransferSyntax merge any new [TransferSyntax](#) to the already existing [PresentationContext](#) in order to re-use the same AbstractSyntax.

See Also

[PresentationContext](#)

Examples:

[CStoreQtProgress.cxx](#).

25.201.2 Member Typedef Documentation

25.201.2.1 `typedef std::vector<PresentationContext> gdcm::PresentationContextGenerator::PresentationContextArrayType`

25.201.2.2 `typedef PresentationContextArrayType::size_type gdcm::PresentationContextGenerator::SizeType`

25.201.3 Constructor & Destructor Documentation

25.201.3.1 `gdcm::PresentationContextGenerator::PresentationContextGenerator ()`

25.201.4 Member Function Documentation

25.201.4.1 `bool gdcm::PresentationContextGenerator::AddPresentationContext (const char * as, const char * ts)`
[protected]

25.201.4.2 `bool gdcm::PresentationContextGenerator::GenerateFromFileNames (const Directory::FileNamesType & files)`

Generate the [PresentationContext](#) array from a File-Set. [File](#) specified needs to be valid DICOM files. Used for C-STORE operations

Examples:

[CStoreQtProgress.cxx](#).

25.201.4.3 `bool gdcm::PresentationContextGenerator::GenerateFromUID (UIDs::TSName asname)`

Generate the [PresentationContext](#) array from a UID (eg. VerificationSOPClass)

25.201.4.4 `const char* gdcm::PresentationContextGenerator::GetDefaultTransferSyntax () const` [protected]

25.201.4.5 `PresentationContextArrayType const& gdcm::PresentationContextGenerator::GetPresentationContexts ()`
[inline]

Examples:

[CStoreQtProgress.cxx](#).

25.201.4.6 `void gdcm::PresentationContextGenerator::SetDefaultTransferSyntax (const TransferSyntax & ts)`

Not implemented for now. GDCM internally uses Implicit Little Endian.

25.201.4.7 `void gdcm::PresentationContextGenerator::SetMergeModeToAbstractSyntax ()`

25.201.4.8 `void gdcm::PresentationContextGenerator::SetMergeModeToTransferSyntax ()`

The documentation for this class was generated from the following file:

- [gdcmPresentationContextGenerator.h](#)

25.202 gdcm::network::PresentationContextRQ Class Reference

[PresentationContextRQ](#) Table 9-13 PRESENTATION CONTEXT ITEM FIELDS.

```
#include <gdcmPresentationContextRQ.h>
```

Public Types

- typedef std::vector
 < [TransferSyntaxSub](#) >
 ::size_type [SizeType](#)

Public Member Functions

- [PresentationContextRQ](#) ()
- [PresentationContextRQ](#) (UIDs::TSName asname, UIDs::TSName tsname=UIDs::ImplicitVRLittleEndianDefaultTransferSyntaxforDICOM)
- [PresentationContextRQ](#) (const [PresentationContext](#) &pc)
- void [AddTransferSyntax](#) ([TransferSyntaxSub](#) const &ts)
- [AbstractSyntax](#) const & [GetAbstractSyntax](#) () const
- [AbstractSyntax](#) & [GetAbstractSyntax](#) ()
- [SizeType](#) [GetNumberOfTransferSyntaxes](#) () const
- uint8_t [GetPresentationContextID](#) () const
- [TransferSyntaxSub](#) const & [GetTransferSyntax](#) ([SizeType](#) i) const
- [TransferSyntaxSub](#) & [GetTransferSyntax](#) ([SizeType](#) i)
- std::vector< [TransferSyntaxSub](#) >
 const & [GetTransferSyntaxes](#) () const
- bool [operator==](#) (const [PresentationContextRQ](#) &pc) const

- void [Print](#) (std::ostream &os) const
- std::istream & [Read](#) (std::istream &is)
- void [SetAbstractSyntax](#) ([AbstractSyntax](#) const &as)
- void [SetPresentationContextID](#) (uint8_t id)
- size_t [Size](#) () const
- const std::ostream & [Write](#) (std::ostream &os) const

25.202.1 Detailed Description

[PresentationContextRQ](#) Table 9-13 PRESENTATION CONTEXT ITEM FIELDS.

See Also

[PresentationContextAC](#)

25.202.2 Member Typedef Documentation

25.202.2.1 `typedef std::vector<TransferSyntaxSub>::size_type gdcm::network::PresentationContextRQ::SizeType`

25.202.3 Constructor & Destructor Documentation

25.202.3.1 `gdcm::network::PresentationContextRQ::PresentationContextRQ ()`

25.202.3.2 `gdcm::network::PresentationContextRQ::PresentationContextRQ (UIDs::TSName asname, UIDs::TSName tsname = UIDs::ImplicitVRLittleEndianDefaultTransferSyntaxforDICOM)`

Initialize Presentation Context with [AbstractSyntax](#) set to *asname* and with a single [TransferSyntax](#) set to *tsname* (default to Implicit [VR](#) LittleEndian when not specified).

25.202.3.3 `gdcm::network::PresentationContextRQ::PresentationContextRQ (const PresentationContext & pc)`

25.202.4 Member Function Documentation

25.202.4.1 `void gdcm::network::PresentationContextRQ::AddTransferSyntax (TransferSyntaxSub const & ts)`

25.202.4.2 `AbstractSyntax const& gdcm::network::PresentationContextRQ::GetAbstractSyntax () const` `[inline]`

25.202.4.3 `AbstractSyntax& gdcm::network::PresentationContextRQ::GetAbstractSyntax ()` `[inline]`

25.202.4.4 `SizeType gdcm::network::PresentationContextRQ::GetNumberOfTransferSyntaxes () const` `[inline]`

25.202.4.5 `uint8_t gdcm::network::PresentationContextRQ::GetPresentationContextID () const`

25.202.4.6 `TransferSyntaxSub const& gdcm::network::PresentationContextRQ::GetTransferSyntax (SizeType i) const` `[inline]`

25.202.4.7 `TransferSyntaxSub& gdcm::network::PresentationContextRQ::GetTransferSyntax (SizeType i)` `[inline]`

25.202.4.8 `std::vector<TransferSyntaxSub> const& gdcm::network::PresentationContextRQ::GetTransferSyntaxes () const` `[inline]`

- 25.202.4.9 `bool gdcm::network::PresentationContextRQ::operator== (const PresentationContextRQ & pc) const`
[inline]
- 25.202.4.10 `void gdcm::network::PresentationContextRQ::Print (std::ostream & os) const`
- 25.202.4.11 `std::istream& gdcm::network::PresentationContextRQ::Read (std::istream & is)`
- 25.202.4.12 `void gdcm::network::PresentationContextRQ::SetAbstractSyntax (AbstractSyntax const & as)`
- 25.202.4.13 `void gdcm::network::PresentationContextRQ::SetPresentationContextID (uint8_t id)`
- 25.202.4.14 `size_t gdcm::network::PresentationContextRQ::Size () const`
- 25.202.4.15 `const std::ostream& gdcm::network::PresentationContextRQ::Write (std::ostream & os) const`

The documentation for this class was generated from the following file:

- [gdcmPresentationContextRQ.h](#)

25.203 gdcm::network::PresentationDataValue Class Reference

[PresentationDataValue Table](#) 9-23 PRESENTATION-DATA-VALUE ITEM FIELDS.

```
#include <gdcmPresentationDataValue.h>
```

Public Member Functions

- [PresentationDataValue](#) ()
- `const std::string & GetBlob () const`
- `bool GetIsCommand () const`
- `bool GetIsLastFragment () const`
- `uint8_t GetMessageHeader () const`
- `uint8_t GetPresentationContextID () const`
- `void Print (std::ostream &os) const`
- `std::istream & Read (std::istream &is)`
- `std::istream & ReadInto (std::istream &is, std::ostream &os)`
- `void SetBlob (const std::string &partialblob)`
- `void SetCommand (bool inCommand)`
- `void SetDataSet (const DataSet &ds)`
- `void SetLastFragment (bool inLast)`
- `void SetMessageHeader (uint8_t messageheader)`
- `void SetPresentationContextID (uint8_t id)`
- `size_t Size () const`
- `const std::ostream & Write (std::ostream &os) const`

Static Public Member Functions

- `static DataSet ConcatenatePDVBlobs (const std::vector< PresentationDataValue > &inPDVs)`

25.203.1 Detailed Description

[PresentationDataValue](#) Table 9-23 PRESENTATION-DATA-VALUE ITEM FIELDS.

25.203.2 Constructor & Destructor Documentation

25.203.2.1 `gdcm::network::PresentationDataValue::PresentationDataValue ()`

25.203.3 Member Function Documentation

25.203.3.1 `static DataSet gdcm::network::PresentationDataValue::ConcatenatePDVBlobs (const std::vector< PresentationDataValue > & inPDVs) [static]`

Warning

[DataSet](#) will be read as Implicit Little Endian TS

25.203.3.2 `const std::string& gdcm::network::PresentationDataValue::GetBlob () const`

25.203.3.3 `bool gdcm::network::PresentationDataValue::GetIsCommand () const`

25.203.3.4 `bool gdcm::network::PresentationDataValue::GetIsLastFragment () const`

25.203.3.5 `uint8_t gdcm::network::PresentationDataValue::GetMessageHeader () const [inline]`

25.203.3.6 `uint8_t gdcm::network::PresentationDataValue::GetPresentationContextID () const [inline]`

25.203.3.7 `void gdcm::network::PresentationDataValue::Print (std::ostream & os) const`

25.203.3.8 `std::istream& gdcm::network::PresentationDataValue::Read (std::istream & is)`

25.203.3.9 `std::istream& gdcm::network::PresentationDataValue::ReadInto (std::istream & is, std::ostream & os)`

25.203.3.10 `void gdcm::network::PresentationDataValue::SetBlob (const std::string & partialblob)`

25.203.3.11 `void gdcm::network::PresentationDataValue::SetCommand (bool inCommand)`

25.203.3.12 `void gdcm::network::PresentationDataValue::SetDataSet (const DataSet & ds)`

Set [DataSet](#). Write [DataSet](#) in implicit.

Warning

size of dataset should be below maxpdusize

25.203.3.13 `void gdcm::network::PresentationDataValue::SetLastFragment (bool inLast)`

25.203.3.14 `void gdcm::network::PresentationDataValue::SetMessageHeader (uint8_t messageheader) [inline]`

25.203.3.15 void gdcm::network::PresentationDataValue::SetPresentationContextID (uint8_t *id*) [inline]

25.203.3.16 size_t gdcm::network::PresentationDataValue::Size () const

25.203.3.17 const std::ostream& gdcm::network::PresentationDataValue::Write (std::ostream & *os*) const

The documentation for this class was generated from the following file:

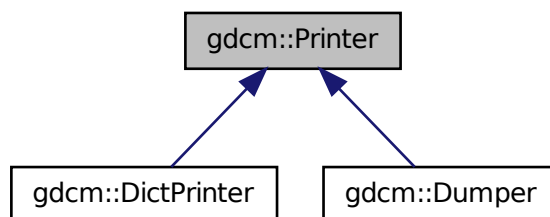
- [gdcmPresentationDataValue.h](#)

25.204 gdcm::Printer Class Reference

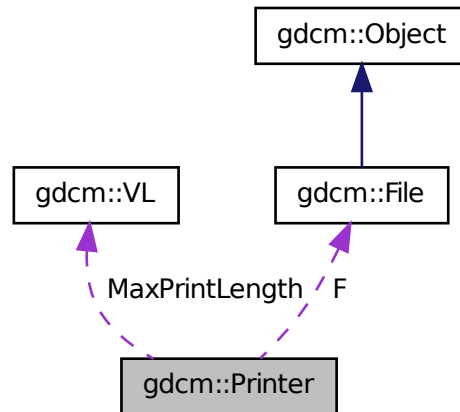
[Printer](#) class.

```
#include <gdcmPrinter.h>
```

Inheritance diagram for gdcm::Printer:



Collaboration diagram for `gdcM::Printer`:



Public Types

- enum `PrintStyles` {
`VERBOSE_STYLE` = 0,
`CONDENSED_STYLE`,
`XML` }

Public Member Functions

- `Printer ()`
- `~Printer ()`
- `PrintStyles GetPrintStyle () const`
Get PrintStyle value.
- `void Print (std::ostream &os)`
Print.
- `void PrintDataSet (const DataSet &ds, std::ostream &os, const std::string &s="")`
Print an individual dataset.
- `void SetColor (bool c)`
Set color mode or not.
- `void SetFile (File const &f)`
Set file.
- `void SetStyle (PrintStyles ps)`
Set PrintStyle value.

Protected Member Functions

- [VR PrintDataElement](#) (std::ostream &os, const [Dicts](#) &dicts, const [DataSet](#) &ds, const [DataElement](#) &de, std::ostream &out, std::string const &indent)
- void [PrintSQ](#) (const [SequenceOfItems](#) *sqi, std::ostream &os, std::string const &indent)

Protected Attributes

- const [File](#) * F
- [VL MaxPrintLength](#)
- [PrintStyles](#) [PrintStyle](#)

25.204.1 Detailed Description

[Printer](#) class.

25.204.2 Member Enumeration Documentation

25.204.2.1 enum gdcm::Printer::PrintStyles

Enumerator

VERBOSE_STYLE
CONDENSED_STYLE
XML

25.204.3 Constructor & Destructor Documentation

25.204.3.1 gdcm::Printer::Printer ()

25.204.3.2 gdcm::Printer::~~Printer ()

25.204.4 Member Function Documentation

25.204.4.1 [PrintStyles](#) gdcm::Printer::GetPrintStyle () const [inline]

Get [PrintStyle](#) value.

25.204.4.2 void gdcm::Printer::Print (std::ostream & os)

Print.

25.204.4.3 VR gdcm::Printer::PrintDataElement (std::ostream & os, const [Dicts](#) & *dicts*, const [DataSet](#) & *ds*, const [DataElement](#) & *de*, std::ostream & *out*, std::string const & *indent*) [protected]

25.204.4.4 void gdcm::Printer::PrintDataSet (const [DataSet](#) & *ds*, std::ostream & *os*, const std::string & *s* = " ")

Print an individual dataset.

25.204.4.5 void `gdcmm::Printer::PrintSQ` (const `SequenceOfItems` * *sqi*, `std::ostream` & *os*, `std::string` const & *indent*)
[protected]

25.204.4.6 void `gdcmm::Printer::SetColor` (bool *c*)

Set color mode or not.

25.204.4.7 void `gdcmm::Printer::SetFile` (`File` const & *f*) [inline]

Set file.

25.204.4.8 void `gdcmm::Printer::SetStyle` (`PrintStyles` *ps*) [inline]

Set `PrintStyle` value.

25.204.5 Member Data Documentation

25.204.5.1 const `File`* `gdcmm::Printer::F` [protected]

25.204.5.2 VL `gdcmm::Printer::MaxPrintLength` [protected]

25.204.5.3 `PrintStyles` `gdcmm::Printer::PrintStyle` [protected]

The documentation for this class was generated from the following file:

- [gdcmmPrinter.h](#)

25.205 gdcmm::PrivateDict Class Reference

Private [Dict](#).

```
#include <gdcmmDict.h>
```

Public Member Functions

- [PrivateDict](#) ()
- [~PrivateDict](#) ()
- void [AddDictEntry](#) (const [PrivateTag](#) &tag, const [DictEntry](#) &de)
- bool [FindDictEntry](#) (const [PrivateTag](#) &tag) const
- const [DictEntry](#) & [GetDictEntry](#) (const [PrivateTag](#) &tag) const
- bool [IsEmpty](#) () const
- void [PrintXML](#) () const
- bool [RemoveDictEntry](#) (const [PrivateTag](#) &tag)

Protected Member Functions

- void [LoadDefault](#) ()

Friends

- class [Dicts](#)
- `std::ostream & operator<< (std::ostream &os, const PrivateDict &val)`

25.205.1 Detailed Description

Private [Dict](#).

25.205.2 Constructor & Destructor Documentation

25.205.2.1 `gdcm::PrivateDict::PrivateDict ()` `[inline]`

25.205.2.2 `gdcm::PrivateDict::~~PrivateDict ()` `[inline]`

25.205.3 Member Function Documentation

25.205.3.1 `void gdcm::PrivateDict::AddDictEntry (const PrivateTag &tag, const DictEntry &de)` `[inline]`

References `gdcm::DictEntry::GetVM()`, `gdcm::DictEntry::GetVR()`, `gdcm::DictEntry::SetVR()`, and `gdcm::VR::UN`.

25.205.3.2 `bool gdcm::PrivateDict::FindDictEntry (const PrivateTag &tag) const` `[inline]`

25.205.3.3 `const DictEntry& gdcm::PrivateDict::GetDictEntry (const PrivateTag &tag) const` `[inline]`

25.205.3.4 `bool gdcm::PrivateDict::IsEmpty () const` `[inline]`

25.205.3.5 `void gdcm::PrivateDict::LoadDefault ()` `[protected]`

25.205.3.6 `void gdcm::PrivateDict::PrintXML () const` `[inline]`

References `gdcm::Tag::GetElement()`, `gdcm::Tag::GetGroup()`, `gdcm::DictEntry::GetName()`, `gdcm::PrivateTag::GetOwner()`, `gdcm::DictEntry::GetVM()`, and `gdcm::DictEntry::GetVR()`.

25.205.3.7 `bool gdcm::PrivateDict::RemoveDictEntry (const PrivateTag &tag)` `[inline]`

Remove entry 'tag'. Return true on success (element was found and remove). return false if element was not found.

25.205.4 Friends And Related Function Documentation

25.205.4.1 `friend class Dicts` `[friend]`

25.205.4.2 `std::ostream& operator<< (std::ostream &os, const PrivateDict &val)` `[friend]`

The documentation for this class was generated from the following file:

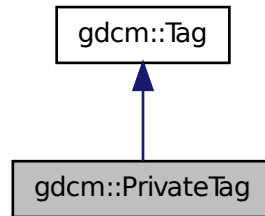
- [gdcmDict.h](#)

25.206 gdcM::PrivateTag Class Reference

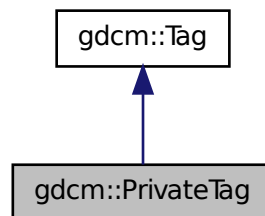
Class to represent a Private DICOM Data [Element](#) ([Attribute](#)) [Tag](#) (Group, [Element](#), Owner)

```
#include <gdcMPrivateTag.h>
```

Inheritance diagram for gdcM::PrivateTag:



Collaboration diagram for gdcM::PrivateTag:



Public Member Functions

- [PrivateTag](#) (uint16_t group=0, uint16_t element=0, const char *owner="")
- const char * [GetOwner](#) () const
- bool [operator<](#) (const [PrivateTag](#) &_val) const
- bool [ReadFromCommaSeparatedString](#) (const char *str)
- void [SetOwner](#) (const char *owner)

Friends

- std::ostream & [operator<<](#) (std::ostream &_os, const [PrivateTag](#) &_val)

25.206.1 Detailed Description

Class to represent a Private DICOM Data [Element](#) ([Attribute](#)) [Tag](#) (Group, [Element](#), Owner)

Note

private tag have element value in: [0x10,0xff], for instance 0x0009,0x0000 is NOT a private tag

Examples:

[csa2img.cxx](#), [DumpADAC.cxx](#), [DumpGEMSMovieGroup.cxx](#), [DumpImageHeaderInfo.cxx](#), [ELSCINT1WaveToText.cxx](#), [GetSubSequenceData.cxx](#), [iU22tomultisc.cxx](#), [MrProtocol.cxx](#), [pmsct_rgb1.cxx](#), [PublicDict.cxx](#), [ReadGEMSS-DO.cxx](#), and [rle2img.cxx](#).

25.206.2 Constructor & Destructor Documentation

25.206.2.1 `gdcm::PrivateTag::PrivateTag (uint16_t group = 0, uint16_t element = 0, const char * owner = " ") [inline]`

25.206.3 Member Function Documentation

25.206.3.1 `const char* gdcm::PrivateTag::GetOwner () const [inline]`

Examples:

[PublicDict.cxx](#).

Referenced by `gdcm::PrivateDict::PrintXML()`.

25.206.3.2 `bool gdcm::PrivateTag::operator< (const PrivateTag & _val) const`

25.206.3.3 `bool gdcm::PrivateTag::ReadFromCommaSeparatedString (const char * str)`

Read [PrivateTag](#) from a string. [Element](#) number will be truncated to 8bits. Eg: "1234,5678,GDCM" is private tag: (1234,78,"GDCM")

25.206.3.4 `void gdcm::PrivateTag::SetOwner (const char * owner) [inline]`

25.206.4 Friends And Related Function Documentation

25.206.4.1 `std::ostream& operator<< (std::ostream & _os, const PrivateTag & _val) [friend]`

The documentation for this class was generated from the following file:

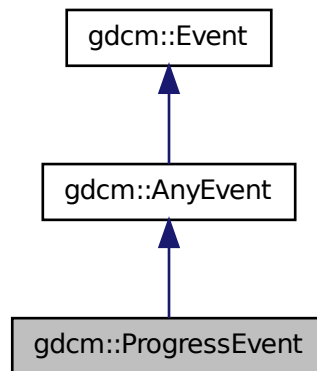
- [gdcmPrivateTag.h](#)

25.207 gdcm::ProgressEvent Class Reference

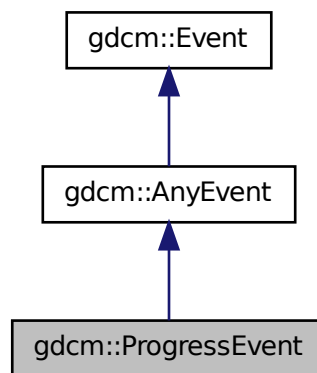
[ProgressEvent](#) Special type of event triggered during.

```
#include <gdcmProgressEvent.h>
```

Inheritance diagram for `gdcm::ProgressEvent`:



Collaboration diagram for `gdcm::ProgressEvent`:



Public Types

- typedef [ProgressEvent](#) `Self`
- typedef [AnyEvent](#) `Superclass`

Public Member Functions

- [ProgressEvent](#) (double p=0)

- [ProgressEvent](#) (const [Self](#) &s)
- virtual [~ProgressEvent](#) ()
- virtual bool [CheckEvent](#) (const [::gdcm::Event](#) *e) const
- virtual const char * [GetEventName](#) () const
- double [GetProgress](#) () const
- virtual [::gdcm::Event](#) * [MakeObject](#) () const
- void [SetProgress](#) (double p)

25.207.1 Detailed Description

[ProgressEvent](#) Special type of event triggered during.

See Also

[AnyEvent](#)

25.207.2 Member Typedef Documentation

25.207.2.1 `typedef ProgressEvent gdcm::ProgressEvent::Self`

25.207.2.2 `typedef AnyEvent gdcm::ProgressEvent::Superclass`

25.207.3 Constructor & Destructor Documentation

25.207.3.1 `gdcm::ProgressEvent::ProgressEvent (double p = 0)` `[inline]`

25.207.3.2 `virtual gdcm::ProgressEvent::~~ProgressEvent ()` `[inline],[virtual]`

25.207.3.3 `gdcm::ProgressEvent::ProgressEvent (const Self & s)` `[inline]`

25.207.4 Member Function Documentation

25.207.4.1 `virtual bool gdcm::ProgressEvent::CheckEvent (const ::gdcm::Event * e) const` `[inline],[virtual]`

25.207.4.2 `virtual const char* gdcm::ProgressEvent::GetEventName () const` `[inline],[virtual]`

Return the StringName associated with the event.

Implements [gdcm::Event](#).

25.207.4.3 `double gdcm::ProgressEvent::GetProgress () const` `[inline]`

25.207.4.4 `virtual ::gdcm::Event* gdcm::ProgressEvent::MakeObject () const` `[inline],[virtual]`

Create an [Event](#) of this type This method work as a Factory for creating events of each particular type.

Implements [gdcm::Event](#).

25.207.4.5 `void gdcm::ProgressEvent::SetProgress (double p)` `[inline]`

The documentation for this class was generated from the following file:

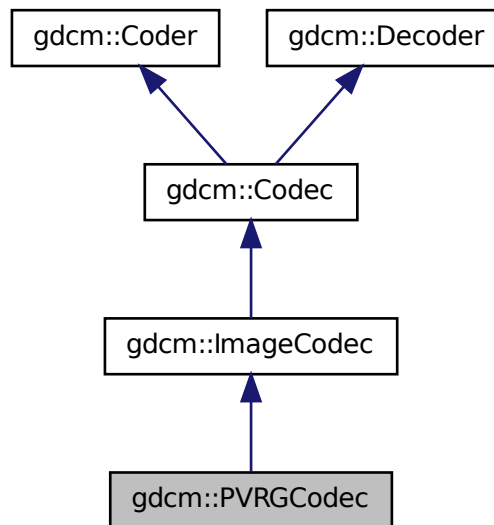
- [gdcmProgressEvent.h](#)

25.208 gdcm::PVRGCodec Class Reference

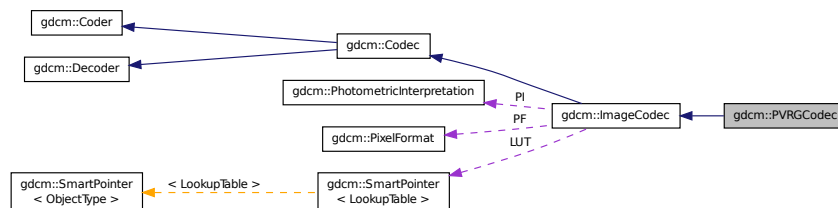
[PVRGCodec](#).

```
#include <gdcmPVRGCodec.h>
```

Inheritance diagram for gdcm::PVRGCodec:



Collaboration diagram for gdcm::PVRGCodec:



Public Member Functions

- [PVRGCodec\(\)](#)
- [~PVRGCodec\(\)](#)

- bool [CanCode](#) ([TransferSyntax](#) const &ts) const
Return whether this coder support this transfer syntax (can code it)
- bool [CanDecode](#) ([TransferSyntax](#) const &ts) const
Return whether this decoder support this transfer syntax (can decode it)
- bool [Code](#) ([DataElement](#) const &in, [DataElement](#) &out)
Code.
- bool [Decode](#) ([DataElement](#) const &is, [DataElement](#) &os)
Decode.

Additional Inherited Members

25.208.1 Detailed Description

[PVRGCodec](#).

Note

pvrj is a broken implementation of the JPEG standard. It is known to have a bug in the 16bits lossless implementation of the standard.

In an ideal world, you should not need this codec at all. But to support some broken file such as:

PHILIPS_Gyrosan-12-Jpeg_Extended_Process_2_4.dcm

we have to...

25.208.2 Constructor & Destructor Documentation

25.208.2.1 `gdcm::PVRGCodec::PVRGCodec ()`

25.208.2.2 `gdcm::PVRGCodec::~~PVRGCodec ()`

25.208.3 Member Function Documentation

25.208.3.1 `bool gdcm::PVRGCodec::CanCode (TransferSyntax const &) const` `[virtual]`

Return whether this coder support this transfer syntax (can code it)

Reimplemented from [gdcm::ImageCodec](#).

25.208.3.2 `bool gdcm::PVRGCodec::CanDecode (TransferSyntax const &) const` `[virtual]`

Return whether this decoder support this transfer syntax (can decode it)

Reimplemented from [gdcm::ImageCodec](#).

25.208.3.3 `bool gdcm::PVRGCodec::Code (DataElement const & in_, DataElement & out_)` `[virtual]`

Code.

Reimplemented from [gdcm::Coder](#).

25.208.3.4 `bool gdcm::PVRGCodec::Decode (DataElement const & , DataElement &) [virtual]`

Decode.

Reimplemented from [gdcm::ImageCodec](#).

The documentation for this class was generated from the following file:

- [gdcmPVRGCodec.h](#)

25.209 gdcm::PythonFilter Class Reference

[PythonFilter](#) [PythonFilter](#) is the class that make gdcm2.x looks more like gdcm1 and transform the binary blob contained in a [DataElement](#) into a string, typically this is a nice feature to have for wrapped language.

```
#include <gdcmPythonFilter.h>
```

Public Member Functions

- [PythonFilter](#) ()
- [~PythonFilter](#) ()
- [File](#) & [GetFile](#) ()
- const [File](#) & [GetFile](#) () const
- void [SetDicts](#) (const [Dicts](#) &dicts)
- void [SetFile](#) (const [File](#) &f)
- PyObject * [ToPyObject](#) (const [Tag](#) &t) const
- void [UseDictAlways](#) (bool use)

25.209.1 Detailed Description

[PythonFilter](#) [PythonFilter](#) is the class that make gdcm2.x looks more like gdcm1 and transform the binary blob contained in a [DataElement](#) into a string, typically this is a nice feature to have for wrapped language.

25.209.2 Constructor & Destructor Documentation

25.209.2.1 `gdcm::PythonFilter::PythonFilter ()`

25.209.2.2 `gdcm::PythonFilter::~~PythonFilter ()`

25.209.3 Member Function Documentation

25.209.3.1 `File& gdcm::PythonFilter::GetFile () [inline]`

25.209.3.2 `const File& gdcm::PythonFilter::GetFile () const [inline]`

25.209.3.3 `void gdcm::PythonFilter::SetDicts (const Dicts &dicts)`

25.209.3.4 `void gdcm::PythonFilter::SetFile (const File &f) [inline]`

25.209.3.5 `PyObject* gdcm::PythonFilter::ToPyObject (const Tag &t) const`

25.209.3.6 void gdcm::PythonFilter::UseDictAlways (bool use) [inline]

The documentation for this class was generated from the following file:

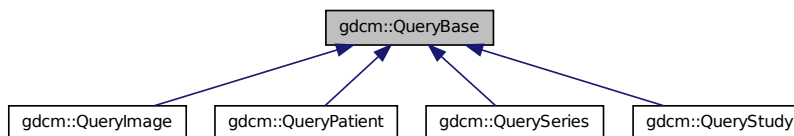
- [gdcmPythonFilter.h](#)

25.210 gdcm::QueryBase Class Reference

[QueryBase](#) contains: the base class for constructing a query dataset for a C-FIND and a C-MOVE.

```
#include <gdcmQueryBase.h>
```

Inheritance diagram for gdcm::QueryBase:



Public Member Functions

- virtual [~QueryBase](#) ()
- std::vector< [Tag](#) > [GetAllRequiredTags](#) (const [ERootType](#) &inRootType) const
- std::vector< [Tag](#) > [GetAllTags](#) (const [ERootType](#) &inRootType) const
- virtual std::vector< [Tag](#) > [GetHierachicalSearchTags](#) (const [ERootType](#) &inRootType) const =0
Return all Unique Key for a particular Query Root type (from the same level and above).
- virtual const char * [GetName](#) () const =0
- virtual std::vector< [Tag](#) > [GetOptionalTags](#) (const [ERootType](#) &inRootType) const =0
- virtual [DataElement](#) [GetQueryLevel](#) () const =0
- virtual std::vector< [Tag](#) > [GetRequiredTags](#) (const [ERootType](#) &inRootType) const =0
- virtual std::vector< [Tag](#) > [GetUniqueTags](#) (const [ERootType](#) &inRootType) const =0

25.210.1 Detailed Description

[QueryBase](#) contains: the base class for constructing a query dataset for a C-FIND and a C-MOVE.

There are four levels of C-FIND and C-MOVE query:

- [Patient](#)
- [Study](#)
- [Series](#)
- [Image](#)

Each one has its own required and optional tags. This class provides an interface for getting those tags. This is an interface class.

See 3.4 C 6.1 and 3.4 C 6.2 for the patient and study root query types. These sections define the tags allowed by a particular query. The caller must pass in which root type they want, patient or study. A third root type, Modality Worklist Query, isn't yet supported.

This class (or rather it's derived classes) will be held in the RootQuery types. These query types actually make the dataset, and will use this dataset to list the required, unique, and optional tags for each type of query. This design is somewhat overly complicated, but is kept so that if we ever wanted to try to guess the query type from the given tags, we could do so.

25.210.2 Constructor & Destructor Documentation

25.210.2.1 `virtual gdcm::QueryBase::~~QueryBase () [inline],[virtual]`

25.210.3 Member Function Documentation

25.210.3.1 `std::vector<Tag> gdcm::QueryBase::GetAllRequiredTags (const ERootType & inRootType) const`

In order to validate a query dataset we need to check that there exists at least one required (or unique) key

25.210.3.2 `std::vector<Tag> gdcm::QueryBase::GetAllTags (const ERootType & inRootType) const`

In order to validate a query dataset, just check for the presence of a tag, not it's requirement level in the spec

25.210.3.3 `virtual std::vector<Tag> gdcm::QueryBase::GetHierarchicalSearchTags (const ERootType & inRootType) const [pure virtual]`

Return all Unique Key for a particular Query Root type (from the same level and above).

Implemented in [gdcm::QueryImage](#), [gdcm::QueryPatient](#), [gdcm::QuerySeries](#), and [gdcm::QueryStudy](#).

25.210.3.4 `virtual const char* gdcm::QueryBase::GetName () const [pure virtual]`

Implemented in [gdcm::QueryImage](#), [gdcm::QueryPatient](#), [gdcm::QuerySeries](#), and [gdcm::QueryStudy](#).

25.210.3.5 `virtual std::vector<Tag> gdcm::QueryBase::GetOptionalTags (const ERootType & inRootType) const [pure virtual]`

Implemented in [gdcm::QueryImage](#), [gdcm::QueryPatient](#), [gdcm::QuerySeries](#), and [gdcm::QueryStudy](#).

25.210.3.6 `virtual DataElement gdcm::QueryBase::GetQueryLevel () const [pure virtual]`

Implemented in [gdcm::QueryImage](#), [gdcm::QueryPatient](#), [gdcm::QuerySeries](#), and [gdcm::QueryStudy](#).

25.210.3.7 `virtual std::vector<Tag> gdcm::QueryBase::GetRequiredTags (const ERootType & inRootType) const [pure virtual]`

Implemented in [gdcm::QueryImage](#), [gdcm::QueryPatient](#), [gdcm::QuerySeries](#), and [gdcm::QueryStudy](#).

25.210.3.8 `virtual std::vector<Tag> gdcm::QueryBase::GetUniqueTags (const ERootType & inRootType) const` [pure virtual]

Implemented in [gdcm::QueryImage](#), [gdcm::QueryPatient](#), [gdcm::QuerySeries](#), and [gdcm::QueryStudy](#).

The documentation for this class was generated from the following file:

- [gdcmQueryBase.h](#)

25.211 gdcm::QueryFactory Class Reference

QueryFactory.h.

```
#include <gdcmQueryFactory.h>
```

Static Public Member Functions

- static [ECharSet](#) [GetCharacterFromCurrentLocale](#) ()
- static void [ListCharSets](#) (std::ostream &os)
List all possible CharSet.
- static [DataElement](#) [ProduceCharacterSetDataElement](#) (const std::vector< [ECharSet](#) > &inCharSetType)
- static [BaseRootQuery](#) * [ProduceQuery](#) ([ERootType](#) inRootType, [EQueryType](#) inQueryType, [EQueryLevel](#) inQueryLevel)

25.211.1 Detailed Description

QueryFactory.h.

Note

contains: a class to produce a query based off of user-entered information

Essentially, this class is used to construct a query based off of user input (typically from the command line; if in code directly, the query itself could just be instantiated)

In theory, could also be used as the interface to validate incoming datasets as belonging to a particular query style

25.211.2 Member Function Documentation

25.211.2.1 `static ECharSet gdcm::QueryFactory::GetCharacterFromCurrentLocale ()` [static]

This function will return the corresponding ECharSet associated with the current locale of the running system (based on the value of locale()).

25.211.2.2 `static void gdcm::QueryFactory::ListCharSets (std::ostream & os)` [static]

List all possible CharSet.

25.211.2.3 `static DataElement gdcM::QueryFactory::ProduceCharacterSetDataElement (const std::vector< ECharSet > & inCharSetType) [static]`

This function will produce the appropriate dataelement given a list of charsets. The first charset will be used directly, while the second and subsequent will be prepended with "ISO2022 ". Redundant character sets are not permitted, so if they are encountered, they will just be skipped. if UTF8 or GB18030 is used, no subsequent character sets will be used if the vector passed in is empty, then the dataelement that's passed out will be empty and Latin1 is the presumed encoding

25.211.2.4 `static BaseRootQuery* gdcM::QueryFactory::ProduceQuery (ERootType inRootType, EQueryType inQueryType, EQueryLevel inQueryLevel) [static]`

this function will produce a query (basically, a wrapper to a dataset that can validate whether or not the query is a valid cfind/cmove query) and the level of the query (patient, study, series, image). If the user provides an invalid instantiation (ie, study root type, query level of patient), then the result is NULL.

The documentation for this class was generated from the following file:

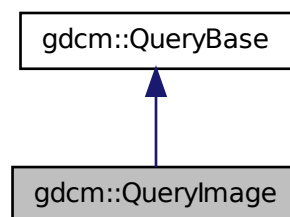
- [gdcMQueryFactory.h](#)

25.212 gdcM::QueryImage Class Reference

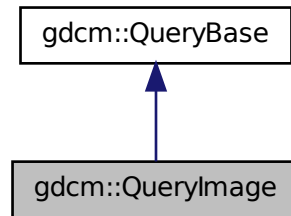
[QueryImage](#) contains: class to construct an image-based query for C-FIND and C-MOVE.

```
#include <gdcMQueryImage.h>
```

Inheritance diagram for gdcM::QueryImage:



Collaboration diagram for gdcm::QueryImage:



Public Member Functions

- `std::vector< Tag > GetHierachicalSearchTags (const ERootType &inRootType) const`
Return all Unique Key for a particular Query Root type (from the same level and above).
- `const char * GetName () const`
- `std::vector< Tag > GetOptionalTags (const ERootType &inRootType) const`
- `DataElement GetQueryLevel () const`
- `std::vector< Tag > GetRequiredTags (const ERootType &inRootType) const`
- `std::vector< Tag > GetUniqueTags (const ERootType &inRootType) const`

25.212.1 Detailed Description

[QueryImage](#) contains: class to construct an image-based query for C-FIND and C-MOVE.

25.212.2 Member Function Documentation

25.212.2.1 `std::vector<Tag> gdcm::QueryImage::GetHierachicalSearchTags (const ERootType & inRootType) const` `[virtual]`

Return all Unique Key for a particular Query Root type (from the same level and above).

Implements [gdcm::QueryBase](#).

25.212.2.2 `const char* gdcm::QueryImage::GetName () const` `[virtual]`

Implements [gdcm::QueryBase](#).

25.212.2.3 `std::vector<Tag> gdcm::QueryImage::GetOptionalTags (const ERootType & inRootType) const` `[virtual]`

Implements [gdcm::QueryBase](#).

25.212.2.4 **DataElement** `gdcm::QueryImage::GetQueryLevel () const` [virtual]

Implements [gdcm::QueryBase](#).

25.212.2.5 `std::vector<Tag>` `gdcm::QueryImage::GetRequiredTags (const ERootType & inRootType) const` [virtual]

Implements [gdcm::QueryBase](#).

25.212.2.6 `std::vector<Tag>` `gdcm::QueryImage::GetUniqueTags (const ERootType & inRootType) const` [virtual]

Implements [gdcm::QueryBase](#).

The documentation for this class was generated from the following file:

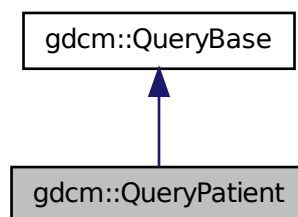
- [gdcmQueryImage.h](#)

25.213 `gdcm::QueryPatient` Class Reference

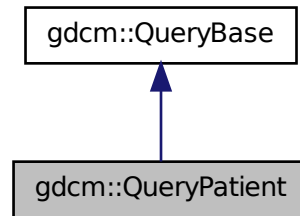
[QueryPatient](#) contains: class to construct a patient-based query for c-find and c-move.

```
#include <gdcmQueryPatient.h>
```

Inheritance diagram for `gdcm::QueryPatient`:



Collaboration diagram for gdcmm::QueryPatient:



Public Member Functions

- `std::vector< Tag > GetHierachicalSearchTags (const ERootType &inRootType) const`
Return all Unique Key for a particular Query Root type (from the same level and above).
- `const char * GetName () const`
- `std::vector< Tag > GetOptionalTags (const ERootType &inRootType) const`
- `DataElement GetQueryLevel () const`
- `std::vector< Tag > GetRequiredTags (const ERootType &inRootType) const`
- `std::vector< Tag > GetUniqueTags (const ERootType &inRootType) const`

25.213.1 Detailed Description

`QueryPatient` contains: class to construct a patient-based query for c-find and c-move.

25.213.2 Member Function Documentation

25.213.2.1 `std::vector<Tag> gdcmm::QueryPatient::GetHierachicalSearchTags (const ERootType & inRootType) const` `[virtual]`

Return all Unique Key for a particular Query Root type (from the same level and above).

Implements `gdcmm::QueryBase`.

25.213.2.2 `const char* gdcmm::QueryPatient::GetName () const` `[virtual]`

Implements `gdcmm::QueryBase`.

25.213.2.3 `std::vector<Tag> gdcmm::QueryPatient::GetOptionalTags (const ERootType & inRootType) const` `[virtual]`

Implements `gdcmm::QueryBase`.

25.213.2.4 **DataElement** `gdcm::QueryPatient::GetQueryLevel () const` [virtual]

Implements [gdcm::QueryBase](#).

25.213.2.5 `std::vector<Tag>` **gdcm::QueryPatient::GetRequiredTags (const ERootType & *inRootType*) const** [virtual]

Implements [gdcm::QueryBase](#).

25.213.2.6 `std::vector<Tag>` **gdcm::QueryPatient::GetUniqueTags (const ERootType & *inRootType*) const** [virtual]

Implements [gdcm::QueryBase](#).

The documentation for this class was generated from the following file:

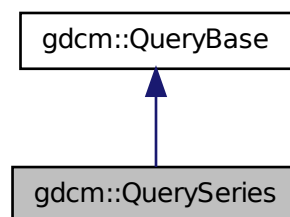
- [gdcmQueryPatient.h](#)

25.214 gdcm::QuerySeries Class Reference

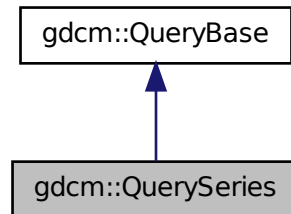
[QuerySeries](#) contains: class to construct a series-based query for c-find and c-move.

```
#include <gdcmQuerySeries.h>
```

Inheritance diagram for `gdcm::QuerySeries`:



Collaboration diagram for gdcm::QuerySeries:



Public Member Functions

- `std::vector< Tag > GetHierachicalSearchTags (const ERootType &inRootType) const`
Return all Unique Key for a particular Query Root type (from the same level and above).
- `const char * GetName () const`
- `std::vector< Tag > GetOptionalTags (const ERootType &inRootType) const`
- `DataElement GetQueryLevel () const`
- `std::vector< Tag > GetRequiredTags (const ERootType &inRootType) const`
- `std::vector< Tag > GetUniqueTags (const ERootType &inRootType) const`

25.214.1 Detailed Description

[QuerySeries](#) contains: class to construct a series-based query for c-find and c-move.

25.214.2 Member Function Documentation

25.214.2.1 `std::vector<Tag> gdcm::QuerySeries::GetHierachicalSearchTags (const ERootType & inRootType) const` `[virtual]`

Return all Unique Key for a particular Query Root type (from the same level and above).

Implements [gdcm::QueryBase](#).

25.214.2.2 `const char* gdcm::QuerySeries::GetName () const` `[virtual]`

Implements [gdcm::QueryBase](#).

25.214.2.3 `std::vector<Tag> gdcm::QuerySeries::GetOptionalTags (const ERootType & inRootType) const` `[virtual]`

Implements [gdcm::QueryBase](#).

25.214.2.4 **DataElement** `gdcm::QuerySeries::GetQueryLevel () const` [virtual]

Implements [gdcm::QueryBase](#).

25.214.2.5 `std::vector<Tag>` **gdcm::QuerySeries::GetRequiredTags (const ERootType & *inRootType*) const** [virtual]

Implements [gdcm::QueryBase](#).

25.214.2.6 `std::vector<Tag>` **gdcm::QuerySeries::GetUniqueTags (const ERootType & *inRootType*) const** [virtual]

Implements [gdcm::QueryBase](#).

The documentation for this class was generated from the following file:

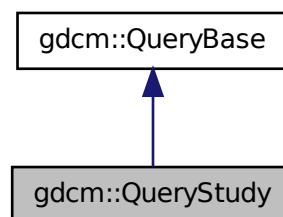
- [gdcmQuerySeries.h](#)

25.215 gdcm::QueryStudy Class Reference

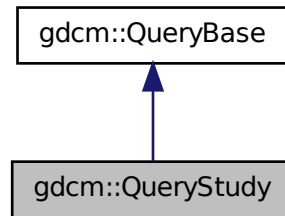
QueryStudy.h contains: class to construct a study-based query for C-FIND and C-MOVE.

```
#include <gdcmQueryStudy.h>
```

Inheritance diagram for `gdcm::QueryStudy`:



Collaboration diagram for gdcm::QueryStudy:



Public Member Functions

- `std::vector< Tag > GetHierachicalSearchTags (const ERootType &inRootType) const`
Return all Unique Key for a particular Query Root type (from the same level and above).
- `const char * GetName () const`
- `std::vector< Tag > GetOptionalTags (const ERootType &inRootType) const`
- `DataElement GetQueryLevel () const`
- `std::vector< Tag > GetRequiredTags (const ERootType &inRootType) const`
- `std::vector< Tag > GetUniqueTags (const ERootType &inRootType) const`

25.215.1 Detailed Description

QueryStudy.h contains: class to construct a study-based query for C-FIND and C-MOVE.

25.215.2 Member Function Documentation

25.215.2.1 `std::vector<Tag> gdcm::QueryStudy::GetHierachicalSearchTags (const ERootType & inRootType) const` `[virtual]`

Return all Unique Key for a particular Query Root type (from the same level and above).

Implements [gdcm::QueryBase](#).

25.215.2.2 `const char* gdcm::QueryStudy::GetName () const` `[virtual]`

Implements [gdcm::QueryBase](#).

25.215.2.3 `std::vector<Tag> gdcm::QueryStudy::GetOptionalTags (const ERootType & inRootType) const` `[virtual]`

Implements [gdcm::QueryBase](#).

25.215.2.4 **DataElement** `gdcm::QueryStudy::GetQueryLevel () const` [virtual]

Implements [gdcm::QueryBase](#).

25.215.2.5 `std::vector<Tag>` `gdcm::QueryStudy::GetRequiredTags (const ERootType & inRootType) const` [virtual]

Implements [gdcm::QueryBase](#).

25.215.2.6 `std::vector<Tag>` `gdcm::QueryStudy::GetUniqueTags (const ERootType & inRootType) const` [virtual]

Implements [gdcm::QueryBase](#).

The documentation for this class was generated from the following file:

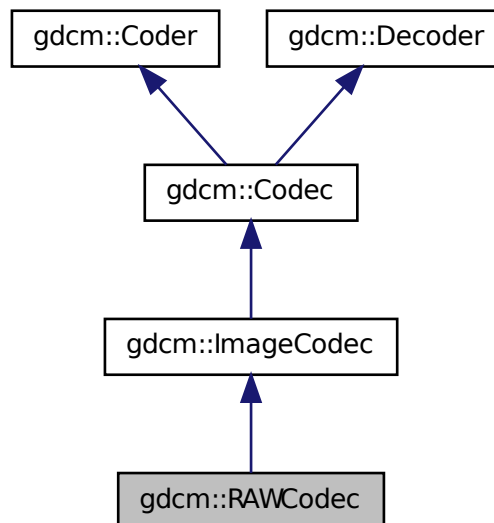
- [gdcmQueryStudy.h](#)

25.216 `gdcm::RAWCodec` Class Reference

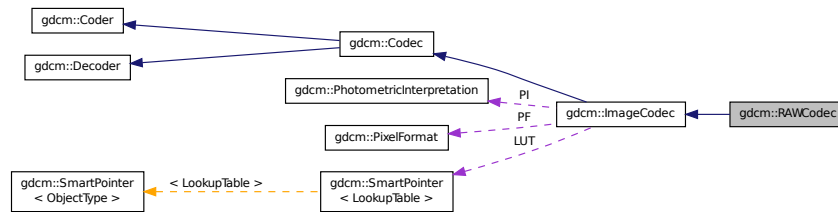
[RAWCodec](#) class.

```
#include <gdcmRAWCodec.h>
```

Inheritance diagram for `gdcm::RAWCodec`:



Collaboration diagram for gdcm::RAWCodec:



Public Member Functions

- [RAWCodec](#) ()
- [~RAWCodec](#) ()
- bool [CanCode](#) ([TransferSyntax](#) const &ts) const
Return whether this coder support this transfer syntax (can code it)
- bool [CanDecode](#) ([TransferSyntax](#) const &ts) const
Return whether this decoder support this transfer syntax (can decode it)
- bool [Code](#) ([DataElement](#) const &in, [DataElement](#) &out)
Code.
- bool [Decode](#) ([DataElement](#) const &is, [DataElement](#) &os)
Decode.
- bool [DecodeBytes](#) (const char *inBytes, size_t inBufferLength, char *outBytes, size_t inOutBufferLength)
- bool [GetHeaderInfo](#) (std::istream &is, [TransferSyntax](#) &ts)

Protected Member Functions

- bool [DecodeByStreams](#) (std::istream &is, std::ostream &os)

Additional Inherited Members

25.216.1 Detailed Description

[RAWCodec](#) class.

25.216.2 Constructor & Destructor Documentation

25.216.2.1 [gdcm::RAWCodec::RAWCodec](#) ()

25.216.2.2 [gdcm::RAWCodec::~~RAWCodec](#) ()

25.216.3 Member Function Documentation

25.216.3.1 bool [gdcm::RAWCodec::CanCode](#) ([TransferSyntax](#) const &) const [virtual]

Return whether this coder support this transfer syntax (can code it)

Reimplemented from [gdcm::ImageCodec](#).

25.216.3.2 `bool gdcm::RAWCodec::CanDecode (TransferSyntax const &) const` [virtual]

Return whether this decoder support this transfer syntax (can decode it)

Reimplemented from [gdcm::ImageCodec](#).

25.216.3.3 `bool gdcm::RAWCodec::Code (DataElement const & in_, DataElement & out_)` [virtual]

Code.

Reimplemented from [gdcm::Coder](#).

25.216.3.4 `bool gdcm::RAWCodec::Decode (DataElement const &, DataElement &)` [virtual]

Decode.

Reimplemented from [gdcm::ImageCodec](#).

25.216.3.5 `bool gdcm::RAWCodec::DecodeByStreams (std::istream & is, std::ostream & os)` [protected],[virtual]

Reimplemented from [gdcm::ImageCodec](#).

25.216.3.6 `bool gdcm::RAWCodec::DecodeBytes (const char * inBytes, size_t inBufferLength, char * outBytes, size_t inOutBufferLength)`

Used by the ImageStreamReader– converts a read in buffer into one with the proper encodings.

25.216.3.7 `bool gdcm::RAWCodec::GetHeaderInfo (std::istream & is, TransferSyntax & ts)` [virtual]

Reimplemented from [gdcm::ImageCodec](#).

The documentation for this class was generated from the following file:

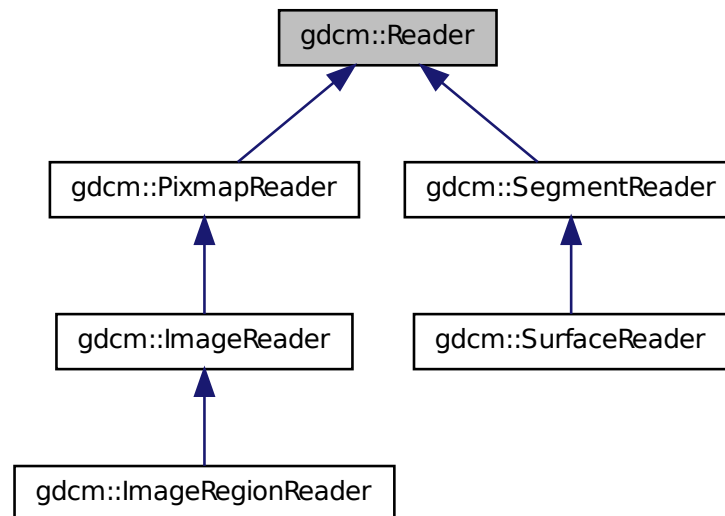
- [gdcmRAWCodec.h](#)

25.217 gdcm::Reader Class Reference

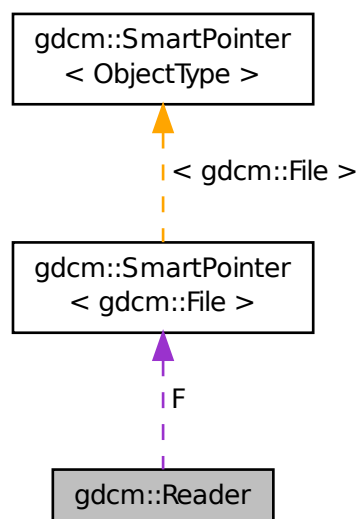
[Reader](#) ala DOM (Document [Object](#) Model)

```
#include <gdcmReader.h>
```

Inheritance diagram for gdcm::Reader:



Collaboration diagram for gdcm::Reader:



Public Member Functions

- [Reader](#) ()
- virtual [~Reader](#) ()
- bool [CanRead](#) () const
- const [File](#) & [GetFile](#) () const
Set/Get File.
- [File](#) & [GetFile](#) ()
Set/Get File.
- virtual bool [Read](#) ()
Main function to read a file.
- bool [ReadSelectedTags](#) (std::set< [Tag](#) > const &tags)
Will only read the specified selected tags.
- bool [ReadUpToTag](#) (const [Tag](#) &tag, std::set< [Tag](#) > const &skiptags=std::set< [Tag](#) >())
- void [SetFile](#) ([File](#) &file)
Set/Get File.
- void [SetFileName](#) (const char *filename_native)
- void [SetStream](#) (std::istream &input_stream)
Set the open-ed stream directly.

Protected Member Functions

- std::istream * [GetStreamPtr](#) () const
- bool [ReadDataSet](#) ()
- bool [ReadMetaInformation](#) ()
- bool [ReadPreamble](#) ()

Protected Attributes

- [SmartPointer](#)< [File](#) > F

Friends

- class [StreamImageReader](#)

25.217.1 Detailed Description

[Reader](#) ala DOM (Document [Object](#) Model)

This class is a non-validating reader, it will only performs well- formedness check only, and to some extent catch known error (non well-formed document).

Detailed description here

A [DataSet](#) DOES NOT contains group 0x0002 (see [FileMetaInformation](#))

This is really a [DataSet](#) reader. This will not make sure the dataset conform to any [IOD](#) at all. This is a completely different step. The reasoning was that user could control the [IOD](#) there lib would handle and thus we would not be able to read a [DataSet](#) if the [IOD](#) was not found Instead we separate the reading from the validation.

Note

From GDCM1.x. Users will realize that one feature is missing from this DOM implementation. In GDCM 1.x user used to be able to control the size of the [Value](#) to be read. By default it was 0xffff. The main author of GDCM2 thought this was too dangerous and harmful and therefore this feature did not make it into GDCM2

Warning

GDCM will not produce warning for unordered (non-alphabetical order).

See Also

[Writer FileMetaInformation DataSet File](#)

Examples:

[ChangeSequenceUltrasound.cxx](#), [ClinicalTrialAnnotate.cxx](#), [csa2img.cxx](#), [DiffFile.cxx](#), [DumpADAC.cxx](#), [DumpGEMSMovieGroup.cxx](#), [DumpImageHeaderInfo.cxx](#), [DuplicatePCDE.cxx](#), [ELSCINT1WaveToText.cxx](#), [ExtractEncryptedContent.cxx](#), [FixBrokenJ2K.cxx](#), [gdcmrtionplan.cxx](#), [gdcmrtplan.cxx](#), [GenLongSeqs.cxx](#), [GenSeqs.cxx](#), [GetSequenceUltrasound.cxx](#), [GetSubSequenceData.cxx](#), [HelloWorld.cxx](#), [iU22tomultisc.cxx](#), [LargeVRDSEExplicit.cxx](#), [PatchFile.cxx](#), [pmsct_rgb1.cxx](#), [ReadAndDumpDICOMDIR.cxx](#), [ReadAndPrintAttributes.cxx](#), [ReadExplicitLengthSQIVR.cxx](#), [ReadGEMSSDO.cxx](#), [ReadUTF8QtDir.cxx](#), [rle2img.cxx](#), and [TestReader.cxx](#).

25.217.2 Constructor & Destructor Documentation

25.217.2.1 `gdcm::Reader::Reader () [inline]`

25.217.2.2 `virtual gdcm::Reader::~~Reader () [virtual]`

25.217.3 Member Function Documentation

25.217.3.1 `bool gdcm::Reader::CanRead () const`

Test whether this is a DICOM file

Warning

need to call either `SetFileName` or `SetStream` first

Examples:

[ReadUTF8QtDir.cxx](#).

25.217.3.2 `const File& gdcm::Reader::GetFile () const [inline]`

Set/Get [File](#).

Examples:

[ChangeSequenceUltrasound.cxx](#), [ClinicalTrialAnnotate.cxx](#), [CompressImage.cxx](#), [csa2img.cxx](#), [DiffFile.cxx](#), [DumpADAC.cxx](#), [DumpImageHeaderInfo.cxx](#), [DuplicatePCDE.cxx](#), [ELSCINT1WaveToText.cxx](#), [ExtractEncryptedContent.cxx](#), [ExtractIconFromFile.cxx](#), [FixBrokenJ2K.cxx](#), [FixJAI BugJPEGLS.cxx](#), [gdcmrtionplan.cxx](#), [gdcmrtplan.cxx](#), [GenLongSeqs.cxx](#), [GenSeqs.cxx](#), [GetJPEGSamplePrecision.cxx](#), [GetSequenceUltrasound.cxx](#), [HelloWorld.cxx](#), [iU22tomultisc.cxx](#), [LargeVRDSEExplicit.cxx](#), [MergeTwoFiles.cxx](#), [MrProtocol.cxx](#), [PatchFile.cxx](#), [pmsct_rgb1.cxx](#), [ReadAndDumpDICOMDIR.cxx](#), [ReadAndPrintAttributes.cxx](#), [ReadExplicitLengthSQIVR.cxx](#), [ReadGEMSSDO.cxx](#), [rle2img.cxx](#), and [TestReader.cxx](#).

25.217.3.3 **File& gdcm::Reader::GetFile ()** [inline]

Set/Get [File](#).

25.217.3.4 **std::istream* gdcm::Reader::GetStreamPtr () const** [inline],[protected]

25.217.3.5 **virtual bool gdcm::Reader::Read ()** [virtual]

Main function to read a file.

Reimplemented in [gdcm::ImageRegionReader](#), [gdcm::PixmapReader](#), [gdcm::ImageReader](#), [gdcm::SegmentReader](#), and [gdcm::SurfaceReader](#).

Examples:

[ChangeSequenceUltrasound.cxx](#), [ClinicalTrialAnnotate.cxx](#), [csa2img.cxx](#), [DiffFile.cxx](#), [DumpADAC.cxx](#), [DumpImageHeaderInfo.cxx](#), [DuplicatePCDE.cxx](#), [ELSCINT1WaveToText.cxx](#), [ExtractEncryptedContent.cxx](#), [FixBrokenJ2K.cxx](#), [gdcmrtionplan.cxx](#), [gdcmrtplan.cxx](#), [GenLongSeqs.cxx](#), [GenSeqs.cxx](#), [GetSequenceUltrasound.cxx](#), [HelloWorld.cxx](#), [iU22tomultisc.cxx](#), [LargeVRDSExplicit.cxx](#), [PatchFile.cxx](#), [pmsct_rgb1.cxx](#), [ReadAndDumpDICOMDIR.cxx](#), [ReadAndPrintAttributes.cxx](#), [ReadExplicitLengthSQIVR.cxx](#), [ReadGEMSSDO.cxx](#), [rle2img.cxx](#), and [TestReader.cxx](#).

25.217.3.6 **bool gdcm::Reader::ReadDataSet ()** [protected]

25.217.3.7 **bool gdcm::Reader::ReadMetaInformation ()** [protected]

25.217.3.8 **bool gdcm::Reader::ReadPreamble ()** [protected]

25.217.3.9 **bool gdcm::Reader::ReadSelectedTags (std::set< Tag > const & tags)**

Will only read the specified selected tags.

25.217.3.10 **bool gdcm::Reader::ReadUpToTag (const Tag & tag, std::set< Tag > const & skiptags = std::set< Tag >())**

Will read only up to [Tag](#)

Parameters

<i>tag</i>	and skipping any tag specified in
<i>skiptags</i>	

25.217.3.11 **void gdcm::Reader::SetFile (File & file)** [inline]

Set/Get [File](#).

25.217.3.12 **void gdcm::Reader::SetFileName (const char * filename_native)**

Set the filename to open. This will create a std::ifstream internally See SetStream if you are dealing with different std::istream object

Examples:

[ChangeSequenceUltrasound.cxx](#), [CheckBigEndianBug.cxx](#), [ClinicalTrialAnnotate.cxx](#), [CompressImage.cxx](#), [ConvertToQImage.cxx](#), [csa2img.cxx](#), [DiffFile.cxx](#), [DumpADAC.cxx](#), [DumpGEMSMovieGroup.cxx](#), [DumpImageHeaderInfo.cxx](#), [DuplicatePCDE.cxx](#), [ELSCINT1WaveToText.cxx](#), [ExtractEncryptedContent.cxx](#), [ExtractIconFromFile.cxx](#), [FixBrokenJ2K.cxx](#), [FixJAI BugJPEGLS.cxx](#), [gdcmrtionplan.cxx](#), [gdcmrtplan.cxx](#), [GenLongSeqs.cxx](#), [GenSeqs.cxx](#), [GetJPEGSamplePrecision.cxx](#), [GetSequenceUltrasound.cxx](#), [GetSubSequenceData.cxx](#), [HelloVizWorld.cxx](#), [HelloWorld.cxx](#), [iU22tomultisc.cxx](#), [LargeVRDSExplicit.cxx](#), [MergeTwoFiles.cxx](#), [MrProtocol.cxx](#), [PatchFile.cxx](#), [pmsct_rgb1.cxx](#), [ReadAndDumpDICOMDIR.cxx](#), [ReadAndPrintAttributes.cxx](#), [ReadExplicitLength-SQIVR.cxx](#), [ReadGEMSSDO.cxx](#), [ReadMultiTimesException.cxx](#), [ReadUTF8QtDir.cxx](#), [rle2img.cxx](#), [TestReader.cxx](#), and [threadgdcm.cxx](#).

25.217.3.13 `void gdcm::Reader::SetStream (std::istream & input_stream)` `[inline]`

Set the open-ed stream directly.

Examples:

[ReadUTF8QtDir.cxx](#).

25.217.4 Friends And Related Function Documentation

25.217.4.1 `friend class StreamImageReader` `[friend]`

25.217.5 Member Data Documentation

25.217.5.1 `SmartPointer<File> gdcm::Reader::F` `[protected]`

The documentation for this class was generated from the following file:

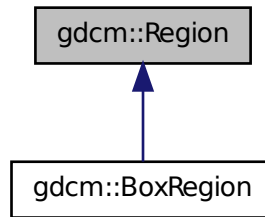
- [gdcmReader.h](#)

25.218 gdcm::Region Class Reference

Class for manipulation region.

```
#include <gdcmRegion.h>
```

Inheritance diagram for `gdcm::Region`:



Public Member Functions

- [Region](#) ()
- virtual [~Region](#) ()
- virtual `size_t` [Area](#) () const =0
compute the area
- virtual [Region](#) * [Clone](#) () const =0
- virtual [BoxRegion](#) [ComputeBoundingBox](#) ()=0
Return the Axis-Aligned minimum bounding box for all regions.
- virtual `bool` [Empty](#) () const =0
return whether this domain is empty:
- virtual `bool` [IsValid](#) () const =0
return whether this is valid domain
- virtual void [Print](#) (std::ostream &os=std::cout) const
Print.

25.218.1 Detailed Description

Class for manipulation region.

25.218.2 Constructor & Destructor Documentation

25.218.2.1 `gdcm::Region::Region ()`

25.218.2.2 `virtual gdcm::Region::~~Region ()` [virtual]

25.218.3 Member Function Documentation

25.218.3.1 `virtual size_t gdcm::Region::Area () const` [pure virtual]

compute the area

Implemented in [gdcm::BoxRegion](#).

25.218.3.2 `virtual Region* gdcm::Region::Clone () const` [pure virtual]

Implemented in [gdcm::BoxRegion](#).

25.218.3.3 `virtual BoxRegion gdcm::Region::ComputeBoundingBox ()` [pure virtual]

Return the Axis-Aligned minimum bounding box for all regions.

Implemented in [gdcm::BoxRegion](#).

25.218.3.4 `virtual bool gdcm::Region::Empty () const` [pure virtual]

return whether this domain is empty:

Implemented in [gdcm::BoxRegion](#).

25.218.3.5 `virtual bool gdcm::Region::IsValid () const` [pure virtual]

return whether this is valid domain

Implemented in [gdcm::BoxRegion](#).

25.218.3.6 `virtual void gdcm::Region::Print (std::ostream & os = std::cout) const` [virtual]

Print.

Reimplemented in [gdcm::BoxRegion](#).

Referenced by `gdcm::operator<<()`.

The documentation for this class was generated from the following file:

- [gdcmRegion.h](#)

25.219 gdcm::Rescaler Class Reference

Rescale class This class is meant to apply the linear transform of Stored Pixel [Value](#) to Real World [Value](#). This is mostly found in CT or PET dataset, where the value are stored using one type, but need to be converted to another scale using a linear transform. There are basically two cases: In CT: the linear transform is generally integer based. E.g. the Stored Pixel [Type](#) is unsigned short 12bits, but to get Hounsfield unit, one need to apply the linear transform:

$$RWV = 1. * SV - 1024$$

So the best scalar to store the Real World [Value](#) will be 16 bits signed type.

```
#include <gdcmRescaler.h>
```

Public Member Functions

- [Rescaler \(\)](#)
- [~Rescaler \(\)](#)
- [PixelFormat::ScalarType ComputeInterceptSlopePixelFormat \(\)](#)

- [PixelFormat ComputePixelTypeFromMinMax](#) ()
- double [GetIntercept](#) () const
- double [GetSlope](#) () const
- bool [InverseRescale](#) (char *out, const char *in, size_t n)
Inverse transform.
- bool [Rescale](#) (char *out, const char *in, size_t n)
Direct transform.
- void [SetIntercept](#) (double i)
Set Intercept: used for both direct&inverse transformation.
- void [SetMinMaxForPixelFormat](#) (double min, double max)
- void [SetPixelFormat](#) ([PixelFormat](#) const &pf)
Set Pixel Format of input data.
- void [SetSlope](#) (double s)
Set Slope: user for both direct&inverse transformation.
- void [SetTargetPixelFormat](#) ([PixelFormat](#) const &targetst)
- void [SetUseTargetPixelFormat](#) (bool b)
Override default behavior of Rescale.

Protected Member Functions

- template<typename TIn >
void [InverseRescaleFunctionIntoBestFit](#) (char *out, const TIn *in, size_t n)
- template<typename TIn >
void [RescaleFunctionIntoBestFit](#) (char *out, const TIn *in, size_t n)

25.219.1 Detailed Description

Rescale class This class is meant to apply the linear transform of Stored Pixel [Value](#) to Real World [Value](#). This is mostly found in CT or PET dataset, where the value are stored using one type, but need to be converted to another scale using a linear transform. There are basically two cases: In CT: the linear transform is generally integer based. E.g. the Stored Pixel [Type](#) is unsigned short 12bits, but to get Hounsfield unit, one need to apply the linear transform:

$$RWV = 1. * SV - 1024$$

So the best scalar to store the Real World [Value](#) will be 16 bits signed type.

In PET: the linear transform is generally floating point based. Since the dynamic range can be quite high, the Rescale Slope / Rescale Intercept can be changing throughout the [Series](#). So it is important to read all linear transform and deduce the best Pixel [Type](#) only at the end (when all the images to be read have been parsed).

Warning

Internally any time a floating point value is found either in the Rescale Slope or the Rescale Intercept it is assumed that the best matching output pixel type is FLOAT64 (in previous implementation it was FLOAT32). Because [VR:DS](#) is closer to a 64bits floating point type FLOAT64 is thus a best matching pixel type for the floating point transformation.

Example: Let say input is FLOAT64, and we want UINT16 as ouput, we would do:

```
Rescaler ir;
ir.SetIntercept( 0 );
ir.SetSlope( 5.6789 );
ir.SetPixelFormat( FLOAT64 );
ir.SetMinMaxForPixelFormat( ((PixelFormat)UINT16).GetMin(), ((PixelFormat)UINT16).GetMax() );
ir.InverseRescale(output,input,numberofbytes );
```

Note

handle floating point transformation back and forth to integer properly (no loss)

See Also

[Unpacker12Bits](#)

25.219.2 Constructor & Destructor Documentation

25.219.2.1 `gdcm::Rescaler::Rescaler ()` `[inline]`

25.219.2.2 `gdcm::Rescaler::~~Rescaler ()` `[inline]`

25.219.3 Member Function Documentation

25.219.3.1 `PixelFormat::ScalarType gdcm::Rescaler::ComputeInterceptSlopePixelFormat ()`

Compute the Pixel Format of the output data Used for direct transformation

25.219.3.2 `PixelFormat gdcm::Rescaler::ComputePixelFormatFromMinMax ()`

Compute the Pixel Format of the output data Used for inverse transformation

25.219.3.3 `double gdcm::Rescaler::GetIntercept () const` `[inline]`

25.219.3.4 `double gdcm::Rescaler::GetSlope () const` `[inline]`

25.219.3.5 `bool gdcm::Rescaler::InverseRescale (char * out, const char * in, size_t n)`

Inverse transform.

25.219.3.6 `template<typename TIn > void gdcm::Rescaler::InverseRescaleFunctionIntoBestFit (char * out, const TIn * in, size_t n)` `[protected]`

25.219.3.7 `bool gdcm::Rescaler::Rescale (char * out, const char * in, size_t n)`

Direct transform.

25.219.3.8 `template<typename TIn > void gdcm::Rescaler::RescaleFunctionIntoBestFit (char * out, const TIn * in, size_t n)` `[protected]`

25.219.3.9 `void gdcm::Rescaler::SetIntercept (double i)` `[inline]`

Set Intercept: used for both direct&inverse transformation.

25.219.3.10 `void gdcm::Rescaler::SetMinMaxForPixelFormat (double min, double max)` `[inline]`

Set target interval for output data. A best match will be computed (if possible) Used for inverse transformation

25.219.3.11 `void gdcm::Rescaler::SetPixelFormat (PixelFormat const & pf)` `[inline]`

Set Pixel Format of input data.

25.219.3.12 `void gdcm::Rescaler::SetSlope (double s)` `[inline]`

Set Slope: user for both direct&inverse transformation.

25.219.3.13 `void gdcm::Rescaler::SetTargetPixelType (PixelFormat const & targetst)`

By default (when `UseTargetPixelType` is false), a best matching Target Pixel [Type](#) is computed. However user can override this auto selection by switching `UseTargetPixelType:true` and also specifying the specifix Target Pixel [Type](#)

25.219.3.14 `void gdcm::Rescaler::SetUseTargetPixelType (bool b)`

Override default behavior of Rescale.

The documentation for this class was generated from the following file:

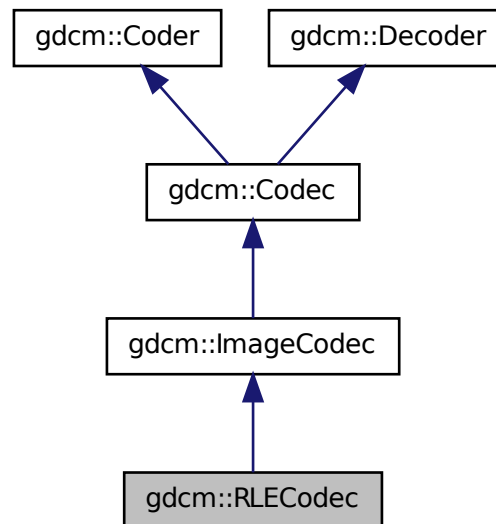
- [gdcmRescaler.h](#)

25.220 gdcm::RLECodec Class Reference

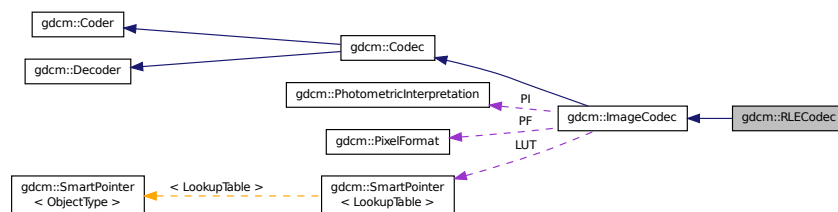
Class to do RLE.

```
#include <gdcmRLECodec.h>
```

Inheritance diagram for gdcm::RLECodec:



Collaboration diagram for gdcm::RLECodec:



Public Member Functions

- [RLECodec](#) ()
- [~RLECodec](#) ()
- bool [CanCode](#) ([TransferSyntax](#) const &ts) const
Return whether this coder support this transfer syntax (can code it)
- bool [CanDecode](#) ([TransferSyntax](#) const &ts) const
Return whether this decoder support this transfer syntax (can decode it)
- bool [Code](#) ([DataElement](#) const &in, [DataElement](#) &out)
Code.
- bool [Decode](#) ([DataElement](#) const &is, [DataElement](#) &os)

Decode.

- unsigned long [GetBufferLength](#) () const
- bool [GetHeaderInfo](#) (std::istream &is, [TransferSyntax](#) &ts)
- void [SetBufferLength](#) (unsigned long l)
- void [SetLength](#) (unsigned long l)

Protected Member Functions

- bool [DecodeByStreams](#) (std::istream &is, std::ostream &os)
- bool [DecodeExtent](#) (char *buffer, unsigned int XMin, unsigned int XMax, unsigned int YMin, unsigned int YMax, unsigned int ZMin, unsigned int ZMax, std::istream &is)

Friends

- class [ImageRegionReader](#)

Additional Inherited Members

25.220.1 Detailed Description

Class to do RLE.

Note

ANSI X3.9 A.4.2 RLE Compression Annex G defines a RLE Compression Transfer Syntax. This transfer Syntax is identified by the UID value "1.2.840.10008.1.2.5". If the object allows multi-frame images in the pixel data field, then each frame shall be encoded separately. Each frame shall be encoded in one and only one [Fragment](#) (see PS 3.5.8.2).

25.220.2 Constructor & Destructor Documentation

25.220.2.1 `gdcm::RLECodec::RLECodec ()`

25.220.2.2 `gdcm::RLECodec::~~RLECodec ()`

25.220.3 Member Function Documentation

25.220.3.1 `bool gdcm::RLECodec::CanCode (TransferSyntax const &) const` `[virtual]`

Return whether this coder support this transfer syntax (can code it)

Reimplemented from [gdcm::ImageCodec](#).

25.220.3.2 `bool gdcm::RLECodec::CanDecode (TransferSyntax const &) const` `[virtual]`

Return whether this decoder support this transfer syntax (can decode it)

Reimplemented from [gdcm::ImageCodec](#).

25.220.3.3 `bool gdcm::RLECodec::Code (DataElement const & in_, DataElement & out_) [virtual]`

Code.

Reimplemented from [gdcm::Coder](#).

25.220.3.4 `bool gdcm::RLECodec::Decode (DataElement const &, DataElement &) [virtual]`

Decode.

Reimplemented from [gdcm::ImageCodec](#).

25.220.3.5 `bool gdcm::RLECodec::DecodeByStreams (std::istream & is, std::ostream & os) [protected], [virtual]`

Reimplemented from [gdcm::ImageCodec](#).

25.220.3.6 `bool gdcm::RLECodec::DecodeExtent (char * buffer, unsigned int XMin, unsigned int XMax, unsigned int YMin, unsigned int YMax, unsigned int ZMin, unsigned int ZMax, std::istream & is) [protected]`

25.220.3.7 `unsigned long gdcm::RLECodec::GetBufferLength () const [inline]`

25.220.3.8 `bool gdcm::RLECodec::GetHeaderInfo (std::istream & is, TransferSyntax & ts) [virtual]`

Reimplemented from [gdcm::ImageCodec](#).

25.220.3.9 `void gdcm::RLECodec::SetBufferLength (unsigned long l) [inline]`

25.220.3.10 `void gdcm::RLECodec::SetLength (unsigned long l) [inline]`

25.220.4 Friends And Related Function Documentation

25.220.4.1 `friend class ImageRegionReader [friend]`

The documentation for this class was generated from the following file:

- [gdcmRLECodec.h](#)

25.221 gdcm::network::RoleSelectionSub Class Reference

[RoleSelectionSub](#) PS 3.7 [Table D.3-9](#) SCP/SCU ROLE SELECTION SUB-ITEM FIELDS (A-ASSOCIATE-RQ)

```
#include <gdcmRoleSelectionSub.h>
```

Public Member Functions

- [RoleSelectionSub](#) ()
- void [Print](#) (std::ostream &os) const
- std::istream & [Read](#) (std::istream &is)
- void [SetTuple](#) (const char *uid, uint8_t scurole, uint8_t scprole)

- `size_t Size () const`
- `const std::ostream & Write (std::ostream &os) const`

25.221.1 Detailed Description

[RoleSelectionSub](#) PS 3.7 [Table D.3-9](#) SCP/SCU ROLE SELECTION SUB-ITEM FIELDS (A-ASSOCIATE-RQ)

25.221.2 Constructor & Destructor Documentation

25.221.2.1 `gdcm::network::RoleSelectionSub::RoleSelectionSub ()`

25.221.3 Member Function Documentation

25.221.3.1 `void gdcm::network::RoleSelectionSub::Print (std::ostream & os) const`

25.221.3.2 `std::istream& gdcm::network::RoleSelectionSub::Read (std::istream & is)`

25.221.3.3 `void gdcm::network::RoleSelectionSub::SetTuple (const char * uid, uint8_t scurole, uint8_t scprole)`

25.221.3.4 `size_t gdcm::network::RoleSelectionSub::Size () const`

25.221.3.5 `const std::ostream& gdcm::network::RoleSelectionSub::Write (std::ostream & os) const`

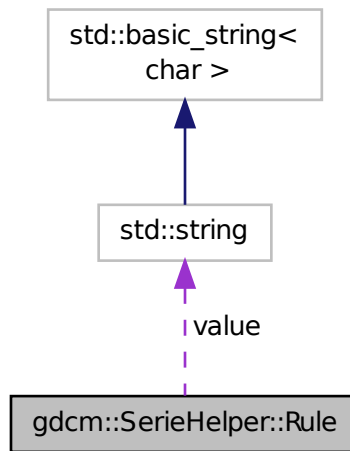
The documentation for this class was generated from the following file:

- [gdcmRoleSelectionSub.h](#)

25.222 gdcm::SerieHelper::Rule Struct Reference

```
#include <gdcmSerieHelper.h>
```


Collaboration diagram for gdcM::SerieHelper::Rule:



Public Attributes

- `uint16_t elem`
- `uint16_t group`
- `int op`
- `std::string value`

25.222.1 Member Data Documentation

25.222.1.1 `uint16_t gdcM::SerieHelper::Rule::elem`

25.222.1.2 `uint16_t gdcM::SerieHelper::Rule::group`

25.222.1.3 `int gdcM::SerieHelper::Rule::op`

25.222.1.4 `std::string gdcM::SerieHelper::Rule::value`

The documentation for this struct was generated from the following file:

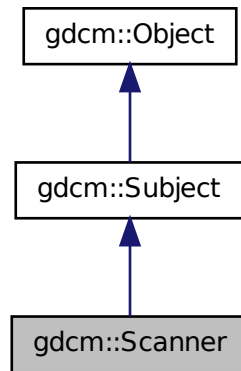
- `gdcMSerieHelper.h`

25.223 gdcM::Scanner Class Reference

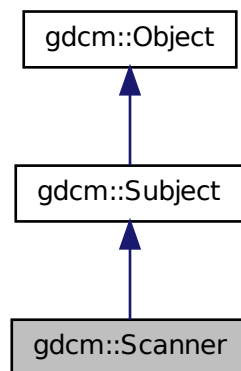
Scanner This filter is meant for quickly browsing a [FileSet](#) (a set of files on disk). Special consideration are taken so as to read the minimum amount of information in each file in order to retrieve the user specified set of DICOM [Attribute](#).

```
#include <gdcmScanner.h>
```

Inheritance diagram for `gdcm::Scanner`:



Collaboration diagram for `gdcm::Scanner`:



Classes

- struct [ltstr](#)

Public Types

- typedef `MappingType::const_iterator` [ConstIterator](#)

- typedef std::map< const char *, [TagToValue](#), [ltstr](#) > [MappingType](#)
- typedef std::map< [Tag](#), const char * > [TagToValue](#)
- typedef [TagToValue](#)::value_type [TagToValueValueType](#)
- typedef std::set< std::string > [ValuesType](#)

Public Member Functions

- [Scanner](#) ()
- [~Scanner](#) ()
- void [AddPrivateTag](#) ([PrivateTag](#) const &t)
- void [AddSkipTag](#) ([Tag](#) const &t)

Add a tag that will need to be skipped. Those are root level skip tags.
- void [AddTag](#) ([Tag](#) const &t)

Add a tag that will need to be read. Those are root level skip tags.
- [ConstIterator](#) [Begin](#) () const
- void [ClearSkipTags](#) ()
- void [ClearTags](#) ()
- [ConstIterator](#) [End](#) () const
- [Directory::FilenamesType](#) [GetAllFilenamesFromTagToValue](#) ([Tag](#) const &t, const char *valueref) const
- const char * [GetFilenameFromTagToValue](#) ([Tag](#) const &t, const char *valueref) const
- [Directory::FilenamesType](#) const & [GetFilenames](#) () const
- [Directory::FilenamesType](#) [GetKeys](#) () const
- [TagToValue](#) const & [GetMapping](#) (const char *filename) const

Get the std::map mapping filenames to value for file 'filename'.
- [TagToValue](#) const & [GetMappingFromTagToValue](#) ([Tag](#) const &t, const char *value) const

See [GetFilenameFromTagToValue\(\)](#). This is simply [GetFilenameFromTagToValue](#) followed.
- [MappingType](#) const & [GetMappings](#) () const

Mappings are the mapping from a particular tag to the map, mapping filename to value:
- [Directory::FilenamesType](#) [GetOrderedValues](#) ([Tag](#) const &t) const
- const char * [GetValue](#) (const char *filename, [Tag](#) const &t) const
- [ValuesType](#) const & [GetValues](#) () const

Get all the values found (in lexicographic order)
- [ValuesType](#) [GetValues](#) ([Tag](#) const &t) const

Get all the values found (in lexicographic order) associated with [Tag](#) 't'.
- bool [IsKey](#) (const char *filename) const
- void [Print](#) (std::ostream &os) const

Print result.
- bool [Scan](#) ([Directory::FilenamesType](#) const &filenames)

Start the scan !

Static Public Member Functions

- static [SmartPointer](#)< [Scanner](#) > [New](#) ()

for wrapped language: instantiate a reference counted object

Protected Member Functions

- void [ProcessPublicTag](#) ([StringFilter](#) &sf, const char *filename)

Friends

- std::ostream & [operator<<](#) (std::ostream &_os, const [Scanner](#) &s)

25.223.1 Detailed Description

[Scanner](#) This filter is meant for quickly browsing a [FileSet](#) (a set of files on disk). Special consideration are taken so as to read the minimum amount of information in each file in order to retrieve the user specified set of DICOM [Attribute](#).

This filter is dealing with both VRASCII and VRBINARY element, thanks to the help of [gdcm::StringFilter](#)

Warning

IMPORTANT In case of file where tags are not ordered (illegal as per DICOM specification), the output will be missing information

Note

implementation details. All values are stored in a std::set of std::string. Then the address of the cstring underlying the std::string is used in the std::map.

This class implement the Subject/Observer pattern trigger the following events:

- [ProgressEvent](#)
- [StartEvent](#)
- [EndEvent](#)

Examples:

[DiscriminateVolume.cxx](#), [DumpToSQLITE3.cxx](#), [SimpleScanner.cxx](#), [SortImage.cxx](#), and [VolumeSorter.cxx](#).

25.223.2 Member Typedef Documentation

25.223.2.1 typedef MappingType::const_iterator [gdcm::Scanner::ConstIterator](#)

25.223.2.2 typedef std::map<const char *,[TagToValue](#), Itstr> [gdcm::Scanner::MappingType](#)

25.223.2.3 typedef std::map<[Tag](#), const char*> [gdcm::Scanner::TagToValue](#)

struct to map a filename to a value Implementation note: all std::map in this class will be using const char * and not std::string since we are pointing to existing std::string (hold in a std::vector) this avoid an extra copy of the byte array. [Tag](#) are used as [Tag](#) class since sizeof(tag) <= sizeof(pointer)

25.223.2.4 `typedef TagToValue::value_type gdcm::Scanner::TagToValueValueType`

25.223.2.5 `typedef std::set< std::string > gdcm::Scanner::ValuesType`

25.223.3 Constructor & Destructor Documentation

25.223.3.1 `gdcm::Scanner::Scanner ()` `[inline]`

25.223.3.2 `gdcm::Scanner::~Scanner ()`

25.223.4 Member Function Documentation

25.223.4.1 `void gdcm::Scanner::AddPrivateTag (PrivateTag const & t)`

25.223.4.2 `void gdcm::Scanner::AddSkipTag (Tag const & t)`

Add a tag that will need to be skipped. Those are root level skip tags.

25.223.4.3 `void gdcm::Scanner::AddTag (Tag const & t)`

Add a tag that will need to be read. Those are root level skip tags.

Examples:

[DiscriminateVolume.cxx](#), [DumpToSQLITE3.cxx](#), [SimpleScanner.cxx](#), [SortImage.cxx](#), and [VolumeSorter.cxx](#).

25.223.4.4 `ConstIterator gdcm::Scanner::Begin () const` `[inline]`

25.223.4.5 `void gdcm::Scanner::ClearSkipTags ()`

25.223.4.6 `void gdcm::Scanner::ClearTags ()`

25.223.4.7 `ConstIterator gdcm::Scanner::End () const` `[inline]`

25.223.4.8 `Directory::FileNamesType gdcm::Scanner::GetAllFileNamesFromTagToValue (Tag const & t, const char * valuref) const`

Will loop over all files and return a vector of std::strings of filenames where value match the reference value 'valuref'

25.223.4.9 `const char* gdcm::Scanner::GetFilenameFromTagToValue (Tag const & t, const char * valuref) const`

Will loop over all files and return the first file where value match the reference value 'valuref'

25.223.4.10 `Directory::FileNamesType const& gdcm::Scanner::GetFileNames () const` `[inline]`

25.223.4.11 `Directory::FileNamesType gdcm::Scanner::GetKeys () const`

Return the list of filename that are key in the internal map, which means those filename were properly parsed

Examples:

[VolumeSorter.cxx](#).

25.223.4.12 TagToValue const& gdcM::Scanner::GetMapping (const char * *filename*) const

Get the std::map mapping filenames to value for file 'filename'.

Examples:

[DumpToSQLITE3.cxx](#), and [SimpleScanner.cxx](#).

25.223.4.13 TagToValue const& gdcM::Scanner::GetMappingFromTagToValue (Tag const & *t*, const char * *value*) const

See [GetFilenameFromTagToValue\(\)](#). This is simply GetFilenameFromTagToValue followed.

25.223.4.14 MappingType const& gdcM::Scanner::GetMappings () const [inline]

Mappings are the mapping from a particular tag to the map, mapping filename to value:

25.223.4.15 Directory::FileNamesType gdcM::Scanner::GetOrderedValues (Tag const & *t*) const

Get all the values found (in a vector) associated with Tag 't' This function is identical to GetValues, but is accessible from the wrapped layer (python, C#, java)

25.223.4.16 const char* gdcM::Scanner::GetValue (const char * *filename*, Tag const & *t*) const

Retrieve the value found for tag: t associated with file: filename This is meant for a single short call. If multiple calls (multiple tags) should be done, prefer the GetMapping function, and then reuse the TagToValue hash table.

Warning

Tag 't' should have been added via [AddTag\(\)](#) prior to the [Scan\(\)](#) call !

25.223.4.17 ValuesType const& gdcM::Scanner::GetValues () const [inline]

Get all the values found (in lexicographic order)

Examples:

[SortImage.cxx](#), and [VolumeSorter.cxx](#).

25.223.4.18 ValuesType gdcM::Scanner::GetValues (Tag const & *t*) const

Get all the values found (in lexicographic order) associated with Tag 't'.

25.223.4.19 `bool gdcm::Scanner::IsKey (const char * filename) const`

Check if filename is a key in the Mapping table. returns true only if file can be found, which means the file was indeed a DICOM file that could be processed

Examples:

[DumpToSQLITE3.cxx](#), and [SimpleScanner.cxx](#).

25.223.4.20 `static SmartPointer<Scanner> gdcm::Scanner::New () [inline],[static]`

for wrapped language: instantiate a reference counted object

25.223.4.21 `void gdcm::Scanner::Print (std::ostream & os) const [virtual]`

Print result.

Reimplemented from [gdcm::Object](#).

Referenced by `gdcm::operator<<()`.

25.223.4.22 `void gdcm::Scanner::ProcessPublicTag (StringFilter & sf, const char * filename) [protected]`

25.223.4.23 `bool gdcm::Scanner::Scan (Directory::FileNamesType const & filenames)`

Start the scan !

Examples:

[DiscriminateVolume.cxx](#), [DumpToSQLITE3.cxx](#), [SimpleScanner.cxx](#), [SortImage.cxx](#), and [VolumeSorter.cxx](#).

25.223.5 Friends And Related Function Documentation

25.223.5.1 `std::ostream& operator<< (std::ostream & _os, const Scanner & s) [friend]`

The documentation for this class was generated from the following file:

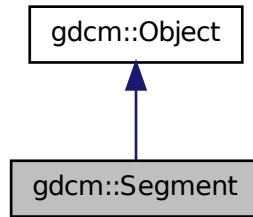
- [gdcmScanner.h](#)

25.224 gdcm::Segment Class Reference

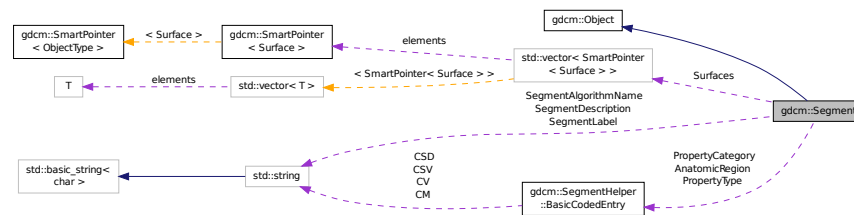
This class defines a segment. It mainly contains attributes of group 0x0062. In addition, it can be associated with surface.

```
#include <gdcmSegment.h>
```

Inheritance diagram for `gdcM::Segment`:



Collaboration diagram for `gdcM::Segment`:



Public Types

- enum `ALGOType` {
`MANUAL` = 0,
`AUTOMATIC`,
`ALGOType_END` }
- typedef `std::vector<SmartPointer<Surface>>` `SurfaceVector`

Public Member Functions

- `Segment()`
- virtual `~Segment()`
- void `AddSurface(SmartPointer<Surface> surface)`
- `SegmentHelper::BasicCodedEntry`
`const & GetAnatomicRegion()` const
- `SegmentHelper::BasicCodedEntry & GetAnatomicRegion()`
- `SegmentHelper::BasicCodedEntry`
`const & GetPropertyCategory()` const
- `SegmentHelper::BasicCodedEntry & GetPropertyCategory()`
- `SegmentHelper::BasicCodedEntry`
`const & GetPropertyType()` const

- [SegmentHelper::BasicCodedEntry](#) & [GetPropertyType](#) ()
- const char * [GetSegmentAlgorithmName](#) () const
- [ALGOType](#) [GetSegmentAlgorithmType](#) () const
- const char * [GetSegmentDescription](#) () const
- const char * [GetSegmentLabel](#) () const
- unsigned short [GetSegmentNumber](#) () const
- [SmartPointer< Surface >](#) [GetSurface](#) (const unsigned int idx=0) const
- unsigned long [GetSurfaceCount](#) ()
- [SurfaceVector](#) const & [GetSurfaces](#) () const
- [SurfaceVector](#) & [GetSurfaces](#) ()
- void [SetAnatomicRegion](#) ([SegmentHelper::BasicCodedEntry](#) const &BSE)
- void [SetPropertyCategory](#) ([SegmentHelper::BasicCodedEntry](#) const &BSE)
- void [SetPropertyType](#) ([SegmentHelper::BasicCodedEntry](#) const &BSE)
- void [SetSegmentAlgorithmName](#) (const char *name)
- void [SetSegmentAlgorithmType](#) ([ALGOType](#) type)
- void [SetSegmentAlgorithmType](#) (const char *typeStr)
- void [SetSegmentDescription](#) (const char *description)
- void [SetSegmentLabel](#) (const char *label)
- void [SetSegmentNumber](#) (const unsigned short num)
- void [SetSurfaceCount](#) (const unsigned long nb)

Static Public Member Functions

- static [ALGOType](#) [GetALGOType](#) (const char *type)
- static const char * [GetALGOTypeString](#) ([ALGOType](#) type)

Protected Attributes

- [SegmentHelper::BasicCodedEntry](#) [AnatomicRegion](#)
- [SegmentHelper::BasicCodedEntry](#) [PropertyCategory](#)
- [SegmentHelper::BasicCodedEntry](#) [PropertyType](#)
- std::string [SegmentAlgorithmName](#)
- [ALGOType](#) [SegmentAlgorithmType](#)
- std::string [SegmentDescription](#)
- std::string [SegmentLabel](#)
- unsigned short [SegmentNumber](#)
- unsigned long [SurfaceCount](#)
- [SurfaceVector](#) [Surfaces](#)

Additional Inherited Members

25.224.1 Detailed Description

This class defines a segment. It mainly contains attributes of group 0x0062. In addition, it can be associated with surface.

See Also

PS 3.3 C.8.20.2 and C.8.23

25.224.2 Member Typedef Documentation

25.224.2.1 `typedef std::vector< SmartPointer< Surface > > gdcm::Segment::SurfaceVector`

25.224.3 Member Enumeration Documentation

25.224.3.1 `enum gdcm::Segment::ALGOType`

Enumerator

MANUAL

AUTOMATIC

ALGOType_END

25.224.4 Constructor & Destructor Documentation

25.224.4.1 `gdcm::Segment::Segment ()`

25.224.4.2 `virtual gdcm::Segment::~~Segment () [virtual]`

25.224.5 Member Function Documentation

25.224.5.1 `void gdcm::Segment::AddSurface (SmartPointer< Surface > surface)`

25.224.5.2 `static ALGOType gdcm::Segment::GetALGOType (const char * type) [static]`

25.224.5.3 `static const char* gdcm::Segment::GetALGOTypeString (ALGOType type) [static]`

25.224.5.4 `SegmentHelper::BasicCodedEntry const& gdcm::Segment::GetAnatomicRegion () const`

25.224.5.5 `SegmentHelper::BasicCodedEntry& gdcm::Segment::GetAnatomicRegion ()`

25.224.5.6 `SegmentHelper::BasicCodedEntry const& gdcm::Segment::GetPropertyCategory () const`

25.224.5.7 `SegmentHelper::BasicCodedEntry& gdcm::Segment::GetPropertyCategory ()`

25.224.5.8 `SegmentHelper::BasicCodedEntry const& gdcm::Segment::GetPropertyType () const`

25.224.5.9 `SegmentHelper::BasicCodedEntry& gdcm::Segment::GetPropertyType ()`

25.224.5.10 `const char* gdcm::Segment::GetSegmentAlgorithmName () const`

25.224.5.11 `ALGOType gdcm::Segment::GetSegmentAlgorithmType () const`

25.224.5.12 `const char* gdcm::Segment::GetSegmentDescription () const`

25.224.5.13 `const char* gdcm::Segment::GetSegmentLabel () const`

25.224.5.14 `unsigned short gdcm::Segment::GetSegmentNumber () const`

25.224.5.15 `SmartPointer< Surface > gdcm::Segment::GetSurface (const unsigned int idx = 0) const`

- 25.224.5.16 unsigned long gdcm::Segment::GetSurfaceCount ()
- 25.224.5.17 SurfaceVector const& gdcm::Segment::GetSurfaces () const
- 25.224.5.18 SurfaceVector& gdcm::Segment::GetSurfaces ()
- 25.224.5.19 void gdcm::Segment::SetAnatomicRegion (SegmentHelper::BasicCodedEntry const & *BSE*)
- 25.224.5.20 void gdcm::Segment::SetPropertyCategory (SegmentHelper::BasicCodedEntry const & *BSE*)
- 25.224.5.21 void gdcm::Segment::SetPropertyType (SegmentHelper::BasicCodedEntry const & *BSE*)
- 25.224.5.22 void gdcm::Segment::SetSegmentAlgorithmName (const char * *name*)
- 25.224.5.23 void gdcm::Segment::SetSegmentAlgorithmType (ALGOType *type*)
- 25.224.5.24 void gdcm::Segment::SetSegmentAlgorithmType (const char * *typeStr*)
- 25.224.5.25 void gdcm::Segment::SetSegmentDescription (const char * *description*)
- 25.224.5.26 void gdcm::Segment::SetSegmentLabel (const char * *label*)
- 25.224.5.27 void gdcm::Segment::SetSegmentNumber (const unsigned short *num*)
- 25.224.5.28 void gdcm::Segment::SetSurfaceCount (const unsigned long *nb*)

25.224.6 Member Data Documentation

- 25.224.6.1 SegmentHelper::BasicCodedEntry gdcm::Segment::AnatomicRegion [protected]
- 25.224.6.2 SegmentHelper::BasicCodedEntry gdcm::Segment::PropertyCategory [protected]
- 25.224.6.3 SegmentHelper::BasicCodedEntry gdcm::Segment::PropertyType [protected]
- 25.224.6.4 std::string gdcm::Segment::SegmentAlgorithmName [protected]
- 25.224.6.5 ALGOType gdcm::Segment::SegmentAlgorithmType [protected]
- 25.224.6.6 std::string gdcm::Segment::SegmentDescription [protected]
- 25.224.6.7 std::string gdcm::Segment::SegmentLabel [protected]
- 25.224.6.8 unsigned short gdcm::Segment::SegmentNumber [protected]
- 25.224.6.9 unsigned long gdcm::Segment::SurfaceCount [protected]
- 25.224.6.10 SurfaceVector gdcm::Segment::Surfaces [protected]

The documentation for this class was generated from the following file:

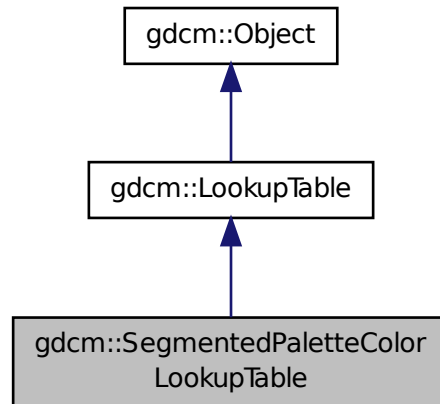
- [gdcmSegment.h](#)

25.225 gdcm::SegmentedPaletteColorLookupTable Class Reference

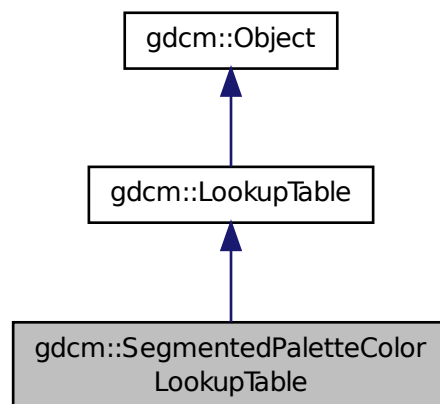
[SegmentedPaletteColorLookupTable](#) class.

```
#include <gdcmSegmentedPaletteColorLookupTable.h>
```

Inheritance diagram for gdcm::SegmentedPaletteColorLookupTable:



Collaboration diagram for gdcm::SegmentedPaletteColorLookupTable:



Public Member Functions

- [SegmentedPaletteColorLookupTable](#) ()
- [~SegmentedPaletteColorLookupTable](#) ()
- void [Print](#) (std::ostream &) const
- void [SetLUT](#) ([LookupTableType](#) type, const unsigned char *array, unsigned int length)

Initialize a [SegmentedPaletteColorLookupTable](#).

Additional Inherited Members

25.225.1 Detailed Description

[SegmentedPaletteColorLookupTable](#) class.

25.225.2 Constructor & Destructor Documentation

25.225.2.1 `gdcm::SegmentedPaletteColorLookupTable::SegmentedPaletteColorLookupTable ()`

25.225.2.2 `gdcm::SegmentedPaletteColorLookupTable::~~SegmentedPaletteColorLookupTable ()`

25.225.3 Member Function Documentation

25.225.3.1 `void gdcm::SegmentedPaletteColorLookupTable::Print (std::ostream &) const` `[inline]`, `[virtual]`

Reimplemented from [gdcm::LookupTable](#).

25.225.3.2 `void gdcm::SegmentedPaletteColorLookupTable::SetLUT (LookupTableType type, const unsigned char * array, unsigned int length)` `[virtual]`

Initialize a [SegmentedPaletteColorLookupTable](#).

Reimplemented from [gdcm::LookupTable](#).

The documentation for this class was generated from the following file:

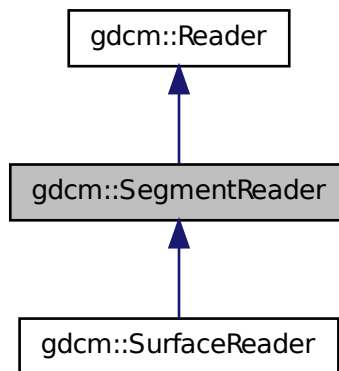
- [gdcmSegmentedPaletteColorLookupTable.h](#)

25.226 gdcm::SegmentReader Class Reference

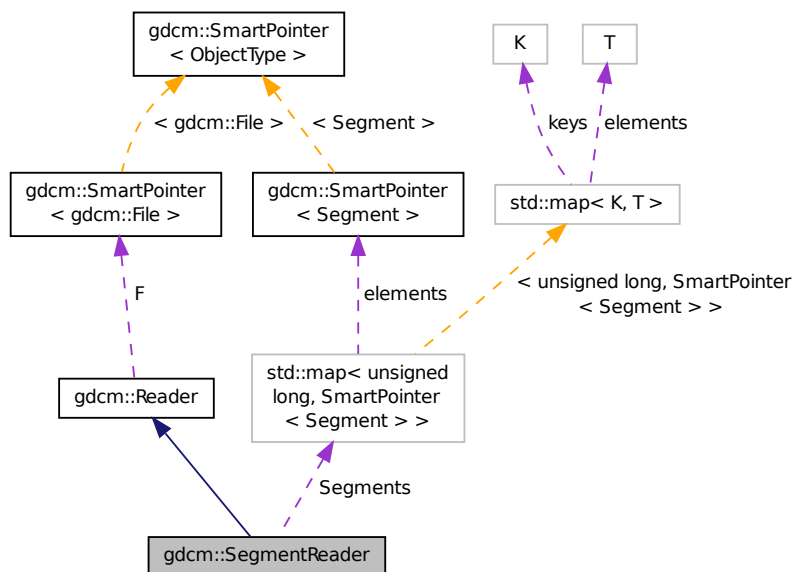
This class defines a segment reader. It reads attributes of group 0x0062.

```
#include <gdcmSegmentReader.h>
```

Inheritance diagram for `gdcm::SegmentReader`:



Collaboration diagram for `gdcm::SegmentReader`:



Public Types

- typedef `std::vector< SmartPointer< Segment > >` `SegmentVector`

Public Member Functions

- [SegmentReader](#) ()
- virtual [~SegmentReader](#) ()
- const [SegmentVector](#) [GetSegments](#) () const
- [SegmentVector](#) [GetSegments](#) ()
- virtual bool [Read](#) ()

Read.

Protected Types

- typedef std::map< unsigned long, [SmartPointer](#)< [Segment](#) > > [SegmentMap](#)

Protected Member Functions

- bool [ReadSegment](#) (const [Item](#) &segmentItem, const unsigned int idx)
- bool [ReadSegments](#) ()

Protected Attributes

- [SegmentMap](#) [Segments](#)

25.226.1 Detailed Description

This class defines a segment reader. It reads attributes of group 0x0062.

See Also

PS 3.3 C.8.20.2 and C.8.23

25.226.2 Member Typedef Documentation

25.226.2.1 `typedef std::map< unsigned long, SmartPointer< Segment > > gdcm::SegmentReader::SegmentMap`
[protected]

25.226.2.2 `typedef std::vector< SmartPointer< Segment > > gdcm::SegmentReader::SegmentVector`

25.226.3 Constructor & Destructor Documentation

25.226.3.1 `gdcm::SegmentReader::SegmentReader ()`

25.226.3.2 `virtual gdcm::SegmentReader::~~SegmentReader ()` [virtual]

25.226.4 Member Function Documentation

25.226.4.1 `const SegmentVector gdcm::SegmentReader::GetSegments ()` const

25.226.4.2 **SegmentVector** `gdcm::SegmentReader::GetSegments ()`

25.226.4.3 **virtual bool** `gdcm::SegmentReader::Read ()` `[virtual]`

Read.

Reimplemented from [gdcm::Reader](#).

Reimplemented in [gdcm::SurfaceReader](#).

25.226.4.4 **bool** `gdcm::SegmentReader::ReadSegment (const Item & segmentItem, const unsigned int idx)` `[protected]`

25.226.4.5 **bool** `gdcm::SegmentReader::ReadSegments ()` `[protected]`

25.226.5 Member Data Documentation

25.226.5.1 **SegmentMap** `gdcm::SegmentReader::Segments` `[protected]`

The documentation for this class was generated from the following file:

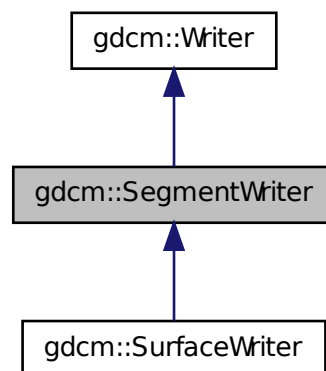
- [gdcmSegmentReader.h](#)

25.227 `gdcm::SegmentWriter` Class Reference

This class defines a segment writer. It writes attributes of group 0x0062.

```
#include <gdcmSegmentWriter.h>
```

Inheritance diagram for `gdcm::SegmentWriter`:



25.227.2 Member Typedef Documentation

25.227.2.1 `typedef std::vector< SmartPointer< Segment > > gdcm::SegmentWriter::SegmentVector`

25.227.3 Constructor & Destructor Documentation

25.227.3.1 `gdcm::SegmentWriter::SegmentWriter ()`

25.227.3.2 `virtual gdcm::SegmentWriter::~~SegmentWriter () [virtual]`

25.227.4 Member Function Documentation

25.227.4.1 `void gdcm::SegmentWriter::AddSegment (SmartPointer< Segment > segment)`

25.227.4.2 `unsigned int gdcm::SegmentWriter::GetNumberOfSegments () const`

25.227.4.3 `SmartPointer< Segment > gdcm::SegmentWriter::GetSegment (const unsigned int idx = 0) const`

25.227.4.4 `const SegmentVector& gdcm::SegmentWriter::GetSegments () const`

25.227.4.5 `SegmentVector& gdcm::SegmentWriter::GetSegments ()`

25.227.4.6 `bool gdcm::SegmentWriter::PrepareWrite () [protected]`

25.227.4.7 `void gdcm::SegmentWriter::SetNumberOfSegments (const unsigned int size)`

25.227.4.8 `void gdcm::SegmentWriter::SetSegments (SegmentVector & segments)`

25.227.4.9 `bool gdcm::SegmentWriter::Write () [virtual]`

Write.

Reimplemented from [gdcm::Writer](#).

Reimplemented in [gdcm::SurfaceWriter](#).

25.227.5 Member Data Documentation

25.227.5.1 `SegmentVector gdcm::SegmentWriter::Segments [protected]`

The documentation for this class was generated from the following file:

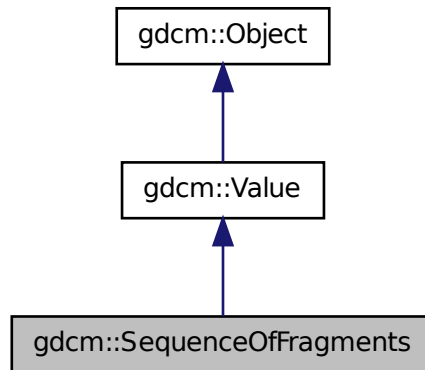
- [gdcmSegmentWriter.h](#)

25.228 gdcm::SequenceOfFragments Class Reference

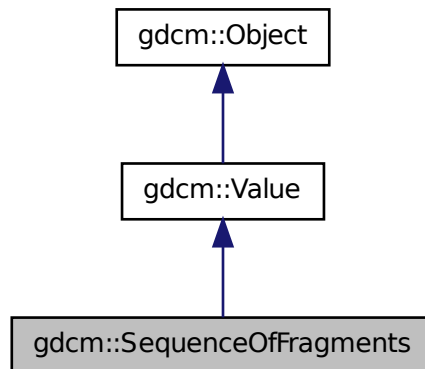
Class to represent a Sequence Of Fragments.

```
#include <gdcmSequenceOfFragments.h>
```

Inheritance diagram for gdcm::SequenceOfFragments:



Collaboration diagram for gdcm::SequenceOfFragments:



Public Types

- typedef
FragmentVector::const_iterator [ConstIterator](#)
- typedef std::vector< [Fragment](#) > [FragmentVector](#)
- typedef FragmentVector::iterator [Iterator](#)
- typedef FragmentVector::size_type [SizeType](#)

Public Member Functions

- [SequenceOfFragments](#) ()
constructor (UndefinedLength by default)
- void [AddFragment](#) ([Fragment](#) const &item)
Appends a [Fragment](#) to the already added ones.
- [Iterator Begin](#) ()
- [ConstIterator Begin](#) () const
- void [Clear](#) ()
Clear.
- unsigned long [ComputeByteLength](#) () const
- [VL ComputeLength](#) () const
- [Iterator End](#) ()
- [ConstIterator End](#) () const
- bool [GetBuffer](#) (char *buffer, unsigned long length) const
- bool [GetFragBuffer](#) (unsigned int fragNb, char *buffer, unsigned long &length) const
- const [Fragment](#) & [GetFragment](#) ([SizeType](#) num) const
- [VL GetLength](#) () const
Returns the SQ length, as read from disk.
- [SizeType GetNumberOfFragments](#) () const
- const [BasicOffsetTable](#) & [GetTable](#) () const
- [BasicOffsetTable](#) & [GetTable](#) ()
- bool [operator==](#) (const [Value](#) &val) const
- void [Print](#) (std::ostream &os) const
- template<typename TSwap >
std::istream & [Read](#) (std::istream &is)
- template<typename TSwap >
std::istream & [ReadPreValue](#) (std::istream &is)
- template<typename TSwap >
std::istream & [ReadValue](#) (std::istream &is)
- void [SetLength](#) ([VL](#) length)
Sets the actual SQ length.
- template<typename TSwap >
std::ostream const & [Write](#) (std::ostream &os) const
- bool [WriteBuffer](#) (std::ostream &os) const

Static Public Member Functions

- static [SmartPointer](#)
< [SequenceOfFragments](#) > [New](#) ()

Additional Inherited Members

25.228.1 Detailed Description

Class to represent a Sequence Of Fragments.

Todo I do not enforce that Sequence of Fragments ends with a SQ end del

Examples:

[FixBrokenJ2K.cxx](#), [FixJAIBugJPEGLS.cxx](#), and [GetJPEGSamplePrecision.cxx](#).

25.228.2 Member Typedef Documentation

25.228.2.1 `typedef FragmentVector::const_iterator gdcmm::SequenceOfFragments::ConstIterator`

25.228.2.2 `typedef std::vector<Fragment> gdcmm::SequenceOfFragments::FragmentVector`

25.228.2.3 `typedef FragmentVector::iterator gdcmm::SequenceOfFragments::Iterator`

25.228.2.4 `typedef FragmentVector::size_type gdcmm::SequenceOfFragments::SizeType`

25.228.3 Constructor & Destructor Documentation

25.228.3.1 `gdcmm::SequenceOfFragments::SequenceOfFragments () [inline]`

constructor (UndefinedLength by default)

25.228.4 Member Function Documentation

25.228.4.1 `void gdcmm::SequenceOfFragments::AddFragment (Fragment const & item)`

Appends a [Fragment](#) to the already added ones.

Examples:

[FixBrokenJ2K.cxx](#).

25.228.4.2 `Iterator gdcmm::SequenceOfFragments::Begin () [inline]`

25.228.4.3 `ConstIterator gdcmm::SequenceOfFragments::Begin () const [inline]`

25.228.4.4 `void gdcmm::SequenceOfFragments::Clear () [virtual]`

Clear.

Implements [gdcmm::Value](#).

25.228.4.5 `unsigned long gdcmm::SequenceOfFragments::ComputeByteLength () const`

25.228.4.6 `VL gdcmm::SequenceOfFragments::ComputeLength () const`

25.228.4.7 `Iterator gdcmm::SequenceOfFragments::End () [inline]`

25.228.4.8 `ConstIterator gdcmm::SequenceOfFragments::End () const [inline]`

25.228.4.9 `bool gdcmm::SequenceOfFragments::GetBuffer (char * buffer, unsigned long length) const`

25.228.4.10 `bool gdcmm::SequenceOfFragments::GetFragBuffer (unsigned int fragNb, char * buffer, unsigned long & length) const`

25.228.4.11 `const Fragment& gdcM::SequenceOfFragments::GetFragment (SizeType num) const`

Examples:

[FixBrokenJ2K.cxx](#), and [FixJAIBugJPEGs.cxx](#).

25.228.4.12 `VL gdcM::SequenceOfFragments::GetLength () const [inline],[virtual]`

Returns the SQ length, as read from disk.

Implements [gdcM::Value](#).

25.228.4.13 `SizeType gdcM::SequenceOfFragments::GetNumberOfFragments () const`

Examples:

[FixJAIBugJPEGs.cxx](#).

25.228.4.14 `const BasicOffsetTable& gdcM::SequenceOfFragments::GetTable () const [inline]`

25.228.4.15 `BasicOffsetTable& gdcM::SequenceOfFragments::GetTable () [inline]`

25.228.4.16 `static SmartPointer<SequenceOfFragments> gdcM::SequenceOfFragments::New () [inline],[static]`

25.228.4.17 `bool gdcM::SequenceOfFragments::operator== (const Value & val) const [inline],[virtual]`

Implements [gdcM::Value](#).

25.228.4.18 `void gdcM::SequenceOfFragments::Print (std::ostream & os) const [inline],[virtual]`

Reimplemented from [gdcM::Object](#).

25.228.4.19 `template<typename TSwap > std::istream& gdcM::SequenceOfFragments::Read (std::istream & is) [inline]`

25.228.4.20 `template<typename TSwap > std::istream& gdcM::SequenceOfFragments::ReadPreValue (std::istream & is) [inline]`

References [gdcMDebugMacro](#), and [gdcM::DataElement::SetByteValue\(\)](#).

25.228.4.21 `template<typename TSwap > std::istream& gdcM::SequenceOfFragments::ReadValue (std::istream & is) [inline]`

References [gdcMDebugMacro](#), [gdcMWarningMacro](#), [gdcM::Tag::GetElement\(\)](#), [gdcM::Tag::GetGroup\(\)](#), [gdcM::ByteValue::GetLength\(\)](#), [gdcM::ByteValue::GetPointer\(\)](#), [gdcM::DataElement::GetTag\(\)](#), [gdcM::DataElement::GetVL\(\)](#), [gdcM::Fragment::Read\(\)](#), [gdcM::Fragment::ReadBacktrack\(\)](#), and [gdcM::Exception::what\(\)](#).

25.228.4.22 `void gdcm::SequenceOfFragments::SetLength (VL length) [inline],[virtual]`

Sets the actual SQ length.

Implements [gdcm::Value](#).

25.228.4.23 `template<typename TSwap > std::ostream const& gdcm::SequenceOfFragments::Write (std::ostream & os) const [inline]`

References [gdcm::VL::Write\(\)](#), and [gdcm::Tag::Write\(\)](#).

25.228.4.24 `bool gdcm::SequenceOfFragments::WriteBuffer (std::ostream & os) const`

Examples:

[GetJPEGSamplePrecision.cxx](#).

The documentation for this class was generated from the following file:

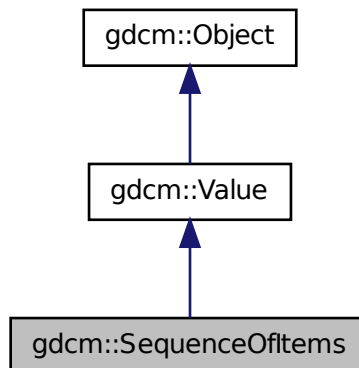
- [gdcmSequenceOfFragments.h](#)

25.229 gdcm::SequenceOfItems Class Reference

Class to represent a Sequence Of Items (value representation : SQ)

```
#include <gdcmSequenceOfItems.h>
```

Inheritance diagram for `gdcm::SequenceOfItems`:



- bool [FindDataElement](#) (const [Tag](#) &t) const
- const [Item](#) & [GetItem](#) ([SizeType](#) position) const
- [Item](#) & [GetItem](#) ([SizeType](#) position)
- [VL GetLength](#) () const
Returns the SQ length, as read from disk.
- [SizeType GetNumberOfItems](#) () const
- bool [IsUndefinedLength](#) () const
return if [Value](#) Length if of undefined length
- [SequenceOfItems](#) & [operator=](#) (const [SequenceOfItems](#) &val)
- bool [operator==](#) (const [Value](#) &val) const
- void [Print](#) (std::ostream &os) const
- template<typename TDE , typename TSwap >
std::istream & [Read](#) (std::istream &is)
- void [SetLength](#) ([VL](#) length)
Sets the actual SQ length.
- void [SetLengthToUndefined](#) ()
Properly set the Sequence of [Item](#) to be undefined length.
- void [SetNumberOfItems](#) ([SizeType](#) n)
- template<typename TDE , typename TSwap >
std::ostream const & [Write](#) (std::ostream &os) const

Static Public Member Functions

- static [SmartPointer](#)
< [SequenceOfItems](#) > [New](#) ()

Public Attributes

- [ItemVector Items](#)
Vector of Sequence Items.
- [VL SequenceLengthField](#)
Total length of the Sequence (or 0xffffffff) if undefined.

Additional Inherited Members

25.229.1 Detailed Description

Class to represent a Sequence Of Items (value representation : SQ)

- a [Value](#) Representation for Data Elements that contains a sequence of Data Sets.
- Sequence of [Item](#) allows for Nested Data Sets

See PS 3.5, 7.4.6 Data [Element Type](#) Within a Sequence

Note

SEQUENCE OF ITEMS (VALUE REPRESENTATION SQ) A [Value](#) Representation for Data Elements that contain a sequence of Data Sets. Sequence of Items allows for Nested Data Sets.

Examples:

[DumpGEMSMovieGroup.cxx](#), [ExtractEncryptedContent.cxx](#), [Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [GenAllVR.cxx](#), [GenFakeIdentifyFile.cxx](#), [GenLongSeqs.cxx](#), [GenSeqs.cxx](#), [GetSequenceUltrasound.cxx](#), and [ReadExplicitLengthSQIVR.cxx](#).

25.229.2 Member Typedef Documentation

25.229.2.1 `typedef ItemVector::const_iterator gdcmm::SequenceOfItems::ConstIterator`

25.229.2.2 `typedef std::vector< Item > gdcmm::SequenceOfItems::ItemVector`

25.229.2.3 `typedef ItemVector::iterator gdcmm::SequenceOfItems::Iterator`

25.229.2.4 `typedef ItemVector::size_type gdcmm::SequenceOfItems::SizeType`

25.229.3 Constructor & Destructor Documentation

25.229.3.1 `gdcmm::SequenceOfItems::SequenceOfItems () [inline]`

constructor (UndefinedLength by default)

25.229.4 Member Function Documentation

25.229.4.1 `void gdcmm::SequenceOfItems::AddItem (Item const & item)`

Appends an [Item](#) to the already added ones.

Examples:

[Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [GenAllVR.cxx](#), [GenLongSeqs.cxx](#), and [GenSeqs.cxx](#).

25.229.4.2 `Iterator gdcmm::SequenceOfItems::Begin () [inline]`

25.229.4.3 `ConstIterator gdcmm::SequenceOfItems::Begin () const [inline]`

25.229.4.4 `void gdcmm::SequenceOfItems::Clear () [inline],[virtual]`

Implements [gdcmm::Value](#).

25.229.4.5 `template<typename TDE > VL gdcmm::SequenceOfItems::ComputeLength () const`

25.229.4.6 `Iterator gdcmm::SequenceOfItems::End () [inline]`

25.229.4.7 **ConstIterator** gdcm::SequenceOfItems::End () const [inline]

25.229.4.8 **bool** gdcm::SequenceOfItems::FindDataElement (const Tag & t) const

25.229.4.9 **const Item&** gdcm::SequenceOfItems::GetItem (**SizeType** position) const

Examples:

[ChangeSequenceUltrasound.cxx](#), [DumpGEMSMovieGroup.cxx](#), [ExtractEncryptedContent.cxx](#), [gdcmrtionplan.cxx](#), [gdcmrtplan.cxx](#), [GetSequenceUltrasound.cxx](#), [LargeVRDSExplicit.cxx](#), and [ReadAndDumpDICOMDIR.cxx](#).

25.229.4.10 **Item&** gdcm::SequenceOfItems::GetItem (**SizeType** position)

25.229.4.11 **VL** gdcm::SequenceOfItems::GetLength () const [inline],[virtual]

Returns the SQ length, as read from disk.

Implements [gdcm::Value](#).

25.229.4.12 **SizeType** gdcm::SequenceOfItems::GetNumberOfItems () const [inline]

Examples:

[ChangeSequenceUltrasound.cxx](#), [DumpGEMSMovieGroup.cxx](#), [ExtractEncryptedContent.cxx](#), [gdcmrtionplan.cxx](#), [gdcmrtplan.cxx](#), [GetSequenceUltrasound.cxx](#), and [LargeVRDSExplicit.cxx](#).

25.229.4.13 **bool** gdcm::SequenceOfItems::IsUndefinedLength () const [inline]

return if [Value](#) Length if of undefined length

25.229.4.14 **static SmartPointer<SequenceOfItems>** gdcm::SequenceOfItems::New () [inline],[static]

25.229.4.15 **SequenceOfItems&** gdcm::SequenceOfItems::operator= (const **SequenceOfItems** & val) [inline]

References Items, and SequenceLengthField.

25.229.4.16 **bool** gdcm::SequenceOfItems::operator==(const **Value** & val) const [inline],[virtual]

Implements [gdcm::Value](#).

References Items, and SequenceLengthField.

25.229.4.17 **void** gdcm::SequenceOfItems::Print (std::ostream & os) const [inline],[virtual]

Reimplemented from [gdcm::Object](#).

25.229.4.18 `template<typename TDE , typename TSwap > std::istream& gdcmm::SequenceOfItems::Read (std::istream & is)`
`[inline]`

Examples:

[ReadExplicitLengthSQIVR.cxx](#).

References `gdcmm::Item::Clear()`, `gdcmmDebugMacro`, `gdcmmWarningMacro`, `gdcmm::Exception::GetDescription()`, `gdcmm::Item::GetNestedDataSet()`, `gdcmm::DataElement::GetTag()`, `gdcmm::DataElement::GetVL()`, `gdcmm::Item::Read()`, and `gdcmm::DataSet::Size()`.

25.229.4.19 `void gdcmm::SequenceOfItems::SetLength (VL length)` `[inline],[virtual]`

Sets the actual SQ length.

Implements [gdcmm::Value](#).

Examples:

[ReadExplicitLengthSQIVR.cxx](#).

25.229.4.20 `void gdcmm::SequenceOfItems::SetLengthToUndefined ()`

Properly set the Sequence of [Item](#) to be undefined length.

Examples:

[Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [GenAllIVR.cxx](#), [GenLongSeqs.cxx](#), and [GenSeqs.cxx](#).

25.229.4.21 `void gdcmm::SequenceOfItems::SetNumberOfItems (SizeType n)` `[inline]`

25.229.4.22 `template<typename TDE , typename TSwap > std::ostream const& gdcmm::SequenceOfItems::Write (std::ostream & os) const` `[inline]`

References `gdcmm::VL::Write()`, and `gdcmm::Tag::Write()`.

25.229.5 Member Data Documentation

25.229.5.1 ItemVector `gdcmm::SequenceOfItems::Items`

Vector of Sequence Items.

Referenced by `operator=()`, and `operator==()`.

25.229.5.2 VL `gdcmm::SequenceOfItems::SequenceLengthField`

Total length of the Sequence (or 0xffffffff) if undefined.

Referenced by `operator=()`, and `operator==()`.

The documentation for this class was generated from the following file:

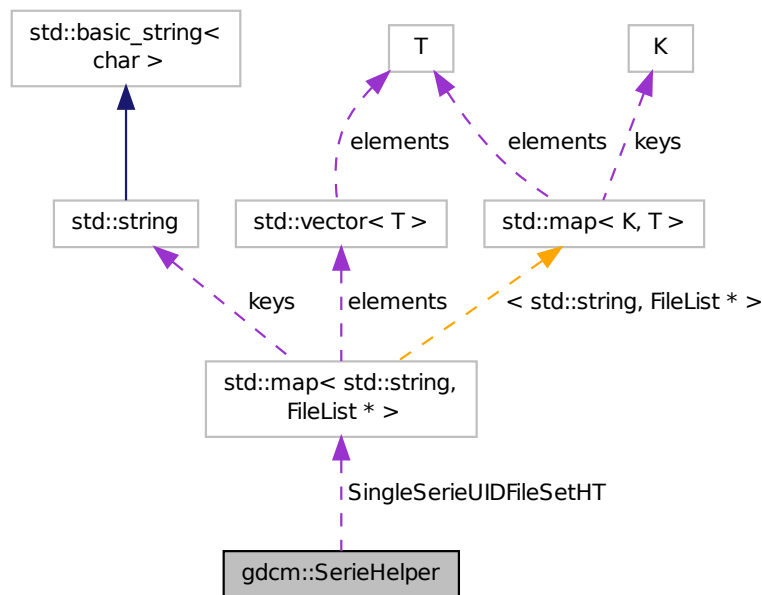
- [gdcmSequenceOfItems.h](#)

25.230 gdcm::SerieHelper Class Reference

[SerieHelper](#) DO NOT USE this class, it is only a temporary solution for ITK migration from GDCM 1.x to GDCM 2.x It will disappear soon, you've been warned.

```
#include <gdcmSerieHelper.h>
```

Collaboration diagram for gdcm::SerieHelper:



Classes

- struct [Rule](#)

Public Member Functions

- [SerieHelper](#) ()
- [~SerieHelper](#) ()
- void [AddRestriction](#) (const std::string &tag)
- void [AddRestriction](#) (uint16_t group, uint16_t elem, std::string const &value, int op)
- void [Clear](#) ()
- void [CreateDefaultUniqueSeriesIdentifier](#) ()
- std::string [CreateUniqueSeriesIdentifier](#) ([File](#) *inFile)
- [FileList](#) * [GetFirstSingleSerieUIDFileSet](#) ()

- [FileList](#) * [GetNextSingleSerieUIDFileSet](#) ()
- void [OrderFileList](#) ([FileList](#) *fileSet)
- void [SetDirectory](#) (std::string const &dir, bool recursive=false)
- void [SetLoadMode](#) (int)
- void [SetUseSeriesDetails](#) (bool useSeriesDetails)

Protected Types

- typedef std::vector< [Rule](#) > [SerieRestrictions](#)
- typedef std::map< std::string, [FileList](#) * > [SingleSerieUIDFileSetmap](#)

Protected Member Functions

- bool [AddFile](#) ([FileWithName](#) &header)
- void [AddFileName](#) (std::string const &filename)
- void [AddRestriction](#) (const [Tag](#) &tag)
- bool [FileNameOrdering](#) ([FileList](#) *fileList)
- bool [ImagePositionPatientOrdering](#) ([FileList](#) *fileSet)
- bool [UserOrdering](#) ([FileList](#) *fileSet)

Protected Attributes

- [SingleSerieUIDFileSetmap::iterator](#) [ItFileSetHt](#)
- [SingleSerieUIDFileSetmap](#) [SingleSerieUIDFileSetHT](#)

25.230.1 Detailed Description

[SerieHelper](#) DO NOT USE this class, it is only a temporary solution for ITK migration from GDCM 1.x to GDCM 2.x It will disappear soon, you've been warned.

Instead see [gdcm::ImageHelper](#) or [gdcm::IPPSorter](#)

25.230.2 Member Typedef Documentation

25.230.2.1 typedef std::vector<[Rule](#)> [gdcm::SerieHelper::SerieRestrictions](#) [protected]

25.230.2.2 typedef std::map<std::string, [FileList](#) *> [gdcm::SerieHelper::SingleSerieUIDFileSetmap](#) [protected]

25.230.3 Constructor & Destructor Documentation

25.230.3.1 [gdcm::SerieHelper::SerieHelper](#) ()

25.230.3.2 [gdcm::SerieHelper::~~SerieHelper](#) ()

25.230.4 Member Function Documentation

- 25.230.4.1 `bool gdcm::SerieHelper::AddFile (FileWithName & header)` [protected]
- 25.230.4.2 `void gdcm::SerieHelper::AddFileName (std::string const & filename)` [protected]
- 25.230.4.3 `void gdcm::SerieHelper::AddRestriction (const std::string & tag)`
- 25.230.4.4 `void gdcm::SerieHelper::AddRestriction (uint16_t group, uint16_t elem, std::string const & value, int op)`
- 25.230.4.5 `void gdcm::SerieHelper::AddRestriction (const Tag & tag)` [protected]
- 25.230.4.6 `void gdcm::SerieHelper::Clear ()`
- 25.230.4.7 `void gdcm::SerieHelper::CreateDefaultUniqueSeriesIdentifier ()`
- 25.230.4.8 `std::string gdcm::SerieHelper::CreateUniqueSeriesIdentifier (File * inFile)`
- 25.230.4.9 `bool gdcm::SerieHelper::FileNameOrdering (FileList * fileList)` [protected]
- 25.230.4.10 `FileList* gdcm::SerieHelper::GetFirstSingleSerieUIDFileSet ()`
- 25.230.4.11 `FileList* gdcm::SerieHelper::GetNextSingleSerieUIDFileSet ()`
- 25.230.4.12 `bool gdcm::SerieHelper::ImagePositionPatientOrdering (FileList * fileSet)` [protected]
- 25.230.4.13 `void gdcm::SerieHelper::OrderFileList (FileList * fileSet)`
- 25.230.4.14 `void gdcm::SerieHelper::SetDirectory (std::string const & dir, bool recursive = false)`
- 25.230.4.15 `void gdcm::SerieHelper::SetLoadMode (int)` [inline]
- 25.230.4.16 `void gdcm::SerieHelper::SetUseSeriesDetails (bool useSeriesDetails)`
- 25.230.4.17 `bool gdcm::SerieHelper::UserOrdering (FileList * fileSet)` [protected]

25.230.5 Member Data Documentation

- 25.230.5.1 `SingleSerieUIDFileSetmap::iterator gdcm::SerieHelper::ItFileSetHt` [protected]
- 25.230.5.2 `SingleSerieUIDFileSetmap gdcm::SerieHelper::SingleSerieUIDFileSetHT` [protected]

The documentation for this class was generated from the following file:

- [gdcmSerieHelper.h](#)

25.231 gdcm::Series Class Reference

[Series.](#)

```
#include <gdcmSeries.h>
```

Public Member Functions

- [Series](#) ()

25.231.1 Detailed Description

[Series](#).

25.231.2 Constructor & Destructor Documentation

25.231.2.1 `gdcm::Series::Series ()` `[inline]`

The documentation for this class was generated from the following file:

- [gdcmSeries.h](#)

25.232 `gdcm::network::ServiceClassApplicationInformation` Class Reference

```
#include <gdcmServiceClassApplicationInformation.h>
```

Public Member Functions

- [ServiceClassApplicationInformation](#) ()
- void [Print](#) (std::ostream &os) const
- std::istream & [Read](#) (std::istream &is)
- void [SetTuple](#) (uint8_t levelofsupport, uint8_t levelofdigitalsig, uint8_t elementcoercion)
- size_t [Size](#) () const
- const std::ostream & [Write](#) (std::ostream &os) const

25.232.1 Detailed Description

PS 3.4 [Table B.3-1](#) SERVICE-CLASS-APPLICATION-INFORMATION (A-ASSOCIATE-RQ)

25.232.2 Constructor & Destructor Documentation

25.232.2.1 `gdcm::network::ServiceClassApplicationInformation::ServiceClassApplicationInformation ()`

25.232.3 Member Function Documentation

25.232.3.1 `void gdcm::network::ServiceClassApplicationInformation::Print (std::ostream & os) const`

25.232.3.2 `std::istream& gdcm::network::ServiceClassApplicationInformation::Read (std::istream & is)`

25.232.3.3 `void gdcm::network::ServiceClassApplicationInformation::SetTuple (uint8_t levelofsupport, uint8_t levelofdigitalsig, uint8_t elementcoercion)`

25.232.3.4 `size_t gdcm::network::ServiceClassApplicationInformation::Size () const`

25.232.3.5 `const std::ostream& gdcm::network::ServiceClassApplicationInformation::Write (std::ostream & os) const`

The documentation for this class was generated from the following file:

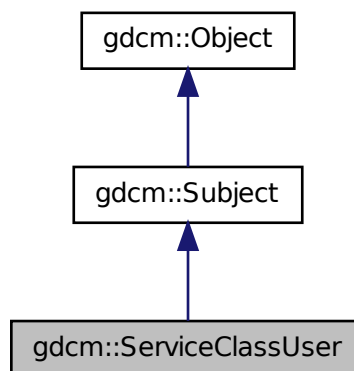
- [gdcmServiceClassApplicationInformation.h](#)

25.233 gdcm::ServiceClassUser Class Reference

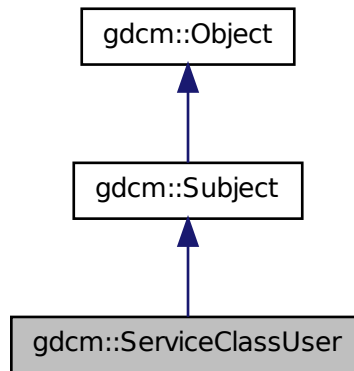
[ServiceClassUser](#).

```
#include <gdcmServiceClassUser.h>
```

Inheritance diagram for `gdcm::ServiceClassUser`:



Collaboration diagram for `gdcm::ServiceClassUser`:



Public Member Functions

- [ServiceClassUser](#) ()
- [~ServiceClassUser](#) ()
- `const char *` [GetAETitle](#) () `const`
- `const char *` [GetCalledAETitle](#) () `const`
- `double` [GetTimeout](#) () `const`
- `bool` [InitializeConnection](#) ()
- `bool` [IsPresentationContextAccepted](#) (`const` [PresentationContext](#) &pc) `const`
Return if the passed in presentation was accepted during association negotiation.
- `bool` [SendEcho](#) ()
C-ECHO.
- `bool` [SendFind](#) (`const` [BaseRootQuery](#) *query, `std::vector`< [DataSet](#) > &retDatasets)
C-FIND a query, return result are in retDatasets.
- `bool` [SendMove](#) (`const` [BaseRootQuery](#) *query, `const char *`outputdir)
Execute a C-MOVE, based on query, return files are written in outputdir.
- `bool` [SendMove](#) (`const` [BaseRootQuery](#) *query, `std::vector`< [DataSet](#) > &retDatasets)
Execute a C-MOVE, based on query, returned dataset are Implicit.
- `bool` [SendMove](#) (`const` [BaseRootQuery](#) *query, `std::vector`< [File](#) > &retFile)
Execute a C-MOVE, based on query, returned Files are stored in vector.
- `bool` [SendStore](#) (`const char *`filename)
Execute a C-STORE on file on disk, named filename.
- `bool` [SendStore](#) ([File](#) `const` &file)
- `bool` [SendStore](#) ([DataSet](#) `const` &ds)
Execute a C-STORE on a DataSet, the transfer syntax used will be Implicit.
- `void` [SetAETitle](#) (`const char *`aetitle)
set calling ae title
- `void` [SetCalledAETitle](#) (`const char *`aetitle)

- set called ae title*
- void [SetHostname](#) (const char *hostname)
Set the name of the called hostname (hostname or IP address)
- void [SetPort](#) (uint16_t port)
Set port of remote host (called application)
- void [SetPortSCP](#) (uint16_t portscp)
Set the port for any incoming C-STORE-SCP operation (typically in a return of C-MOVE)
- void [SetPresentationContexts](#) (std::vector< [PresentationContext](#) > const &pcs)
Set the Presentation Context used for the Association.
- void [SetTimeout](#) (double t)
set/get Timeout
- bool [StartAssociation](#) ()
Start the association. Need to call SetPresentationContexts before.
- bool [StopAssociation](#) ()
Stop the running association.

Additional Inherited Members

25.233.1 Detailed Description

[ServiceClassUser](#).

Examples:

[CStoreQtProgress.cxx](#).

25.233.2 Constructor & Destructor Documentation

25.233.2.1 gdcm::ServiceClassUser::ServiceClassUser ()

Construct a SCU with default:

- hostname = localhost
- port = 104

25.233.2.2 gdcm::ServiceClassUser::~~ServiceClassUser ()

25.233.3 Member Function Documentation

25.233.3.1 const char* gdcm::ServiceClassUser::GetAETitle () const

25.233.3.2 const char* gdcm::ServiceClassUser::GetCalledAETitle () const

25.233.3.3 double gdcm::ServiceClassUser::GetTimeout () const

25.233.3.4 bool gdcm::ServiceClassUser::InitializeConnection ()

Will try to connect This will setup the actual timeout used during the whole connection time. Need to call SetTimeout first

Examples:

[CStoreQtProgress.cxx](#).

25.233.3.5 `bool gdcmm::ServiceClassUser::IsPresentationContextAccepted (const PresentationContext & pc) const`

Return if the passed in presentation was accepted during association negotiation.

25.233.3.6 `bool gdcmm::ServiceClassUser::SendEcho ()`

C-ECHO.

25.233.3.7 `bool gdcmm::ServiceClassUser::SendFind (const BaseRootQuery * query, std::vector< DataSet > & retDatasets)`

C-FIND a query, return result are in retDatasets.

25.233.3.8 `bool gdcmm::ServiceClassUser::SendMove (const BaseRootQuery * query, const char * outputdir)`

Execute a C-MOVE, based on query, return files are written in outputdir.

25.233.3.9 `bool gdcmm::ServiceClassUser::SendMove (const BaseRootQuery * query, std::vector< DataSet > & retDatasets)`

Execute a C-MOVE, based on query, returned dataset are Implicit.

25.233.3.10 `bool gdcmm::ServiceClassUser::SendMove (const BaseRootQuery * query, std::vector< File > & retFile)`

Execute a C-MOVE, based on query, returned Files are stored in vector.

25.233.3.11 `bool gdcmm::ServiceClassUser::SendStore (const char * filename)`

Execute a C-STORE on file on disk, named filename.

Examples:

[CStoreQtProgress.cxx](#).

25.233.3.12 `bool gdcmm::ServiceClassUser::SendStore (File const & file)`

Execute a C-STORE on a [File](#), the transfer syntax used for the query is based on the file.

25.233.3.13 `bool gdcmm::ServiceClassUser::SendStore (DataSet const & ds)`

Execute a C-STORE on a [DataSet](#), the transfer syntax used will be Implicit.

25.233.3.14 `void gdcmm::ServiceClassUser::SetAETitle (const char * aetitle)`

set calling ae title

25.233.3.15 void gdcm::ServiceClassUser::SetCalledAETitle (const char * *aetitle*)

set called ae title

Examples:

[CStoreQtProgress.cxx](#).

25.233.3.16 void gdcm::ServiceClassUser::SetHostname (const char * *hostname*)

Set the name of the called hostname (hostname or IP address)

Examples:

[CStoreQtProgress.cxx](#).

25.233.3.17 void gdcm::ServiceClassUser::SetPort (uint16_t *port*)

Set port of remote host (called application)

Examples:

[CStoreQtProgress.cxx](#).

25.233.3.18 void gdcm::ServiceClassUser::SetPortSCP (uint16_t *portscp*)

Set the port for any incoming C-STORE-SCP operation (typically in a return of C-MOVE)

25.233.3.19 void gdcm::ServiceClassUser::SetPresentationContexts (std::vector< **PresentationContext** > const & *pcs*)

Set the Presentation Context used for the Association.

Examples:

[CStoreQtProgress.cxx](#).

25.233.3.20 void gdcm::ServiceClassUser::SetTimeout (double *t*)

set/get Timeout

Examples:

[CStoreQtProgress.cxx](#).

25.233.3.21 bool gdcm::ServiceClassUser::StartAssociation ()

Start the association. Need to call SetPresentationContexts before.

Examples:

[CStoreQtProgress.cxx](#).

25.233.3.22 bool gdcm::ServiceClassUser::StopAssociation ()

Stop the running association.

Examples:

[CStoreQtProgress.cxx](#).

The documentation for this class was generated from the following file:

- [gdcmServiceClassUser.h](#)

25.234 gdcm::SHA1 Class Reference

Class for [SHA1](#).

```
#include <gdcmSHA1.h>
```

Public Member Functions

- [SHA1](#) ()
- [~SHA1](#) ()

Static Public Member Functions

- static bool [Compute](#) (const char *buffer, unsigned long buf_len, char digest_str[20 *2+1])
- static bool [ComputeFile](#) (const char *filename, char digest_str[20 *2+1])

25.234.1 Detailed Description

Class for [SHA1](#).

Warning

this class is able to pick from one implementation:

1. the one from OpenSSL (when GDCM_USE_SYSTEM_OPENSSL is turned ON)

In all other cases it will return an error

25.234.2 Constructor & Destructor Documentation

25.234.2.1 gdcm::SHA1::SHA1 ()

25.234.2.2 gdcm::SHA1::~~SHA1 ()

25.234.3 Member Function Documentation

25.234.3.1 static bool gdcm::SHA1::Compute (const char * *buffer*, unsigned long *buf_len*, char *digest_str*[20 *2+1]) [static]

25.234.3.2 static bool gdcm::SHA1::ComputeFile (const char * *filename*, char *digest_str*[20*2+1]) [static]

The documentation for this class was generated from the following file:

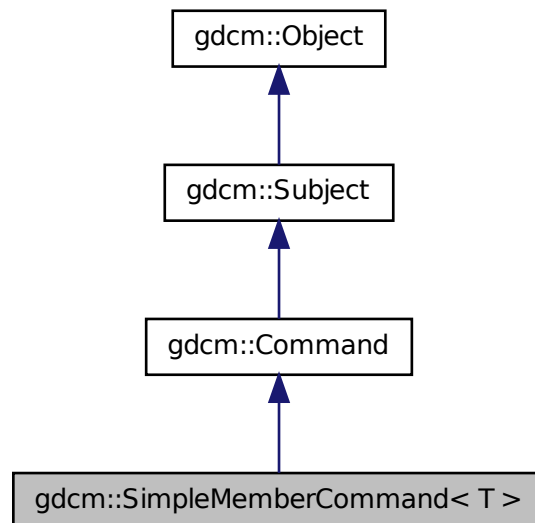
- [gdcmSHA1.h](#)

25.235 gdcm::SimpleMemberCommand< T > Class Template Reference

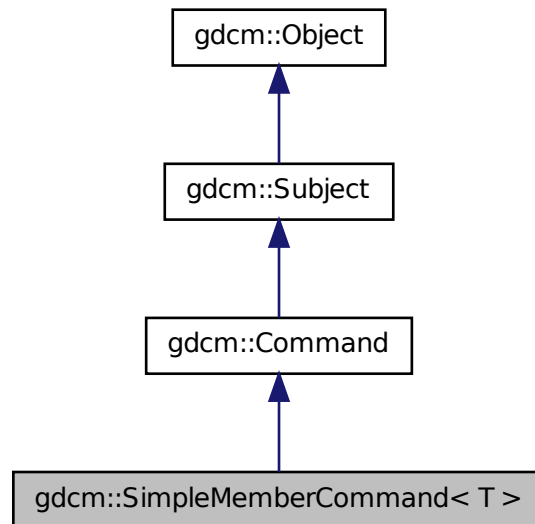
[Command](#) subclass that calls a pointer to a member function.

```
#include <gdcmCommand.h>
```

Inheritance diagram for gdcm::SimpleMemberCommand< T >:



Collaboration diagram for `gdcM::SimpleMemberCommand< T >`:



Public Types

- typedef `SimpleMemberCommand Self`
- typedef void(`T::*` `TMemberFunctionPointer`)()

Public Member Functions

- virtual void `Execute` (`Subject *`, const `Event &`)
- virtual void `Execute` (const `Subject *`, const `Event &`)
- void `SetCallbackFunction` (`T *object`, `TMemberFunctionPointer` memberFunction)

Static Public Member Functions

- static `SmartPointer`
 < `SimpleMemberCommand` > `New` ()

Protected Member Functions

- `SimpleMemberCommand` ()
- virtual `~SimpleMemberCommand` ()

Protected Attributes

- [TMemberFunctionPointer m_MemberFunction](#)
- [T * m_This](#)

25.235.1 Detailed Description

`template<typename T>class gdcm::SimpleMemberCommand< T >`

[Command](#) subclass that calls a pointer to a member function.

[SimpleMemberCommand](#) calls a pointer to a member function with no arguments.

25.235.2 Member Typedef Documentation

25.235.2.1 `template<typename T > typedef SimpleMemberCommand gdcm::SimpleMemberCommand< T >::Self`

Standard class typedefs.

25.235.2.2 `template<typename T > typedef void(T::* gdcm::SimpleMemberCommand< T >::TMemberFunctionPointer)()`

A method callback.

25.235.3 Constructor & Destructor Documentation

25.235.3.1 `template<typename T > gdcm::SimpleMemberCommand< T >::SimpleMemberCommand ()`
`[inline], [protected]`

Referenced by `gdcm::SimpleMemberCommand< T >::New()`.

25.235.3.2 `template<typename T > virtual gdcm::SimpleMemberCommand< T >::~~SimpleMemberCommand ()`
`[inline], [protected], [virtual]`

25.235.4 Member Function Documentation

25.235.4.1 `template<typename T > virtual void gdcm::SimpleMemberCommand< T >::Execute (Subject *, const Event &)` `[inline], [virtual]`

Invoke the callback function.

Implements [gdcm::Command](#).

References `gdcm::SimpleMemberCommand< T >::m_MemberFunction`.

25.235.4.2 `template<typename T > virtual void gdcm::SimpleMemberCommand< T >::Execute (const Subject * caller, const Event & event)` `[inline], [virtual]`

Abstract method that defines the action to be taken by the command. This variant is expected to be used when requests comes from a const [Object](#)

Implements [gdcm::Command](#).

References `gdcm::SimpleMemberCommand< T >::m_MemberFunction`.

25.235.4.3 `template<typename T > static SmartPointer<SimpleMemberCommand> gdcm::SimpleMemberCommand< T >::New () [inline], [static]`

Run-time type information (and related methods). Method for creation through the object factory.

References `gdcm::SimpleMemberCommand< T >::SimpleMemberCommand()`.

25.235.4.4 `template<typename T > void gdcm::SimpleMemberCommand< T >::SetCallbackFunction (T * object, TMemberFunctionPointer memberFunction) [inline]`

Specify the callback function.

References `gdcm::SimpleMemberCommand< T >::m_MemberFunction`, and `gdcm::SimpleMemberCommand< T >::m_This`.

25.235.5 Member Data Documentation

25.235.5.1 `template<typename T > TMemberFunctionPointer gdcm::SimpleMemberCommand< T >::m_MemberFunction [protected]`

Referenced by `gdcm::SimpleMemberCommand< T >::Execute()`, and `gdcm::SimpleMemberCommand< T >::SetCallbackFunction()`.

25.235.5.2 `template<typename T > T* gdcm::SimpleMemberCommand< T >::m_This [protected]`

Referenced by `gdcm::SimpleMemberCommand< T >::SetCallbackFunction()`.

The documentation for this class was generated from the following file:

- [gdcmCommand.h](#)

25.236 gdcm::SimpleSubjectWatcher Class Reference

[SimpleSubjectWatcher](#) This is a typical [Subject](#) Watcher class. It will observe all events.

```
#include <gdcmSimpleSubjectWatcher.h>
```

Public Member Functions

- [SimpleSubjectWatcher](#) ([Subject](#) *s, const char *comment="")
- virtual [~SimpleSubjectWatcher](#) ()

Protected Member Functions

- virtual void [EndFilter](#) ()
- virtual void [ShowAbort](#) ()
- virtual void [ShowAnonymization](#) ([Subject](#) *caller, const [Event](#) &evt)

- virtual void [ShowData](#) ([Subject](#) *caller, const [Event](#) &evt)
- virtual void [ShowDataSet](#) ([Subject](#) *caller, const [Event](#) &evt)
- virtual void [ShowIteration](#) ()
- virtual void [ShowProgress](#) ([Subject](#) *caller, const [Event](#) &evt)
- virtual void [StartFilter](#) ()
- void [TestAbortOff](#) ()
- void [TestAbortOn](#) ()

25.236.1 Detailed Description

[SimpleSubjectWatcher](#) This is a typical [Subject](#) Watcher class. It will observe all events.

25.236.2 Constructor & Destructor Documentation

25.236.2.1 `gdcm::SimpleSubjectWatcher::SimpleSubjectWatcher (Subject *s, const char * comment = " ")`

25.236.2.2 `virtual gdcm::SimpleSubjectWatcher::~SimpleSubjectWatcher ()` [virtual]

25.236.3 Member Function Documentation

25.236.3.1 `virtual void gdcm::SimpleSubjectWatcher::EndFilter ()` [protected],[virtual]

25.236.3.2 `virtual void gdcm::SimpleSubjectWatcher::ShowAbort ()` [protected],[virtual]

25.236.3.3 `virtual void gdcm::SimpleSubjectWatcher::ShowAnonymization (Subject * caller, const Event & evt)` [protected],[virtual]

25.236.3.4 `virtual void gdcm::SimpleSubjectWatcher::ShowData (Subject * caller, const Event & evt)` [protected],[virtual]

25.236.3.5 `virtual void gdcm::SimpleSubjectWatcher::ShowDataSet (Subject * caller, const Event & evt)` [protected],[virtual]

25.236.3.6 `virtual void gdcm::SimpleSubjectWatcher::ShowIteration ()` [protected],[virtual]

25.236.3.7 `virtual void gdcm::SimpleSubjectWatcher::ShowProgress (Subject * caller, const Event & evt)` [protected],[virtual]

25.236.3.8 `virtual void gdcm::SimpleSubjectWatcher::StartFilter ()` [protected],[virtual]

25.236.3.9 `void gdcm::SimpleSubjectWatcher::TestAbortOff ()` [protected]

25.236.3.10 `void gdcm::SimpleSubjectWatcher::TestAbortOn ()` [protected]

The documentation for this class was generated from the following file:

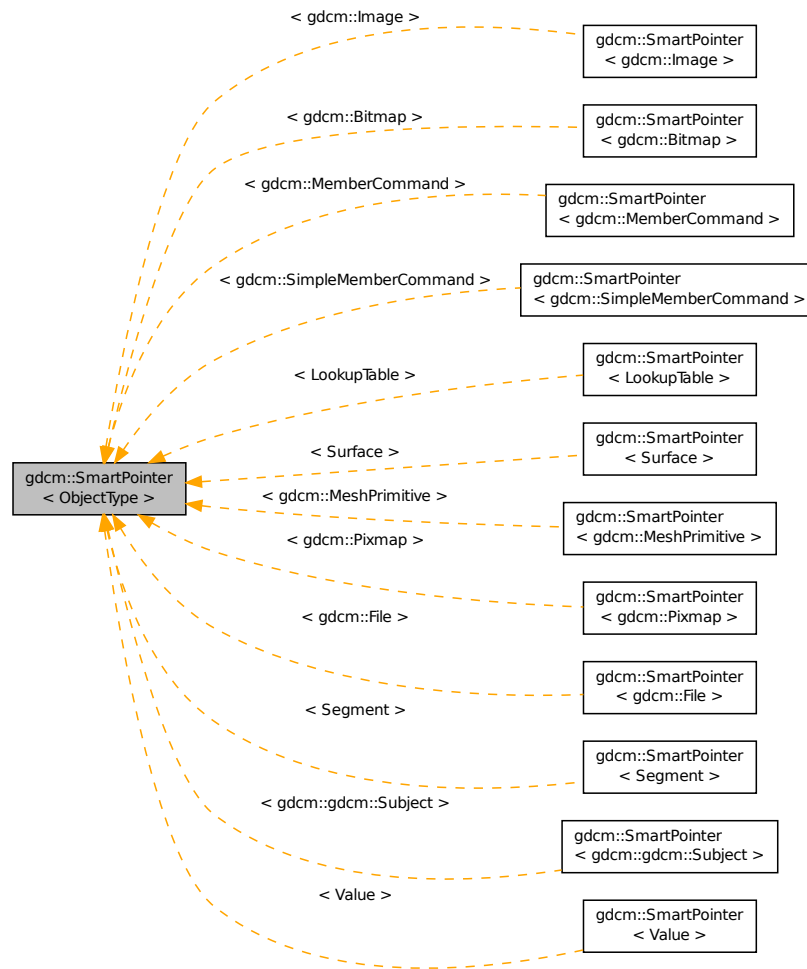
- [gdcmSimpleSubjectWatcher.h](#)

25.237 gdcmm::SmartPointer< ObjectType > Class Template Reference

Class for Smart Pointer.

```
#include <gdcmmObject.h>
```

Inheritance diagram for gdcmm::SmartPointer< ObjectType >:



Public Member Functions

- [SmartPointer](#) ()
- [SmartPointer](#) (const [SmartPointer](#)< ObjectType > &p)
- [SmartPointer](#) (ObjectType *p)
- [SmartPointer](#) (ObjectType const &p)
- [~SmartPointer](#) ()
- ObjectType * [GetPointer](#) () const

Explicit function to retrieve the pointer.

- `operator ObjectType * () const`
Return pointer to object.
- `ObjectType & operator* () const`
- `ObjectType * operator-> () const`
Overload operator ->
- `SmartPointer & operator= (SmartPointer const &r)`
Overload operator assignment.
- `SmartPointer & operator= (ObjectType *r)`
Overload operator assignment.
- `SmartPointer & operator= (ObjectType const &r)`

25.237.1 Detailed Description

```
template<class ObjectType>class gdcm::SmartPointer< ObjectType >
```

Class for Smart Pointer.

Will only work for subclass of `gdcm::Object` See `tr1/shared_ptr` for a more general approach (not invasive) `#include <tr1/memory> { shared_ptr<Bla> b(new Bla); }`

Note

Class partly based on post by Bill Hubauer: <http://groups.google.com/group/comp.lang.-c++/msg/173ddc38a827a930>

See Also

<http://www.davethehat.com/articles/smarterp.htm>

and `itk::SmartPointer`

Examples:

[ChangeSequenceUltrasound.cxx](#), [CStoreQtProgress.cxx](#), [DumpGEMSMovieGroup.cxx](#), [Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [FixBrokenJ2K.cxx](#), [gdcmrtionplan.cxx](#), [gdcmrtplan.cxx](#), [GenAllVR.cxx](#), [GenFakeIdentifyFile.cxx](#), [GenLongSeqs.cxx](#), [GenSeqs.cxx](#), [GetSubSequenceData.cxx](#), [LargeVRDS-Explicit.cxx](#), [ReadAndDumpDICOMDIR.cxx](#), and [ReadExplicitLengthSQIVR.cxx](#).

25.237.2 Constructor & Destructor Documentation

25.237.2.1 `template<class ObjectType> gdcm::SmartPointer< ObjectType >::SmartPointer () [inline]`

25.237.2.2 `template<class ObjectType> gdcm::SmartPointer< ObjectType >::SmartPointer (const SmartPointer< ObjectType > & p) [inline]`

25.237.2.3 `template<class ObjectType> gdcm::SmartPointer< ObjectType >::SmartPointer (ObjectType * p) [inline]`

25.237.2.4 `template<class ObjectType> gdcm::SmartPointer< ObjectType >::SmartPointer (ObjectType const & p) [inline]`

25.237.2.5 `template<class ObjectType> gdcmm::SmartPointer< ObjectType >::~SmartPointer () [inline]`

25.237.3 Member Function Documentation

25.237.3.1 `template<class ObjectType> ObjectType* gdcmm::SmartPointer< ObjectType >::GetPointer () const [inline]`

Explicit function to retrieve the pointer.

25.237.3.2 `template<class ObjectType> gdcmm::SmartPointer< ObjectType >::operator ObjectType * () const [inline]`

Return pointer to object.

25.237.3.3 `template<class ObjectType> ObjectType& gdcmm::SmartPointer< ObjectType >::operator* () const [inline]`

25.237.3.4 `template<class ObjectType> ObjectType* gdcmm::SmartPointer< ObjectType >::operator-> () const [inline]`

Overload operator ->

25.237.3.5 `template<class ObjectType> SmartPointer& gdcmm::SmartPointer< ObjectType >::operator= (SmartPointer< ObjectType > const & r) [inline]`

Overload operator assignment.

Referenced by `gdcmm::SmartPointer< Value >::operator=()`.

25.237.3.6 `template<class ObjectType> SmartPointer& gdcmm::SmartPointer< ObjectType >::operator= (ObjectType * r) [inline]`

Overload operator assignment.

25.237.3.7 `template<class ObjectType> SmartPointer& gdcmm::SmartPointer< ObjectType >::operator= (ObjectType const & r) [inline]`

The documentation for this class was generated from the following files:

- [gdcmmObject.h](#)
- [gdcmmSmartPointer.h](#)

25.238 gdcmm::network::SOPClassExtendedNegociationSub Class Reference

[SOPClassExtendedNegociationSub](#) PS 3.7 [Table D.3-11](#) SOP CLASS EXTENDED NEGOTIATION SUB-ITEM FIELDS (A-ASSOCIATE-RQ and A-ASSOCIATE-AC)

```
#include <gdcmmSOPClassExtendedNegociationSub.h>
```

Public Member Functions

- [SOPClassExtendedNegociationSub](#) ()
- void [Print](#) (std::ostream &os) const
- std::istream & [Read](#) (std::istream &is)
- void [SetTuple](#) (const char *uid, uint8_t levelofsupport=3, uint8_t levelofdigitalsig=0, uint8_t elementcoercion=2)
- size_t [Size](#) () const
- const std::ostream & [Write](#) (std::ostream &os) const

25.238.1 Detailed Description

[SOPClassExtendedNegociationSub](#) PS 3.7 [Table D.3-11](#) SOP CLASS EXTENDED NEGOTIATION SUB-ITEM FIELDS (A-ASSOCIATE-RQ and A-ASSOCIATE-AC)

25.238.2 Constructor & Destructor Documentation

25.238.2.1 `gdcm::network::SOPClassExtendedNegociationSub::SOPClassExtendedNegociationSub ()`

25.238.3 Member Function Documentation

25.238.3.1 `void gdcm::network::SOPClassExtendedNegociationSub::Print (std::ostream & os) const`

25.238.3.2 `std::istream& gdcm::network::SOPClassExtendedNegociationSub::Read (std::istream & is)`

25.238.3.3 `void gdcm::network::SOPClassExtendedNegociationSub::SetTuple (const char * uid, uint8_t levelofsupport = 3, uint8_t levelofdigitalsig = 0, uint8_t elementcoercion = 2)`

25.238.3.4 `size_t gdcm::network::SOPClassExtendedNegociationSub::Size () const`

25.238.3.5 `const std::ostream& gdcm::network::SOPClassExtendedNegociationSub::Write (std::ostream & os) const`

The documentation for this class was generated from the following file:

- [gdcmSOPClassExtendedNegociationSub.h](#)

25.239 gdcm::SOPClassUIDToIOD Class Reference

Class convert a class SOP Class UID into [IOD](#).

```
#include <gdcmSOPClassUIDToIOD.h>
```

Public Types

- typedef const char * [const](#) (SOPClassUIDToIODType)[2]

Static Public Member Functions

- static [const](#) char * [GetIOD](#) (UIDs [const](#) &uid)

- static `const char *` [GetIODFromSOPClassUID](#) (`const char *sopclassuid`)
- static `unsigned int` [GetNumberOfSOPClassToIOD](#) ()
Return the number of SOP Class UID listed internally.
- static `const char *` [GetSOPClassUIDFromIOD](#) (`const char *iod`)
- static `SOPClassUIDToIODType &` [GetSOPClassUIDToIOD](#) (`unsigned int i`)
- static `SOPClassUIDToIODType *` [GetSOPClassUIDToIODs](#) ()

25.239.1 Detailed Description

Class convert a class SOP Class UID into [IOD](#).

Reference PS 3.4 [Table B.5-1](#) STANDARD SOP CLASSES

25.239.2 Member Typedef Documentation

25.239.2.1 `typedef const char* gdcm::SOPClassUIDToIOD::const(SOPClassUIDToIODType)[2]`

25.239.3 Member Function Documentation

25.239.3.1 `static const char* gdcm::SOPClassUIDToIOD::GetIOD (UIDs const & uid)` [`static`]

Return the associated [IOD](#) based on a SOP Class UID uid (there is a one-to-one mapping from SOP Class UID to matching [IOD](#))

Examples:

[GenerateStandardSOPClasses.cxx](#).

25.239.3.2 `static const char* gdcm::SOPClassUIDToIOD::GetIODFromSOPClassUID (const char * sopclassuid)` [`static`]

25.239.3.3 `static unsigned int gdcm::SOPClassUIDToIOD::GetNumberOfSOPClassToIOD ()` [`static`]

Return the number of SOP Class UID listed internally.

25.239.3.4 `static const char* gdcm::SOPClassUIDToIOD::GetSOPClassUIDFromIOD (const char * iod)` [`static`]

25.239.3.5 `static SOPClassUIDToIODType& gdcm::SOPClassUIDToIOD::GetSOPClassUIDToIOD (unsigned int i)` [`static`]

25.239.3.6 `static SOPClassUIDToIODType* gdcm::SOPClassUIDToIOD::GetSOPClassUIDToIODs ()` [`static`]

The documentation for this class was generated from the following file:

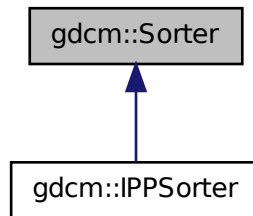
- [gdcmSOPClassUIDToIOD.h](#)

25.240 gdcm::Sorter Class Reference

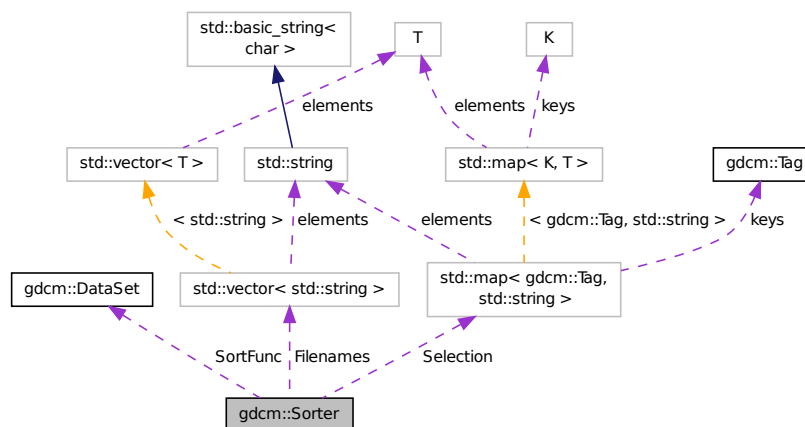
[Sorter](#) General class to do sorting using a custom function You simply need to provide a function of type: [Sorter::Sort-Function](#).


```
#include <gdcmSorter.h>
```

Inheritance diagram for gdcm::Sorter:



Collaboration diagram for gdcm::Sorter:



Public Types

- typedef bool(* [SortFunction](#))([DataSet](#) const &, [DataSet](#) const &)
Set the sort function which compares one dataset to the other.

Public Member Functions

- [Sorter](#) ()
- virtual [~Sorter](#) ()
- bool [AddSelect](#) ([Tag](#) const &tag, const char *value)
UNSUPPORTED FOR NOW.

- `const std::vector< std::string > & GetFileNames () const`
- `void Print (std::ostream &os) const`
Print.
- `void SetSortFunction (SortFunction f)`
- `virtual bool Sort (std::vector< std::string > const &filenames)`
Typically the output of `gdcmm::Directory::GetFileNames()`
- `virtual bool StableSort (std::vector< std::string > const &filenames)`

Protected Types

- `typedef std::map< Tag, std::string > SelectionMap`

Protected Attributes

- `std::vector< std::string > Filenames`
- `std::map< Tag, std::string > Selection`
- `SortFunction SortFunc`

Friends

- `std::ostream & operator<< (std::ostream &_os, const Sorter &s)`

25.240.1 Detailed Description

Sorter General class to do sorting using a custom function You simply need to provide a function of type: `Sorter::SortFunction`.

Warning

implementation details. For now there is no cache mechanism. Which means that everytime you call Sort, all files specified as input paramater are *read*

See Also

[Scanner](#)

Examples:

[SortImage.cxx](#), and [VolumeSorter.cxx](#).

25.240.2 Member Typedef Documentation

25.240.2.1 `typedef std::map<Tag,std::string> gdcmm::Sorter::SelectionMap` [protected]

25.240.2.2 `typedef bool(* gdcmm::Sorter::SortFunction)(DataSet const &, DataSet const &)`

Set the sort function which compares one dataset to the other.

25.240.3 Constructor & Destructor Documentation

25.240.3.1 `gdcm::Sorter::Sorter ()`

25.240.3.2 `virtual gdcm::Sorter::~~Sorter ()` `[virtual]`

25.240.4 Member Function Documentation

25.240.4.1 `bool gdcm::Sorter::AddSelect (Tag const & tag, const char * value)`

UNSUPPORTED FOR NOW.

25.240.4.2 `const std::vector<std::string>& gdcm::Sorter::GetFileNames () const` `[inline]`

Return the list of filenames as sorted by the specific algorithm used. Empty by default (before [Sort\(\)](#) is called)

Examples:

[gdcmorthoplanes.cxx](#), [reslicesphere.cxx](#), [SortImage.cxx](#), and [VolumeSorter.cxx](#).

25.240.4.3 `void gdcm::Sorter::Print (std::ostream & os) const`

Print.

Examples:

[gdcmorthoplanes.cxx](#), [SortImage.cxx](#), and [VolumeSorter.cxx](#).

Referenced by `gdcm::operator<<()`.

25.240.4.4 `void gdcm::Sorter::SetSortFunction (SortFunction f)`

Examples:

[SortImage.cxx](#), and [VolumeSorter.cxx](#).

25.240.4.5 `virtual bool gdcm::Sorter::Sort (std::vector< std::string > const & filenames)` `[virtual]`

Typically the output of [gdcm::Directory::GetFileNames\(\)](#)

Reimplemented in [gdcm::IPPSorter](#).

Examples:

[SortImage.cxx](#).

25.240.4.6 `virtual bool gdcm::Sorter::StableSort (std::vector< std::string > const & filenames)` `[virtual]`

Examples:

[SortImage.cxx](#), and [VolumeSorter.cxx](#).

25.240.5 Friends And Related Function Documentation

25.240.5.1 `std::ostream& operator<< (std::ostream & _os, const Sorter & s)` [*friend*]

25.240.6 Member Data Documentation

25.240.6.1 `std::vector<std::string> gdcM::Sorter::FileNames` [*protected*]

25.240.6.2 `std::map<Tag,std::string> gdcM::Sorter::Selection` [*protected*]

25.240.6.3 **SortFunction** `gdcM::Sorter::SortFunc` [*protected*]

The documentation for this class was generated from the following file:

- [gdcMSorter.h](#)

25.241 **gdcM::Spacing** Class Reference

Class for [Spacing](#).

```
#include <gdcMSpacing.h>
```

Public Types

- enum [SpacingType](#) {
[DETECTOR](#) = 0,
[MAGNIFIED](#),
[CALIBRATED](#),
[UNKNOWN](#) }

Public Member Functions

- [Spacing](#) ()
- [~Spacing](#) ()

Static Public Member Functions

- static [Attribute](#)< 0x28, 0x34 > [ComputePixelAspectRatioFromPixelSpacing](#) (const [Attribute](#)< 0x28, 0x30 > &pixelspacing)

25.241.1 Detailed Description

Class for [Spacing](#).

It all began with a mail to WG6:

Subject: Imager Pixel [Spacing](#) vs Pixel [Spacing](#) **Body:** [Apologies for the duplicate post, namely to David Clunie & OFFIS team]

I have been trying to understand CP-586 in the following two cases:

On the one hand:

- DISCIMG/IMAGES/CRIMAGE taken from <http://dclunie.com/images/pixelspacingtestimages.zip>

And on the other hand:

- http://gdcm.sourceforge.net/thingies/cr_pixelspacing.dcm

If I understand correctly the CP, one is required to use Pixel [Spacing](#) for measurement ('true size' print) instead of Imager Pixel [Spacing](#), since the two attributes are present and Pixel [Spacing](#) is different from Imager Pixel [Spacing](#).

If this is correct, then the test data DISCIMG/IMAGES/CRIMAGE is incorrect. If this is incorrect (ie. I need to use Imager Pixel [Spacing](#)), then the display of cr_pixelspacing.dcm for measurement will be incorrect.

Could someone please let me know what am I missing here? I could not find any information in any header that would allow me to differentiate those.

Thank you for your time,

Ref: <http://lists.nema.org/scripts/lyris.pl?sub=488573&id=400720477> See PS 3.3-2008, [Table C.7-11b IMAGE PIXEL MACRO ATTRIBUTES](#)

Ratio of the vertical size and horizontal size of the pixels in the image specified by a pair of integer values where the first value is the vertical pixel size, and the second value is the horizontal pixel size. Required if the aspect ratio values do not have a ratio of 1:1 and the physical pixel spacing is not specified by Pixel [Spacing](#) (0028,0030), or Imager Pixel [Spacing](#) (0018,1164) or Nominal Scanned Pixel [Spacing](#) (0018,2010), either for the entire [Image](#) or per-frame in a Functional Group [Macro](#). See C.7.6.3.1.7.

PS 3.3-2008 10.7.1.3 Pixel [Spacing Value](#) Order and Valid Values All pixel spacing related attributes shall have non-zero values, except when there is only a single row or column or pixel of data present, in which case the corresponding value may be zero.

Ref: http://apps.sourceforge.net/mediawiki/gdcm/index.php?title=Imager_Pixel_Spacing

25.241.2 Member Enumeration Documentation

25.241.2.1 enum gdcm::Spacing::SpacingType

Enumerator

DETECTOR

MAGNIFIED

CALIBRATED

UNKNOWN

25.241.3 Constructor & Destructor Documentation

25.241.3.1 gdcm::Spacing::Spacing ()

25.241.3.2 gdcm::Spacing::~~Spacing ()

25.241.4 Member Function Documentation

25.241.4.1 `static Attribute<0x28,0x34> gdcM::Spacing::ComputePixelAspectRatioFromPixelSpacing (const Attribute< 0x28, 0x30 > & pixelspacing) [static]`

The documentation for this class was generated from the following file:

- [gdcMSpacing.h](#)

25.242 gdcM::Spectroscopy Class Reference

[Spectroscopy](#) class.

```
#include <gdcMSpectroscopy.h>
```

Public Member Functions

- [Spectroscopy](#) ()

25.242.1 Detailed Description

[Spectroscopy](#) class.

25.242.2 Constructor & Destructor Documentation

25.242.2.1 `gdcM::Spectroscopy::Spectroscopy () [inline]`

The documentation for this class was generated from the following file:

- [gdcMSpectroscopy.h](#)

25.243 gdcM::SplitMosaicFilter Class Reference

[SplitMosaicFilter](#) class Class to reshuffle bytes for a SIEMENS Mosaic image Siemens CSA [Image](#) Header CSA:= Common Siemens Architecture, sometimes also known as Common syngo Architecture.

```
#include <gdcMSplitMosaicFilter.h>
```

Public Member Functions

- [SplitMosaicFilter](#) ()
- [~SplitMosaicFilter](#) ()
- bool [ComputeMOSAICDimensions](#) (unsigned int dims[3])
- [File](#) & [GetFile](#) ()
- const [File](#) & [GetFile](#) () const
- const [Image](#) & [GetImage](#) () const
- [Image](#) & [GetImage](#) ()
- void [SetFile](#) (const [File](#) &f)
- void [SetImage](#) (const [Image](#) &image)
- bool [Split](#) ()

Split the SIEMENS MOSAIC image.

25.243.1 Detailed Description

[SplitMosaicFilter](#) class Class to reshuffle bytes for a SIEMENS Mosaic image Siemens CSA [Image](#) Header CSA:= Common Siemens Architecture, sometimes also known as Common syngo Architecture.

25.243.2 Constructor & Destructor Documentation

25.243.2.1 `gdcm::SplitMosaicFilter::SplitMosaicFilter ()`

25.243.2.2 `gdcm::SplitMosaicFilter::~~SplitMosaicFilter ()`

25.243.3 Member Function Documentation

25.243.3.1 `bool gdcm::SplitMosaicFilter::ComputeMOSAICDimensions (unsigned int dims[3])`

Compute the new dimensions according to private information stored in the MOSAIC header.

25.243.3.2 `File& gdcm::SplitMosaicFilter::GetFile ()` `[inline]`

25.243.3.3 `const File& gdcm::SplitMosaicFilter::GetFile () const` `[inline]`

25.243.3.4 `const Image& gdcm::SplitMosaicFilter::GetImage () const` `[inline]`

25.243.3.5 `Image& gdcm::SplitMosaicFilter::GetImage ()` `[inline]`

25.243.3.6 `void gdcm::SplitMosaicFilter::SetFile (const File & f)` `[inline]`

25.243.3.7 `void gdcm::SplitMosaicFilter::SetImage (const Image & image)`

25.243.3.8 `bool gdcm::SplitMosaicFilter::Split ()`

Split the SIEMENS MOSAIC image.

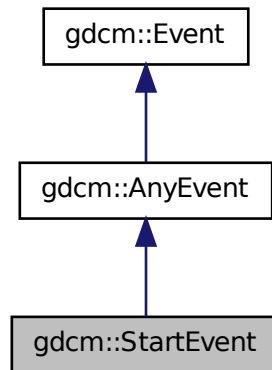
The documentation for this class was generated from the following file:

- [gdcmSplitMosaicFilter.h](#)

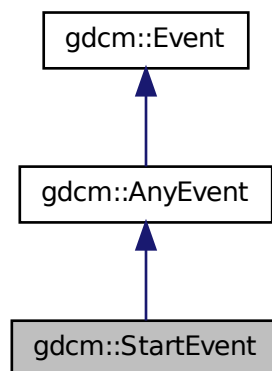
25.244 gdcm::StartEvent Class Reference

```
#include <gdcmEvent.h>
```

Inheritance diagram for `gdcM::StartEvent`:



Collaboration diagram for `gdcM::StartEvent`:



Additional Inherited Members

The documentation for this class was generated from the following file:

- [gdcMEvent.h](#)

25.245 gdcm::static_assert_test< x > Struct Template Reference

```
#include <gdcmStaticAssert.h>
```

The documentation for this struct was generated from the following file:

- [gdcmStaticAssert.h](#)

25.246 gdcm::STATIC_ASSERTION_FAILURE< x > Struct Template Reference

```
#include <gdcmStaticAssert.h>
```

The documentation for this struct was generated from the following file:

- [gdcmStaticAssert.h](#)

25.247 gdcm::STATIC_ASSERTION_FAILURE< true > Struct Template Reference

```
#include <gdcmStaticAssert.h>
```

Public Types

- enum { [value](#) = 1 }

25.247.1 Member Enumeration Documentation

25.247.1.1 anonymous enum

Enumerator

value

The documentation for this struct was generated from the following file:

- [gdcmStaticAssert.h](#)

25.248 gdcm::StreamImageReader Class Reference

[StreamImageReader](#).

```
#include <gdcmStreamImageReader.h>
```

Public Member Functions

- [StreamImageReader](#) ()
- virtual [~StreamImageReader](#) ()
- bool [CanReadImage](#) () const

- void [DefinePixelExtent](#) (uint16_t inXMin, uint16_t inXMax, uint16_t inYMin, uint16_t inYMax, uint16_t inZMin=0, uint16_t inZMax=1)
- uint32_t [DefineProperBufferLength](#) () const
- std::vector< unsigned int > [GetDimensionsValueForResolution](#) (unsigned int)
- [File](#) const & [GetFile](#) () const
- bool [Read](#) (char *inReadBuffer, const std::size_t &inBufferLength)
- virtual bool [ReadImageInformation](#) ()
- void [SetFileName](#) (const char *inFileName)
- void [SetStream](#) (std::istream &inStream)

25.248.1 Detailed Description

[StreamImageReader](#).

Note

its role is to convert the DICOM [DataSet](#) into a [gdcm::Image](#) representation via an ITK streaming (ie, multithreaded) interface [Image](#) is different from [Pixmap](#) has it has a position and a direction in Space. Currently, this class is thread safe in that it can read a single extent in a single thread. Multiple versions can be used for multiple extents/threads.

See Also

[Image](#)

Examples:

[StreamImageReaderTest.cxx](#).

25.248.2 Constructor & Destructor Documentation

25.248.2.1 [gdcm::StreamImageReader::StreamImageReader](#) ()

25.248.2.2 [virtual gdcm::StreamImageReader::~~StreamImageReader](#) () `[virtual]`

25.248.3 Member Function Documentation

25.248.3.1 [bool gdcm::StreamImageReader::CanReadImage](#) () const

Only RAW images are currently readable by the stream reader. As more streaming codecs are added, then this function will be updated to reflect those changes. Calling this function prior to reading will ensure that only streamable files are streamed. Make sure to call [ReadImageInformation](#) prior to calling this function.

Examples:

[StreamImageReaderTest.cxx](#).

25.248.3.2 [void gdcm::StreamImageReader::DefinePixelExtent](#) (uint16_t *inXMin*, uint16_t *inXMax*, uint16_t *inYMin*, uint16_t *inYMax*, uint16_t *inZMin* = 0, uint16_t *inZMax* = 1)

Defines an image extent for the Read function. DICOM states that an image can have no more than 2^{16} pixels per edge (as of 2009) In this case, the pixel extents ignore the direction cosines entirely, and assumes that the origin of the image is at location 0,0 (regardless of the definition in space per the tags). So, if the first 100 pixels of the first row are to be read in, this function should be called with [DefinePixelExtent](#)(0, 100, 0, 1), regardless of pixel size or orientation.

Examples:

[StreamImageReaderTest.cxx](#).

25.248.3.3 `uint32_t gdcm::StreamImageReader::DefineProperBufferLength () const`

Paying attention to the pixel format and so forth, define the proper buffer length for the user. The return amount is in bytes. Call this function to determine the size of the `char*` buffer that will need to be passed in to `ReadImageSubregion()`. If the return is 0, then that means that the pixel extent was not defined prior

Examples:

[StreamImageReaderTest.cxx](#).

25.248.3.4 `std::vector<unsigned int> gdcm::StreamImageReader::GetDimensionsValueForResolution (unsigned int)`

25.248.3.5 `File const& gdcm::StreamImageReader::GetFile () const`

Returns the dataset read by `ReadImageInformation` Couple this with the [ImageHelper](#) to get statistics about the image, like pixel extent, to be able to initialize buffers for reading

Examples:

[StreamImageReaderTest.cxx](#).

25.248.3.6 `bool gdcm::StreamImageReader::Read (char * inReadBuffer, const std::size_t & inBufferLength)`

Read the DICOM image. There are three reasons for failure:

1. The extent is not set
2. the conversion from `char*` to `std::ostream` (internally) fails
3. the given buffer isn't large enough to accommodate the desired pixel extent. This method has been implemented to look similar to the `metainageio` in `itk` MUST have an extent defined, or else `Read` will return false. If no particular extent is required, use [ImageReader](#) instead.

Examples:

[StreamImageReaderTest.cxx](#).

25.248.3.7 `virtual bool gdcm::StreamImageReader::ReadImageInformation () [virtual]`

Set the spacing and dimension information for the set filename. returns false if the file is not initialized or not an image, with the pixel (7fe0,0010) tag.

Examples:

[StreamImageReaderTest.cxx](#).

25.248.3.8 void gdcM::StreamImageReader::SetFileName (const char * *inFileName*)

One of either SetFileName or SetStream must be called prior to any other functions. These initialize an internal [Reader](#) class to be able to get non-pixel image information.

Examples:

[StreamImageReaderTest.cxx](#).

25.248.3.9 void gdcM::StreamImageReader::SetStream (std::istream & *inStream*)

The documentation for this class was generated from the following file:

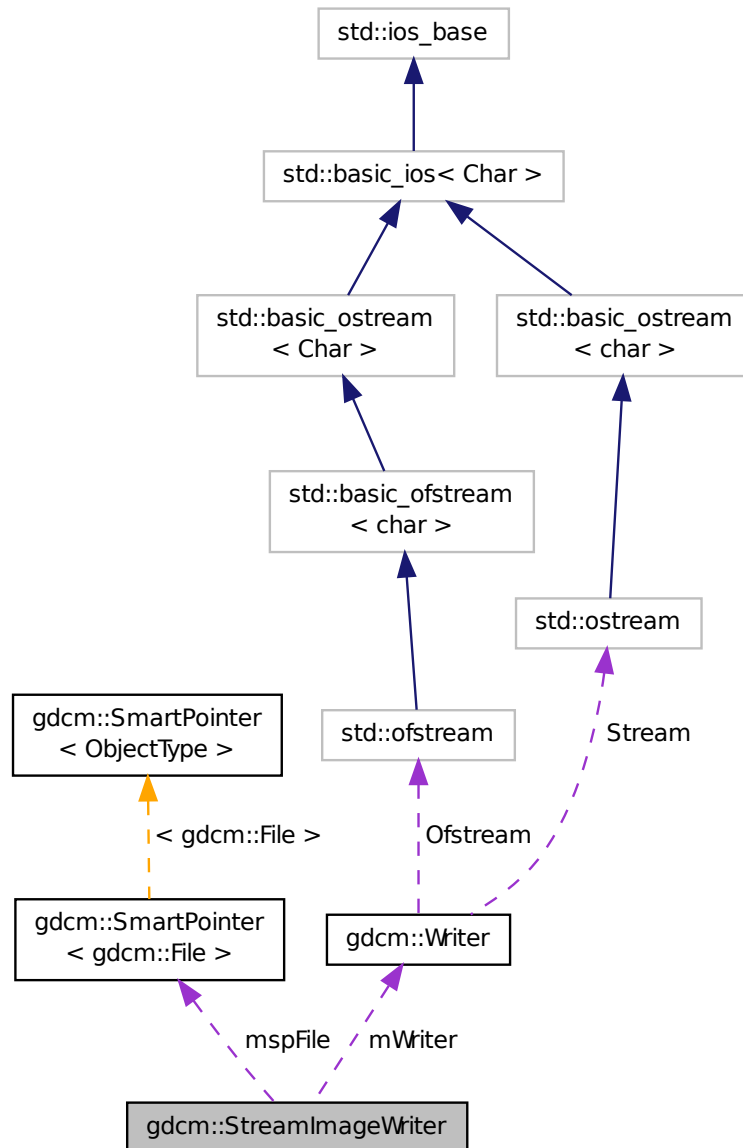
- [gdcMStreamImageReader.h](#)

25.249 gdcM::StreamImageWriter Class Reference

[StreamImageReader](#).

```
#include <gdcMStreamImageWriter.h>
```

Collaboration diagram for gdcm::StreamImageWriter:



Public Member Functions

- [StreamImageWriter](#) ()
- virtual [~StreamImageWriter](#) ()
- bool [CanWriteFile](#) () const
- void [DefinePixelExtent](#) (uint16_t inXMin, uint16_t inXMax, uint16_t inYMin, uint16_t inYMax, uint16_t inZMin=0, uint16_t inZMax=1)

- uint32_t [DefineProperBufferLength](#) ()
- void [SetFile](#) (const [File](#) &inFile)
- void [SetFileName](#) (const char *inFileName)
- void [SetStream](#) (std::ostream &inStream)
- bool [Write](#) (void *inWriteBuffer, const std::size_t &inBufferLength)
- virtual bool [WriteImageInformation](#) ()

Protected Member Functions

- virtual bool [WriteImageSubregionRAW](#) (char *inWriteBuffer, const std::size_t &inBufferLength)
- int [WriteRawHeader](#) ([RAWCodec](#) *inCodec, std::ostream *inStream)

Protected Attributes

- int [mElementOffsets](#)
- int [mElementOffsets1](#)
- [SmartPointer](#)< [File](#) > [mspFile](#)
- [Writer](#) [mWriter](#)
- uint16_t [mXMax](#)
- uint16_t [mXMin](#)
- uint16_t [mYMax](#)
- uint16_t [mYMin](#)
- uint16_t [mZMax](#)
- uint16_t [mZMin](#)

25.249.1 Detailed Description

[StreamImageReader](#).

Note

its role is to convert the DICOM [DataSet](#) into a [gdcm::Image](#) representation via an ITK streaming (ie, multithreaded) interface [Image](#) is different from [Pixmap](#) has it has a position and a direction in Space. Currently, this class is threadsafe in that it can read a single extent in a single thread. Multiple versions can be used for multiple extents/threads.

See Also

[Image](#)

Examples:

[Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), and [StreamImageReaderTest.cxx](#).

25.249.2 Constructor & Destructor Documentation

25.249.2.1 [gdcm::StreamImageWriter::StreamImageWriter](#) ()

25.249.2.2 [virtual gdcm::StreamImageWriter::~~StreamImageWriter](#) () [\[virtual\]](#)

25.249.3 Member Function Documentation

25.249.3.1 `bool gdcm::StreamImageWriter::CanWriteFile () const`

This function determines if a file can even be written using the streaming writer unlike the reader, can be called before `WriteImageInformation`, but must be called after `SetFile`.

Examples:

[Extracting_All_Resolution.cxx](#), and [Fake_Image_Using_Stream_Image_Writer.cxx](#).

25.249.3.2 `void gdcm::StreamImageWriter::DefinePixelExtent (uint16_t inXMin, uint16_t inXMax, uint16_t inYMin, uint16_t inYMax, uint16_t inZMin = 0, uint16_t inZMax = 1)`

Defines an image extent for the `Read` function. DICOM states that an image can have no more than 2^{16} pixels per edge (as of 2009) In this case, the pixel extents ignore the direction cosines entirely, and assumes that the origin of the image is at location 0,0 (regardless of the definition in space per the tags). So, if the first 100 pixels of the first row are to be read in, this function should be called with `DefinePixelExtent(0, 100, 0, 1)`, regardless of pixel size or orientation.
15 nov 2010: added z dimension, defaults to being 1 plane large

Examples:

[Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), and [StreamImageReaderTest.cxx](#).

25.249.3.3 `uint32_t gdcm::StreamImageWriter::DefineProperBufferLength ()`

Paying attention to the pixel format and so forth, define the proper buffer length for the user. The return amount is in bytes. If the return is 0, then that means that the pixel extent was not defined prior this return is for RAW inputs which are then encoded by the writer, but are used to ensure that the writer gets the proper buffer size

Examples:

[Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), and [StreamImageReaderTest.cxx](#).

25.249.3.4 `void gdcm::StreamImageWriter::SetFile (const File & inFile)`

Set the image information to be written to disk that is everything but the pixel information: (7fe0,0010) `PixelData`

Examples:

[Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), and [StreamImageReaderTest.cxx](#).

25.249.3.5 `void gdcm::StreamImageWriter::SetFileName (const char * inFileName)`

One of either `SetFileName` or `SetStream` must be called prior to any other functions. These initialize an internal [Reader](#) class to be able to get non-pixel image information.

25.249.3.6 `void gdcm::StreamImageWriter::SetStream (std::ostream & inStream)`

Examples:

[Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), and [StreamImageReaderTest.cxx](#).

25.249.3.7 `bool gdcmm::StreamImageWriter::Write (void * inWriteBuffer, const std::size_t & inBufferLength)`

Read the DICOM image. There are three reasons for failure:

1. The extent is not set
2. the conversion from void* to std::ostream (internally) fails
3. the given buffer isn't large enough to accomodate the desired pixel extent. This method has been implemented to look similar to the `metainageio` in `itk` MUST have an extent defined, or else `Read` will return false. If no particular extent is required, use [ImageReader](#) instead.

Examples:

[Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), and [StreamImageReaderTest.cxx](#).

25.249.3.8 `virtual bool gdcmm::StreamImageWriter::WriteImageInformation () [virtual]`

Write the header information to disk, and a bunch of zeros for the actual pixel information. Of course, if we're doing a non-compressed format, that works but if it's compressed, we have to force the ordering of chunks that are written.

Examples:

[Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), and [StreamImageReaderTest.cxx](#).

25.249.3.9 `virtual bool gdcmm::StreamImageWriter::WriteImageSubregionRAW (char * inWriteBuffer, const std::size_t & inBufferLength) [protected], [virtual]`

Using the min, max, etc set by `DefinePixelExtent`, this will fill the given buffer. Make sure to call `DefinePixelExtent` and to initialize the buffer with the amount given by `DefineProperBufferLength` prior to calling this. reads by the RAW codec; other codecs are added once implemented

25.249.3.10 `int gdcmm::StreamImageWriter::WriteRawHeader (RAWCodec * inCodec, std::ostream * inStream) [protected]`

when writing a raw file, we know the full extent, and can just write the first 12 bytes out (the tag, the [VR](#), and the size) when we do compressed files, we'll do it in chunks, as described in 2009-3, part 5, Annex A, section 4. Pass the raw codec so that in the rare case of a bigendian explicit raw, the first 12 bytes written out should still be kosher. returns -1 if there's any failure, or the complete offset (12 bytes) if it works. Those 12 bytes are then added to the position in order to determine where to write.

25.249.4 Member Data Documentation

25.249.4.1 `int gdcmm::StreamImageWriter::mElementOffsets [protected]`

The result of `WriteRawHeader` (or another header, when that's implemented) This result is saved so that the first N bytes aren't constantly being rewritten for each chunk that's passed in. For compressed data, the offset table will require rewrites of data.

25.249.4.2 int gdcm::StreamImageWriter::mElementOffsets1 [protected]

25.249.4.3 SmartPointer<File> gdcm::StreamImageWriter::mspFile [protected]

25.249.4.4 Writer gdcm::StreamImageWriter::mWriter [protected]

25.249.4.5 uint16_t gdcm::StreamImageWriter::mXMax [protected]

25.249.4.6 uint16_t gdcm::StreamImageWriter::mXMin [protected]

25.249.4.7 uint16_t gdcm::StreamImageWriter::mYMax [protected]

25.249.4.8 uint16_t gdcm::StreamImageWriter::mYMin [protected]

25.249.4.9 uint16_t gdcm::StreamImageWriter::mZMax [protected]

25.249.4.10 uint16_t gdcm::StreamImageWriter::mZMin [protected]

The documentation for this class was generated from the following file:

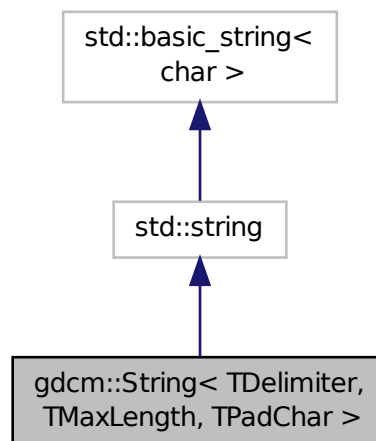
- [gdcmStreamImageWriter.h](#)

25.250 gdcm::String< TDelimiter, TMaxLength, TPadChar > Class Template Reference

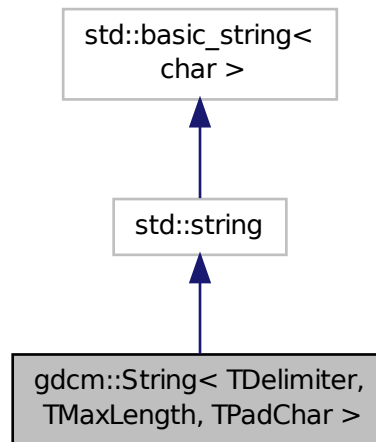
[String.](#)

```
#include <gdcmString.h>
```

Inheritance diagram for gdcm::String< TDelimiter, TMaxLength, TPadChar >:



Collaboration diagram for `gdcmm::String< TDelimiter, TMaxLength, TPadChar >`:



Public Types

- typedef `std::string::const_iterator` [const_iterator](#)
- typedef `std::string::const_reference` [const_reference](#)
- typedef `std::string::const_reverse_iterator` [const_reverse_iterator](#)
- typedef `std::string::difference_type` [difference_type](#)
- typedef `std::string::iterator` [iterator](#)
- typedef `std::string::pointer` [pointer](#)
- typedef `std::string::reference` [reference](#)
- typedef `std::string::reverse_iterator` [reverse_iterator](#)
- typedef `std::string::size_type` [size_type](#)
- typedef `std::string::value_type` [value_type](#)

Public Member Functions

- [String](#) ()
String constructors.
- [String](#) (const [value_type](#) *s)
- [String](#) (const [value_type](#) *s, [size_type](#) n)
- [String](#) (const `std::string` &s, [size_type](#) pos=0, [size_type](#) n=npow)
- `bool` [IsValid](#) () const
return if string is valid

- [operator const char * \(\)](#) const
WARNING: Trailing \0 might be lost in this operation:
- `std::string` [Trim](#) () const
- [gdcmm::String](#)< TDelimiter, TMaxLength, TPadChar > [Truncate](#) () const

Static Public Member Functions

- static `std::string` [Trim](#) (const char *input)

25.250.1 Detailed Description

template<char TDelimiter = '\\', unsigned int TMaxLength = 64, char TPadChar = ' '>class gdcmm::String< TDelimiter, TMaxLength, TPadChar >

[String](#).

Note

TDelimiter template parameter is used to separate multiple [String](#) (VM1 >) TMaxLength is only a hint. Noone actually respect the max length TPadChar is the string padding (0 or space)

25.250.2 Member Typedef Documentation

- 25.250.2.1 template<char TDelimiter = '\\', unsigned int TMaxLength = 64, char TPadChar = ' '> typedef std::string::const_iterator gdcmm::String< TDelimiter, TMaxLength, TPadChar >::const_iterator
- 25.250.2.2 template<char TDelimiter = '\\', unsigned int TMaxLength = 64, char TPadChar = ' '> typedef std::string::const_reference gdcmm::String< TDelimiter, TMaxLength, TPadChar >::const_reference
- 25.250.2.3 template<char TDelimiter = '\\', unsigned int TMaxLength = 64, char TPadChar = ' '> typedef std::string::const_reverse_iterator gdcmm::String< TDelimiter, TMaxLength, TPadChar >::const_reverse_iterator
- 25.250.2.4 template<char TDelimiter = '\\', unsigned int TMaxLength = 64, char TPadChar = ' '> typedef std::string::difference_type gdcmm::String< TDelimiter, TMaxLength, TPadChar >::difference_type
- 25.250.2.5 template<char TDelimiter = '\\', unsigned int TMaxLength = 64, char TPadChar = ' '> typedef std::string::iterator gdcmm::String< TDelimiter, TMaxLength, TPadChar >::iterator
- 25.250.2.6 template<char TDelimiter = '\\', unsigned int TMaxLength = 64, char TPadChar = ' '> typedef std::string::pointer gdcmm::String< TDelimiter, TMaxLength, TPadChar >::pointer
- 25.250.2.7 template<char TDelimiter = '\\', unsigned int TMaxLength = 64, char TPadChar = ' '> typedef std::string::reference gdcmm::String< TDelimiter, TMaxLength, TPadChar >::reference
- 25.250.2.8 template<char TDelimiter = '\\', unsigned int TMaxLength = 64, char TPadChar = ' '> typedef std::string::reverse_iterator gdcmm::String< TDelimiter, TMaxLength, TPadChar >::reverse_iterator
- 25.250.2.9 template<char TDelimiter = '\\', unsigned int TMaxLength = 64, char TPadChar = ' '> typedef std::string::size_type gdcmm::String< TDelimiter, TMaxLength, TPadChar >::size_type

25.250.2.10 `template<char TDelimiter = '\\', unsigned int TMaxLength = 64, char TPadChar = '>'> typedef std::string::value_type
gdcm::String< TDelimiter, TMaxLength, TPadChar >::value_type`

25.250.3 Constructor & Destructor Documentation

25.250.3.1 `template<char TDelimiter = '\\', unsigned int TMaxLength = 64, char TPadChar = '>'> gdcm::String< TDelimiter,
TMaxLength, TPadChar >::String () [inline]`

[String](#) constructors.

25.250.3.2 `template<char TDelimiter = '\\', unsigned int TMaxLength = 64, char TPadChar = '>'> gdcm::String< TDelimiter,
TMaxLength, TPadChar >::String (const value_type * s) [inline]`

25.250.3.3 `template<char TDelimiter = '\\', unsigned int TMaxLength = 64, char TPadChar = '>'> gdcm::String< TDelimiter,
TMaxLength, TPadChar >::String (const value_type * s, size_type n) [inline]`

25.250.3.4 `template<char TDelimiter = '\\', unsigned int TMaxLength = 64, char TPadChar = '>'> gdcm::String< TDelimiter,
TMaxLength, TPadChar >::String (const std::string & s, size_type pos = 0, size_type n = npos) [inline]`

25.250.4 Member Function Documentation

25.250.4.1 `template<char TDelimiter = '\\', unsigned int TMaxLength = 64, char TPadChar = '>'> bool gdcm::String< TDelimiter,
TMaxLength, TPadChar >::IsValid () const [inline]`

return if string is valid

Referenced by `gdcm::String< TDelimiter, TMaxLength, TPadChar >::Truncate()`.

25.250.4.2 `template<char TDelimiter = '\\', unsigned int TMaxLength = 64, char TPadChar = '>'> gdcm::String< TDelimiter,
TMaxLength, TPadChar >::operator const char * () const [inline]`

WARNING: Trailing \0 might be lost in this operation:

25.250.4.3 `template<char TDelimiter = '\\', unsigned int TMaxLength = 64, char TPadChar = '>'> std::string gdcm::String<
TDelimiter, TMaxLength, TPadChar >::Trim () const [inline]`

Trim function is required to return a `std::string` object, otherwise we could not create a [gdcm::String](#) object with an odd number of bytes...

25.250.4.4 `template<char TDelimiter = '\\', unsigned int TMaxLength = 64, char TPadChar = '>'> static std::string gdcm::String<
TDelimiter, TMaxLength, TPadChar >::Trim (const char * input) [inline], [static]`

25.250.4.5 `template<char TDelimiter = '\\', unsigned int TMaxLength = 64, char TPadChar = '>'> gdcm::String<TDelimiter,
TMaxLength, TPadChar> gdcm::String< TDelimiter, TMaxLength, TPadChar >::Truncate () const [inline]`

References `gdcm::String< TDelimiter, TMaxLength, TPadChar >::IsValid()`.

The documentation for this class was generated from the following file:

- [gdcmString.h](#)

25.251 gdcm::StringFilter Class Reference

[StringFilter](#) [StringFilter](#) is the class that make gdcm2.x looks more like gdcm1 and transform the binary blob contained in a [DataElement](#) into a string, typically this is a nice feature to have for wrapped language.

```
#include <gdcmStringFilter.h>
```

Public Member Functions

- [StringFilter](#) ()
- [~StringFilter](#) ()
- bool [ExecuteQuery](#) (std::string const &query, std::string &value) const
- std::string [FromString](#) (const [Tag](#) &t, const char *value, [VL](#) const &vl)
DEPRECATED: NEVER USE IT.
- std::string [FromString](#) (const [Tag](#) &t, const char *value, size_t len)
- [File](#) & [GetFile](#) ()
- const [File](#) & [GetFile](#) () const
- void [SetDicts](#) (const [Dicts](#) &dicts)
Allow user to pass in there own dicts.
- void [SetFile](#) (const [File](#) &f)
Set/Get File.
- std::string [ToString](#) (const [Tag](#) &t) const
Convert to string the [ByteValue](#) contained in a [DataElement](#).
- std::pair< std::string,
std::string > [ToStringPair](#) (const [Tag](#) &t) const
- void [UseDictAlways](#) (bool)

Protected Member Functions

- bool [ExecuteQuery](#) (std::string const &query, [DataSet](#) const &ds, std::string &value) const
- std::pair< std::string,
std::string > [ToStringPair](#) (const [Tag](#) &t, [DataSet](#) const &ds) const

25.251.1 Detailed Description

[StringFilter](#) [StringFilter](#) is the class that make gdcm2.x looks more like gdcm1 and transform the binary blob contained in a [DataElement](#) into a string, typically this is a nice feature to have for wrapped language.

Examples:

[ReadAndPrintAttributes.cxx](#).

25.251.2 Constructor & Destructor Documentation

25.251.2.1 [gdcm::StringFilter::StringFilter](#) ()

25.251.2.2 [gdcm::StringFilter::~~StringFilter](#) ()

25.251.3 Member Function Documentation

25.251.3.1 `bool gdcM::StringFilter::ExecuteQuery (std::string const & query, std::string & value) const`

Execute the XPATH query to find a value (as string) return false when attribute is not found (or an error in the XPATH query) You need to make sure that your XPATH query is syntatically correct

25.251.3.2 `bool gdcM::StringFilter::ExecuteQuery (std::string const & query, DataSet const & ds, std::string & value) const`
`[protected]`

25.251.3.3 `std::string gdcM::StringFilter::FromString (const Tag & t, const char * value, VL const & vl)`

DEPRECATED: NEVER USE IT.

25.251.3.4 `std::string gdcM::StringFilter::FromString (const Tag & t, const char * value, size_t len)`

25.251.3.5 `File& gdcM::StringFilter::GetFile ()` `[inline]`

25.251.3.6 `const File& gdcM::StringFilter::GetFile () const` `[inline]`

25.251.3.7 `void gdcM::StringFilter::SetDicts (const Dicts & dicts)`

Allow user to pass in there own dicts.

25.251.3.8 `void gdcM::StringFilter::SetFile (const File & f)` `[inline]`

Set/Get [File](#).

Examples:

[ReadAndPrintAttributes.cxx](#).

25.251.3.9 `std::string gdcM::StringFilter::ToString (const Tag & t) const`

Convert to string the [ByteValue](#) contained in a [DataElement](#).

Examples:

[ReadAndPrintAttributes.cxx](#).

25.251.3.10 `std::pair<std::string, std::string> gdcM::StringFilter::ToStringPair (const Tag & t) const`

Convert to string the [ByteValue](#) contained in a [DataElement](#) the returned elements are: pair.first : the name as found in the dictionary of [DataElement](#) pari.second : the value encoded into a string (US,UL...) are properly converted

Examples:

[ReadAndPrintAttributes.cxx](#).

25.251.3.11 `std::pair<std::string, std::string> gdcm::StringFilter::ToStringPair (const Tag & t, DataSet const & ds) const`
[protected]

25.251.3.12 `void gdcm::StringFilter::UseDictAlways (bool)` [inline]

The documentation for this class was generated from the following file:

- [gdcmStringFilter.h](#)

25.252 gdcm::Study Class Reference

[Study.](#)

```
#include <gdcmStudy.h>
```

Public Member Functions

- [Study \(\)](#)

25.252.1 Detailed Description

[Study.](#)

25.252.2 Constructor & Destructor Documentation

25.252.2.1 `gdcm::Study::Study ()` [inline]

The documentation for this class was generated from the following file:

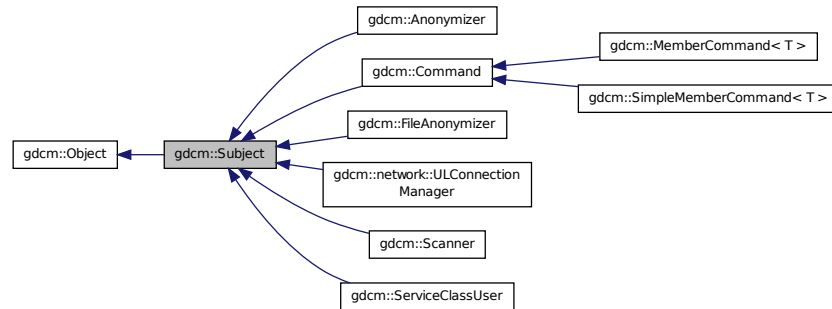
- [gdcmStudy.h](#)

25.253 gdcm::Subject Class Reference

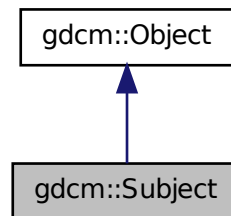
[Subject.](#)

```
#include <gdcmSubject.h>
```

Inheritance diagram for `gdcmm::Subject`:



Collaboration diagram for `gdcmm::Subject`:



Public Member Functions

- [Subject](#) ()
- [~Subject](#) ()
- unsigned long [AddObserver](#) (const [Event](#) &event, [Command](#) *)
- unsigned long [AddObserver](#) (const [Event](#) &event, [Command](#) *) const
- [Command](#) * [GetCommand](#) (unsigned long tag)
- bool [HasObserver](#) (const [Event](#) &event) const
- void [InvokeEvent](#) (const [Event](#) &)
- void [InvokeEvent](#) (const [Event](#) &) const
- void [RemoveAllObservers](#) ()
- void [RemoveObserver](#) (unsigned long tag)

Additional Inherited Members

25.253.1 Detailed Description

[Subject](#).

See Also

[Command Event](#)

25.253.2 Constructor & Destructor Documentation

25.253.2.1 `gdcmm::Subject::Subject ()`

25.253.2.2 `gdcmm::Subject::~~Subject ()`

25.253.3 Member Function Documentation

25.253.3.1 `unsigned long gdcmm::Subject::AddObserver (const Event & event, Command *)`

Allow people to add/remove/invoke observers (callbacks) to any GDCM object. This is an implementation of the subject/observer design pattern. An observer is added by specifying an event to respond to and an [gdcmm::Command](#) to execute. It returns an unsigned long tag which can be used later to remove the event or retrieve the command. The memory for the [Command](#) becomes the responsibility of this object, so don't pass the same instance of a command to two different objects

25.253.3.2 `unsigned long gdcmm::Subject::AddObserver (const Event & event, Command *) const`

25.253.3.3 `Command* gdcmm::Subject::GetCommand (unsigned long tag)`

Get the command associated with the given tag. NOTE: This returns a pointer to a [Command](#), but it is safe to assign this to a `Command::Pointer`. Since [Command](#) inherits from `LightObject`, at this point in the code, only a pointer or a reference to the [Command](#) can be used.

25.253.3.4 `bool gdcmm::Subject::HasObserver (const Event & event) const`

Return true if an observer is registered for this event.

25.253.3.5 `void gdcmm::Subject::InvokeEvent (const Event &)`

Call `Execute` on all the `Commands` observing this event id.

25.253.3.6 `void gdcmm::Subject::InvokeEvent (const Event &) const`

Call `Execute` on all the `Commands` observing this event id. The actions triggered by this call doesn't modify this object.

25.253.3.7 `void gdcmm::Subject::RemoveAllObservers ()`

Remove all observers .

25.253.3.8 `void gdcmm::Subject::RemoveObserver (unsigned long tag)`

Remove the observer with this tag value.

The documentation for this class was generated from the following file:

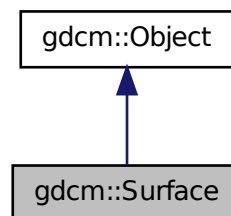
- [gdcmSubject.h](#)

25.254 gdcm::Surface Class Reference

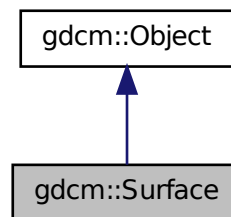
This class defines a SURFACE IE. This members are taken from required surface mesh module attributes.

```
#include <gdcmSurface.h>
```

Inheritance diagram for gdcm::Surface:



Collaboration diagram for gdcm::Surface:



Public Types

- enum [STATES](#) {
 [NO](#) = 0,
 [YES](#),
 [UNKNOWN](#),
 [STATES_END](#) }
- enum [VIEWType](#) {

```

    SURFACE = 0,
    WIREFRAME,
    POINTS,
    VIEWType_END }

```

Enumeration for Recommended Presentation *Type*.

Public Member Functions

- [Surface](#) ()
- virtual [~Surface](#) ()
- [SegmentHelper::BasicCodedEntry](#)
const & [GetAlgorithmFamily](#) () const
- [SegmentHelper::BasicCodedEntry](#) & [GetAlgorithmFamily](#) ()
- const char * [GetAlgorithmName](#) () const
- const char * [GetAlgorithmVersion](#) () const
- const float * [GetAxisOfRotation](#) () const
- const float * [GetCenterOfRotation](#) () const
- [STATES](#) [GetFiniteVolume](#) () const
- [STATES](#) [GetManifold](#) () const
- float [GetMaximumPointDistance](#) () const
- float [GetMeanPointDistance](#) () const
- [MeshPrimitive](#) const & [GetMeshPrimitive](#) () const
- [MeshPrimitive](#) & [GetMeshPrimitive](#) ()
- unsigned long [GetNumberOfSurfacePoints](#) () const
- unsigned long [GetNumberOfVectors](#) () const
- const [DataElement](#) & [GetPointCoordinatesData](#) () const
- [DataElement](#) & [GetPointCoordinatesData](#) ()
- const float * [GetPointPositionAccuracy](#) () const
- const float * [GetPointsBoundingBoxCoordinates](#) () const
- [SegmentHelper::BasicCodedEntry](#)
const & [GetProcessingAlgorithm](#) () const
- [SegmentHelper::BasicCodedEntry](#) & [GetProcessingAlgorithm](#) ()
- const unsigned short * [GetRecommendedDisplayCIELabValue](#) () const
- unsigned short [GetRecommendedDisplayCIELabValue](#) (const unsigned int idx) const
- unsigned short [GetRecommendedDisplayGrayscaleValue](#) () const
- float [GetRecommendedPresentationOpacity](#) () const
- [VIEWType](#) [GetRecommendedPresentationType](#) () const
- const char * [GetSurfaceComments](#) () const
- unsigned long [GetSurfaceNumber](#) () const
- bool [GetSurfaceProcessing](#) () const
- const char * [GetSurfaceProcessingDescription](#) () const
- float [GetSurfaceProcessingRatio](#) () const
- const float * [GetVectorAccuracy](#) () const
- const [DataElement](#) & [GetVectorCoordinateData](#) () const
- [DataElement](#) & [GetVectorCoordinateData](#) ()
- unsigned short [GetVectorDimensionality](#) () const
- void [SetAlgorithmFamily](#) ([SegmentHelper::BasicCodedEntry](#) const &BSE)
- void [SetAlgorithmName](#) (const char *str)
- void [SetAlgorithmVersion](#) (const char *str)
- void [SetAxisOfRotation](#) (const float *axis)

- void [SetCenterOfRotation](#) (const float *center)
- void [SetFiniteVolume](#) ([STATES](#) state)
- void [SetManifold](#) ([STATES](#) state)
- void [SetMaximumPointDistance](#) (float maximum)
- void [SetMeanPointDistance](#) (float average)
- void [SetMeshPrimitive](#) ([MeshPrimitive](#) &mp)
- void [SetNumberOfSurfacePoints](#) (const unsigned long nb)
- void [SetNumberOfVectors](#) (const unsigned long nb)
- void [SetPointCoordinatesData](#) ([DataElement](#) const &de)
- void [SetPointPositionAccuracy](#) (const float *accuracies)
- void [SetPointsBoundingBoxCoordinates](#) (const float *coordinates)
- void [SetProcessingAlgorithm](#) ([SegmentHelper::BasicCodedEntry](#) const &BSE)
- void [SetRecommendedDisplayCIELabValue](#) (const unsigned short vl[3])
- void [SetRecommendedDisplayCIELabValue](#) (const unsigned short vl, const unsigned int idx=0)
- void [SetRecommendedDisplayCIELabValue](#) (const std::vector< unsigned short > &vl)
- void [SetRecommendedDisplayGrayscaleValue](#) (const unsigned short vl)
- void [SetRecommendedPresentationOpacity](#) (const float opacity)
- void [SetRecommendedPresentationType](#) ([VIEWType](#) type)
- void [SetSurfaceComments](#) (const char *comment)
- void [SetSurfaceNumber](#) (const unsigned long nb)
- void [SetSurfaceProcessing](#) (bool b)
- void [SetSurfaceProcessingDescription](#) (const char *description)
- void [SetSurfaceProcessingRatio](#) (const float ratio)
- void [SetVectorAccuracy](#) (const float *accuracy)
- void [SetVectorCoordinateData](#) ([DataElement](#) const &de)
- void [SetVectorDimensionality](#) (const unsigned short dim)

Static Public Member Functions

- static [STATES](#) [GetSTATES](#) (const char *state)
- static const char * [GetSTATESString](#) ([STATES](#) state)
- static [VIEWType](#) [GetVIEWType](#) (const char *type)
- static const char * [GetVIEWTypeString](#) ([VIEWType](#) type)

Additional Inherited Members

25.254.1 Detailed Description

This class defines a SURFACE IE. This members are taken from required surface mesh module attributes.

See Also

PS 3.3 A.1.2.18 , A.57 and C.27

25.254.2 Member Enumeration Documentation

25.254.2.1 enum gdcm::Surface::STATES

Enumerator

NO

YES

UNKNOWN

STATES_END

25.254.2.2 enum gdcm::Surface::VIEWType

Enumeration for Recommended Presentation [Type](#).

See Also

Tag(0x0066, 0x000D) and PS 3.3 C.27.1.1.3

Enumerator

SURFACE

WIREFRAME

POINTS

VIEWType_END

25.254.3 Constructor & Destructor Documentation

25.254.3.1 gdcm::Surface::Surface ()

25.254.3.2 virtual gdcm::Surface::~~Surface () [virtual]

25.254.4 Member Function Documentation

25.254.4.1 SegmentHelper::BasicCodedEntry const& gdcm::Surface::GetAlgorithmFamily () const

25.254.4.2 SegmentHelper::BasicCodedEntry& gdcm::Surface::GetAlgorithmFamily ()

25.254.4.3 const char* gdcm::Surface::GetAlgorithmName () const

25.254.4.4 const char* gdcm::Surface::GetAlgorithmVersion () const

25.254.4.5 const float* gdcm::Surface::GetAxisOfRotation () const

Note

Pointer is null if undefined

25.254.4.6 `const float* gdcm::Surface::GetCenterOfRotation () const`

Note

Pointer is null if undefined

25.254.4.7 **STATES** `gdcm::Surface::GetFiniteVolume () const`

25.254.4.8 **STATES** `gdcm::Surface::GetManifold () const`

25.254.4.9 `float gdcm::Surface::GetMaximumPointDistance () const`

25.254.4.10 `float gdcm::Surface::GetMeanPointDistance () const`

25.254.4.11 **MeshPrimitive** `const& gdcm::Surface::GetMeshPrimitive () const`

25.254.4.12 **MeshPrimitive** `& gdcm::Surface::GetMeshPrimitive ()`

25.254.4.13 `unsigned long gdcm::Surface::GetNumberOfSurfacePoints () const`

25.254.4.14 `unsigned long gdcm::Surface::GetNumberOfVectors () const`

25.254.4.15 `const DataElement& gdcm::Surface::GetPointCoordinatesData () const`

25.254.4.16 **DataElement** `& gdcm::Surface::GetPointCoordinatesData ()`

25.254.4.17 `const float* gdcm::Surface::GetPointPositionAccuracy () const`

Note

Pointer is null if undefined

25.254.4.18 `const float* gdcm::Surface::GetPointsBoundingBoxCoordinates () const`

Note

Pointer is null if undefined

25.254.4.19 **SegmentHelper::BasicCodedEntry** `const& gdcm::Surface::GetProcessingAlgorithm () const`

25.254.4.20 **SegmentHelper::BasicCodedEntry** `& gdcm::Surface::GetProcessingAlgorithm ()`

25.254.4.21 `const unsigned short* gdcm::Surface::GetRecommendedDisplayCIELabValue () const`

25.254.4.22 `unsigned short gdcm::Surface::GetRecommendedDisplayCIELabValue (const unsigned int idx) const`

25.254.4.23 `unsigned short gdcm::Surface::GetRecommendedDisplayGrayscaleValue () const`

25.254.4.24 `float gdcm::Surface::GetRecommendedPresentationOpacity () const`

- 25.254.4.25 **VIEWType** gdcm::Surface::GetRecommendedPresentationType () const
- 25.254.4.26 static **STATES** gdcm::Surface::GetSTATES (const char * *state*) [static]
- 25.254.4.27 static const char* gdcm::Surface::GetSTATESString (**STATES** *state*) [static]
- 25.254.4.28 const char* gdcm::Surface::GetSurfaceComments () const
- 25.254.4.29 unsigned long gdcm::Surface::GetSurfaceNumber () const
- 25.254.4.30 bool gdcm::Surface::GetSurfaceProcessing () const
- 25.254.4.31 const char* gdcm::Surface::GetSurfaceProcessingDescription () const
- 25.254.4.32 float gdcm::Surface::GetSurfaceProcessingRatio () const
- 25.254.4.33 const float* gdcm::Surface::GetVectorAccuracy () const
- 25.254.4.34 const **DataElement**& gdcm::Surface::GetVectorCoordinateData () const
- 25.254.4.35 **DataElement**& gdcm::Surface::GetVectorCoordinateData ()
- 25.254.4.36 unsigned short gdcm::Surface::GetVectorDimensionality () const
- 25.254.4.37 static **VIEWType** gdcm::Surface::GetVIEWType (const char * *type*) [static]
- 25.254.4.38 static const char* gdcm::Surface::GetVIEWTypeString (**VIEWType** *type*) [static]
- 25.254.4.39 void gdcm::Surface::SetAlgorithmFamily (**SegmentHelper::BasicCodedEntry** const & *BSE*)
- 25.254.4.40 void gdcm::Surface::SetAlgorithmName (const char * *str*)
- 25.254.4.41 void gdcm::Surface::SetAlgorithmVersion (const char * *str*)
- 25.254.4.42 void gdcm::Surface::SetAxisOfRotation (const float * *axis*)
- 25.254.4.43 void gdcm::Surface::SetCenterOfRotation (const float * *center*)
- 25.254.4.44 void gdcm::Surface::SetFiniteVolume (**STATES** *state*)
- 25.254.4.45 void gdcm::Surface::SetManifold (**STATES** *state*)
- 25.254.4.46 void gdcm::Surface::SetMaximumPointDistance (float *maximum*)
- 25.254.4.47 void gdcm::Surface::SetMeanPointDistance (float *average*)
- 25.254.4.48 void gdcm::Surface::SetMeshPrimitive (**MeshPrimitive** & *mp*)
- 25.254.4.49 void gdcm::Surface::SetNumberOfSurfacePoints (const unsigned long *nb*)
- 25.254.4.50 void gdcm::Surface::SetNumberOfVectors (const unsigned long *nb*)

- 25.254.4.51 void gdcM::Surface::SetPointCoordinatesData (DataElement const & *de*)
- 25.254.4.52 void gdcM::Surface::SetPointPositionAccuracy (const float * *accuracies*)
- 25.254.4.53 void gdcM::Surface::SetPointsBoundingBoxCoordinates (const float * *coordinates*)
- 25.254.4.54 void gdcM::Surface::SetProcessingAlgorithm (SegmentHelper::BasicCodedEntry const & *BSE*)
- 25.254.4.55 void gdcM::Surface::SetRecommendedDisplayCIELabValue (const unsigned short *vl[3]*)
- 25.254.4.56 void gdcM::Surface::SetRecommendedDisplayCIELabValue (const unsigned short *vl*, const unsigned int *idx* = 0)
- 25.254.4.57 void gdcM::Surface::SetRecommendedDisplayCIELabValue (const std::vector< unsigned short > & *vl*)
- 25.254.4.58 void gdcM::Surface::SetRecommendedDisplayGrayscaleValue (const unsigned short *vl*)
- 25.254.4.59 void gdcM::Surface::SetRecommendedPresentationOpacity (const float *opacity*)
- 25.254.4.60 void gdcM::Surface::SetRecommendedPresentationType (VIEWType *type*)
- 25.254.4.61 void gdcM::Surface::SetSurfaceComments (const char * *comment*)
- 25.254.4.62 void gdcM::Surface::SetSurfaceNumber (const unsigned long *nb*)
- 25.254.4.63 void gdcM::Surface::SetSurfaceProcessing (bool *b*)
- 25.254.4.64 void gdcM::Surface::SetSurfaceProcessingDescription (const char * *description*)
- 25.254.4.65 void gdcM::Surface::SetSurfaceProcessingRatio (const float *ratio*)
- 25.254.4.66 void gdcM::Surface::SetVectorAccuracy (const float * *accuracy*)
- 25.254.4.67 void gdcM::Surface::SetVectorCoordinateData (DataElement const & *de*)
- 25.254.4.68 void gdcM::Surface::SetVectorDimensionality (const unsigned short *dim*)

The documentation for this class was generated from the following file:

- [gdcMSurface.h](#)

25.255 gdcM::SurfaceHelper Class Reference

[SurfaceHelper](#) Helper class for [Surface](#) object.

```
#include <gdcMSurfaceHelper.h>
```

Public Types

- typedef std::vector< unsigned short > [ColorArray](#)

Public Member Functions

- `template<typename T , typename U >`
`std::vector< T > RecommendedDisplayCIELabToRGB` (const `ColorArray` &CIELab, const U rangeMax)
- `template<typename U >`
`std::vector< float > RecommendedDisplayCIELabToRGB` (const `ColorArray` &CIELab, const U rangeMax)
- `template<typename T , typename U >`
`SurfaceHelper::ColorArray RGBToRecommendedDisplayCIELab` (const std::vector< T > &RGB, const U rangeMax)
- `template<typename T , typename U >`
`unsigned short RGBToRecommendedDisplayGrayscale` (const std::vector< T > &RGB, const U rangeMax)

Static Public Member Functions

- `template<typename T , typename U >`
`static std::vector< T > RecommendedDisplayCIELabToRGB` (const `ColorArray` &CIELab, const U rangeMax=255)
Convert a DICOM CIE-Lab (after reading) color into RGB.
- `template<typename U >`
`static std::vector< float > RecommendedDisplayCIELabToRGB` (const `ColorArray` &CIELab, const U rangeMax=255)
Convert a DICOM CIE-Lab (after reading) color into RGB.
- `template<typename T , typename U >`
`static ColorArray RGBToRecommendedDisplayCIELab` (const std::vector< T > &RGB, const U rangeMax=255)
Convert a RGB color into DICOM CIE-Lab (ready to write).
- `template<typename T , typename U >`
`static unsigned short RGBToRecommendedDisplayGrayscale` (const std::vector< T > &RGB, const U rangeMax=255)
Convert a RGB color into DICOM grayscale (ready to write).

25.255.1 Detailed Description

`SurfaceHelper` Helper class for `Surface` object.

25.255.2 Member Typedef Documentation

25.255.2.1 `typedef std::vector< unsigned short > gdcm::SurfaceHelper::ColorArray`

25.255.3 Member Function Documentation

25.255.3.1 `template<typename T , typename U > static std::vector<T> gdcm::SurfaceHelper::RecommendedDisplayCIELabToRGB`
 (const `ColorArray` & `CIELab`, const U `rangeMax` = 255) [static]

Convert a DICOM CIE-Lab (after reading) color into RGB.

See Also

PS 3.3 C.10.7.1.1

Parameters

<i>CIELab</i>	DICOM CIE-Lab array.
<i>rangeMax</i>	Max value of the RGB range.

Template Parameters

<i>T</i>	Type of CIELab components.
<i>U</i>	Type of rangeMax value.

25.255.3.2 `template<typename U > static std::vector<float> gdcm::SurfaceHelper::RecommendedDisplayCIELabToRGB (const ColorArray & CIELab, const U rangeMax = 255) [static]`

Convert a DICOM CIE-Lab (after reading) color into RGB.

See Also

PS 3.3 C.10.7.1.1

Parameters

<i>CIELab</i>	DICOM CIE-Lab array.
<i>rangeMax</i>	Max value of the RGB range.

Template Parameters

<i>U</i>	Type of rangeMax value.
----------	---

25.255.3.3 `template<typename T , typename U > std::vector<T> gdcm::SurfaceHelper::RecommendedDisplayCIELabToRGB (const ColorArray & CIELab, const U rangeMax)`

25.255.3.4 `template<typename U > std::vector<float> gdcm::SurfaceHelper::RecommendedDisplayCIELabToRGB (const ColorArray & CIELab, const U rangeMax)`

25.255.3.5 `template<typename T , typename U > static ColorArray gdcm::SurfaceHelper::RGBToRecommendedDisplayCIELab (const std::vector< T > & RGB, const U rangeMax = 255) [static]`

Convert a RGB color into DICOM CIE-Lab (ready to write).

See Also

PS 3.3 C.10.7.1.1

Parameters

<i>RGB</i>	RGB array.
<i>rangeMax</i>	Max value of the RGB range.

Template Parameters

<i>T</i>	Type of RGB components.
<i>U</i>	Type of rangeMax value.

25.255.3.6 `template<typename T , typename U > SurfaceHelper::ColorArray gdcm::SurfaceHelper::RGBToRecommendedDisplayCIELab (const std::vector< T > & RGB, const U rangeMax)`

25.255.3.7 `template<typename T , typename U > static unsigned short gdcm::SurfaceHelper::RGBToRecommendedDisplayGrayscale (const std::vector< T > & RGB, const U rangeMax = 255) [static]`

Convert a RGB color into DICOM grayscale (ready to write).

See Also

PS 3.3 C.27.1 tag(0062,000C)

Parameters

<i>RGB</i>	RGB array.
<i>rangeMax</i>	Max value of the RGB range.

Template Parameters

<i>T</i>	Type of RGB components.
<i>U</i>	Type of rangeMax value.

25.255.3.8 `template<typename T , typename U > unsigned short gdcm::SurfaceHelper::RGBToRecommendedDisplayGrayscale (const std::vector< T > & RGB, const U rangeMax)`

The documentation for this class was generated from the following file:

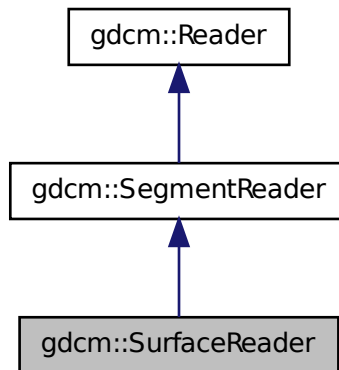
- [gdcmSurfaceHelper.h](#)

25.256 gdcm::SurfaceReader Class Reference

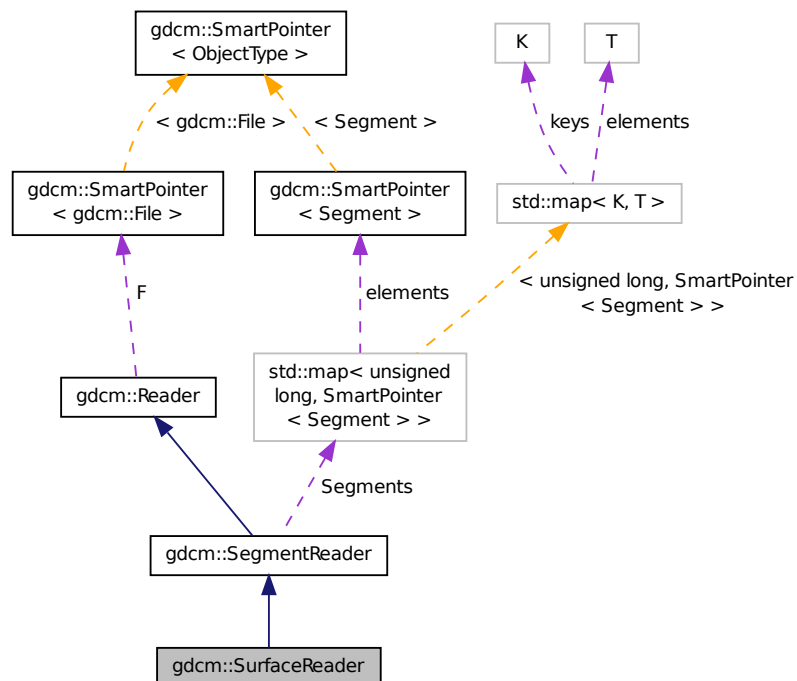
This class defines a SURFACE IE reader. It reads surface mesh module attributes.

```
#include <gdcmSurfaceReader.h>
```

Inheritance diagram for `gdcm::SurfaceReader`:



Collaboration diagram for `gdcm::SurfaceReader`:



Public Member Functions

- [SurfaceReader](#) ()
- virtual [~SurfaceReader](#) ()
- unsigned long [GetNumberOfSurfaces](#) () const
- virtual bool [Read](#) ()

Read.

Protected Member Functions

- bool [ReadPointMacro](#) ([SmartPointer](#)< [Surface](#) > surface, const [DataSet](#) &surfaceDS)
- bool [ReadSurface](#) (const [Item](#) &surfacerItem, const unsigned long idx)
- bool [ReadSurfaces](#) ()

Additional Inherited Members

25.256.1 Detailed Description

This class defines a SURFACE IE reader. It reads surface mesh module attributes.

See Also

PS 3.3 A.1.2.18 , A.57 and C.27

25.256.2 Constructor & Destructor Documentation

25.256.2.1 `gdcm::SurfaceReader::SurfaceReader ()`

25.256.2.2 `virtual gdcm::SurfaceReader::~~SurfaceReader ()` `[virtual]`

25.256.3 Member Function Documentation

25.256.3.1 `unsigned long gdcm::SurfaceReader::GetNumberOfSurfaces ()` `const`

25.256.3.2 `virtual bool gdcm::SurfaceReader::Read ()` `[virtual]`

Read.

Reimplemented from [gdcm::SegmentReader](#).

25.256.3.3 `bool gdcm::SurfaceReader::ReadPointMacro (SmartPointer< Surface > surface, const DataSet & surfaceDS)` `[protected]`

25.256.3.4 `bool gdcm::SurfaceReader::ReadSurface (const Item & surfacerItem, const unsigned long idx)` `[protected]`

25.256.3.5 `bool gdcm::SurfaceReader::ReadSurfaces ()` `[protected]`

The documentation for this class was generated from the following file:

- [gdcmSurfaceReader.h](#)

Protected Attributes

- unsigned long [NumberOfSurfaces](#)

Additional Inherited Members

25.257.1 Detailed Description

This class defines a SURFACE IE writer. It writes surface mesh module attributes.

See Also

PS 3.3 A.1.2.18 , A.57 and C.27

25.257.2 Constructor & Destructor Documentation

25.257.2.1 `gdcm::SurfaceWriter::SurfaceWriter ()`

25.257.2.2 `virtual gdcm::SurfaceWriter::~~SurfaceWriter () [virtual]`

25.257.3 Member Function Documentation

25.257.3.1 `void gdcm::SurfaceWriter::ComputeNumberOfSurfaces () [protected]`

25.257.3.2 `unsigned long gdcm::SurfaceWriter::GetNumberOfSurfaces ()`

25.257.3.3 `bool gdcm::SurfaceWriter::PrepareWrite () [protected]`

25.257.3.4 `bool gdcm::SurfaceWriter::PrepareWritePointMacro (SmartPointer< Surface > surface, DataSet & surfaceDS, const TransferSyntax & ts) [protected]`

25.257.3.5 `void gdcm::SurfaceWriter::SetNumberOfSurfaces (const unsigned long nb)`

25.257.3.6 `bool gdcm::SurfaceWriter::Write () [virtual]`

Write.

Reimplemented from [gdcm::SegmentWriter](#).

25.257.4 Member Data Documentation

25.257.4.1 `unsigned long gdcm::SurfaceWriter::NumberOfSurfaces [protected]`

The documentation for this class was generated from the following file:

- [gdcmSurfaceWriter.h](#)

25.258 gdcm::SwapCode Class Reference

[SwapCode](#) representation.

```
#include <gdcmswapCode.h>
```

Public Types

- enum [SwapCodeType](#) {
 [Unknown](#) = 0,
 [LittleEndian](#) = 1234,
 [BigEndian](#) = 4321,
 [BadLittleEndian](#) = 3412,
 [BadBigEndian](#) = 2143 }

Public Member Functions

- [SwapCode](#) ([SwapCodeType](#) sc=[Unknown](#))
- [operator SwapCode::SwapCodeType](#) () const

Static Public Member Functions

- static const char * [GetSwapCodeString](#) ([SwapCode](#) const &sc)

Static Protected Member Functions

- static int [GetIndex](#) ([SwapCode](#) const &sc)

Friends

- std::ostream & [operator<<](#) (std::ostream &os, const [SwapCode](#) &sc)

25.258.1 Detailed Description

[SwapCode](#) representation.

Examples:

[TestByteSwap.cxx](#).

25.258.2 Member Enumeration Documentation

25.258.2.1 enum [gdcmswapCode::SwapCodeType](#)

Enumerator

Unknown

LittleEndian

BigEndian

BadLittleEndian

BadBigEndian

25.258.3 Constructor & Destructor Documentation

25.258.3.1 `gdcm::SwapCode::SwapCode (SwapCodeType sc = Unknown)` `[inline]`

25.258.4 Member Function Documentation

25.258.4.1 `static int gdcm::SwapCode::GetIndex (SwapCode const & sc)` `[static], [protected]`

25.258.4.2 `static const char* gdcm::SwapCode::GetSwapCodeString (SwapCode const & sc)` `[static]`

Referenced by `gdcm::operator<<()`.

25.258.4.3 `gdcm::SwapCode::operator SwapCode::SwapCodeType () const` `[inline]`

25.258.5 Friends And Related Function Documentation

25.258.5.1 `std::ostream& operator<< (std::ostream & os, const SwapCode & sc)` `[friend]`

The documentation for this class was generated from the following file:

- [gdcmSwapCode.h](#)

25.259 gdcm::SwapperDoOp Class Reference

```
#include <gdcmSwapper.h>
```

Static Public Member Functions

- `template<typename T >`
 `static T Swap (T val)`
- `template<typename T >`
 `static void SwapArray (T *array, size_t n)`

25.259.1 Member Function Documentation

25.259.1.1 `template<typename T > static T gdcm::SwapperDoOp::Swap (T val)` `[static]`

Referenced by `gdcm::Item::Read()`.

25.259.1.2 `template<typename T > static void gdcm::SwapperDoOp::SwapArray (T * array, size_t n)` `[inline], [static]`

The documentation for this class was generated from the following file:

- [gdcmSwapper.h](#)

25.260 gdcm::SwapperNoOp Class Reference

```
#include <gdcmSwapper.h>
```

Static Public Member Functions

- template<typename T >
static T [Swap](#) (T val)
- template<typename T >
static void [SwapArray](#) (T *, size_t)

25.260.1 Detailed Description

Examples:

[ReadExplicitLengthSQIVR.cxx](#).

25.260.2 Member Function Documentation

25.260.2.1 template<typename T > static T gdcm::SwapperNoOp::Swap (T val) [inline], [static]

Referenced by gdcm::EncodingImplementation< VR::VRBINARY >::Write().

25.260.2.2 template<typename T > static void gdcm::SwapperNoOp::SwapArray (T *, size_t) [inline], [static]

Referenced by gdcm::EncodingImplementation< VR::VRBINARY >::Read().

The documentation for this class was generated from the following file:

- [gdcmSwapper.h](#)

25.261 gdcm::System Class Reference

Class to do system operation.

```
#include <gdcmSystem.h>
```

Static Public Member Functions

- static bool [DeleteDirectory](#) (const char *source)
remove a directory named source
- static size_t [EncodeBytes](#) (char *out, const unsigned char *data, int size)
- static bool [FileExists](#) (const char *filename)
Check whether the specified file exist on the sytem.
- static bool [FileIsDirectory](#) (const char *name)
Check whether the file specified is a directory:
- static bool [FileIsSymlink](#) (const char *name)
Check whether name is a symlink.

- static size_t [FileSize](#) (const char *filename)
- static time_t [FileTime](#) (const char *filename)
- static bool [FormatDateTime](#) (char date[22], time_t t, long milliseconds=0)
- static bool [GetCurrentDateTime](#) (char date[22])
- static const char * [GetCurrentModuleFileName](#) ()
- static const char * [GetCurrentProcessFileName](#) ()
- static const char * [GetCurrentResourcesDirectory](#) ()
- static const char * [GetCWD](#) ()
- static bool [GetHostName](#) (char hostname[255])
- static const char * [GetLastError](#) ()
- Return the last error.*
- static const char * [GetLocaleCharset](#) ()
- return locale charmap*
- static const char * [GetTimezoneOffsetFromUTC](#) ()
- static bool [MakeDirectory](#) (const char *path)
- Create a directory name path.*
- static bool [ParseDateTime](#) (time_t &timep, const char date[22])
- Parse a date stored as ASCII text into a time_t structured (discard millisecond if any)*
- static bool [ParseDateTime](#) (time_t &timep, long &milliseconds, const char date[22])
- static bool [RemoveFile](#) (const char *source)
- remove a file named source*
- static int [StrCaseCmp](#) (const char *s1, const char *s2)
- consistent func for C99 spec of strcasecmp/strncasecmp*
- static int [StrNCaseCmp](#) (const char *s1, const char *s2, size_t n)
- static char * [StrTokR](#) (char *ptr, const char *sep, char **end)
- strtok_r*

Static Protected Member Functions

- static bool [GetPermissions](#) (const char *file, unsigned short &mode)
- NOT THREAD SAFE.*
- static bool [SetPermissions](#) (const char *file, unsigned short mode)

25.261.1 Detailed Description

Class to do system operation.

OS independent functionalities

25.261.2 Member Function Documentation

25.261.2.1 static bool gdcm::System::DeleteDirectory (const char * *source*) [static]

remove a directory named source

25.261.2.2 static size_t gdcm::System::EncodeBytes (char * *out*, const unsigned char * *data*, int *size*) [static]

Used internally by the [UIDGenerator](#) class to convert a uuid tape to a DICOM [VR:UI](#) type

25.261.2.3 static bool gdcm::System::FileExists (const char * *filename*) [static]

Check whether the specified file exist on the sytem.

Examples:

[EncapsulateFileInRawData.cxx](#), [gdcmorthoplanes.cxx](#), and [MagnifyFile.cxx](#).

25.261.2.4 static bool gdcm::System::FilesDirectory (const char * *name*) [static]

Check whether the file specified is a directory:

Examples:

[gdcmorthoplanes.cxx](#), and [threadgdcm.cxx](#).

25.261.2.5 static bool gdcm::System::FilesSymlink (const char * *name*) [static]

Check whether name is a symlink.

25.261.2.6 static size_t gdcm::System::FileSize (const char * *filename*) [static]

Return the filesize. 0 if file does not exist.

Warning

you need to use FileExists to differentiate between empty file and missing file.
for very large size file and on system where size_t is not appropriate to store off_t value the function will return 0.

Examples:

[CheckBigEndianBug.cxx](#), [CreateARGBImage.cxx](#), [CreateCMYKImage.cxx](#), and [EncapsulateFileInRawData.cxx](#).

25.261.2.7 static time_t gdcm::System::FileTime (const char * *filename*) [static]

Return the time of last modification of file 0 if the file does not exist

25.261.2.8 static bool gdcm::System::FormatDateTime (char *date[22]*, time_t *t*, long *milliseconds* = 0) [static]

format as ASCII text a time_t with milliseconds See [VR::DT](#) from DICOM PS 3.5 milliseconds is in the range [0, 999999]

25.261.2.9 static bool gdcm::System::GetCurrentDateTime (char *date[22]*) [static]

Return the current data time, and format it as ASCII text. This is simply a call to gettimeofday + FormatDateTime, since WIN32 do not have an implementation for gettimeofday, this is more portable. The call time(0) is not precise for our resolution

25.261.2.10 `static const char* gdcmm::System::GetCurrentModuleFileName () [static]`

Return the directory the current module is located: NOT THREAD SAFE

25.261.2.11 `static const char* gdcmm::System::GetCurrentProcessFileName () [static]`

Return the directory the current process (executable) is located: NOT THREAD SAFE

25.261.2.12 `static const char* gdcmm::System::GetCurrentResourcesDirectory () [static]`

On some system (Apple) return the path to the current bundled 'Resources' directory NOT THREAD SAFE

25.261.2.13 `static const char* gdcmm::System::GetCurrentWorkingDirectory () [static]`

Return current working directory Warning: if current working path is too long (>2048 bytes) the call will fail and call will return NULL NOT THREAD SAFE

25.261.2.14 `static bool gdcmm::System::GetHostName (char hostname[255]) [static]`

Retrieve the hostname, only the first 255 byte are copied. This may come handy to specify the Station Name

25.261.2.15 `static const char* gdcmm::System::GetLastError () [static]`

Return the last error.

25.261.2.16 `static const char* gdcmm::System::GetLocaleCharSet () [static]`

return locale charmap

25.261.2.17 `static bool gdcmm::System::GetPermissions (const char * file, unsigned short & mode) [static],
[protected]`

NOT THREAD SAFE.

25.261.2.18 `static const char* gdcmm::System::GetTimezoneOffsetFromUTC () [static]`

Return the value for Timezone Offset From UTC as string.

Warning

not thread safe

25.261.2.19 `static bool gdcmm::System::MakeDirectory (const char * path) [static]`

Create a directory name path.

25.261.2.20 `static bool gdcM::System::ParseDateTime (time_t & timep, const char date[22])` `[static]`

Parse a date stored as ASCII text into a time_t structured (discard millisecond if any)

25.261.2.21 `static bool gdcM::System::ParseDateTime (time_t & timep, long & milliseconds, const char date[22])` `[static]`

Parse a date stored as ASCII text into a time_t structured and millisecond

See Also

[FormatDateTime](#)

25.261.2.22 `static bool gdcM::System::RemoveFile (const char * source)` `[static]`

remove a file named source

25.261.2.23 `static bool gdcM::System::SetPermissions (const char * file, unsigned short mode)` `[static]`,
`[protected]`

25.261.2.24 `static int gdcM::System::StrCaseCmp (const char * s1, const char * s2)` `[static]`

consistent func for C99 spec of strcasecmp/strncasecmp

25.261.2.25 `static int gdcM::System::StrNCaseCmp (const char * s1, const char * s2, size_t n)` `[static]`

Precondition

`n != 0`

25.261.2.26 `static char* gdcM::System::StrTokR (char * ptr, const char * sep, char ** end)` `[static]`

strtok_r

The documentation for this class was generated from the following file:

- [gdcMSystem.h](#)

25.262 gdcM::Table Class Reference

[Table](#).

```
#include <gdcMTable.h>
```

Public Types

- `typedef std::map< Tag, TableEntry > MapTableEntry`

Public Member Functions

- [Table](#) ()
- [~Table](#) ()
- const [TableEntry](#) & [GetTableEntry](#) (const [Tag](#) &tag) const
- void [InsertEntry](#) ([Tag](#) const &tag, [TableEntry](#) const &te)

Friends

- std::ostream & [operator<<](#) (std::ostream &_os, const [Table](#) &_val)

25.262.1 Detailed Description

[Table](#).

25.262.2 Member Typedef Documentation

25.262.2.1 typedef std::map<[Tag](#), [TableEntry](#)> gdcm::Table::MapTableEntry

25.262.3 Constructor & Destructor Documentation

25.262.3.1 gdcm::Table::Table () [\[inline\]](#)

25.262.3.2 gdcm::Table::~~Table () [\[inline\]](#)

25.262.4 Member Function Documentation

25.262.4.1 const [TableEntry](#)& gdcm::Table::GetTableEntry (const [Tag](#) & tag) const [\[inline\]](#)

25.262.4.2 void gdcm::Table::InsertEntry ([Tag](#) const & tag, [TableEntry](#) const & te) [\[inline\]](#)

25.262.5 Friends And Related Function Documentation

25.262.5.1 std::ostream& [operator<<](#) (std::ostream &_os, const [Table](#) &_val) [\[friend\]](#)

The documentation for this class was generated from the following file:

- [gdcmTable.h](#)

25.263 gdcm::TableEntry Class Reference

[TableEntry](#).

```
#include <gdcmTableEntry.h>
```

Public Member Functions

- [TableEntry](#) (const char *attribute=0, [Type](#) const &type=[Type](#)(), const char *des=0)
- [~TableEntry](#) ()

25.263.1 Detailed Description

[TableEntry](#).

25.263.2 Constructor & Destructor Documentation

25.263.2.1 `gdcM::TableEntry::TableEntry (const char * attribute = 0, Type const & type = Type (), const char * des = 0)`
`[inline]`

25.263.2.2 `gdcM::TableEntry::~~TableEntry ()` `[inline]`

The documentation for this class was generated from the following file:

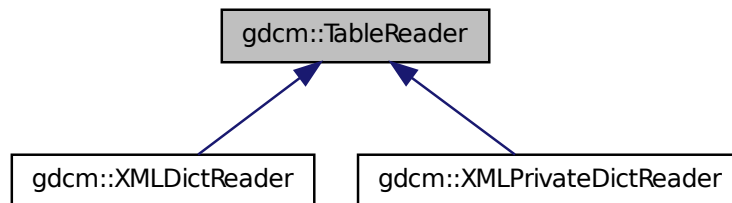
- [gdcMTableEntry.h](#)

25.264 gdcM::TableReader Class Reference

Class for representing a [TableReader](#).

```
#include <gdcMTableReader.h>
```

Inheritance diagram for gdcM::TableReader:



Public Member Functions

- [TableReader](#) ([Defs](#) &defs)
- virtual [~TableReader](#) ()
- virtual void [CharacterDataHandler](#) (const char *data, int length)
- virtual void [EndElement](#) (const char *name)
- const [Defs](#) & [GetDefs](#) () const
- const char * [GetFilename](#) ()
- void [HandleIOD](#) (const char **atts)
- void [HandleIOEntry](#) (const char **atts)
- void [HandleMacro](#) (const char **atts)
- void [HandleMacroEntry](#) (const char **atts)
- void [HandleMacroEntryDescription](#) (const char **atts)

- void [HandleModule](#) (const char **atts)
- void [HandleModuleEntry](#) (const char **atts)
- void [HandleModuleEntryDescription](#) (const char **atts)
- void [HandleModuleInclude](#) (const char **atts)
- int [Read](#) ()
- void [SetFilename](#) (const char *filename)
- virtual void [StartElement](#) (const char *name, const char **atts)

25.264.1 Detailed Description

Class for representing a [TableReader](#).

Note

This class is an empty shell meant to be derived

25.264.2 Constructor & Destructor Documentation

25.264.2.1 `gdcm::TableReader::TableReader (Defs & defs) [inline]`

25.264.2.2 `virtual gdcm::TableReader::~~TableReader () [inline],[virtual]`

25.264.3 Member Function Documentation

25.264.3.1 `virtual void gdcm::TableReader::CharacterDataHandler (const char * data, int length) [virtual]`

Reimplemented in [gdcm::XMLDictReader](#), and [gdcm::XMLPrivateDictReader](#).

25.264.3.2 `virtual void gdcm::TableReader::EndElement (const char * name) [virtual]`

Reimplemented in [gdcm::XMLDictReader](#), and [gdcm::XMLPrivateDictReader](#).

25.264.3.3 `const Defs& gdcm::TableReader::GetDefs () const [inline]`

25.264.3.4 `const char* gdcm::TableReader::GetFilename () [inline]`

25.264.3.5 `void gdcm::TableReader::HandleIOD (const char ** atts)`

25.264.3.6 `void gdcm::TableReader::HandleIOEntry (const char ** atts)`

25.264.3.7 `void gdcm::TableReader::HandleMacro (const char ** atts)`

25.264.3.8 `void gdcm::TableReader::HandleMacroEntry (const char ** atts)`

25.264.3.9 `void gdcm::TableReader::HandleMacroEntryDescription (const char ** atts)`

25.264.3.10 `void gdcm::TableReader::HandleModule (const char ** atts)`

25.264.3.11 `void gdcm::TableReader::HandleModuleEntry (const char ** atts)`

25.264.3.12 void gdcM::TableReader::HandleModuleEntryDescription (const char ** *atts*)

25.264.3.13 void gdcM::TableReader::HandleModuleInclude (const char ** *atts*)

25.264.3.14 int gdcM::TableReader::Read ()

25.264.3.15 void gdcM::TableReader::SetFilename (const char * *filename*) [inline]

25.264.3.16 virtual void gdcM::TableReader::StartElement (const char * *name*, const char ** *atts*) [virtual]

Reimplemented in [gdcM::XMLDictReader](#), and [gdcM::XMLPrivateDictReader](#).

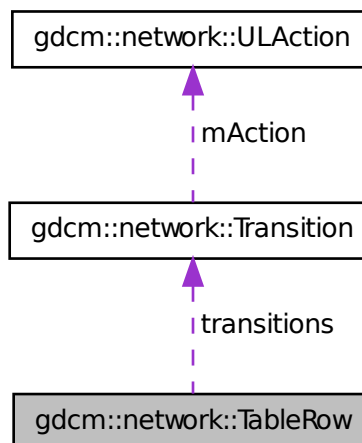
The documentation for this class was generated from the following file:

- [gdcMTableReader.h](#)

25.265 gdcM::network::TableRow Class Reference

```
#include <gdcMULTransitionTable.h>
```

Collaboration diagram for gdcM::network::TableRow:



Public Member Functions

- [TableRow](#) ()
- [~TableRow](#) ()

Public Attributes

- [Transition](#) * [transitions](#) [cMaxStateID]

25.265.1 Constructor & Destructor Documentation

25.265.1.1 `gdcm::network::TableRow::TableRow ()` `[inline]`

References `gdcm::network::cMaxStateID`, and transitions.

25.265.1.2 `gdcm::network::TableRow::~~TableRow ()` `[inline]`

References `gdcm::network::cMaxStateID`, and transitions.

25.265.2 Member Data Documentation

25.265.2.1 `Transition* gdcm::network::TableRow::transitions[cMaxStateID]`

Referenced by `TableRow()`, and `~TableRow()`.

The documentation for this class was generated from the following file:

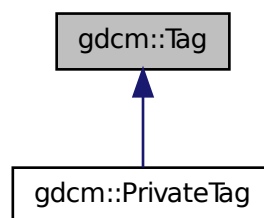
- [gdcmULTransitionTable.h](#)

25.266 gdcm::Tag Class Reference

Class to represent a DICOM Data [Element](#) ([Attribute](#)) [Tag](#) (Group, [Element](#)). Basically an `uint32_t` which can also be expressed as two `uint16_t` (group and element)

```
#include <gdcmTag.h>
```

Inheritance diagram for `gdcm::Tag`:



Public Member Functions

- [Tag](#) (`uint16_t` group, `uint16_t` element)
*Constructor with 2*uint16_t.*
- [Tag](#) (`uint32_t` tag=0)
*Constructor with 1*uint32_t Prefer the ctor that takes two uint16_t.*

- [Tag](#) (const [Tag](#) &_val)
- [uint16_t GetElement](#) () const
Returns the 'Element number' of the given Tag.
- [uint32_t GetElementTag](#) () const
Returns the full tag value of the given Tag.
- [uint16_t GetGroup](#) () const
Returns the 'Group number' of the given Tag.
- [uint32_t GetLength](#) () const
return the length of tag (read: size on disk)
- [Tag GetPrivateCreator](#) () const
Return the Private Creator Data Element tag of a private data element.
- [bool IsGroupLength](#) () const
return whether the tag correspond to a group length tag:
- [bool IsGroupXX](#) (const [Tag](#) &t) const
e.g 6002,3000 belong to groupXX: 6000,3000
- [bool IsIllegal](#) () const
return if the tag is considered to be an illegal tag
- [bool IsPrivate](#) () const
- [bool IsPrivateCreator](#) () const
- [bool IsPublic](#) () const
- [bool operator!=](#) (const [Tag](#) &_val) const
- [bool operator<](#) (const [Tag](#) &_val) const
- [bool operator<=](#) (const [Tag](#) &t2) const
- [Tag & operator=](#) (const [Tag](#) &_val)
- [bool operator==](#) (const [Tag](#) &_val) const
- [const uint16_t & operator\[\]](#) (const unsigned int &_id) const
Returns the Group or Element of the given Tag, depending on id (0/1)
- [uint16_t & operator\[\]](#) (const unsigned int &_id)
Returns the Group or Element of the given Tag, depending on id (0/1)
- [std::string PrintAsPipeSeparatedString](#) () const
- [template<typename TSwap >](#)
[std::istream & Read](#) (std::istream &is)
Read a tag from binary representation.
- [bool ReadFromCommaSeparatedString](#) (const char *str)
- [bool ReadFromPipeSeparatedString](#) (const char *str)
- [void SetElement](#) (uint16_t element)
Sets the 'Element number' of the given Tag.
- [void SetElementTag](#) (uint16_t group, uint16_t element)
Sets the 'Group number' & 'Element number' of the given Tag.
- [void SetElementTag](#) (uint32_t tag)
Sets the full tag value of the given Tag.
- [void SetGroup](#) (uint16_t group)
Sets the 'Group number' of the given Tag.
- [void SetPrivateCreator](#) ([Tag](#) const &t)
Set private creator:
- [template<typename TSwap >](#)
[const std::ostream & Write](#) (std::ostream &os) const
Write a tag in binary rep.

Friends

- `std::ostream & operator<< (std::ostream &_os, const Tag &_val)`
- `std::istream & operator>> (std::istream &_is, Tag &_val)`

25.266.1 Detailed Description

Class to represent a DICOM Data [Element](#) ([Attribute](#)) [Tag](#) (Group, [Element](#)). Basically an `uint32_t` which can also be expressed as two `uint16_t` (group and element)

Note

DATA ELEMENT TAG: A unique identifier for a Data [Element](#) composed of an ordered pair of numbers (a Group Number followed by an [Element](#) Number). GROUP NUMBER: The first number in the ordered pair of numbers that makes up a Data [Element](#) [Tag](#). ELEMENT NUMBER: The second number in the ordered pair of numbers that makes up a Data [Element](#) [Tag](#).

Examples:

[ChangeSequenceUltrasound.cxx](#), [ClinicalTrialAnnotate.cxx](#), [CreateARGBImage.cxx](#), [CreateCMYKImage.cxx](#), [CreateJPIPDataSet.cxx](#), [DumpToSQLITE3.cxx](#), [DuplicatePCDE.cxx](#), [EncapsulateFileInRawData.cxx](#), [Extract-EncryptedContent.cxx](#), [Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [FixBroken-J2K.cxx](#), [FixJAIBugJPEGLS.cxx](#), [gdcmrtionplan.cxx](#), [gdcmrtplan.cxx](#), [GenAllVR.cxx](#), [GenFakelIdentifyFile.cxx](#), [GenFakelImage.cxx](#), [GenLongSeqs.cxx](#), [GenSeqs.cxx](#), [GetJPEGSamplePrecision.cxx](#), [GetSequenceUltrasound.cxx](#), [GetSubSequenceData.cxx](#), [iU22tomultisc.cxx](#), [LargeVRDSExplicit.cxx](#), [MergeTwoFiles.cxx](#), [PatchFile.cxx](#), [pmsct_rgb1.cxx](#), [PublicDict.cxx](#), [ReadAndDumpDICOMDIR.cxx](#), [ReadAndPrintAttributes.cxx](#), [ReadExplicitLength-SQIVR.cxx](#), [rle2img.cxx](#), [SimpleScanner.cxx](#), [SortImage.cxx](#), [StreamImageReaderTest.cxx](#), [TraverseModules.cxx](#), and [VolumeSorter.cxx](#).

25.266.2 Constructor & Destructor Documentation

25.266.2.1 `gdcm::Tag::Tag (uint16_t group, uint16_t element)` `[inline]`

Constructor with 2*`uint16_t`.

25.266.2.2 `gdcm::Tag::Tag (uint32_t tag = 0)` `[inline]`

Constructor with 1*`uint32_t` Prefer the ctor that takes two `uint16_t`.

25.266.2.3 `gdcm::Tag::Tag (const Tag &_val)` `[inline]`

References `tag`.

25.266.3 Member Function Documentation

25.266.3.1 `uint16_t gdcm::Tag::GetElement ()` `const` `[inline]`

Returns the '[Element](#) number' of the given [Tag](#).

Examples:

[DuplicatePCDE.cxx](#), and [PublicDict.cxx](#).

Referenced by `gdcM::DataSet::ComputeGroupLength()`, `IsGroupXX()`, `gdcM::PrivateDict::PrintXML()`, `gdcM::SequenceOfFragments::ReadValue()`, and `SetPrivateCreator()`.

25.266.3.2 `uint32_t gdcM::Tag::GetElementTag () const [inline]`

Returns the full tag value of the given [Tag](#).

25.266.3.3 `uint16_t gdcM::Tag::GetGroup () const [inline]`

Returns the 'Group number' of the given [Tag](#).

Examples:

[DuplicatePCDE.cxx](#), and [GenAllVR.cxx](#).

Referenced by `gdcM::DataSet::ComputeGroupLength()`, `gdcM::CommandDataSet::Insert()`, `gdcM::FileMetaInformation::Insert()`, `gdcM::DataSet::Insert()`, `IsGroupXX()`, `gdcM::PrivateDict::PrintXML()`, `gdcM::SequenceOfFragments::ReadValue()`, `gdcM::Attribute< Group, Element, TVR, TVM >::SetFromDataElement()`, `gdcM::Attribute< Group, Element, TVR, VM::VM1 >::SetFromDataElement()`, and `gdcM::Attribute< Group, Element, TVR, VM::VM1_n >::SetFromDataElement()`.

25.266.3.4 `uint32_t gdcM::Tag::GetLength () const [inline]`

return the length of tag (read: size on disk)

25.266.3.5 `Tag gdcM::Tag::GetPrivateCreator () const [inline]`

Return the Private Creator Data [Element](#) tag of a private data element.

References `SetElement()`.

25.266.3.6 `bool gdcM::Tag::IsGroupLength () const [inline]`

return whether the tag correspond to a group length tag:

25.266.3.7 `bool gdcM::Tag::IsGroupXX (const Tag & t) const [inline]`

e.g 6002,3000 belong to groupXX: 6000,3000

References `GetElement()`, `GetGroup()`, and `IsPrivate()`.

25.266.3.8 `bool gdcM::Tag::IsIllegal () const [inline]`

return if the tag is considered to be an illegal tag

25.266.3.9 `bool gdcM::Tag::IsPrivate () const [inline]`

PRIVATE DATA ELEMENT: Additional Data [Element](#), defined by an implementor, to communicate information that is not contained in Standard Data Elements. Private Data elements have odd Group Numbers.

Examples:

[DuplicatePCDE.cxx](#).

Referenced by `IsGroupXX()`, and `SetPrivateCreator()`.

25.266.3.10 `bool gdcmm::Tag::IsPrivateCreator () const [inline]`

Returns if tag is a Private Creator (xxxx,00yy), where xxxx is odd number and yy in [0x10,0xFF]

Examples:

[DuplicatePCDE.cxx](#).

25.266.3.11 `bool gdcmm::Tag::IsPublic () const [inline]`

STANDARD DATA ELEMENT: A Data [Element](#) defined in the DICOM Standard, and therefore listed in the DICOM Data [Element](#) Dictionary in PS 3.6. Is the [Tag](#) from the Public dict...well the implementation is buggy it does not prove the element is indeed in the dict...

25.266.3.12 `bool gdcmm::Tag::operator!= (const Tag &_val) const [inline]`

References tag.

25.266.3.13 `bool gdcmm::Tag::operator< (const Tag &_val) const [inline]`

DICOM Standard expects the Data [Element](#) to be sorted by Tags All other comparison can be constructed from this one and operator ==

References tag, and tags.

25.266.3.14 `bool gdcmm::Tag::operator<= (const Tag &t2) const [inline]`

25.266.3.15 `Tag& gdcmm::Tag::operator= (const Tag &_val) [inline]`

References tag.

25.266.3.16 `bool gdcmm::Tag::operator== (const Tag &_val) const [inline]`

References tag.

25.266.3.17 `const uint16_t& gdcmm::Tag::operator[] (const unsigned int &_id) const [inline]`

Returns the Group or [Element](#) of the given [Tag](#), depending on id (0/1)

25.266.3.18 `uint16_t& gdcmm::Tag::operator[] (const unsigned int &_id) [inline]`

Returns the Group or [Element](#) of the given [Tag](#), depending on id (0/1)

25.266.3.19 `std::string gdcm::Tag::PrintAsPipeSeparatedString () const`

Print as a pipe separated string (GDCM 1.x compat only). Do not use in newer code

See Also

[ReadFromPipeSeparatedString](#)

25.266.3.20 `template<typename TSwap> std::istream& gdcm::Tag::Read (std::istream & is) [inline]`

Read a tag from binary representation.

25.266.3.21 `bool gdcm::Tag::ReadFromCommaSeparatedString (const char * str)`

Read from a comma separated string. This is a highly user oriented function, the string should be formatted as: 1234,5678 to specify the tag (0x1234,0x5678) The notation comes from the DICOM standard, and is handy to use from a command line program

25.266.3.22 `bool gdcm::Tag::ReadFromPipeSeparatedString (const char * str)`

Read from a pipe separated string (GDCM 1.x compat only). Do not use in newer code

See Also

[ReadFromCommaSeparatedString](#)

25.266.3.23 `void gdcm::Tag::SetElement (uint16_t element) [inline]`

Sets the '[Element](#) number' of the given [Tag](#).

Examples:

[DuplicatePCDE.cxx](#), and [PublicDict.cxx](#).

Referenced by `GetPrivateCreator()`, and `gdcm::operator>>()`.

25.266.3.24 `void gdcm::Tag::SetElementTag (uint16_t group, uint16_t element) [inline]`

Sets the 'Group number' & '[Element](#) number' of the given [Tag](#).

25.266.3.25 `void gdcm::Tag::SetElementTag (uint32_t tag) [inline]`

Sets the full tag value of the given [Tag](#).

25.266.3.26 `void gdcm::Tag::SetGroup (uint16_t group) [inline]`

Sets the 'Group number' of the given [Tag](#).

Referenced by `gdcm::operator>>()`.

25.266.3.27 `void gdcm::Tag::SetPrivateCreator (Tag const & t) [inline]`

Set private creator:

Examples:

[DuplicatePCDE.cxx](#).

References `GetElement()`, and `IsPrivate()`.

25.266.3.28 `template<typename TSwap > const std::ostream& gdcm::Tag::Write (std::ostream & os) const [inline]`

Write a tag in binary rep.

Referenced by `gdcm::SequenceOfItems::Write()`, `gdcm::SequenceOfFragments::Write()`, and `gdcm::Item::Write()`.

25.266.4 Friends And Related Function Documentation

25.266.4.1 `std::ostream& operator<< (std::ostream & _os, const Tag & _val) [friend]`

25.266.4.2 `std::istream& operator>> (std::istream & _is, Tag & _val) [friend]`

25.266.5 Member Data Documentation

25.266.5.1 `char gdcm::Tag::bytes[4]`

25.266.5.2 `uint32_t gdcm::Tag::tag`

Referenced by `operator!=()`, `operator<()`, `operator=()`, `operator==()`, and `Tag()`.

25.266.5.3 `uint16_t gdcm::Tag::tags[2]`

Referenced by `operator<()`.

The documentation for this class was generated from the following file:

- [gdcmTag.h](#)

25.267 gdcm::TagPath Class Reference

class to handle a path of tag.

```
#include <gdcmTagPath.h>
```

Public Member Functions

- [TagPath \(\)](#)
- [~TagPath \(\)](#)
- bool [ConstructFromString](#) (const char *path)
- bool [ConstructFromTagList](#) (Tag const *l, unsigned int n)

Construct from a list of tags.

- void [Print](#) (std::ostream &) const
- bool [Push](#) (Tag const &t)
- bool [Push](#) (unsigned int itemnum)

Static Public Member Functions

- static bool [IsValid](#) (const char *path)

Return if path is valid or not.

25.267.1 Detailed Description

class to handle a path of tag.

Any Resemblance to Existing XPath is Purely Coincidental ftp://medical.nema.org/medical/dicom/supps/sup118-_pc.pdf

25.267.2 Constructor & Destructor Documentation

25.267.2.1 `gdcm::TagPath::TagPath ()`

25.267.2.2 `gdcm::TagPath::~~TagPath ()`

25.267.3 Member Function Documentation

25.267.3.1 `bool gdcm::TagPath::ConstructFromString (const char * path)`

"/0018,0018/"... No space allowed, comma is use to separate tag group from tag element and slash is used to separate tag return false if invalid

25.267.3.2 `bool gdcm::TagPath::ConstructFromTagList (Tag const * l, unsigned int n)`

Construct from a list of tags.

25.267.3.3 `static bool gdcm::TagPath::IsValid (const char * path)` `[static]`

Return if path is valid or not.

25.267.3.4 `void gdcm::TagPath::Print (std::ostream &) const`

25.267.3.5 `bool gdcm::TagPath::Push (Tag const & t)`

25.267.3.6 `bool gdcm::TagPath::Push (unsigned int itemnum)`

The documentation for this class was generated from the following file:

- [gdcmTagPath.h](#)

25.268 gdcm::Testing Class Reference

class for testing

```
#include <gdcmTesting.h>
```

Public Types

- typedef const char *const (* [MD5DataImagesType](#))[2]
- typedef const char *const (* [MediaStorageDataFilesType](#))[2]
return the table that map the media storage (as string) of a filename (gdcmData)

Public Member Functions

- [Testing](#) ()
- [~Testing](#) ()
- void [Print](#) (std::ostream &os=std::cout)
Print.

Static Public Member Functions

- static bool [ComputeFileMD5](#) (const char *filename, char digest_str[33])
- static bool [ComputeMD5](#) (const char *buffer, unsigned long buf_len, char digest_str[33])
- static const char * [GetDataExtraRoot](#) ()
Return the GDCM DATA EXTRA ROOT.
- static const char * [GetDataRoot](#) ()
Return the GDCM DATA ROOT.
- static const char * [GetFileName](#) (unsigned int file)
- static const char *const * [GetFileNames](#) ()
return the table of fullpath to gdcmData DICOM files:
- static int [GetLossyFlagFromFile](#) (const char *filepath)
- static const char *const * [GetMD5DataImage](#) (unsigned int file)
- static [MD5DataImagesType](#) [GetMD5DataImages](#) ()
- static const char * [GetMD5FromBrokenFile](#) (const char *filepath)
- static const char * [GetMD5FromFile](#) (const char *filepath)
- static const char *const * [GetMediaStorageDataFile](#) (unsigned int file)
- static [MediaStorageDataFilesType](#) [GetMediaStorageDataFiles](#) ()
- static const char * [GetMediaStorageFromFile](#) (const char *filepath)
- static unsigned int [GetNumberOfFileNames](#) ()
- static unsigned int [GetNumberOfMD5DataImages](#) ()
- static unsigned int [GetNumberOfMediaStorageDataFiles](#) ()
- static const char * [GetPixelSpacingDataRoot](#) ()
Return the GDCM PIXEL SPACING DATA ROOT (See David Clunie website for dataset)
- static std::streamoff [GetSelectedTagsOffsetFromFile](#) (const char *filepath)
- static const char * [GetSourceDirectory](#) ()
- static std::streamoff [GetStreamOffsetFromFile](#) (const char *filepath)
- static const char * [GetTempDirectory](#) (const char *subdir=0)
- static const wchar_t * [GetTempDirectoryW](#) (const wchar_t *subdir=0)

NOT THREAD SAFE.

- static const char * [GetTempFilename](#) (const char *filename, const char *subdir=0)

NOT THREAD SAFE.

- static const wchar_t * [GetTempFilenameW](#) (const wchar_t *filename, const wchar_t *subdir=0)

NOT THREAD SAFE.

25.268.1 Detailed Description

class for testing

this class is used for the nightly regression system for GDCM It makes heavily use of md5 computation

See Also

[gdcm::MD5](#) class for md5 computation

25.268.2 Member Typedef Documentation

25.268.2.1 typedef const char* const(* gdcm::Testing::MD5DataImagesType)[2]

return the table that map the md5 (as in md5sum) of the Pixel Data associated to a filename

25.268.2.2 typedef const char* const(* gdcm::Testing::MediaStorageDataFileType)[2]

return the table that map the media storage (as string) of a filename (gdcmData)

25.268.3 Constructor & Destructor Documentation

25.268.3.1 gdcm::Testing::Testing () [inline]

25.268.3.2 gdcm::Testing::~~Testing () [inline]

25.268.4 Member Function Documentation

25.268.4.1 static bool gdcm::Testing::ComputeFileMD5 (const char * *filename*, char *digest_str*[33]) [static]

25.268.4.2 static bool gdcm::Testing::ComputeMD5 (const char * *buffer*, unsigned long *buf_len*, char *digest_str*[33]) [static]

[MD5](#) stuff *digest_str* needs to be at least : `strlen = [2*16+1]`; string will be \0 padded. (md5 are 32 bytes long) [Testing](#) is not meant to be shipped with an installed GDCM release, always prefer the [gdcm::MD5](#) API when doing md5 computation.

25.268.4.3 static const char* gdcm::Testing::GetDataExtraRoot () [static]

Return the GDCM DATA EXTRA ROOT.

Examples:

[DiscriminateVolume.cxx](#), [reslicesphere.cxx](#), and [VolumeSorter.cxx](#).

25.268.4.4 `static const char* gdcm::Testing::GetDataRoot () [static]`

Return the GDCM DATA ROOT.

Examples:

[Convert16BitsTo8Bits.cxx](#), [ConvertMultiFrameToSingleFrame.cxx](#), [ConvertRGBToLuminance.cxx](#), and [Magnify-File.cxx](#).

25.268.4.5 `static const char* gdcm::Testing::GetFileName (unsigned int file) [static]`

25.268.4.6 `static const char* const* gdcm::Testing::GetFileNames () [static]`

return the table of fullpath to gdcmData DICOM files:

Examples:

[TestReader.cxx](#).

25.268.4.7 `static int gdcm::Testing::GetLossyFlagFromFile (const char * filepath) [static]`

Return the lossy flag of the given filename -1 -> Error 0 -> Lossless 1 -> Lossy

25.268.4.8 `static const char* const* gdcm::Testing::GetMD5DataImage (unsigned int file) [static]`

25.268.4.9 `static MD5DataImagesType gdcm::Testing::GetMD5DataImages () [static]`

25.268.4.10 `static const char* gdcm::Testing::GetMD5FromBrokenFile (const char * filepath) [static]`

Return what should have been the md5 of file 'filepath' This is based on current GDCM implementation to decipher a broken DICOM file.

25.268.4.11 `static const char* gdcm::Testing::GetMD5FromFile (const char * filepath) [static]`

25.268.4.12 `static const char* const* gdcm::Testing::GetMediaStorageDataFile (unsigned int file) [static]`

25.268.4.13 `static MediaStorageDataFilesType gdcm::Testing::GetMediaStorageDataFiles () [static]`

25.268.4.14 `static const char* gdcm::Testing::GetMediaStorageFromFile (const char * filepath) [static]`

Examples:

[TestReader.cxx](#).

25.268.4.15 `static unsigned int gdcm::Testing::GetNumberOfFileNames () [static]`

25.268.4.16 `static unsigned int gdcm::Testing::GetNumberOfMD5DataImages () [static]`

25.268.4.17 `static unsigned int gdcmm::Testing::GetNumberOfMediaStorageDataFiles () [static]`

25.268.4.18 `static const char* gdcmm::Testing::GetPixelSpacingDataRoot () [static]`

Return the GDCM PIXEL SPACING DATA ROOT (See David Clunie website for dataset)

25.268.4.19 `static std::streamoff gdcmm::Testing::GetSelectedTagsOffsetFromFile (const char * filepath) [static]`

Return the offset just after Pixel Data Length (7fe0,0000) if found. Otherwise the offset of the very first pixel cell in Pixel Data -1 if not found

25.268.4.20 `static const char* gdcmm::Testing::GetSourceDirectory () [static]`

25.268.4.21 `static std::streamoff gdcmm::Testing::GetStreamOffsetFromFile (const char * filepath) [static]`

Return the offset of the very first pixel cell in the PixelData -1 if not found

25.268.4.22 `static const char* gdcmm::Testing::GetTempDirectory (const char * subdir = 0) [static]`

NOT THREAD SAFE Returns the temp directory as used in testing needing to output data:

25.268.4.23 `static const wchar_t* gdcmm::Testing::GetTempDirectoryW (const wchar_t * subdir = 0) [static]`

NOT THREAD SAFE.

25.268.4.24 `static const char* gdcmm::Testing::GetTempFilename (const char * filename, const char * subdir = 0) [static]`

NOT THREAD SAFE.

25.268.4.25 `static const wchar_t* gdcmm::Testing::GetTempFilenameW (const wchar_t * filename, const wchar_t * subdir = 0) [static]`

NOT THREAD SAFE.

25.268.4.26 `void gdcmm::Testing::Print (std::ostream & os = std::cout)`

Print.

The documentation for this class was generated from the following file:

- [gdcmmTesting.h](#)

25.269 gdcmm::Trace Class Reference

[Trace.](#)

```
#include <gdcmmTrace.h>
```

Public Member Functions

- [Trace](#) ()
- [~Trace](#) ()

Static Public Member Functions

- static void [DebugOff](#) ()
- static void [DebugOn](#) ()
- static void [ErrorOff](#) ()
- static void [ErrorOn](#) ()
- static bool [GetDebugFlag](#) ()
- static std::ostream & [GetDebugStream](#) ()
- static bool [GetErrorFlag](#) ()
- static std::ostream & [GetErrorStream](#) ()
- static std::ostream & [GetStream](#) ()
- static bool [GetWarningFlag](#) ()
- static std::ostream & [GetWarningStream](#) ()
- static void [SetDebug](#) (bool debug)
Turn debug messages on (default: false)
- static void [SetDebugStream](#) (std::ostream &os)
Explicitly set the stream which receive Debug messages:
- static void [SetError](#) (bool debug)
Turn error messages on (default: true)
- static void [SetErrorStream](#) (std::ostream &os)
Explicitly set the stream which receive Error messages:
- static void [SetStream](#) (std::ostream &os)
- static void [SetStreamToFile](#) (const char *filename)
- static void [SetWarning](#) (bool debug)
Turn warning messages on (default: true)
- static void [SetWarningStream](#) (std::ostream &os)
Explicitly set the stream which receive Warning messages:
- static void [WarningOff](#) ()
- static void [WarningOn](#) ()

25.269.1 Detailed Description

[Trace](#).

Debug / Warning and Error are encapsulated in this class by default the [Trace](#) class will redirect any debug/warning/error to std::cerr. Unless SetStream was specified with another (open) stream or SetStreamToFile was specified to a writable file on the system.

Warning

All string messages are removed during compilation time when compiled with CMAKE_BUILD_TYPE being set to either:

- Release
- MinSizeRel It is recommended to compile with RelWithDebInfo and/or Debug during prototyping of applications.

25.269.2 Constructor & Destructor Documentation

25.269.2.1 `gdcm::Trace::Trace ()`

25.269.2.2 `gdcm::Trace::~~Trace ()`

25.269.3 Member Function Documentation

25.269.3.1 `static void gdcm::Trace::DebugOff () [static]`

Examples:

[TestReader.cxx](#).

25.269.3.2 `static void gdcm::Trace::DebugOn () [static]`

Examples:

[Fake_Image_Using_Stream_Image_Writer.cxx](#), and [StreamImageReaderTest.cxx](#).

25.269.3.3 `static void gdcm::Trace::ErrorOff () [static]`

25.269.3.4 `static void gdcm::Trace::ErrorOn () [static]`

25.269.3.5 `static bool gdcm::Trace::GetDebugFlag () [static]`

25.269.3.6 `static std::ostream& gdcm::Trace::GetDebugStream () [static]`

25.269.3.7 `static bool gdcm::Trace::GetErrorFlag () [static]`

25.269.3.8 `static std::ostream& gdcm::Trace::GetErrorStream () [static]`

25.269.3.9 `static std::ostream& gdcm::Trace::GetStream () [static]`

25.269.3.10 `static bool gdcm::Trace::GetWarningFlag () [static]`

25.269.3.11 `static std::ostream& gdcm::Trace::GetWarningStream () [static]`

25.269.3.12 `static void gdcm::Trace::SetDebug (bool debug) [static]`

Turn debug messages on (default: false)

Examples:

[DumpToSQLITE3.cxx](#).

25.269.3.13 `static void gdcm::Trace::SetDebugStream (std::ostream & os) [static]`

Explicitely set the stream which receive Debug messages:

25.269.3.14 `static void gdcm::Trace::SetError (bool debug) [static]`

Turn error messages on (default: true)

25.269.3.15 `static void gdcm::Trace::SetErrorStream (std::ostream & os) [static]`

Explicitely set the stream which receive Error messages:

Examples:

[CStoreQtProgress.cxx](#).

25.269.3.16 `static void gdcm::Trace::SetStream (std::ostream & os) [static]`

Explicitely set the ostream for [gdcm::Trace](#) to report to This will set the DebugStream, WarningStream and ErrorStream at once:

25.269.3.17 `static void gdcm::Trace::SetStreamToFile (const char * filename) [static]`

Explicitely set the filename for [gdcm::Trace](#) to report to The file will be created (it will not append to existing file)

25.269.3.18 `static void gdcm::Trace::SetWarning (bool debug) [static]`

Turn warning messages on (default: true)

Examples:

[DumpToSQLITE3.cxx](#).

25.269.3.19 `static void gdcm::Trace::SetWarningStream (std::ostream & os) [static]`

Explicitely set the stream which receive Warning messages:

25.269.3.20 `static void gdcm::Trace::WarningOff () [static]`

Examples:

[TestReader.cxx](#).

25.269.3.21 `static void gdcm::Trace::WarningOn () [static]`

Examples:

[Fake_Image_Using_Stream_Image_Writer.cxx](#), and [StreamImageReaderTest.cxx](#).

The documentation for this class was generated from the following file:

- [gdcmTrace.h](#)

25.270 gdcm::TransferSyntax Class Reference

Class to manipulate Transfer Syntax.

```
#include <gdcmTransferSyntax.h>
```

Public Types

- enum [NegociatedType](#) {
[Unknown](#) = 0,
[Explicit](#),
[Implicit](#) }
- enum [TSType](#) {
[ImplicitVRLittleEndian](#) = 0,
[ImplicitVRBigEndianPrivateGE](#),
[ExplicitVRLittleEndian](#),
[DeflatedExplicitVRLittleEndian](#),
[ExplicitVRBigEndian](#),
[JPEGBaselineProcess1](#),
[JPEGExtendedProcess2_4](#),
[JPEGExtendedProcess3_5](#),
[JPEGSpectralSelectionProcess6_8](#),
[JPEGFullProgressionProcess10_12](#),
[JPEGLosslessProcess14](#),
[JPEGLosslessProcess14_1](#),
[JPEGLSLossless](#),
[JPEGLSNearLossless](#),
[JPEG2000Lossless](#),
[JPEG2000](#),
[JPEG2000Part2Lossless](#),
[JPEG2000Part2](#),
[RLELossless](#),
[MPEG2MainProfile](#),
[ImplicitVRBigEndianACRNEMA](#),
[CT_private_ELE](#),
[JPIPReferenced](#),
[TS_END](#) }

Public Member Functions

- [TransferSyntax](#) ([TSType](#) type=[ImplicitVRLittleEndian](#))
- bool [CanStoreLossy](#) () const
- [NegociatedType](#) [GetNegociatedType](#) () const
- const char * [GetString](#) () const
- [SwapCode](#) [GetSwapCode](#) () const
- bool [IsEncapsulated](#) () const
- bool [IsEncoded](#) () const
- bool [IsExplicit](#) () const
- bool [IsImplicit](#) () const
- bool [IsLossless](#) () const
- bool [IsLossy](#) () const
- bool [IsValid](#) () const
- [operator TSType](#) () const

Static Public Member Functions

- static const char * [GetTSSString](#) (TSType ts)
- static [TSType GetTSType](#) (const char *str)

Friends

- std::ostream & [operator<<](#) (std::ostream &os, const [TransferSyntax](#) &ts)

25.270.1 Detailed Description

Class to manipulate Transfer Syntax.

Note

TRANSFER SYNTAX (Standard and Private): A set of encoding rules that allow Application Entities to unambiguously negotiate the encoding techniques (e.g., Data [Element](#) structure, byte ordering, compression) they are able to support, thereby allowing these Application Entities to communicate.

Todo : The implementation is completely retarded -> see [gdcm::UIDs](#) for a replacement We need: IsSupported We need preprocess of raw/xml file We need GetFullName()

Need a notion of Private Syntax. As defined in PS 3.5. Section 9.2

See Also

[UIDs](#)

Examples:

[GetJPEGSamplePrecision.cxx](#), and [LargeVRDSExplicit.cxx](#).

25.270.2 Member Enumeration Documentation

25.270.2.1 enum gdcm::TransferSyntax::NegociatedType

Enumerator

Unknown

Explicit

Implicit

25.270.2.2 enum gdcm::TransferSyntax::TSType

Enumerator

ImplicitVRLittleEndian

ImplicitVRBigEndianPrivateGE

ExplicitVRLittleEndian

DeflatedExplicitVRLittleEndian

ExplicitVRBigEndian
JPEGBaselineProcess1
JPEGExtendedProcess2_4
JPEGExtendedProcess3_5
JPEGSpectralSelectionProcess6_8
JPEGFullProgressionProcess10_12
JPEGLosslessProcess14
JPEGLosslessProcess14_1
JPEGLSLossless
JPEGLSNearLossless
JPEG2000Lossless
JPEG2000
JPEG2000Part2Lossless
JPEG2000Part2
RLELossless
MPEG2MainProfile
ImplicitVRBigEndianACRNEMA
CT_private_ELE
JPIPReferenced
TS_END

25.270.3 Constructor & Destructor Documentation

25.270.3.1 `gdcm::TransferSyntax::TransferSyntax (TSType type = ImplicitVRLittleEndian) [inline]`

25.270.4 Member Function Documentation

25.270.4.1 `bool gdcm::TransferSyntax::CanStoreLossy () const`

return if TransFer Syntax Allow storing of Lossy Pixel Data

25.270.4.2 `NegotiatedType gdcm::TransferSyntax::GetNegociatedType () const`

25.270.4.3 `const char* gdcm::TransferSyntax::GetString () const [inline]`

References GetTSString().

25.270.4.4 `SwapCode gdcm::TransferSyntax::GetSwapCode () const`

Deprecated Return the [SwapCode](#) associated with the Transfer Syntax. Be careful with the special GE private syntax the [DataSet](#) is written in little endian but the Pixel Data is in Big Endian.

25.270.4.5 static const char* gdcm::TransferSyntax::GetTSString (TSType *ts*) [static]

Examples:

[LargeVRDSExplicit.cxx.](#)

Referenced by GetString(), and gdcm::operator<<().

25.270.4.6 static TSType gdcm::TransferSyntax::GetTSType (const char * *str*) [static]

25.270.4.7 bool gdcm::TransferSyntax::IsEncapsulated () const

Examples:

[ExtractIconFromFile.cxx.](#)

25.270.4.8 bool gdcm::TransferSyntax::IsEncoded () const

25.270.4.9 bool gdcm::TransferSyntax::IsExplicit () const

25.270.4.10 bool gdcm::TransferSyntax::IsImplicit () const

25.270.4.11 bool gdcm::TransferSyntax::IsLossless () const

Return if the transfer syntax algorithm is a lossless algorithm

25.270.4.12 bool gdcm::TransferSyntax::IsLossy () const

Return if the transfer syntax algorithm is a lossy algorithm

25.270.4.13 bool gdcm::TransferSyntax::IsValid () const [inline]

25.270.4.14 gdcm::TransferSyntax::operator TSType () const [inline]

25.270.5 Friends And Related Function Documentation

25.270.5.1 std::ostream& operator<< (std::ostream & *os*, const TransferSyntax & *ts*) [friend]

The documentation for this class was generated from the following file:

- [gdcmTransferSyntax.h](#)

25.271 gdcm::network::TransferSyntaxSub Class Reference

[TransferSyntaxSub](#) Table 9-15 TRANSFER SYNTAX SUB-ITEM FIELDS.

```
#include <gdcmTransferSyntaxSub.h>
```

Public Member Functions

- [TransferSyntaxSub](#) ()
- const char * [GetName](#) () const
- bool [operator==](#) (const [TransferSyntaxSub](#) &ts) const
- void [Print](#) (std::ostream &os) const
- std::istream & [Read](#) (std::istream &is)
- void [SetName](#) (const char *name)
- void [SetNameFromUID](#) ([UIDs::TSName](#) tsname)
- size_t [Size](#) () const
- const std::ostream & [Write](#) (std::ostream &os) const

25.271.1 Detailed Description

[TransferSyntaxSub](#) Table 9-15 TRANSFER SYNTAX SUB-ITEM FIELDS.

TODO what is the goal of :

[Table](#) 9-19 TRANSFER SYNTAX SUB-ITEM FIELDS

25.271.2 Constructor & Destructor Documentation

25.271.2.1 `gdcm::network::TransferSyntaxSub::TransferSyntaxSub ()`

25.271.3 Member Function Documentation

25.271.3.1 `const char* gdcm::network::TransferSyntaxSub::GetName () const` `[inline]`

25.271.3.2 `bool gdcm::network::TransferSyntaxSub::operator== (const TransferSyntaxSub & ts) const` `[inline]`

25.271.3.3 `void gdcm::network::TransferSyntaxSub::Print (std::ostream & os) const`

25.271.3.4 `std::istream& gdcm::network::TransferSyntaxSub::Read (std::istream & is)`

25.271.3.5 `void gdcm::network::TransferSyntaxSub::SetName (const char * name)`

25.271.3.6 `void gdcm::network::TransferSyntaxSub::SetNameFromUID (UIDs::TSName tsname)`

25.271.3.7 `size_t gdcm::network::TransferSyntaxSub::Size () const`

25.271.3.8 `const std::ostream& gdcm::network::TransferSyntaxSub::Write (std::ostream & os) const`

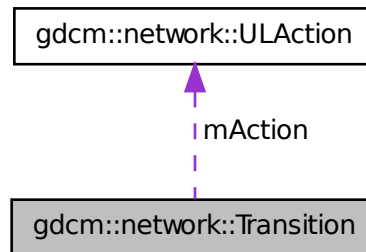
The documentation for this class was generated from the following file:

- [gdcmTransferSyntaxSub.h](#)

25.272 gdcm::network::Transition Struct Reference

```
#include <gdcmULTransitionTable.h>
```

Collaboration diagram for gdcm::network::Transition:



Public Member Functions

- [Transition](#) ()
- [Transition](#) (int inEndState, [ULAction](#) *inAction)
- [~Transition](#) ()

Static Public Member Functions

- static [Transition](#) * [MakeNew](#) (int inEndState, [ULAction](#) *inAction)

Public Attributes

- [ULAction](#) * [mAction](#)
- int [mEnd](#)

25.272.1 Constructor & Destructor Documentation

25.272.1.1 gdcm::network::Transition::Transition () [inline]

References [gdcm::network::eStaDoesNotExist](#), [mAction](#), and [mEnd](#).

Referenced by [MakeNew\(\)](#).

25.272.1.2 gdcm::network::Transition::~~Transition () [inline]

References [mAction](#).

25.272.1.3 gdcm::network::Transition::Transition (int inEndState, [ULAction](#) * inAction) [inline]

References [mAction](#), and [mEnd](#).

25.272.2 Member Function Documentation

25.272.2.1 `static Transition* gdcmm::network::Transition::MakeNew (int inEndState, ULAction * inAction)` `[inline]`,
`[static]`

References `Transition()`.

25.272.3 Member Data Documentation

25.272.3.1 `ULAction* gdcmm::network::Transition::mAction`

Referenced by `Transition()`, and `~Transition()`.

25.272.3.2 `int gdcmm::network::Transition::mEnd`

Referenced by `Transition()`.

The documentation for this struct was generated from the following file:

- [gdcmmULTransitionTable.h](#)

25.273 gdcmm::Type Class Reference

Type.

```
#include <gdcmmType.h>
```

Public Types

- enum `TypeType` {
 `T1` = 0,
 `T1C`,
 `T2`,
 `T2C`,
 `T3`,
 `UNKNOWN` }

Public Member Functions

- `Type` (`TypeType` `type`=`UNKNOWN`)
- `operator TypeType` () const

Static Public Member Functions

- static const char * `GetTypeString` (`TypeType` `type`)
- static `TypeType` `GetTypeType` (const char *`type`)

Friends

- `std::ostream & operator<< (std::ostream &os, const Type &vr)`

25.273.1 Detailed Description

[Type](#).

Note

PS 3.5 7.4 DATA ELEMENT TYPE 7.4.1 TYPE 1 REQUIRED DATA ELEMENTS 7.4.2 TYPE 1C CONDITIONAL DATA ELEMENTS 7.4.3 TYPE 2 REQUIRED DATA ELEMENTS 7.4.4 TYPE 2C CONDITIONAL DATA ELEMENTS 7.4.5 TYPE 3 OPTIONAL DATA ELEMENTS

The intent of [Type](#) 2 Data Elements is to allow a zero length to be conveyed when the operator or application does not know its value or has a specific reason for not specifying its value. It is the intent that the device should support these Data Elements.

Examples:

[TraverseModules.cxx](#).

25.273.2 Member Enumeration Documentation

25.273.2.1 enum gdcm::Type::TypeType

Enumerator

T1
T1C
T2
T2C
T3
UNKNOWN

25.273.3 Constructor & Destructor Documentation

25.273.3.1 `gdcm::Type::Type (TypeType type = UNKNOWN)` `[inline]`

25.273.4 Member Function Documentation

25.273.4.1 `static const char* gdcm::Type::GetTypeString (TypeType type)` `[static]`

Referenced by `gdcm::operator<<()`.

25.273.4.2 `static TypeType gdcm::Type::GetTypeType (const char * type)` `[static]`

Referenced by `gdcm::ModuleEntry::ModuleEntry()`.

25.273.4.3 `gdcmm::Type::operator TypeType () const` `[inline]`

25.273.5 Friends And Related Function Documentation

25.273.5.1 `std::ostream& operator<< (std::ostream & os, const Type & vr)` `[friend]`

The documentation for this class was generated from the following file:

- [gdcmmType.h](#)

25.274 gdcmm::UI Struct Reference

```
#include <gdcmmVR.h>
```

Public Attributes

- char [Internal](#) [64+1]

Friends

- `std::ostream & operator<< (std::ostream &_os, const UI &_val)`

25.274.1 Friends And Related Function Documentation

25.274.1.1 `std::ostream& operator<< (std::ostream &_os, const UI &_val)` `[friend]`

25.274.2 Member Data Documentation

25.274.2.1 `char gdcmm::UI::Internal[64+1]`

Referenced by `gdcmm::operator<<()`.

The documentation for this struct was generated from the following file:

- [gdcmmVR.h](#)

25.275 gdcmm::UIDGenerator Class Reference

Class for generating unique UID.

```
#include <gdcmmUIDGenerator.h>
```

Public Member Functions

- [UIDGenerator](#) ()
By default the root of a UID is a GDCM Root...
- const char * [Generate](#) ()

Static Public Member Functions

- static const char * [GetGDCMUID](#) ()
Return the default (GDCM) root UID:
- static const char * [GetRoot](#) ()
- static bool [IsValid](#) (const char *uid)
- static void [SetRoot](#) (const char *root)

Static Protected Member Functions

- static bool [GenerateUUID](#) (unsigned char *uuid_data)

25.275.1 Detailed Description

Class for generating unique UID.

Note

bla [Usage](#): When constructing a [Series](#) or [Study](#) UID, user *has* to keep around the UID, otherwise the UID Generator will simply forget the value and create a new UID.

Examples:

[CreateJPIPDataset.cxx](#), [EncapsulateFileInRawData.cxx](#), [Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [GenAllVR.cxx](#), [GenFakeIdentifyFile.cxx](#), [GenFakeImage.cxx](#), [GetSubSequenceData.cxx](#), [StreamImageReaderTest.cxx](#), and [uid_unique.cxx](#).

25.275.2 Constructor & Destructor Documentation

25.275.2.1 `gdcm::UIDGenerator::UIDGenerator () [inline]`

By default the root of a UID is a GDCM Root...

25.275.3 Member Function Documentation

25.275.3.1 `const char* gdcm::UIDGenerator::Generate ()`

Internally uses a std::string, so two calls have the same pointer ! save into a std::string In summary do not write code like that: const char *uid1 = uid.Generate(); const char *uid2 = uid.Generate(); since uid1 == uid2

Examples:

[CreateJPIPDataset.cxx](#), [EncapsulateFileInRawData.cxx](#), [Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [GenAllVR.cxx](#), [GenFakeIdentifyFile.cxx](#), [GenFakeImage.cxx](#), [StreamImageReaderTest.cxx](#), and [uid_unique.cxx](#).

25.275.3.2 `static bool gdcm::UIDGenerator::GenerateUUID (unsigned char * uuid_data) [static], [protected]`

25.275.3.3 `static const char* gdcm::UIDGenerator::GetGDCMUID () [static]`

Return the default (GDCM) root UID:

25.275.3.4 `static const char* gdcm::UIDGenerator::GetRoot () [static]`

25.275.3.5 `static bool gdcm::UIDGenerator::IsValid (const char * uid) [static]`

Find out if the string is a valid UID or not

Todo : Move that in DataStructureAndEncoding (see FileMetaInformation::CheckFileMetaInformation)

25.275.3.6 `static void gdcm::UIDGenerator::SetRoot (const char * root) [static]`

The current implementation in GDCM make use of the UUID implementation (RFC 4122) and has been successfully been tested for a root of size 26 bytes. Any longer root should work (the `::Generate()` function will return a string), but will truncate the high bits of the 128bits UUID until the generated string fits on 64 bits. The authors disclaims any responsibility for guaranteeing uniqueness of [UIDs](#) when the root is longer than 26 bytes.

Examples:

[uid_unique.cxx](#).

The documentation for this class was generated from the following file:

- [gdcmUIDGenerator.h](#)

25.276 gdcm::UIDs Class Reference

all known uids

```
#include <gdcmUIDs.h>
```

Public Types

- `typedef const char *const (* TransferSyntaxStringsType)[2]`
- `enum TSName {`

VerificationSOPClass = 1,
ImplicitVRLittleEndianDefaultTransferSyntaxforDICOM = 2,
ExplicitVRLittleEndian = 3,
DeflatedExplicitVRLittleEndian = 4,
ExplicitVRBigEndian = 5,
JPEGBaselineProcess1DefaultTransferSyntaxforLossyJPEG8BitImageCompression = 6,
JPEGExtendedProcess24DefaultTransferSyntaxforLossyJPEG12BitImageCompressionProcess4only = 7,
JPEGExtendedProcess35Retired = 8,
JPEGsSpectralSelectionNonHierarchicalProcess68Retired = 9,
JPEGsSpectralSelectionNonHierarchicalProcess79Retired = 10,
JPEGFullProgressionNonHierarchicalProcess1012Retired = 11,
JPEGFullProgressionNonHierarchicalProcess1113Retired = 12,
JPEGLosslessNonHierarchicalProcess14 = 13,
JPEGLosslessNonHierarchicalProcess15Retired = 14,
JPEGExtendedHierarchicalProcess1618Retired = 15,
JPEGExtendedHierarchicalProcess1719Retired = 16,
JPEGsSpectralSelectionHierarchicalProcess2022Retired = 17,
JPEGsSpectralSelectionHierarchicalProcess2123Retired = 18,
JPEGFullProgressionHierarchicalProcess2426Retired = 19,
JPEGFullProgressionHierarchicalProcess2527Retired = 20,
JPEGLosslessHierarchicalProcess28Retired = 21,
JPEGLosslessHierarchicalProcess29Retired = 22,
JPEGLosslessNonHierarchicalFirstOrderPredictionProcess14SelectionValue1DefaultTransferSyntaxforLossless-

BreastTomosynthesisImageStorage }

- enum TSType {

```
uid_1_2_840_10008_1_1 = 1,  
uid_1_2_840_10008_1_2 = 2,  
uid_1_2_840_10008_1_2_1 = 3,  
uid_1_2_840_10008_1_2_1_99 = 4,  
uid_1_2_840_10008_1_2_2 = 5,  
uid_1_2_840_10008_1_2_4_50 = 6,  
uid_1_2_840_10008_1_2_4_51 = 7,  
uid_1_2_840_10008_1_2_4_52 = 8,  
uid_1_2_840_10008_1_2_4_53 = 9,  
uid_1_2_840_10008_1_2_4_54 = 10,  
uid_1_2_840_10008_1_2_4_55 = 11,  
uid_1_2_840_10008_1_2_4_56 = 12,  
uid_1_2_840_10008_1_2_4_57 = 13,  
uid_1_2_840_10008_1_2_4_58 = 14,  
uid_1_2_840_10008_1_2_4_59 = 15,  
uid_1_2_840_10008_1_2_4_60 = 16,  
uid_1_2_840_10008_1_2_4_61 = 17,  
uid_1_2_840_10008_1_2_4_62 = 18,  
uid_1_2_840_10008_1_2_4_63 = 19,  
uid_1_2_840_10008_1_2_4_64 = 20,  
uid_1_2_840_10008_1_2_4_65 = 21,  
uid_1_2_840_10008_1_2_4_66 = 22,  
uid_1_2_840_10008_1_2_4_70 = 23,  
uid_1_2_840_10008_1_2_4_80 = 24,  
uid_1_2_840_10008_1_2_4_81 = 25,  
uid_1_2_840_10008_1_2_4_90 = 26,  
uid_1_2_840_10008_1_2_4_91 = 27,  
uid_1_2_840_10008_1_2_4_92 = 28,  
uid_1_2_840_10008_1_2_4_93 = 29,  
uid_1_2_840_10008_1_2_4_94 = 30,  
uid_1_2_840_10008_1_2_4_95 = 31,  
uid_1_2_840_10008_1_2_4_100 = 32,  
uid_1_2_840_10008_1_2_5 = 33,  
uid_1_2_840_10008_1_2_6_1 = 34,  
uid_1_2_840_10008_1_2_6_2 = 35,  
uid_1_2_840_10008_1_3_10 = 36,  
uid_1_2_840_10008_1_4_1_1 = 37,  
uid_1_2_840_10008_1_4_1_2 = 38,  
uid_1_2_840_10008_1_4_1_3 = 39,  
uid_1_2_840_10008_1_4_1_4 = 40,  
uid_1_2_840_10008_1_4_1_5 = 41,  
uid_1_2_840_10008_1_4_1_6 = 42,  
uid_1_2_840_10008_1_4_1_7 = 43,  
uid_1_2_840_10008_1_4_1_8 = 44,  
uid_1_2_840_10008_1_4_1_9 = 45,  
uid_1_2_840_10008_1_4_1_10 = 46,  
uid_1_2_840_10008_1_4_1_11 = 47,  
uid_1_2_840_10008_1_4_1_12 = 48,  
uid_1_2_840_10008_1_4_1_13 = 49,  
uid_1_2_840_10008_1_4_1_14 = 50,  
uid_1_2_840_10008_1_4_1_15 = 51,  
uid_1_2_840_10008_1_4_1_16 = 52,  
uid_1_2_840_10008_1_4_1_17 = 53,  
uid_1_2_840_10008_1_4_1_18 = 54,  
uid_1_2_840_10008_1_4_2_1 = 55,  
uid_1_2_840_10008_1_4_2_2 = 56,  
uid_1_2_840_10008_1_9 = 57,  
uid_1_2_840_10008_1_20_1 = 58,  
uid_1_2_840_10008_1_20_1_1 = 59,  
uid_1_2_840_10008_1_20_2 = 60,
```



```
uid_1_2_840_10008_5_1_4_1_1_13_1_3 }
```

Public Member Functions

- const char * [GetName](#) () const
- const char * [GetString](#) () const
- [operator TSType](#) () const
- bool [SetFromUID](#) (const char *str)

Static Public Member Functions

- static unsigned int [GetNumberOfTransferSyntaxStrings](#) ()
- static const char *const * [GetTransferSyntaxString](#) (unsigned int ts)
- static [TransferSyntaxStringsType](#) [GetTransferSyntaxStrings](#) ()
- static const char * [GetUIDName](#) (unsigned int ts)
- static const char * [GetUIDString](#) (unsigned int ts)

25.276.1 Detailed Description

all known uids

Examples:

[GenerateStandardSOPClasses.cxx](#).

25.276.2 Member Typedef Documentation

25.276.2.1 `typedef const char* const(* gdcm::UIDs::TransferSyntaxStringsType)[2]`

25.276.3 Member Enumeration Documentation

25.276.3.1 `enum gdcm::UIDs::TSName`

Enumerator

VerificationSOPClass

ImplicitVRLittleEndianDefaultTransferSyntaxforDICOM

ExplicitVRLittleEndian

DeflatedExplicitVRLittleEndian

ExplicitVRBigEndian

JPEGBaselineProcess1DefaultTransferSyntaxforLossyJPEG8BitImageCompression

JPEGExtendedProcess24DefaultTransferSyntaxforLossyJPEG12BitImageCompressionProcess4only

JPEGExtendedProcess35Retired

JPEGSpectralSelectionNonHierarchicalProcess68Retired

JPEGSpectralSelectionNonHierarchicalProcess79Retired

JPEGFullProgressionNonHierarchicalProcess1012Retired

JPEGFullProgressionNonHierarchicalProcess1113Retired

JPEGLosslessNonHierarchicalProcess14
JPEGLosslessNonHierarchicalProcess15Retired
JPEGExtendedHierarchicalProcess1618Retired
JPEGExtendedHierarchicalProcess1719Retired
JPEGSpectralSelectionHierarchicalProcess2022Retired
JPEGSpectralSelectionHierarchicalProcess2123Retired
JPEGFullProgressionHierarchicalProcess2426Retired
JPEGFullProgressionHierarchicalProcess2527Retired
JPEGLosslessHierarchicalProcess28Retired
JPEGLosslessHierarchicalProcess29Retired
JPEGLosslessNonHierarchicalFirstOrderPredictionProcess14SelectionValue1DefaultTransferSyntaxforLosslessJPEGImage

JPEGLSLosslessImageCompression
JPEGLSLossyNearLosslessImageCompression
JPEG2000ImageCompressionLosslessOnly
JPEG2000ImageCompression
JPEG2000Part2MulticomponentImageCompressionLosslessOnly
JPEG2000Part2MulticomponentImageCompression
JPIPReferenced
JPIPReferencedDeflate
MPEG2MainProfileMainLevel
RLELossless
RFC2557MIMEencapsulation
XMLEncoding
MediaStorageDirectoryStorage
TalairachBrainAtlasFrameofReference
SPM2T1FrameofReference
SPM2T2FrameofReference
SPM2PDFFrameofReference
SPM2EPIFrameofReference
SPM2FIL T1FrameofReference
SPM2PETFrameofReference
SPM2TRANSMFrameofReference
SPM2SPECTFrameofReference
SPM2GRAYFrameofReference
SPM2WHITEFrameofReference
SPM2CSFFFrameofReference
SPM2BRAINMASKFrameofReference
SPM2AVG305T1FrameofReference
SPM2AVG152T1FrameofReference
SPM2AVG152T2FrameofReference
SPM2AVG152PDFFrameofReference

SPM2SINGLESUBJT1FrameofReference
ICBM452T1FrameofReference
ICBMSingleSubjectMRIFrameofReference
BasicStudyContentNotificationSOPClassRetired
StorageCommitmentPushModelSOPClass
StorageCommitmentPushModelSOPInstance
StorageCommitmentPullModelSOPClassRetired
StorageCommitmentPullModelSOPInstanceRetired
ProceduralEventLoggingSOPClass
ProceduralEventLoggingSOPInstance
SubstanceAdministrationLoggingSOPClass
SubstanceAdministrationLoggingSOPInstance
DICOMUIDRegistry
DICOMControlledTerminology
DICOMApplicationContextName
DetachedPatientManagementSOPClassRetired
DetachedPatientManagementMetaSOPClassRetired
DetachedVisitManagementSOPClassRetired
DetachedStudyManagementSOPClassRetired
StudyComponentManagementSOPClassRetired
ModalityPerformedProcedureStepSOPClass
ModalityPerformedProcedureStepRetrieveSOPClass
ModalityPerformedProcedureStepNotificationSOPClass
DetachedResultsManagementSOPClassRetired
DetachedResultsManagementMetaSOPClassRetired
DetachedStudyManagementMetaSOPClassRetired
DetachedInterpretationManagementSOPClassRetired
StorageServiceClass
BasicFilmSessionSOPClass
BasicFilmBoxSOPClass
BasicGrayscaleImageBoxSOPClass
BasicColorImageBoxSOPClass
ReferencedImageBoxSOPClassRetired
BasicGrayscalePrintManagementMetaSOPClass
ReferencedGrayscalePrintManagementMetaSOPClassRetired
PrintJobSOPClass
BasicAnnotationBoxSOPClass
PrinterSOPClass
PrinterConfigurationRetrievalSOPClass
PrinterSOPInstance
PrinterConfigurationRetrievalSOPInstance
BasicColorPrintManagementMetaSOPClass

ReferencedColorPrintManagementMetaSOPClassRetired
VOILUTBoxSOPClass
PresentationLUTSOPClass
ImageOverlayBoxSOPClassRetired
BasicPrintImageOverlayBoxSOPClassRetired
PrintQueueSOPInstanceRetired
PrintQueueManagementSOPClassRetired
StoredPrintStorageSOPClassRetired
HardcopyGrayscaleImageStorageSOPClassRetired
HardcopyColorImageStorageSOPClassRetired
PullPrintRequestSOPClassRetired
PullStoredPrintManagementMetaSOPClassRetired
MediaCreationManagementSOPClassUID
ComputedRadiographyImageStorage
DigitalXRayImageStorageForPresentation
DigitalXRayImageStorageForProcessing
DigitalMammographyXRayImageStorageForPresentation
DigitalMammographyXRayImageStorageForProcessing
DigitalIntraoralXRayImageStorageForPresentation
DigitalIntraoralXRayImageStorageForProcessing
CTImageStorage
EnhancedCTImageStorage
UltrasoundMultiframeImageStorageRetired
UltrasoundMultiframeImageStorage
MRIImageStorage
EnhancedMRIImageStorage
MRSpectroscopyStorage
NuclearMedicineImageStorageRetired
UltrasoundImageStorageRetired
UltrasoundImageStorage
SecondaryCaptureImageStorage
MultiframeSingleBitSecondaryCaptureImageStorage
MultiframeGrayscaleByteSecondaryCaptureImageStorage
MultiframeGrayscaleWordSecondaryCaptureImageStorage
MultiframeTrueColorSecondaryCaptureImageStorage
StandaloneOverlayStorageRetired
StandaloneCurveStorageRetired
WaveformStorageTrialRetired
GeneralECGWaveformStorage
AmbulatoryECGWaveformStorage
HemodynamicWaveformStorage
CardiacElectrophysiologyWaveformStorage

BasicVoiceAudioWaveformStorage
StandaloneModalityLUTStorageRetired
StandaloneVOILUTStorageRetired
GrayscaleSoftcopyPresentationStateStorageSOPClass
ColorSoftcopyPresentationStateStorageSOPClass
PseudoColorSoftcopyPresentationStateStorageSOPClass
BlendingSoftcopyPresentationStateStorageSOPClass
XRayAngiographicImageStorage
EnhancedXAImageStorage
XRayRadiofluoroscopicImageStorage
EnhancedXRImageStorage
XRay3DAngiographicImageStorage
XRay3DCraniofacialImageStorage
XRayAngiographicBiPlaneImageStorageRetired
NuclearMedicineImageStorage
RawDataStorage
SpatialRegistrationStorage
SpatialFiducialsStorage
DeformableSpatialRegistrationStorage
SegmentationStorage
RealWorldValueMappingStorage
VLImageStorageTrialRetired
VLMultiframeImageStorageTrialRetired
VLEndoscopicImageStorage
VideoEndoscopicImageStorage
VLMicroscopicImageStorage
VideoMicroscopicImageStorage
VLSlideCoordinatesMicroscopicImageStorage
VLPhotographicImageStorage
VideoPhotographicImageStorage
OphthalmicPhotography8BitImageStorage
OphthalmicPhotography16BitImageStorage
StereometricRelationshipStorage
OphthalmicTomographyImageStorage
TextSRStorageTrialRetired
AudioSRStorageTrialRetired
DetailSRStorageTrialRetired
ComprehensiveSRStorageTrialRetired
BasicTextSRStorage
EnhancedSRStorage
ComprehensiveSRStorage
ProcedureLogStorage

MammographyCADSRStorage
KeyObjectSelectionDocumentStorage
ChestCADSRStorage
XRayRadiationDoseSRStorage
EncapsulatedPDFStorage
EncapsulatedCDASStorage
PositronEmissionTomographyImageStorage
StandalonePETCurveStorageRetired
RTImageStorage
RTDoseStorage
RTStructureSetStorage
RTBeamsTreatmentRecordStorage
RTPlanStorage
RTBrachyTreatmentRecordStorage
RTTreatmentSummaryRecordStorage
RTIonPlanStorage
RTIonBeamsTreatmentRecordStorage
PatientRootQueryRetrieveInformationModelFIND
PatientRootQueryRetrieveInformationModelMOVE
PatientRootQueryRetrieveInformationModelGET
StudyRootQueryRetrieveInformationModelFIND
StudyRootQueryRetrieveInformationModelMOVE
StudyRootQueryRetrieveInformationModelGET
PatientStudyOnlyQueryRetrieveInformationModelFINDRetired
PatientStudyOnlyQueryRetrieveInformationModelMOVERetired
PatientStudyOnlyQueryRetrieveInformationModelGETRetired
ModalityWorklistInformationModelFIND
GeneralPurposeWorklistInformationModelFIND
GeneralPurposeScheduledProcedureStepSOPClass
GeneralPurposePerformedProcedureStepSOPClass
GeneralPurposeWorklistManagementMetaSOPClass
InstanceAvailabilityNotificationSOPClass
RTBeamsDeliveryInstructionStorageSupplement74FrozenDraft
RTConventionalMachineVerificationSupplement74FrozenDraft
RTIonMachineVerificationSupplement74FrozenDraft
UnifiedWorklistandProcedureStepServiceClass
UnifiedProcedureStepPushSOPClass
UnifiedProcedureStepWatchSOPClass
UnifiedProcedureStepPullSOPClass
UnifiedProcedureStepEventSOPClass
UnifiedWorklistandProcedureStepSOPInstance
GeneralRelevantPatientInformationQuery

BreastImagingRelevantPatientInformationQuery
CardiacRelevantPatientInformationQuery
HangingProtocolStorage
HangingProtocolInformationModelFIND
HangingProtocolInformationModelMOVE
ProductCharacteristicsQuerySOPClass
SubstanceApprovalQuerySOPClass
dicomDeviceName
dicomDescription
dicomManufacturer
dicomManufacturerModelName
dicomSoftwareVersion
dicomVendorData
dicomAETitle
dicomNetworkConnectionReference
dicomApplicationCluster
dicomAssociationInitiator
dicomAssociationAcceptor
dicomHostname
dicomPort
dicomSOPClass
dicomTransferRole
dicomTransferSyntax
dicomPrimaryDeviceType
dicomRelatedDeviceReference
dicomPreferredCalledAETitle
dicomTLSCyphersuite
dicomAuthorizedNodeCertificateReference
dicomThisNodeCertificateReference
dicomInstalled
dicomStationName
dicomDeviceSerialNumber
dicomInstitutionName
dicomInstitutionAddress
dicomInstitutionDepartmentName
dicomIssuerOfPatientID
dicomPreferredCallingAETitle
dicomSupportedCharacterSet
dicomConfigurationRoot
dicomDevicesRoot
dicomUniqueAETitlesRegistryRoot
dicomDevice

dicomNetworkAE
dicomNetworkConnection
dicomUniqueAETitle
dicomTransferCapability
VLWholeSlideMicroscopyImageStorage
EnhancedUSVolumeStorage
SurfaceSegmentationStorage
BreastTomosynthesisImageStorage

25.276.3.2 enum gdcm::UIDs::TSType

Enumerator

uid_1_2_840_10008_1_1
uid_1_2_840_10008_1_2
uid_1_2_840_10008_1_2_1
uid_1_2_840_10008_1_2_1_99
uid_1_2_840_10008_1_2_2
uid_1_2_840_10008_1_2_4_50
uid_1_2_840_10008_1_2_4_51
uid_1_2_840_10008_1_2_4_52
uid_1_2_840_10008_1_2_4_53
uid_1_2_840_10008_1_2_4_54
uid_1_2_840_10008_1_2_4_55
uid_1_2_840_10008_1_2_4_56
uid_1_2_840_10008_1_2_4_57
uid_1_2_840_10008_1_2_4_58
uid_1_2_840_10008_1_2_4_59
uid_1_2_840_10008_1_2_4_60
uid_1_2_840_10008_1_2_4_61
uid_1_2_840_10008_1_2_4_62
uid_1_2_840_10008_1_2_4_63
uid_1_2_840_10008_1_2_4_64
uid_1_2_840_10008_1_2_4_65
uid_1_2_840_10008_1_2_4_66
uid_1_2_840_10008_1_2_4_70
uid_1_2_840_10008_1_2_4_80
uid_1_2_840_10008_1_2_4_81
uid_1_2_840_10008_1_2_4_90
uid_1_2_840_10008_1_2_4_91
uid_1_2_840_10008_1_2_4_92
uid_1_2_840_10008_1_2_4_93

uid_1_2_840_10008_1_2_4_94
uid_1_2_840_10008_1_2_4_95
uid_1_2_840_10008_1_2_4_100
uid_1_2_840_10008_1_2_5
uid_1_2_840_10008_1_2_6_1
uid_1_2_840_10008_1_2_6_2
uid_1_2_840_10008_1_3_10
uid_1_2_840_10008_1_4_1_1
uid_1_2_840_10008_1_4_1_2
uid_1_2_840_10008_1_4_1_3
uid_1_2_840_10008_1_4_1_4
uid_1_2_840_10008_1_4_1_5
uid_1_2_840_10008_1_4_1_6
uid_1_2_840_10008_1_4_1_7
uid_1_2_840_10008_1_4_1_8
uid_1_2_840_10008_1_4_1_9
uid_1_2_840_10008_1_4_1_10
uid_1_2_840_10008_1_4_1_11
uid_1_2_840_10008_1_4_1_12
uid_1_2_840_10008_1_4_1_13
uid_1_2_840_10008_1_4_1_14
uid_1_2_840_10008_1_4_1_15
uid_1_2_840_10008_1_4_1_16
uid_1_2_840_10008_1_4_1_17
uid_1_2_840_10008_1_4_1_18
uid_1_2_840_10008_1_4_2_1
uid_1_2_840_10008_1_4_2_2
uid_1_2_840_10008_1_9
uid_1_2_840_10008_1_20_1
uid_1_2_840_10008_1_20_1_1
uid_1_2_840_10008_1_20_2
uid_1_2_840_10008_1_20_2_1
uid_1_2_840_10008_1_40
uid_1_2_840_10008_1_40_1
uid_1_2_840_10008_1_42
uid_1_2_840_10008_1_42_1
uid_1_2_840_10008_2_6_1
uid_1_2_840_10008_2_16_4
uid_1_2_840_10008_3_1_1_1
uid_1_2_840_10008_3_1_2_1_1
uid_1_2_840_10008_3_1_2_1_4
uid_1_2_840_10008_3_1_2_2_1

uid_1_2_840_10008_3_1_2_3_1
uid_1_2_840_10008_3_1_2_3_2
uid_1_2_840_10008_3_1_2_3_3
uid_1_2_840_10008_3_1_2_3_4
uid_1_2_840_10008_3_1_2_3_5
uid_1_2_840_10008_3_1_2_5_1
uid_1_2_840_10008_3_1_2_5_4
uid_1_2_840_10008_3_1_2_5_5
uid_1_2_840_10008_3_1_2_6_1
uid_1_2_840_10008_4_2
uid_1_2_840_10008_5_1_1_1
uid_1_2_840_10008_5_1_1_2
uid_1_2_840_10008_5_1_1_4
uid_1_2_840_10008_5_1_1_4_1
uid_1_2_840_10008_5_1_1_4_2
uid_1_2_840_10008_5_1_1_9
uid_1_2_840_10008_5_1_1_9_1
uid_1_2_840_10008_5_1_1_14
uid_1_2_840_10008_5_1_1_15
uid_1_2_840_10008_5_1_1_16
uid_1_2_840_10008_5_1_1_16_376
uid_1_2_840_10008_5_1_1_17
uid_1_2_840_10008_5_1_1_17_376
uid_1_2_840_10008_5_1_1_18
uid_1_2_840_10008_5_1_1_18_1
uid_1_2_840_10008_5_1_1_22
uid_1_2_840_10008_5_1_1_23
uid_1_2_840_10008_5_1_1_24
uid_1_2_840_10008_5_1_1_24_1
uid_1_2_840_10008_5_1_1_25
uid_1_2_840_10008_5_1_1_26
uid_1_2_840_10008_5_1_1_27
uid_1_2_840_10008_5_1_1_29
uid_1_2_840_10008_5_1_1_30
uid_1_2_840_10008_5_1_1_31
uid_1_2_840_10008_5_1_1_32
uid_1_2_840_10008_5_1_1_33
uid_1_2_840_10008_5_1_4_1_1_1
uid_1_2_840_10008_5_1_4_1_1_1_1
uid_1_2_840_10008_5_1_4_1_1_1_1_1
uid_1_2_840_10008_5_1_4_1_1_1_2
uid_1_2_840_10008_5_1_4_1_1_1_2_1

uid_1_2_840_10008_5_1_4_1_1_1_3
uid_1_2_840_10008_5_1_4_1_1_1_3_1
uid_1_2_840_10008_5_1_4_1_1_2
uid_1_2_840_10008_5_1_4_1_1_2_1
uid_1_2_840_10008_5_1_4_1_1_3
uid_1_2_840_10008_5_1_4_1_1_3_1
uid_1_2_840_10008_5_1_4_1_1_4
uid_1_2_840_10008_5_1_4_1_1_4_1
uid_1_2_840_10008_5_1_4_1_1_4_2
uid_1_2_840_10008_5_1_4_1_1_5
uid_1_2_840_10008_5_1_4_1_1_6
uid_1_2_840_10008_5_1_4_1_1_6_1
uid_1_2_840_10008_5_1_4_1_1_7
uid_1_2_840_10008_5_1_4_1_1_7_1
uid_1_2_840_10008_5_1_4_1_1_7_2
uid_1_2_840_10008_5_1_4_1_1_7_3
uid_1_2_840_10008_5_1_4_1_1_7_4
uid_1_2_840_10008_5_1_4_1_1_8
uid_1_2_840_10008_5_1_4_1_1_9
uid_1_2_840_10008_5_1_4_1_1_9_1
uid_1_2_840_10008_5_1_4_1_1_9_1_1
uid_1_2_840_10008_5_1_4_1_1_9_1_2
uid_1_2_840_10008_5_1_4_1_1_9_1_3
uid_1_2_840_10008_5_1_4_1_1_9_2_1
uid_1_2_840_10008_5_1_4_1_1_9_3_1
uid_1_2_840_10008_5_1_4_1_1_9_4_1
uid_1_2_840_10008_5_1_4_1_1_10
uid_1_2_840_10008_5_1_4_1_1_11
uid_1_2_840_10008_5_1_4_1_1_11_1
uid_1_2_840_10008_5_1_4_1_1_11_2
uid_1_2_840_10008_5_1_4_1_1_11_3
uid_1_2_840_10008_5_1_4_1_1_11_4
uid_1_2_840_10008_5_1_4_1_1_12_1
uid_1_2_840_10008_5_1_4_1_1_12_1_1
uid_1_2_840_10008_5_1_4_1_1_12_2
uid_1_2_840_10008_5_1_4_1_1_12_2_1
uid_1_2_840_10008_5_1_4_1_1_13_1_1
uid_1_2_840_10008_5_1_4_1_1_13_1_2
uid_1_2_840_10008_5_1_4_1_1_12_3
uid_1_2_840_10008_5_1_4_1_1_20
uid_1_2_840_10008_5_1_4_1_1_66
uid_1_2_840_10008_5_1_4_1_1_66_1

uid_1_2_840_10008_5_1_4_1_1_66_2
uid_1_2_840_10008_5_1_4_1_1_66_3
uid_1_2_840_10008_5_1_4_1_1_66_4
uid_1_2_840_10008_5_1_4_1_1_67
uid_1_2_840_10008_5_1_4_1_1_77_1
uid_1_2_840_10008_5_1_4_1_1_77_2
uid_1_2_840_10008_5_1_4_1_1_77_1_1
uid_1_2_840_10008_5_1_4_1_1_77_1_1_1
uid_1_2_840_10008_5_1_4_1_1_77_1_2
uid_1_2_840_10008_5_1_4_1_1_77_1_2_1
uid_1_2_840_10008_5_1_4_1_1_77_1_3
uid_1_2_840_10008_5_1_4_1_1_77_1_4
uid_1_2_840_10008_5_1_4_1_1_77_1_4_1
uid_1_2_840_10008_5_1_4_1_1_77_1_5_1
uid_1_2_840_10008_5_1_4_1_1_77_1_5_2
uid_1_2_840_10008_5_1_4_1_1_77_1_5_3
uid_1_2_840_10008_5_1_4_1_1_77_1_5_4
uid_1_2_840_10008_5_1_4_1_1_88_1
uid_1_2_840_10008_5_1_4_1_1_88_2
uid_1_2_840_10008_5_1_4_1_1_88_3
uid_1_2_840_10008_5_1_4_1_1_88_4
uid_1_2_840_10008_5_1_4_1_1_88_11
uid_1_2_840_10008_5_1_4_1_1_88_22
uid_1_2_840_10008_5_1_4_1_1_88_33
uid_1_2_840_10008_5_1_4_1_1_88_40
uid_1_2_840_10008_5_1_4_1_1_88_50
uid_1_2_840_10008_5_1_4_1_1_88_59
uid_1_2_840_10008_5_1_4_1_1_88_65
uid_1_2_840_10008_5_1_4_1_1_88_67
uid_1_2_840_10008_5_1_4_1_1_104_1
uid_1_2_840_10008_5_1_4_1_1_104_2
uid_1_2_840_10008_5_1_4_1_1_128
uid_1_2_840_10008_5_1_4_1_1_129
uid_1_2_840_10008_5_1_4_1_1_481_1
uid_1_2_840_10008_5_1_4_1_1_481_2
uid_1_2_840_10008_5_1_4_1_1_481_3
uid_1_2_840_10008_5_1_4_1_1_481_4
uid_1_2_840_10008_5_1_4_1_1_481_5
uid_1_2_840_10008_5_1_4_1_1_481_6
uid_1_2_840_10008_5_1_4_1_1_481_7
uid_1_2_840_10008_5_1_4_1_1_481_8
uid_1_2_840_10008_5_1_4_1_1_481_9

uid_1_2_840_10008_5_1_4_1_2_1_1
uid_1_2_840_10008_5_1_4_1_2_1_2
uid_1_2_840_10008_5_1_4_1_2_1_3
uid_1_2_840_10008_5_1_4_1_2_2_1
uid_1_2_840_10008_5_1_4_1_2_2_2
uid_1_2_840_10008_5_1_4_1_2_2_3
uid_1_2_840_10008_5_1_4_1_2_3_1
uid_1_2_840_10008_5_1_4_1_2_3_2
uid_1_2_840_10008_5_1_4_1_2_3_3
uid_1_2_840_10008_5_1_4_31
uid_1_2_840_10008_5_1_4_32_1
uid_1_2_840_10008_5_1_4_32_2
uid_1_2_840_10008_5_1_4_32_3
uid_1_2_840_10008_5_1_4_32
uid_1_2_840_10008_5_1_4_33
uid_1_2_840_10008_5_1_4_34_1
uid_1_2_840_10008_5_1_4_34_2
uid_1_2_840_10008_5_1_4_34_3
uid_1_2_840_10008_5_1_4_34_4
uid_1_2_840_10008_5_1_4_34_4_1
uid_1_2_840_10008_5_1_4_34_4_2
uid_1_2_840_10008_5_1_4_34_4_3
uid_1_2_840_10008_5_1_4_34_4_4
uid_1_2_840_10008_5_1_4_34_5
uid_1_2_840_10008_5_1_4_37_1
uid_1_2_840_10008_5_1_4_37_2
uid_1_2_840_10008_5_1_4_37_3
uid_1_2_840_10008_5_1_4_38_1
uid_1_2_840_10008_5_1_4_38_2
uid_1_2_840_10008_5_1_4_38_3
uid_1_2_840_10008_5_1_4_41
uid_1_2_840_10008_5_1_4_42
uid_1_2_840_10008_15_0_3_1
uid_1_2_840_10008_15_0_3_2
uid_1_2_840_10008_15_0_3_3
uid_1_2_840_10008_15_0_3_4
uid_1_2_840_10008_15_0_3_5
uid_1_2_840_10008_15_0_3_6
uid_1_2_840_10008_15_0_3_7
uid_1_2_840_10008_15_0_3_8
uid_1_2_840_10008_15_0_3_9
uid_1_2_840_10008_15_0_3_10

```

uid_1_2_840_10008_15_0_3_11
uid_1_2_840_10008_15_0_3_12
uid_1_2_840_10008_15_0_3_13
uid_1_2_840_10008_15_0_3_14
uid_1_2_840_10008_15_0_3_15
uid_1_2_840_10008_15_0_3_16
uid_1_2_840_10008_15_0_3_17
uid_1_2_840_10008_15_0_3_18
uid_1_2_840_10008_15_0_3_19
uid_1_2_840_10008_15_0_3_20
uid_1_2_840_10008_15_0_3_21
uid_1_2_840_10008_15_0_3_22
uid_1_2_840_10008_15_0_3_23
uid_1_2_840_10008_15_0_3_24
uid_1_2_840_10008_15_0_3_25
uid_1_2_840_10008_15_0_3_26
uid_1_2_840_10008_15_0_3_27
uid_1_2_840_10008_15_0_3_28
uid_1_2_840_10008_15_0_3_29
uid_1_2_840_10008_15_0_3_30
uid_1_2_840_10008_15_0_3_31
uid_1_2_840_10008_15_0_4_1
uid_1_2_840_10008_15_0_4_2
uid_1_2_840_10008_15_0_4_3
uid_1_2_840_10008_15_0_4_4
uid_1_2_840_10008_15_0_4_5
uid_1_2_840_10008_15_0_4_6
uid_1_2_840_10008_15_0_4_7
uid_1_2_840_10008_15_0_4_8
uid_1_2_840_10008_5_1_4_1_1_77_1_6
uid_1_2_840_10008_5_1_4_1_1_6_2
uid_1_2_840_10008_5_1_4_1_1_66_5
uid_1_2_840_10008_5_1_4_1_1_13_1_3

```

25.276.4 Member Function Documentation

25.276.4.1 `const char* gdcm::UIDs::GetName () const`

When object is Initialize function return the well known name associated with uid return NULL when not initialized

Examples:

[GenerateStandardSOPClasses.cxx](#).

Referenced by `gdcm::operator<<()`.

25.276.4.2 `static unsigned int gdcm::UIDs::GetNumberOfTransferSyntaxStrings () [static]`

25.276.4.3 `const char* gdcm::UIDs::GetString () const`

When object is Initialize function return the uid return NULL when not initialized

Examples:

[GenerateStandardSOPClasses.cxx](#).

Referenced by `gdcm::operator<<()`.

25.276.4.4 `static const char* const* gdcm::UIDs::GetTransferSyntaxString (unsigned int ts) [static]`

25.276.4.5 `static TransferSyntaxStringsType gdcm::UIDs::GetTransferSyntaxStrings () [static]`

25.276.4.6 `static const char* gdcm::UIDs::GetUIDName (unsigned int ts) [static]`

25.276.4.7 `static const char* gdcm::UIDs::GetUIDString (unsigned int ts) [static]`

25.276.4.8 `gdcm::UIDs::operator TSType () const [inline]`

25.276.4.9 `bool gdcm::UIDs::SetFromUID (const char * str)`

Initialize object from a string (a uid number) return false on error, and internal state is set to 0

Examples:

[GenerateStandardSOPClasses.cxx](#).

The documentation for this class was generated from the following file:

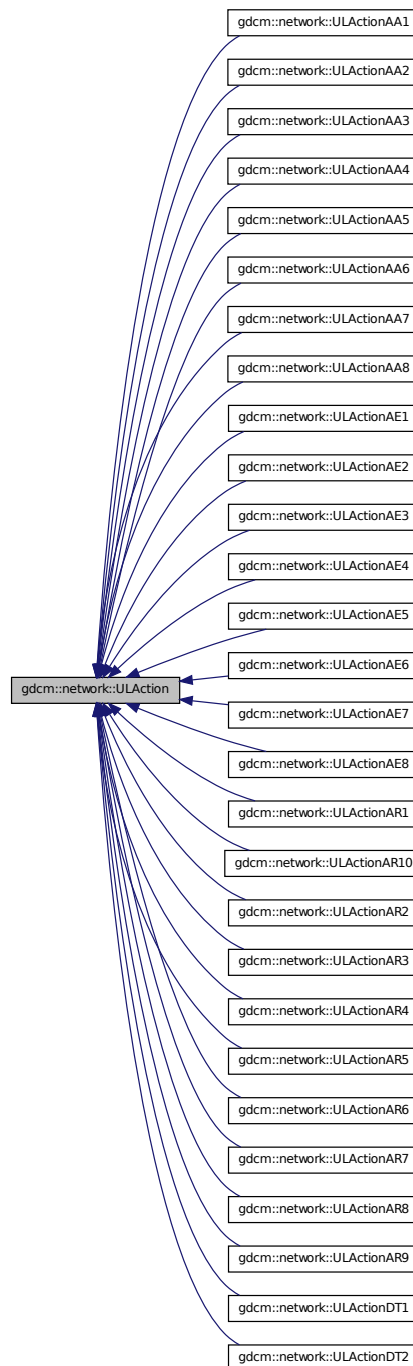
- [gdcmUIDs.h](#)

25.277 gdcm::network::ULAction Class Reference

ULAction A [ULConnection](#) in a given ULState can perform certain ULActions. This base class provides the interface for running those ULActions on a given [ULConnection](#).

```
#include <gdcmULAction.h>
```

Inheritance diagram for `gdc::network::ULAction`:



Public Member Functions

- [ULAction](#) ()
- virtual [~ULAction](#) ()

- virtual [EStateID PerformAction](#) ([Subject *s](#), [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)=0

25.277.1 Detailed Description

[ULAction](#) A [ULConnection](#) in a given [ULState](#) can perform certain [ULActions](#). This base class provides the interface for running those [ULActions](#) on a given [ULConnection](#).

Essentially, the [ULConnectionManager](#) will take this object, determined from the current [ULState](#) of the [ULConnection](#), and pass the [ULConnection](#) object to the [ULAction](#). The [ULAction](#) will then invoke whatever necessary commands are required by a given action.

The result of a [ULAction](#) is a [ULEvent](#) (ie, what happened as a result of the action).

This [ULEvent](#) is passed to the [ULState](#), so that the transition to the next state can occur.

Actions are associated with Payloads— be thos filestreams, AETitles to establish connections, whatever. The actual parameters that the user will pass via an action will come through a Payload object, which should, in itself, be some gdcm-based object (but not all objects can be payloads; sending a single dataelement as a payload isn't meaningful). As such, each action has its own particular payload.

For the sake of keeping files together, both the particular payload class and the action class will be defined in the same header file. Payloads should JUST be data (or streams), NO METHODS.

Some actions perform changes that should raise events on the local system, and some actions perform changes that will require waiting for events from the remote system.

Therefore, this base action has been modified so that those events are set by each action. When the event loop runs an action, it will then test to see if a local event was raised by the action, and if so, perform the appropriate subsequent action. If the action requires waiting for a response from the remote system, then the event loop will sit there (presumably with the ARTIM timer running) and wait for a response from the remote system. Once a response is obtained, then the the rest of the state transitions can happen.

25.277.2 Constructor & Destructor Documentation

25.277.2.1 `gdcm::network::ULAction::ULAction () [inline]`

25.277.2.2 `virtual gdcm::network::ULAction::~~ULAction () [inline], [virtual]`

25.277.3 Member Function Documentation

25.277.3.1 `virtual EStateID gdcm::network::ULAction::PerformAction (Subject * s, ULEvent & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent) [pure virtual]`

Implemented in [gdcm::network::ULActionAR10](#), [gdcm::network::ULActionAR9](#), [gdcm::network::ULActionAE8](#), [gdcm::network::ULActionAA8](#), [gdcm::network::ULActionAR8](#), [gdcm::network::ULActionAE7](#), [gdcm::network::ULActionAA7](#), [gdcm::network::ULActionAR7](#), [gdcm::network::ULActionAE6](#), [gdcm::network::ULActionAA6](#), [gdcm::network::ULActionAR6](#), [gdcm::network::ULActionAA5](#), [gdcm::network::ULActionAE5](#), [gdcm::network::ULActionAR5](#), [gdcm::network::ULActionAA4](#), [gdcm::network::ULActionAE4](#), [gdcm::network::ULActionAR4](#), [gdcm::network::ULActionAA3](#), [gdcm::network::ULActionAE3](#), [gdcm::network::ULActionAR3](#), [gdcm::network::ULActionAA2](#), [gdcm::network::ULActionAE2](#), [gdcm::network::ULActionAR2](#), [gdcm::network::ULActionDT2](#), [gdcm::network::ULActionAA1](#), [gdcm::network::ULActionAE1](#), [gdcm::network::ULActionAR1](#), and [gdcm::network::ULActionDT1](#).

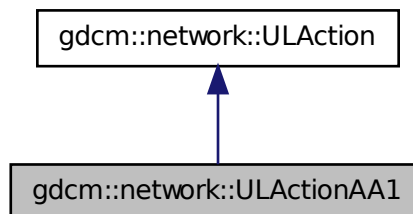
The documentation for this class was generated from the following file:

- [gdcmULAction.h](#)

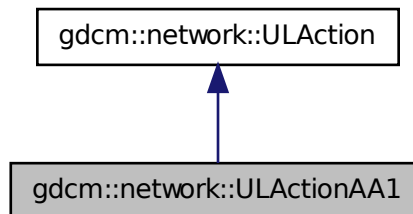
25.278 `gdcmm::network::ULActionAA1` Class Reference

```
#include <gdcmmULActionAA.h>
```

Inheritance diagram for `gdcmm::network::ULActionAA1`:



Collaboration diagram for `gdcmm::network::ULActionAA1`:



Public Member Functions

- [EStateID PerformAction](#) ([Subject](#) *s, [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.278.1 Member Function Documentation

25.278.1.1 `EStateID gdcmm::network::ULActionAA1::PerformAction (Subject * s, ULEvent & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent)` `[virtual]`

Implements [gdcmm::network::ULAction](#).

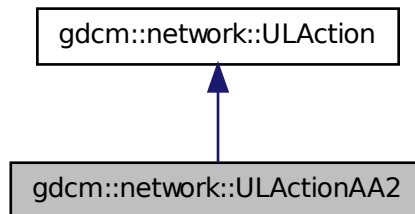
The documentation for this class was generated from the following file:

- [gdcmmULActionAA.h](#)

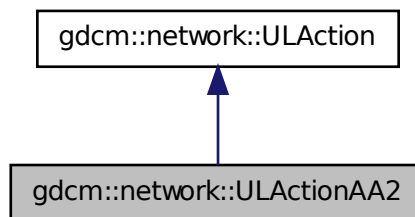
25.279 gdcmm::network::ULActionAA2 Class Reference

```
#include <gdcmmULActionAA.h>
```

Inheritance diagram for gdcmm::network::ULActionAA2:



Collaboration diagram for gdcmm::network::ULActionAA2:



Public Member Functions

- [EStateID PerformAction](#) ([Subject](#) *s, [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.279.1 Member Function Documentation

25.279.1.1 **EStateID** `gdcm::network::ULActionAA2::PerformAction (Subject * s, ULEvent & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent)` [virtual]

Implements [gdcm::network::ULAction](#).

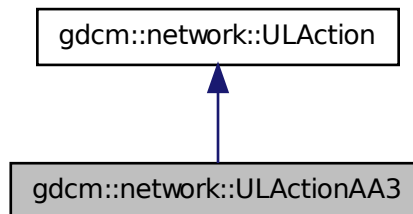
The documentation for this class was generated from the following file:

- [gdcmULActionAA.h](#)

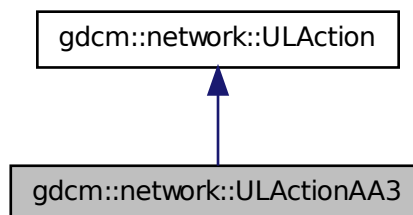
25.280 `gdcm::network::ULActionAA3` Class Reference

```
#include <gdcmULActionAA.h>
```

Inheritance diagram for `gdcm::network::ULActionAA3`:



Collaboration diagram for `gdcm::network::ULActionAA3`:



Public Member Functions

- [EStateID](#) [PerformAction](#) ([Subject](#) *s, [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.280.1 Member Function Documentation

25.280.1.1 `EStateID gdcmm::network::ULActionAA3::PerformAction (Subject * s, ULEvent & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent) [virtual]`

Implements [gdcmm::network::ULAction](#).

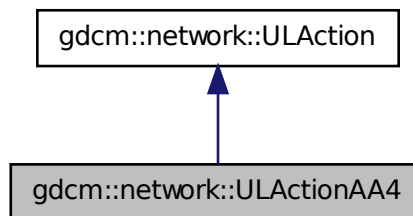
The documentation for this class was generated from the following file:

- [gdcmmULActionAA.h](#)

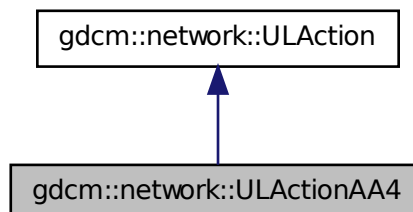
25.281 gdcmm::network::ULActionAA4 Class Reference

```
#include <gdcmmULActionAA.h>
```

Inheritance diagram for gdcmm::network::ULActionAA4:



Collaboration diagram for gdcmm::network::ULActionAA4:



Public Member Functions

- [EStateID PerformAction](#) ([Subject](#) *s, [ULError](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.281.1 Member Function Documentation

25.281.1.1 [EStateID](#) `gdcmm::network::ULActionAA4::PerformAction (Subject * s, ULError & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent)` [virtual]

Implements [gdcmm::network::ULAction](#).

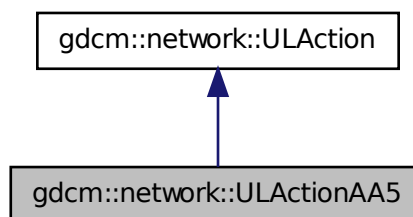
The documentation for this class was generated from the following file:

- [gdcmmULActionAA.h](#)

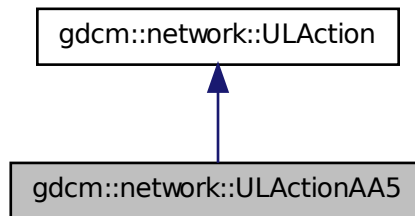
25.282 gdcmm::network::ULActionAA5 Class Reference

```
#include <gdcmmULActionAA.h>
```

Inheritance diagram for `gdcmm::network::ULActionAA5`:



Collaboration diagram for gdcm::network::ULActionAA5:



Public Member Functions

- [EStateID PerformAction](#) ([Subject](#) *s, [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.282.1 Member Function Documentation

25.282.1.1 `EStateID gdcm::network::ULActionAA5::PerformAction (Subject * s, ULEvent & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent) [virtual]`

Implements [gdcm::network::ULAction](#).

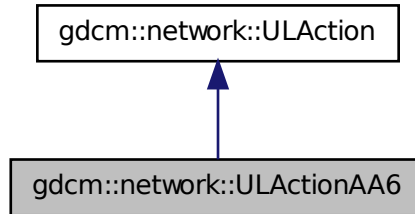
The documentation for this class was generated from the following file:

- [gdcmULActionAA.h](#)

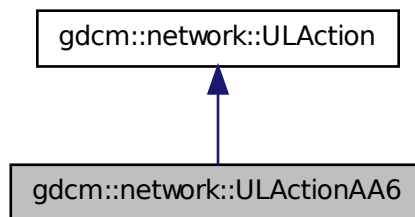
25.283 gdcm::network::ULActionAA6 Class Reference

```
#include <gdcmULActionAA.h>
```

Inheritance diagram for `gdcn::network::ULActionAA6`:



Collaboration diagram for `gdcn::network::ULActionAA6`:



Public Member Functions

- [EStateID PerformAction](#) ([Subject](#) *s, [UEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.283.1 Member Function Documentation

25.283.1.1 **EStateID** `gdcn::network::ULActionAA6::PerformAction` ([Subject](#) *s, [UEvent](#) & *inEvent*, [ULConnection](#) & *inConnection*, bool & *outWaitingForEvent*, [EEventID](#) & *outRaisedEvent*) `[virtual]`

Implements [gdcn::network::ULAction](#).

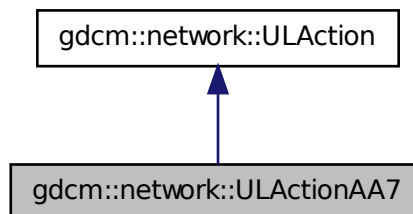
The documentation for this class was generated from the following file:

- [gdcnULActionAA.h](#)

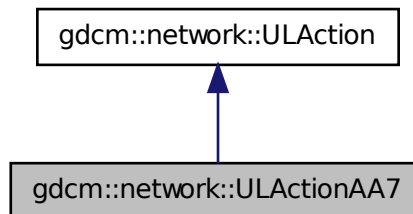
25.284 gdcm::network::ULActionAA7 Class Reference

```
#include <gdcmULActionAA.h>
```

Inheritance diagram for gdcm::network::ULActionAA7:



Collaboration diagram for gdcm::network::ULActionAA7:



Public Member Functions

- [EStateID PerformAction](#) ([Subject](#) *s, [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.284.1 Member Function Documentation

25.284.1.1 **EStateID** `gdcm::network::ULActionAA7::PerformAction` (`Subject` * s, `ULEvent` & *inEvent*, `ULConnection` & *inConnection*, bool & *outWaitingForEvent*, `EEventID` & *outRaisedEvent*) `[virtual]`

Implements [gdcm::network::ULAction](#).

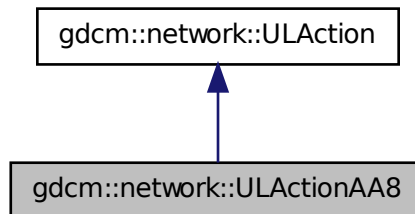
The documentation for this class was generated from the following file:

- [gdcmlActionAA.h](#)

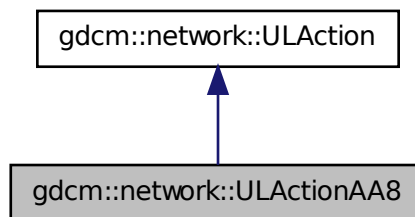
25.285 gdcmlnetwork::ULActionAA8 Class Reference

```
#include <gdcmlActionAA.h>
```

Inheritance diagram for gdcmlnetwork::ULActionAA8:



Collaboration diagram for gdcmlnetwork::ULActionAA8:



Public Member Functions

- [EStateID](#) [PerformAction](#) ([Subject](#) *s, [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.285.1 Member Function Documentation

25.285.1.1 `EStateID` `gdcm::network::ULActionAA8::PerformAction (Subject * s, ULEvent & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent)` [virtual]

Implements [gdcm::network::ULAction](#).

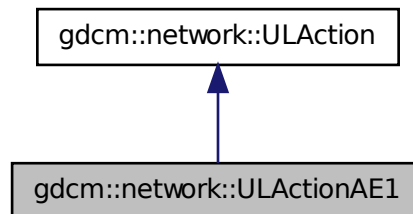
The documentation for this class was generated from the following file:

- [gdcmULActionAA.h](#)

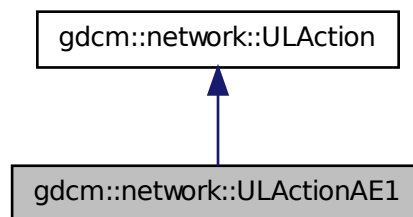
25.286 gdcm::network::ULActionAE1 Class Reference

```
#include <gdcmULActionAE.h>
```

Inheritance diagram for `gdcm::network::ULActionAE1`:



Collaboration diagram for `gdcm::network::ULActionAE1`:



Public Member Functions

- [EStateID](#) [PerformAction](#) ([Subject](#) *s, [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.286.1 Member Function Documentation

25.286.1.1 `EStateID gdcmm::network::ULActionAE1::PerformAction (Subject * s, ULEvent & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent) [virtual]`

Implements [gdcmm::network::ULAction](#).

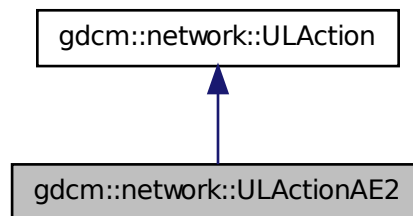
The documentation for this class was generated from the following file:

- [gdcmmULActionAE.h](#)

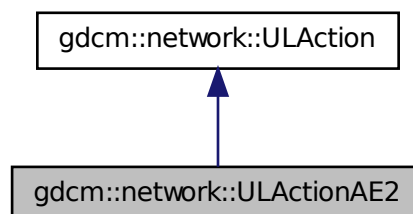
25.287 gdcmm::network::ULActionAE2 Class Reference

```
#include <gdcmmULActionAE.h>
```

Inheritance diagram for gdcmm::network::ULActionAE2:



Collaboration diagram for gdcmm::network::ULActionAE2:



Public Member Functions

- [EStateID PerformAction](#) ([Subject](#) *s, [ULError](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.287.1 Member Function Documentation

25.287.1.1 [EStateID](#) `gdcm::network::ULActionAE2::PerformAction (Subject * s, ULError & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent)` `[virtual]`

Implements [gdcm::network::ULAction](#).

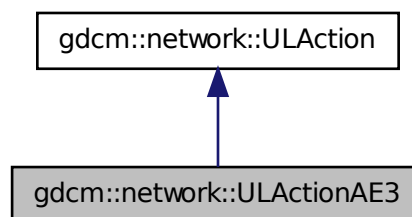
The documentation for this class was generated from the following file:

- [gdcmULActionAE.h](#)

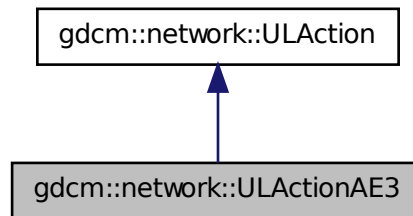
25.288 gdcm::network::ULActionAE3 Class Reference

```
#include <gdcmULActionAE.h>
```

Inheritance diagram for `gdcm::network::ULActionAE3`:



Collaboration diagram for `gdcm::network::ULActionAE3`:



Public Member Functions

- [EStateID PerformAction](#) ([Subject](#) *s, [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.288.1 Member Function Documentation

25.288.1.1 `EStateID gdcm::network::ULActionAE3::PerformAction (Subject * s, ULEvent & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent) [virtual]`

Implements [gdcm::network::ULAction](#).

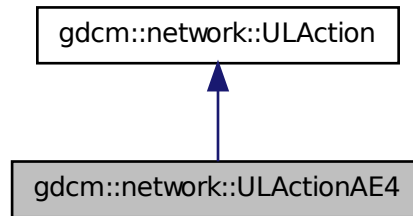
The documentation for this class was generated from the following file:

- [gdcmULActionAE.h](#)

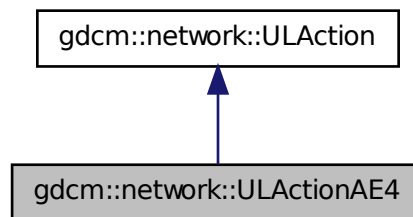
25.289 gdcm::network::ULActionAE4 Class Reference

```
#include <gdcmULActionAE.h>
```

Inheritance diagram for gdcmm::network::ULActionAE4:



Collaboration diagram for gdcmm::network::ULActionAE4:



Public Member Functions

- [EStateID PerformAction](#) ([Subject](#) *s, [ULError](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.289.1 Member Function Documentation

25.289.1.1 **EStateID** `gdcmm::network::ULActionAE4::PerformAction (Subject * s, ULError & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent)` `[virtual]`

Implements [gdcmm::network::ULAction](#).

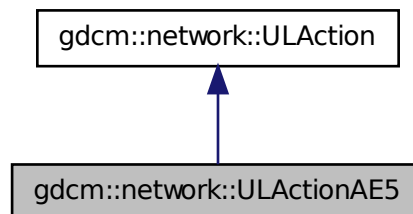
The documentation for this class was generated from the following file:

- [gdcmmULActionAE.h](#)

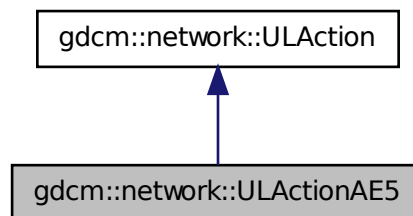
25.290 gdcmm::network::ULActionAE5 Class Reference

```
#include <gdcmmULActionAE.h>
```

Inheritance diagram for gdcmm::network::ULActionAE5:



Collaboration diagram for gdcmm::network::ULActionAE5:



Public Member Functions

- [EStateID PerformAction](#) ([Subject](#) *s, [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.290.1 Member Function Documentation

25.290.1.1 `EStateID gdcmm::network::ULActionAE5::PerformAction (Subject * s, ULEvent & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent) [virtual]`

Implements [gdcmm::network::ULAction](#).

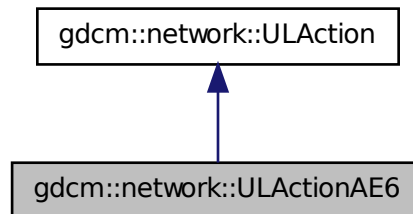
The documentation for this class was generated from the following file:

- [gdcmULActionAE.h](#)

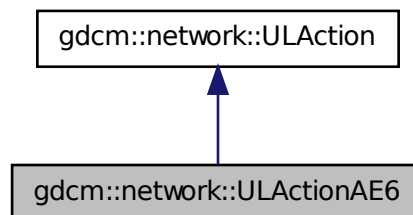
25.291 gdcm::network::ULActionAE6 Class Reference

```
#include <gdcmULActionAE.h>
```

Inheritance diagram for gdcm::network::ULActionAE6:



Collaboration diagram for gdcm::network::ULActionAE6:



Public Member Functions

- [EStateID PerformAction](#) ([Subject](#) *s, [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.291.1 Member Function Documentation

25.291.1.1 **EStateID** `gdcm::network::ULActionAE6::PerformAction (Subject * s, ULEvent & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent)` [virtual]

Implements [gdcm::network::ULAction](#).

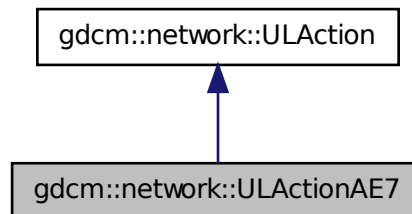
The documentation for this class was generated from the following file:

- [gdcmULActionAE.h](#)

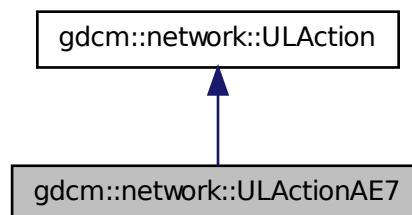
25.292 `gdcm::network::ULActionAE7` Class Reference

```
#include <gdcmULActionAE.h>
```

Inheritance diagram for `gdcm::network::ULActionAE7`:



Collaboration diagram for `gdcm::network::ULActionAE7`:



Public Member Functions

- [EStateID](#) [PerformAction](#) ([Subject](#) *s, [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.292.1 Member Function Documentation

25.292.1.1 `EStateID gdcmm::network::ULActionAE7::PerformAction (Subject * s, ULEvent & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent) [virtual]`

Implements [gdcmm::network::ULAction](#).

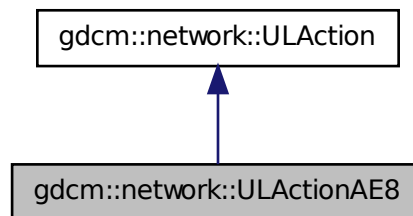
The documentation for this class was generated from the following file:

- [gdcmmULActionAE.h](#)

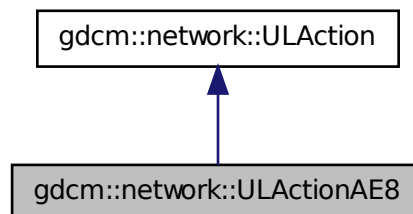
25.293 gdcmm::network::ULActionAE8 Class Reference

```
#include <gdcmmULActionAE.h>
```

Inheritance diagram for gdcmm::network::ULActionAE8:



Collaboration diagram for gdcmm::network::ULActionAE8:



Public Member Functions

- [EStateID PerformAction](#) ([Subject](#) *s, [ULError](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.293.1 Member Function Documentation

25.293.1.1 [EStateID gdcmm::network::ULActionAE8::PerformAction](#) ([Subject](#) * s, [ULError](#) & *inEvent*, [ULConnection](#) & *inConnection*, bool & *outWaitingForEvent*, [EEventID](#) & *outRaisedEvent*) [virtual]

Implements [gdcmm::network::ULAction](#).

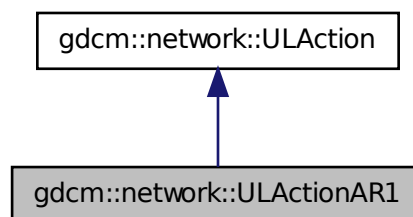
The documentation for this class was generated from the following file:

- [gdcmmULActionAE.h](#)

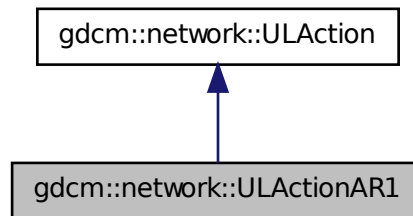
25.294 gdcmm::network::ULActionAR1 Class Reference

```
#include <gdcmmULActionAR.h>
```

Inheritance diagram for gdcmm::network::ULActionAR1:



Collaboration diagram for gdcm::network::ULActionAR1:



Public Member Functions

- [EStateID PerformAction](#) ([Subject](#) *s, [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.294.1 Member Function Documentation

25.294.1.1 **EStateID** `gdcm::network::ULActionAR1::PerformAction (Subject * s, ULEvent & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent)` [virtual]

Implements [gdcm::network::ULAction](#).

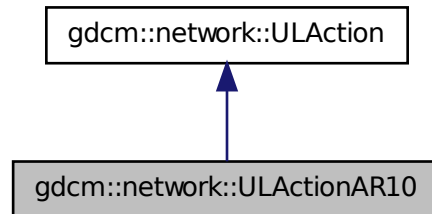
The documentation for this class was generated from the following file:

- [gdcmULActionAR.h](#)

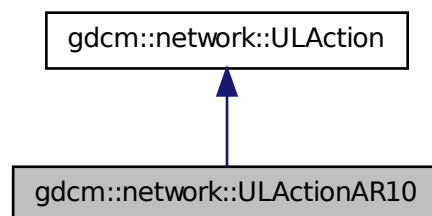
25.295 gdcm::network::ULActionAR10 Class Reference

```
#include <gdcmULActionAR.h>
```

Inheritance diagram for `gdcn::network::ULActionAR10`:



Collaboration diagram for `gdcn::network::ULActionAR10`:



Public Member Functions

- [EStateID PerformAction](#) ([Subject](#) *s, [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.295.1 Member Function Documentation

25.295.1.1 **EStateID** `gdcn::network::ULActionAR10::PerformAction` ([Subject](#) *s, [ULEvent](#) & *inEvent*, [ULConnection](#) & *inConnection*, bool & *outWaitingForEvent*, [EEventID](#) & *outRaisedEvent*) `[virtual]`

Implements [gdcn::network::ULAction](#).

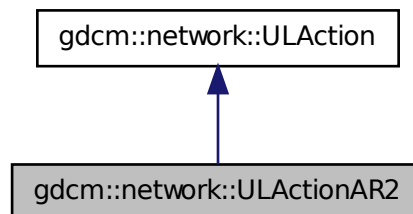
The documentation for this class was generated from the following file:

- [gdcnULActionAR.h](#)

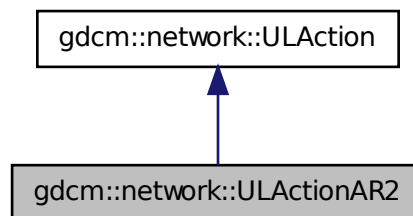
25.296 gdcm::network::ULActionAR2 Class Reference

```
#include <gdcmULActionAR.h>
```

Inheritance diagram for gdcm::network::ULActionAR2:



Collaboration diagram for gdcm::network::ULActionAR2:



Public Member Functions

- [EStateID PerformAction](#) ([Subject](#) *s, [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.296.1 Member Function Documentation

25.296.1.1 [EStateID](#) `gdcm::network::ULActionAR2::PerformAction` ([Subject](#) * s, [ULEvent](#) & *inEvent*, [ULConnection](#) & *inConnection*, bool & *outWaitingForEvent*, [EEventID](#) & *outRaisedEvent*) `[virtual]`

Implements [gdcm::network::ULAction](#).

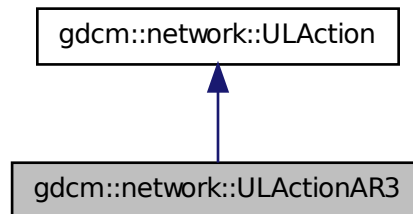
The documentation for this class was generated from the following file:

- [gdcmlActionAR.h](#)

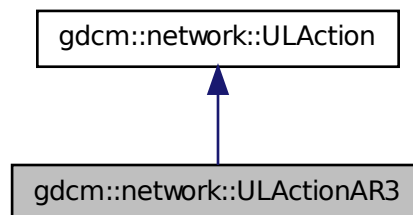
25.297 gdcml::network::ULActionAR3 Class Reference

```
#include <gdcmlActionAR.h>
```

Inheritance diagram for gdcml::network::ULActionAR3:



Collaboration diagram for gdcml::network::ULActionAR3:



Public Member Functions

- [EStateID](#) [PerformAction](#) ([Subject](#) *s, [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.297.1 Member Function Documentation

25.297.1.1 `EStateID` `gdcm::network::ULActionAR3::PerformAction (Subject * s, ULEvent & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent)` [virtual]

Implements [gdcm::network::ULAction](#).

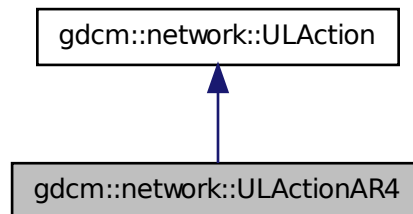
The documentation for this class was generated from the following file:

- [gdcmULActionAR.h](#)

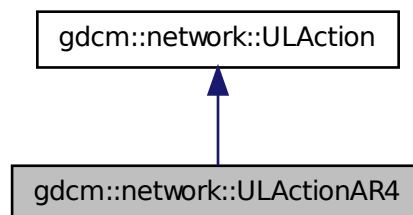
25.298 gdcm::network::ULActionAR4 Class Reference

```
#include <gdcmULActionAR.h>
```

Inheritance diagram for `gdcm::network::ULActionAR4`:



Collaboration diagram for `gdcm::network::ULActionAR4`:



Public Member Functions

- [EStateID](#) [PerformAction](#) ([Subject](#) *s, [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.298.1 Member Function Documentation

25.298.1.1 **EStateID** `gdcmm::network::ULActionAR4::PerformAction (Subject * s, ULEvent & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent)` [virtual]

Implements [gdcmm::network::ULAction](#).

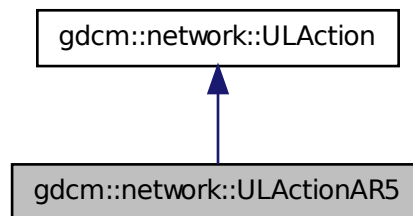
The documentation for this class was generated from the following file:

- [gdcmmULActionAR.h](#)

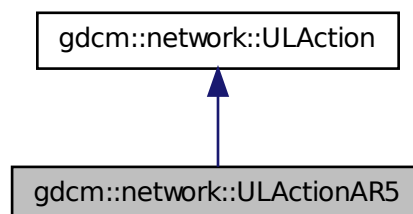
25.299 gdcmm::network::ULActionAR5 Class Reference

```
#include <gdcmmULActionAR.h>
```

Inheritance diagram for `gdcmm::network::ULActionAR5`:



Collaboration diagram for `gdcmm::network::ULActionAR5`:



Public Member Functions

- [EStateID PerformAction](#) ([Subject](#) *s, [ULError](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.299.1 Member Function Documentation

25.299.1.1 [EStateID](#) `gdcm::network::ULActionAR5::PerformAction (Subject * s, ULError & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent)` [virtual]

Implements [gdcm::network::ULAction](#).

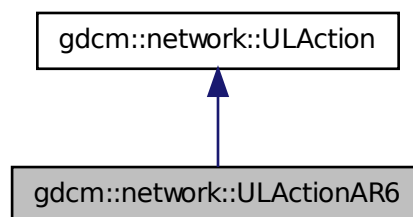
The documentation for this class was generated from the following file:

- [gdcmULActionAR.h](#)

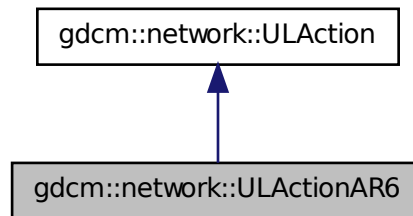
25.300 gdcm::network::ULActionAR6 Class Reference

```
#include <gdcmULActionAR.h>
```

Inheritance diagram for `gdcm::network::ULActionAR6`:



Collaboration diagram for `gdcm::network::ULActionAR6`:



Public Member Functions

- [EStateID PerformAction](#) ([Subject](#) *s, [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.300.1 Member Function Documentation

25.300.1.1 **EStateID** `gdcm::network::ULActionAR6::PerformAction (Subject * s, ULEvent & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent)` [virtual]

Implements [gdcm::network::ULAction](#).

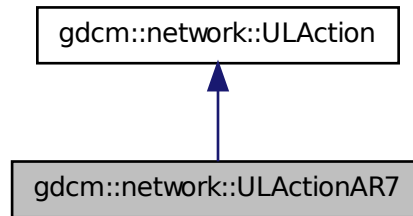
The documentation for this class was generated from the following file:

- [gdcmULActionAR.h](#)

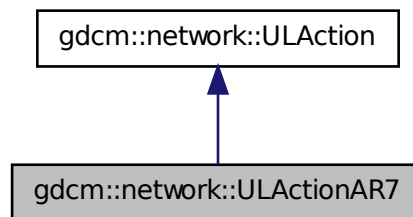
25.301 gdcm::network::ULActionAR7 Class Reference

```
#include <gdcmULActionAR.h>
```

Inheritance diagram for gdcn::network::ULActionAR7:



Collaboration diagram for gdcn::network::ULActionAR7:



Public Member Functions

- [EStateID PerformAction](#) ([Subject](#) *s, [UEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.301.1 Member Function Documentation

25.301.1.1 **EStateID** gdcn::network::ULActionAR7::PerformAction ([Subject](#) * s, [UEvent](#) & *inEvent*, [ULConnection](#) & *inConnection*, bool & *outWaitingForEvent*, [EEventID](#) & *outRaisedEvent*) [virtual]

Implements [gdcn::network::ULAction](#).

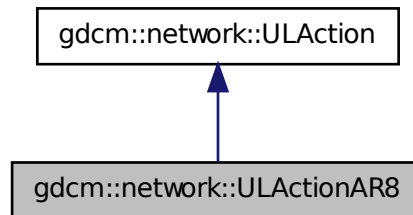
The documentation for this class was generated from the following file:

- [gdcnULActionAR.h](#)

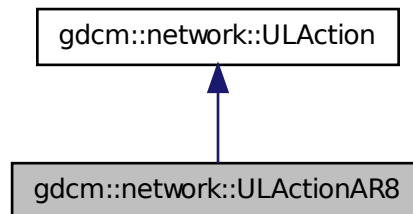
25.302 gdcmm::network::ULActionAR8 Class Reference

```
#include <gdcmmULActionAR.h>
```

Inheritance diagram for gdcmm::network::ULActionAR8:



Collaboration diagram for gdcmm::network::ULActionAR8:



Public Member Functions

- [EStateID PerformAction](#) ([Subject](#) *s, [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.302.1 Member Function Documentation

25.302.1.1 **EStateID** gdcmm::network::ULActionAR8::PerformAction (**Subject** * s, **ULEvent** & *inEvent*, **ULConnection** & *inConnection*, bool & *outWaitingForEvent*, **EEventID** & *outRaisedEvent*) [virtual]

Implements [gdcmm::network::ULAction](#).

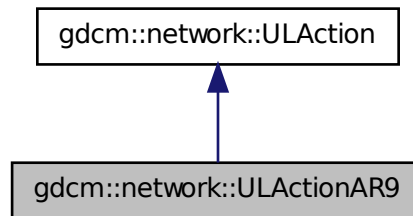
The documentation for this class was generated from the following file:

- [gdcmULActionAR.h](#)

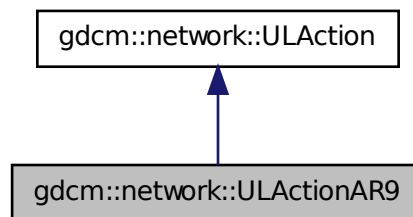
25.303 gdcm::network::ULActionAR9 Class Reference

```
#include <gdcmULActionAR.h>
```

Inheritance diagram for gdcm::network::ULActionAR9:



Collaboration diagram for gdcm::network::ULActionAR9:



Public Member Functions

- [EStateID PerformAction](#) ([Subject](#) *s, [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.303.1 Member Function Documentation

25.303.1.1 **EStateID** `gdcm::network::ULActionAR9::PerformAction (Subject * s, ULEvent & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent) [virtual]`

Implements [gdcm::network::ULAction](#).

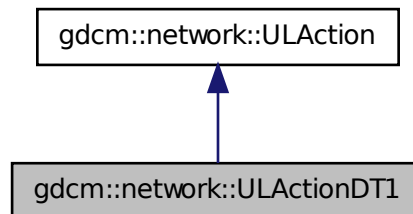
The documentation for this class was generated from the following file:

- [gdcmULActionAR.h](#)

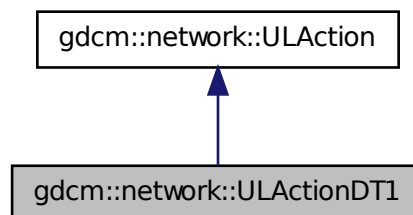
25.304 `gdcm::network::ULActionDT1` Class Reference

```
#include <gdcmULActionDT.h>
```

Inheritance diagram for `gdcm::network::ULActionDT1`:



Collaboration diagram for `gdcm::network::ULActionDT1`:



Public Member Functions

- [EStateID](#) [PerformAction](#) ([Subject](#) *s, [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.304.1 Member Function Documentation

25.304.1.1 `EStateID gdcm::network::ULActionDT1::PerformAction (Subject * s, ULEvent & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent) [virtual]`

Implements [gdcm::network::ULAction](#).

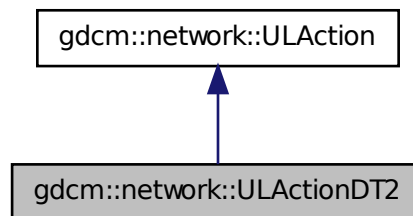
The documentation for this class was generated from the following file:

- [gdcmULActionDT.h](#)

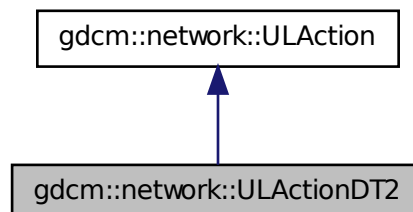
25.305 gdcm::network::ULActionDT2 Class Reference

```
#include <gdcmULActionDT.h>
```

Inheritance diagram for `gdcm::network::ULActionDT2`:



Collaboration diagram for `gdcm::network::ULActionDT2`:



Public Member Functions

- [EStateID PerformAction](#) ([Subject](#) *s, [ULError](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [EEventID](#) &outRaisedEvent)

25.305.1 Member Function Documentation

25.305.1.1 [EStateID](#) `gdcm::network::ULActionDT2::PerformAction (Subject * s, ULError & inEvent, ULConnection & inConnection, bool & outWaitingForEvent, EEventID & outRaisedEvent)` `[virtual]`

Implements [gdcm::network::ULAction](#).

The documentation for this class was generated from the following file:

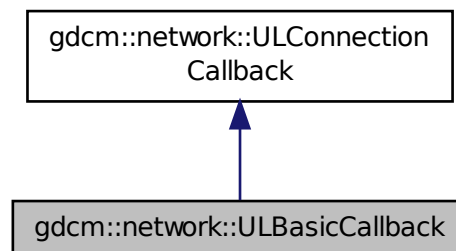
- [gdcmULActionDT.h](#)

25.306 gdcm::network::ULBasicCallback Class Reference

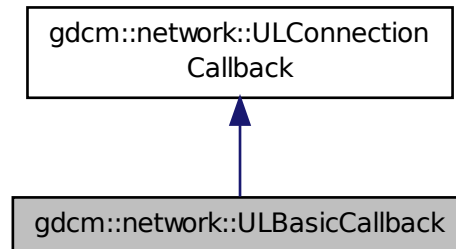
[ULBasicCallback](#) This is the most basic of callbacks for how the [ULConnectionManager](#) handles incoming datasets. DataSets are just concatenated to the mDataSets vector, and the result can be pulled out of the vector by later code. Alternatives to this method include progress updates, saving to disk, etc. This class is NOT THREAD SAFE. Access the dataset vector after the entire set of datasets has been returned by the [ULConnectionManager](#).

```
#include <gdcmULBasicCallback.h>
```

Inheritance diagram for `gdcm::network::ULBasicCallback`:



Collaboration diagram for gdcm::network::ULBasicCallback:



Public Member Functions

- [ULBasicCallback](#) ()
- virtual [~ULBasicCallback](#) ()
- `std::vector< DataSet > const & GetDataSets () const`
- `std::vector< DataSet > const & GetResponses () const`
- virtual void [HandleDataSet](#) (const [DataSet](#) &inDataSet)
- virtual void [HandleResponse](#) (const [DataSet](#) &inDataSet)

Additional Inherited Members

25.306.1 Detailed Description

[ULBasicCallback](#) This is the most basic of callbacks for how the [ULConnectionManager](#) handles incoming datasets. DataSets are just concatenated to the `mDataSets` vector, and the result can be pulled out of the vector by later code. Alternatives to this method include progress updates, saving to disk, etc. This class is NOT THREAD SAFE. Access the dataset vector after the entire set of datasets has been returned by the [ULConnectionManager](#).

25.306.2 Constructor & Destructor Documentation

25.306.2.1 `gdcm::network::ULBasicCallback::ULBasicCallback () [inline]`

25.306.2.2 `virtual gdcm::network::ULBasicCallback::~~ULBasicCallback () [inline],[virtual]`

25.306.3 Member Function Documentation

25.306.3.1 `std::vector<DataSet> const& gdcm::network::ULBasicCallback::GetDataSets () const`

25.306.3.2 `std::vector<DataSet> const& gdcm::network::ULBasicCallback::GetResponses () const`

25.306.3.3 virtual void `gdcm::network::ULBasicCallback::HandleDataSet (const DataSet & inDataSet)` [virtual]

Implements [gdcm::network::ULConnectionCallback](#).

25.306.3.4 virtual void `gdcm::network::ULBasicCallback::HandleResponse (const DataSet & inDataSet)` [virtual]

Implements [gdcm::network::ULConnectionCallback](#).

The documentation for this class was generated from the following file:

- [gdcmULBasicCallback.h](#)

25.307 gdcm::network::ULConnection Class Reference

[ULConnection](#) This is the class that contains the socket to another machine, and passes data through itself, as well as maintaining a sense of state.

```
#include <gdcmULConnection.h>
```

Public Member Functions

- [ULConnection](#) (const [ULConnectionInfo](#) &inUserInformation)
- virtual [~ULConnection](#) ()
- void [AddAcceptedPresentationContext](#) (const [PresentationContextAC](#) &inPC)
- [PresentationContextRQ FindContext](#) (const [DataElement](#) &de) const
- std::vector
< [PresentationContextAC](#) >
const & [GetAcceptedPresentationContexts](#) () const
- std::vector
< [PresentationContextAC](#) > & [GetAcceptedPresentationContexts](#) ()
- const [ULConnectionInfo](#) & [GetConnectionInfo](#) () const
- uint32_t [GetMaxPDUSize](#) () const
- const [PresentationContextAC](#) * [GetPresentationContextACByID](#) (uint8_t id) const
- uint8_t [GetPresentationContextIDFromPresentationContext](#) ([PresentationContextRQ](#) const &pc) const
return 0 upon error
- const [PresentationContextRQ](#) * [GetPresentationContextRQByID](#) (uint8_t id) const
- std::vector
< [PresentationContextRQ](#) >
const & [GetPresentationContexts](#) () const
- std::iostream * [GetProtocol](#) ()
- [EStateID](#) [GetState](#) () const
- [ARTIMTimer](#) & [GetTimer](#) ()
- bool [InitializeConnection](#) ()
used to establish scu connections
- bool [InitializeIncomingConnection](#) ()
used to establish scp connections
- void [SetMaxPDUSize](#) (uint32_t inSize)
- void [SetPresentationContexts](#) (const std::vector< [PresentationContextRQ](#) > &inContexts)
- void [SetPresentationContexts](#) (const std::vector< [PresentationContext](#) > &inContexts)
- void [SetState](#) (const [EStateID](#) &inState)
- void [StopProtocol](#) ()

25.307.1 Detailed Description

ULConnection This is the class that contains the socket to another machine, and passes data through itself, as well as maintaining a sense of state.

The **ULConnectionManager** tells the **ULConnection** what data can actually be sent.

This class is done this way so that it can be eventually be replaced with a **ULSecureConnection**, if such a protocol is warranted, so that all data that passes through can be managed through a secure connection. For now, this class provides a simple pass-through mechanism to the socket itself.

So, for instance, a **gdcm** object will be passes to this object, and it will then get passed along the connection, if that connection is in the proper state to do so.

For right now, this class is not directly intended to be inherited from, but the potential for future **ULSecureConnection** warrants the addition, rather than having everything be managed from within the **ULConnectionManager** (or this class) without a wrapper.

25.307.2 Constructor & Destructor Documentation

25.307.2.1 **gdcm::network::ULConnection::ULConnection (const **ULConnectionInfo** & *inUserInfo*)**

25.307.2.2 **virtual gdcm::network::ULConnection::~~ULConnection () [virtual]**

25.307.3 Member Function Documentation

25.307.3.1 **void gdcm::network::ULConnection::AddAcceptedPresentationContext (const **PresentationContextAC** & *inPC*)**

25.307.3.2 **PresentationContextRQ gdcm::network::ULConnection::FindContext (const **DataElement** & *de*) const**

25.307.3.3 **std::vector<**PresentationContextAC**> const& gdcm::network::ULConnection::GetAcceptedPresentationContexts () const**

25.307.3.4 **std::vector<**PresentationContextAC**>& gdcm::network::ULConnection::GetAcceptedPresentationContexts ()**

25.307.3.5 **const **ULConnectionInfo**& gdcm::network::ULConnection::GetConnectionInfo () const**

25.307.3.6 **uint32_t gdcm::network::ULConnection::GetMaxPDUSize () const**

25.307.3.7 **const **PresentationContextAC*** gdcm::network::ULConnection::GetPresentationContextACByID (uint8_t *id*) const**

25.307.3.8 **uint8_t gdcm::network::ULConnection::GetPresentationContextIDFromPresentationContext (**PresentationContextRQ** const & *pc*) const**

return 0 upon error

25.307.3.9 **const **PresentationContextRQ*** gdcm::network::ULConnection::GetPresentationContextRQByID (uint8_t *id*) const**

25.307.3.10 **std::vector<**PresentationContextRQ**> const& gdcm::network::ULConnection::GetPresentationContexts () const**

25.307.3.11 **std::iostream* gdcm::network::ULConnection::GetProtocol ()**

25.307.3.12 **EStateID gdcm::network::ULConnection::GetState () const**

25.307.3.13 **ARTIMTimer&** `gdcm::network::ULConnection::GetTimer ()`

25.307.3.14 **bool** `gdcm::network::ULConnection::InitializeConnection ()`

used to establish scu connections

25.307.3.15 **bool** `gdcm::network::ULConnection::InitializeIncomingConnection ()`

used to establish scp connections

25.307.3.16 **void** `gdcm::network::ULConnection::SetMaxPDUSize (uint32_t inSize)`

25.307.3.17 **void** `gdcm::network::ULConnection::SetPresentationContexts (const std::vector< PresentationContextRQ > & inContexts)`

25.307.3.18 **void** `gdcm::network::ULConnection::SetPresentationContexts (const std::vector< PresentationContext > & inContexts)`

25.307.3.19 **void** `gdcm::network::ULConnection::SetState (const EStateID & inState)`

25.307.3.20 **void** `gdcm::network::ULConnection::StopProtocol ()`

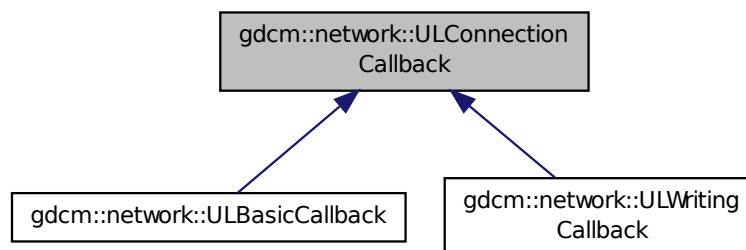
The documentation for this class was generated from the following file:

- [gdcmULConnection.h](#)

25.308 `gdcm::network::ULConnectionCallback` Class Reference

```
#include <gdcmULConnectionCallback.h>
```

Inheritance diagram for `gdcm::network::ULConnectionCallback`:



Public Member Functions

- [ULConnectionCallback](#) ()

- virtual [~ULConnectionCallback](#) ()
- bool [DataSetHandles](#) () const
- virtual void [HandleDataSet](#) (const [DataSet](#) &inDataSet)=0
- virtual void [HandleResponse](#) (const [DataSet](#) &inDataSet)=0
- void [ResetHandledDataSet](#) ()

Protected Member Functions

- void [DataSetHandled](#) ()

25.308.1 Detailed Description

When a dataset comes back from a query/move/etc, the result can either be stored entirely in memory, or could be stored on disk. This class provides a mechanism to indicate what the [ULConnectionManager](#) should do with datasets that are produced through query results. The [ULConnectionManager](#) will call the [HandleDataSet](#) function during the course of receiving datasets. Particular implementations should fill in what that function does, including updating progress, etc. NOTE: since cmove requires that multiple event loops be employed, the callback function MUST set [mHandledDataSet](#) to true. otherwise, the cmove event loop handler will not know data was received, and proceed to end the loop prematurely.

25.308.2 Constructor & Destructor Documentation

25.308.2.1 `gdcm::network::ULConnectionCallback::ULConnectionCallback ()` `[inline]`

25.308.2.2 `virtual gdcm::network::ULConnectionCallback::~~ULConnectionCallback ()` `[inline]`, `[virtual]`

25.308.3 Member Function Documentation

25.308.3.1 `void gdcm::network::ULConnectionCallback::DataSetHandled ()` `[inline]`, `[protected]`

25.308.3.2 `bool gdcm::network::ULConnectionCallback::DataSetHandles ()` `const` `[inline]`

25.308.3.3 `virtual void gdcm::network::ULConnectionCallback::HandleDataSet (const DataSet & inDataSet)` `[pure virtual]`

Implemented in [gdcm::network::ULBasicCallback](#), and [gdcm::network::ULWritingCallback](#).

25.308.3.4 `virtual void gdcm::network::ULConnectionCallback::HandleResponse (const DataSet & inDataSet)` `[pure virtual]`

Implemented in [gdcm::network::ULBasicCallback](#), and [gdcm::network::ULWritingCallback](#).

25.308.3.5 `void gdcm::network::ULConnectionCallback::ResetHandledDataSet ()` `[inline]`

The documentation for this class was generated from the following file:

- [gdcmULConnectionCallback.h](#)

25.309 gdcmm::network::ULConnectionInfo Class Reference

[ULConnectionInfo](#) this class contains all the information about a particular connection as established by the user. That is, it's: User Information Calling AE Title Called AE Title IP address/computer name IP Port A connection must be established with this information, that's subsequently placed into various primitives for actual communication.

```
#include <gdcmmULConnectionInfo.h>
```

Public Member Functions

- [ULConnectionInfo](#) ()
- const char * [GetCalledAETitle](#) () const
- std::string [GetCalledComputerName](#) () const
- unsigned long [GetCalledIPAddress](#) () const
- int [GetCalledIPPort](#) () const
- const char * [GetCallingAETitle](#) () const
- unsigned long [GetMaxPDULength](#) () const
- bool [Initialize](#) ([UserInfo](#) const &inUserInfo, const char *inCalledAETitle, const char *inCallingAETitle, unsigned long inCalledIPAddress, int inCalledIPPort, std::string inCalledComputerName)
- void [SetMaxPDULength](#) (unsigned long inMaxPDULength)

25.309.1 Detailed Description

[ULConnectionInfo](#) this class contains all the information about a particular connection as established by the user. That is, it's: User Information Calling AE Title Called AE Title IP address/computer name IP Port A connection must be established with this information, that's subsequently placed into various primitives for actual communication.

25.309.2 Constructor & Destructor Documentation

25.309.2.1 `gdcmm::network::ULConnectionInfo::ULConnectionInfo ()`

25.309.3 Member Function Documentation

25.309.3.1 `const char* gdcmm::network::ULConnectionInfo::GetCalledAETitle () const`

25.309.3.2 `std::string gdcmm::network::ULConnectionInfo::GetCalledComputerName () const`

25.309.3.3 `unsigned long gdcmm::network::ULConnectionInfo::GetCalledIPAddress () const`

25.309.3.4 `int gdcmm::network::ULConnectionInfo::GetCalledIPPort () const`

25.309.3.5 `const char* gdcmm::network::ULConnectionInfo::GetCallingAETitle () const`

25.309.3.6 `unsigned long gdcmm::network::ULConnectionInfo::GetMaxPDULength () const`

25.309.3.7 `bool gdcmm::network::ULConnectionInfo::Initialize (UserInfo const & inUserInfo, const char * inCalledAETitle, const char * inCallingAETitle, unsigned long inCalledIPAddress, int inCalledIPPort, std::string inCalledComputerName)`

25.309.3.8 void gdcm::network::ULConnectionInfo::SetMaxPDULength (unsigned long *inMaxPDULength*)

The documentation for this class was generated from the following file:

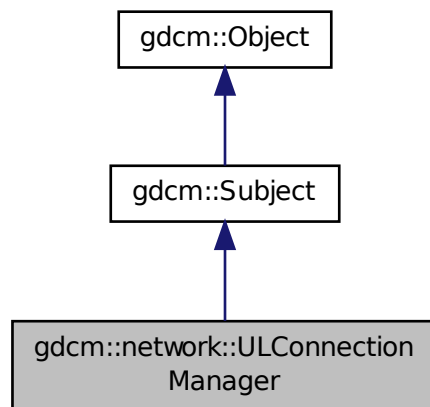
- [gdcmULConnectionInfo.h](#)

25.310 gdcm::network::ULConnectionManager Class Reference

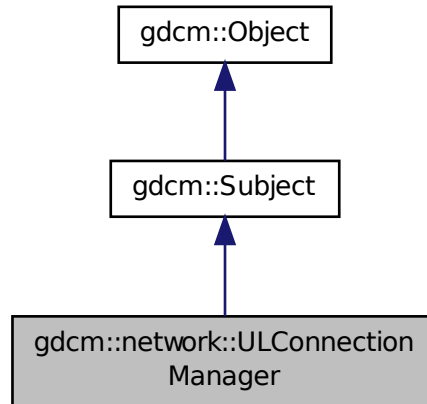
ULConnectionManager The **ULConnectionManager** performs actions on the **ULConnection** given inputs from the user and from the state of what's going on around the connection (ie, timeouts of the ARTIM timer, responses from the peer across the connection, etc).

```
#include <gdcmULConnectionManager.h>
```

Inheritance diagram for gdcm::network::ULConnectionManager:



Collaboration diagram for `gdcm::network::ULConnectionManager`:



Public Member Functions

- [ULConnectionManager](#) ()
- [~ULConnectionManager](#) ()
- bool [BreakConnection](#) (const double &inTimeout)
- void [BreakConnectionNow](#) ()
- bool [EstablishConnection](#) (const std::string &inAETitle, const std::string &inConnectAETitle, const std::string &inComputerName, long inIPAddress, uint16_t inConnectPort, double inTimeout, std::vector< [PresentationContext](#) > const &pcVector)
- bool [EstablishConnectionMove](#) (const std::string &inAETitle, const std::string &inConnectAETitle, const std::string &inComputerName, long inIPAddress, uint16_t inConnectPort, double inTimeout, uint16_t inReturnPort, std::vector< [PresentationContext](#) > const &pcVector)
- std::vector< [PresentationDataValue](#) > [SendEcho](#) ()
- std::vector< [DataSet](#) > [SendFind](#) (const [BaseRootQuery](#) *inRootQuery)
- void [SendFind](#) (const [BaseRootQuery](#) *inRootQuery, [ULConnectionCallback](#) *inCallback)
- std::vector< [DataSet](#) > [SendMove](#) (const [BaseRootQuery](#) *inRootQuery)
- bool [SendMove](#) (const [BaseRootQuery](#) *inRootQuery, [ULConnectionCallback](#) *inCallback)
return false upon error
- std::vector< [DataSet](#) > [SendStore](#) (const [File](#) &file)
- void [SendStore](#) (const [File](#) &file, [ULConnectionCallback](#) *inCallback)
callback based API

Additional Inherited Members

25.310.1 Detailed Description

[ULConnectionManager](#) The [ULConnectionManager](#) performs actions on the [ULConnection](#) given inputs from the user and from the state of what's going on around the connection (ie, timeouts of the ARTIM timer, responses from the peer across the connection, etc).

Its inputs are ULEvents, and it performs ULActions.

25.310.2 Constructor & Destructor Documentation

25.310.2.1 `gdcmm::network::ULConnectionManager::ULConnectionManager ()`

25.310.2.2 `gdcmm::network::ULConnectionManager::~~ULConnectionManager ()`

25.310.3 Member Function Documentation

25.310.3.1 `bool gdcmm::network::ULConnectionManager::BreakConnection (const double & inTimeout)`

25.310.3.2 `void gdcmm::network::ULConnectionManager::BreakConnectionNow ()`

25.310.3.3 `bool gdcmm::network::ULConnectionManager::EstablishConnection (const std::string & inAETitle, const std::string & inConnectAETitle, const std::string & inComputerName, long inIPAddress, uint16_t inConnectPort, double inTimeout, std::vector< PresentationContext > const & pcVector)`

returns true if a connection of the given AETitle (ie, 'this' program) is able to connect to the given AETitle and Port in a certain amount of time providing the connection type will establish the proper exchange syntax with a server; if a different functionality is required, a different connection should be established. returns false if the connection type is 'move'— have to give a return port for move to work as specified.

25.310.3.4 `bool gdcmm::network::ULConnectionManager::EstablishConnectionMove (const std::string & inAETitle, const std::string & inConnectAETitle, const std::string & inComputerName, long inIPAddress, uint16_t inConnectPort, double inTimeout, uint16_t inReturnPort, std::vector< PresentationContext > const & pcVector)`

returns true for above reasons, but contains the special 'move' port

25.310.3.5 `std::vector<PresentationDataValue> gdcmm::network::ULConnectionManager::SendEcho ()`

25.310.3.6 `std::vector<DataSet> gdcmm::network::ULConnectionManager::SendFind (const BaseRootQuery * inRootQuery)`

25.310.3.7 `void gdcmm::network::ULConnectionManager::SendFind (const BaseRootQuery * inRootQuery, ULConnectionCallback * inCallback)`

25.310.3.8 `std::vector<DataSet> gdcmm::network::ULConnectionManager::SendMove (const BaseRootQuery * inRootQuery)`

25.310.3.9 `bool gdcmm::network::ULConnectionManager::SendMove (const BaseRootQuery * inRootQuery, ULConnectionCallback * inCallback)`

return false upon error

25.310.3.10 `std::vector<DataSet> gdcmm::network::ULConnectionManager::SendStore (const File & file)`

25.310.3.11 void gdcm::network::ULConnectionManager::SendStore (const File & file, ULConnectionCallback * inCallback)

callback based API

The documentation for this class was generated from the following file:

- [gdcmULConnectionManager.h](#)

25.311 gdcm::network::ULEvent Class Reference

[ULEvent](#) base class for network events.

```
#include <gdcmULEvent.h>
```

Public Member Functions

- [ULEvent](#) (const [EEventID](#) &inEventID, std::vector< [BasePDU](#) * > const &inBasePDU)
- [ULEvent](#) (const [EEventID](#) &inEventID, [BasePDU](#) *inBasePDU)
- [~ULEvent](#) ()
- [EEventID](#) [GetEvent](#) () const
- std::vector< [BasePDU](#) * > const & [GetPDUs](#) () const
- void [SetEvent](#) (const [EEventID](#) &inEvent)
- void [SetPDU](#) (std::vector< [BasePDU](#) * > const &inPDU)

25.311.1 Detailed Description

[ULEvent](#) base class for network events.

An event consists of the event ID and the data associated with that event.

Note that once a PDU is created, it is now the responsibility of the associated event to destroy it!

25.311.2 Constructor & Destructor Documentation

25.311.2.1 gdcm::network::ULEvent::ULEvent (const [EEventID](#) & inEventID, std::vector< [BasePDU](#) * > const & inBasePDU)
[inline]

25.311.2.2 gdcm::network::ULEvent::ULEvent (const [EEventID](#) & inEventID, [BasePDU](#) * inBasePDU) [inline]

25.311.2.3 gdcm::network::ULEvent::~~ULEvent () [inline]

25.311.3 Member Function Documentation

25.311.3.1 [EEventID](#) gdcm::network::ULEvent::GetEvent () const [inline]

25.311.3.2 std::vector<[BasePDU](#)*> const& gdcm::network::ULEvent::GetPDUs () const [inline]

25.311.3.3 void gdcm::network::ULEvent::SetEvent (const [EEventID](#) & inEvent) [inline]

25.311.3.4 void gdcm::network::ULEvent::SetPDU (std::vector< BasePDU * > const & *inPDU*) [inline]

The documentation for this class was generated from the following file:

- [gdcmULEvent.h](#)

25.312 gdcm::network::ULTransitionTable Class Reference

[ULTransitionTable](#) The transition table of all the ULEvents, new ULActions, and ULStates.

```
#include <gdcmULTransitionTable.h>
```

Public Member Functions

- [ULTransitionTable](#) ()
- void [HandleEvent](#) (Subject *s, [ULEvent](#) &inEvent, [ULConnection](#) &inConnection, bool &outWaitingForEvent, [E-EventID](#) &outRaisedEvent) const
- void [PrintTable](#) () const

25.312.1 Detailed Description

[ULTransitionTable](#) The transition table of all the ULEvents, new ULActions, and ULStates.

Based roughly on the solutions in player2.cpp in the boost examples and this so question: <http://stackoverflow.com/questions/1647631/c-state-machine-design>

The transition table is constructed of TableRows. Each row is based on an event, and an event handler in the Transition-Table object takes a given event, and then finds the given row.

Then, given the current state of the connection, determines the appropriate action to take and then the state to transition to next.

25.312.2 Constructor & Destructor Documentation

25.312.2.1 gdcm::network::ULTransitionTable::ULTransitionTable ()

25.312.3 Member Function Documentation

25.312.3.1 void gdcm::network::ULTransitionTable::HandleEvent (Subject * s, [ULEvent](#) & *inEvent*, [ULConnection](#) & *inConnection*, bool & *outWaitingForEvent*, [EEventID](#) & *outRaisedEvent*) const

25.312.3.2 void gdcm::network::ULTransitionTable::PrintTable () const

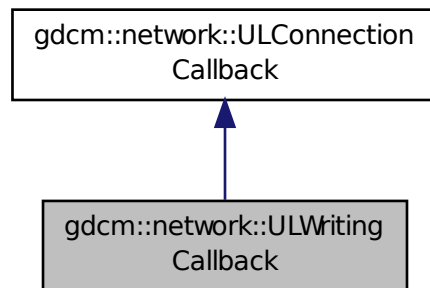
The documentation for this class was generated from the following file:

- [gdcmULTransitionTable.h](#)

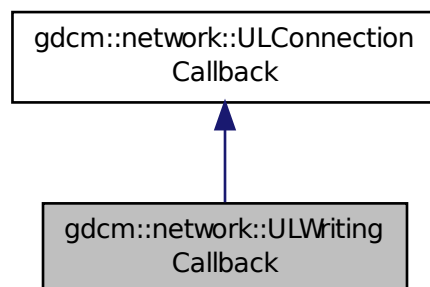
25.313 gdcm::network::ULWritingCallback Class Reference

```
#include <gdcmULWritingCallback.h>
```

Inheritance diagram for `gdcm::network::ULWritingCallback`:



Collaboration diagram for `gdcm::network::ULWritingCallback`:



Public Member Functions

- [ULWritingCallback](#) ()
- virtual [~ULWritingCallback](#) ()
- virtual void [HandleDataSet](#) (const [DataSet](#) &inDataSet)
- virtual void [HandleResponse](#) (const [DataSet](#) &inDataSet)
- void [SetDirectory](#) (const std::string &inDirectoryName)
provide the directory into which all files are written.

Additional Inherited Members

25.313.1 Constructor & Destructor Documentation

25.313.1.1 `gdcm::network::ULWritingCallback::ULWritingCallback ()` `[inline]`

25.313.1.2 `virtual gdcm::network::ULWritingCallback::~~ULWritingCallback ()` `[inline],[virtual]`

25.313.2 Member Function Documentation

25.313.2.1 `virtual void gdcm::network::ULWritingCallback::HandleDataSet (const DataSet & inDataSet)` `[virtual]`

Implements [gdcm::network::ULConnectionCallback](#).

25.313.2.2 `virtual void gdcm::network::ULWritingCallback::HandleResponse (const DataSet & inDataSet)` `[virtual]`

Implements [gdcm::network::ULConnectionCallback](#).

25.313.2.3 `void gdcm::network::ULWritingCallback::SetDirectory (const std::string & inDirectoryName)` `[inline]`

provide the directory into which all files are written.

The documentation for this class was generated from the following file:

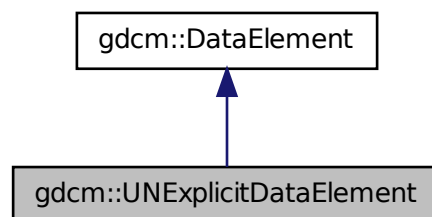
- [gdcmULWritingCallback.h](#)

25.314 gdcm::UNExplicitDataElement Class Reference

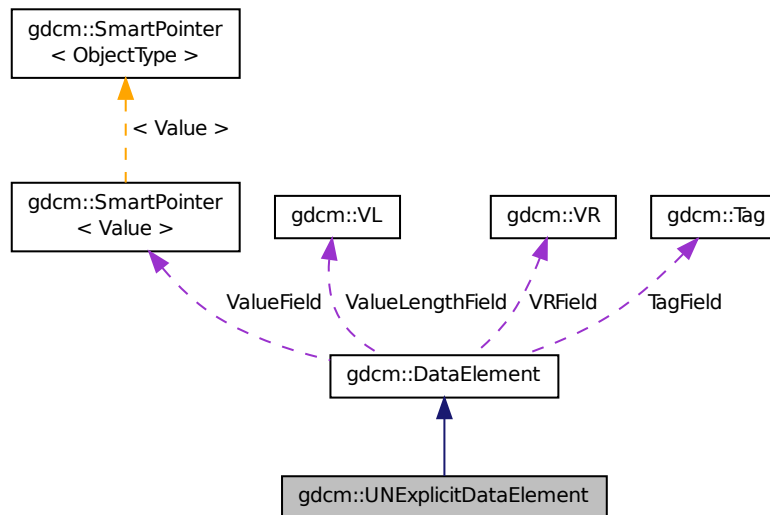
Class to read/write a [DataElement](#) as UNExplicit Data [Element](#).

```
#include <gdcmUNExplicitDataElement.h>
```

Inheritance diagram for `gdcm::UNExplicitDataElement`:



Collaboration diagram for `gdcm::UNExplicitDataElement`:



Public Member Functions

- [VL GetLength](#) () const
- template<typename TSwap >
std::istream & [Read](#) (std::istream &is)
- template<typename TSwap >
std::istream & [ReadPreValue](#) (std::istream &is)
- template<typename TSwap >
std::istream & [ReadValue](#) (std::istream &is)
- template<typename TSwap >
std::istream & [ReadWithLength](#) (std::istream &is, [VL](#) &length)

Additional Inherited Members

25.314.1 Detailed Description

Class to read/write a [DataElement](#) as UNExplicit Data [Element](#).

Note

bla

25.314.2 Member Function Documentation

25.314.2.1 VL `gdcm::UNExplicitDataElement::GetLength` () const

25.314.2.2 `template<typename TSwap > std::istream& gdcm::UNExplicitDataElement::Read (std::istream & is)`

25.314.2.3 `template<typename TSwap > std::istream& gdcm::UNExplicitDataElement::ReadPreValue (std::istream & is)`

25.314.2.4 `template<typename TSwap > std::istream& gdcm::UNExplicitDataElement::ReadValue (std::istream & is)`

25.314.2.5 `template<typename TSwap > std::istream& gdcm::UNExplicitDataElement::ReadWithLength (std::istream & is, VL & length)`

The documentation for this class was generated from the following file:

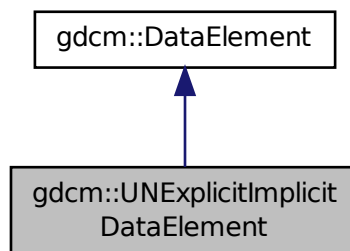
- [gdcmUNExplicitDataElement.h](#)

25.315 gdcm::UNExplicitImplicitDataElement Class Reference

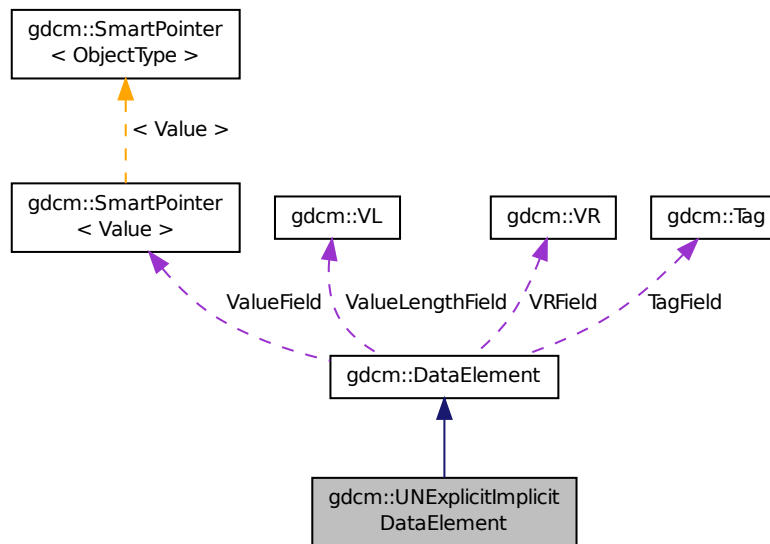
Class to read/write a [DataElement](#) as ExplicitImplicit Data [Element](#) This class gather two known bugs:

```
#include <gdcmUNExplicitImplicitDataElement.h>
```

Inheritance diagram for `gdcm::UNExplicitImplicitDataElement`:



Collaboration diagram for `gdcm::UNExplicitImplicitDataElement`:



Public Member Functions

- [VL GetLength](#) () const
- template<typename TSwap >
std::istream & [Read](#) (std::istream &is)
- template<typename TSwap >
std::istream & [ReadPreValue](#) (std::istream &is)
- template<typename TSwap >
std::istream & [ReadValue](#) (std::istream &is)

Additional Inherited Members

25.315.1 Detailed Description

Class to read/write a [DataElement](#) as ExplicitImplicit Data [Element](#) This class gather two known bugs:

1. GDCM 1.2.0 would rewrite [VR](#)=UN [Value](#) Length on 2 bytes instead of 4 bytes
2. GDCM 1.2.0 would also rewrite [DataElement](#) as Implicit when the [VR](#) would not be known this would only happen in some very rare cases. gdcm 2.X design could handle bug #1 or #2 exclusively, this class can now handle file which have both issues. See: `gdcmData/TherapysGDCM120Bug.dcm`

25.315.2 Member Function Documentation

25.315.2.1 VL `gdcm::UNExplicitImplicitDataElement::GetLength` () const

25.315.2.2 `template<typename TSwap > std::istream& gdcm::UNExplicitImplicitDataElement::Read (std::istream & is)`

25.315.2.3 `template<typename TSwap > std::istream& gdcm::UNExplicitImplicitDataElement::ReadPreValue (std::istream & is)`

25.315.2.4 `template<typename TSwap > std::istream& gdcm::UNExplicitImplicitDataElement::ReadValue (std::istream & is)`

The documentation for this class was generated from the following file:

- [gdcmUNExplicitImplicitDataElement.h](#)

25.316 gdcm::Unpacker12Bits Class Reference

Pack/Unpack 12 bits pixel into 16bits.

```
#include <gdcmUnpacker12Bits.h>
```

Static Public Member Functions

- static bool [Pack](#) (char *out, const char *in, size_t n)
- static bool [Unpack](#) (char *out, const char *in, size_t n)

25.316.1 Detailed Description

Pack/Unpack 12 bits pixel into 16bits.

- You can only pack an even number of 16bits, which means a multiple of 4 (expressed in bytes)
- You can only unpack a multiple of 3 bytes

This class has no purpose in general purpose DICOM implementation. However to be able to cope with some early ACR-NEMA file generated by a well-known private vendor, one would need to unpack 12bits Stored Pixel [Value](#) into a more standard 16bits Stored Pixel [Value](#).

See Also

[Rescaler](#)

25.316.2 Member Function Documentation

25.316.2.1 `static bool gdcm::Unpacker12Bits::Pack (char * out, const char * in, size_t n) [static]`

Pack an array of 16bits where all values are 12bits into a pack form. n is the length in bytes of array in, out will be a fake 8bits array of size $(n / 2) * 3$

25.316.2.2 `static bool gdcm::Unpacker12Bits::Unpack (char * out, const char * in, size_t n) [static]`

Unpack an array of 'packed' 12bits data into a more conventional 16bits array. n is the length in bytes of array in, out will be a 16bits array of size $(n / 3) * 2$

The documentation for this class was generated from the following file:

- [gdcmUnpacker12Bits.h](#)

25.317 gdcmm::Usage Class Reference

[Usage.](#)

```
#include <gdcmmUsage.h>
```

Public Types

- enum [UsageType](#) {
[Mandatory](#),
[Conditional](#),
[UserOption](#),
[Invalid](#) }

Public Member Functions

- [Usage](#) ([UsageType](#) type=[Invalid](#))
- [operator UsageType](#) () const

Static Public Member Functions

- static const char * [GetUsageString](#) ([UsageType](#) type)
- static [UsageType](#) [GetUsageType](#) (const char *type)

Friends

- std::ostream & [operator<<](#) (std::ostream &os, const [Usage](#) &vr)

25.317.1 Detailed Description

[Usage.](#)

Note

A.1.3 [IOD Module Table](#) and Functional Group [Macro Table](#) This Section of each [IOD](#) defines in a tabular form the [Modules](#) comprising the [IOD](#). The following information must be specified for each [Module](#) in the table:

- The name of the [Module](#) or Functional Group
 - A reference to the Section in Annex C which defines the [Module](#) or Functional Group
 - The usage of the [Module](#) or Functional Group; whether it is:
 - Mandatory (see A.1.3.1) , abbreviated M
 - Conditional (see A.1.3.2) , abbreviated C
 - User Option (see A.1.3.3) , abbreviated U
- The [Modules](#) referenced are defined in Annex C. A.1.3.1 MANDATORY MODULES For each [IOD](#), Mandatory [Modules](#) shall be supported per the definitions, semantics and requirements defined in Annex C.

A.1.3.2 CONDITIONAL MODULES Conditional [Modules](#) are Mandatory [Modules](#) if specific conditions are met. If the specified conditions are not met, this [Module](#) shall not be supported; that is, no information defined in that [Module](#) shall be sent. A.1.3.3 USER OPTION MODULES User Option [Modules](#) may or may not be supported. If an optional [Module](#) is supported, the [Attribute](#) Types specified in the [Modules](#) in Annex C shall be supported.

25.317.2 Member Enumeration Documentation

25.317.2.1 enum gdcm::Usage::UsageType

Enumerator

Mandatory

Conditional

UserOption

Invalid

25.317.3 Constructor & Destructor Documentation

25.317.3.1 gdcm::Usage::Usage (UsageType type = Invalid) [inline]

25.317.4 Member Function Documentation

25.317.4.1 static const char* gdcm::Usage::GetUsageString (UsageType type) [static]

Referenced by gdcm::operator<<().

25.317.4.2 static UsageType gdcm::Usage::GetUsageType (const char * type) [static]

25.317.4.3 gdcm::Usage::operator UsageType () const [inline]

25.317.5 Friends And Related Function Documentation

25.317.5.1 std::ostream& operator<< (std::ostream & os, const Usage & vr) [friend]

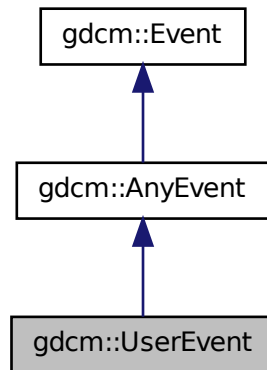
The documentation for this class was generated from the following file:

- [gdcmUsage.h](#)

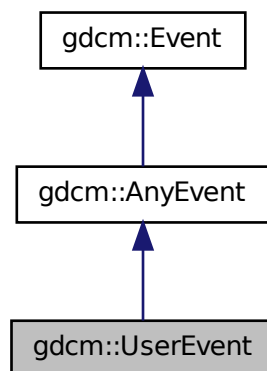
25.318 gdcm::UserEvent Class Reference

```
#include <gdcmEvent.h>
```

Inheritance diagram for `gdcm::UserEvent`:



Collaboration diagram for `gdcm::UserEvent`:



Additional Inherited Members

The documentation for this class was generated from the following file:

- [gdcmEvent.h](#)

25.319 gdcm::network::UserInformation Class Reference

[UserInformation Table](#) 9-16 USER INFORMATION ITEM FIELDS.

```
#include <gdcmUserInformation.h>
```

Public Member Functions

- [UserInformation](#) ()
- [~UserInformation](#) ()
- const [MaximumLengthSub](#) & [GetMaximumLengthSub](#) () const
- [MaximumLengthSub](#) & [GetMaximumLengthSub](#) ()
- [UserInformation](#) & [operator=](#) (const [UserInformation](#) &)
- void [Print](#) (std::ostream &os) const
- std::istream & [Read](#) (std::istream &is)
- size_t [Size](#) () const
- const std::ostream & [Write](#) (std::ostream &os) const

25.319.1 Detailed Description

[UserInformation Table](#) 9-16 USER INFORMATION ITEM FIELDS.

TODO what is the goal of :

[Table](#) 9-20 USER INFORMATION ITEM FIELDS

25.319.2 Constructor & Destructor Documentation

25.319.2.1 `gdcm::network::UserInformation::UserInformation ()`

25.319.2.2 `gdcm::network::UserInformation::~~UserInformation ()`

25.319.3 Member Function Documentation

25.319.3.1 `const MaximumLengthSub& gdcm::network::UserInformation::GetMaximumLengthSub () const` `[inline]`

25.319.3.2 `MaximumLengthSub& gdcm::network::UserInformation::GetMaximumLengthSub ()` `[inline]`

25.319.3.3 `UserInformation& gdcm::network::UserInformation::operator= (const UserInformation &)`

25.319.3.4 `void gdcm::network::UserInformation::Print (std::ostream & os) const`

25.319.3.5 `std::istream& gdcm::network::UserInformation::Read (std::istream & is)`

25.319.3.6 `size_t gdcm::network::UserInformation::Size () const`

25.319.3.7 `const std::ostream& gdcm::network::UserInformation::Write (std::ostream & os) const`

The documentation for this class was generated from the following file:

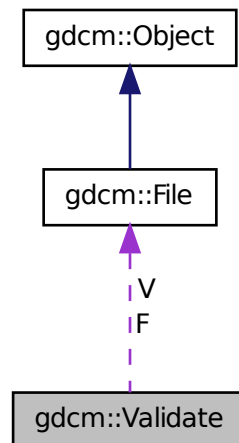
- [gdcmUserInformation.h](#)

25.320 gdcmm::Validate Class Reference

[Validate](#) class.

```
#include <gdcmmValidate.h>
```

Collaboration diagram for gdcmm::Validate:



Public Member Functions

- [Validate](#) ()
- [~Validate](#) ()
- const [File](#) & [GetValidatedFile](#) ()
- void [SetFile](#) ([File](#) const &f)
- void [Validation](#) ()

Protected Attributes

- const [File](#) * [F](#)
- [File](#) [V](#)

25.320.1 Detailed Description

[Validate](#) class.

25.320.2 Constructor & Destructor Documentation

25.320.2.1 gdcmm::Validate::Validate ()

25.320.2.2 gdcmm::Validate::~~Validate ()

25.320.3 Member Function Documentation

25.320.3.1 const File& gdcmm::Validate::GetValidatedFile () [inline]

25.320.3.2 void gdcmm::Validate::SetFile (File const & f) [inline]

25.320.3.3 void gdcmm::Validate::Validation ()

25.320.4 Member Data Documentation

25.320.4.1 const File* gdcmm::Validate::F [protected]

25.320.4.2 File gdcmm::Validate::V [protected]

The documentation for this class was generated from the following file:

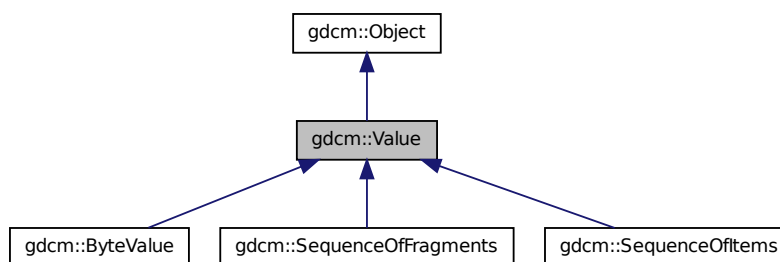
- [gdcmmValidate.h](#)

25.321 gdcmm::Value Class Reference

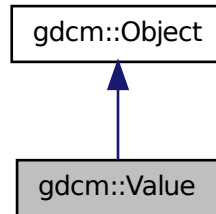
Class to represent the value of a Data [Element](#).

```
#include <gdcmmValue.h>
```

Inheritance diagram for gdcmm::Value:



Collaboration diagram for `gdcm::Value`:



Public Member Functions

- [Value](#) ()
- [~Value](#) ()
- virtual void [Clear](#) ()=0
- virtual [VL GetLength](#) () const =0
- virtual bool [operator==](#) (const [Value](#) &val) const =0
- virtual void [SetLength](#) ([VL](#) l)=0

Additional Inherited Members

25.321.1 Detailed Description

Class to represent the value of a Data [Element](#).

Note

VALUE: A component of a [Value](#) Field. A [Value](#) Field may consist of one or more of these components.

25.321.2 Constructor & Destructor Documentation

25.321.2.1 `gdcm::Value::Value ()` [`inline`]

25.321.2.2 `gdcm::Value::~~Value ()` [`inline`]

25.321.3 Member Function Documentation

25.321.3.1 `virtual void gdcm::Value::Clear ()` [`pure virtual`]

Implemented in [gdcm::ByteValue](#), [gdcm::SequenceOfItems](#), and [gdcm::SequenceOfFragments](#).

25.321.3.2 virtual VL gdcm::Value::GetLength () const [pure virtual]

Implemented in [gdcm::ByteValue](#), [gdcm::SequenceOfItems](#), and [gdcm::SequenceOfFragments](#).

Referenced by [gdcm::DataSet::InsertDataElement\(\)](#), and [gdcm::DataElement::SetValue\(\)](#).

25.321.3.3 virtual bool gdcm::Value::operator== (const Value & val) const [pure virtual]

Implemented in [gdcm::SequenceOfFragments](#), [gdcm::SequenceOfItems](#), and [gdcm::ByteValue](#).

25.321.3.4 virtual void gdcm::Value::SetLength (VL /) [pure virtual]

Implemented in [gdcm::ByteValue](#), [gdcm::SequenceOfItems](#), and [gdcm::SequenceOfFragments](#).

The documentation for this class was generated from the following file:

- [gdcmValue.h](#)

25.322 gdcm::ValueIO< TDE, TSwap, TType > Class Template Reference

Class to dispatch template calls.

```
#include <gdcmValueIO.h>
```

Static Public Member Functions

- static std::istream & [Read](#) (std::istream &is, [Value](#) &v)
- static const std::ostream & [Write](#) (std::ostream &os, const [Value](#) &v)

25.322.1 Detailed Description

```
template<typename TDE, typename TSwap, typename TType = uint8_t>class gdcm::ValueIO< TDE, TSwap, TType >
```

Class to dispatch template calls.

25.322.2 Member Function Documentation

25.322.2.1 template<typename TDE , typename TSwap , typename TType = uint8_t> static std::istream& gdcm::ValueIO< TDE, TSwap, TType >::Read (std::istream & is, [Value](#) & v) [static]

25.322.2.2 template<typename TDE , typename TSwap , typename TType = uint8_t> static const std::ostream& gdcm::ValueIO< TDE, TSwap, TType >::Write (std::ostream & os, const [Value](#) & v) [static]

The documentation for this class was generated from the following file:

- [gdcmValueIO.h](#)

25.323 gdcm::Version Class Reference

major/minor and build version

```
#include <gdcmVersion.h>
```

Public Member Functions

- [Version](#) ()
- [~Version](#) ()
- void [Print](#) (std::ostream &os=std::cout) const

Static Public Member Functions

- static int [GetBuildVersion](#) ()
- static int [GetMajorVersion](#) ()
- static int [GetMinorVersion](#) ()
- static const char * [GetVersion](#) ()

Friends

- std::ostream & [operator<<](#) (std::ostream &_os, const [Version](#) &v)

25.323.1 Detailed Description

major/minor and build version

25.323.2 Constructor & Destructor Documentation

25.323.2.1 `gdcm::Version::Version ()` [inline]

25.323.2.2 `gdcm::Version::~~Version ()` [inline]

25.323.3 Member Function Documentation

25.323.3.1 `static int gdcm::Version::GetBuildVersion ()` [static]

25.323.3.2 `static int gdcm::Version::GetMajorVersion ()` [static]

25.323.3.3 `static int gdcm::Version::GetMinorVersion ()` [static]

25.323.3.4 `static const char* gdcm::Version::GetVersion ()` [static]

25.323.3.5 `void gdcm::Version::Print (std::ostream & os = std::cout) const`

Referenced by `gdcm::operator<<()`.

25.323.4 Friends And Related Function Documentation

25.323.4.1 `std::ostream& operator<< (std::ostream &_os, const Version &v)` [[friend](#)]

The documentation for this class was generated from the following file:

- [gdcmVersion.h](#)

25.324 gdcm::VL Class Reference

[Value](#) Length.

```
#include <gdcmVL.h>
```

Public Types

- typedef uint32_t [Type](#)

Public Member Functions

- [VL](#) (uint32_t vl=0)
- [VL GetLength](#) () const
- bool [IsOdd](#) () const
Return whether or not the [VL](#) is odd or not.
- bool [IsUndefined](#) () const
- [operator uint32_t](#) () const
- [VL & operator++](#) ()
- [VL operator++](#) (int)
- [VL & operator+=](#) ([VL](#) const &vl)
+= operator
- template<typename TSwap >
std::istream & [Read](#) (std::istream &is)
- template<typename TSwap >
std::istream & [Read16](#) (std::istream &is)
- void [SetToUndefined](#) ()
- template<typename TSwap >
const std::ostream & [Write](#) (std::ostream &os) const
- template<typename TSwap >
const std::ostream & [Write16](#) (std::ostream &os) const

Static Public Member Functions

- static uint16_t [GetVL16Max](#) ()
- static uint32_t [GetVL32Max](#) ()

Friends

- std::ostream & [operator<<](#) (std::ostream &os, const [VL](#) &vl)

25.324.1 Detailed Description

[Value](#) Length.

Warning

this is a 4bytes value ! Do not try to use it for 2bytes value length

Examples:

[rle2img.cxx](#).

25.324.2 Member Typedef Documentation

25.324.2.1 `typedef uint32_t gdcm::VL::Type`

25.324.3 Constructor & Destructor Documentation

25.324.3.1 `gdcm::VL::VL (uint32_t v/ = 0) [inline]`

25.324.4 Member Function Documentation

25.324.4.1 `VL gdcm::VL::GetLength () const [inline]`

Referenced by `gdcm::FileMetaInformation::GetFullLength()`, `gdcm::Fragment::GetLength()`, and `gdcm::Item::Write()`.

25.324.4.2 `static uint16_t gdcm::VL::GetVL16Max () [inline],[static]`

25.324.4.3 `static uint32_t gdcm::VL::GetVL32Max () [inline],[static]`

25.324.4.4 `bool gdcm::VL::IsOdd () const [inline]`

Return whether or not the [VL](#) is odd or not.

Referenced by `gdcm::ByteValue::SetLength()`.

25.324.4.5 `bool gdcm::VL::IsUndefined () const [inline]`

Referenced by `gdcm::ByteValue::SetLength()`.

25.324.4.6 `gdcm::VL::operator uint32_t () const [inline]`

25.324.4.7 `VL& gdcm::VL::operator++ () [inline]`

25.324.4.8 `VL gdcm::VL::operator++ (int) [inline]`

25.324.4.9 `VL& gdcm::VL::operator+=(VL const & v/) [inline]`

`+=` operator

25.324.4.10 `template<typename TSwap > std::istream& gdcm::VL::Read (std::istream & is) [inline]`

25.324.4.11 `template<typename TSwap > std::istream& gdcm::VL::Read16 (std::istream & is) [inline]`

25.324.4.12 `void gdcm::VL::SetToUndefined () [inline]`

25.324.4.13 `template<typename TSwap > const std::ostream& gdcm::VL::Write (std::ostream & os) const [inline]`

Referenced by `gdcm::Fragment::Write()`, `gdcm::SequenceOfItems::Write()`, `gdcm::SequenceOfFragments::Write()`, and `gdcm::Item::Write()`.

25.324.4.14 `template<typename TSwap > const std::ostream& gdcm::VL::Write16 (std::ostream & os) const [inline]`

25.324.5 Friends And Related Function Documentation

25.324.5.1 `std::ostream& operator<< (std::ostream & os, const VL & vl) [friend]`

The documentation for this class was generated from the following file:

- [gdcmVL.h](#)

25.325 gdcm::VM Class Reference

Value Multiplicity Looking at the DICOMV3 dict only there is very few cases: 1 2 3 4 5 6 8 16 24 1-2 1-3 1-8 1-32 1-99 1-n 2-2n 2-n 3-3n 3-n.

```
#include <gdcmVM.h>
```

Public Types

- enum [VMType](#) {
 - [VM0](#) = 0,
 - [VM1](#) = 1,
 - [VM2](#) = 2,
 - [VM3](#) = 4,
 - [VM4](#) = 8,
 - [VM5](#) = 16,
 - [VM6](#) = 32,
 - [VM8](#) = 64,
 - [VM9](#) = 128,
 - [VM10](#) = 256,
 - [VM12](#) = 512,
 - [VM16](#) = 1024,
 - [VM18](#) = 2048,
 - [VM24](#) = 4096,
 - [VM28](#) = 8192,
 - [VM32](#) = 16384,
 - [VM35](#) = 32768,
 - [VM99](#) = 65536,
 - [VM256](#) = 131072,
 - [VM1_2](#) = [VM1](#) | [VM2](#),
 - [VM1_3](#) = [VM1](#) | [VM2](#) | [VM3](#),
 - [VM1_4](#) = [VM1](#) | [VM2](#) | [VM3](#) | [VM4](#),
 - [VM1_5](#) = [VM1](#) | [VM2](#) | [VM3](#) | [VM4](#) | [VM5](#),
 - [VM1_8](#) = [VM1](#) | [VM2](#) | [VM3](#) | [VM4](#) | [VM5](#) | [VM6](#) | [VM8](#),
 - [VM1_32](#) = [VM1](#) | [VM2](#) | [VM3](#) | [VM4](#) | [VM5](#) | [VM6](#) | [VM8](#) | [VM9](#) | [VM16](#) | [VM24](#) | [VM32](#),
 - [VM1_99](#) = [VM1](#) | [VM2](#) | [VM3](#) | [VM4](#) | [VM5](#) | [VM6](#) | [VM8](#) | [VM9](#) | [VM16](#) | [VM24](#) | [VM32](#) | [VM99](#),
 - [VM1_n](#) = [VM1](#) | [VM2](#) | [VM3](#) | [VM4](#) | [VM5](#) | [VM6](#) | [VM8](#) | [VM9](#) | [VM16](#) | [VM24](#) | [VM32](#) | [VM99](#) | [VM256](#),
 - [VM2_2n](#) = [VM2](#) | [VM4](#) | [VM6](#) | [VM8](#) | [VM16](#) | [VM24](#) | [VM32](#) | [VM256](#),
 - [VM2_n](#) = [VM2](#) | [VM3](#) | [VM4](#) | [VM5](#) | [VM6](#) | [VM8](#) | [VM9](#) | [VM16](#) | [VM24](#) | [VM32](#) | [VM99](#) | [VM256](#),
 - [VM3_4](#) = [VM3](#) | [VM4](#),
 - [VM3_3n](#) = [VM3](#) | [VM6](#) | [VM9](#) | [VM24](#) | [VM99](#) | [VM256](#),
 - [VM3_n](#) = [VM3](#) | [VM4](#) | [VM5](#) | [VM6](#) | [VM8](#) | [VM9](#) | [VM16](#) | [VM24](#) | [VM32](#) | [VM99](#) | [VM256](#),
 - [VM4_4n](#) = [VM4](#) | [VM16](#) | [VM24](#) | [VM32](#) | [VM256](#),
 - [VM6_6n](#) = [VM6](#) | [VM12](#) | [VM18](#) | [VM24](#),
 - [VM7_7n](#),
 - [VM30_30n](#),
 - [VM47_47n](#),
 - [VM_END](#) = [VM1_n](#) + 1 }

Public Member Functions

- [VM](#) ([VMType](#) type=[VM0](#))
- bool [Compatible](#) ([VM](#) const &vm) const
- unsigned int [GetLength](#) () const
- operator [VMType](#) () const

Static Public Member Functions

- static unsigned int [GetNumberOfElementsFromArray](#) (const char *array, unsigned int length)

- static const char * [GetVMString](#) (VMType vm)
- static VMType [GetVMType](#) (const char *vm)
- static VMType [GetVMTypeFromLength](#) (unsigned int length, unsigned int size)
- static bool [IsValid](#) (int vm1, VMType vm2)

Static Protected Member Functions

- static unsigned int [GetIndex](#) (VMType vm)

Friends

- std::ostream & [operator<<](#) (std::ostream &os, const VM &vm)

25.325.1 Detailed Description

Value Multiplicity Looking at the DICOMV3 dict only there is very few cases: 1 2 3 4 5 6 8 16 24 1-2 1-3 1-8 1-32 1-99 1-n 2-2n 2-n 3-3n 3-n.

Some private dict define some more: 4-4n 1-4 1-5 256 9 3-4

even more:

7-7n 10 18 12 35 47_47n 30_30n 28

6-6n

25.325.2 Member Enumeration Documentation

25.325.2.1 enum gdcmm::VM::VMType

Enumerator

VM0
VM1
VM2
VM3
VM4
VM5
VM6
VM8
VM9
VM10
VM12
VM16
VM18
VM24
VM28
VM32

VM35
VM99
VM256
VM1_2
VM1_3
VM1_4
VM1_5
VM1_8
VM1_32
VM1_99
VM1_n
VM2_2n
VM2_n
VM3_4
VM3_3n
VM3_n
VM4_4n
VM6_6n
VM7_7n
VM30_30n
VM47_47n
VM_END

25.325.3 Constructor & Destructor Documentation

25.325.3.1 `gdcm::VM::VM (VMType type = VM0) [inline]`

25.325.4 Member Function Documentation

25.325.4.1 `bool gdcm::VM::Compatible (VM const & vm) const`

WARNING: Implementation deficiency The Compatible function is poorly implemented, the reference vm should be coming from the dictionary, while the passed in value is the value guess from the file.

25.325.4.2 `static unsigned int gdcm::VM::GetIndex (VMType vm) [static], [protected]`

25.325.4.3 `unsigned int gdcm::VM::GetLength () const`

25.325.4.4 `static unsigned int gdcm::VM::GetNumberOfElementsFromArray (const char * array, unsigned int length) [static]`

25.325.4.5 `static const char* gdcm::VM::GetVMString (VMType vm) [static]`

Return the string as written in the official DICOM dict from a custom enum type

Referenced by `gdcm::operator<<()`.

25.325.4.6 `static VMType gdcm::VM::GetVMType (const char * vm) [static]`

25.325.4.7 `static VMType gdcm::VM::GetVMTypeFromLength (unsigned int length, unsigned int size) [static]`

25.325.4.8 `static bool gdcm::VM::IsValid (int vm1, VMType vm2) [static]`

Check if vm1 is valid compare to vm2, i.e vm1 is element of vm2 vm1 is typically deduce from counting in a ValueField

25.325.4.9 `gdcm::VM::operator VMType () const [inline]`

25.325.5 Friends And Related Function Documentation

25.325.5.1 `std::ostream& operator<< (std::ostream & os, const VM & vm) [friend]`

The documentation for this class was generated from the following file:

- [gdcmVM.h](#)

25.326 gdcm::VMToLength< T > Struct Template Reference

```
#include <gdcmVM.h>
```

The documentation for this struct was generated from the following file:

- [gdcmVM.h](#)

25.327 gdcm::VR Class Reference

VR class This is adapted from DICOM standard The biggest difference is the INVALID **VR** and the composite one that differ from standard (more like an addition) This allow us to represent all the possible case express in the DICOMV3 dict.

```
#include <gdcmVR.h>
```

Public Types

- enum [VRType](#) {
 - [INVALID](#) = 0,
 - [AE](#) = 1,
 - [AS](#) = 2,
 - [AT](#) = 4,
 - [CS](#) = 8,
 - [DA](#) = 16,
 - [DS](#) = 32,
 - [DT](#) = 64,
 - [FD](#) = 128,
 - [FL](#) = 256,
 - [IS](#) = 512,
 - [LO](#) = 1024,
 - [LT](#) = 2048,
 - [OB](#) = 4096,
 - [OF](#) = 8192,
 - [OW](#) = 16384,
 - [PN](#) = 32768,
 - [SH](#) = 65536,
 - [SL](#) = 131072,
 - [SQ](#) = 262144,
 - [SS](#) = 524288,
 - [ST](#) = 1048576,
 - [TM](#) = 2097152,
 - [UI](#) = 4194304,
 - [UL](#) = 8388608,
 - [UN](#) = 16777216,
 - [US](#) = 33554432,
 - [UT](#) = 67108864,
 - [OB_OW](#) = OB | OW,
 - [US_SS](#) = US | SS,
 - [US_SS_OW](#) = US | SS | OW,
 - [VL16](#) = AE | AS | AT | CS | DA | DS | DT | FD | FL | IS | LO | LT | PN | SH | SL | SS | ST | TM | UI | UL | US,
 - [VL32](#) = OB | OW | OF | SQ | UN | UT,
 - [VRASCII](#) = AE | AS | CS | DA | DS | DT | IS | LO | LT | PN | SH | ST | TM | UI | UT,
 - [VRBINARY](#) = AT | FL | FD | OB | OF | OW | SL | SQ | SS | UL | UN | US,
 - [VR_VM1](#) = AS | LT | ST | UT | SQ | OF | OW | OB | UN,
 - [VRALL](#) = VRASCII | VRBINARY,
 - [VR_END](#) = UT+1 }

Public Member Functions

- [VR](#) ([VRType](#) vr=[INVALID](#))
- bool [Compatible](#) ([VR](#) const &vr) const
- int [GetLength](#) () const
- unsigned int [GetSize](#) () const
- unsigned int [GetSizeof](#) () const
- bool [IsDual](#) () const
- bool [IsVRFile](#) () const
- [operator VRType](#) () const
- std::istream & [Read](#) (std::istream &is)

- const std::ostream & [Write](#) (std::ostream &os) const

Static Public Member Functions

- static bool [CanDisplay](#) (VRType vr)
- static uint32_t [GetLength](#) (VRType vr)
- static const char * [GetVRString](#) (VRType vr)
- static const char * [GetVRStringFromFile](#) (VRType vr)
- static VRType [GetVRType](#) (const char *vr)
- static VRType [GetVRTypeFromFile](#) (const char *vr)
- static bool [IsASCII](#) (VRType vr)
- static bool [IsASCII2](#) (VRType vr)
- static bool [IsBinary](#) (VRType vr)
- static bool [IsBinary2](#) (VRType vr)
- static bool [IsSwap](#) (const char *vr)
- static bool [IsValid](#) (const char *vr)
- static bool [IsValid](#) (const char *vr1, VRType vr2)

Friends

- std::ostream & [operator<<](#) (std::ostream &os, const VR &vr)

25.327.1 Detailed Description

[VR](#) class This is adapted from DICOM standard The biggest difference is the INVALID [VR](#) and the composite one that differ from standard (more like an addition) This allow us to represent all the possible case express in the DICOMV3 dict.

Note

VALUE REPRESENTATION ([VR](#)) Specifies the data type and format of the Value(s) contained in the [Value](#) Field of a Data [Element](#). VALUE REPRESENTATION FIELD: The field where the [Value](#) Representation of a Data [Element](#) is stored in the encoding of a Data [Element](#) structure with explicit [VR](#).

Examples:

[GenAllVR.cxx](#), and [GenFakeIdentifyFile.cxx](#).

25.327.2 Member Enumeration Documentation

25.327.2.1 enum gdcm::VR::VRType

Enumerator

INVALID
AE
AS
AT
CS
DA

DS
DT
FD
FL
IS
LO
LT
OB
OF
OW
PN
SH
SL
SQ
SS
ST
TM
UI
UL
UN
US
UT
OB_OW
US_SS
US_SS_OW
VL16
VL32
VRASCII
VRBINARY
VR_VM1
VRALL
VR_END

25.327.3 Constructor & Destructor Documentation

25.327.3.1 `gdcmm::VR::VR (VRType vr = INVALID) [inline]`

25.327.4 Member Function Documentation

25.327.4.1 `static bool gdcmm::VR::CanDisplay (VRType vr) [static]`

25.327.4.2 `bool gdcmm::VR::Compatible (VR const & vr) const`

25.327.4.3 `int gdcm::VR::GetLength () const [inline]`

25.327.4.4 `static uint32_t gdcm::VR::GetLength (VRType vr) [inline], [static]`

25.327.4.5 `unsigned int gdcm::VR::GetSize () const [inline]`

References AE, US_SS, and VRTypeTemplateCase.

25.327.4.6 `unsigned int gdcm::VR::GetSizeof () const`

25.327.4.7 `static const char* gdcm::VR::GetVRString (VRType vr) [static]`

Referenced by `gdcm::operator<<()`.

25.327.4.8 `static const char* gdcm::VR::GetVRStringFromFile (VRType vr) [static]`

25.327.4.9 `static VRType gdcm::VR::GetVRType (const char * vr) [static]`

25.327.4.10 `static VRType gdcm::VR::GetVRTypeFromFile (const char * vr) [static]`

25.327.4.11 `static bool gdcm::VR::IsASCII (VRType vr) [static]`

25.327.4.12 `static bool gdcm::VR::IsASCII2 (VRType vr) [static]`

25.327.4.13 `static bool gdcm::VR::IsBinary (VRType vr) [static]`

25.327.4.14 `static bool gdcm::VR::IsBinary2 (VRType vr) [static]`

25.327.4.15 `bool gdcm::VR::IsDual () const`

25.327.4.16 `static bool gdcm::VR::IsSwap (const char * vr) [static]`

25.327.4.17 `static bool gdcm::VR::IsValid (const char * vr) [static]`

25.327.4.18 `static bool gdcm::VR::IsValid (const char * vr1, VRType vr2) [static]`

25.327.4.19 `bool gdcm::VR::IsVRFile () const`

Referenced by `gdcm::DataElement::SetVR()`.

25.327.4.20 `gdcm::VR::operator VRType () const [inline]`

25.327.4.21 `std::istream& gdcm::VR::Read (std::istream & is) [inline]`

References `gdcmDebugMacro`, `INVALID`, and `VR_END`.

25.327.4.22 `const std::ostream& gdcm::VR::Write (std::ostream & os) const [inline]`

References `gdcmAssertAlwaysMacro`, and `INVALID`.

25.327.5 Friends And Related Function Documentation

25.327.5.1 `std::ostream& operator<< (std::ostream & os, const VR & vr)` `[friend]`

The documentation for this class was generated from the following file:

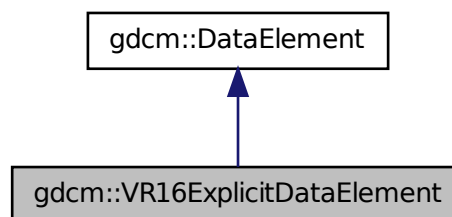
- [gdcmVR.h](#)

25.328 gdcm::VR16ExplicitDataElement Class Reference

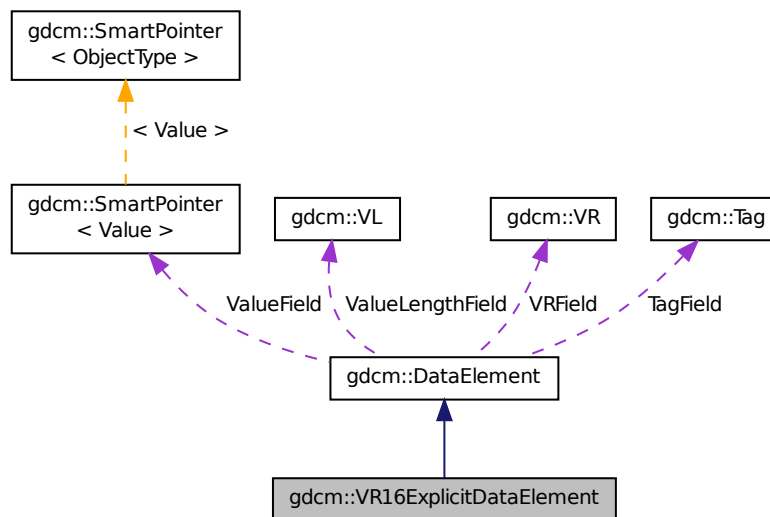
Class to read/write a [DataElement](#) as Explicit Data [Element](#).

```
#include <gdcmVR16ExplicitDataElement.h>
```

Inheritance diagram for `gdcm::VR16ExplicitDataElement`:



Collaboration diagram for gdcm::VR16ExplicitDataElement:



Public Member Functions

- [VL GetLength](#) () const
- template<typename TSwap >
std::istream & [Read](#) (std::istream &is)
- template<typename TSwap >
std::istream & [ReadPreValue](#) (std::istream &is)
- template<typename TSwap >
std::istream & [ReadValue](#) (std::istream &is)
- template<typename TSwap >
std::istream & [ReadWithLength](#) (std::istream &is, [VL](#) &length)

Additional Inherited Members

25.328.1 Detailed Description

Class to read/write a [DataElement](#) as Explicit Data [Element](#).

Note

This class support 16 bits when finding an unkown [VR](#): For instance: Siemens_CT_Sensation64_has_VR_RT.dcm

25.328.2 Member Function Documentation

25.328.2.1 VL gdcm::VR16ExplicitDataElement::GetLength () const

25.328.2.2 `template<typename TSwap > std::istream& gdcm::VR16ExplicitDataElement::Read (std::istream & is)`

25.328.2.3 `template<typename TSwap > std::istream& gdcm::VR16ExplicitDataElement::ReadPreValue (std::istream & is)`

25.328.2.4 `template<typename TSwap > std::istream& gdcm::VR16ExplicitDataElement::ReadValue (std::istream & is)`

25.328.2.5 `template<typename TSwap > std::istream& gdcm::VR16ExplicitDataElement::ReadWithLength (std::istream & is, VL & length)`

The documentation for this class was generated from the following file:

- [gdcmVR16ExplicitDataElement.h](#)

25.329 `gdcm::VRToEncoding< T >` Struct Template Reference

```
#include <gdcmVR.h>
```

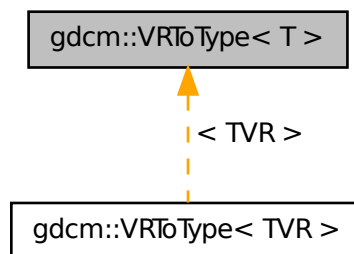
The documentation for this struct was generated from the following file:

- [gdcmVR.h](#)

25.330 `gdcm::VRToType< T >` Struct Template Reference

```
#include <gdcmVR.h>
```

Inheritance diagram for `gdcm::VRToType< T >`:



25.330.1 Detailed Description

```
template<int T>struct gdcm::VRToType< T >
```

Examples:

[DumpGEMSMovieGroup.cxx](#).

The documentation for this struct was generated from the following file:

- [gdcmVR.h](#)

25.331 gdcm::VRVLSIZE< T > Class Template Reference

```
#include <gdcmAttribute.h>
```

The documentation for this class was generated from the following file:

- [gdcmAttribute.h](#)

25.332 gdcm::VRVLSIZE< 0 > Class Template Reference

```
#include <gdcmAttribute.h>
```

Static Public Member Functions

- static uint16_t [Read](#) (std::istream &_is)
- static void [Write](#) (std::ostream &os)

25.332.1 Member Function Documentation

25.332.1.1 static uint16_t gdcm::VRVLSIZE< 0 >::Read (std::istream &_is) [inline], [static]

25.332.1.2 static void gdcm::VRVLSIZE< 0 >::Write (std::ostream &os) [inline], [static]

The documentation for this class was generated from the following file:

- [gdcmAttribute.h](#)

25.333 gdcm::VRVLSIZE< 1 > Class Template Reference

```
#include <gdcmAttribute.h>
```

Static Public Member Functions

- static uint32_t [Read](#) (std::istream &_is)
- static void [Write](#) (std::ostream &os)

25.333.1 Member Function Documentation

25.333.1.1 static uint32_t gdcm::VRVLSIZE< 1 >::Read (std::istream &_is) [inline], [static]

25.333.1.2 static void gdcm::VRVLSIZE< 1 >::Write (std::ostream &os) [inline], [static]

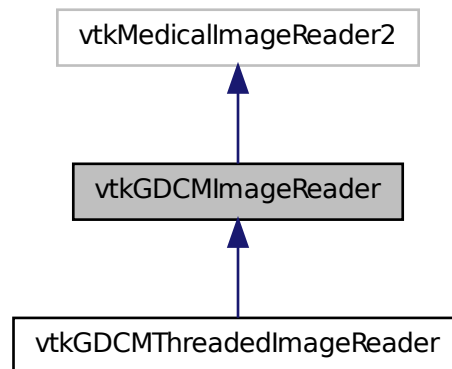
The documentation for this class was generated from the following file:

- [gdcmAttribute.h](#)

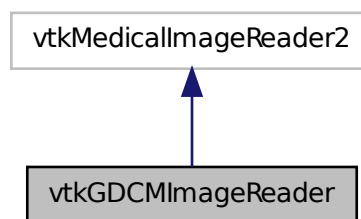
25.334 vtkGDCMImageReader Class Reference

```
#include <vtkGDCMImageReader.h>
```

Inheritance diagram for vtkGDCMImageReader:



Collaboration diagram for vtkGDCMImageReader:



Public Member Functions

- virtual int [CanReadFile](#) (const char *fname)
- virtual const char * [GetDescriptiveName](#) ()
- virtual const char * [GetFileExtensions](#) ()
- vtkImageData * [GetIconImage](#) ()

- vtkImageData * [GetOverlay](#) (int i)
- virtual void [PrintSelf](#) (ostream &os, vtkIndent indent)
- virtual void [SetCurve](#) (vtkPolyData *pd)
- virtual void [SetFileNames](#) (vtkStringArray *)
- virtual void [SetMedicalImageProperties](#) (vtkMedicalImageProperties *pd)
- [vtkBooleanMacro](#) (LoadOverlays, int)
- [vtkBooleanMacro](#) (LoadIconImage, int)
- [vtkBooleanMacro](#) (LossyFlag, int)
- [vtkBooleanMacro](#) (ApplyLookupTable, int)
- int [vtkBooleanMacro](#) (ApplyYBRToRGB, int)
- [vtkGetMacro](#) (LoadOverlays, int)
- [vtkGetMacro](#) (LoadIconImage, int)
- [vtkGetMacro](#) (LossyFlag, int)
- [vtkGetMacro](#) (NumberOfOverlays, int)
- [vtkGetMacro](#) (NumberOfIconImages, int)
- [vtkGetMacro](#) (ApplyLookupTable, int)
- [vtkGetMacro](#) (ApplyYBRToRGB, int) [vtkSetMacro](#)(ApplyYBRToRGB
- [vtkGetMacro](#) (ImageFormat, int)
- [vtkGetMacro](#) (PlanarConfiguration, int)
- [vtkGetMacro](#) (Shift, double)
- [vtkGetMacro](#) (Scale, double)
- [vtkGetObjectMacro](#) (DirectionCosines, vtkMatrix4x4)
- [vtkGetObjectMacro](#) (MedicalImageProperties, vtkMedicalImageProperties)
- [vtkGetObjectMacro](#) (FileNames, vtkStringArray)
- [vtkGetObjectMacro](#) (Curve, vtkPolyData)
- [vtkGetVector3Macro](#) (ImagePositionPatient, double)
- [vtkGetVector6Macro](#) (ImageOrientationPatient, double)
- [vtkSetMacro](#) (LoadOverlays, int)
- [vtkSetMacro](#) (LoadIconImage, int)
- [vtkSetMacro](#) (LossyFlag, int)
- [vtkSetMacro](#) (ApplyLookupTable, int)
- [vtkTypeRevisionMacro](#) (vtkGDCMImageReader, vtkMedicalImageReader2)

Static Public Member Functions

- static [vtkGDCMImageReader](#) * [New](#) ()

Protected Member Functions

- [vtkGDCMImageReader](#) ()
- [~vtkGDCMImageReader](#) ()
- void [ExecuteData](#) (vtkDataObject *out)
- void [ExecuteInformation](#) ()
- void [FillMedicalImageInformation](#) (const [gdcm::ImageReader](#) &reader)
- int [LoadSingleFile](#) (const char *filename, char *pointer, unsigned long &outlen)
- int [RequestDataCompat](#) ()
- int [RequestInformationCompat](#) ()
- void [SetFilePattern](#) (const char *)
- void [SetFilePrefix](#) (const char *)
- [vtkGetStringMacro](#) (FilePrefix)
- [vtkGetStringMacro](#) (FilePattern)
- [vtkSetVector6Macro](#) (ImageOrientationPatient, double)

Protected Attributes

- int [ApplyInverseVideo](#)
- int [ApplyLookupTable](#)
- int [ApplyPlanarConfiguration](#)
- int [ApplyShiftScale](#)
- int [ApplyYBRToRGB](#)
- vtkPolyData * [Curve](#)
- vtkMatrix4x4 * [DirectionCosines](#)
- vtkStringArray * [FileNames](#)
- int [ForceRescale](#)
- int [IconDataScalarType](#)
- int [IconImageDataExtent](#) [6]
- int [IconNumberOfScalarComponents](#)
- int [ImageFormat](#)
- double [ImageOrientationPatient](#) [6]
- double [ImagePositionPatient](#) [3]
- int [LoadIconImage](#)
- int [LoadOverlays](#)
- int [LossyFlag](#)
- vtkMedicalImageProperties * [MedicalImageProperties](#)
- int [NumberOfIconImages](#)
- int [NumberOfOverlays](#)
- int [PlanarConfiguration](#)
- double [Scale](#)
- double [Shift](#)

25.334.1 Detailed Description

Examples:

[AWTMedical3.java](#), [Convert16BitsTo8Bits.cxx](#), [ConvertMultiFrameToSingleFrame.cxx](#), [ConvertRGBToLuminance.cxx](#), [ConvertSingleBitTo8Bits.cxx](#), [gdcmmorthoplanes.cxx](#), [gdcmmreslice.cxx](#), [gdcmmtexture.cxx](#), [gdcmmvolume.cxx](#), [HelloActiviz.cs](#), [HelloActiviz2.cs](#), [HelloActiviz3.cs](#), [HelloActiviz4.cs](#), [HelloActiviz5.cs](#), [HelloVTKWorld.cs](#), [HelloVTKWorld.java](#), [MagnifyFile.cxx](#), [MetaImageMD5Activiz.cs](#), [MIPViewer.java](#), [MPRViewer.java](#), [MPRViewer2.java](#), [offscreenimage.cxx](#), [ReadSeriesIntoVTK.java](#), [RefCounting.cs](#), and [reslicesphere.cxx](#).

25.334.2 Constructor & Destructor Documentation

25.334.2.1 `vtkGDCMImageReader::vtkGDCMImageReader ()` [protected]

Examples:

[HelloActiviz2.cs](#).

25.334.2.2 `vtkGDCMImageReader::~~vtkGDCMImageReader ()` [protected]

25.334.3 Member Function Documentation

25.334.3.1 `virtual int vtkGDCMImageReader::CanReadFile (const char * fname)` [virtual]

Examples:

[MetalImageMD5Activiz.cs](#).

25.334.3.2 `void vtkGDCMImageReader::ExecuteData (vtkDataObject * out)` [protected]

25.334.3.3 `void vtkGDCMImageReader::ExecuteInformation ()` [protected]

25.334.3.4 `void vtkGDCMImageReader::FillMedicalImageInformation (const gdcm::ImageReader & reader)`
[protected]

25.334.3.5 `virtual const char* vtkGDCMImageReader::GetDescriptiveName ()` [inline],[virtual]

25.334.3.6 `virtual const char* vtkGDCMImageReader::GetFileExtensions ()` [inline],[virtual]

25.334.3.7 `vtkImageData* vtkGDCMImageReader::GetIconImage ()`

25.334.3.8 `vtkImageData* vtkGDCMImageReader::GetOverlay (int i)`

25.334.3.9 `int vtkGDCMImageReader::LoadSingleFile (const char * filename, char * pointer, unsigned long & outlen)`
[protected]

25.334.3.10 `static vtkGDCMImageReader* vtkGDCMImageReader::New ()` [static]

Examples:

[Convert16BitsTo8Bits.cxx](#), [ConvertMultiFrameToSingleFrame.cxx](#), [ConvertRGBToLuminance.cxx](#), [ConvertSingle-BitTo8Bits.cxx](#), [gdcmmorthoplanes.cxx](#), [gdcmmreslice.cxx](#), [gdcmttexture.cxx](#), [gdcmvolume.cxx](#), [HelloActiviz.cs](#), [Hello-Activiz3.cs](#), [HelloActiviz4.cs](#), [HelloActiviz5.cs](#), [HelloVTKWorld.cs](#), [MagnifyFile.cxx](#), [MetalImageMD5Activiz.cs](#), [offscreenimage.cxx](#), [RefCounting.cs](#), and [reslicesphere.cxx](#).

25.334.3.11 `virtual void vtkGDCMImageReader::PrintSelf (ostream & os, vtkIndent indent)` [virtual]

Reimplemented in [vtkGDCMThreadedImageReader](#).

25.334.3.12 `int vtkGDCMImageReader::RequestDataCompat ()` [protected]

25.334.3.13 `int vtkGDCMImageReader::RequestInformationCompat ()` [protected]

25.334.3.14 `virtual void vtkGDCMImageReader::SetCurve (vtkPolyData * pd)` [virtual]

25.334.3.15 `virtual void vtkGDCMImageReader::SetFileNames (vtkStringArray *)` [virtual]

Examples:

[gdcmortoplanes.cxx](#), [HelloActiviz3.cs](#), [HelloActiviz4.cs](#), [HelloActiviz5.cs](#), [MIPViewer.java](#), [MPRViewer.java](#), [MPRViewer2.java](#), and [ReadSeriesIntoVTK.java](#).

25.334.3.16 `void vtkGDCMImageReader::SetFilePattern (const char *)` [inline],[protected]

25.334.3.17 `void vtkGDCMImageReader::SetFilePrefix (const char *)` [inline],[protected]

25.334.3.18 `virtual void vtkGDCMImageReader::SetMedicalImageProperties (vtkMedicalImageProperties * pd)` [virtual]

25.334.3.19 `vtkGDCMImageReader::vtkBooleanMacro (LoadOverlays , int)`

25.334.3.20 `vtkGDCMImageReader::vtkBooleanMacro (LoadIconImage , int)`

25.334.3.21 `vtkGDCMImageReader::vtkBooleanMacro (LossyFlag , int)`

25.334.3.22 `vtkGDCMImageReader::vtkBooleanMacro (ApplyLookupTable , int)`

25.334.3.23 `int vtkGDCMImageReader::vtkBooleanMacro (ApplyYBRToRGB , int)`

25.334.3.24 `vtkGDCMImageReader::vtkGetMacro (LoadOverlays , int)`

25.334.3.25 `vtkGDCMImageReader::vtkGetMacro (LoadIconImage , int)`

25.334.3.26 `vtkGDCMImageReader::vtkGetMacro (LossyFlag , int)`

25.334.3.27 `vtkGDCMImageReader::vtkGetMacro (NumberOfOverlays , int)`

25.334.3.28 `vtkGDCMImageReader::vtkGetMacro (NumberOfIconImages , int)`

25.334.3.29 `vtkGDCMImageReader::vtkGetMacro (ApplyLookupTable , int)`

25.334.3.30 `vtkGDCMImageReader::vtkGetMacro (ApplyYBRToRGB , int)`

25.334.3.31 `vtkGDCMImageReader::vtkGetMacro (ImageFormat , int)`

25.334.3.32 `vtkGDCMImageReader::vtkGetMacro (PlanarConfiguration , int)`

25.334.3.33 `vtkGDCMImageReader::vtkGetMacro (Shift , double)`

25.334.3.34 `vtkGDCMImageReader::vtkGetMacro (Scale , double)`

25.334.3.35 `vtkGDCMImageReader::vtkGetObjectMacro (DirectionCosines , vtkMatrix4x4)`

25.334.3.36 `vtkGDCMImageReader::vtkGetObjectMacro (MedicalImageProperties , vtkMedicalImageProperties)`

25.334.3.37 `vtkGDCMImageReader::vtkGetObjectMacro (FileNames , vtkStringArray)`

- 25.334.3.38 `vtkGDCMImageReader::vtkGetObjectMacro (Curve , vtkPolyData)`
- 25.334.3.39 `vtkGDCMImageReader::vtkGetStringMacro (FilePrefix)` [protected]
- 25.334.3.40 `vtkGDCMImageReader::vtkGetStringMacro (FilePattern)` [protected]
- 25.334.3.41 `vtkGDCMImageReader::vtkGetVector3Macro (ImagePositionPatient , double)`
- 25.334.3.42 `vtkGDCMImageReader::vtkGetVector6Macro (ImageOrientationPatient , double)`
- 25.334.3.43 `vtkGDCMImageReader::vtkSetMacro (LoadOverlays , int)`
- 25.334.3.44 `vtkGDCMImageReader::vtkSetMacro (LoadIconImage , int)`
- 25.334.3.45 `vtkGDCMImageReader::vtkSetMacro (LossyFlag , int)`
- 25.334.3.46 `vtkGDCMImageReader::vtkSetMacro (ApplyLookupTable , int)`
- 25.334.3.47 `vtkGDCMImageReader::vtkSetVector6Macro (ImageOrientationPatient , double)` [protected]
- 25.334.3.48 `vtkGDCMImageReader::vtkTypeRevisionMacro (vtkGDCMImageReader , vtkMedicalImageReader2)`

25.334.4 Member Data Documentation

- 25.334.4.1 `int vtkGDCMImageReader::ApplyInverseVideo` [protected]
- 25.334.4.2 `int vtkGDCMImageReader::ApplyLookupTable` [protected]
- 25.334.4.3 `int vtkGDCMImageReader::ApplyPlanarConfiguration` [protected]
- 25.334.4.4 `int vtkGDCMImageReader::ApplyShiftScale` [protected]
- 25.334.4.5 `int vtkGDCMImageReader::ApplyYBRToRGB` [protected]
- 25.334.4.6 `vtkPolyData* vtkGDCMImageReader::Curve` [protected]
- 25.334.4.7 `vtkMatrix4x4* vtkGDCMImageReader::DirectionCosines` [protected]
- 25.334.4.8 `vtkStringArray* vtkGDCMImageReader::FileNames` [protected]
- 25.334.4.9 `int vtkGDCMImageReader::ForceRescale` [protected]
- 25.334.4.10 `int vtkGDCMImageReader::IconDataScalarType` [protected]
- 25.334.4.11 `int vtkGDCMImageReader::IconImageDataExtent[6]` [protected]
- 25.334.4.12 `int vtkGDCMImageReader::IconNumberOfScalarComponents` [protected]
- 25.334.4.13 `int vtkGDCMImageReader::ImageFormat` [protected]
- 25.334.4.14 `double vtkGDCMImageReader::ImageOrientationPatient[6]` [protected]

- 25.334.4.15 `double vtkGDCMImageReader::ImagePositionPatient[3]` [protected]
- 25.334.4.16 `int vtkGDCMImageReader::LoadIconImage` [protected]
- 25.334.4.17 `int vtkGDCMImageReader::LoadOverlays` [protected]
- 25.334.4.18 `int vtkGDCMImageReader::LossyFlag` [protected]
- 25.334.4.19 `vtkMedicalImageProperties* vtkGDCMImageReader::MedicalImageProperties` [protected]
- 25.334.4.20 `int vtkGDCMImageReader::NumberOfIconImages` [protected]
- 25.334.4.21 `int vtkGDCMImageReader::NumberOfOverlays` [protected]
- 25.334.4.22 `int vtkGDCMImageReader::PlanarConfiguration` [protected]
- 25.334.4.23 `double vtkGDCMImageReader::Scale` [protected]
- 25.334.4.24 `double vtkGDCMImageReader::Shift` [protected]

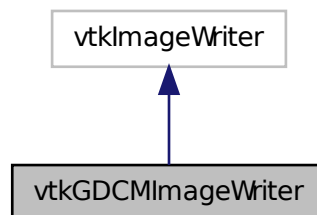
The documentation for this class was generated from the following file:

- [vtkGDCMImageReader.h](#)

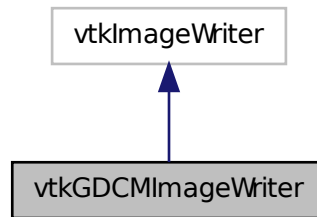
25.335 vtkGDCMImageWriter Class Reference

```
#include <vtkGDCMImageWriter.h>
```

Inheritance diagram for vtkGDCMImageWriter:



Collaboration diagram for vtkGDCMImageWriter:



Public Types

- enum `CompressionTypes` {
`NO_COMPRESSION` = 0,
`JPEG_COMPRESSION`,
`JPEG2000_COMPRESSION`,
`JPEGLS_COMPRESSION`,
`RLE_COMPRESSION` }

Public Member Functions

- virtual const char * `GetDescriptiveName` ()
- virtual const char * `GetFileExtensions` ()
- virtual void `PrintSelf` (ostream &os, vtkIndent indent)
- virtual void `SetDirectionCosines` (vtkMatrix4x4 *matrix)
- virtual void `SetDirectionCosinesFromImageOrientationPatient` (const double dircos[6])
- virtual void `SetFileNames` (vtkStringArray *)
- virtual void `SetMedicalImageProperties` (vtkMedicalImageProperties *)
- `vtkBooleanMacro` (LossyFlag, int)
- `vtkBooleanMacro` (FileLowerLeft, int)
- `vtkGetMacro` (LossyFlag, int)
- `vtkGetMacro` (Shift, double)
- `vtkGetMacro` (Scale, double)
- `vtkGetMacro` (ImageFormat, int)
- `vtkGetMacro` (FileLowerLeft, int)
- `vtkGetMacro` (PlanarConfiguration, int)
- `vtkGetMacro` (CompressionType, int)
- `vtkGetObjectMacro` (MedicalImageProperties, vtkMedicalImageProperties)
- `vtkGetObjectMacro` (FileNames, vtkStringArray)
- `vtkGetObjectMacro` (DirectionCosines, vtkMatrix4x4)
- `vtkGetStringMacro` (StudyUID)
- `vtkGetStringMacro` (SeriesUID)
- `vtkSetMacro` (LossyFlag, int)
- `vtkSetMacro` (Shift, double)

- [vtkSetMacro](#) (Scale, double)
- [vtkSetMacro](#) (ImageFormat, int)
- [vtkSetMacro](#) (FileLowerLeft, int)
- [vtkSetMacro](#) (PlanarConfiguration, int)
- [vtkSetMacro](#) (CompressionType, int)
- [vtkSetStringMacro](#) (StudyUID)
- [vtkSetStringMacro](#) (SeriesUID)
- [vtkTypeRevisionMacro](#) ([vtkGDCMImageWriter](#), [vtkImageWriter](#))
- virtual void [Write](#) ()

Static Public Member Functions

- static [vtkGDCMImageWriter](#) * [New](#) ()

Protected Member Functions

- [vtkGDCMImageWriter](#) ()
- [~vtkGDCMImageWriter](#) ()
- virtual char * [GetFileName](#) ()
- int [WriteGDCMData](#) (vtkImageData *data, int timeStep)
- void [WriteSlice](#) (vtkImageData *data)

25.335.1 Detailed Description

Examples:

[Convert16BitsTo8Bits.cxx](#), [ConvertMultiFrameToSingleFrame.cxx](#), [ConvertRGBToLuminance.cxx](#), [ConvertSingleBitTo8Bits.cxx](#), [gdcmortoplanes.cxx](#), [HelloActiviz.cs](#), [HelloActiviz2.cs](#), [HelloVTKWorld.cs](#), [HelloVTKWorld.java](#), [HelloVTKWorld2.cs](#), [MagnifyFile.cxx](#), and [RefCounting.cs](#).

25.335.2 Member Enumeration Documentation

25.335.2.1 enum [vtkGDCMImageWriter::CompressionTypes](#)

Enumerator

NO_COMPRESSION
JPEG_COMPRESSION
JPEG2000_COMPRESSION
JPEGLS_COMPRESSION
RLE_COMPRESSION

25.335.3 Constructor & Destructor Documentation

25.335.3.1 [vtkGDCMImageWriter::vtkGDCMImageWriter](#) () [protected]

25.335.3.2 [vtkGDCMImageWriter::~~vtkGDCMImageWriter](#) () [protected]

25.335.4 Member Function Documentation

25.335.4.1 `virtual const char* vtkGDCMImageWriter::GetDescriptiveName ()` [inline],[virtual]

25.335.4.2 `virtual const char* vtkGDCMImageWriter::GetFileExtensions ()` [inline],[virtual]

25.335.4.3 `virtual char* vtkGDCMImageWriter::GetFileName ()` [protected],[virtual]

25.335.4.4 `static vtkGDCMImageWriter* vtkGDCMImageWriter::New ()` [static]

Examples:

[Convert16BitsTo8Bits.cxx](#), [ConvertMultiFrameToSingleFrame.cxx](#), [ConvertRGBToLuminance.cxx](#), [ConvertSingleBitTo8Bits.cxx](#), [gdcmorphoplanes.cxx](#), [HelloActiviz.cs](#), [HelloVTKWorld.cs](#), [HelloVTKWorld2.cs](#), [MagnifyFile.cxx](#), and [RefCounting.cs](#).

25.335.4.5 `virtual void vtkGDCMImageWriter::PrintSelf (ostream & os, vtkIndent indent)` [virtual]

25.335.4.6 `virtual void vtkGDCMImageWriter::SetDirectionCosines (vtkMatrix4x4 * matrix)` [virtual]

Examples:

[Convert16BitsTo8Bits.cxx](#), [ConvertRGBToLuminance.cxx](#), [ConvertSingleBitTo8Bits.cxx](#), [gdcmorphoplanes.cxx](#), [HelloActiviz2.cs](#), [HelloVTKWorld.cs](#), [HelloVTKWorld.java](#), and [MagnifyFile.cxx](#).

25.335.4.7 `virtual void vtkGDCMImageWriter::SetDirectionCosinesFromImageOrientationPatient (const double dircos[6])` [virtual]

25.335.4.8 `virtual void vtkGDCMImageWriter::SetFileNames (vtkStringArray *)` [virtual]

Examples:

[ConvertMultiFrameToSingleFrame.cxx](#).

25.335.4.9 `virtual void vtkGDCMImageWriter::SetMedicalImageProperties (vtkMedicalImageProperties *)` [virtual]

Examples:

[Convert16BitsTo8Bits.cxx](#), [ConvertRGBToLuminance.cxx](#), [ConvertSingleBitTo8Bits.cxx](#), [gdcmorphoplanes.cxx](#), [HelloActiviz.cs](#), [HelloActiviz2.cs](#), [HelloVTKWorld.cs](#), [HelloVTKWorld.java](#), and [MagnifyFile.cxx](#).

25.335.4.10 `vtkGDCMImageWriter::vtkBooleanMacro (LossyFlag , int)`

25.335.4.11 `vtkGDCMImageWriter::vtkBooleanMacro (FileLowerLeft , int)`

25.335.4.12 `vtkGDCMImageWriter::vtkGetMacro (LossyFlag , int)`

25.335.4.13 `vtkGDCMImageWriter::vtkGetMacro (Shift , double)`

25.335.4.14 `vtkGDCMImageWriter::vtkGetMacro (Scale , double)`

```

25.335.4.15  vtkGDCMImageWriter::vtkGetMacro ( ImageFormat , int )
25.335.4.16  vtkGDCMImageWriter::vtkGetMacro ( FileLowerLeft , int )
25.335.4.17  vtkGDCMImageWriter::vtkGetMacro ( PlanarConfiguration , int )
25.335.4.18  vtkGDCMImageWriter::vtkGetMacro ( CompressionType , int )
25.335.4.19  vtkGDCMImageWriter::vtkGetObjectMacro ( MedicalImageProperties , vtkMedicalImageProperties )
25.335.4.20  vtkGDCMImageWriter::vtkGetObjectMacro ( FileNames , vtkStringArray )
25.335.4.21  vtkGDCMImageWriter::vtkGetObjectMacro ( DirectionCosines , vtkMatrix4x4 )
25.335.4.22  vtkGDCMImageWriter::vtkGetStringMacro ( StudyUID )
25.335.4.23  vtkGDCMImageWriter::vtkGetStringMacro ( SeriesUID )
25.335.4.24  vtkGDCMImageWriter::vtkSetMacro ( LossyFlag , int )
25.335.4.25  vtkGDCMImageWriter::vtkSetMacro ( Shift , double )
25.335.4.26  vtkGDCMImageWriter::vtkSetMacro ( Scale , double )
25.335.4.27  vtkGDCMImageWriter::vtkSetMacro ( ImageFormat , int )
25.335.4.28  vtkGDCMImageWriter::vtkSetMacro ( FileLowerLeft , int )
25.335.4.29  vtkGDCMImageWriter::vtkSetMacro ( PlanarConfiguration , int )
25.335.4.30  vtkGDCMImageWriter::vtkSetMacro ( CompressionType , int )
25.335.4.31  vtkGDCMImageWriter::vtkSetStringMacro ( StudyUID )
25.335.4.32  vtkGDCMImageWriter::vtkSetStringMacro ( SeriesUID )
25.335.4.33  vtkGDCMImageWriter::vtkTypeRevisionMacro ( vtkGDCMImageWriter , vtkImageWriter )
25.335.4.34  virtual void vtkGDCMImageWriter::Write ( ) [virtual]

```

Examples:

[Convert16BitsTo8Bits.cxx](#), [ConvertMultiFrameToSingleFrame.cxx](#), [ConvertRGBToLuminance.cxx](#), [ConvertSingle-BitTo8Bits.cxx](#), [gdcmorthoplanes.cxx](#), [HelloActiviz.cs](#), [HelloActiviz2.cs](#), [HelloVTKWorld.cs](#), [HelloVTKWorld.java](#), [HelloVTKWorld2.cs](#), and [MagnifyFile.cxx](#).

```

25.335.4.35  int vtkGDCMImageWriter::WriteGDCMData ( vtkImageData * data , int timeStep ) [protected]
25.335.4.36  void vtkGDCMImageWriter::WriteSlice ( vtkImageData * data ) [protected]

```

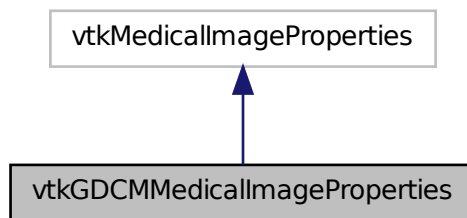
The documentation for this class was generated from the following file:

- [vtkGDCMImageWriter.h](#)

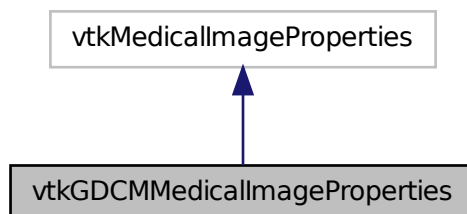
25.336 vtkGDCMMedicalImageProperties Class Reference

```
#include <vtkGDCMMedicalImageProperties.h>
```

Inheritance diagram for vtkGDCMMedicalImageProperties:



Collaboration diagram for vtkGDCMMedicalImageProperties:



Public Member Functions

- virtual void [Clear](#) ()
- void [PrintSelf](#) (ostream &os, vtkIndent indent)
- [vtkTypeRevisionMacro](#) ([vtkGDCMMedicalImageProperties](#), vtkMedicalImageProperties)

Static Public Member Functions

- static
[vtkGDCMMedicalImageProperties * New](#) ()

Protected Member Functions

- [vtkGDCMMedicalImageProperties](#) ()
- [~vtkGDCMMedicalImageProperties](#) ()
- [gdcmm::File](#) const & [GetFile](#) (unsigned int *t*)
- void [PushBackFile](#) ([gdcmm::File](#) const &*f*)

Friends

- class [vtkGDCMImageReader](#)
- class [vtkGDCMImageWriter](#)

25.336.1 Constructor & Destructor Documentation

25.336.1.1 [vtkGDCMMedicalImageProperties::vtkGDCMMedicalImageProperties](#) () [protected]

25.336.1.2 [vtkGDCMMedicalImageProperties::~~vtkGDCMMedicalImageProperties](#) () [protected]

25.336.2 Member Function Documentation

25.336.2.1 virtual void [vtkGDCMMedicalImageProperties::Clear](#) () [virtual]

25.336.2.2 [gdcmm::File](#) const& [vtkGDCMMedicalImageProperties::GetFile](#) (unsigned int *t*) [protected]

25.336.2.3 static [vtkGDCMMedicalImageProperties*](#) [vtkGDCMMedicalImageProperties::New](#) () [static]

25.336.2.4 void [vtkGDCMMedicalImageProperties::PrintSelf](#) (ostream & *os*, vtkIndent *indent*)

25.336.2.5 void [vtkGDCMMedicalImageProperties::PushBackFile](#) ([gdcmm::File](#) const & *f*) [protected]

25.336.2.6 [vtkGDCMMedicalImageProperties::vtkTypeRevisionMacro](#) ([vtkGDCMMedicalImageProperties](#) , [vtkMedicalImageProperties](#))

25.336.3 Friends And Related Function Documentation

25.336.3.1 friend class [vtkGDCMImageReader](#) [friend]

25.336.3.2 friend class [vtkGDCMImageWriter](#) [friend]

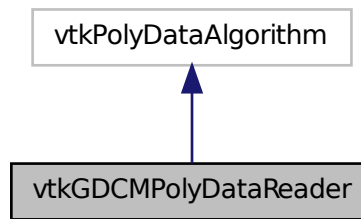
The documentation for this class was generated from the following file:

- [vtkGDCMMedicalImageProperties.h](#)

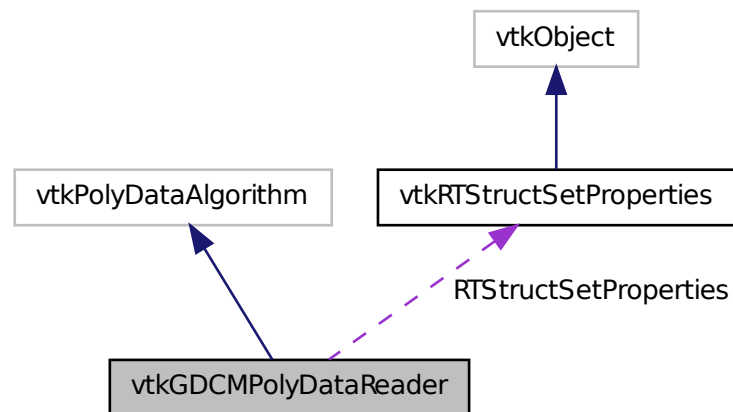
25.337 vtkGDCMPolyDataReader Class Reference

```
#include <vtkGDCMPolyDataReader.h>
```


Inheritance diagram for vtkGDCMPolyDataReader:



Collaboration diagram for vtkGDCMPolyDataReader:



Public Member Functions

- virtual void [PrintSelf](#) (ostream &os, vtkIndent indent)
- [vtkGetObjectMacro](#) ([MedicalImageProperties](#), vtkMedicalImageProperties)
- [vtkGetObjectMacro](#) ([RTStructSetProperties](#), [vtkRTStructSetProperties](#))
- [vtkGetStringMacro](#) ([FileName](#))
- [vtkSetStringMacro](#) ([FileName](#))
- [vtkTypeRevisionMacro](#) ([vtkGDCMPolyDataReader](#), vtkPolyDataAlgorithm)

Static Public Member Functions

- static [vtkGDCMPolyDataReader](#) * [New](#) ()

Protected Member Functions

- [vtkGDCMPolyDataReader\(\)](#)
- [~vtkGDCMPolyDataReader\(\)](#)
- void [FillMedicalImageInformation](#) (const [gdcmm::Reader](#) &reader)
- int [RequestData](#) (vtkInformation *, vtkInformationVector **, vtkInformationVector *)
- int [RequestData_HemodynamicWaveformStorage](#) ([gdcmm::Reader](#) const &reader, vtkInformationVector *outputVector)
- int [RequestData_RTStructureSetStorage](#) ([gdcmm::Reader](#) const &reader, vtkInformationVector *outputVector)
- int [RequestInformation](#) (vtkInformation *vtkNotUsed(request), vtkInformationVector **vtkNotUsed(inputVector), vtkInformationVector *outputVector)
- int [RequestInformation_HemodynamicWaveformStorage](#) ([gdcmm::Reader](#) const &reader)
- int [RequestInformation_RTStructureSetStorage](#) ([gdcmm::Reader](#) const &reader)

Protected Attributes

- char * [FileName](#)
- vtkMedicalImageProperties * [MedicalImageProperties](#)
- [vtkRTStructSetProperties](#) * [RTStructSetProperties](#)

25.337.1 Detailed Description

Examples:

[gdcmscene.cxx](#), [GenerateRTSTRUCT.cxx](#), and [rtstructapp.cxx](#).

25.337.2 Constructor & Destructor Documentation

25.337.2.1 `vtkGDCMPolyDataReader::vtkGDCMPolyDataReader ()` [protected]

25.337.2.2 `vtkGDCMPolyDataReader::~~vtkGDCMPolyDataReader ()` [protected]

25.337.3 Member Function Documentation

25.337.3.1 `void vtkGDCMPolyDataReader::FillMedicalImageInformation (const gdcmm::Reader & reader)` [protected]

25.337.3.2 `static vtkGDCMPolyDataReader* vtkGDCMPolyDataReader::New ()` [static]

Examples:

[gdcmscene.cxx](#), [GenerateRTSTRUCT.cxx](#), and [rtstructapp.cxx](#).

25.337.3.3 `virtual void vtkGDCMPolyDataReader::PrintSelf (ostream & os, vtkIndent indent)` [virtual]

25.337.3.4 `int vtkGDCMPolyDataReader::RequestData (vtkInformation *, vtkInformationVector **, vtkInformationVector *)` [protected]

25.337.3.5 `int vtkGDCMPolyDataReader::RequestData_HemodynamicWaveformStorage (gdcmm::Reader const & reader, vtkInformationVector * outputVector)` [protected]

- 25.337.3.6 `int vtkGDCMPolyDataReader::RequestData_RTStructureSetStorage (gdcm::Reader const & reader, vtkInformationVector * outputVector)` [protected]
- 25.337.3.7 `int vtkGDCMPolyDataReader::RequestInformation (vtkInformation * vtkNotUsed(request), vtkInformationVector ** vtkNotUsed(inputVector), vtkInformationVector * outputVector)` [protected]
- 25.337.3.8 `int vtkGDCMPolyDataReader::RequestInformation_HemodynamicWaveformStorage (gdcm::Reader const & reader)` [protected]
- 25.337.3.9 `int vtkGDCMPolyDataReader::RequestInformation_RTStructureSetStorage (gdcm::Reader const & reader)` [protected]
- 25.337.3.10 `vtkGDCMPolyDataReader::vtkGetObjectMacro (MedicalImageProperties , vtkMedicalImageProperties)`
- 25.337.3.11 `vtkGDCMPolyDataReader::vtkGetObjectMacro (RTStructSetProperties , vtkRTStructSetProperties)`
- 25.337.3.12 `vtkGDCMPolyDataReader::vtkGetStringMacro (FileName)`
- 25.337.3.13 `vtkGDCMPolyDataReader::vtkSetStringMacro (FileName)`
- 25.337.3.14 `vtkGDCMPolyDataReader::vtkTypeRevisionMacro (vtkGDCMPolyDataReader , vtkPolyDataAlgorithm)`

25.337.4 Member Data Documentation

- 25.337.4.1 `char* vtkGDCMPolyDataReader::FileName` [protected]
- 25.337.4.2 `vtkMedicalImageProperties* vtkGDCMPolyDataReader::MedicalImageProperties` [protected]
- 25.337.4.3 `vtkRTStructSetProperties* vtkGDCMPolyDataReader::RTStructSetProperties` [protected]

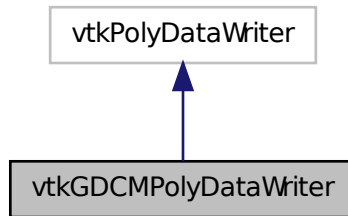
The documentation for this class was generated from the following file:

- [vtkGDCMPolyDataReader.h](#)

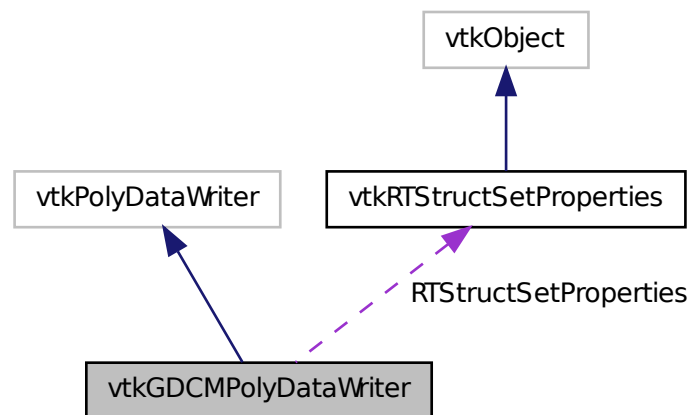
25.338 vtkGDCMPolyDataWriter Class Reference

```
#include <vtkGDCMPolyDataWriter.h>
```

Inheritance diagram for vtkGDCMPolyDataWriter:



Collaboration diagram for vtkGDCMPolyDataWriter:



Public Member Functions

- void [InitializeRTStructSet](#) (vtkStdString inDirectory, vtkStdString inStructLabel, vtkStdString inStructName, vtkStringArray *inROINames, vtkStringArray *inROIAlgorithmName, vtkStringArray *inROIType)
- virtual void [PrintSelf](#) (ostream &os, vtkIndent indent)
- virtual void [SetMedicalImageProperties](#) (vtkMedicalImageProperties *pd)
- void [SetNumberOfInputPorts](#) (int n)
- virtual void [SetRTStructSetProperties](#) (vtkRTStructSetProperties *pd)
- [vtkTypeRevisionMacro](#) (vtkGDCMPolyDataWriter, vtkPolyDataWriter)

Static Public Member Functions

- static [vtkGDCMPolyDataWriter](#) * [New](#) ()

Protected Member Functions

- [vtkGDCMPolyDataWriter](#) ()
- [~vtkGDCMPolyDataWriter](#) ()
- void [WriteData](#) ()
- void [WriteRTSTRUCTData](#) (gdcmm::File &file, int num)
- void [WriteRTSTRUCTInfo](#) (gdcmm::File &file)

Protected Attributes

- vtkMedicalImageProperties * [MedicalImageProperties](#)
- [vtkRTStructSetProperties](#) * [RTStructSetProperties](#)

25.338.1 Detailed Description

Examples:

[GenerateRTSTRUCT.cxx](#), and [rtstructapp.cxx](#).

25.338.2 Constructor & Destructor Documentation

25.338.2.1 [vtkGDCMPolyDataWriter::vtkGDCMPolyDataWriter](#) () [protected]

25.338.2.2 [vtkGDCMPolyDataWriter::~~vtkGDCMPolyDataWriter](#) () [protected]

25.338.3 Member Function Documentation

25.338.3.1 void [vtkGDCMPolyDataWriter::InitializeRTStructSet](#) (vtkStdString *inDirectory*, vtkStdString *inStructLabel*, vtkStdString *inStructName*, vtkStringArray * *inROINames*, vtkStringArray * *inROIAlgorithmName*, vtkStringArray * *inROIType*)

Examples:

[GenerateRTSTRUCT.cxx](#).

25.338.3.2 static [vtkGDCMPolyDataWriter*](#) [vtkGDCMPolyDataWriter::New](#) () [static]

Examples:

[GenerateRTSTRUCT.cxx](#), and [rtstructapp.cxx](#).

25.338.3.3 virtual void [vtkGDCMPolyDataWriter::PrintSelf](#) (ostream & *os*, vtkIndent *indent*) [virtual]

25.338.3.4 virtual void [vtkGDCMPolyDataWriter::SetMedicalImageProperties](#) (vtkMedicalImageProperties * *pd*) [virtual]

Examples:

[GenerateRTSTRUCT.cxx](#), and [rtstructapp.cxx](#).

25.338.3.5 void vtkGDCMPolyDataWriter::SetNumberOfInputPorts (int *n*)

Examples:

[GenerateRTSTRUCT.cxx](#), and [rtstructapp.cxx](#).

25.338.3.6 virtual void vtkGDCMPolyDataWriter::SetRTStructSetProperties (vtkRTStructSetProperties * *pd*) [virtual]

Examples:

[GenerateRTSTRUCT.cxx](#), and [rtstructapp.cxx](#).

25.338.3.7 vtkGDCMPolyDataWriter::vtkTypeRevisionMacro (vtkGDCMPolyDataWriter , vtkPolyDataWriter)

25.338.3.8 void vtkGDCMPolyDataWriter::WriteData () [protected]

25.338.3.9 void vtkGDCMPolyDataWriter::WriteRTSTRUCTData (gdcm::File & *file*, int *num*) [protected]

25.338.3.10 void vtkGDCMPolyDataWriter::WriteRTSTRUCTInfo (gdcm::File & *file*) [protected]

25.338.4 Member Data Documentation

25.338.4.1 vtkMedicalImageProperties* vtkGDCMPolyDataWriter::MedicalImageProperties [protected]

25.338.4.2 vtkRTStructSetProperties* vtkGDCMPolyDataWriter::RTStructSetProperties [protected]

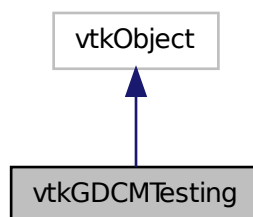
The documentation for this class was generated from the following file:

- [vtkGDCMPolyDataWriter.h](#)

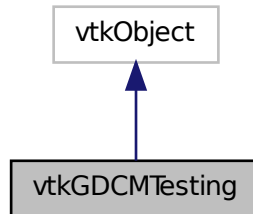
25.339 vtkGDCMTesting Class Reference

```
#include <vtkGDCMTesting.h>
```

Inheritance diagram for vtkGDCMTesting:



Collaboration diagram for vtkGDCMTesting:



Public Types

- `typedef const char *const (* MD5MetalmagesType) [3]`

Public Member Functions

- `void PrintSelf (ostream &os, vtkIndent indent)`
- `vtkTypeRevisionMacro (vtkGDCMTesting, vtkObject)`

Static Public Member Functions

- `static const char * GetGDCMDataRoot ()`
- `static const char *const * GetMD5MetalImage (unsigned int file)`
- `static const char * GetMHDMD5FromFile (const char *filepath)`
- `static unsigned int GetNumberOfMD5MetalImages ()`
- `static const char * GetRAWMD5FromFile (const char *filepath)`
- `static const char * GetVTKDataRoot ()`
- `static vtkGDCMTesting * New ()`

Protected Member Functions

- `vtkGDCMTesting ()`
- `~vtkGDCMTesting ()`

25.339.1 Detailed Description

Examples:

[HelloActiviz5.cs](#), [HelloVTKWorld2.cs](#), [MetalImageMD5Activiz.cs](#), [ReadSeriesIntoVTK.java](#), and [RefCounting.cs](#).

25.339.2 Member Typedef Documentation

25.339.2.1 `typedef const char* const(* vtkGDCMTesting::MD5MetalmagesType)[3]`

25.339.3 Constructor & Destructor Documentation

25.339.3.1 `vtkGDCMTesting::vtkGDCMTesting ()` [protected]

25.339.3.2 `vtkGDCMTesting::~~vtkGDCMTesting ()` [protected]

25.339.4 Member Function Documentation

25.339.4.1 `static const char* vtkGDCMTesting::GetGDCMDataRoot ()` [static]

Examples:

[HelloActiviz5.cs](#), and [ReadSeriesIntoVTK.java](#).

25.339.4.2 `static const char* const* vtkGDCMTesting::GetMD5Metalmage (unsigned int file)` [static]

25.339.4.3 `static const char* vtkGDCMTesting::GetMHDM5FromFile (const char * filepath)` [static]

Examples:

[MetalmageMD5Activiz.cs](#).

25.339.4.4 `static unsigned int vtkGDCMTesting::GetNumberOfMD5Metalmages ()` [static]

25.339.4.5 `static const char* vtkGDCMTesting::GetRAWMD5FromFile (const char * filepath)` [static]

Examples:

[MetalmageMD5Activiz.cs](#).

25.339.4.6 `static const char* vtkGDCMTesting::GetVTKDataRoot ()` [static]

Examples:

[HelloActiviz5.cs](#), and [HelloVTKWorld2.cs](#).

25.339.4.7 `static vtkGDCMTesting* vtkGDCMTesting::New ()` [static]

Examples:

[RefCounting.cs](#).

25.339.4.8 void vtkGDCMTesting::PrintSelf (ostream & *os*, vtkIndent *indent*)

25.339.4.9 vtkGDCMTesting::vtkTypeRevisionMacro (vtkGDCMTesting , vtkObject)

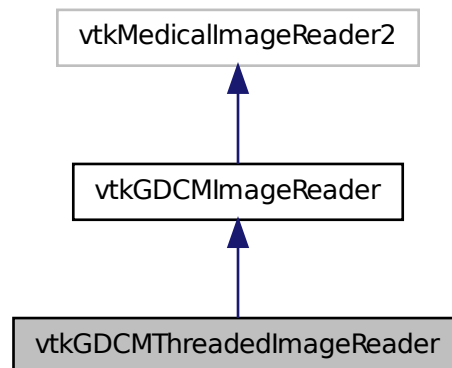
The documentation for this class was generated from the following file:

- [vtkGDCMTesting.h](#)

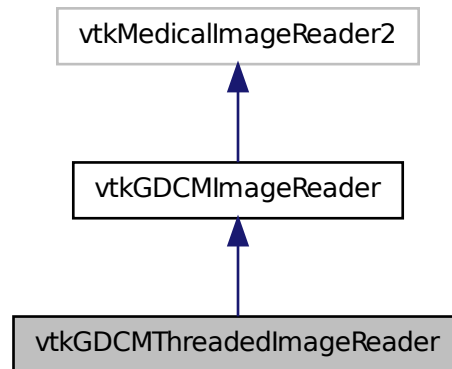
25.340 vtkGDCMThreadedImageReader Class Reference

```
#include <vtkGDCMThreadedImageReader.h>
```

Inheritance diagram for vtkGDCMThreadedImageReader:



Collaboration diagram for vtkGDCMThreadedImageReader:



Public Member Functions

- virtual void [PrintSelf](#) (ostream &os, vtkIndent indent)
- [vtkBooleanMacro](#) (UseShiftScale, int)
- [vtkGetMacro](#) (UseShiftScale, int)
- [vtkSetMacro](#) (Shift, double)
- [vtkSetMacro](#) (Scale, double)
- [vtkSetMacro](#) (UseShiftScale, int)
- [vtkTypeRevisionMacro](#) (vtkGDCMThreadedImageReader, vtkGDCMImageReader)

Static Public Member Functions

- static [vtkGDCMThreadedImageReader * New](#) ()

Protected Member Functions

- [vtkGDCMThreadedImageReader](#) ()
- [~vtkGDCMThreadedImageReader](#) ()
- void [ExecuteData](#) (vtkDataObject *out)
- void [ExecuteInformation](#) ()
- void [ReadFiles](#) (unsigned int nfiles, const char *filenames[])
- void [RequestDataCompat](#) ()

Additional Inherited Members

25.340.1 Constructor & Destructor Documentation

25.340.1.1 `vtkGDCMThreadedImageReader::vtkGDCMThreadedImageReader ()` [protected]

25.340.1.2 `vtkGDCMThreadedImageReader::~~vtkGDCMThreadedImageReader ()` [protected]

25.340.2 Member Function Documentation

25.340.2.1 `void vtkGDCMThreadedImageReader::ExecuteData (vtkDataObject * out)` [protected]

25.340.2.2 `void vtkGDCMThreadedImageReader::ExecuteInformation ()` [protected]

25.340.2.3 `static vtkGDCMThreadedImageReader* vtkGDCMThreadedImageReader::New ()` [static]

25.340.2.4 `virtual void vtkGDCMThreadedImageReader::PrintSelf (ostream & os, vtkIndent indent)` [virtual]

Reimplemented from [vtkGDCMImageReader](#).

25.340.2.5 `void vtkGDCMThreadedImageReader::ReadFiles (unsigned int nfiles, const char * filenames[])` [protected]

25.340.2.6 `void vtkGDCMThreadedImageReader::RequestDataCompat ()` [protected]

25.340.2.7 `vtkGDCMThreadedImageReader::vtkBooleanMacro (UseShiftScale , int)`

25.340.2.8 `vtkGDCMThreadedImageReader::vtkGetMacro (UseShiftScale , int)`

25.340.2.9 `vtkGDCMThreadedImageReader::vtkSetMacro (Shift , double)`

25.340.2.10 `vtkGDCMThreadedImageReader::vtkSetMacro (Scale , double)`

25.340.2.11 `vtkGDCMThreadedImageReader::vtkSetMacro (UseShiftScale , int)`

25.340.2.12 `vtkGDCMThreadedImageReader::vtkTypeRevisionMacro (vtkGDCMThreadedImageReader ,
vtkGDCMImageReader)`

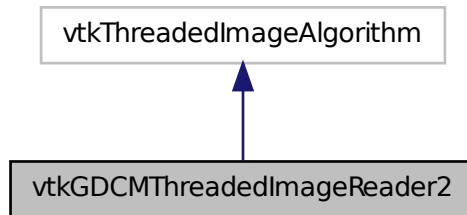
The documentation for this class was generated from the following file:

- [vtkGDCMThreadedImageReader.h](#)

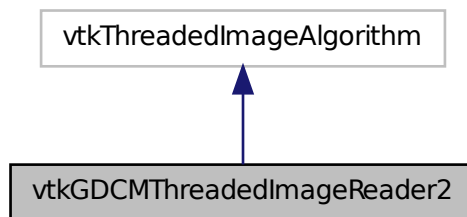
25.341 vtkGDCMThreadedImageReader2 Class Reference

```
#include <vtkGDCMThreadedImageReader2.h>
```

Inheritance diagram for vtkGDCMThreadedImageReader2:



Collaboration diagram for vtkGDCMThreadedImageReader2:



Public Member Functions

- virtual const char * [GetFileName](#) (int i=0)
- virtual void [PrintSelf](#) (ostream &os, vtkIndent indent)
- virtual void [SetFileName](#) (const char *filename)
- virtual void [SetFileNames](#) (vtkStringArray *)
- int [SplitExtent](#) (int splitExt[6], int startExt[6], int num, int total)
- [vtkBooleanMacro](#) (FileLowerLeft, int)
- [vtkBooleanMacro](#) (LoadOverlays, int)
- [vtkBooleanMacro](#) (UseShiftScale, int)
- [vtkGetMacro](#) (FileLowerLeft, int)
- [vtkGetMacro](#) (NumberOfOverlays, int)
- [vtkGetMacro](#) (DataScalarType, int)
- [vtkGetMacro](#) (NumberOfScalarComponents, int)
- [vtkGetMacro](#) (LoadOverlays, int)
- [vtkGetMacro](#) (Shift, double)
- [vtkGetMacro](#) (Scale, double)

- [vtkGetMacro](#) (UseShiftScale, int)
- [vtkGetObjectMacro](#) (FileNames, vtkStringArray)
- [vtkGetVector3Macro](#) (DataOrigin, double)
- [vtkGetVector3Macro](#) (DataSpacing, double)
- [vtkGetVector6Macro](#) (DataExtent, int)
- [vtkSetMacro](#) (FileLowerLeft, int)
- [vtkSetMacro](#) (DataScalarType, int)
- [vtkSetMacro](#) (NumberOfScalarComponents, int)
- [vtkSetMacro](#) (LoadOverlays, int)
- [vtkSetMacro](#) (Shift, double)
- [vtkSetMacro](#) (Scale, double)
- [vtkSetMacro](#) (UseShiftScale, int)
- [vtkSetVector3Macro](#) (DataOrigin, double)
- [vtkSetVector3Macro](#) (DataSpacing, double)
- [vtkSetVector6Macro](#) (DataExtent, int)
- [vtkTypeRevisionMacro](#) (vtkGDCMThreadedImageReader2, vtkThreadedImageAlgorithm)

Static Public Member Functions

- static
[vtkGDCMThreadedImageReader2 * New](#) ()

Protected Member Functions

- [vtkGDCMThreadedImageReader2](#) ()
- [~vtkGDCMThreadedImageReader2](#) ()
- int [RequestInformation](#) (vtkInformation *request, vtkInformationVector **inputVector, vtkInformationVector *outputVector)
- void [ThreadedRequestData](#) (vtkInformation *request, vtkInformationVector **inputVector, vtkInformationVector *outputVector, vtkImageData ***inData, vtkImageData **outData, int outExt[6], int id)

25.341.1 Constructor & Destructor Documentation

25.341.1.1 [vtkGDCMThreadedImageReader2::vtkGDCMThreadedImageReader2](#) () [protected]

25.341.1.2 [vtkGDCMThreadedImageReader2::~~vtkGDCMThreadedImageReader2](#) () [protected]

25.341.2 Member Function Documentation

25.341.2.1 [virtual const char* vtkGDCMThreadedImageReader2::GetFileName](#) (int *i* = 0) [virtual]

25.341.2.2 [static vtkGDCMThreadedImageReader2* vtkGDCMThreadedImageReader2::New](#) () [static]

25.341.2.3 [virtual void vtkGDCMThreadedImageReader2::PrintSelf](#) (ostream & *os*, vtkIndent *indent*) [virtual]

25.341.2.4 [int vtkGDCMThreadedImageReader2::RequestInformation](#) (vtkInformation * *request*, vtkInformationVector ** *inputVector*, vtkInformationVector * *outputVector*) [protected]

25.341.2.5 [virtual void vtkGDCMThreadedImageReader2::SetFileName](#) (const char * *filename*) [virtual]

- 25.341.2.6 `virtual void vtkGDCMThreadedImageReader2::SetFileNames (vtkStringArray *) [virtual]`
- 25.341.2.7 `int vtkGDCMThreadedImageReader2::SplitExtent (int splitExt[6], int startExt[6], int num, int total)`
- 25.341.2.8 `void vtkGDCMThreadedImageReader2::ThreadedRequestData (vtkInformation * request, vtkInformationVector ** inputVector, vtkInformationVector * outputVector, vtkImageData *** inData, vtkImageData ** outData, int outExt[6], int id) [protected]`
- 25.341.2.9 `vtkGDCMThreadedImageReader2::vtkBooleanMacro (FileLowerLeft , int)`
- 25.341.2.10 `vtkGDCMThreadedImageReader2::vtkBooleanMacro (LoadOverlays , int)`
- 25.341.2.11 `vtkGDCMThreadedImageReader2::vtkBooleanMacro (UseShiftScale , int)`
- 25.341.2.12 `vtkGDCMThreadedImageReader2::vtkGetMacro (FileLowerLeft , int)`
- 25.341.2.13 `vtkGDCMThreadedImageReader2::vtkGetMacro (NumberOfOverlays , int)`
- 25.341.2.14 `vtkGDCMThreadedImageReader2::vtkGetMacro (DataScalarType , int)`
- 25.341.2.15 `vtkGDCMThreadedImageReader2::vtkGetMacro (NumberOfScalarComponents , int)`
- 25.341.2.16 `vtkGDCMThreadedImageReader2::vtkGetMacro (LoadOverlays , int)`
- 25.341.2.17 `vtkGDCMThreadedImageReader2::vtkGetMacro (Shift , double)`
- 25.341.2.18 `vtkGDCMThreadedImageReader2::vtkGetMacro (Scale , double)`
- 25.341.2.19 `vtkGDCMThreadedImageReader2::vtkGetMacro (UseShiftScale , int)`
- 25.341.2.20 `vtkGDCMThreadedImageReader2::vtkGetObjectMacro (FileNames , vtkStringArray)`
- 25.341.2.21 `vtkGDCMThreadedImageReader2::vtkGetVector3Macro (DataOrigin , double)`
- 25.341.2.22 `vtkGDCMThreadedImageReader2::vtkGetVector3Macro (DataSpacing , double)`
- 25.341.2.23 `vtkGDCMThreadedImageReader2::vtkGetVector6Macro (DataExtent , int)`
- 25.341.2.24 `vtkGDCMThreadedImageReader2::vtkSetMacro (FileLowerLeft , int)`
- 25.341.2.25 `vtkGDCMThreadedImageReader2::vtkSetMacro (DataScalarType , int)`
- 25.341.2.26 `vtkGDCMThreadedImageReader2::vtkSetMacro (NumberOfScalarComponents , int)`
- 25.341.2.27 `vtkGDCMThreadedImageReader2::vtkSetMacro (LoadOverlays , int)`
- 25.341.2.28 `vtkGDCMThreadedImageReader2::vtkSetMacro (Shift , double)`
- 25.341.2.29 `vtkGDCMThreadedImageReader2::vtkSetMacro (Scale , double)`
- 25.341.2.30 `vtkGDCMThreadedImageReader2::vtkSetMacro (UseShiftScale , int)`

25.341.2.31 `vtkGDCMThreadedImageReader2::vtkSetVector3Macro (DataOrigin , double)`

25.341.2.32 `vtkGDCMThreadedImageReader2::vtkSetVector3Macro (DataSpacing , double)`

25.341.2.33 `vtkGDCMThreadedImageReader2::vtkSetVector6Macro (DataExtent , int)`

25.341.2.34 `vtkGDCMThreadedImageReader2::vtkTypeRevisionMacro (vtkGDCMThreadedImageReader2 ,
vtkThreadedImageAlgorithm)`

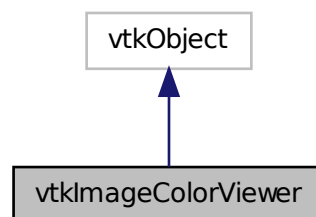
The documentation for this class was generated from the following file:

- [vtkGDCMThreadedImageReader2.h](#)

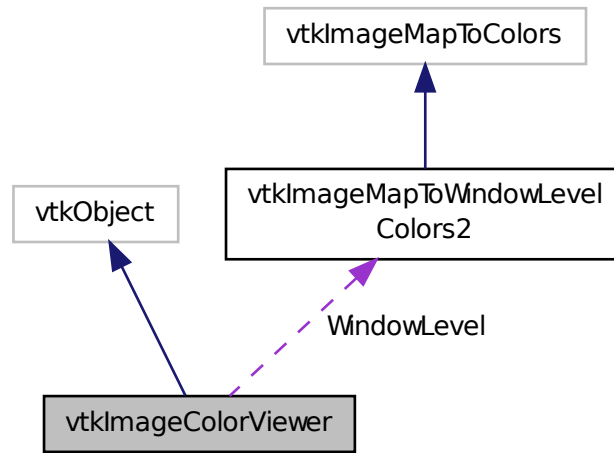
25.342 vtkImageColorViewer Class Reference

```
#include <vtkImageColorViewer.h>
```

Inheritance diagram for vtkImageColorViewer:



Collaboration diagram for vtkImageColorViewer:



Public Types

- enum {
[SLICE_ORIENTATION_YZ](#) = 0,
[SLICE_ORIENTATION_XZ](#) = 1,
[SLICE_ORIENTATION_XY](#) = 2 }

Public Member Functions

- virtual void [AddInput](#) (vtkImageData *input)
- virtual void [AddInputConnection](#) (vtkAlgorithmOutput *input)
- virtual double [GetColorLevel](#) ()
- virtual double [GetColorWindow](#) ()
- virtual vtkImageData * [GetInput](#) ()
- virtual int [GetOffScreenRendering](#) ()
- double [GetOverlayVisibility](#) ()
- virtual int * [GetPosition](#) ()
- virtual int * [GetSize](#) ()
- virtual int [GetSliceMax](#) ()
- virtual int [GetSliceMin](#) ()
- virtual void [GetSliceRange](#) (int range[2])
- virtual void [GetSliceRange](#) (int &min, int &max)
- virtual int * [GetSliceRange](#) ()
- virtual const char * [GetWindowName](#) ()
- void [PrintSelf](#) (ostream &os, vtkIndent indent)
- virtual void [Render](#) (void)
- virtual void [SetColorLevel](#) (double s)

- virtual void [SetColorWindow](#) (double s)
- virtual void [SetDisplayId](#) (void *a)
- virtual void [SetInput](#) (vtkImageData *in)
- virtual void [SetInputConnection](#) (vtkAlgorithmOutput *input)
- virtual void [SetOffScreenRendering](#) (int)
- void [SetOverlayVisibility](#) (double vis)
- virtual void [SetParentId](#) (void *a)
- virtual void [SetPosition](#) (int a, int b)
- virtual void [SetPosition](#) (int a[2])
- virtual void [SetRenderer](#) (vtkRenderer *arg)
- virtual void [SetRenderWindow](#) (vtkRenderWindow *arg)
- virtual void [SetSize](#) (int a, int b)
- virtual void [SetSize](#) (int a[2])
- virtual void [SetSlice](#) (int s)
- virtual void [SetSliceOrientation](#) (int orientation)
- virtual void [SetSliceOrientationToXY](#) ()
- virtual void [SetSliceOrientationToXZ](#) ()
- virtual void [SetSliceOrientationToYZ](#) ()
- virtual void [SetupInteractor](#) (vtkRenderWindowInteractor *)
- virtual void [SetWindowId](#) (void *a)
- virtual void [UpdateDisplayExtent](#) ()
- [VTK_LEGACY](#) (int GetWholeZMin())
- [VTK_LEGACY](#) (int GetWholeZMax())
- [VTK_LEGACY](#) (int GetZSlice())
- [VTK_LEGACY](#) (void SetZSlice(int))
- [vtkBooleanMacro](#) (OffScreenRendering, int)
- [vtkGetMacro](#) (SliceOrientation, int)
- [vtkGetMacro](#) (Slice, int)
- [vtkGetObjectMacro](#) (RenderWindow, vtkRenderWindow)
- [vtkGetObjectMacro](#) (Renderer, vtkRenderer)
- [vtkGetObjectMacro](#) (ImageActor, vtkImageActor)
- [vtkGetObjectMacro](#) (WindowLevel, vtkImageMapToWindowLevelColors2)
- [vtkGetObjectMacro](#) (InteractorStyle, vtkInteractorStyleImage)
- [vtkTypeRevisionMacro](#) (vtkImageColorViewer, vtkObject)

Static Public Member Functions

- static [vtkImageColorViewer * New](#) ()

Protected Member Functions

- [vtkImageColorViewer](#) ()
- [~vtkImageColorViewer](#) ()
- virtual void [InstallPipeline](#) ()
- virtual void [UnInstallPipeline](#) ()
- virtual void [UpdateOrientation](#) ()

Protected Attributes

- int [FirstRender](#)
- vtkImageActor * [ImageActor](#)
- vtkRenderWindowInteractor * [Interactor](#)
- vtkInteractorStyleImage * [InteractorStyle](#)
- vtkImageActor * [OverlayImageActor](#)
- vtkRenderer * [Renderer](#)
- vtkRenderWindow * [RenderWindow](#)
- int [Slice](#)
- int [SliceOrientation](#)
- vtkImageMapToWindowLevelColors2 * [WindowLevel](#)

25.342.1 Detailed Description

Examples:

[gdcmrionplan.cxx](#), and [gdcmrtpplan.cxx](#).

25.342.2 Member Enumeration Documentation

25.342.2.1 anonymous enum

Enumerator

SLICE_ORIENTATION_YZ
SLICE_ORIENTATION_XZ
SLICE_ORIENTATION_XY

25.342.3 Constructor & Destructor Documentation

25.342.3.1 `vtkImageColorViewer::vtkImageColorViewer ()` [protected]

25.342.3.2 `vtkImageColorViewer::~~vtkImageColorViewer ()` [protected]

25.342.4 Member Function Documentation

25.342.4.1 `virtual void vtkImageColorViewer::AddInput (vtkImageData * input)` [virtual]

25.342.4.2 `virtual void vtkImageColorViewer::AddInputConnection (vtkAlgorithmOutput * input)` [virtual]

25.342.4.3 `virtual double vtkImageColorViewer::GetColorLevel ()` [virtual]

25.342.4.4 `virtual double vtkImageColorViewer::GetColorWindow ()` [virtual]

25.342.4.5 `virtual vtkImageData* vtkImageColorViewer::GetInput ()` [virtual]

25.342.4.6 `virtual int vtkImageColorViewer::GetOffScreenRendering ()` [virtual]

25.342.4.7 `double vtkImageColorViewer::GetOverlayVisibility ()`

- 25.342.4.8 `virtual int* vtkImageColorViewer::GetPosition () [virtual]`
- 25.342.4.9 `virtual int* vtkImageColorViewer::GetSize () [virtual]`
- 25.342.4.10 `virtual int vtkImageColorViewer::GetSliceMax () [virtual]`
- 25.342.4.11 `virtual int vtkImageColorViewer::GetSliceMin () [virtual]`
- 25.342.4.12 `virtual void vtkImageColorViewer::GetSliceRange (int range[2]) [inline],[virtual]`
- 25.342.4.13 `virtual void vtkImageColorViewer::GetSliceRange (int & min, int & max) [virtual]`
- 25.342.4.14 `virtual int* vtkImageColorViewer::GetSliceRange () [virtual]`
- 25.342.4.15 `virtual const char* vtkImageColorViewer::GetWindowName () [virtual]`
- 25.342.4.16 `virtual void vtkImageColorViewer::InstallPipeline () [protected],[virtual]`
- 25.342.4.17 `static vtkImageColorViewer* vtkImageColorViewer::New () [static]`

Examples:

[gdcmrtionplan.cxx](#), and [gdcmrtplan.cxx](#).

- 25.342.4.18 `void vtkImageColorViewer::PrintSelf (ostream & os, vtkIndent indent)`
- 25.342.4.19 `virtual void vtkImageColorViewer::Render (void) [virtual]`

Examples:

[gdcmrtionplan.cxx](#), and [gdcmrtplan.cxx](#).

- 25.342.4.20 `virtual void vtkImageColorViewer::SetColorLevel (double s) [virtual]`
- 25.342.4.21 `virtual void vtkImageColorViewer::SetColorWindow (double s) [virtual]`
- 25.342.4.22 `virtual void vtkImageColorViewer::SetDisplayId (void * a) [virtual]`
- 25.342.4.23 `virtual void vtkImageColorViewer::SetInput (vtkImageData * in) [virtual]`

Examples:

[gdcmrtionplan.cxx](#), and [gdcmrtplan.cxx](#).

- 25.342.4.24 `virtual void vtkImageColorViewer::SetInputConnection (vtkAlgorithmOutput * input) [virtual]`
- 25.342.4.25 `virtual void vtkImageColorViewer::SetOffScreenRendering (int) [virtual]`
- 25.342.4.26 `void vtkImageColorViewer::SetOverlayVisibility (double vis)`

25.342.4.27 `virtual void vtkImageColorViewer::SetParentId (void * a) [virtual]`

25.342.4.28 `virtual void vtkImageColorViewer::SetPosition (int a, int b) [virtual]`

25.342.4.29 `virtual void vtkImageColorViewer::SetPosition (int a[2]) [inline],[virtual]`

References `SetPosition()`.

Referenced by `SetPosition()`.

25.342.4.30 `virtual void vtkImageColorViewer::SetRenderer (vtkRenderer * arg) [virtual]`

25.342.4.31 `virtual void vtkImageColorViewer::SetRenderWindow (vtkRenderWindow * arg) [virtual]`

25.342.4.32 `virtual void vtkImageColorViewer::SetSize (int a, int b) [virtual]`

Examples:

[gdcmrtionplan.cxx](#), and [gdcmrtplan.cxx](#).

25.342.4.33 `virtual void vtkImageColorViewer::SetSize (int a[2]) [inline],[virtual]`

References `SetSize()`.

Referenced by `SetSize()`.

25.342.4.34 `virtual void vtkImageColorViewer::SetSlice (int s) [virtual]`

25.342.4.35 `virtual void vtkImageColorViewer::SetSliceOrientation (int orientation) [virtual]`

25.342.4.36 `virtual void vtkImageColorViewer::SetSliceOrientationToXY () [inline],[virtual]`

References `SLICE_ORIENTATION_XY`.

25.342.4.37 `virtual void vtkImageColorViewer::SetSliceOrientationToXZ () [inline],[virtual]`

References `SLICE_ORIENTATION_XZ`.

25.342.4.38 `virtual void vtkImageColorViewer::SetSliceOrientationToYZ () [inline],[virtual]`

References `SLICE_ORIENTATION_YZ`.

25.342.4.39 `virtual void vtkImageColorViewer::SetupInteractor (vtkRenderWindowInteractor *) [virtual]`

Examples:

[gdcmrtionplan.cxx](#), and [gdcmrtplan.cxx](#).

- 25.342.4.40 `virtual void vtkImageColorViewer::SetWindowId (void * a)` [virtual]
- 25.342.4.41 `virtual void vtkImageColorViewer::UnInstallPipeline ()` [protected],[virtual]
- 25.342.4.42 `virtual void vtkImageColorViewer::UpdateDisplayExtent ()` [virtual]
- 25.342.4.43 `virtual void vtkImageColorViewer::UpdateOrientation ()` [protected],[virtual]
- 25.342.4.44 `vtkImageColorViewer::VTK_LEGACY (int GetWholeZMin())`
- 25.342.4.45 `vtkImageColorViewer::VTK_LEGACY (int GetWholeZMax())`
- 25.342.4.46 `vtkImageColorViewer::VTK_LEGACY (int GetZSlice())`
- 25.342.4.47 `vtkImageColorViewer::VTK_LEGACY (void SetZSliceint)`
- 25.342.4.48 `vtkImageColorViewer::vtkBooleanMacro (OffScreenRendering , int)`
- 25.342.4.49 `vtkImageColorViewer::vtkGetMacro (SliceOrientation , int)`
- 25.342.4.50 `vtkImageColorViewer::vtkGetMacro (Slice , int)`
- 25.342.4.51 `vtkImageColorViewer::vtkGetObjectMacro (RenderWindow , vtkRenderWindow)`
- 25.342.4.52 `vtkImageColorViewer::vtkGetObjectMacro (Renderer , vtkRenderer)`
- 25.342.4.53 `vtkImageColorViewer::vtkGetObjectMacro (ImageActor , vtkImageActor)`
- 25.342.4.54 `vtkImageColorViewer::vtkGetObjectMacro (WindowLevel , vtkImageMapToWindowLevelColors2)`
- 25.342.4.55 `vtkImageColorViewer::vtkGetObjectMacro (InteractorStyle , vtkInteractorStyleImage)`
- 25.342.4.56 `vtkImageColorViewer::vtkTypeRevisionMacro (vtkImageColorViewer , vtkObject)`

25.342.5 Member Data Documentation

- 25.342.5.1 `int vtkImageColorViewer::FirstRender` [protected]
- 25.342.5.2 `vtkImageActor* vtkImageColorViewer::ImageActor` [protected]
- 25.342.5.3 `vtkRenderWindowInteractor* vtkImageColorViewer::Interactor` [protected]
- 25.342.5.4 `vtkInteractorStyleImage* vtkImageColorViewer::InteractorStyle` [protected]
- 25.342.5.5 `vtkImageActor* vtkImageColorViewer::OverlayImageActor` [protected]
- 25.342.5.6 `vtkRenderer* vtkImageColorViewer::Renderer` [protected]
- 25.342.5.7 `vtkRenderWindow* vtkImageColorViewer::RenderWindow` [protected]
- 25.342.5.8 `int vtkImageColorViewer::Slice` [protected]

25.342.5.9 `int vtkImageColorViewer::SliceOrientation` [protected]

25.342.5.10 `vtkImageMapToWindowLevelColors2* vtkImageColorViewer::WindowLevel` [protected]

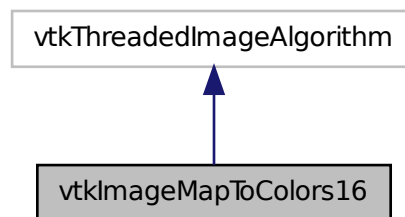
The documentation for this class was generated from the following file:

- [vtkImageColorViewer.h](#)

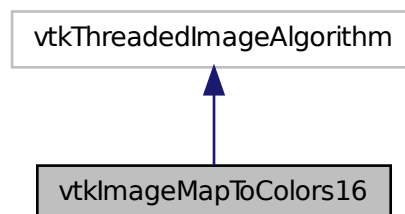
25.343 `vtkImageMapToColors16` Class Reference

```
#include <vtkImageMapToColors16.h>
```

Inheritance diagram for `vtkImageMapToColors16`:



Collaboration diagram for `vtkImageMapToColors16`:



Public Member Functions

- virtual unsigned long [GetMTime](#) ()
- void [PrintSelf](#) (ostream &os, vtkIndent indent)
- virtual void [SetLookupTable](#) (vtkScalarsToColors *)

- void [SetOutputFormatToLuminance](#) ()
- void [SetOutputFormatToLuminanceAlpha](#) ()
- void [SetOutputFormatToRGB](#) ()
- void [SetOutputFormatToRGBA](#) ()
- [vtkBooleanMacro](#) ([PassAlphaToOutput](#), int)
- [vtkGetMacro](#) ([OutputFormat](#), int)
- [vtkGetMacro](#) ([ActiveComponent](#), int)
- [vtkGetMacro](#) ([PassAlphaToOutput](#), int)
- [vtkGetObjectMacro](#) ([LookupTable](#), [vtkScalarsToColors](#))
- [vtkSetMacro](#) ([OutputFormat](#), int)
- [vtkSetMacro](#) ([ActiveComponent](#), int)
- [vtkSetMacro](#) ([PassAlphaToOutput](#), int)
- [vtkTypeRevisionMacro](#) ([vtkImageMapToColors16](#), [vtkThreadedImageAlgorithm](#))

Static Public Member Functions

- static [vtkImageMapToColors16](#) * [New](#) ()

Protected Member Functions

- [vtkImageMapToColors16](#) ()
- [~vtkImageMapToColors16](#) ()
- virtual int [RequestData](#) ([vtkInformation](#) *request, [vtkInformationVector](#) **inputVector, [vtkInformationVector](#) *outputVector)
- virtual int [RequestInformation](#) ([vtkInformation](#) *, [vtkInformationVector](#) **, [vtkInformationVector](#) *)
- void [ThreadedRequestData](#) ([vtkInformation](#) *request, [vtkInformationVector](#) **inputVector, [vtkInformationVector](#) *outputVector, [vtkImageData](#) ***inData, [vtkImageData](#) **outData, int extent[6], int id)

Protected Attributes

- int [ActiveComponent](#)
- int [DataWasPassed](#)
- [vtkScalarsToColors](#) * [LookupTable](#)
- int [OutputFormat](#)
- int [PassAlphaToOutput](#)

25.343.1 Constructor & Destructor Documentation

25.343.1.1 [vtkImageMapToColors16::vtkImageMapToColors16](#) () [protected]

25.343.1.2 [vtkImageMapToColors16::~~vtkImageMapToColors16](#) () [protected]

25.343.2 Member Function Documentation

25.343.2.1 virtual unsigned long [vtkImageMapToColors16::GetMTime](#) () [virtual]

25.343.2.2 static [vtkImageMapToColors16](#)* [vtkImageMapToColors16::New](#) () [static]

- 25.343.2.3 void vtkImageMapToColors16::PrintSelf (ostream & *os*, vtkIndent *indent*)
- 25.343.2.4 virtual int vtkImageMapToColors16::RequestData (vtkInformation * *request*, vtkInformationVector ** *inputVector*, vtkInformationVector * *outputVector*) [protected],[virtual]
- 25.343.2.5 virtual int vtkImageMapToColors16::RequestInformation (vtkInformation * , vtkInformationVector ** , vtkInformationVector *) [protected],[virtual]
- 25.343.2.6 virtual void vtkImageMapToColors16::SetLookupTable (vtkScalarsToColors *) [virtual]
- 25.343.2.7 void vtkImageMapToColors16::SetOutputFormatToLuminance () [inline]
- 25.343.2.8 void vtkImageMapToColors16::SetOutputFormatToLuminanceAlpha () [inline]
- 25.343.2.9 void vtkImageMapToColors16::SetOutputFormatToRGB () [inline]
- 25.343.2.10 void vtkImageMapToColors16::SetOutputFormatToRGBA () [inline]
- 25.343.2.11 void vtkImageMapToColors16::ThreadedRequestData (vtkInformation * *request*, vtkInformationVector ** *inputVector*, vtkInformationVector * *outputVector*, vtkImageData *** *inData*, vtkImageData ** *outData*, int *extent*[6], int *id*) [protected]
- 25.343.2.12 vtkImageMapToColors16::vtkBooleanMacro (PassAlphaToOutput , int)
- 25.343.2.13 vtkImageMapToColors16::vtkGetMacro (OutputFormat , int)
- 25.343.2.14 vtkImageMapToColors16::vtkGetMacro (ActiveComponent , int)
- 25.343.2.15 vtkImageMapToColors16::vtkGetMacro (PassAlphaToOutput , int)
- 25.343.2.16 vtkImageMapToColors16::vtkGetObjectMacro (LookupTable , vtkScalarsToColors)
- 25.343.2.17 vtkImageMapToColors16::vtkSetMacro (OutputFormat , int)
- 25.343.2.18 vtkImageMapToColors16::vtkSetMacro (ActiveComponent , int)
- 25.343.2.19 vtkImageMapToColors16::vtkSetMacro (PassAlphaToOutput , int)
- 25.343.2.20 vtkImageMapToColors16::vtkTypeRevisionMacro (vtkImageMapToColors16 , vtkThreadedImageAlgorithm)

25.343.3 Member Data Documentation

- 25.343.3.1 int vtkImageMapToColors16::ActiveComponent [protected]
- 25.343.3.2 int vtkImageMapToColors16::DataWasPassed [protected]
- 25.343.3.3 vtkScalarsToColors* vtkImageMapToColors16::LookupTable [protected]
- 25.343.3.4 int vtkImageMapToColors16::OutputFormat [protected]

25.343.3.5 int vtkImageMapToColors16::PassAlphaToOutput [protected]

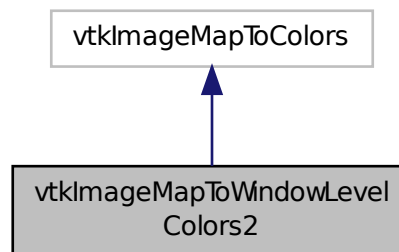
The documentation for this class was generated from the following file:

- [vtkImageMapToColors16.h](#)

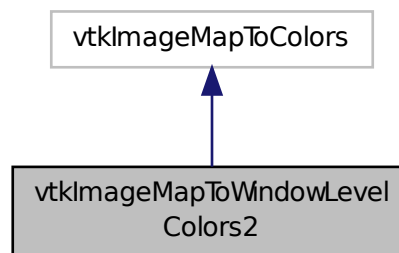
25.344 vtkImageMapToWindowLevelColors2 Class Reference

```
#include <vtkImageMapToWindowLevelColors2.h>
```

Inheritance diagram for vtkImageMapToWindowLevelColors2:



Collaboration diagram for vtkImageMapToWindowLevelColors2:



Public Member Functions

- void [PrintSelf](#) (ostream &os, vtkIndent indent)
- [vtkGetMacro](#) ([Window](#), double)

- [vtkGetMacro](#) ([Level](#), double)
- [vtkSetMacro](#) ([Window](#), double)
- [vtkSetMacro](#) ([Level](#), double)
- [vtkTypeRevisionMacro](#) ([vtkImageMapToWindowLevelColors2](#), [vtkImageMapToColors](#))

Static Public Member Functions

- static
[vtkImageMapToWindowLevelColors2](#) * [New](#) ()

Protected Member Functions

- [vtkImageMapToWindowLevelColors2](#) ()
- [~vtkImageMapToWindowLevelColors2](#) ()
- virtual int [RequestData](#) ([vtkInformation](#) *request, [vtkInformationVector](#) **inputVector, [vtkInformationVector](#) *outputVector)
- virtual int [RequestInformation](#) ([vtkInformation](#) *, [vtkInformationVector](#) **, [vtkInformationVector](#) *)
- void [ThreadedRequestData](#) ([vtkInformation](#) *request, [vtkInformationVector](#) **inputVector, [vtkInformationVector](#) *outputVector, [vtkImageData](#) ***inData, [vtkImageData](#) **outData, int extent[6], int id)

Protected Attributes

- double [Level](#)
- double [Window](#)

25.344.1 Constructor & Destructor Documentation

25.344.1.1 [vtkImageMapToWindowLevelColors2::vtkImageMapToWindowLevelColors2](#) () [protected]

25.344.1.2 [vtkImageMapToWindowLevelColors2::~~vtkImageMapToWindowLevelColors2](#) () [protected]

25.344.2 Member Function Documentation

25.344.2.1 static [vtkImageMapToWindowLevelColors2* vtkImageMapToWindowLevelColors2::New](#) () [static]

25.344.2.2 void [vtkImageMapToWindowLevelColors2::PrintSelf](#) (ostream & os, vtkIndent indent)

25.344.2.3 virtual int [vtkImageMapToWindowLevelColors2::RequestData](#) ([vtkInformation](#) * request, [vtkInformationVector](#) ** inputVector, [vtkInformationVector](#) * outputVector) [protected],[virtual]

25.344.2.4 virtual int [vtkImageMapToWindowLevelColors2::RequestInformation](#) ([vtkInformation](#) * , [vtkInformationVector](#) ** , [vtkInformationVector](#) *) [protected],[virtual]

25.344.2.5 void [vtkImageMapToWindowLevelColors2::ThreadedRequestData](#) ([vtkInformation](#) * request, [vtkInformationVector](#) ** inputVector, [vtkInformationVector](#) * outputVector, [vtkImageData](#) *** inData, [vtkImageData](#) ** outData, int extent[6], int id) [protected]

25.344.2.6 [vtkImageMapToWindowLevelColors2::vtkGetMacro](#) ([Window](#) , double)

25.344.2.7 `vtkImageMapToWindowLevelColors2::vtkGetMacro (Level , double)`

25.344.2.8 `vtkImageMapToWindowLevelColors2::vtkSetMacro (Window , double)`

25.344.2.9 `vtkImageMapToWindowLevelColors2::vtkSetMacro (Level , double)`

25.344.2.10 `vtkImageMapToWindowLevelColors2::vtkTypeRevisionMacro (vtkImageMapToWindowLevelColors2 ,
vtkImageMapToColors)`

25.344.3 Member Data Documentation

25.344.3.1 `double vtkImageMapToWindowLevelColors2::Level` [protected]

25.344.3.2 `double vtkImageMapToWindowLevelColors2::Window` [protected]

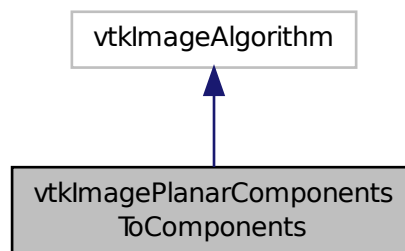
The documentation for this class was generated from the following file:

- [vtkImageMapToWindowLevelColors2.h](#)

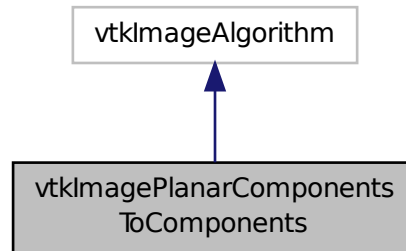
25.345 vtkImagePlanarComponentsToComponents Class Reference

```
#include <vtkImagePlanarComponentsToComponents.h>
```

Inheritance diagram for `vtkImagePlanarComponentsToComponents`:



Collaboration diagram for `vtkImagePlanarComponentsToComponents`:



Public Member Functions

- void [PrintSelf](#) (ostream &os, vtkIndent indent)
- [vtkTypeRevisionMacro](#) ([vtkImagePlanarComponentsToComponents](#), vtkImageAlgorithm)

Static Public Member Functions

- static
[vtkImagePlanarComponentsToComponents](#) * [New](#) ()

Protected Member Functions

- [vtkImagePlanarComponentsToComponents](#) ()
- [~vtkImagePlanarComponentsToComponents](#) ()
- virtual int [RequestData](#) (vtkInformation *, vtkInformationVector **, vtkInformationVector *)

25.345.1 Constructor & Destructor Documentation

25.345.1.1 `vtkImagePlanarComponentsToComponents::vtkImagePlanarComponentsToComponents ()` [protected]

25.345.1.2 `vtkImagePlanarComponentsToComponents::~~vtkImagePlanarComponentsToComponents ()` [inline], [protected]

25.345.2 Member Function Documentation

25.345.2.1 `static vtkImagePlanarComponentsToComponents* vtkImagePlanarComponentsToComponents::New ()` [static]

25.345.2.2 `void vtkImagePlanarComponentsToComponents::PrintSelf (ostream & os, vtkIndent indent)`

25.345.2.3 `virtual int vtkImagePlanarComponentsToComponents::RequestData (vtkInformation *, vtkInformationVector **, vtkInformationVector *) [protected],[virtual]`

25.345.2.4 `vtkImagePlanarComponentsToComponents::vtkTypeRevisionMacro (vtkImagePlanarComponentsToComponents , vtkImageAlgorithm)`

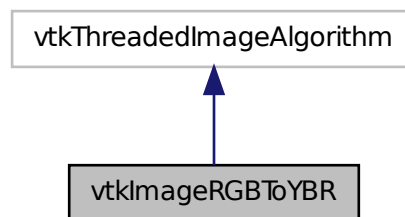
The documentation for this class was generated from the following file:

- [vtkImagePlanarComponentsToComponents.h](#)

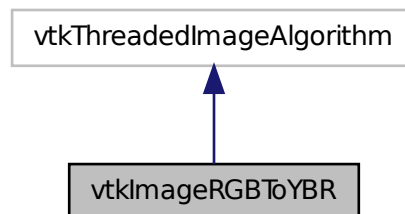
25.346 vtkImageRGBToYBR Class Reference

```
#include <vtkImageRGBToYBR.h>
```

Inheritance diagram for vtkImageRGBToYBR:



Collaboration diagram for vtkImageRGBToYBR:



Public Member Functions

- void [PrintSelf](#) (ostream &os, vtkIndent indent)

- [vtkTypeRevisionMacro](#) ([vtkImageRGBToYBR](#), [vtkThreadedImageAlgorithm](#))

Static Public Member Functions

- static [vtkImageRGBToYBR](#) * [New](#) ()

Protected Member Functions

- [vtkImageRGBToYBR](#) ()
- [~vtkImageRGBToYBR](#) ()
- void [ThreadedExecute](#) ([vtkImageData](#) **inData*, [vtkImageData](#) **outData*, int *ext*[6], int *id*)

25.346.1 Constructor & Destructor Documentation

25.346.1.1 [vtkImageRGBToYBR::vtkImageRGBToYBR](#) () [[protected](#)]

25.346.1.2 [vtkImageRGBToYBR::~~vtkImageRGBToYBR](#) () [[inline](#)], [[protected](#)]

25.346.2 Member Function Documentation

25.346.2.1 static [vtkImageRGBToYBR*](#) [vtkImageRGBToYBR::New](#) () [[static](#)]

25.346.2.2 void [vtkImageRGBToYBR::PrintSelf](#) ([ostream](#) & *os*, [vtkIndent](#) *indent*)

25.346.2.3 void [vtkImageRGBToYBR::ThreadedExecute](#) ([vtkImageData](#) * *inData*, [vtkImageData](#) * *outData*, int *ext*[6], int *id*)
[[protected](#)]

25.346.2.4 [vtkImageRGBToYBR::vtkTypeRevisionMacro](#) ([vtkImageRGBToYBR](#) , [vtkThreadedImageAlgorithm](#))

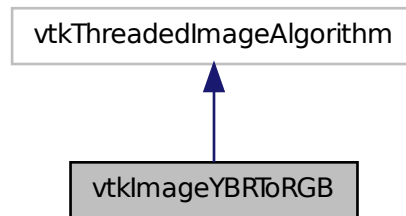
The documentation for this class was generated from the following file:

- [vtkImageRGBToYBR.h](#)

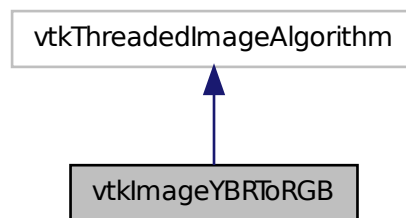
25.347 vtkImageYBRToRGB Class Reference

```
#include <vtkImageYBRToRGB.h>
```

Inheritance diagram for vtkImageYBRToRGB:



Collaboration diagram for vtkImageYBRToRGB:



Public Member Functions

- void [PrintSelf](#) (ostream &os, vtkIndent indent)
- [vtkTypeRevisionMacro](#) ([vtkImageYBRToRGB](#), vtkThreadedImageAlgorithm)

Static Public Member Functions

- static [vtkImageYBRToRGB](#) * [New](#) ()

Protected Member Functions

- [vtkImageYBRToRGB](#) ()
- [~vtkImageYBRToRGB](#) ()
- void [ThreadedExecute](#) (vtkImageData *inData, vtkImageData *outData, int ext[6], int id)

25.347.1 Constructor & Destructor Documentation

25.347.1.1 `vtkImageYBRToRGB::vtkImageYBRToRGB ()` `[protected]`

25.347.1.2 `vtkImageYBRToRGB::~~vtkImageYBRToRGB ()` `[inline], [protected]`

25.347.2 Member Function Documentation

25.347.2.1 `static vtkImageYBRToRGB* vtkImageYBRToRGB::New ()` `[static]`

25.347.2.2 `void vtkImageYBRToRGB::PrintSelf (ostream & os, vtkIndent indent)`

25.347.2.3 `void vtkImageYBRToRGB::ThreadedExecute (vtkImageData * inData, vtkImageData * outData, int ext[6], int id)`
`[protected]`

25.347.2.4 `vtkImageYBRToRGB::vtkTypeRevisionMacro (vtkImageYBRToRGB , vtkThreadedImageAlgorithm)`

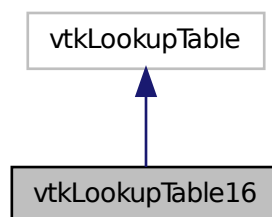
The documentation for this class was generated from the following file:

- [vtkImageYBRToRGB.h](#)

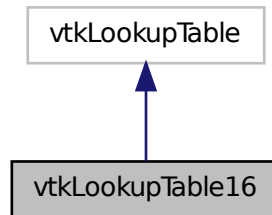
25.348 vtkLookupTable16 Class Reference

```
#include <vtkLookupTable16.h>
```

Inheritance diagram for vtkLookupTable16:



Collaboration diagram for vtkLookupTable16:



Public Member Functions

- void [Build](#) ()
- unsigned short * [GetPointer](#) (const vtkIdType id)
- void [PrintSelf](#) (ostream &os, vtkIndent indent)
- void [SetNumberOfTableValues](#) (vtkIdType number)
- [vtkTypeRevisionMacro](#) ([vtkLookupTable16](#), vtkLookupTable)
- unsigned char * [WritePointer](#) (const vtkIdType id, const int number)

Static Public Member Functions

- static [vtkLookupTable16](#) * [New](#) ()

Protected Member Functions

- [vtkLookupTable16](#) (int size=256, int ext=256)
- [~vtkLookupTable16](#) ()
- void [MapScalarsThroughTable2](#) (void *input, unsigned char *output, int inputDataType, int numberOfValues, int inputIncrement, int outputFormat)

Protected Attributes

- vtkUnsignedShortArray * [Table16](#)

25.348.1 Constructor & Destructor Documentation

25.348.1.1 `vtkLookupTable16::vtkLookupTable16 (int size = 256, int ext = 256)` [protected]

25.348.1.2 `vtkLookupTable16::~~vtkLookupTable16 ()` [protected]

25.348.2 Member Function Documentation

- 25.348.2.1 void vtkLookupTable16::Build ()
- 25.348.2.2 unsigned short* vtkLookupTable16::GetPointer (const vtkIdType *id*) [inline]
- 25.348.2.3 void vtkLookupTable16::MapScalarsThroughTable2 (void * *input*, unsigned char * *output*, int *inputDataType*, int *numberOfValues*, int *inputIncrement*, int *outputFormat*) [protected]
- 25.348.2.4 static vtkLookupTable16* vtkLookupTable16::New () [static]
- 25.348.2.5 void vtkLookupTable16::PrintSelf (ostream & *os*, vtkIndent *indent*)
- 25.348.2.6 void vtkLookupTable16::SetNumberOfTableValues (vtkIdType *number*)
- 25.348.2.7 vtkLookupTable16::vtkTypeRevisionMacro (vtkLookupTable16 , vtkLookupTable)
- 25.348.2.8 unsigned char * vtkLookupTable16::WritePointer (const vtkIdType *id*, const int *number*) [inline]

References Table16.

25.348.3 Member Data Documentation

- 25.348.3.1 vtkUnsignedShortArray* vtkLookupTable16::Table16 [protected]

Referenced by WritePointer().

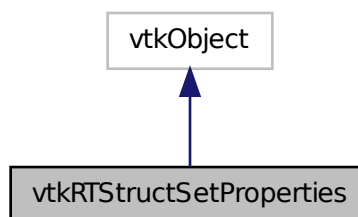
The documentation for this class was generated from the following file:

- [vtkLookupTable16.h](#)

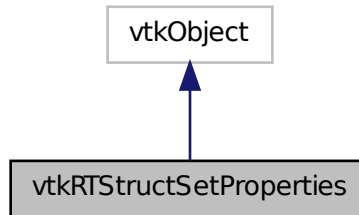
25.349 vtkRTStructSetProperties Class Reference

```
#include <vtkRTStructSetProperties.h>
```

Inheritance diagram for vtkRTStructSetProperties:



Collaboration diagram for vtkRTStructSetProperties:



Public Member Functions

- void [AddContourReferencedFrameOfReference](#) (vtkIdType pdnum, const char *classuid, const char *instanceuid)
- void [AddReferencedFrameOfReference](#) (const char *classuid, const char *instanceuid)
- void [AddStructureSetROI](#) (int roinumber, const char *refframerefid, const char *roiname, const char *ROI-GenerationAlgorithm)
- void [AddStructureSetROIObservation](#) (int refnumber, int observationnumber, const char *rtroiinterpretedtype, const char *roiinterpreter)
- virtual void [Clear](#) ()
- virtual void [DeepCopy](#) (vtkRTStructSetProperties *p)
- const char * [GetContourReferencedFrameOfReferenceClassUID](#) (vtkIdType pdnum, vtkIdType id)
- const char * [GetContourReferencedFrameOfReferenceInstanceUID](#) (vtkIdType pdnum, vtkIdType id)
- vtkIdType [GetNumberOfContourReferencedFrameOfReferences](#) ()
- vtkIdType [GetNumberOfContourReferencedFrameOfReferences](#) (vtkIdType pdnum)
- vtkIdType [GetNumberOfReferencedFrameOfReferences](#) ()
- vtkIdType [GetNumberOfStructureSetROIs](#) ()
- const char * [GetReferencedFrameOfReferenceClassUID](#) (vtkIdType id)
- const char * [GetReferencedFrameOfReferenceInstanceUID](#) (vtkIdType id)
- int [GetStructureSetObservationNumber](#) (vtkIdType id)
- const char * [GetStructureSetROIGenerationAlgorithm](#) (vtkIdType)
- const char * [GetStructureSetROIName](#) (vtkIdType)
- int [GetStructureSetROINumber](#) (vtkIdType id)
- const char * [GetStructureSetROIRefFrameRefUID](#) (vtkIdType)
- const char * [GetStructureSetRTROIInterpretedType](#) (vtkIdType id)
- void [PrintSelf](#) (ostream &os, vtkIndent indent)
- [vtkGetStringMacro](#) (StructureSetLabel)
- [vtkGetStringMacro](#) (StructureSetName)
- [vtkGetStringMacro](#) (StructureSetDate)
- [vtkGetStringMacro](#) (StructureSetTime)
- [vtkGetStringMacro](#) (SOPInstanceUID)
- [vtkGetStringMacro](#) (StudyInstanceUID)
- [vtkGetStringMacro](#) (SeriesInstanceUID)
- [vtkGetStringMacro](#) (ReferenceSeriesInstanceUID)
- [vtkGetStringMacro](#) (ReferenceFrameOfReferenceUID)

- [vtkSetStringMacro \(StructureSetLabel\)](#)
- [vtkSetStringMacro \(StructureSetName\)](#)
- [vtkSetStringMacro \(StructureSetDate\)](#)
- [vtkSetStringMacro \(StructureSetTime\)](#)
- [vtkSetStringMacro \(SOPInstanceUID\)](#)
- [vtkSetStringMacro \(StudyInstanceUID\)](#)
- [vtkSetStringMacro \(SeriesInstanceUID\)](#)
- [vtkSetStringMacro \(ReferenceSeriesInstanceUID\)](#)
- [vtkSetStringMacro \(ReferenceFrameOfReferenceUID\)](#)
- [vtkTypeRevisionMacro \(vtkRTStructSetProperties, vtkObject\)](#)

Static Public Member Functions

- static [vtkRTStructSetProperties](#) * [New](#) ()

Protected Member Functions

- [vtkRTStructSetProperties](#) ()
- [~vtkRTStructSetProperties](#) ()

Protected Attributes

- [vtkRTStructSetPropertiesInternals](#) * [Internals](#)
- char * [ReferenceFrameOfReferenceUID](#)
- char * [ReferenceSeriesInstanceUID](#)
- char * [SeriesInstanceUID](#)
- char * [SOPInstanceUID](#)
- char * [StructureSetDate](#)
- char * [StructureSetLabel](#)
- char * [StructureSetName](#)
- char * [StructureSetTime](#)
- char * [StudyInstanceUID](#)

25.349.1 Detailed Description

Examples:

[GenerateRTSTRUCT.cxx](#).

25.349.2 Constructor & Destructor Documentation

25.349.2.1 [vtkRTStructSetProperties::vtkRTStructSetProperties \(\)](#) [protected]

25.349.2.2 [vtkRTStructSetProperties::~~vtkRTStructSetProperties \(\)](#) [protected]

25.349.3 Member Function Documentation

25.349.3.1 void [vtkRTStructSetProperties::AddContourReferencedFrameOfReference](#) ([vtkIdType](#) *pdnum*, const char * *classuid*, const char * *instanceuid*)

- 25.349.3.2 void vtkRTStructSetProperties::AddReferencedFrameOfReference (const char * *classuid*, const char * *instanceuid*)
- 25.349.3.3 void vtkRTStructSetProperties::AddStructureSetROI (int *roinumber*, const char * *refframerefuid*, const char * *roiname*, const char * *ROIGenerationAlgorithm*)
- 25.349.3.4 void vtkRTStructSetProperties::AddStructureSetROIObservation (int *refnumber*, int *observationnumber*, const char * *rtroiinterpretedtype*, const char * *roiinterpreter*)
- 25.349.3.5 virtual void vtkRTStructSetProperties::Clear () [virtual]
- 25.349.3.6 virtual void vtkRTStructSetProperties::DeepCopy (vtkRTStructSetProperties * *p*) [virtual]
- 25.349.3.7 const char* vtkRTStructSetProperties::GetContourReferencedFrameOfReferenceClassUID (vtkIdType *pdnum*, vtkIdType *id*)
- 25.349.3.8 const char* vtkRTStructSetProperties::GetContourReferencedFrameOfReferenceInstanceUID (vtkIdType *pdnum*, vtkIdType *id*)
- 25.349.3.9 vtkIdType vtkRTStructSetProperties::GetNumberOfContourReferencedFrameOfReferences ()
- 25.349.3.10 vtkIdType vtkRTStructSetProperties::GetNumberOfContourReferencedFrameOfReferences (vtkIdType *pdnum*)
- 25.349.3.11 vtkIdType vtkRTStructSetProperties::GetNumberOfReferencedFrameOfReferences ()
- 25.349.3.12 vtkIdType vtkRTStructSetProperties::GetNumberOfStructureSetROIs ()
- 25.349.3.13 const char* vtkRTStructSetProperties::GetReferencedFrameOfReferenceClassUID (vtkIdType *id*)
- 25.349.3.14 const char* vtkRTStructSetProperties::GetReferencedFrameOfReferenceInstanceUID (vtkIdType *id*)
- 25.349.3.15 int vtkRTStructSetProperties::GetStructureSetObservationNumber (vtkIdType *id*)
- 25.349.3.16 const char* vtkRTStructSetProperties::GetStructureSetROIGenerationAlgorithm (vtkIdType)
- 25.349.3.17 const char* vtkRTStructSetProperties::GetStructureSetROIName (vtkIdType)
- 25.349.3.18 int vtkRTStructSetProperties::GetStructureSetROINumber (vtkIdType *id*)
- 25.349.3.19 const char* vtkRTStructSetProperties::GetStructureSetROIRefFrameRefUID (vtkIdType)
- 25.349.3.20 const char* vtkRTStructSetProperties::GetStructureSetRTROIInterpretedType (vtkIdType *id*)
- 25.349.3.21 static vtkRTStructSetProperties* vtkRTStructSetProperties::New () [static]

Examples:

[GenerateRTSTRUCT.cxx](#).

- 25.349.3.22 void vtkRTStructSetProperties::PrintSelf (ostream & *os*, vtkIndent *indent*)
- 25.349.3.23 vtkRTStructSetProperties::vtkGetStringMacro (StructureSetLabel)

- 25.349.3.24 `vtkRTStructSetProperties::vtkGetStringMacro (StructureSetName)`
- 25.349.3.25 `vtkRTStructSetProperties::vtkGetStringMacro (StructureSetDate)`
- 25.349.3.26 `vtkRTStructSetProperties::vtkGetStringMacro (StructureSetTime)`
- 25.349.3.27 `vtkRTStructSetProperties::vtkGetStringMacro (SOPInstanceUID)`
- 25.349.3.28 `vtkRTStructSetProperties::vtkGetStringMacro (StudyInstanceUID)`
- 25.349.3.29 `vtkRTStructSetProperties::vtkGetStringMacro (SeriesInstanceUID)`
- 25.349.3.30 `vtkRTStructSetProperties::vtkGetStringMacro (ReferenceSeriesInstanceUID)`
- 25.349.3.31 `vtkRTStructSetProperties::vtkGetStringMacro (ReferenceFrameOfReferenceUID)`
- 25.349.3.32 `vtkRTStructSetProperties::vtkSetStringMacro (StructureSetLabel)`
- 25.349.3.33 `vtkRTStructSetProperties::vtkSetStringMacro (StructureSetName)`
- 25.349.3.34 `vtkRTStructSetProperties::vtkSetStringMacro (StructureSetDate)`
- 25.349.3.35 `vtkRTStructSetProperties::vtkSetStringMacro (StructureSetTime)`
- 25.349.3.36 `vtkRTStructSetProperties::vtkSetStringMacro (SOPInstanceUID)`
- 25.349.3.37 `vtkRTStructSetProperties::vtkSetStringMacro (StudyInstanceUID)`
- 25.349.3.38 `vtkRTStructSetProperties::vtkSetStringMacro (SeriesInstanceUID)`
- 25.349.3.39 `vtkRTStructSetProperties::vtkSetStringMacro (ReferenceSeriesInstanceUID)`
- 25.349.3.40 `vtkRTStructSetProperties::vtkSetStringMacro (ReferenceFrameOfReferenceUID)`
- 25.349.3.41 `vtkRTStructSetProperties::vtkTypeRevisionMacro (vtkRTStructSetProperties , vtkObject)`

25.349.4 Member Data Documentation

- 25.349.4.1 `vtkRTStructSetPropertiesInternals* vtkRTStructSetProperties::Internals` [protected]
- 25.349.4.2 `char* vtkRTStructSetProperties::ReferenceFrameOfReferenceUID` [protected]
- 25.349.4.3 `char* vtkRTStructSetProperties::ReferenceSeriesInstanceUID` [protected]
- 25.349.4.4 `char* vtkRTStructSetProperties::SeriesInstanceUID` [protected]
- 25.349.4.5 `char* vtkRTStructSetProperties::SOPInstanceUID` [protected]
- 25.349.4.6 `char* vtkRTStructSetProperties::StructureSetDate` [protected]
- 25.349.4.7 `char* vtkRTStructSetProperties::StructureSetLabel` [protected]

25.349.4.8 `char* vtkRTStructSetProperties::StructureSetName` [protected]

25.349.4.9 `char* vtkRTStructSetProperties::StructureSetTime` [protected]

25.349.4.10 `char* vtkRTStructSetProperties::StudyInstanceUID` [protected]

The documentation for this class was generated from the following file:

- [vtkRTStructSetProperties.h](#)

25.350 gdcm::Waveform Class Reference

[Waveform](#) class.

```
#include <gdcmWaveform.h>
```

Public Member Functions

- [Waveform](#) ()

25.350.1 Detailed Description

[Waveform](#) class.

25.350.2 Constructor & Destructor Documentation

25.350.2.1 `gdcm::Waveform::Waveform ()` [inline]

The documentation for this class was generated from the following file:

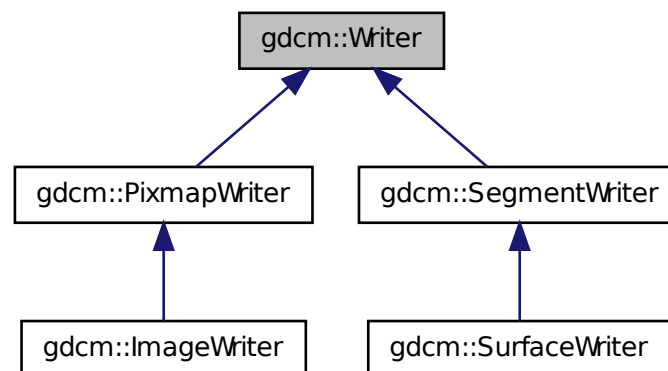
- [gdcmWaveform.h](#)

25.351 gdcm::Writer Class Reference

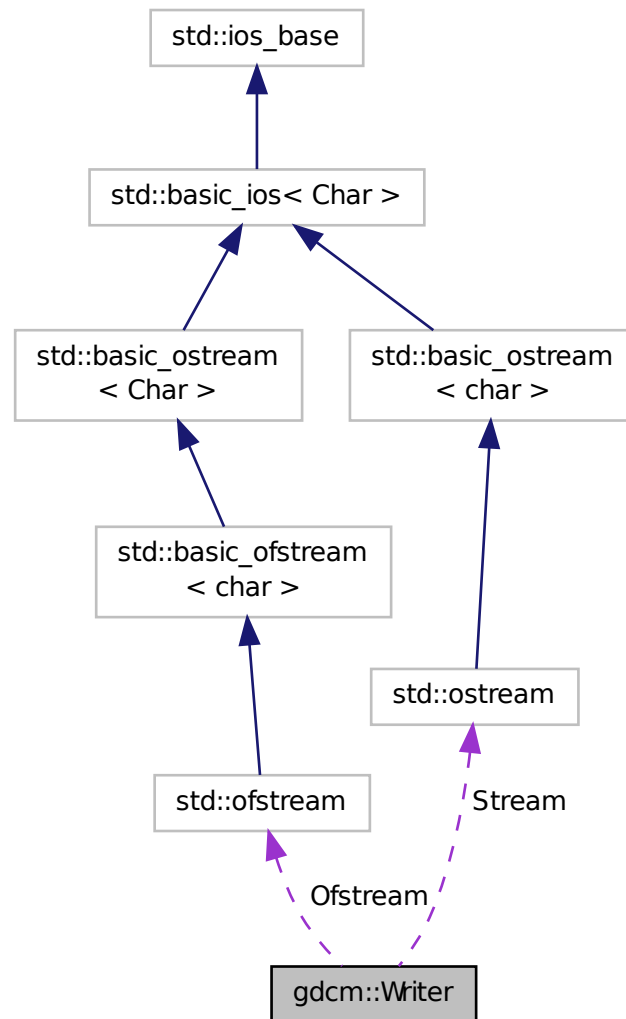
[Writer](#) ala DOM (Document [Object](#) Model) This class is a non-validating writer, it will only performs well- formedness check only.

```
#include <gdcmWriter.h>
```

Inheritance diagram for `gdcm::Writer`:



Collaboration diagram for gdcm::Writer:



Public Member Functions

- [Writer](#) ()
- virtual [~Writer](#) ()
- void [CheckFileMetaInformationOff](#) ()
- void [CheckFileMetaInformationOn](#) ()
- [File](#) & [GetFile](#) ()
- void [SetCheckFileMetaInformation](#) (bool b)
Undocumented function, do not use (= leave default)
- void [SetFile](#) (const [File](#) &f)

Set/Get the DICOM file ([DataSet](#) + Header)

- void [SetFileName](#) (const char *filename_native)

Set the filename of DICOM file to write:

- void [SetStream](#) (std::ostream &output_stream)

Set user ostream buffer.

- virtual bool [Write](#) ()

Main function to tell the writer to write.

Protected Member Functions

- std::ostream * [GetStreamPtr](#) () const
- void [SetWriteDataSetOnly](#) (bool b)

Protected Attributes

- std::ofstream * [Ofstream](#)
- std::ostream * [Stream](#)

Friends

- class [StreamImageWriter](#)

25.351.1 Detailed Description

[Writer](#) ala DOM (Document [Object](#) Model) This class is a non-validating writer, it will only performs well- formedness check only.

Detailed description here To avoid GDCM being yet another broken DICOM lib we try to be user level and avoid writing illegal stuff (odd length, non-zero value for [Item](#) start/end length ...) Therefore you cannot (well unless you are really smart) write DICOM with even length tag. All the checks are consider basics:

- Correct Meta Information Header (see [gdcm::FileMetaInformation](#))
- Zero value for [Item](#) Length (0xfffe, 0xe00d/0xe0dd)
- Even length for any elements
- Alphabetical order for elements (garanteed by design of internals)
- 32bits [VR](#) will be rewritten with 00

Warning

[gdcm::Writer](#) cannot write a [DataSet](#) if no SOP Instance UID (0008,0018) is found, unless a [DICOMDIR](#) is being written out

See Also

[Reader DataSet File](#)

Examples:

[ChangeSequenceUltrasound.cxx](#), [ClinicalTrialAnnotate.cxx](#), [CreateJPIPDataSet.cxx](#), [DuplicatePCDE.cxx](#), [EncapsulateFileInRawData.cxx](#), [Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [FixBrokenJ2K.cxx](#), [FixJAIBugJPEGLS.cxx](#), [GenAllVR.cxx](#), [GenFakeIdentifyFile.cxx](#), [GenLongSeqs.cxx](#), [GenSeqs.cxx](#), [HelloWorld.cxx](#), [LargeVRDSExplicit.cxx](#), [PatchFile.cxx](#), [pmsct_rgb1.cxx](#), [rle2img.cxx](#), and [StreamImageReaderTest.cxx](#).

25.351.2 Constructor & Destructor Documentation

25.351.2.1 `gdcm::Writer::Writer ()`

25.351.2.2 `virtual gdcm::Writer::~~Writer ()` `[virtual]`

25.351.3 Member Function Documentation

25.351.3.1 `void gdcm::Writer::CheckFileMetaInformationOff ()` `[inline]`

Examples:

[FixBrokenJ2K.cxx](#), and [HelloWorld.cxx](#).

25.351.3.2 `void gdcm::Writer::CheckFileMetaInformationOn ()` `[inline]`

25.351.3.3 `File& gdcm::Writer::GetFile ()` `[inline]`

Examples:

[CreateJPIPDataSet.cxx](#), [EncapsulateFileInRawData.cxx](#), [Extracting_All_Resolution.cxx](#), [Fake_Image_Using_Stream_Image_Writer.cxx](#), [GenAllVR.cxx](#), [GenFakeIdentifyFile.cxx](#), [iU22tomultisc.cxx](#), [pmsct_rgb1.cxx](#), [rle2img.cxx](#), and [StreamImageReaderTest.cxx](#).

25.351.3.4 `std::ostream* gdcm::Writer::GetStreamPtr () const` `[inline]`, `[protected]`

25.351.3.5 `void gdcm::Writer::SetCheckFileMetaInformation (bool b)` `[inline]`

Undocumented function, do not use (= leave default)

Examples:

[GenAllVR.cxx](#), [GenFakeIdentifyFile.cxx](#), and [PatchFile.cxx](#).

25.351.3.6 `void gdcm::Writer::SetFile (const File & f)` `[inline]`

Set/Get the DICOM file ([DataSet](#) + Header)

Examples:

[ChangeSequenceUltrasound.cxx](#), [ClinicalTrialAnnotate.cxx](#), [CompressImage.cxx](#), [DuplicatePCDE.cxx](#), [FixBrokenJ2K.cxx](#), [FixJAIBugJPEGLS.cxx](#), [GenFakelImage.cxx](#), [GenLongSeqs.cxx](#), [GenSeqs.cxx](#), [HelloWorld.cxx](#), [LargeVRDSExplicit.cxx](#), [MergeTwoFiles.cxx](#), [PatchFile.cxx](#), [pmsct_rgb1.cxx](#), and [rle2img.cxx](#).

25.351.3.7 void `gdcm::Writer::SetFileName` (const char * *filename_native*)

Set the filename of DICOM file to write:

Examples:

[ChangeSequenceUltrasound.cxx](#), [ClinicalTrialAnnotate.cxx](#), [CompressImage.cxx](#), [CreateARGBImage.cxx](#), [CreateCMYKImage.cxx](#), [CreateJPIPDataSet.cxx](#), [csa2img.cxx](#), [DuplicatePCDE.cxx](#), [EncapsulateFileInRawData.cxx](#), [FixBrokenJ2K.cxx](#), [FixJAIBugJPEGLS.cxx](#), [GenAllVR.cxx](#), [GenFakelIdentifyFile.cxx](#), [GenFakelImage.cxx](#), [GenLongSeqs.cxx](#), [GenSeqs.cxx](#), [HelloVizWorld.cxx](#), [HelloWorld.cxx](#), [iU22tomultisc.cxx](#), [LargeVRDSExplicit.cxx](#), [MergeTwoFiles.cxx](#), [PatchFile.cxx](#), [pmsct_rgb1.cxx](#), and [rle2img.cxx](#).

25.351.3.8 void `gdcm::Writer::SetStream` (std::ostream & *output_stream*) [inline]

Set user ostream buffer.

25.351.3.9 void `gdcm::Writer::SetWriteDataSetOnly` (bool *b*) [inline],[protected]

25.351.3.10 virtual bool `gdcm::Writer::Write` () [virtual]

Main function to tell the writer to write.

Reimplemented in [gdcm::PixmapWriter](#), [gdcm::ImageWriter](#), [gdcm::SurfaceWriter](#), and [gdcm::SegmentWriter](#).

Examples:

[ChangeSequenceUltrasound.cxx](#), [ClinicalTrialAnnotate.cxx](#), [CreateJPIPDataSet.cxx](#), [DuplicatePCDE.cxx](#), [EncapsulateFileInRawData.cxx](#), [FixBrokenJ2K.cxx](#), [FixJAIBugJPEGLS.cxx](#), [GenAllVR.cxx](#), [GenFakelIdentifyFile.cxx](#), [GenLongSeqs.cxx](#), [GenSeqs.cxx](#), [HelloWorld.cxx](#), [LargeVRDSExplicit.cxx](#), [PatchFile.cxx](#), [pmsct_rgb1.cxx](#), and [rle2img.cxx](#).

25.351.4 Friends And Related Function Documentation

25.351.4.1 friend class `StreamImageWriter` [friend]

25.351.5 Member Data Documentation

25.351.5.1 std::ofstream* `gdcm::Writer::Ofstream` [protected]

25.351.5.2 std::ostream* `gdcm::Writer::Stream` [protected]

The documentation for this class was generated from the following file:

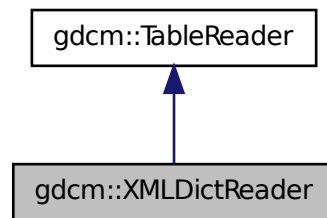
- [gdcmWriter.h](#)

25.352 gdcm::XMLDictReader Class Reference

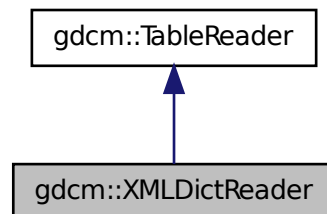
Class for representing a [XMLDictReader](#).

```
#include <gdcmXMLDictReader.h>
```

Inheritance diagram for gdcm::XMLDictReader:



Collaboration diagram for gdcm::XMLDictReader:



Public Member Functions

- [XMLDictReader](#) ()
- [~XMLDictReader](#) ()
- void [CharacterDataHandler](#) (const char *data, int length)
- void [EndElement](#) (const char *name)
- const [Dict](#) & [GetDict](#) ()
- void [StartElement](#) (const char *name, const char **atts)

Protected Member Functions

- void [HandleDescription](#) (const char **atts)

- void [HandleEntry](#) (const char **atts)

25.352.1 Detailed Description

Class for representing a [XMLDictReader](#).

Note

bla Will read the DICOMV3.xml file

25.352.2 Constructor & Destructor Documentation

25.352.2.1 `gdcm::XMLDictReader::XMLDictReader ()`

25.352.2.2 `gdcm::XMLDictReader::~~XMLDictReader ()` `[inline]`

25.352.3 Member Function Documentation

25.352.3.1 `void gdcm::XMLDictReader::CharacterDataHandler (const char * data, int length)` `[virtual]`

Reimplemented from [gdcm::TableReader](#).

25.352.3.2 `void gdcm::XMLDictReader::EndElement (const char * name)` `[virtual]`

Reimplemented from [gdcm::TableReader](#).

25.352.3.3 `const Dict& gdcm::XMLDictReader::GetDict ()` `[inline]`

25.352.3.4 `void gdcm::XMLDictReader::HandleDescription (const char ** atts)` `[protected]`

25.352.3.5 `void gdcm::XMLDictReader::HandleEntry (const char ** atts)` `[protected]`

25.352.3.6 `void gdcm::XMLDictReader::StartElement (const char * name, const char ** atts)` `[virtual]`

Reimplemented from [gdcm::TableReader](#).

The documentation for this class was generated from the following file:

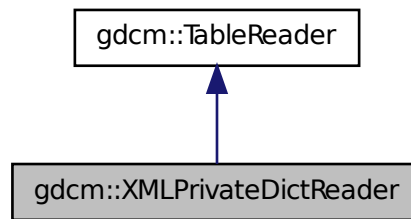
- [gdcmXMLDictReader.h](#)

25.353 gdcm::XMLPrivateDictReader Class Reference

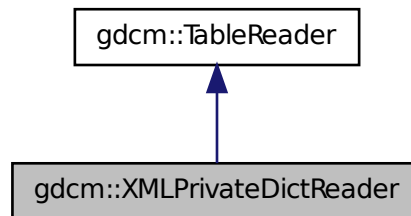
Class for representing a [XMLPrivateDictReader](#).

```
#include <gdcmXMLPrivateDictReader.h>
```

Inheritance diagram for gdcmm::XMLPrivateDictReader:



Collaboration diagram for gdcmm::XMLPrivateDictReader:



Public Member Functions

- [XMLPrivateDictReader](#) ()
- [~XMLPrivateDictReader](#) ()
- void [CharacterDataHandler](#) (const char *data, int length)
- void [EndElement](#) (const char *name)
- const [PrivateDict](#) & [GetPrivateDict](#) ()
- void [StartElement](#) (const char *name, const char **atts)

Protected Member Functions

- void [HandleDescription](#) (const char **atts)
- void [HandleEntry](#) (const char **atts)

25.353.1 Detailed Description

Class for representing a [XMLPrivateDictReader](#).

Note

bla Will read the Private.xml file

25.353.2 Constructor & Destructor Documentation

25.353.2.1 `gdcm::XMLPrivateDictReader::XMLPrivateDictReader ()`

25.353.2.2 `gdcm::XMLPrivateDictReader::~~XMLPrivateDictReader ()` `[inline]`

25.353.3 Member Function Documentation

25.353.3.1 `void gdcm::XMLPrivateDictReader::CharacterDataHandler (const char * data, int length)` `[virtual]`

Reimplemented from [gdcm::TableReader](#).

25.353.3.2 `void gdcm::XMLPrivateDictReader::EndElement (const char * name)` `[virtual]`

Reimplemented from [gdcm::TableReader](#).

25.353.3.3 `const PrivateDict& gdcm::XMLPrivateDictReader::GetPrivateDict ()` `[inline]`

25.353.3.4 `void gdcm::XMLPrivateDictReader::HandleDescription (const char ** atts)` `[protected]`

25.353.3.5 `void gdcm::XMLPrivateDictReader::HandleEntry (const char ** atts)` `[protected]`

25.353.3.6 `void gdcm::XMLPrivateDictReader::StartElement (const char * name, const char ** atts)` `[virtual]`

Reimplemented from [gdcm::TableReader](#).

The documentation for this class was generated from the following file:

- [gdcmXMLPrivateDictReader.h](#)

Chapter 26

File Documentation

26.1 gdc2pnm.man File Reference

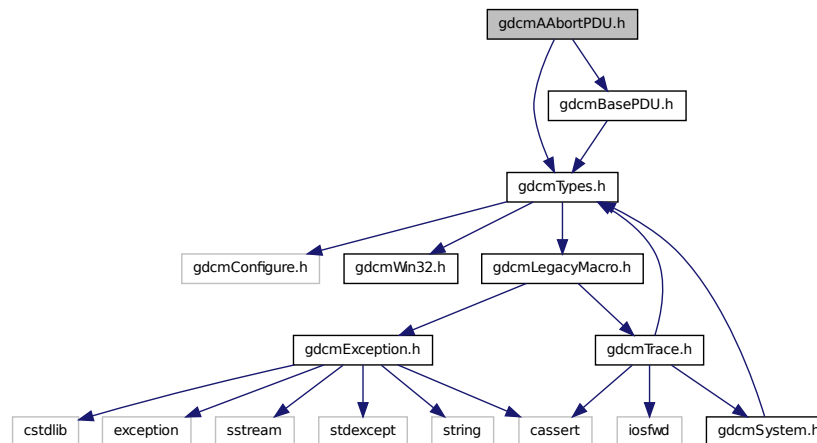
26.2 gdc2vtk.man File Reference

26.3 gdcmAAbortPDU.h File Reference

```
#include "gdcTypes.h"
```

```
#include "gdcBasePDU.h"
```

Include dependency graph for gdcmAAbortPDU.h:



Classes

- class [gdc::network::AAabortPDU](#)

[AAabortPDU Table](#) 9-26 A-ABORT PDU FIELDS.

Namespaces

- [gdcm](#)
- [gdcm::network](#)

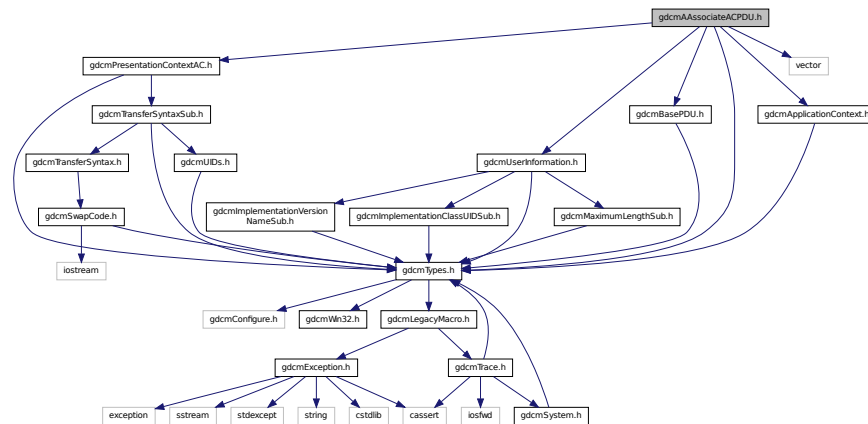
Constant Groups

- [gdcm](#)
- [gdcm::network](#)

26.4 gdcmAAssociateACPDU.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmApplicationContext.h"
#include "gdcmPresentationContextAC.h"
#include "gdcmUserInformation.h"
#include "gdcmBasePDU.h"
#include <vector>
```

Include dependency graph for gdcmAAssociateACPDU.h:



Classes

- class [gdcm::network::AAssociateACPDU](#)
AAssociateACPDU Table 9-17 ASSOCIATE-AC PDU fields.

Namespaces

- [gdcm](#)
- [gdcm::network](#)

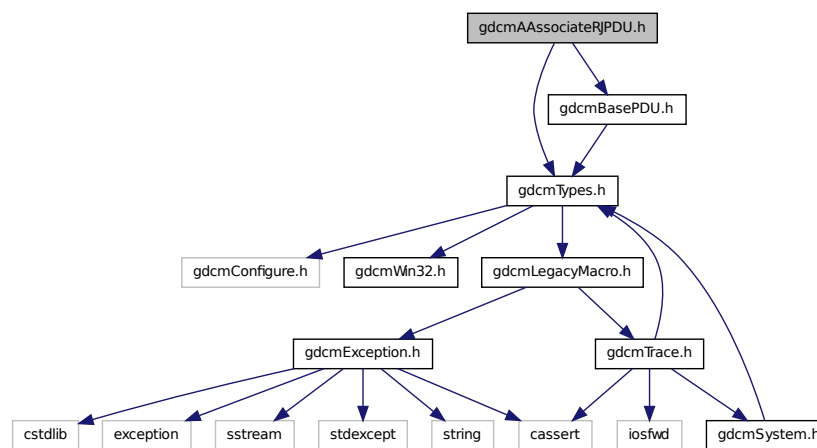
Constant Groups

- [gdcm](#)
- [gdcm::network](#)

26.5 gdcmAAssociateRJPDU.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmBasePDU.h"
```

Include dependency graph for gdcmAAssociateRJPDU.h:



Classes

- class [gdcm::network::AAssociateRJPDU](#)
AAssociateRJPDU Table 9-21 ASSOCIATE-RJ PDU FIELDS.

Namespaces

- [gdcm](#)
- [gdcm::network](#)

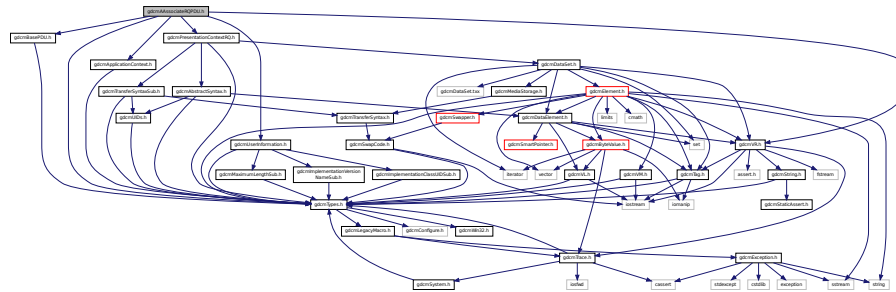
Constant Groups

- [gdcm](#)
- [gdcm::network](#)

26.6 gdcmAAssociateRQPDU.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmVR.h"
#include "gdcmApplicationContext.h"
#include "gdcmPresentationContextRQ.h"
#include "gdcmUserInformation.h"
#include "gdcmBasePDU.h"
```

Include dependency graph for gdcmAAssociateRQPDU.h:



Classes

- class [gdcm::network::AAssociateRQPDU](#)
[AAssociateRQPDU](#) Table 9-11 ASSOCIATE-RQ PDU fields.

Namespaces

- [gdcm](#)
- [gdcm::network](#)

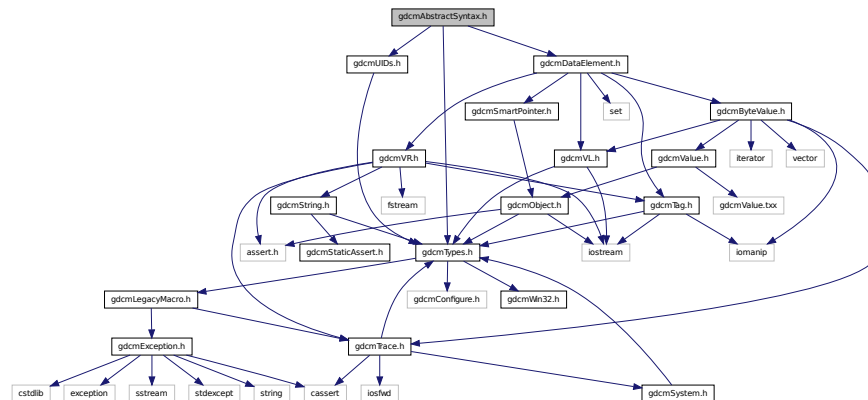
Constant Groups

- [gdcm](#)
- [gdcm::network](#)

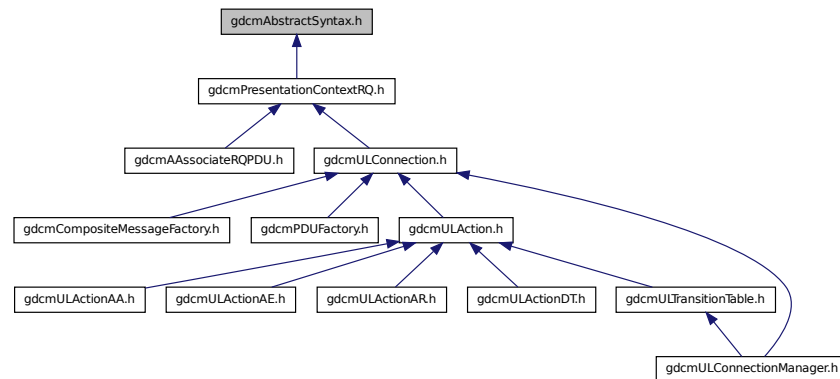
26.7 gdcmAbstractSyntax.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmUIDs.h"
#include "gdcmDataElement.h"
```

Include dependency graph for gdcAbstractSyntax.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdc::network::AbstractSyntax](#)
AbstractSyntax Table 9-14 ABSTRACT SYNTAX SUB-ITEM FIELDS.

Namespaces

- [gdc](#)
- [gdc::network](#)

Constant Groups

- [gdc](#)
- [gdc::network](#)

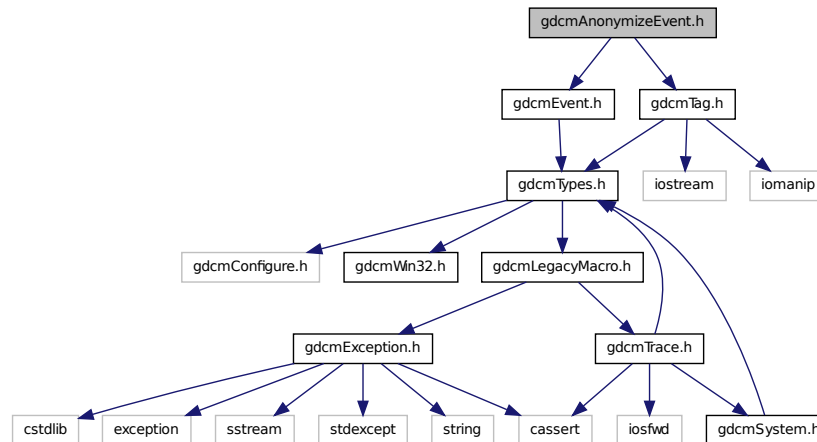
26.8 gdcmanon.man File Reference

26.9 gdcmAnonymizeEvent.h File Reference

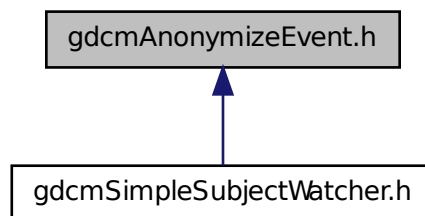
```
#include "gdcmEvent.h"
```

```
#include "gdcmTag.h"
```

Include dependency graph for gdcmAnonymizeEvent.h:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcm::AnonymizeEvent`

AnonymizeEvent Special type of event triggered during the Anonymization process.

Namespaces

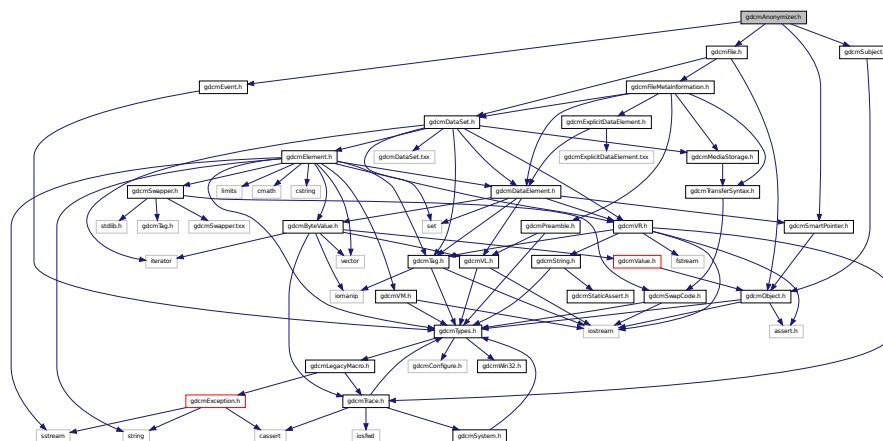
- **gdcm**

Constant Groups

- **gdcm**

26.10 gdcmAnonymizer.h File Reference

```
#include "gdcMFile.h"
#include "gdcMSubject.h"
#include "gdcMEvent.h"
#include "gdcMSmartPointer.h"
Include dependency graph for gdcMAnonymizer.h:
```



Classes

- class `gdcm::Anonymizer`

Anonymizer This class is a multi purpose anonymizer. It can work in 2 mode:

Namespaces

- **gdcm**

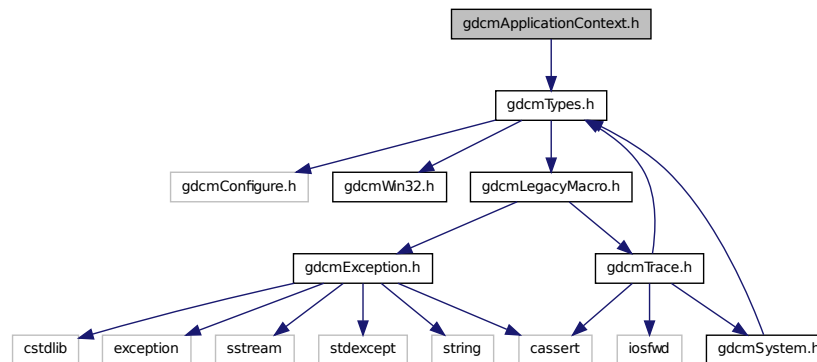
Constant Groups

- **gdcm**

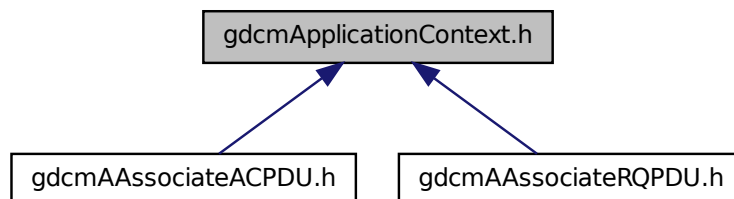
26.11 gdcmApplicationContext.h File Reference

```
#include "gdcmTypes.h"
```

Include dependency graph for gdcmApplicationContext.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::network::ApplicationContext](#)

ApplicationContext Table 9-12 APPLICATION CONTEXT ITEM FIELDS Looks like Application Context can only be 64 bytes at max (see Figure 9-1 / PS 3.8 - 2009)

Namespaces

- [gdcm](#)
- [gdcm::network](#)

Constant Groups

- [gdcm](#)
- [gdcm::network](#)

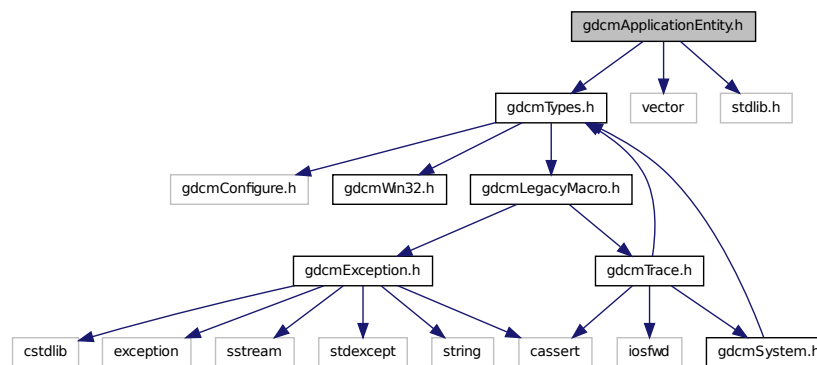
26.12 gdcmApplicationEntity.h File Reference

```
#include "gdcmTypes.h"
```

```
#include <vector>
```

```
#include <stdlib.h>
```

Include dependency graph for gdcmApplicationEntity.h:



Classes

- class [gdcm::ApplicationEntity](#)
ApplicationEntity.

Namespaces

- [gdcm](#)

Constant Groups

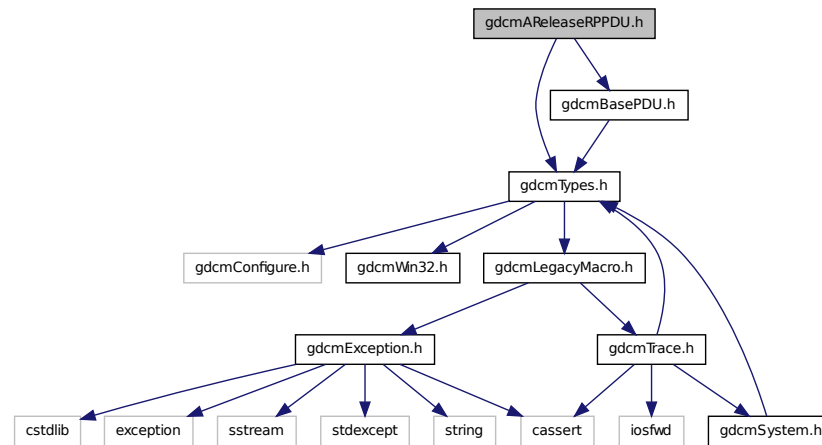
- [gdcm](#)

26.13 gdcmAReleaseRPPDU.h File Reference

```
#include "gdcmTypes.h"
```

```
#include "gdcmBasePDU.h"
```

Include dependency graph for `gdcmAReleaseRPPDU.h`:



Classes

- class `gdcm::network::AReleaseRPPDU`

AReleaseRPPDU Table 9-25 A-RELEASE-RP PDU fields.

Namespaces

- `gdcm`
- `gdcm::network`

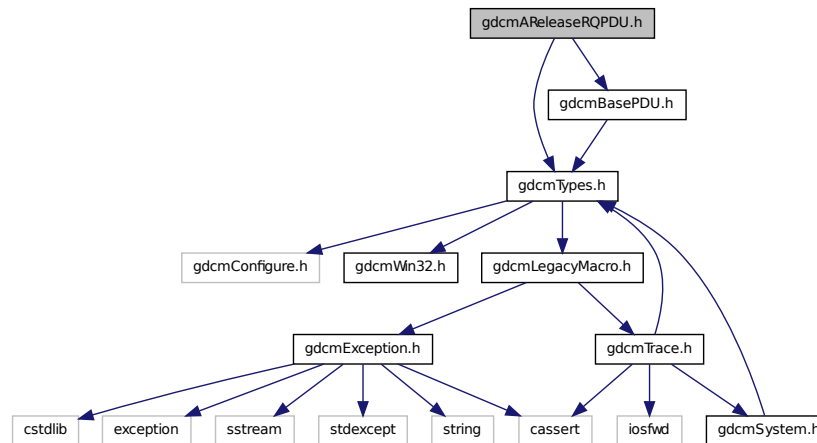
Constant Groups

- `gdcm`
- `gdcm::network`

26.14 gdcmAReleaseRQPDU.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmBasePDU.h"
```

Include dependency graph for gdcmAReleaseRQPDU.h:



Classes

- class [gdcm::network::AReleaseRQPDU](#)

AReleaseRQPDU Table 9-24 A-RELEASE-RQ PDU FIELDS.

Namespaces

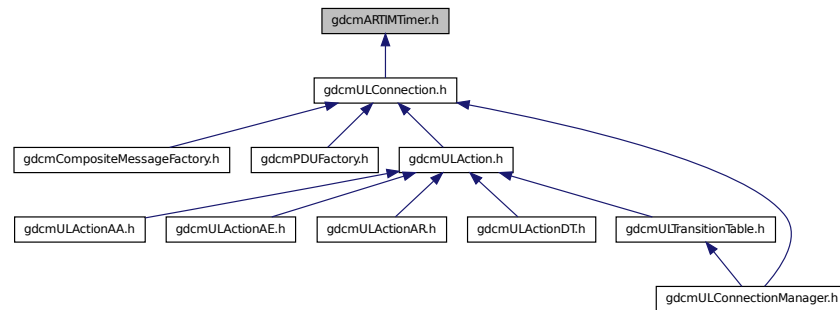
- [gdcm](#)
- [gdcm::network](#)

Constant Groups

- [gdcm](#)
- [gdcm::network](#)

26.15 gdcmARTIMTimer.h File Reference

This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::network::ARTIMTimer](#)

[ARTIMTimer](#) This file contains the code for the ARTIM timer.

Namespaces

- [gdcm](#)
- [gdcm::network](#)

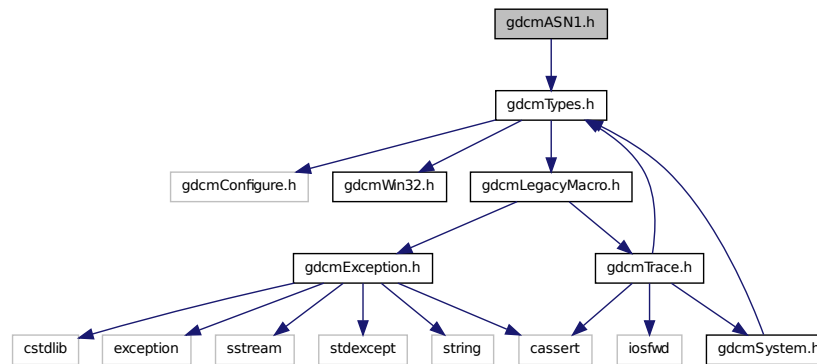
Constant Groups

- [gdcm](#)
- [gdcm::network](#)

26.16 gdcmASN1.h File Reference

```
#include "gdcmTypes.h"
```

Include dependency graph for gdcmASN1.h:



Classes

- class `gdcm::ASN1`

Class for `ASN1`.

Namespaces

- `gdcm`

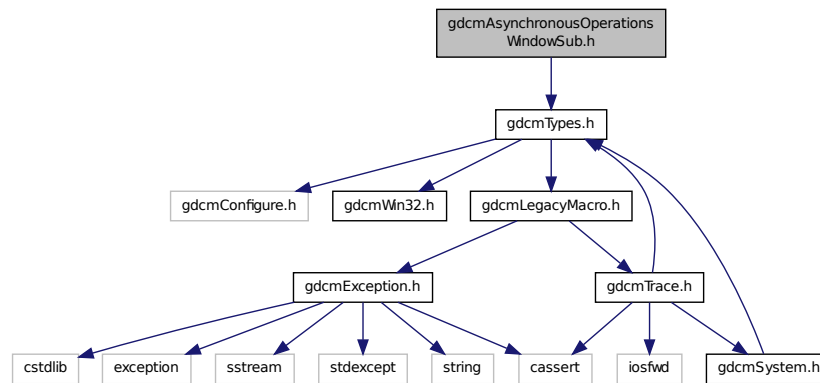
Constant Groups

- `gdcm`

26.17 gdcmAsynchronousOperationsWindowSub.h File Reference

```
#include "gdcmTypes.h"
```

Include dependency graph for gdcmAsynchronousOperationsWindowSub.h:



Classes

- class [gdcm::network::AsynchronousOperationsWindowSub](#)

AsynchronousOperationsWindowSub PS 3.7 Table D.3-7 ASYNCHRONOUS OPERATIONS WINDOW SUB-ITEM FIELDS (A-ASSOCIATE-RQ)

Namespaces

- [gdcm](#)
- [gdcm::network](#)

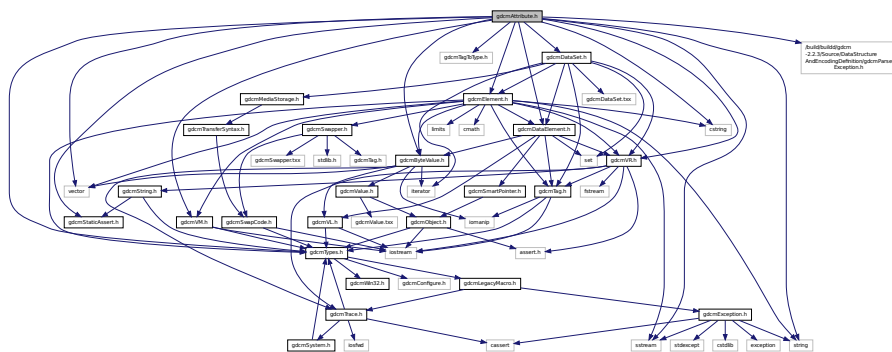
Constant Groups

- [gdcm](#)
- [gdcm::network](#)

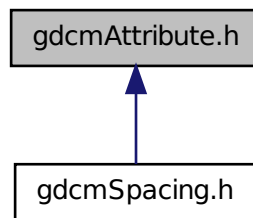
26.18 gdcmAttribute.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmVR.h"
#include "gdcmTagToType.h"
#include "gdcmVM.h"
#include "gdcmElement.h"
#include "gdcmDataElement.h"
#include "gdcmDataSet.h"
#include "gdcmStaticAssert.h"
#include <string>
#include <vector>
#include <sstream>
```

Include dependency graph for gdcmAttribute.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Attribute< Group, Element, TVR, TVM >](#)

Attribute class This class use template metaprograming tricks to let the user know when the template instanciation does not match the public dictionary.

- class [gdcm::Attribute< Group, Element, TVR, VM::VM1 >](#)

- class [gdcm::Attribute< Group, Element, TVR, VM::VM1_3 >](#)
- class [gdcm::Attribute< Group, Element, TVR, VM::VM1_8 >](#)
- class [gdcm::Attribute< Group, Element, TVR, VM::VM1_n >](#)
- class [gdcm::Attribute< Group, Element, TVR, VM::VM2_2n >](#)
- class [gdcm::Attribute< Group, Element, TVR, VM::VM2_n >](#)
- class [gdcm::Attribute< Group, Element, TVR, VM::VM3_3n >](#)
- class [gdcm::Attribute< Group, Element, TVR, VM::VM3_n >](#)
- class [gdcm::VRVLSize< T >](#)
- class [gdcm::VRVLSize< 0 >](#)
- class [gdcm::VRVLSize< 1 >](#)

Namespaces

- [gdcm](#)

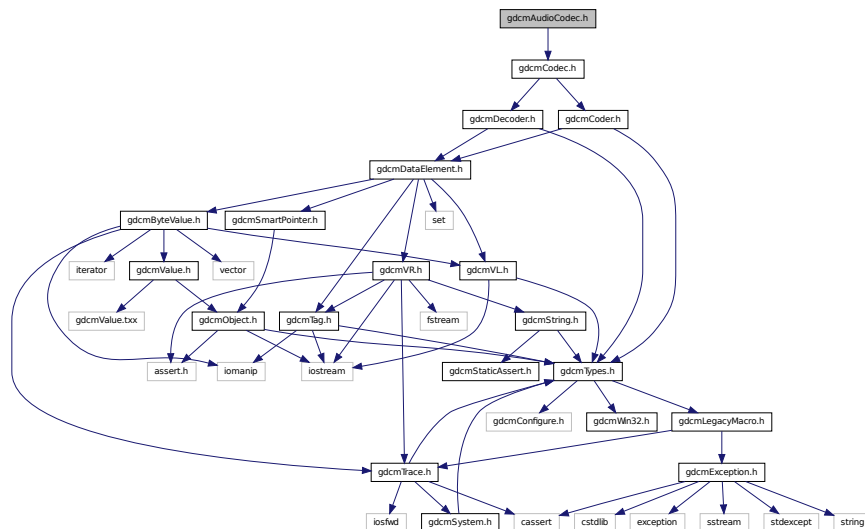
Constant Groups

- [gdcm](#)

26.19 gdcmAudioCodec.h File Reference

```
#include "gdcmCodec.h"
```

Include dependency graph for `gdcmAudioCodec.h`:



Classes

- class [gdcm::AudioCodec](#)
AudioCodec.

Namespaces

- [gdcm](#)

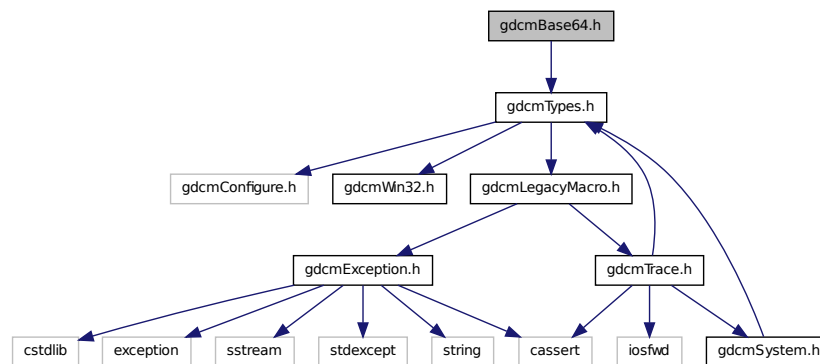
Constant Groups

- [gdcm](#)

26.20 gdcmBase64.h File Reference

```
#include "gdcmTypes.h"
```

Include dependency graph for gdcmBase64.h:



Classes

- class [gdcm::Base64](#)
Class for *Base64*.

Namespaces

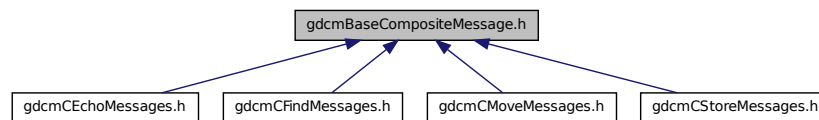
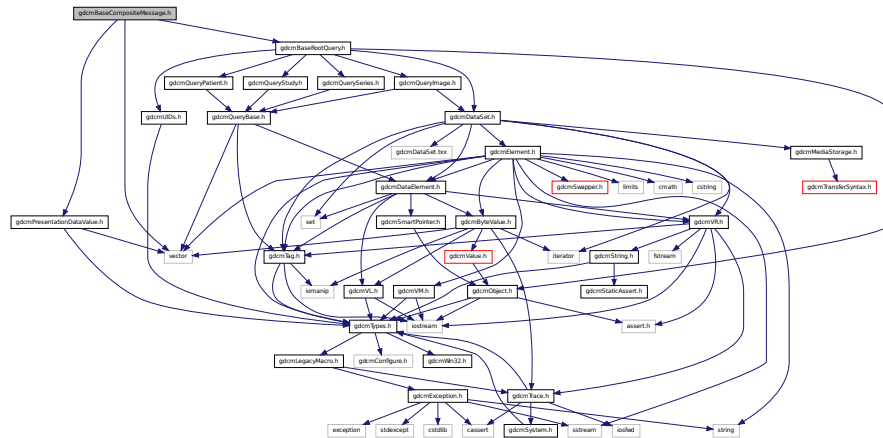
- [gdcm](#)

Constant Groups

- [gdcm](#)

26.21 gdcmBaseCompositeMessage.h File Reference

```
#include "gdcmPresentationDataValue.h"
#include "gdcmBaseRootQuery.h"
#include <vector>
```



- BaseCompositeMessage* The Composite events

BaseCompositeMessage The Composite events described in section 3.7-2009 of the DICOM standard all use their own messages. These messages are constructed using Presentation Data Values, from section 3.8-2009 of the standard, and then fill in appropriate values in their datasets.

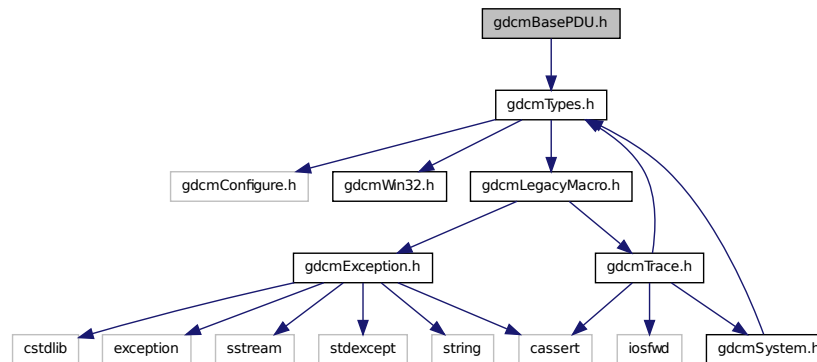
- `gdcm`
- `gdcm::network`

- `gdcm`
- `gdcm::network`

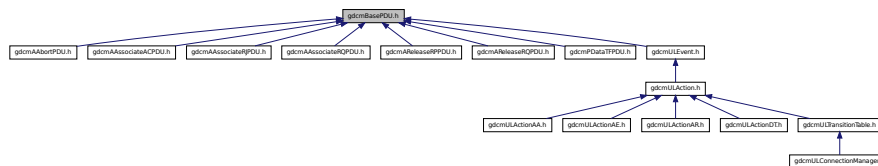
26.22 gdcmBasePDU.h File Reference

```
#include "gdcmTypes.h"
```

Include dependency graph for gdcmBasePDU.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::network::BasePDU](#)
BasePDU base class for PDUs.

Namespaces

- [gdcm](#)
- [gdcm::network](#)

Constant Groups

- [gdcm](#)
- [gdcm::network](#)

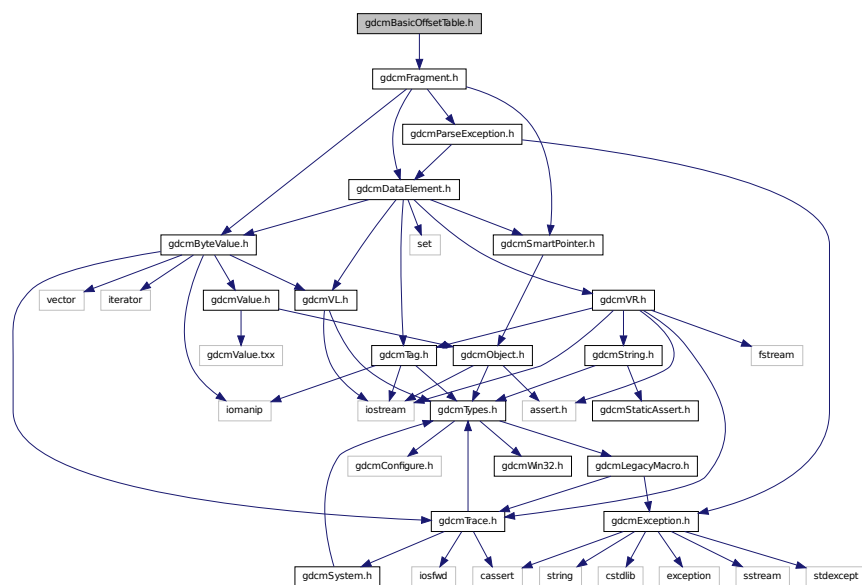
Enumerations

- enum `gdcm::EQueryLevel` {
`gdcm::ePatient` = 0,
`gdcm::eStudy` = 1,
`gdcm::eSeries` = 2,
`gdcm::eImage` = 3 }
- enum `gdcm::EQueryType` {
`gdcm::eFind` = 0,
`gdcm::eMove` }

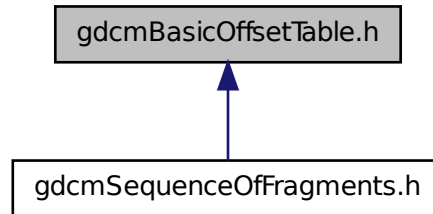
26.24 gdcmBasicOffsetTable.h File Reference

```
#include "gdcmFragment.h"
```

Include dependency graph for `gdcmBasicOffsetTable.h`:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcml::BasicOffsetTable](#)
Class to represent a [BasicOffsetTable](#).

Namespaces

- [gdcml](#)

Constant Groups

- [gdcml](#)

Functions

- `std::ostream & gdcml::operator<< (std::ostream &os, const BasicOffsetTable &val)`

26.25 gdcmlBitmap.h File Reference

```
#include "gdcmlObject.h"
#include "gdcmlCurve.h"
#include "gdcmlDataElement.h"
#include "gdcmlLookupTable.h"
#include "gdcmlOverlay.h"
#include "gdcmlPhotometricInterpretation.h"
#include "gdcmlPixelFormat.h"
#include "gdcmlSmartPointer.h"
#include "gdcmlTransferSyntax.h"
#include <vector>
```

[illegible]

- class `gdcm::Bitmap`

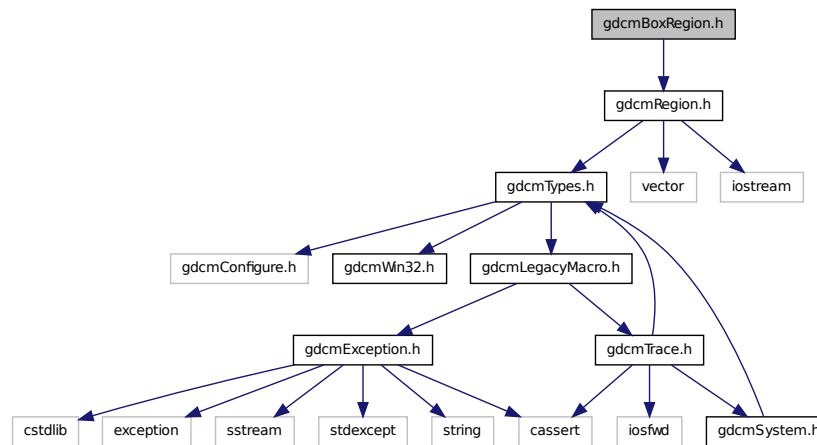
Namespaces

- **gdcm**

- **gdcm**

```
#include "gdcmBitmap.h"
```


Include dependency graph for gdcmBoxRegion.h:



Classes

- class [gdcm::BoxRegion](#)

Class for manipulation box region This is a very simple implementation of the [Region](#) class. It only support 3D box type region. It assumes the 3D Box does not have a tilt Origin is as (0,0,0)

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

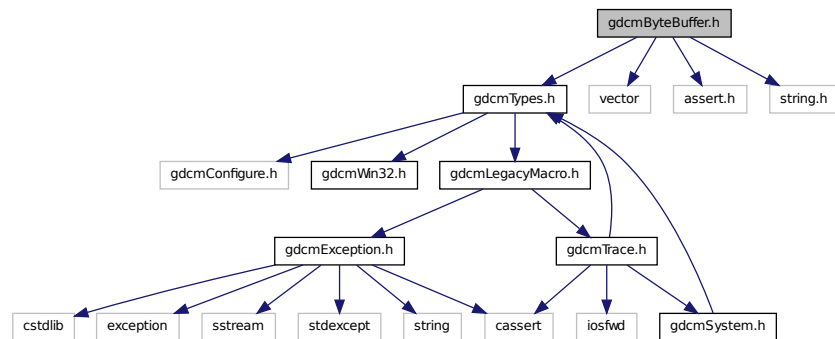
26.28 gdcmByteBuffer.h File Reference

```

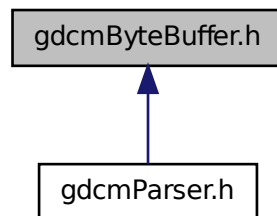
#include "gdcmTypes.h"
#include <vector>
#include <assert.h>
#include <string.h>

```

Include dependency graph for `gdcmByteBuffer.h`:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcm::ByteBuffer`
ByteBuffer.

Namespaces

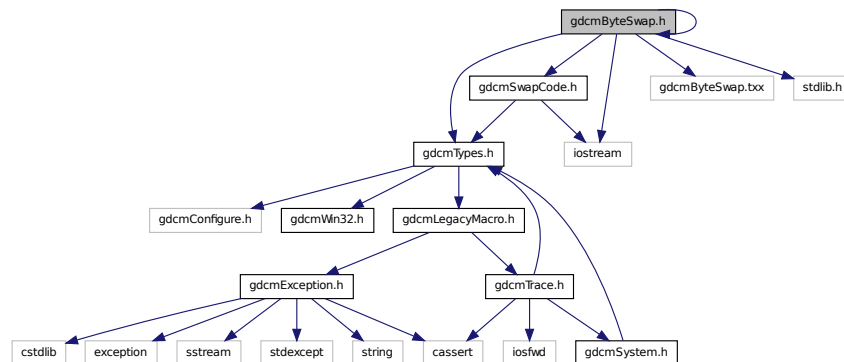
- `gdcm`

Constant Groups

- `gdcm`

26.29 gdcmByteSwap.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmSwapCode.h"
#include "gdcmByteSwap.txx"
Include dependency graph for gdcmByteSwap.h:
```



Classes

- class [gdcm::ByteSwap< T >](#)

ByteSwap.

Namespaces

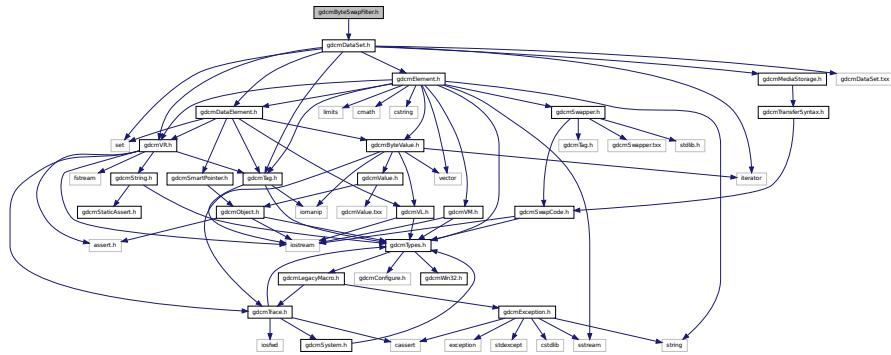
- [gdcm](#)

Constant Groups

- [gdcm](#)

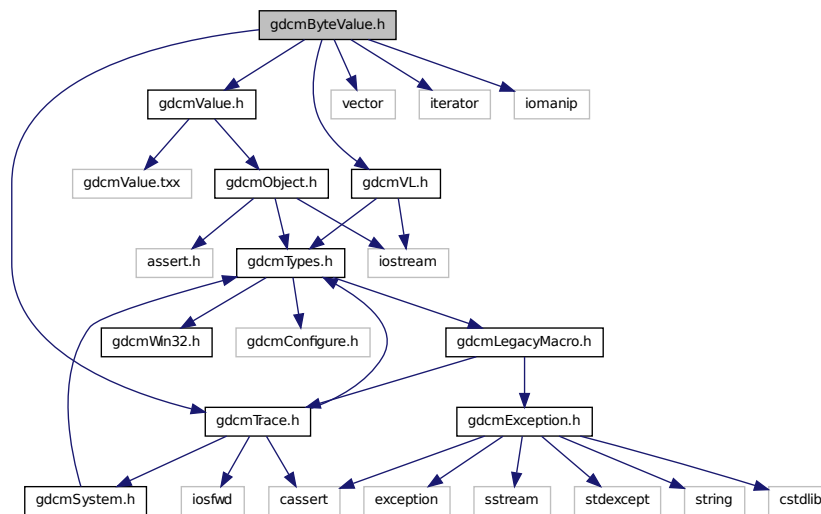
26.30 gdcmByteSwapFilter.h File Reference

```
#include "gdcmDataSet.h"
```

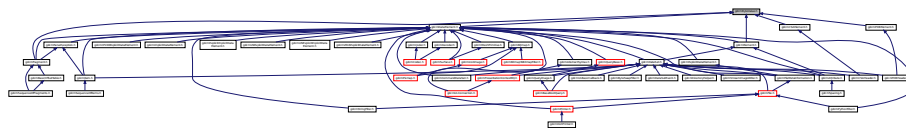


```
#include "gdcmValue.h"
#include "gdcmTrace.h"
#include "gdcmVL.h"
#include <vector>
#include <iterator>
#include <iomanip>
```

Include dependency graph for gdcmByteValue.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::ByteValue](#)
Class to represent binary value (array of bytes)

Namespaces

- [gdcm](#)

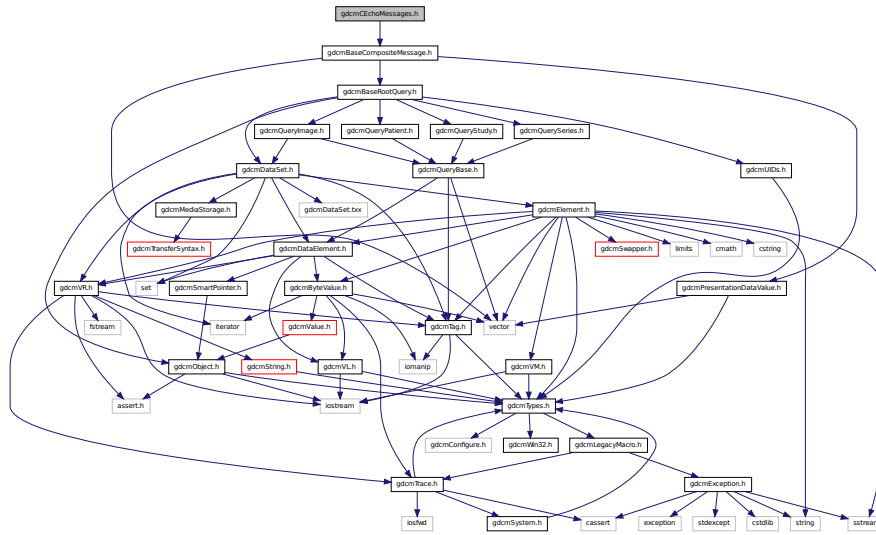
Constant Groups

- [gdcm](#)

26.32 gdcmCEchoMessages.h File Reference

```
#include "gdcmBaseCompositeMessage.h"
```

Include dependency graph for `gdcmCEchoMessages.h`:



Classes

- class `gdcm::network::CEchoRQ`
CEchoRQ this file defines the messages for the cecho action.
- class `gdcm::network::CEchoRSP`
CEchoRSP this file defines the messages for the cecho action.

Namespaces

- `gdcm`
- `gdcm::network`

Constant Groups

- `gdcm`
- `gdcm::network`

26.33 gdcmCFindMessages.h File Reference

```
#include "gdcmBaseCompositeMessage.h"
#include "gdcmBaseRootQuery.h"
```

[illegible]

- class `gdcmm::network::CFindCancelRQ`
CFindCancelRQ this file defines the messages for the *cfind* action.
- class `gdcmm::network::CFindRQ`
CFindRQ this file defines the messages for the *cfind* action.
- class `gdcmm::network::CFindRSP`
CFindRSP this file defines the messages for the *cfind* action.

- `gdcm`
- `gdcm::network`

- `gdcm`
- `gdcm::network`

```
#include "gdcmBaseCompositeMessage.h"
#include "gdcmBaseRootQuery.h"
```

[illegible]

- class `gdcmm::network::CMoveCancelRq`
- class `gdcmm::network::CMoveRQ`
`CMoveRQ` this file defines the messages for the `cmove` action.
- class `gdcmm::network::CMoveRSP`
`CMoveRSP` this file defines the messages for the `cmove` action.

- gdc
- gdc::network

- gdc
- gdc::network

```
#include "gdcmCoder.h"
#include "gdcmDecoder.h"
```



```

graph TD
    glibcCodeh[glibcCode.h] --> glibcAudioCodec[h]
    glibcCodeh --> glibcImageCodec[h]
    glibcCodeh --> glibcPOCCodec[h]
    glibcAudioCodec[h] --> glibcDeltaEncodingCodec[h]
    glibcAudioCodec[h] --> glibcPEEGCodec[h]
    glibcAudioCodec[h] --> glibcPEG2000Codec[h]
    glibcAudioCodec[h] --> glibcPEGLSCodec[h]
    glibcAudioCodec[h] --> glibcPEGL2Codec[h]
    glibcImageCodec[h] --> glibcPEGLSCodec[h]
    glibcImageCodec[h] --> glibcKAKADUCodec[h]
    glibcImageCodec[h] --> glibcPOCCodec[h]
    glibcImageCodec[h] --> glibcPVMCodec[h]
    glibcImageCodec[h] --> glibcPWCCodec[h]
    glibcImageCodec[h] --> glibcPWLCodec[h]
    glibcImageCodec[h] --> glibcPRLCodec[h]
    glibcPOCCodec[h] --> glibcPEGLSCodec[h]
    glibcPOCCodec[h] --> glibcKAKADUCodec[h]
    glibcPOCCodec[h] --> glibcPOCCodec[h]
    glibcPOCCodec[h] --> glibcPVMCodec[h]
    glibcPOCCodec[h] --> glibcPWCCodec[h]
    glibcPOCCodec[h] --> glibcPWLCodec[h]
    glibcPOCCodec[h] --> glibcPRLCodec[h]
    glibcPEGLSCodec[h] --> glibcPEGL2Codec[h]
    glibcPEGLSCodec[h] --> glibcPEGL18Codec[h]
    glibcPEGLSCodec[h] --> glibcPEGL8Codec[h]
  
```

- class `gdcm::Codec`
Codec class.

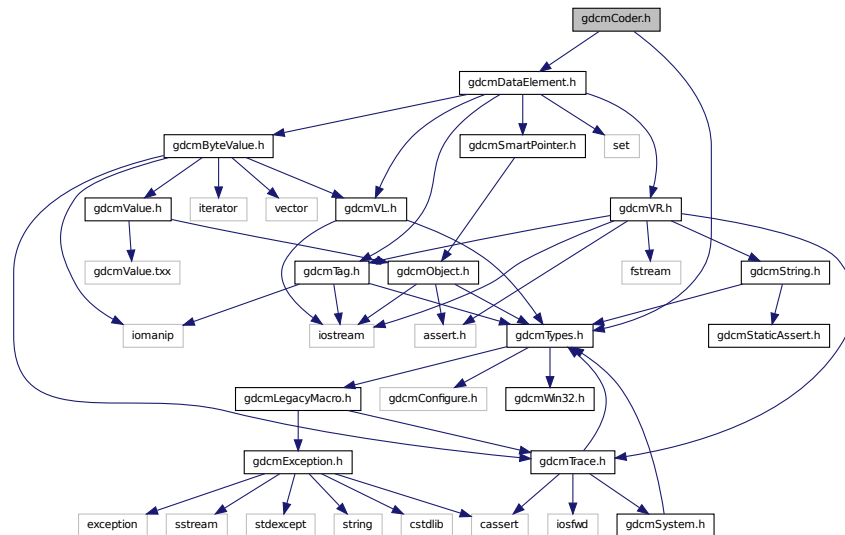
- **gdcm**

- **gdcm**

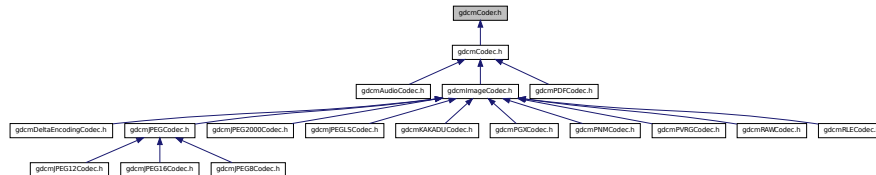
```
#include "gdcmTypes.h"
#include "gdcmDataElement.h"
```

Generated on Tue Jul 30 2013 22:32:05 for GDCM by Doxygen

Include dependency graph for `gdcmCoder.h`:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcm::Coder`
Coder.

Namespaces

- `gdcm`

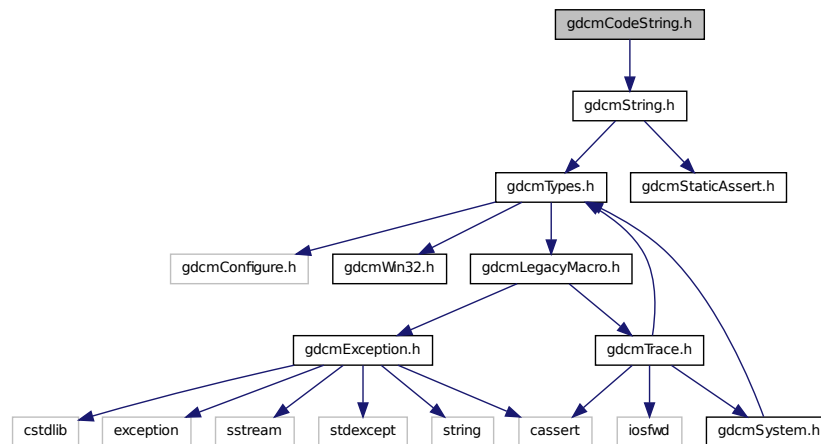
Constant Groups

- `gdcm`

26.37 gdcmCodeString.h File Reference

```
#include "gdcmString.h"
```

Include dependency graph for gdcmCodeString.h:



Classes

- class [gdcm::CodeString](#)

[CodeString](#) This is an implementation of DICOM [VR](#): CS The ctor will properly Trim so that operator== is correct.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

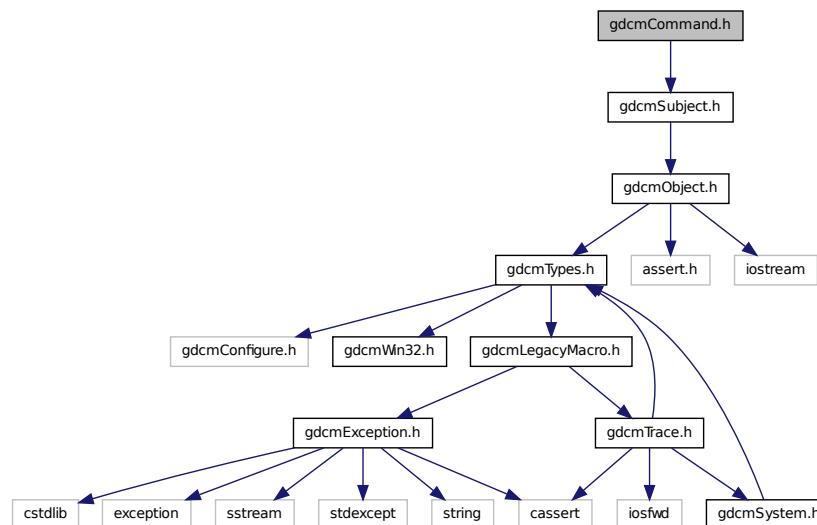
Functions

- bool [gdcm::operator!=](#) (const CodeString &ref, const CodeString &cs)
- std::ostream & [gdcm::operator<<](#) (std::ostream &os, const CodeString &str)
- bool [gdcm::operator==](#) (const CodeString &ref, const CodeString &cs)

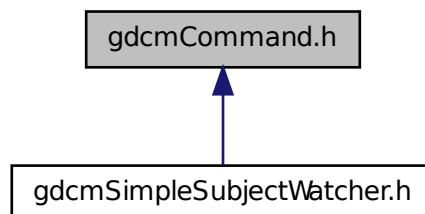
26.38 gdcmCommand.h File Reference

```
#include "gdcmSubject.h"
```

Include dependency graph for `gdcMCommand.h`:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcM::Command`
Command superclass for callback/observer methods.
- class `gdcM::MemberCommand< T >`
Command subclass that calls a pointer to a member function.
- class `gdcM::SimpleMemberCommand< T >`
Command subclass that calls a pointer to a member function.

Namespaces

- [gdcm](#)

Constant Groups

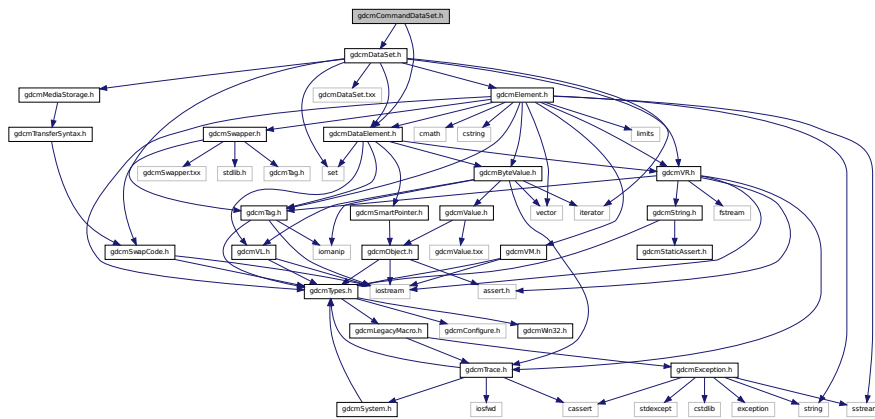
- [gdcm](#)

26.39 gdcmCommandDataSet.h File Reference

```
#include "gdcmDataSet.h"
```

```
#include "gdcmDataElement.h"
```

Include dependency graph for gdcmCommandDataSet.h:



Classes

- class [gdcm::CommandDataSet](#)
Class to represent a [Command DataSet](#).

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

Functions

- `std::ostream & gdcm::operator<< (std::ostream &os, const CommandDataSet &val)`

- class `gdcm::CompositeNetworkFunctions`

Composite Network Functions These functions provide a generic API to the DICOM functions implemented in GDCM. Advanced users can use this code as a template for building their own versions of these functions (for instance, to provide progress bars or some other way of handling returned query information), but for most users, these functions should be sufficient to interface with a PACS to a local machine. Note that these functions are not contained within a static class or some other class-style interface, because multiple connections can be instantiated in the same program. The DICOM standard is much more function oriented rather than class oriented in this instance, so the design of this API reflects that functional approach. These functions implements the following SCU operations:

- **gdcm**

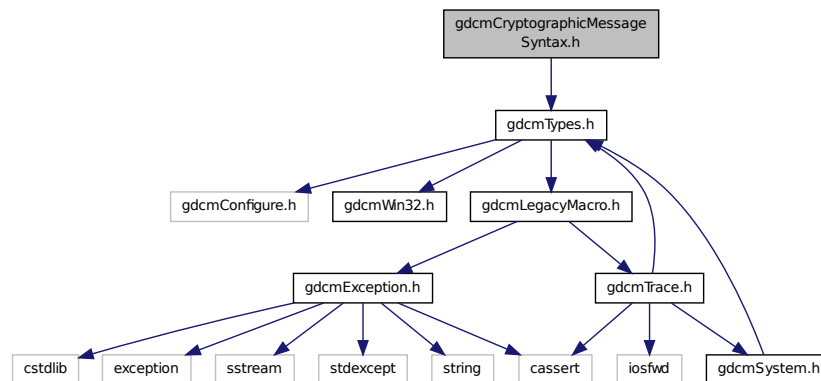
- **gdcm**

- class `gdc::ConstCharWrapper`

Do not use me.

- **gdcm**

Include dependency graph for gdcmCryptographicMessageSyntax.h:



Classes

- class [gdcm::CryptographicMessageSyntax](#)

Class for [CryptographicMessageSyntax](#) encryption. This is just a simple wrapper around openssl PKCS7_encrypt functionalities.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

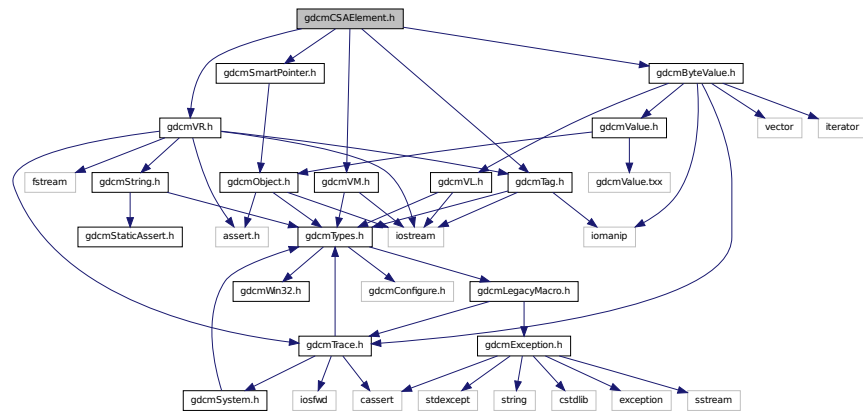
26.46 gdcmCSAElement.h File Reference

```

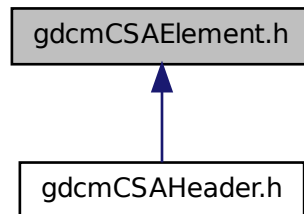
#include "gdcmTag.h"
#include "gdcmVM.h"
#include "gdcmVR.h"
#include "gdcmByteValue.h"
#include "gdcmSmartPointer.h"

```

Include dependency graph for `gdcmCSAElement.h`:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcm::CSAElement`
Class to represent a CSA [Element](#).

Namespaces

- `gdcm`

Constant Groups

- `gdcm`

Functions

- `std::ostream & gdcm::operator<< (std::ostream &os, const CSAElement &val)`

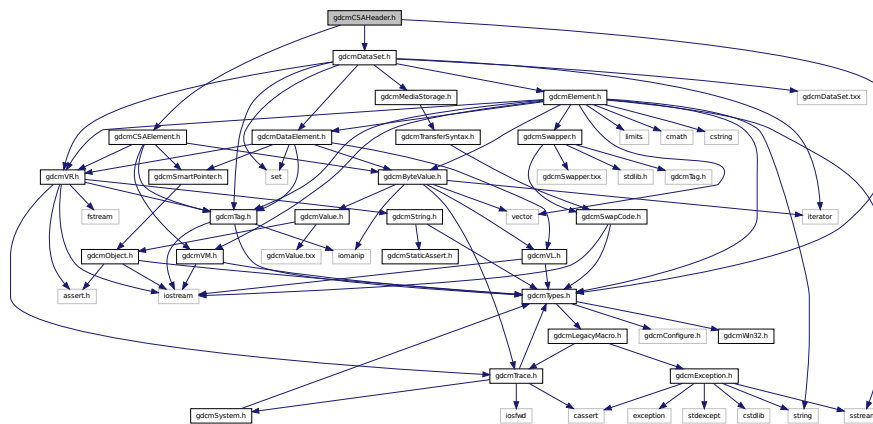
26.47 gdcmCSAHeader.h File Reference

```
#include "gdcmTypes.h"
```

```
#include "gdcmDataSet.h"
```

```
#include "gdcmsSAElement.h"
```

Include dependency graph for gdcmCSAHeader.h:



Classes

- class `gdcm::CSAHeader`
Class for CSAHeader.

Namespaces

- **gdcm**

Constant Groups

- gdc

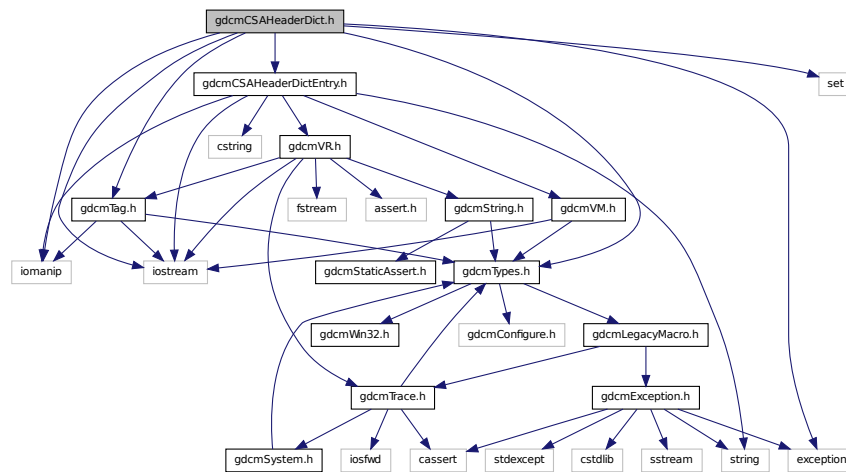
Functions

- `std::ostream & gdcm::operator<< (std::ostream &os, const CSAHeader &d)`

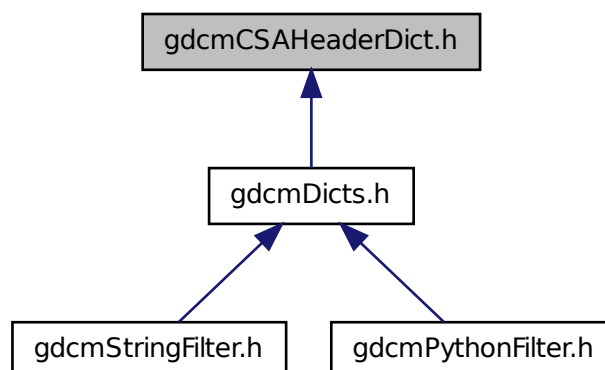
26.48 gdcmCSAHeaderDict.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmTag.h"
#include "gdcmCSAHeaderDictEntry.h"
#include <iostream>
#include <iomanip>
#include <set>
#include <exception>
```

Include dependency graph for gdcmCSAHeaderDict.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::CSAHeaderDict](#)
Class to represent a map of [CSAHeaderDictEntry](#).
- class [gdcm::CSAHeaderDictException](#)

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

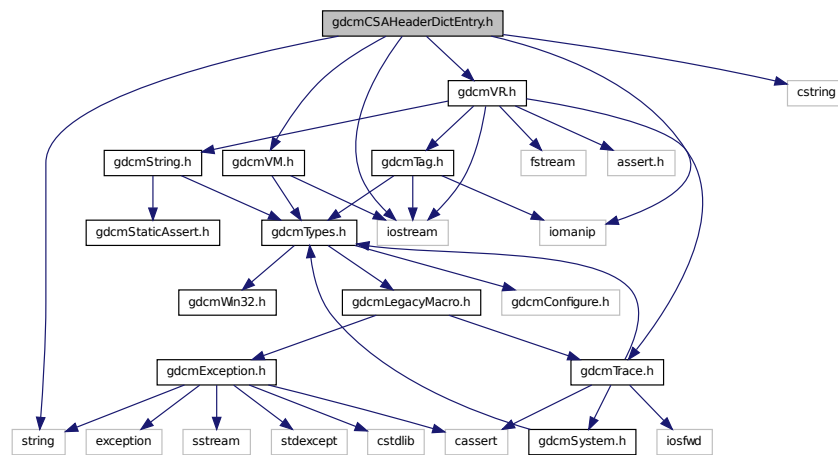
Functions

- `std::ostream & gdcm::operator<< (std::ostream &os, const CSAHeaderDict &val)`

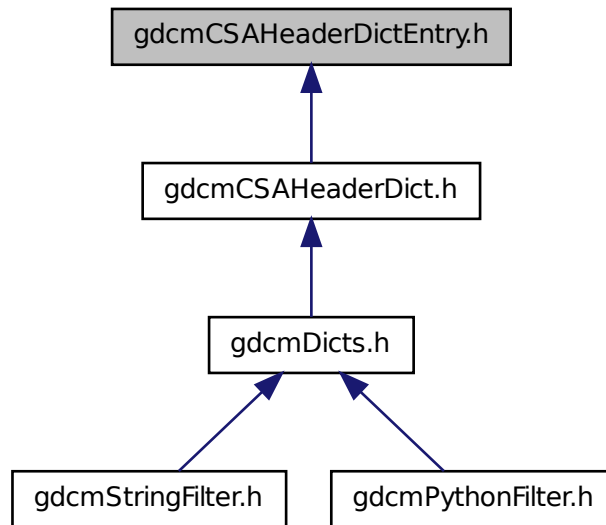
26.49 gdcmCSAHeaderDictEntry.h File Reference

```
#include "gdcmVR.h"
#include "gdcmVM.h"
#include <string>
#include <iostream>
#include <iomanip>
#include <cstring>
```

Include dependency graph for `gdcmCSAHeaderDictEntry.h`:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcml::CSAHeaderDictEntry](#)

Class to represent an Entry in the [Dict](#). Does not really exist within the DICOM definition, just a way to minimize storage and have a mapping from [gdcml::Tag](#) to the needed information.

Namespaces

- [gdcml](#)

Constant Groups

- [gdcml](#)

Functions

- `std::ostream & gdcml::operator<< (std::ostream &os, const CSAHeaderDictEntry &val)`

26.50 gdcmlCStoreMessages.h File Reference

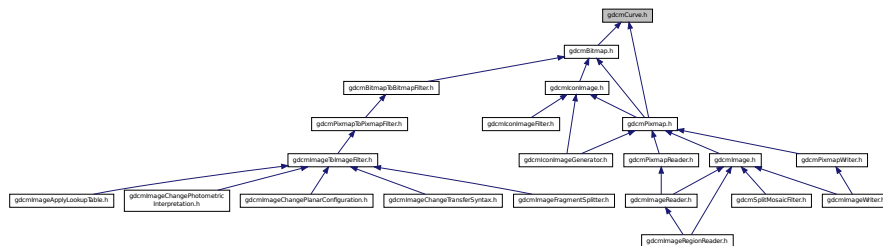
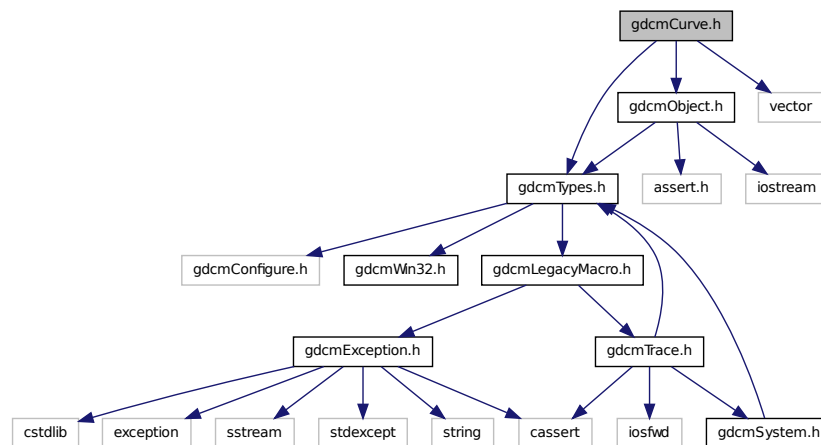
```
#include "gdcmlBaseCompositeMessage.h"
```

- class `gdcm::network::CStoreRQ`
CStoreRQ this file defines the messages for the cecho action.
- class `gdcm::network::CStoreRSP`
CStoreRSP this file defines the messages for the cecho action.

- `gdc`
- `gdc::network`

- `gdc`
- `gdc::network`

```
#include "gdcmTypes.h"
#include "gdcmObject.h"
#include <vector>
```



- class `gdcm::Curve`

- Curve* class to handle element 50xx,3000 *Curve* Data WARNING: This is deprecated and lastly defined in PS 3.3 - 2004.

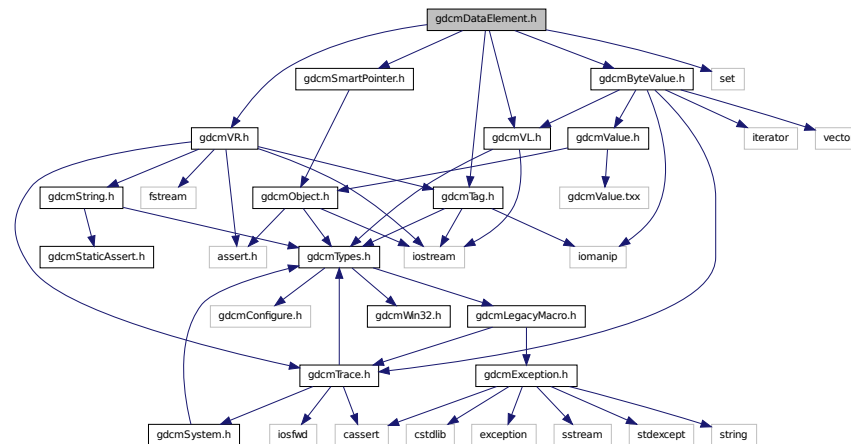
- **gdcm**

- **gdcm**

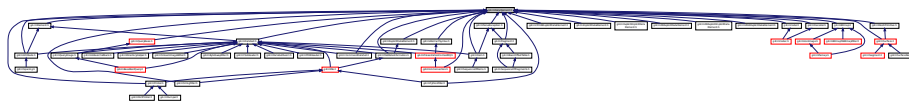
26.52 gdcmDataElement.h File Reference

```
#include "gdcmTag.h"
#include "gdcmVL.h"
#include "gdcmVR.h"
#include "gdcmByteValue.h"
#include "gdcmSmartPointer.h"
#include <set>
```

Include dependency graph for gdcmDataElement.h:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcm::DataElement`
Class to represent a Data *Element* either Implicit or Explicit.

Namespaces

- `gdcm`

Constant Groups

- `gdcm`

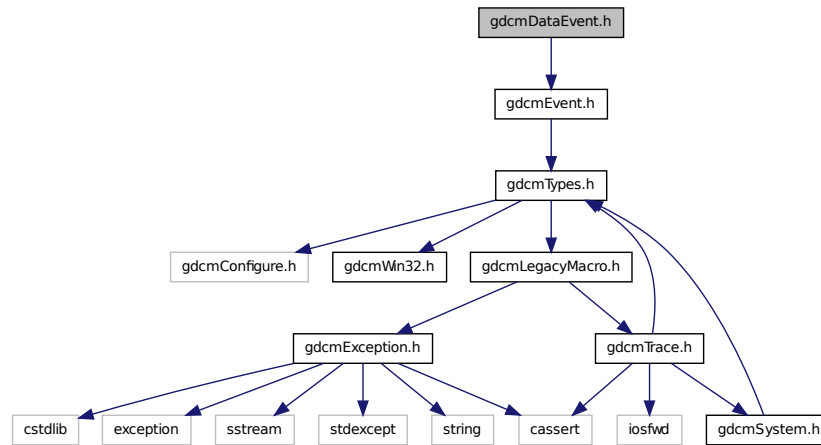
Functions

- bool `gdcm::operator!=` (const DataElement &lhs, const DataElement &rhs)
- std::ostream & `gdcm::operator<<` (std::ostream &os, const DataElement &val)

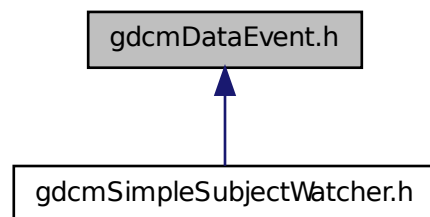
26.53 gdcmDataEvent.h File Reference

```
#include "gdcmEvent.h"
```

Include dependency graph for gdcmDataEvent.h:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcm::DataEvent`
DataEvent.

Namespaces

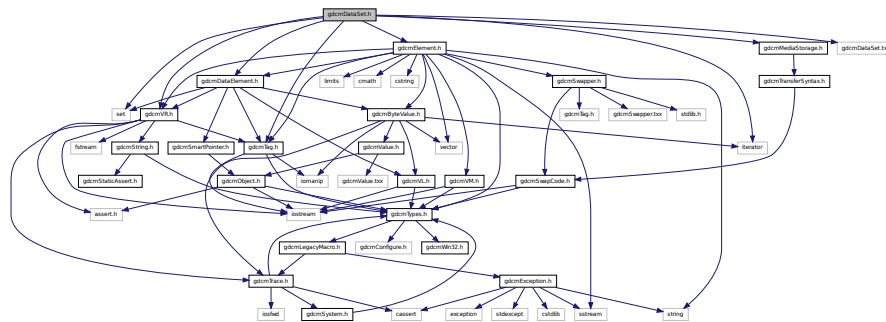
- [gdcm](#)

Constant Groups

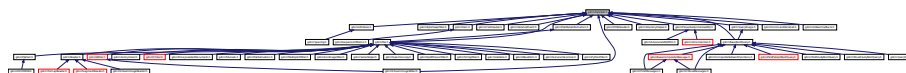
- [gdcm](#)

26.54 gdcmDataSet.h File Reference

```
#include "gdcmDataElement.h"
#include "gdcmTag.h"
#include "gdcmVR.h"
#include "gdcmElement.h"
#include "gdcmMediaStorage.h"
#include <set>
#include <iterator>
#include "gdcmDataSet.txx"
Include dependency graph for gdcmDataSet.h:
```



This graph shows which files directly or indirectly include this file:



Classes

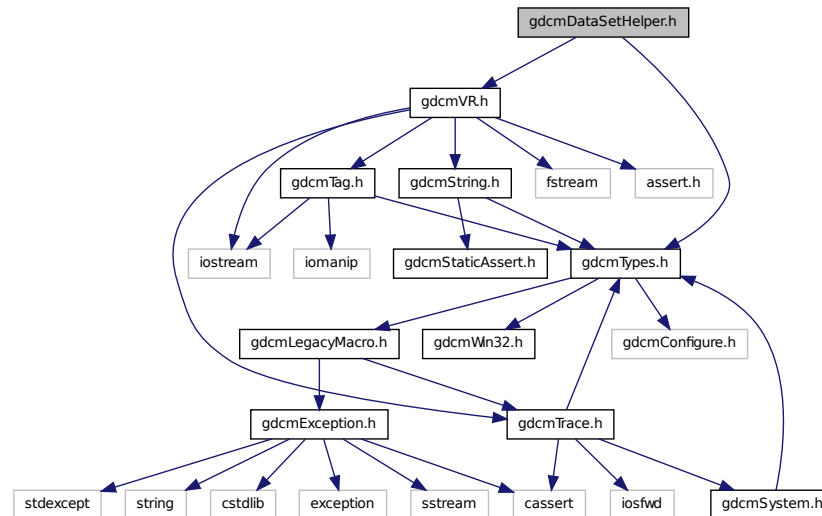
- class [gdcm::DataElementException](#)
- class [gdcm::DataSet](#)

Class to represent a Data Set (which contains Data Elements) A Data Set represents an instance of a real world Information [Object](#).

Namespaces

- [gdcm](#)

Include dependency graph for gdcmDataSetHelper.h:



Classes

- class [gdcm::DataSetHelper](#)
DataSetHelper (internal class, not intended for user level)

Namespaces

- [gdcm](#)

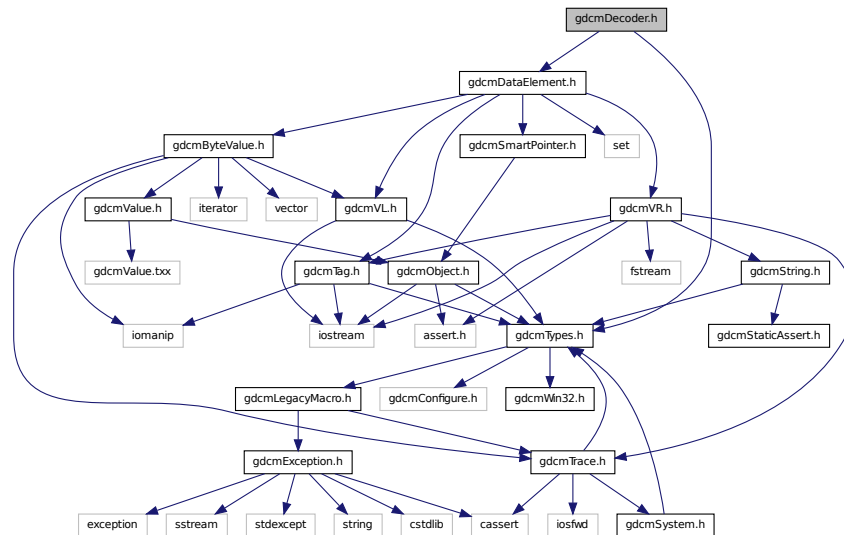
Constant Groups

- [gdcm](#)

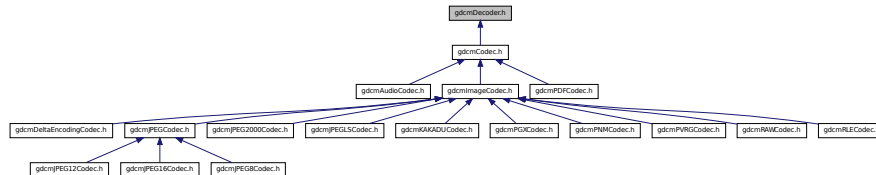
26.57 gdcmDecoder.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmDataElement.h"
```

Include dependency graph for `gdcmDecoder.h`:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcm::Decoder`
Decoder.

Namespaces

- `gdcm`

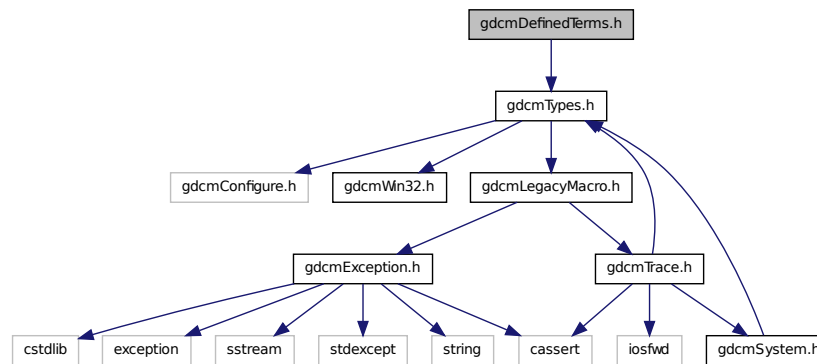
Constant Groups

- `gdcm`

26.58 gdcmDefinedTerms.h File Reference

```
#include "gdcmTypes.h"
```

Include dependency graph for gdcmDefinedTerms.h:



Classes

- class [gdcm::DefinedTerms](#)

Defined Terms are used when the specified explicit Values may be extended by implementors to include additional new Values. These new Values shall be specified in the Conformance Statement (see PS 3.2) and shall not have the same meaning as currently defined Values in this standard. A Data [Element](#) with Defined Terms that does not contain a [Value](#) equivalent to one of the Values currently specified in this standard shall not be considered to have an invalid value. Note: Interpretation [Type](#) ID (4008,0210) is an example of a Data [Element](#) having Defined Terms. It is defined to have a [Value](#) that may be one of the set of standard Values; REPORT or AMENDMENT (see PS 3.3). Because this Data [Element](#) has Defined Terms other Interpretation [Type](#) IDs may be defined by the implementor.

Namespaces

- [gdcm](#)

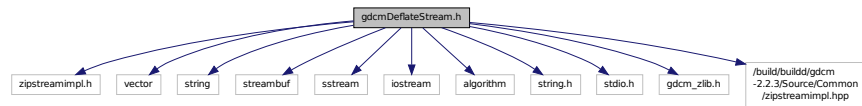
Constant Groups

- [gdcm](#)

26.59 gdcmDeflateStream.h File Reference

```
#include "zipstreamimpl.h"
```

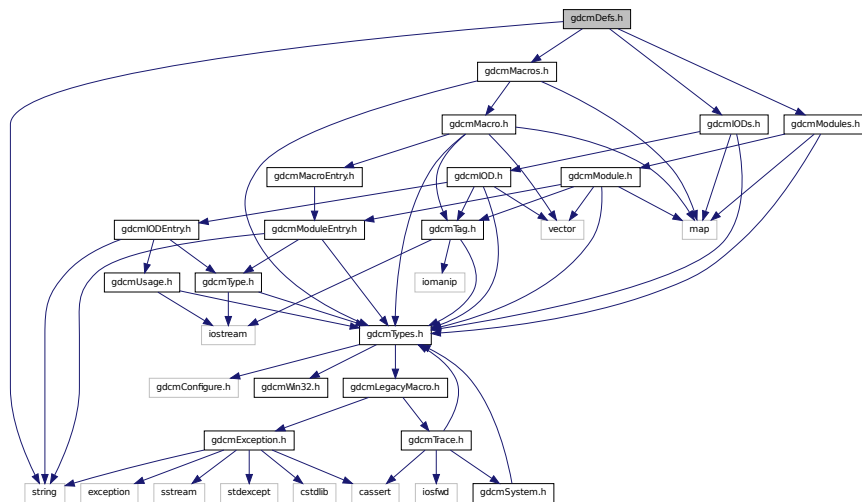
Include dependency graph for gdcMDeflateStream.h:



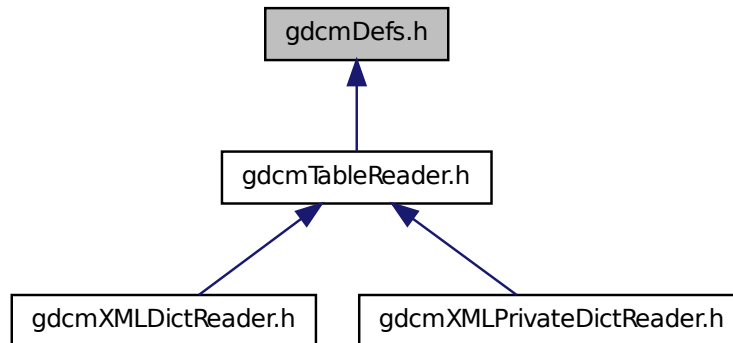
26.60 gdcmDefs.h File Reference

```
#include "gdcModules.h"
#include "gdcMacros.h"
#include "gdcIODs.h"
#include <string>
```

Include dependency graph for gdcmDefs.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Defs](#)

FIXME I do not like the name 'Defs'.

Namespaces

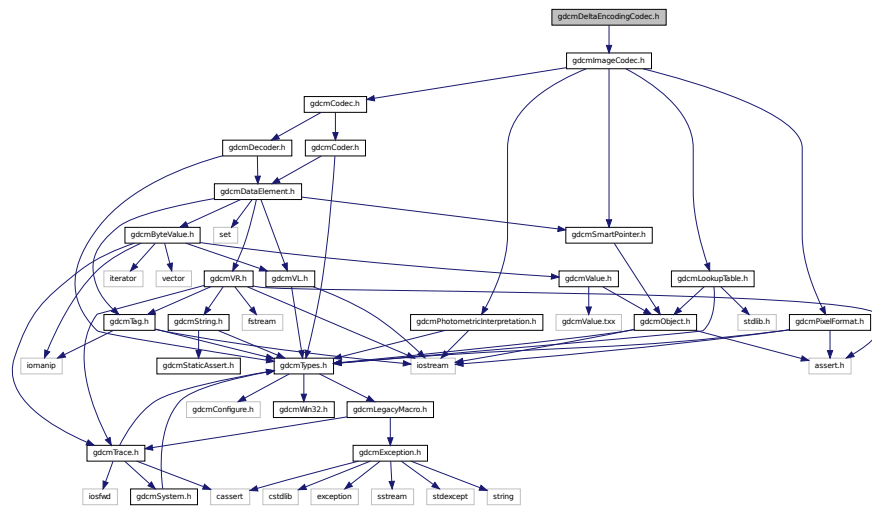
- [gdcm](#)

Constant Groups

- [gdcm](#)

26.61 gdcmDeltaEncodingCodec.h File Reference

```
#include "gdcmImageCodec.h"
```



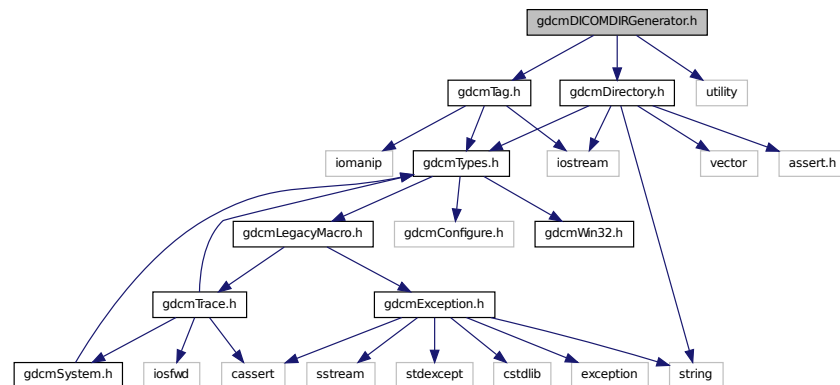
- class `gdcm::DICOMDIR`
DICOMDIR class.

- `gdcm`

- **gdcm**

```
#include "gdcmDirectory.h"
#include "gdcmTag.h"
#include <utility>
```

Include dependency graph for `gdcmdicomdirgenerator.h`:



Classes

- class [gdcmdicomdirgenerator](#)

[DICOMDIRGenerator](#) class This is a STD-GEN-CD [DICOMDIR](#) generator. ref: PS 3.11-2008 Annex D (Normative) - General Purpose CD-R and DVD Interchange Profiles.

Namespaces

- [gdcmdicomdir](#)

Constant Groups

- [gdcmdicomdir](#)

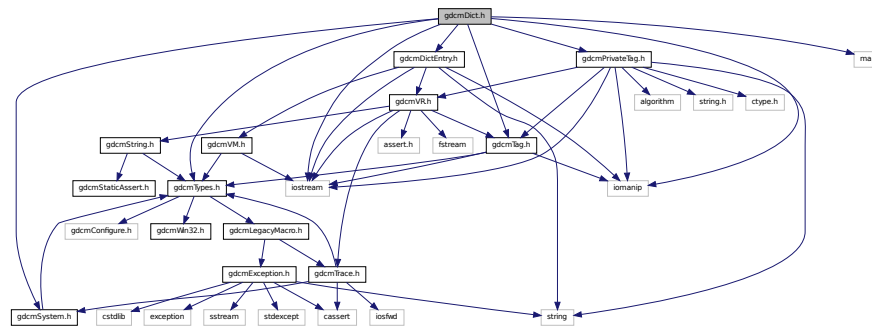
26.64 gdcmdict.h File Reference

```

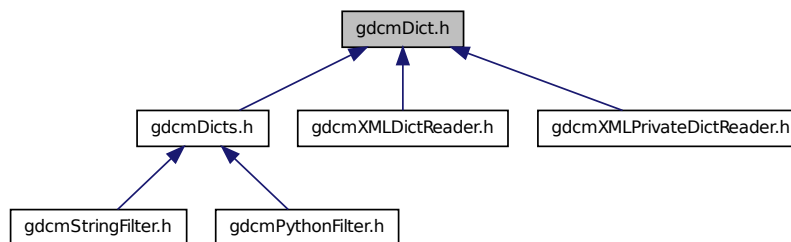
#include "gdcmtypes.h"
#include "gdcmtag.h"
#include "gdcmlibraryprivateTag.h"
#include "gdcmlibrarydictEntry.h"
#include "gdcmlibrarysystem.h"
#include <iostream>
#include <iomanip>
#include <map>

```

Include dependency graph for gdcmDict.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Dict](#)
Class to represent a map of [DictEntry](#).
- class [gdcm::PrivateDict](#)
Private [Dict](#).

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

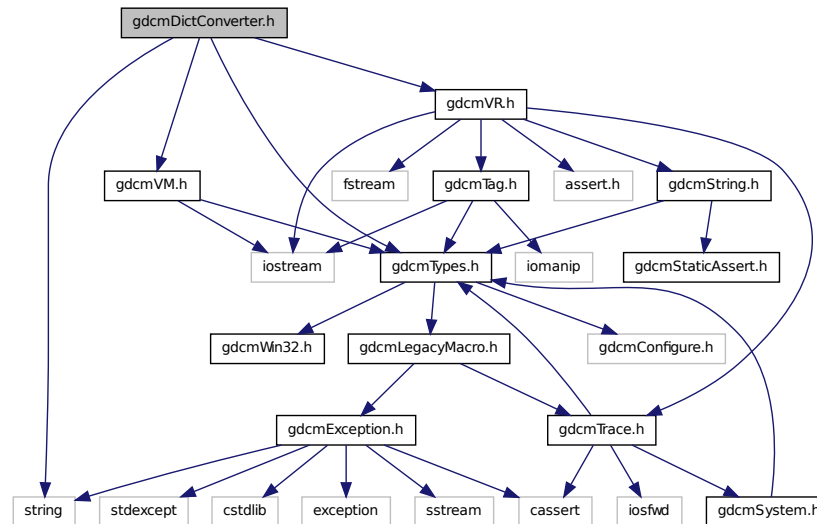
Functions

- `std::ostream & gdcm::operator<< (std::ostream &os, const Dict &val)`
- `std::ostream & gdcm::operator<< (std::ostream &os, const PrivateDict &val)`

26.65 gdcmDictConverter.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmVR.h"
#include "gdcmVM.h"
#include <string>
```

Include dependency graph for gdcmDictConverter.h:



Classes

- class [gdcm::DictConverter](#)
Class to convert a .dic file into something else:

Namespaces

- [gdcm](#)

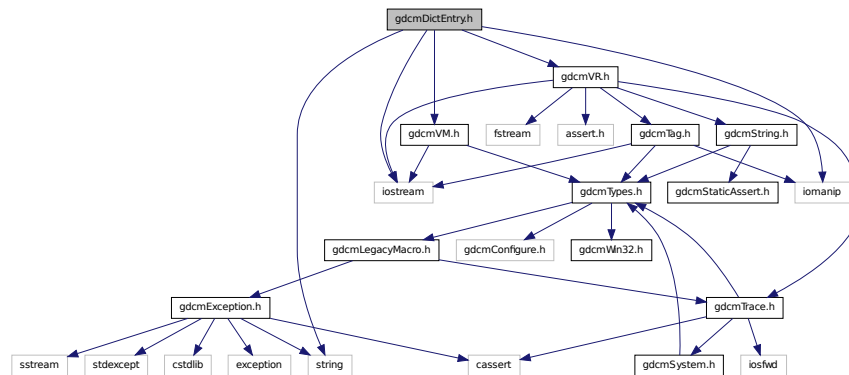
Constant Groups

- [gdcm](#)

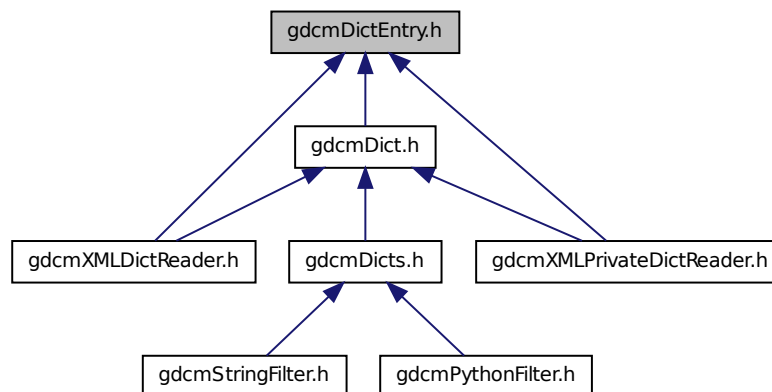
26.66 gdcmDictEntry.h File Reference

```
#include "gdcmVR.h"
#include "gdcmVM.h"
#include <string>
#include <iostream>
#include <iomanip>
```

Include dependency graph for gdcmDictEntry.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::DictEntry](#)
Class to represent an Entry in the *Dict* Does not really exist within the DICOM definition, just a way to minimize storage and have a mapping from [gdcm::Tag](#) to the needed information.

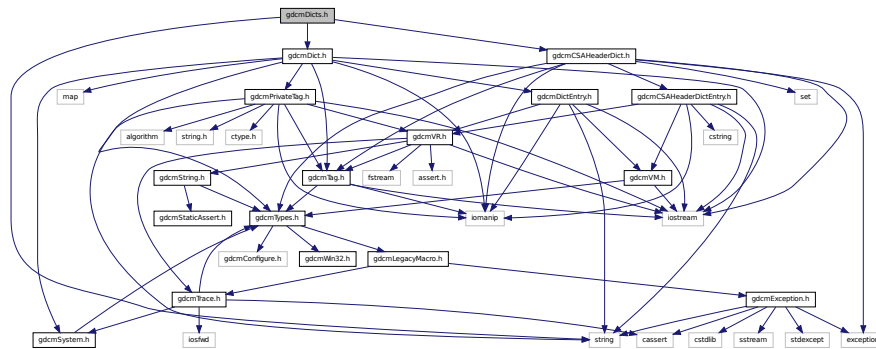
Namespaces

- [gdcm](#)

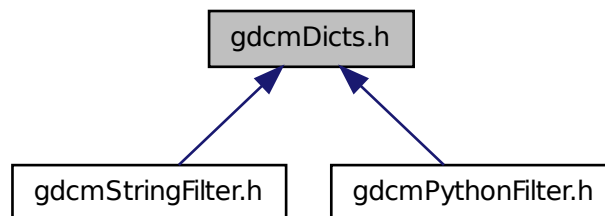
Constant Groups

- [gdcm](#)

Include dependency graph for gdcmDicts.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Dicts](#)
Class to manipulate the sum of knowledge (all the dict user load)

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

Functions

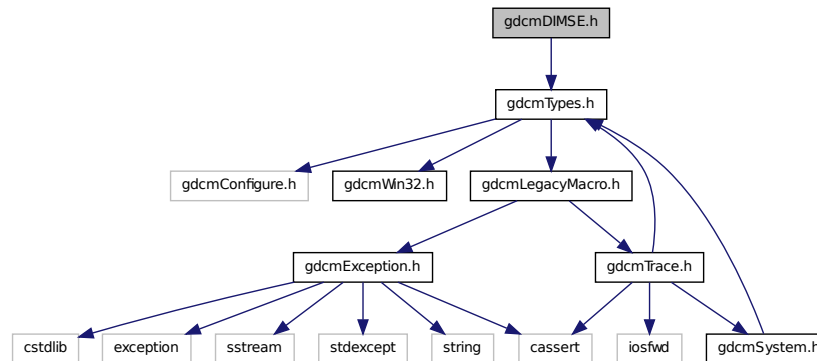
- `std::ostream & gdcm::operator<< (std::ostream &os, const Dicts &d)`

26.69 gdcmdiff.man File Reference

26.70 gdcmdIMSE.h File Reference

```
#include "gdcmdTypes.h"
```

Include dependency graph for gdcmdIMSE.h:



Classes

- class [gdcmd::network::CEchoRQ](#)
CEchoRQ this file defines the messages for the cecho action.
- class [gdcmd::network::CEchoRSP](#)
CEchoRSP this file defines the messages for the cecho action.
- class [gdcmd::network::CFind](#)
- class [gdcmd::network::DIMSE](#)
DIMSE PS 3.7 - 2009 Annex E [Command Dictionary \(Normative\)](#) E.1 REGISTRY OF DICOM COMMAND ELEMENTS
[Table E.1-1 COMMAND FIELDS \(PART 1\)](#)

Namespaces

- [gdcmd](#)
- [gdcmd::network](#)

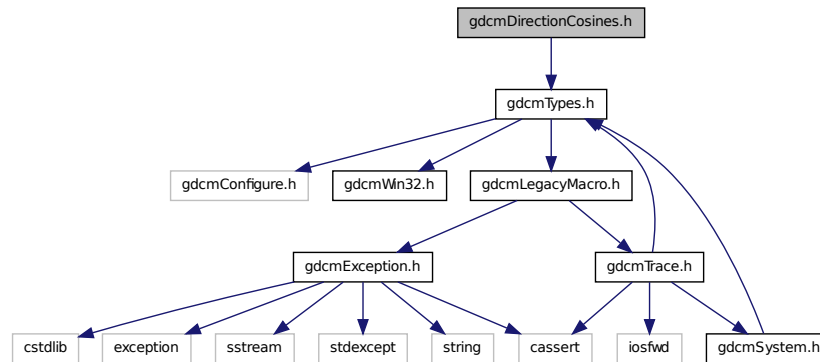
Constant Groups

- [gdcmd](#)
- [gdcmd::network](#)

26.71 gdcmDirectionCosines.h File Reference

```
#include "gdcmTypes.h"
```

Include dependency graph for gdcmDirectionCosines.h:



Classes

- class [gdcm::DirectionCosines](#)
class to handle [DirectionCosines](#)

Namespaces

- [gdcm](#)

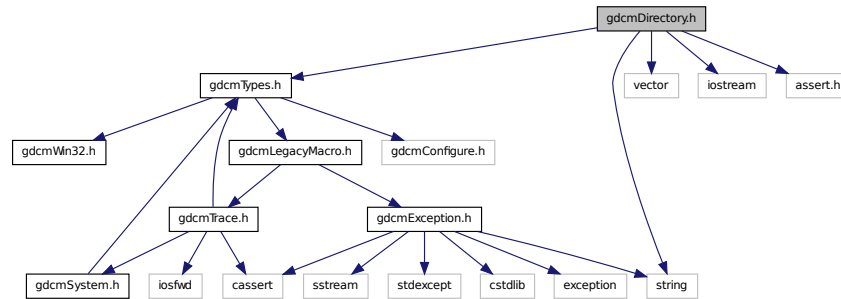
Constant Groups

- [gdcm](#)

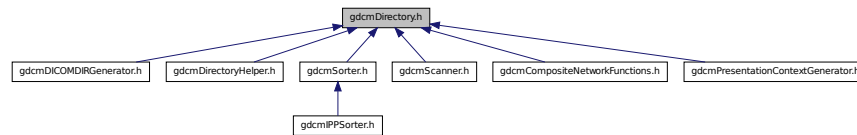
26.72 gdcmDirectory.h File Reference

```
#include "gdcmTypes.h"
#include <string>
#include <vector>
#include <iostream>
#include <assert.h>
```

Include dependency graph for `gdcDirectory.h`:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdc::Directory](#)
Class for manipulation directories.

Namespaces

- [gdc](#)

Constant Groups

- [gdc](#)

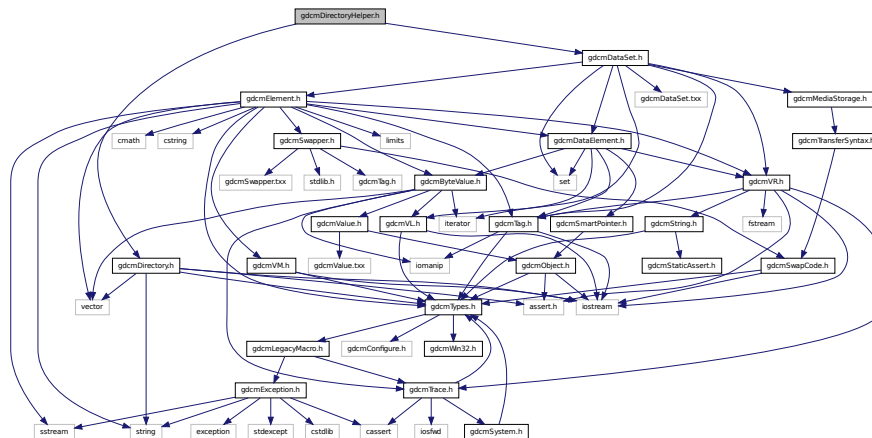
Functions

- `std::ostream & gdc::operator<< (std::ostream &os, const Directory &d)`

26.73 gdcDirectoryHelper.h File Reference

```
#include "gdcDirectory.h"
#include "gdcDataSet.h"
```

Include dependency graph for `gdcmDirectoryHelper.h`:



Classes

- class `gdcm::DirectoryHelper`

DirectoryHelper this class is designed to help mitigate some of the commonly performed operations on directories. namely: 1) the ability to determine the number of series in a directory by what type of series is present 2) the ability to find all ct series in a directory 3) the ability to find all mr series in a directory 4) to load a set of DataSets from a series that's already been sorted by the IPP sorter 5) For rtstruct stuff, you need to know the sopinstanceuid of each z plane, so there's a retrieval function for that 6) then a few other functions for rtstruct writeouts.

Namespaces

- **gdcm**

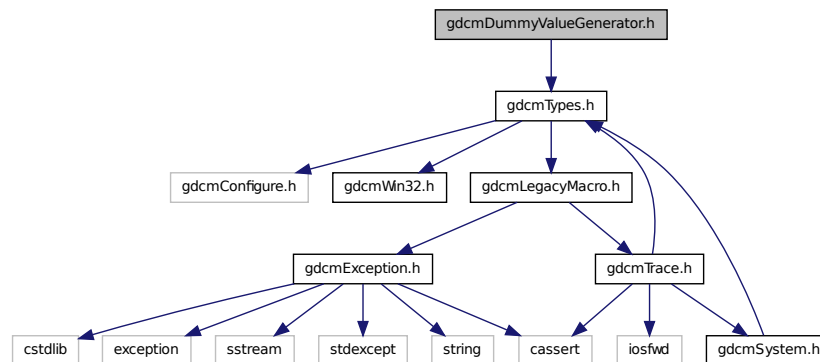
Constant Groups

- gdc

26.74 gdcmDummyValueGenerator.h File Reference

```
#include "gdcmTypes.h"
```

Include dependency graph for `gdcmDummyValueGenerator.h`:



Classes

- class [gdcm::DummyValueGenerator](#)

Class for generating dummy value.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

26.75 gdcmdump.man File Reference

26.76 gdcmDumper.h File Reference

```
#include "gdcmPrinter.h"
```

[illegible]

- class `gdcm::Dumper`
Codec class.

- **gdcm**

- **gdcm**

```
#include "gdcmTypes.h"
#include "gdcmVR.h"
#include "gdcmTag.h"
#include "gdcmVM.h"
#include "gdcmByteValue.h"
#include "gdcmDataElement.h"
#include "gdcmSwapper.h"
#include <string>
#include <vector>
#include <sstream>
#include <limits>
#include <cmath>
#include <cstring>
```

[illegible]

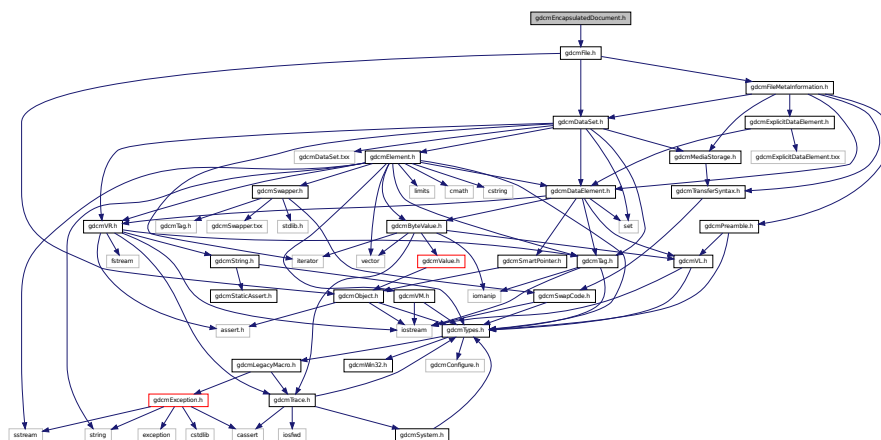
- class `gdc::Element< TVR, TVM >`
Element class.
- class `gdc::Element< TVR, VM::VM1_2 >`
- class `gdc::Element< TVR, VM::VM1_n >`
- class `gdc::Element< TVR, VM::VM2_2n >`
- class `gdc::Element< TVR, VM::VM2_n >`
- class `gdc::Element< TVR, VM::VM3_3n >`
- class `gdc::Element< TVR, VM::VM3_n >`
- class `gdc::Element< VR::AS, VM::VM5 >`
- class `gdc::Element< VR::OB, VM::VM1 >`
- class `gdc::Element< VR::OW, VM::VM1 >`
- class `gdc::EncodingImplementation< T >`
EncodingImplementation.
- class `gdc::EncodingImplementation< VR::VRASCII >`
- class `gdc::EncodingImplementation< VR::VRBINARY >`
- struct `gdc::ignore_char`

- [gdc](#)

- [gdc](#)

- ignore_char const **gdcmm::backslash** ('\\')
- std::istream & **gdcmm::operator>>** (std::istream &in, ignore_char const &ic)
- template<typename Float >
std::string **gdcmm::to_string** (Float data)

```
#include "gdcmFile.h"
Include dependency graph for gdcmEncapsulatedDocument.h:
```



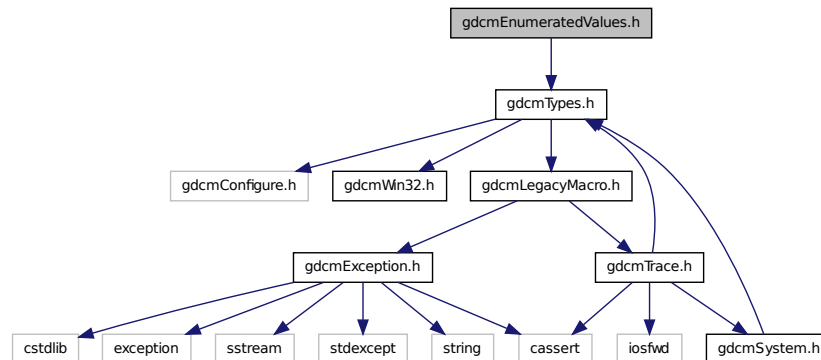
- class `gdcm::EncapsulatedDocument`
EncapsulatedDocument.

- **gdcm**

- **gdcm**

```
#include "gdcmTypes.h"
```

Include dependency graph for `gdcmEnumeratedValues.h`:



Classes

- class [gdcm::EnumeratedValues](#)

***Element.** A Data [Element](#) with Enumerated Values that does not have a [Value](#) equivalent to one of the Values specified in this standard has an invalid value within the scope of a specific Information Object/SOP Class definition. Note:*

Namespaces

- [gdcm](#)

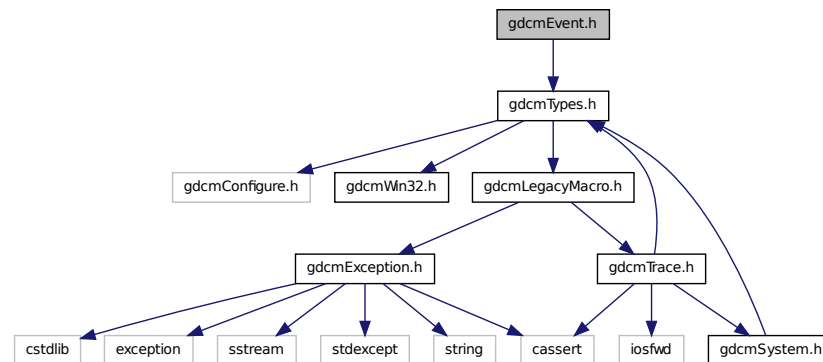
Constant Groups

- [gdcm](#)

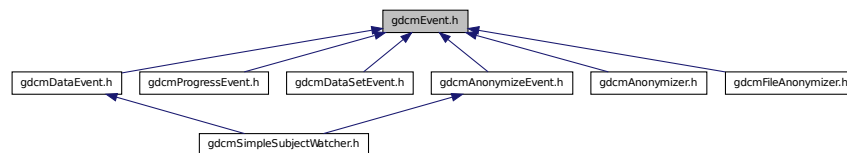
26.80 gdcmEvent.h File Reference

```
#include "gdcmTypes.h"
```

Include dependency graph for gdcEvent.h:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdc::AbortEvent`
- class `gdc::AnyEvent`
- class `gdc::EndEvent`
- class `gdc::Event`
superclass for callback/observer methods
- class `gdc::ExitEvent`
- class `gdc::InitializeEvent`
- class `gdc::IterationEvent`
- class `gdc::ModifiedEvent`
- class `gdc::NoEvent`
- class `gdc::StartEvent`
- class `gdc::UserEvent`

Namespaces

- `gdc`

Constant Groups

- [gdc](#)

Macros

- `#define gdcEventMacro(classname, super)`

Functions

- `std::ostream & gdc::operator<< (std::ostream &os, Event &e)`

Generic inserter operator for [Event](#) and its subclasses.

26.80.1 Macro Definition Documentation

26.80.1.1 `#define gdcEventMacro(classname, super)`

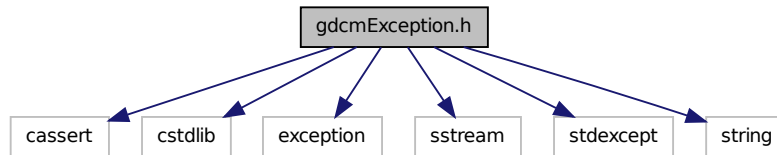
Value:

```
\
class classname : public super { \
public: \
    typedef classname Self; \
    typedef super Superclass; \
    classname() {} \
    virtual ~classname() {} \
    virtual const char * GetEventName() const { return #classname; } \
    virtual bool CheckEvent(const ::gdc::Event* e) const \
    { return dynamic_cast<const Self*>(e) ? true : false; } \
    virtual ::gdc::Event* MakeObject() const \
    { return new Self; } \
    classname(const Self&s) : super(s){}; \
private: \
    void operator=(const Self&); \
}
```

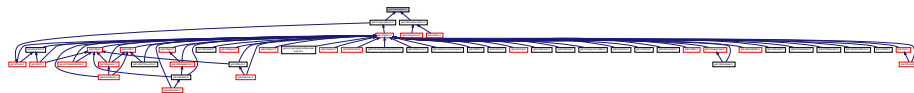
26.81 [gdcException.h](#) File Reference

```
#include <cassert>
#include <cstdlib>
#include <exception>
#include <sstream>
#include <stdexcept>
#include <string>
```

Include dependency graph for gdcmException.h:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcm::Exception`
Exception.

Namespaces

- `gdcm`

Constant Groups

- `gdcm`

26.82 gdcmExplicitDataElement.h File Reference

```
#include "gdcmDataElement.h"  
#include "gdcmExplicitDataElement.txx"
```

- class `gdcm::ExplicitDataElement`
Class to read/write a `DataElement` as Explicit Data `Element`.

- **gdcm**

- **gdcm**

```
#include "gdcmDataElement.h"
#include "gdcmExplicitImplicitDataElement.txx"
```


Classes

- class [gdcm::Fiducials](#)
Fiducials.

Namespaces

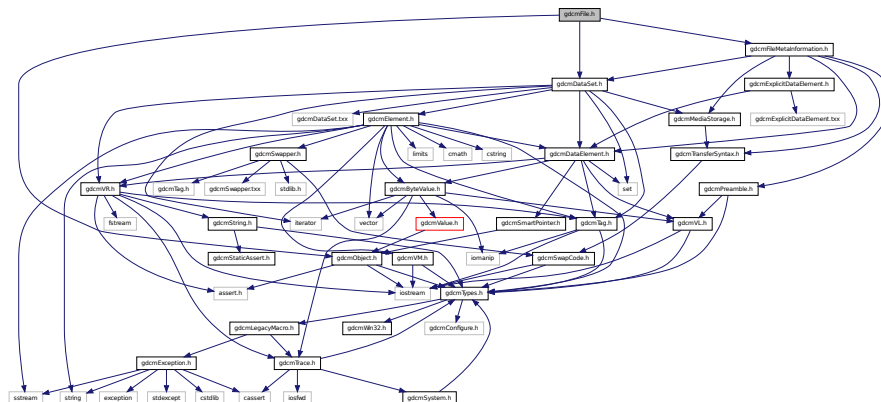
- [gdcm](#)

Constant Groups

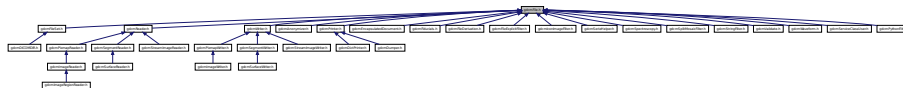
- [gdcm](#)

26.85 gdcmFile.h File Reference

```
#include "gdcmObject.h"
#include "gdcmDataSet.h"
#include "gdcmFileMetaInformation.h"
Include dependency graph for gdcmFile.h:
```



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::File](#)

a DICOM *File* See PS 3.10 *File*: A *File* is an ordered string of zero or more bytes, where the first byte is at the beginning of the file and the last byte at the end of the *File*. Files are identified by a unique *File* ID and may be written, read and/or deleted.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

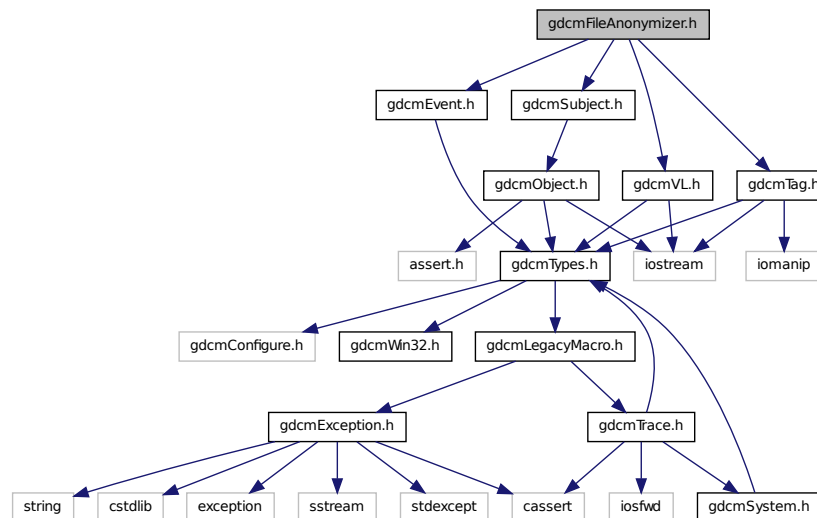
Functions

- `std::ostream & gdcm::operator<< (std::ostream &os, const File &val)`

26.86 gdcmFileAnonymizer.h File Reference

```
#include "gdcmSubject.h"
#include "gdcmEvent.h"
#include "gdcmTag.h"
#include "gdcmVL.h"
```

Include dependency graph for gdcmFileAnonymizer.h:



Classes

- class `gdcm::FileAnonymizer`
[FileAnonymizer](#).

Namespaces

- [gdcm](#)

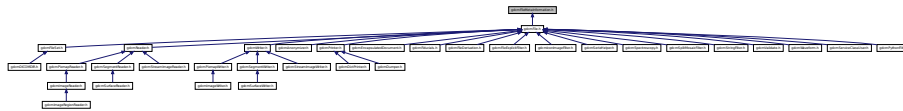
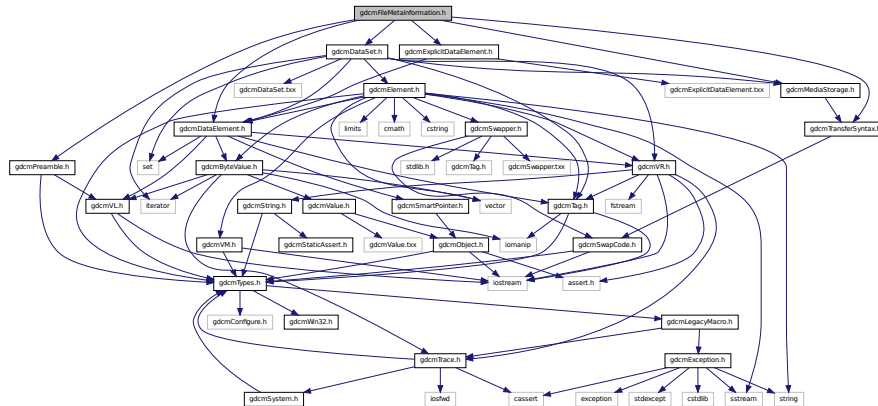
- class `gdcm::FileExplicitFilter`

Namespaces

- ## Constant Groups

- gdc

```
#include "gdcmPreamble.h"
#include "gdcmDataSet.h"
#include "gdcmDataElement.h"
#include "gdcmMediaStorage.h"
#include "gdcmTransferSyntax.h"
#include "gdcmExplicitDataElement.h"
```



- class `gdcm::FileMetaInformation`
*Class to represent a **File** Meta Information.*

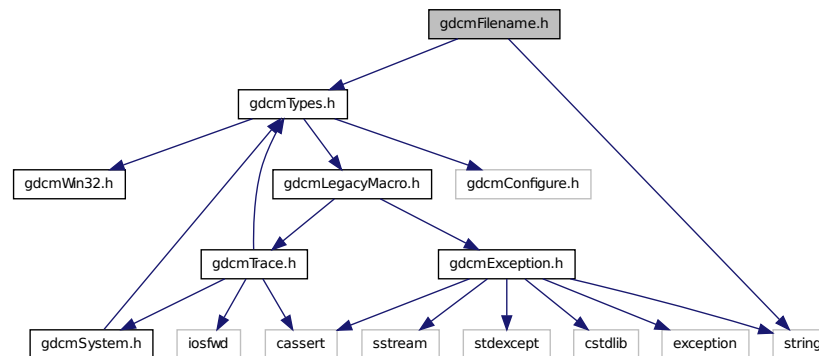
- **gdcm**

- **gdcm**

- `std::ostream & gdcmm::operator<< (std::ostream &os, const FileMetalInformation &val)`

```
#include "gdcmTypes.h"
#include <string>
```

Include dependency graph for gdcmFilename.h:



Classes

- class `gdcm::Filename`

Class to manipulate file name's.

Namespaces

- `gdcm`

Constant Groups

- `gdcm`

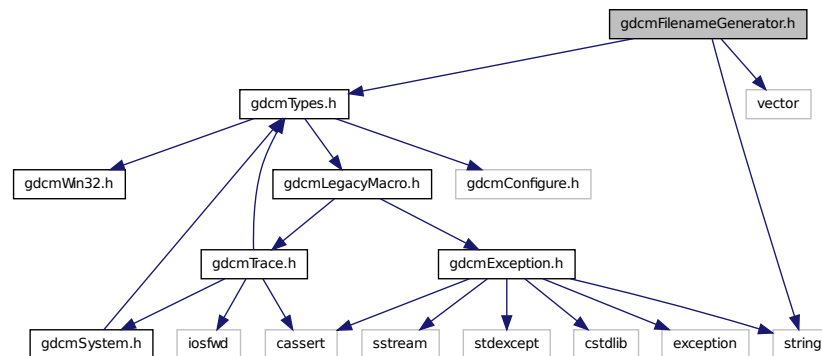
26.91 gdcmFilenameGenerator.h File Reference

```

#include "gdcmTypes.h"
#include <string>
#include <vector>

```

Include dependency graph for `gdcmlFilenameGenerator.h`:



Classes

- class `gdcml::FilenameGenerator`

FilenameGenerator.

Namespaces

- `gdcml`

Constant Groups

- `gdcml`

26.92 gdcmlFileSet.h File Reference

```
#include "gdcmlFile.h"
#include <vector>
```

```
graph BT
    gdcmDICOMDIR.h --> gdcmFileSet.h
```

- class `gdcm::FileSet`

- **gdcm**

- **gdcm**

Namespaces

- **gdcm**

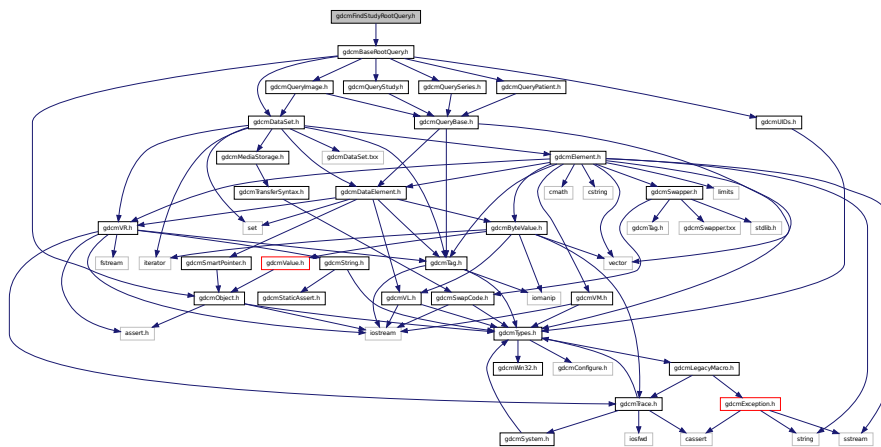
Constant Groups

- **gdcm**

26.94 gdcmFindStudyRootQuery.h File Reference

```
#include "gdcmBaseRootQuery.h"
```

Include dependency graph for gdcMFindStudyRootQuery.h:



Classes

- class `gdcm::FindStudyRootQuery`

FindStudyRootQuery contains: the class which will produce a dataset for C-FIND with study root.

Namespaces

- **gdcm**

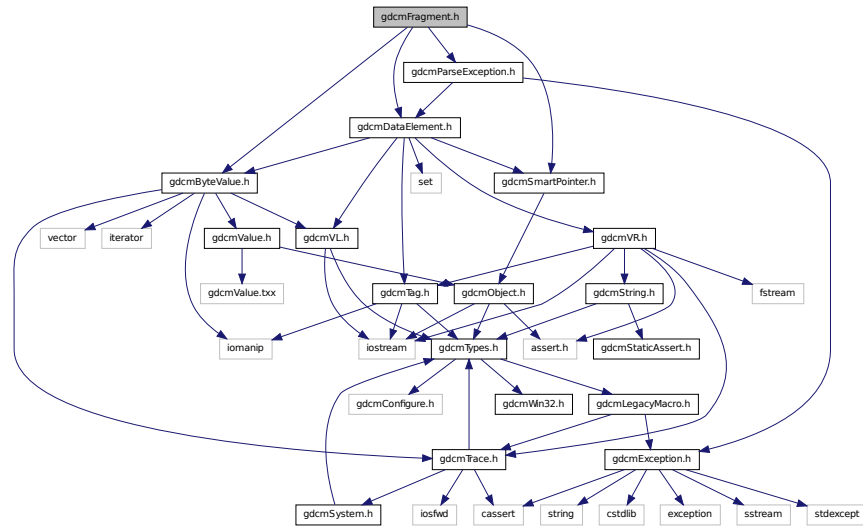
Constant Groups

- **gdcm**

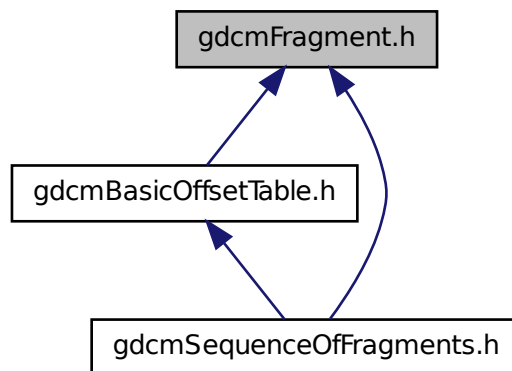
26.95 gdcmFragment.h File Reference

```
#include "gdcmDataElement.h"
```

```
#include "gdcmByteValue.h"
#include "gdcmSmartPointer.h"
#include "gdcmParseException.h"
Include dependency graph for gdcmFragment.h:
```



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Fragment](#)
Class to represent a *Fragment*.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

Functions

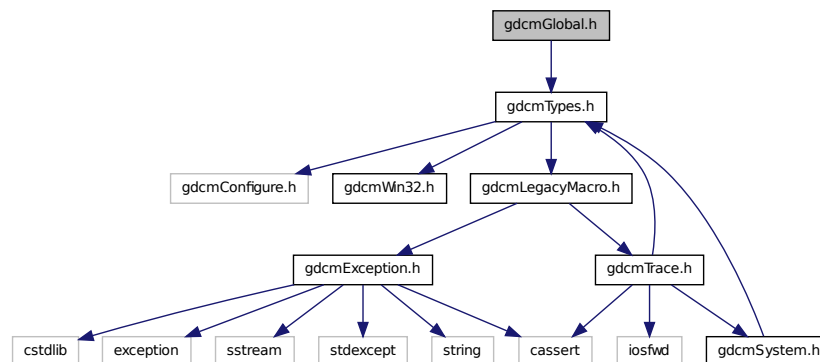
- `std::ostream & gdcm::operator<< (std::ostream &os, const Fragment &val)`

26.96 gdcmgendir.man File Reference

26.97 gdcmGlobal.h File Reference

```
#include "gdcmTypes.h"
```

Include dependency graph for gdcmGlobal.h:



Classes

- class [gdcm::Global](#)
Global.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

Functions

- `std::ostream & gdcmm::operator<< (std::ostream &os, const Global &g)`

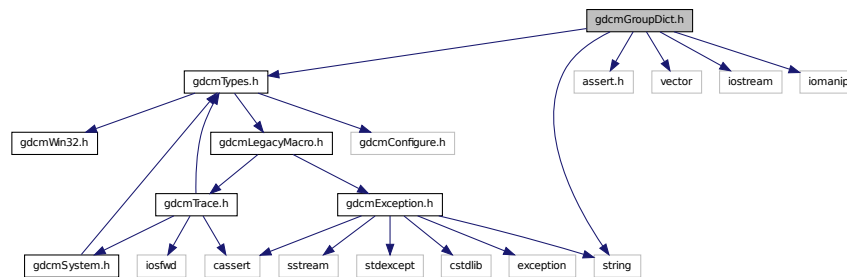
Variables

- static Global `gdcmm::GlobalInstance`

26.98 gdcmmGroupDict.h File Reference

```
#include "gdcmmTypes.h"
#include <assert.h>
#include <vector>
#include <string>
#include <iostream>
#include <iomanip>
```

Include dependency graph for gdcmmGroupDict.h:



Classes

- class `gdcmm::GroupDict`
Class to represent the mapping from group number to its abbreviation and name.

Namespaces

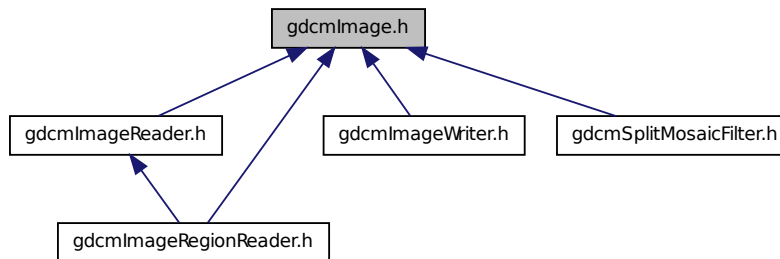
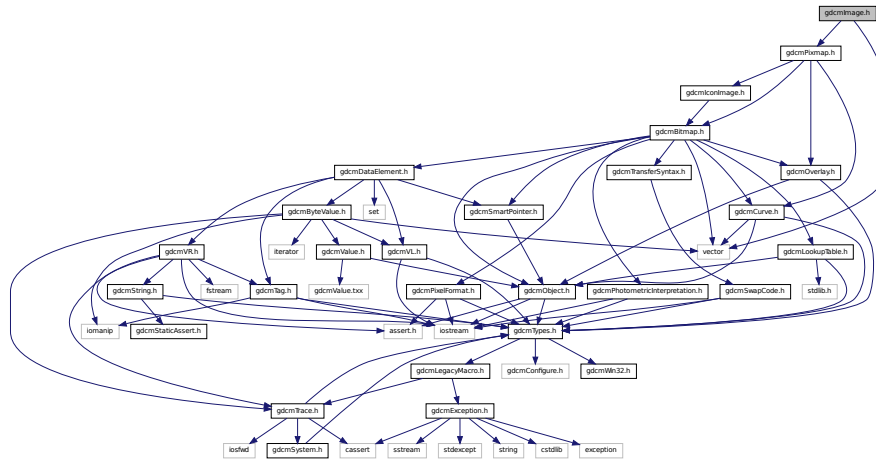
- `gdcmm`

Constant Groups

- `gdcmm`

Functions

- `std::ostream & gdcmm::operator<< (std::ostream &_os, const GroupDict &_val)`

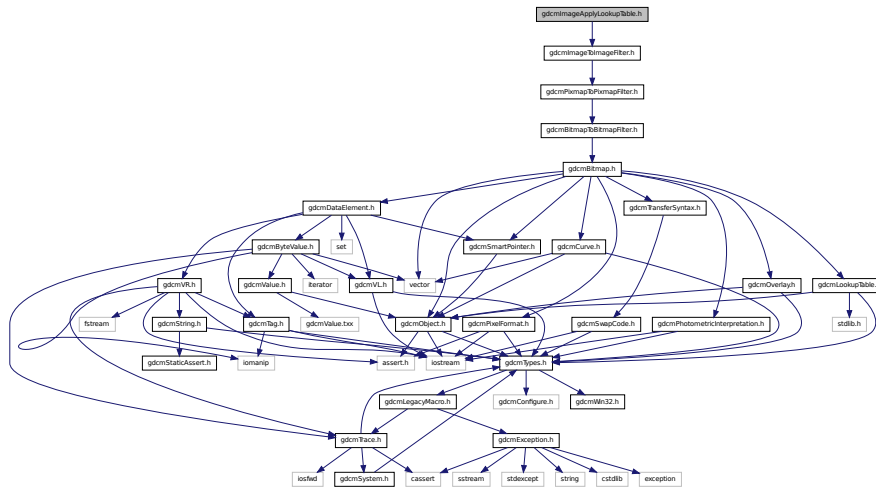


- class `gdcm::Image`

- **gdcm**

- **gdcm**


```
#include "gdcmImageToImageFilter.h"
Include dependency graph for gdcmImageApplyLookupTable.h:
```



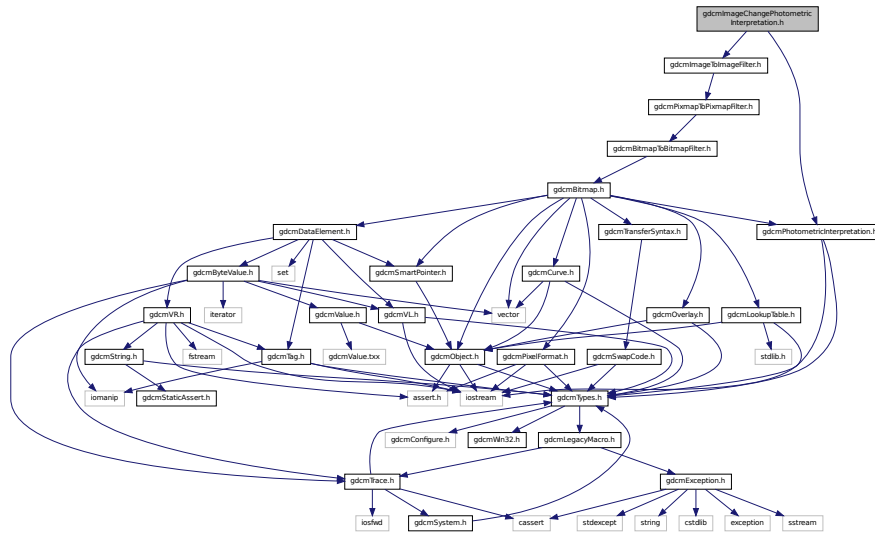
- class `gdcm::ImageApplyLookupTable`

ImageApplyLookupTable class It applies the LUT the PixelData (only PALETTE_COLOR images) Output will be a PhotometricInterpretation=RGB image.

- `gdcm`

- **gdcm**

```
#include "gdcImageToImageFilter.h"
#include "gdcPhotometricInterpretation.h"
```



- class `gdcm::ImageChangePhotometricInterpretation`

- **gdcm**

- **gdcm**

```
#include "gdcmImageToImageFilter.h"
```

- class `gdcm::ImageChangePlanarConfiguration`

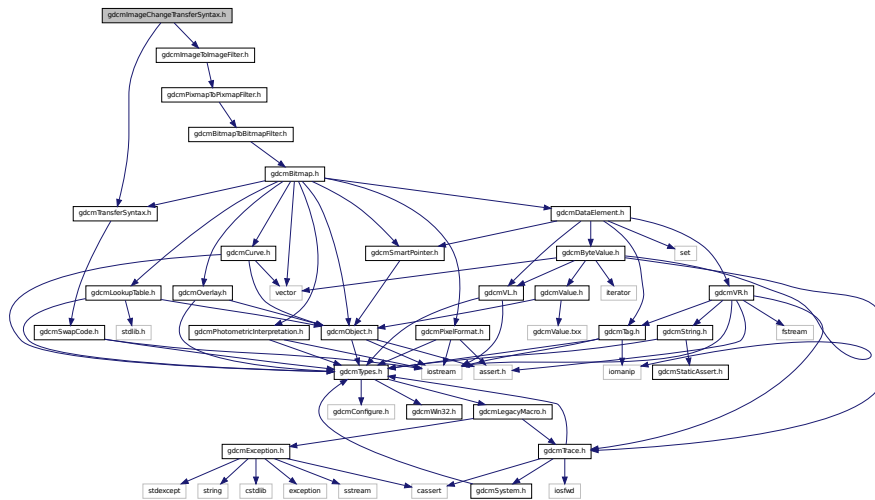
Namespaces

- **gdcm**

- gdc

```
#include "gdcmImageToImageFilter.h"
#include "gdcmTransferSyntax.h"
```

Include dependency graph for `gdcmImageChangeTransferSyntax.h`:



Classes

- class [gdcm::ImageChangeTransferSyntax](#)

ImageChangeTransferSyntax class Class to change the transfer syntax of an input DICOM.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

26.107 gdcmImageCodec.h File Reference

```
#include "gdcmCodec.h"
#include "gdcmPhotometricInterpretation.h"
#include "gdcmLookupTable.h"
#include "gdcmSmartPointer.h"
#include "gdcmPixelFormat.h"
```

```

graph TD
    gdalImageCodec.h --> gdcmCodec.h
    gdalImageCodec.h --> gdcmSmartPointer.h
    gdalImageCodec.h --> gdcmValue.h
    gdalImageCodec.h --> gdcmLookUpTable.h
    gdalImageCodec.h --> gdcmObject.h
    gdalImageCodec.h --> gdcmPhotometricInterpretation.h
    gdalImageCodec.h --> gdcmValue.txx
    gdalImageCodec.h --> gdcmObject.txx
    gdalImageCodec.h --> gdcmStdlib.h
    gdalImageCodec.h --> gdcmPixelFormat.h
    gdalImageCodec.h --> gdcmAssert.h
    gdcmCodec.h --> gdcmDecoder.h
    gdcmCodec.h --> gdcmCoder.h
    gdcmDecoder.h --> gdcmDataElement.h
    gdcmCoder.h --> gdcmDataElement.h
    gdcmDataElement.h --> gdcmByteValue.h
    gdcmDataElement.h --> set
    gdcmDataElement.h --> iterator
    gdcmDataElement.h --> vector
    gdcmDataElement.h --> gdcmVR.h
    gdcmDataElement.h --> gdcmVL.h
    gdcmDataElement.h --> gdcmTag.h
    gdcmDataElement.h --> gdcmString.h
    gdcmDataElement.h --> fstream
    gdcmDataElement.h --> gdcmStaticAssert.h
    gdcmDataElement.h --> gdcmTypes.h
    gdcmDataElement.h --> gdcmConfig.h
    gdcmDataElement.h --> gdcmWin32.h
    gdcmDataElement.h --> gdcmLegacyMacro.h
    gdcmDataElement.h --> gdcmFace.h
    gdcmDataElement.h --> gdcmException.h
    gdcmDataElement.h --> iosfwd
    gdcmDataElement.h --> gdcmSystem.h
    gdcmDataElement.h --> cassert
    gdcmDataElement.h --> cstdlib
    gdcmDataElement.h --> exception
    gdcmDataElement.h --> sstream
    gdcmDataElement.h --> stdexcept
    gdcmDataElement.h --> string
    gdcmSmartPointer.h --> gdcmValue.h
    gdcmSmartPointer.h --> gdcmLookUpTable.h
    gdcmSmartPointer.h --> gdcmObject.h
    gdcmSmartPointer.h --> gdcmPhotometricInterpretation.h
    gdcmSmartPointer.h --> gdcmValue.txx
    gdcmSmartPointer.h --> gdcmObject.txx
    gdcmSmartPointer.h --> gdcmStdlib.h
    gdcmSmartPointer.h --> gdcmPixelFormat.h
    gdcmSmartPointer.h --> gdcmAssert.h
    gdcmSmartPointer.h --> gdcmTypes.h
    gdcmSmartPointer.h --> gdcmConfig.h
    gdcmSmartPointer.h --> gdcmWin32.h
    gdcmSmartPointer.h --> gdcmLegacyMacro.h
    gdcmSmartPointer.h --> gdcmFace.h
    gdcmSmartPointer.h --> gdcmException.h
    gdcmSmartPointer.h --> iosfwd
    gdcmSmartPointer.h --> gdcmSystem.h
    gdcmSmartPointer.h --> cassert
    gdcmSmartPointer.h --> cstdlib
    gdcmSmartPointer.h --> exception
    gdcmSmartPointer.h --> sstream
    gdcmSmartPointer.h --> stdexcept
    gdcmSmartPointer.h --> string
    gdcmValue.h --> gdcmLookUpTable.h
    gdcmValue.h --> gdcmObject.h
    gdcmValue.h --> gdcmPhotometricInterpretation.h
    gdcmValue.h --> gdcmValue.txx
    gdcmValue.h --> gdcmObject.txx
    gdcmValue.h --> gdcmStdlib.h
    gdcmValue.h --> gdcmPixelFormat.h
    gdcmValue.h --> gdcmAssert.h
    gdcmValue.h --> gdcmTypes.h
    gdcmValue.h --> gdcmConfig.h
    gdcmValue.h --> gdcmWin32.h
    gdcmValue.h --> gdcmLegacyMacro.h
    gdcmValue.h --> gdcmFace.h
    gdcmValue.h --> gdcmException.h
    gdcmValue.h --> iosfwd
    gdcmValue.h --> gdcmSystem.h
    gdcmValue.h --> cassert
    gdcmValue.h --> cstdlib
    gdcmValue.h --> exception
    gdcmValue.h --> sstream
    gdcmValue.h --> stdexcept
    gdcmValue.h --> string
    gdcmLookUpTable.h --> gdcmObject.h
    gdcmLookUpTable.h --> gdcmPhotometricInterpretation.h
    gdcmLookUpTable.h --> gdcmValue.txx
    gdcmLookUpTable.h --> gdcmObject.txx
    gdcmLookUpTable.h --> gdcmStdlib.h
    gdcmLookUpTable.h --> gdcmPixelFormat.h
    gdcmLookUpTable.h --> gdcmAssert.h
    gdcmLookUpTable.h --> gdcmTypes.h
    gdcmLookUpTable.h --> gdcmConfig.h
    gdcmLookUpTable.h --> gdcmWin32.h
    gdcmLookUpTable.h --> gdcmLegacyMacro.h
    gdcmLookUpTable.h --> gdcmFace.h
    gdcmLookUpTable.h --> gdcmException.h
    gdcmLookUpTable.h --> iosfwd
    gdcmLookUpTable.h --> gdcmSystem.h
    gdcmLookUpTable.h --> cassert
    gdcmLookUpTable.h --> cstdlib
    gdcmLookUpTable.h --> exception
    gdcmLookUpTable.h --> sstream
    gdcmLookUpTable.h --> stdexcept
    gdcmLookUpTable.h --> string
    gdcmObject.h --> gdcmPhotometricInterpretation.h
    gdcmObject.h --> gdcmValue.txx
    gdcmObject.h --> gdcmObject.txx
    gdcmObject.h --> gdcmStdlib.h
    gdcmObject.h --> gdcmPixelFormat.h
    gdcmObject.h --> gdcmAssert.h
    gdcmObject.h --> gdcmTypes.h
    gdcmObject.h --> gdcmConfig.h
    gdcmObject.h --> gdcmWin32.h
    gdcmObject.h --> gdcmLegacyMacro.h
    gdcmObject.h --> gdcmFace.h
    gdcmObject.h --> gdcmException.h
    gdcmObject.h --> iosfwd
    gdcmObject.h --> gdcmSystem.h
    gdcmObject.h --> cassert
    gdcmObject.h --> cstdlib
    gdcmObject.h --> exception
    gdcmObject.h --> sstream
    gdcmObject.h --> stdexcept
    gdcmObject.h --> string
    gdcmPhotometricInterpretation.h --> gdcmValue.txx
    gdcmPhotometricInterpretation.h --> gdcmObject.txx
    gdcmPhotometricInterpretation.h --> gdcmStdlib.h
    gdcmPhotometricInterpretation.h --> gdcmPixelFormat.h
    gdcmPhotometricInterpretation.h --> gdcmAssert.h
    gdcmPhotometricInterpretation.h --> gdcmTypes.h
    gdcmPhotometricInterpretation.h --> gdcmConfig.h
    gdcmPhotometricInterpretation.h --> gdcmWin32.h
    gdcmPhotometricInterpretation.h --> gdcmLegacyMacro.h
    gdcmPhotometricInterpretation.h --> gdcmFace.h
    gdcmPhotometricInterpretation.h --> gdcmException.h
    gdcmPhotometricInterpretation.h --> iosfwd
    gdcmPhotometricInterpretation.h --> gdcmSystem.h
    gdcmPhotometricInterpretation.h --> cassert
    gdcmPhotometricInterpretation.h --> cstdlib
    gdcmPhotometricInterpretation.h --> exception
    gdcmPhotometricInterpretation.h --> sstream
    gdcmPhotometricInterpretation.h --> stdexcept
    gdcmPhotometricInterpretation.h --> string
    gdcmValue.txx --> gdcmObject.txx
    gdcmValue.txx --> gdcmStdlib.h
    gdcmValue.txx --> gdcmPixelFormat.h
    gdcmValue.txx --> gdcmAssert.h
    gdcmValue.txx --> gdcmTypes.h
    gdcmValue.txx --> gdcmConfig.h
    gdcmValue.txx --> gdcmWin32.h
    gdcmValue.txx --> gdcmLegacyMacro.h
    gdcmValue.txx --> gdcmFace.h
    gdcmValue.txx --> gdcmException.h
    gdcmValue.txx --> iosfwd
    gdcmValue.txx --> gdcmSystem.h
    gdcmValue.txx --> cassert
    gdcmValue.txx --> cstdlib
    gdcmValue.txx --> exception
    gdcmValue.txx --> sstream
    gdcmValue.txx --> stdexcept
    gdcmValue.txx --> string
    gdcmObject.txx --> gdcmStdlib.h
    gdcmObject.txx --> gdcmPixelFormat.h
    gdcmObject.txx --> gdcmAssert.h
    gdcmObject.txx --> gdcmTypes.h
    gdcmObject.txx --> gdcmConfig.h
    gdcmObject.txx --> gdcmWin32.h
    gdcmObject.txx --> gdcmLegacyMacro.h
    gdcmObject.txx --> gdcmFace.h
    gdcmObject.txx --> gdcmException.h
    gdcmObject.txx --> iosfwd
    gdcmObject.txx --> gdcmSystem.h
    gdcmObject.txx --> cassert
    gdcmObject.txx --> cstdlib
    gdcmObject.txx --> exception
    gdcmObject.txx --> sstream
    gdcmObject.txx --> stdexcept
    gdcmObject.txx --> string
    gdcmStdlib.h --> gdcmPixelFormat.h
    gdcmStdlib.h --> gdcmAssert.h
    gdcmStdlib.h --> gdcmTypes.h
    gdcmStdlib.h --> gdcmConfig.h
    gdcmStdlib.h --> gdcmWin32.h
    gdcmStdlib.h --> gdcmLegacyMacro.h
    gdcmStdlib.h --> gdcmFace.h
    gdcmStdlib.h --> gdcmException.h
    gdcmStdlib.h --> iosfwd
    gdcmStdlib.h --> gdcmSystem.h
    gdcmStdlib.h --> cassert
    gdcmStdlib.h --> cstdlib
    gdcmStdlib.h --> exception
    gdcmStdlib.h --> sstream
    gdcmStdlib.h --> stdexcept
    gdcmStdlib.h --> string
    gdcmPixelFormat.h --> gdcmAssert.h
    gdcmPixelFormat.h --> gdcmTypes.h
    gdcmPixelFormat.h --> gdcmConfig.h
    gdcmPixelFormat.h --> gdcmWin32.h
    gdcmPixelFormat.h --> gdcmLegacyMacro.h
    gdcmPixelFormat.h --> gdcmFace.h
    gdcmPixelFormat.h --> gdcmException.h
    gdcmPixelFormat.h --> iosfwd
    gdcmPixelFormat.h --> gdcmSystem.h
    gdcmPixelFormat.h --> cassert
    gdcmPixelFormat.h --> cstdlib
    gdcmPixelFormat.h --> exception
    gdcmPixelFormat.h --> sstream
    gdcmPixelFormat.h --> stdexcept
    gdcmPixelFormat.h --> string
    gdcmAssert.h --> gdcmTypes.h
    gdcmAssert.h --> gdcmConfig.h
    gdcmAssert.h --> gdcmWin32.h
    gdcmAssert.h --> gdcmLegacyMacro.h
    gdcmAssert.h --> gdcmFace.h
    gdcmAssert.h --> gdcmException.h
    gdcmAssert.h --> iosfwd
    gdcmAssert.h --> gdcmSystem.h
    gdcmAssert.h --> cassert
    gdcmAssert.h --> cstdlib
    gdcmAssert.h --> exception
    gdcmAssert.h --> sstream
    gdcmAssert.h --> stdexcept
    gdcmAssert.h --> string
    gdcmTypes.h --> gdcmConfig.h
    gdcmTypes.h --> gdcmWin32.h
    gdcmTypes.h --> gdcmLegacyMacro.h
    gdcmTypes.h --> gdcmFace.h
    gdcmTypes.h --> gdcmException.h
    gdcmTypes.h --> iosfwd
    gdcmTypes.h --> gdcmSystem.h
    gdcmTypes.h --> cassert
    gdcmTypes.h --> cstdlib
    gdcmTypes.h --> exception
    gdcmTypes.h --> sstream
    gdcmTypes.h --> stdexcept
    gdcmTypes.h --> string
    gdcmConfig.h --> gdcmWin32.h
    gdcmConfig.h --> gdcmLegacyMacro.h
    gdcmConfig.h --> gdcmFace.h
    gdcmConfig.h --> gdcmException.h
    gdcmConfig.h --> iosfwd
    gdcmConfig.h --> gdcmSystem.h
    gdcmConfig.h --> cassert
    gdcmConfig.h --> cstdlib
    gdcmConfig.h --> exception
    gdcmConfig.h --> sstream
    gdcmConfig.h --> stdexcept
    gdcmConfig.h --> string
    gdcmWin32.h --> gdcmLegacyMacro.h
    gdcmWin32.h --> gdcmFace.h
    gdcmWin32.h --> gdcmException.h
    gdcmWin32.h --> iosfwd
    gdcmWin32.h --> gdcmSystem.h
    gdcmWin32.h --> cassert
    gdcmWin32.h --> cstdlib
    gdcmWin32.h --> exception
    gdcmWin32.h --> sstream
    gdcmWin32.h --> stdexcept
    gdcmWin32.h --> string
    gdcmLegacyMacro.h --> gdcmFace.h
    gdcmLegacyMacro.h --> gdcmException.h
    gdcmLegacyMacro.h --> iosfwd
    gdcmLegacyMacro.h --> gdcmSystem.h
    gdcmLegacyMacro.h --> cassert
    gdcmLegacyMacro.h --> cstdlib
    gdcmLegacyMacro.h --> exception
    gdcmLegacyMacro.h --> sstream
    gdcmLegacyMacro.h --> stdexcept
    gdcmLegacyMacro.h --> string
    gdcmFace.h --> gdcmException.h
    gdcmFace.h --> iosfwd
    gdcmFace.h --> gdcmSystem.h
    gdcmFace.h --> cassert
    gdcmFace.h --> cstdlib
    gdcmFace.h --> exception
    gdcmFace.h --> sstream
    gdcm
```

```

graph TD
    gdcmImageCodec.h --> gdcmDedicatedEncodingCodec.h
    gdcmImageCodec.h --> gdcmPEGCCodec.h
    gdcmImageCodec.h --> gdcmPEG2000Codec.h
    gdcmImageCodec.h --> gdcmPEGLSCodec.h
    gdcmImageCodec.h --> gdcmMAMAAUDCodec.h
    gdcmImageCodec.h --> gdcmPGJCodec.h
    gdcmImageCodec.h --> gdcmPNACCodec.h
    gdcmImageCodec.h --> gdcmPVRGCodec.h
    gdcmImageCodec.h --> gdcmRAWCodec.h
    gdcmImageCodec.h --> gdcmRLECodec.h
    gdcmPEGCCodec.h --> gdcmPEGL2Codec.h
    gdcmPEGCCodec.h --> gdcmPEGL8Codec.h
    gdcmPEGCCodec.h --> gdcmPEGBCodec.h
  
```

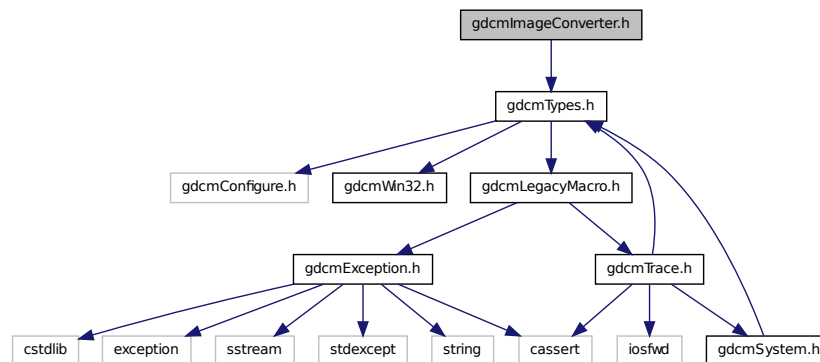
- class `gdcm::ImageCodec`
ImageCodec.

- **gdcm**

- gdc

```
#include "gdcmTypes.h"
```

Include dependency graph for `gdcmImageConverter.h`:



Classes

- class `gdcm::ImageConverter`

Image Converter.

Namespaces

- `gdcm`

Constant Groups

- `gdcm`

26.109 gdcmImageFragmentSplitter.h File Reference

```
#include "gdcmImageToImageFilter.h"
```

[illegible]

- class `gdcm::ImageFragmentSplitter`

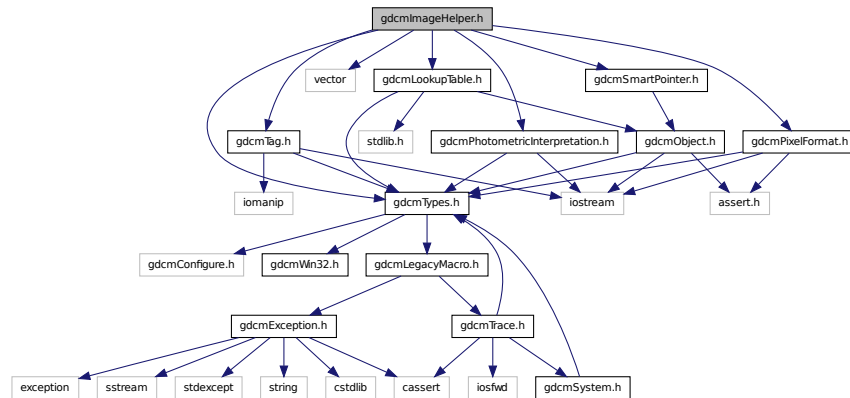
Namespaces

- ## Constant Groups

- **gdcm**

```
#include "gdcmTypes.h"
#include "gdcmTag.h"
#include <vector>
#include "gdcmPixelFormat.h"
#include "gdcmPhotometricInterpretation.h"
#include "gdcmSmartPointer.h"
#include "gdcmLookupTable.h"
```

Include dependency graph for `gdcmImageHelper.h`:



Classes

- class `gdcm::ImageHelper`

ImageHelper (internal class, not intended for user level)

Namespaces

- `gdcm`

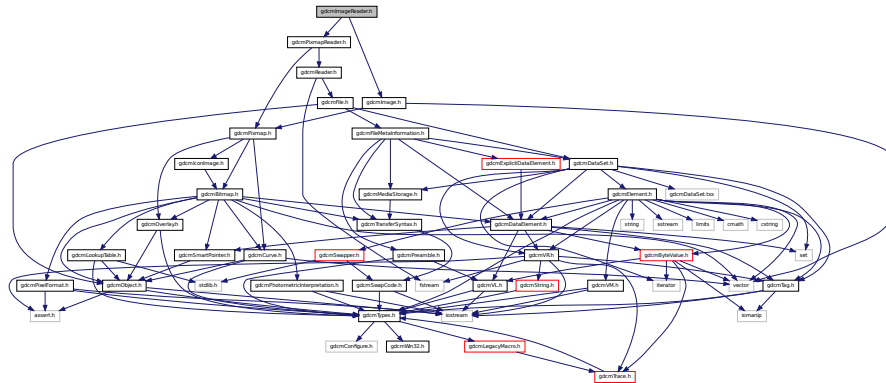
Constant Groups

- `gdcm`

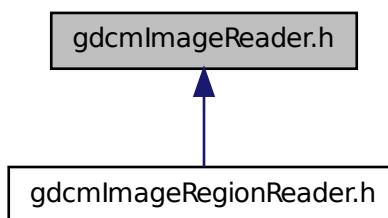
26.111 gdcmImageReader.h File Reference

```
#include "gdcmPixmapReader.h"
#include "gdcmImage.h"
```


Include dependency graph for gdcmImageReader.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::ImageReader](#)
ImageReader.

Namespaces

- [gdcm](#)

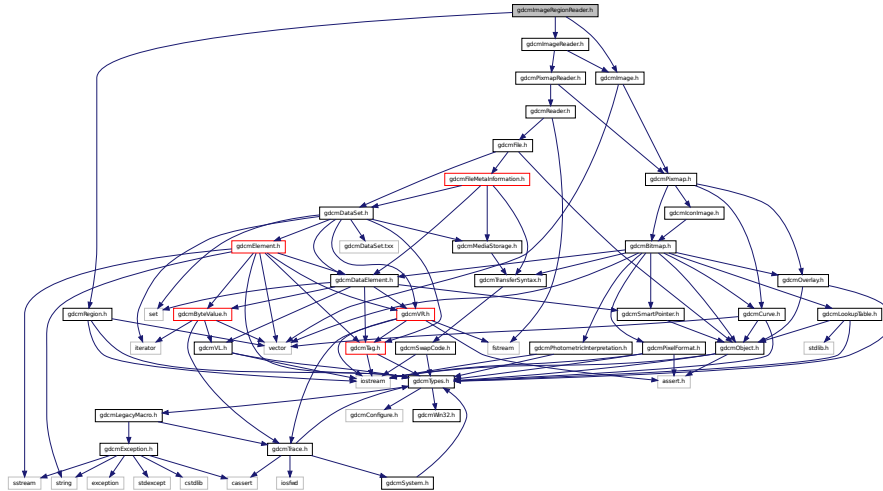
Constant Groups

- [gdcm](#)

26.112 gdcmImageRegionReader.h File Reference

```
#include "gdcmImageReader.h"
#include "gdcmImage.h"
#include "gdcmRegion.h"
```

Include dependency graph for gdcmImageRegionReader.h:



Classes

- class [gdcm::ImageRegionReader](#)
ImageRegionReader.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

26.113 gdcmImageToImageFilter.h File Reference

```
#include "gdcmPixmapToPixmapFilter.h"
```

```

graph TD
    gdcImageToImageFilter.h --> gdcImageApplyLookupTable.h
    gdcImageToImageFilter.h --> gdcImageChangePhotometricInterpretation.h
    gdcImageToImageFilter.h --> gdcImageChangePlanarConfiguration.h
    gdcImageToImageFilter.h --> gdcImageChangeTransferSyntax.h
    gdcImageToImageFilter.h --> gdcImageFragmentSplitter.h

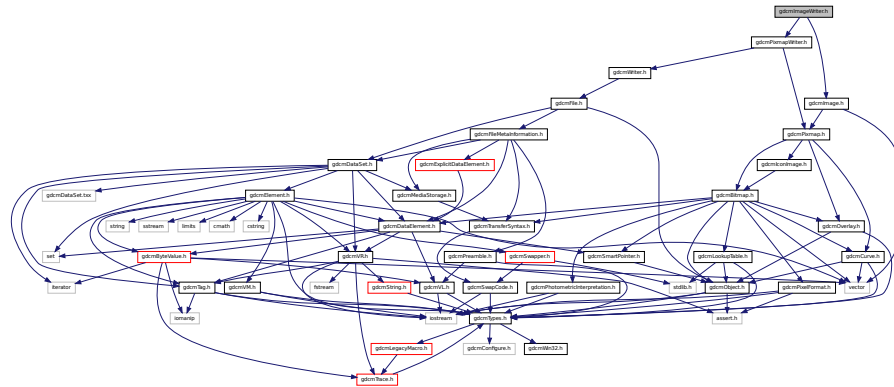
```

- class `gdcm::ImageToImageFilter`
ImageToImageFilter class Super class for all filter taking an image and producing an output image.

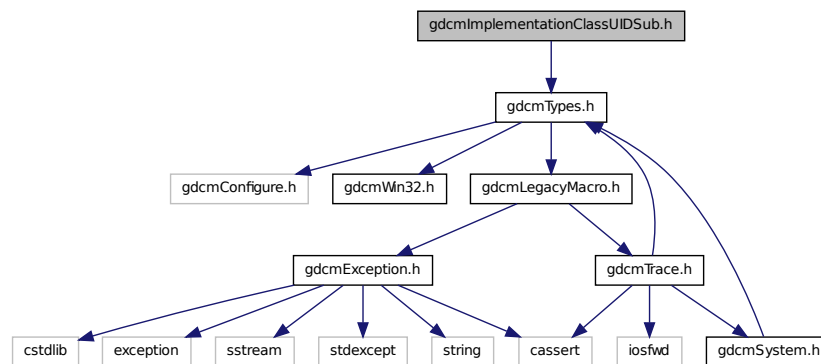
- **gdcm**

- **gdcm**

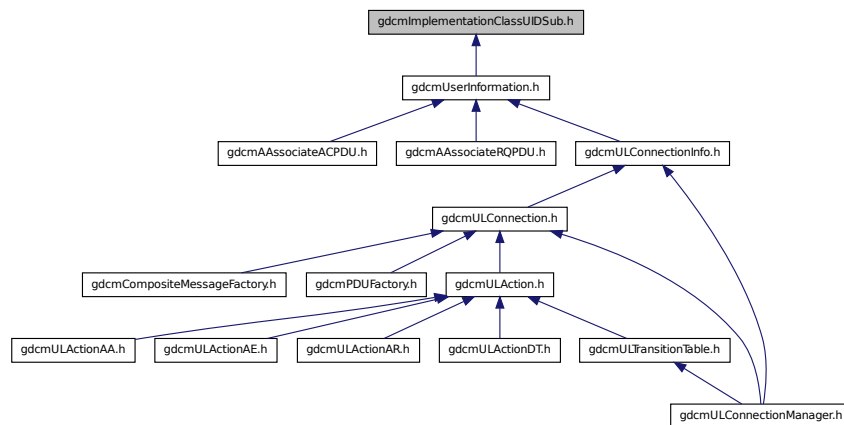
```
#include "gdcmPixmapWriter.h"
#include "gdcmImage.h"
```



Include dependency graph for gdcmImplementationClassUIDSub.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::network::ImplementationClassUIDSub](#)

ImplementationClassUIDSub PS 3.7 Table D.3-1 IMPLEMENTATION CLASS UID SUB-ITEM FIELDS (A-ASSOCIATE--RQ)

Namespaces

- [gdcm](#)
- [gdcm::network](#)

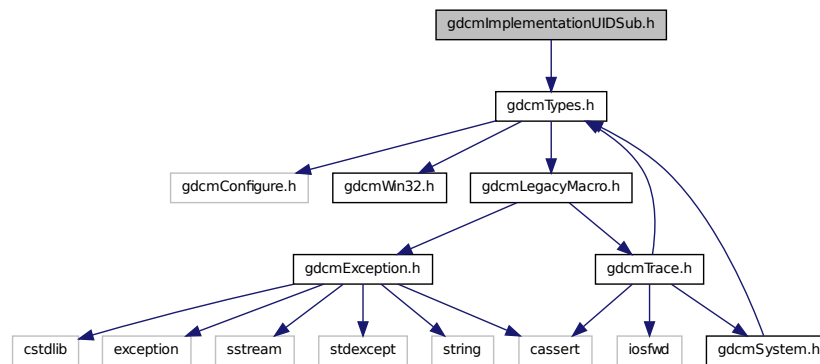
Constant Groups

- [gdcm](#)
- [gdcm::network](#)

26.117 gdcmImplementationUIDSub.h File Reference

```
#include "gdcmTypes.h"
```

Include dependency graph for gdcmImplementationUIDSub.h:



Classes

- class [gdcm::network::ImplementationUIDSub](#)
ImplementationUIDSub Table D.3-2 IMPLEMENTATION UID SUB-ITEM FIELDS (A-ASSOCIATE-AC)

Namespaces

- [gdcm](#)
- [gdcm::network](#)

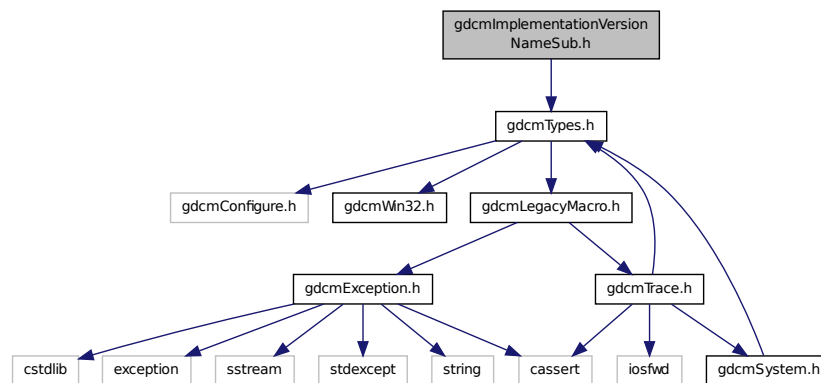
Constant Groups

- [gdcm](#)
- [gdcm::network](#)

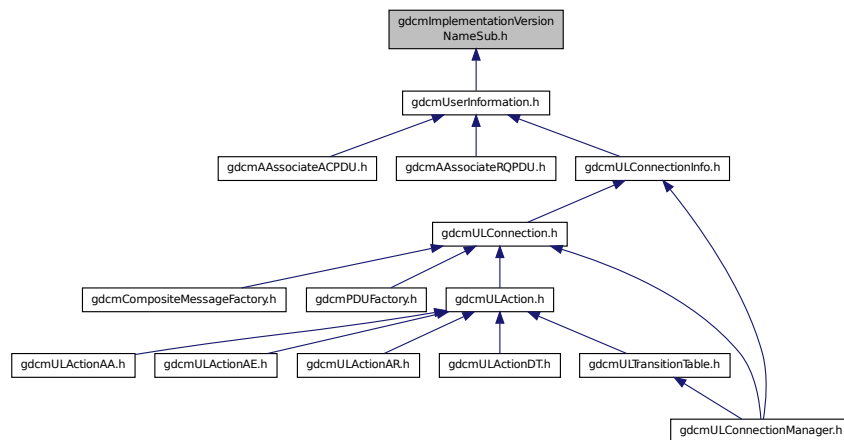
26.118 gdcmImplementationVersionNameSub.h File Reference

```
#include "gdcmTypes.h"
```

Include dependency graph for gdcmImplementationVersionNameSub.h:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcm::network::ImplementationVersionNameSub`

ImplementationVersionNameSub Table D.3-3 IMPLEMENTATION VERSION NAME SUB-ITEM FIELDS (A-ASSOCIATE-RQ)

Namespaces

- `gdcm`
- `gdcm::network`

Constant Groups

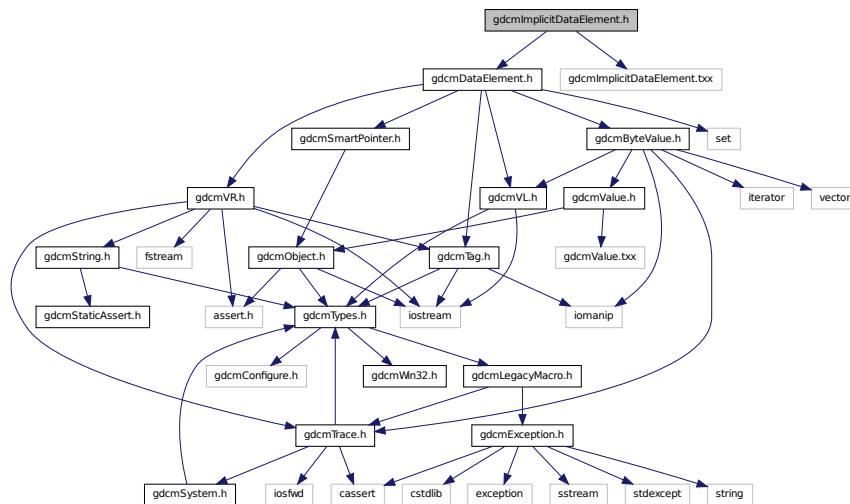
- [gdcm](#)
- [gdcm::network](#)

26.119 gdcmImplicitDataElement.h File Reference

```
#include "gdcmDataElement.h"
```

```
#include "gdcmImplicitDataElement.txx"
```

Include dependency graph for `gdcmImplicitDataElement.h`:



Classes

- class [gdcm::ImplicitDataElement](#)
Class to represent an Implicit *VR* Data *Element*.

Namespaces

- [gdcm](#)

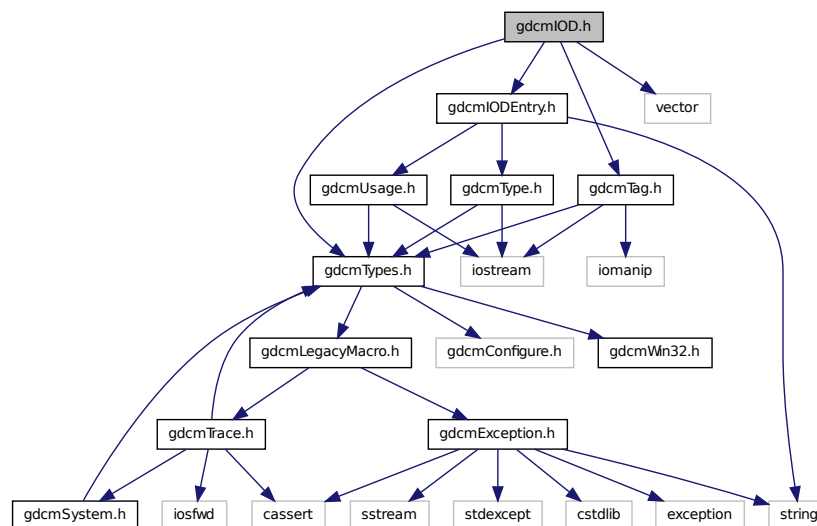
Constant Groups

- [gdcm](#)

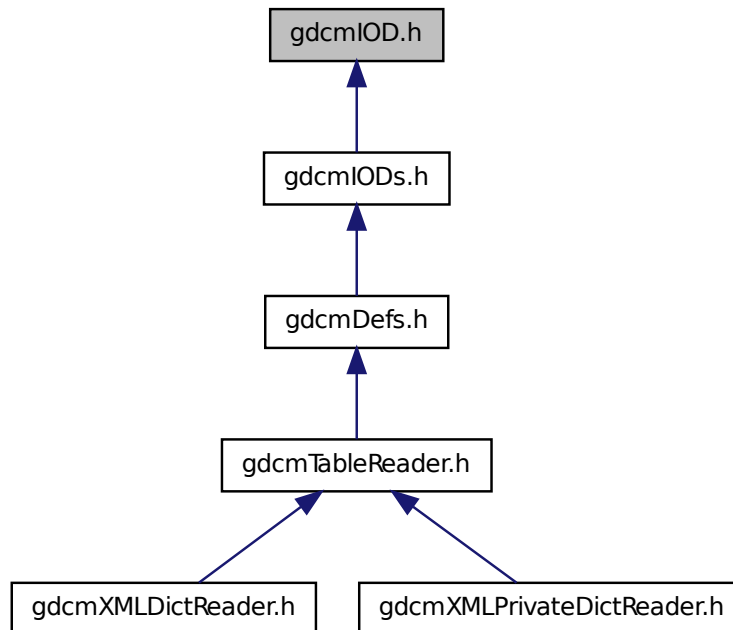
26.120 gdcminfo.man File Reference

26.121 gdcmIOD.h File Reference

```
#include "gdcmTypes.h"  
#include "gdcmTag.h"  
#include "gdcmIODEntry.h"  
#include <vector>  
Include dependency graph for gdcmIOD.h:
```



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcml::IOD](#)
Class for representing a [IOD](#).

Namespaces

- [gdcml](#)

Constant Groups

- [gdcml](#)

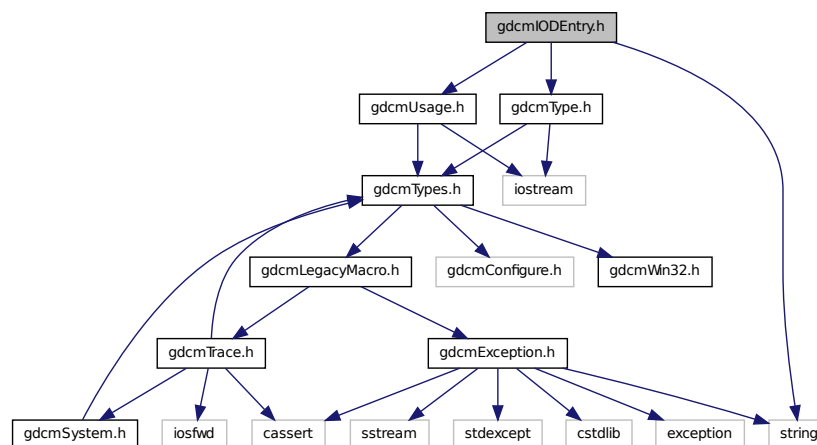
Functions

- `std::ostream & gdcml::operator<< (std::ostream &_os, const IOD &_val)`

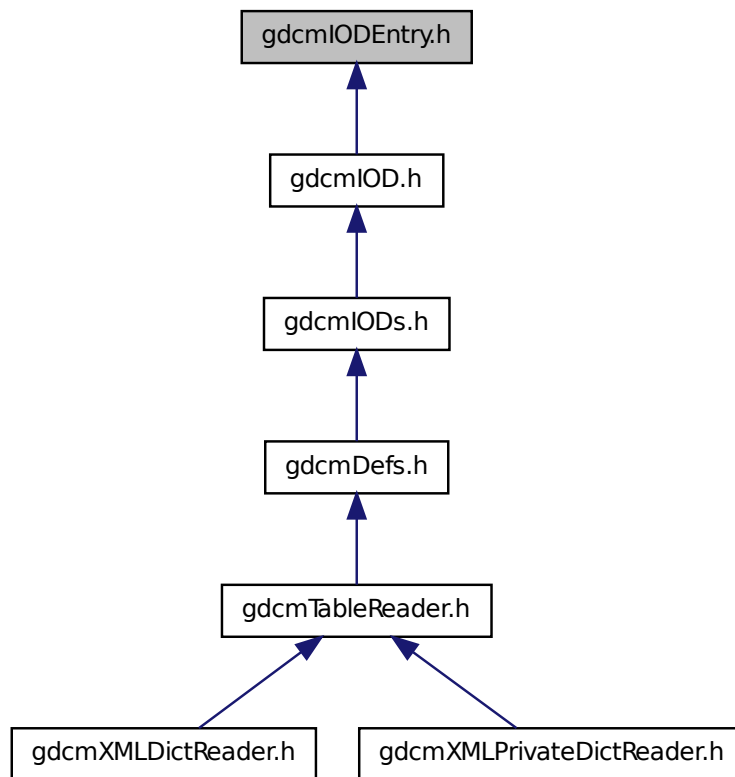
26.122 gdcmIODEntry.h File Reference

```
#include "gdcmUsage.h"  
#include "gdcmType.h"  
#include <string>
```

Include dependency graph for gdcmIODEntry.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcml::IODEntry](#)
Class for representing a [IODEntry](#).

Namespaces

- [gdcml](#)

Constant Groups

- [gdcml](#)

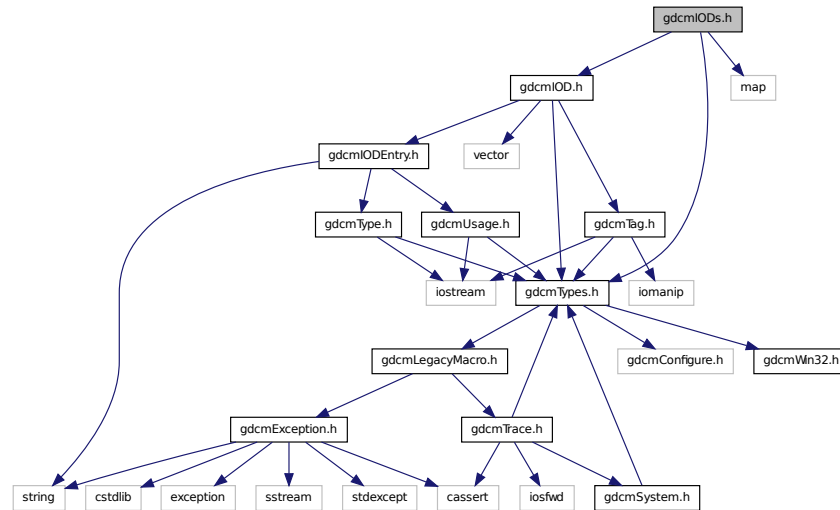
Functions

- `std::ostream & gdcml::operator<< (std::ostream &_os, const IODEntry &_val)`

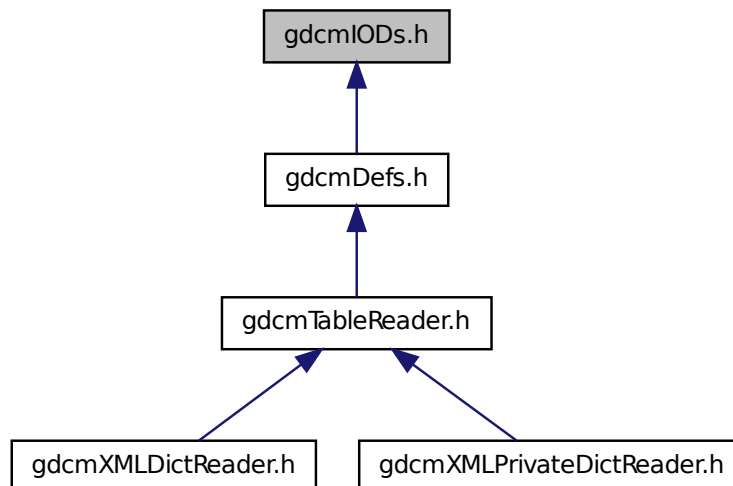
26.123 gdcmIODs.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmIOD.h"
#include <map>
```

Include dependency graph for gdcmIODs.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::IODs](#)
Class for representing a *IODs*.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

Functions

- std::ostream & [gdcm::operator<<](#) (std::ostream &_os, const IODs &_val)

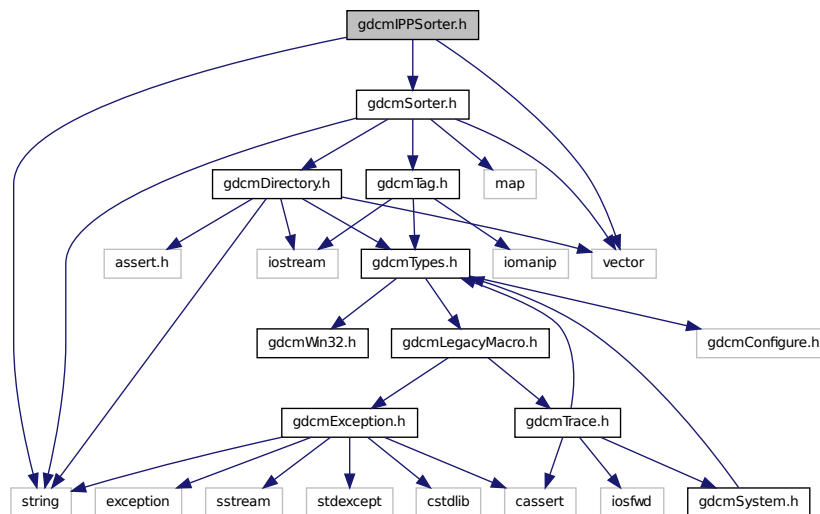
26.124 gdcmIPPSorter.h File Reference

```
#include "gdcmSorter.h"
```

```
#include <vector>
```

```
#include <string>
```

Include dependency graph for gdcmIPPSorter.h:



Classes

- class [gdcm::IPPSorter](#)

IPPSorter Implement a simple **Image Position (Patient)** sorter, along the **Image Orientation (Patient)** direction. This algorithm does NOT support duplicate and will FAIL in case of duplicate IPP.

Namespaces

- **gdcm**

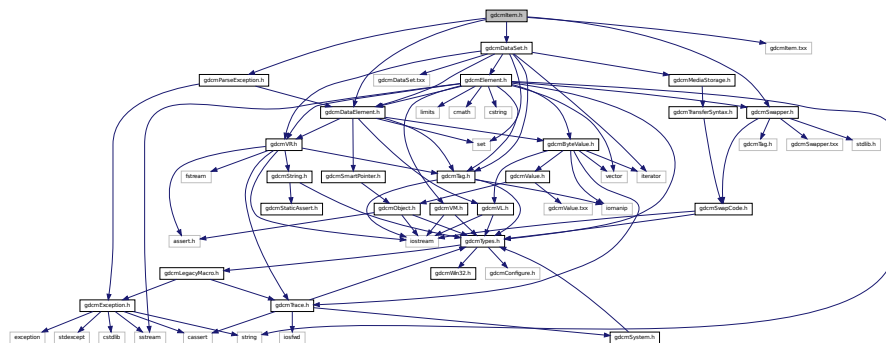
Constant Groups

- `gdcm`

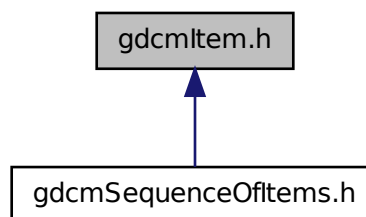
26.125 gdcmltem.h File Reference

```
#include "gdcmDataElement.h"
#include "gdcmDataSet.h"
#include "gdcmParseException.h"
#include "gdcmSwapper.h"
#include "gdcmItem.hxx"
```

Include dependency graph for `gdcmlItem.h`:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Item](#)

Class to represent an [Item](#) A component of the value of a Data [Element](#) that is of [Value](#) Representation Sequence of Items. An [Item](#) contains a Data Set . See PS 3.5 7.5.1 [Item](#) Encoding Rules Each [Item](#) of a Data [Element](#) of VR SQ shall be encoded as a DICOM Standard Data [Element](#) with a specific Data [Element](#) Tag of [Value](#) (FFFFE000). The [Item](#) Tag is followed by a 4 byte [Item](#) Length field encoded in one of the following two ways Explicit/ Implicit.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

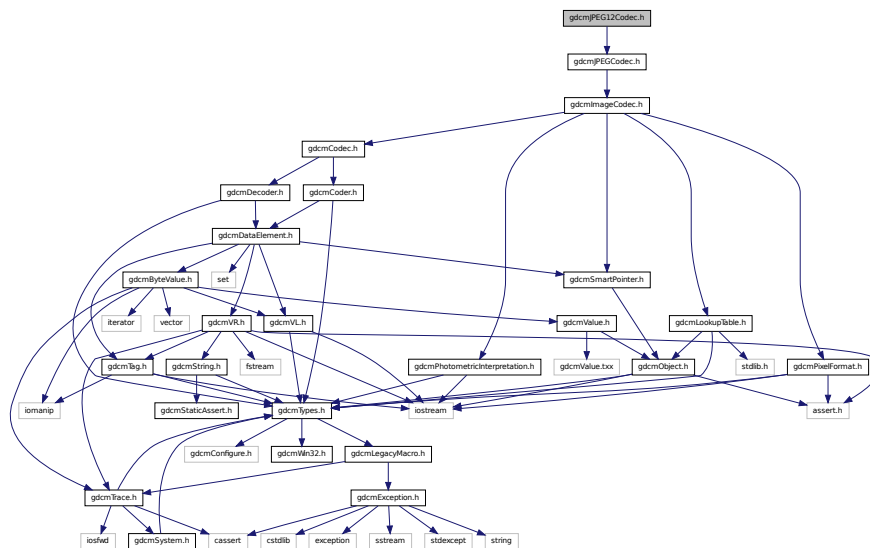
Functions

- std::ostream & [gdcm::operator<<](#) (std::ostream &os, const Item &val)

26.126 gdcmJPEG12Codec.h File Reference

```
#include "gdcmJPEGCodec.h"
```

Include dependency graph for gdcmJPEG12Codec.h:



Classes

- class [gdcm::JPEG12Codec](#)

Class to do JPEG 12bits (lossy & lossless)

Namespaces

- **gdcm**

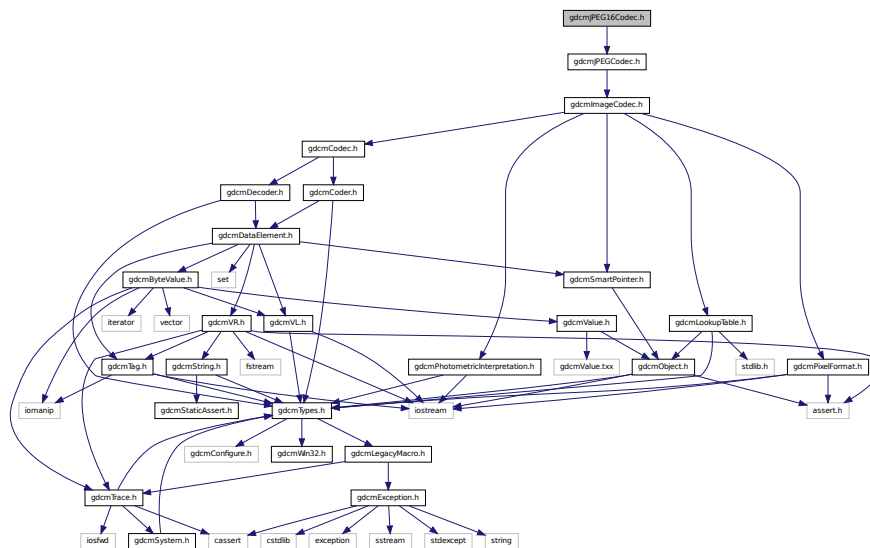
Constant Groups

- **gdcm**

26.127 gdcmJPEG16Codec.h File Reference

```
#include "gdcmJPEGCodec.h"
```

Include dependency graph for gdcMJPEG16Codec.h:



Classes

- class `gdcm::JPEG16Codec`
Class to do JPEG 16bits (lossless)

Namespaces

- **gdcm**

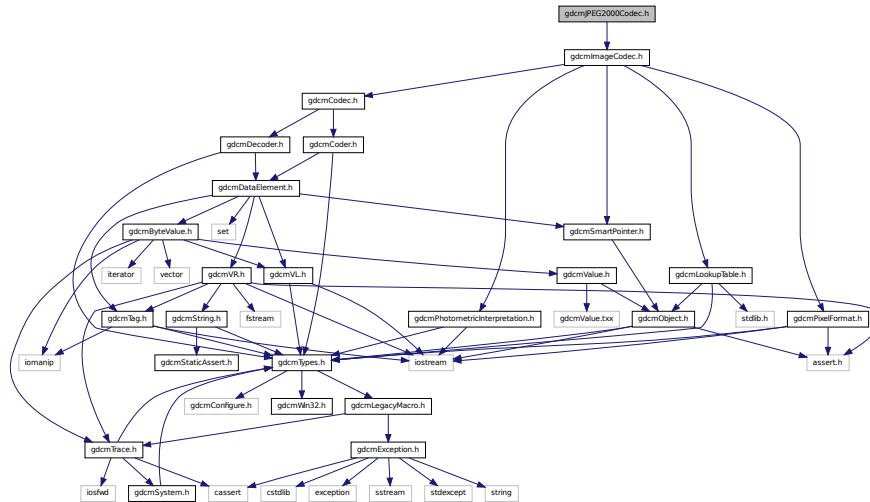
Constant Groups

- **gdcm**

26.128 gdcmJPEG2000Codec.h File Reference

```
#include "gdcmImageCodec.h"
```

Include dependency graph for gdcmJPEG2000Codec.h:



Classes

- class [gdcm::JPEG2000Codec](#)

Class to do JPEG 2000.

Namespaces

- [gdcm](#)

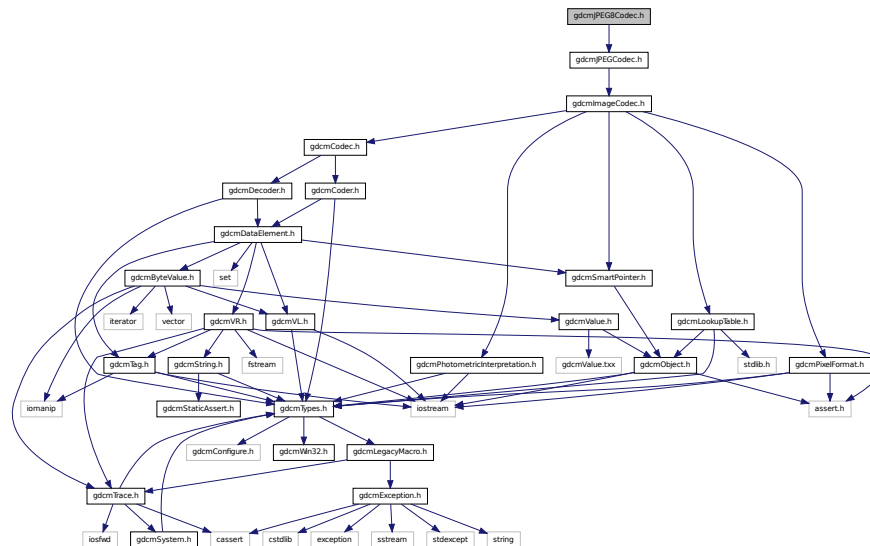
Constant Groups

- [gdcm](#)

26.129 gdcmJPEG8Codec.h File Reference

```
#include "gdcmJPEGCodec.h"
```

Include dependency graph for gdcmJPEG8Codec.h:



Classes

- class [gdcm::JPEG8Codec](#)

Class to do JPEG 8bits (lossy & lossless)

Namespaces

- [gdcm](#)

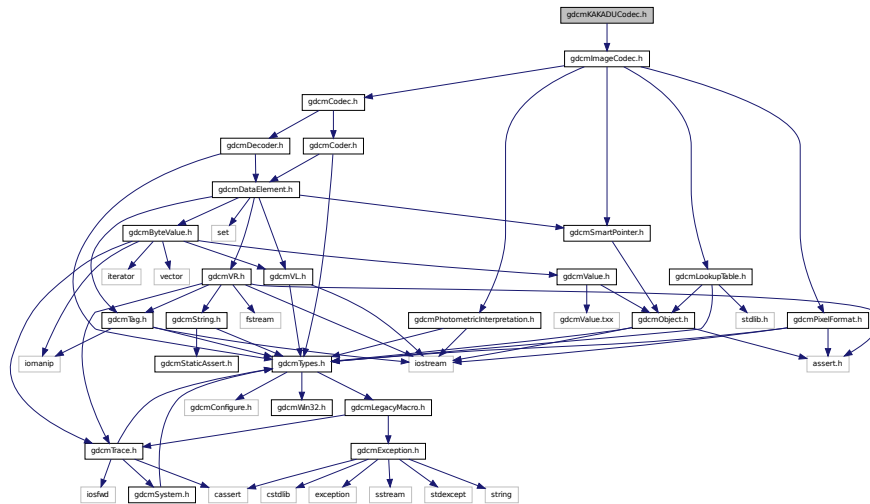
Constant Groups

- [gdcm](#)

26.130 gdcmJPEGCodec.h File Reference

```
#include "gdcmImageCodec.h"
```


Include dependency graph for `gdcmmKAKADUCodec.h`:



Classes

- class `gdcmm::KAKADUCodec`

KAKADUCodec.

Namespaces

- `gdcmm`

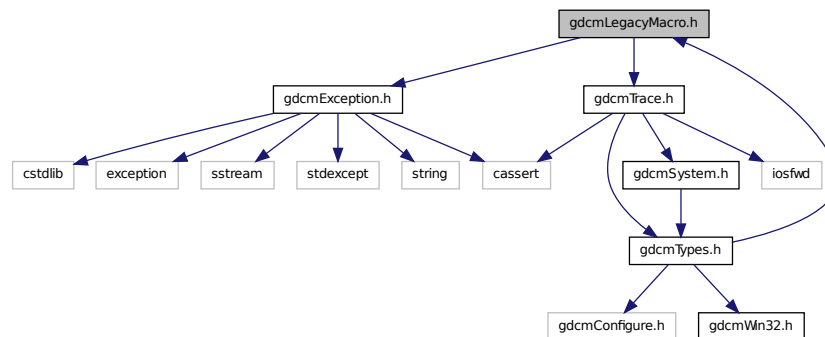
Constant Groups

- `gdcmm`

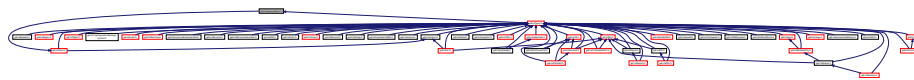
26.133 gdcmmLegacyMacro.h File Reference

```
#include "gdcmmException.h"
#include "gdcmmTrace.h"
```

Include dependency graph for gdcmLegacyMacro.h:



This graph shows which files directly or indirectly include this file:



Macros

- `#define GDCM_LEGACY(method) method;`
- `#define GDCM_LEGACY_BODY(method, version) gdcmWarningMacro(#method " was deprecated for " version " and will be removed in a future version.")`
- `#define GDCM_LEGACY_REPLACED_BODY(method, version, replace) gdcmWarningMacro(#method " was deprecated for " version " and will be removed in a future version. Use " #replace " instead.")`

26.133.1 Macro Definition Documentation

26.133.1.1 `#define GDCM_LEGACY(method) method;`

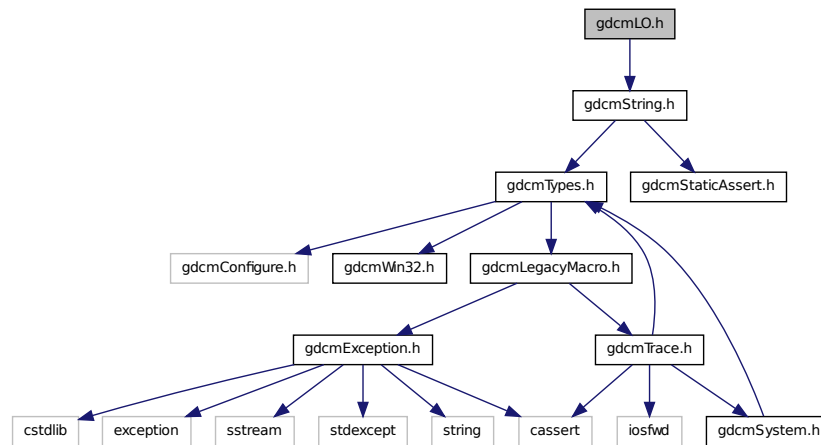
26.133.1.2 `#define GDCM_LEGACY_BODY(method, version) gdcmWarningMacro(#method " was deprecated for " version " and will be removed in a future version.")`

26.133.1.3 `#define GDCM_LEGACY_REPLACED_BODY(method, version, replace) gdcmWarningMacro(#method " was deprecated for " version " and will be removed in a future version. Use " #replace " instead.")`

26.134 gdcmLO.h File Reference

```
#include "gdcmString.h"
```

Include dependency graph for `gdcmLO.h`:



Classes

- class `gdcm::LO`

LO.

Namespaces

- `gdcm`

Constant Groups

- `gdcm`

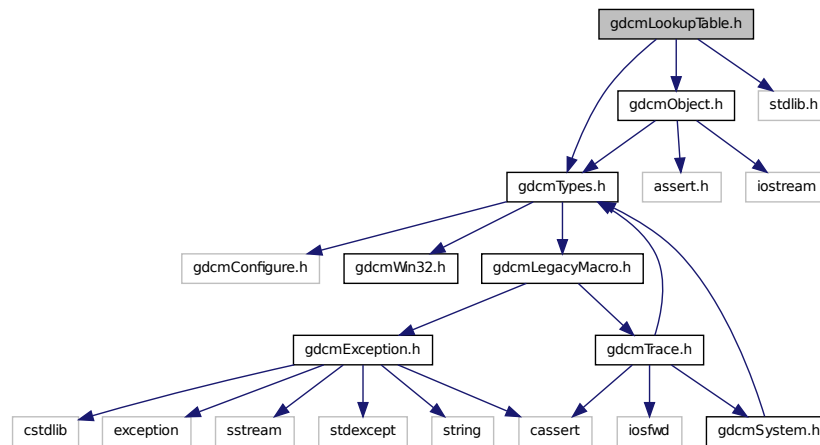
26.135 `gdcmLookupTable.h` File Reference

```

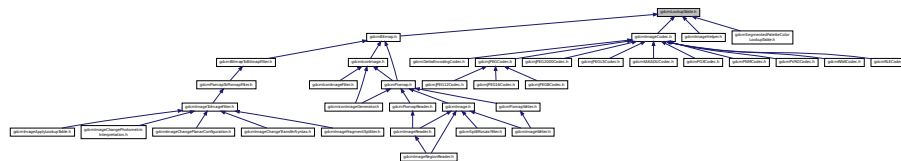
#include "gdcmTypes.h"
#include "gdcmObject.h"
#include <stdlib.h>

```


Include dependency graph for gdcmLookupTable.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::LookupTable](#)
LookupTable class.

Namespaces

- [gdcm](#)

Constant Groups

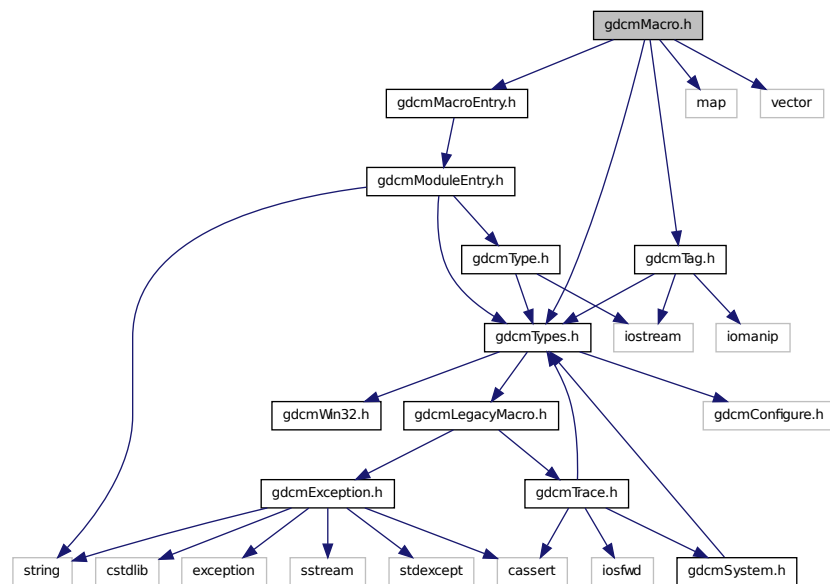
- [gdcm](#)

26.136 gdcmMacro.h File Reference

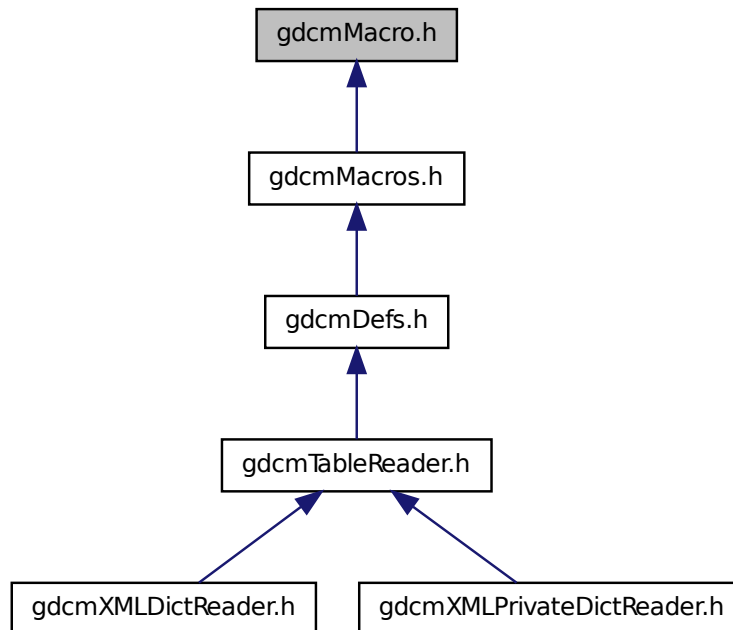
```
#include "gdcmTypes.h"
```

```
#include "gdcmTag.h"
#include "gdcmMacroEntry.h"
#include <map>
#include <vector>
```

Include dependency graph for gdcmMacro.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Macro](#)
Class for representing a [Macro](#).

Namespaces

- [gdcm](#)

Constant Groups

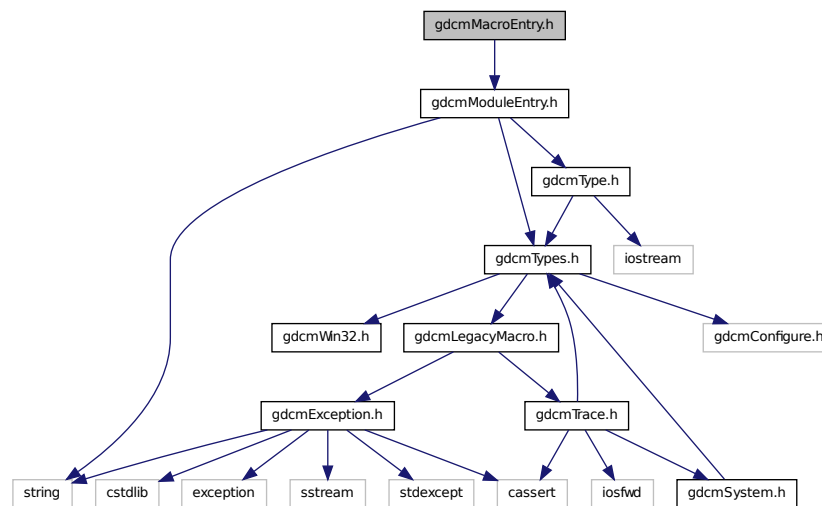
- [gdcm](#)

Functions

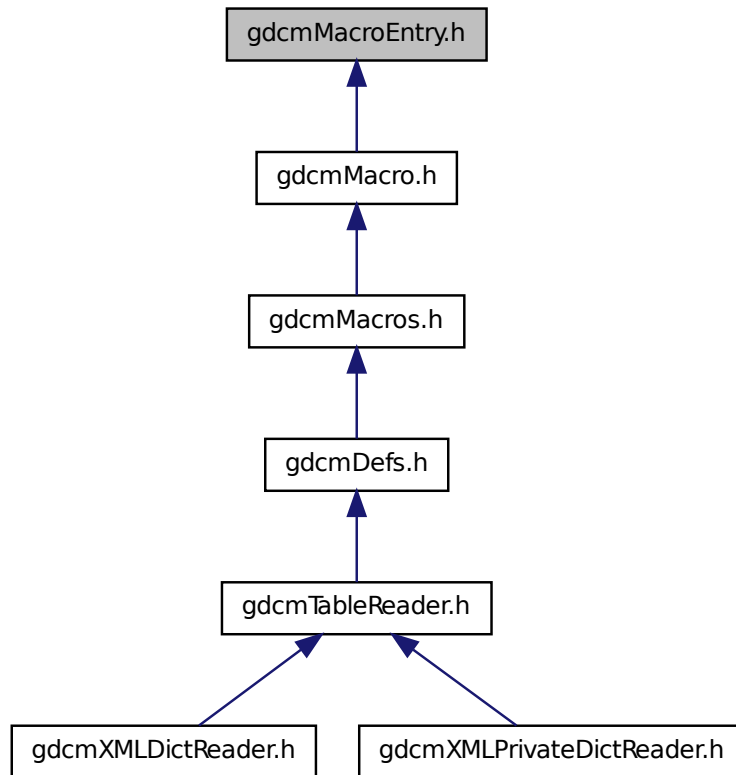
- `std::ostream & gdcm::operator<< (std::ostream &_os, const Macro &_val)`

26.137 gdcmMacroEntry.h File Reference

```
#include "gdcmModuleEntry.h"  
Include dependency graph for gdcmMacroEntry.h:
```



This graph shows which files directly or indirectly include this file:



Macros

- `#define` [GDCMMACROENTRY_H](#)

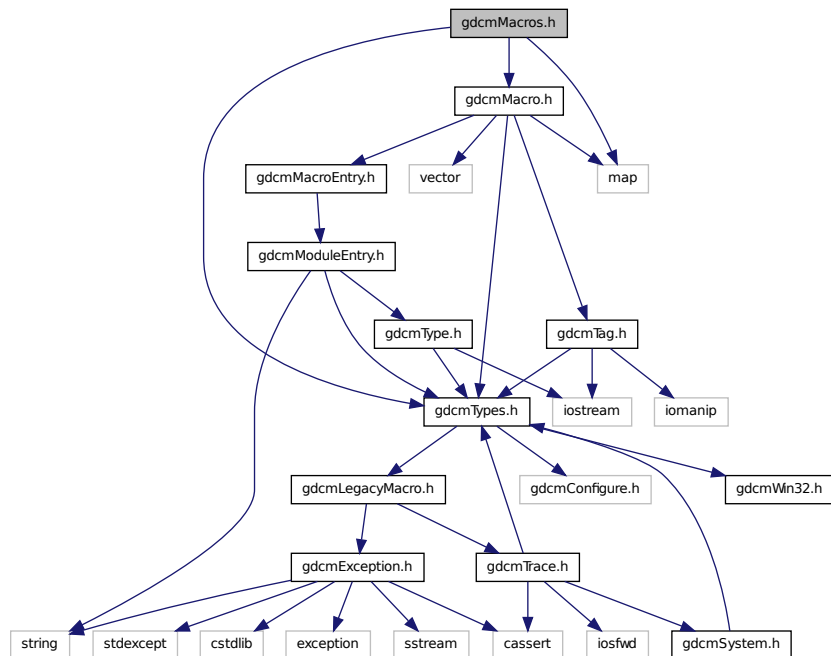
26.137.1 Macro Definition Documentation

26.137.1.1 `#define` GDCMMACROENTRY_H

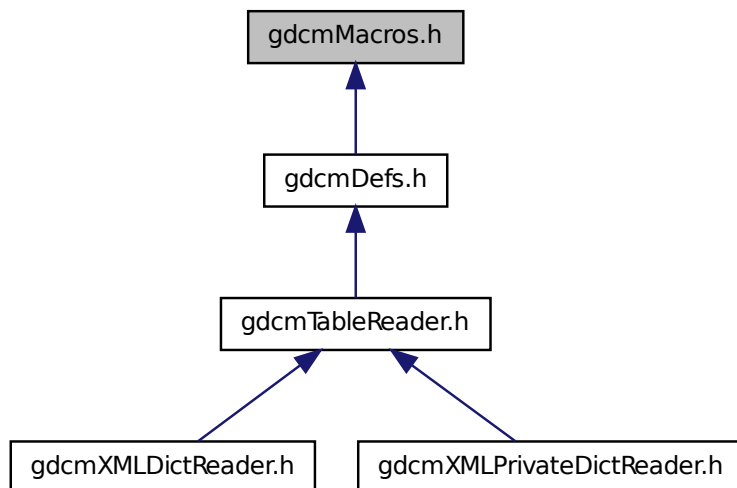
26.138 gdcmMacros.h File Reference

```
#include "gdcmTypes.h"  
#include "gdcmMacro.h"  
#include <map>
```

Include dependency graph for gdcmMacros.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Macros](#)

Class for representing a [Modules](#).

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

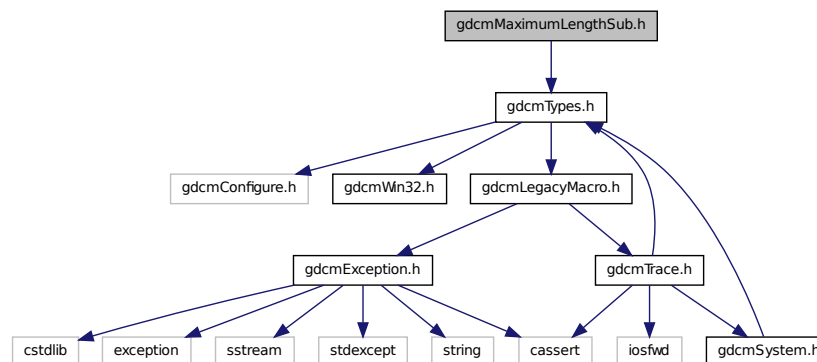
Functions

- `std::ostream & gdcm::operator<< (std::ostream &_os, const Macros &_val)`

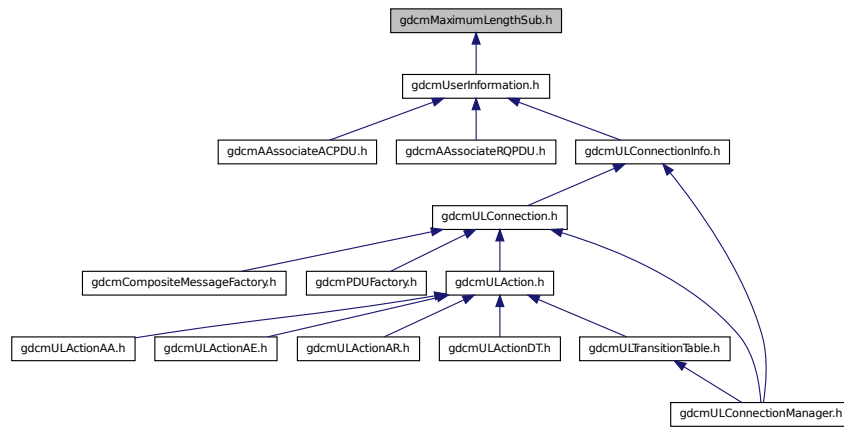
26.139 gdcmMaximumLengthSub.h File Reference

```
#include "gdcmTypes.h"
```

Include dependency graph for gdcmMaximumLengthSub.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdc::network::MaximumLengthSub](#)

MaximumLengthSub Annex D Table D.1-1 MAXIMUM LENGTH SUB-ITEM FIELDS (A-ASSOCIATE-RQ)

Namespaces

- [gdc](#)
- [gdc::network](#)

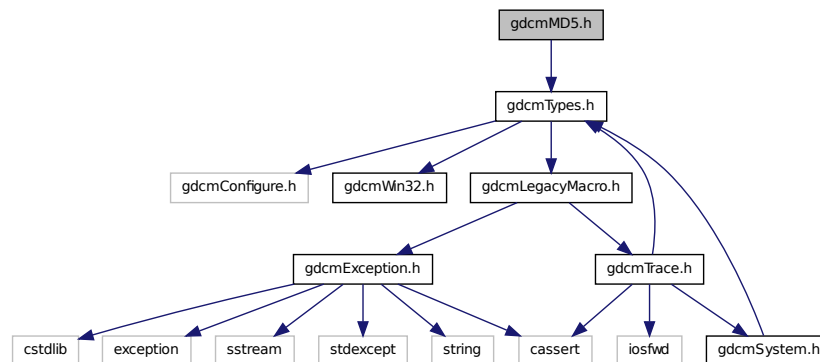
Constant Groups

- [gdc](#)
- [gdc::network](#)

26.140 gdcMD5.h File Reference

```
#include "gdcTypes.h"
```


Include dependency graph for gdcmMD5.h:



Classes

- class [gdcm::MD5](#)

Class for MD5.

Namespaces

- [gdcm](#)

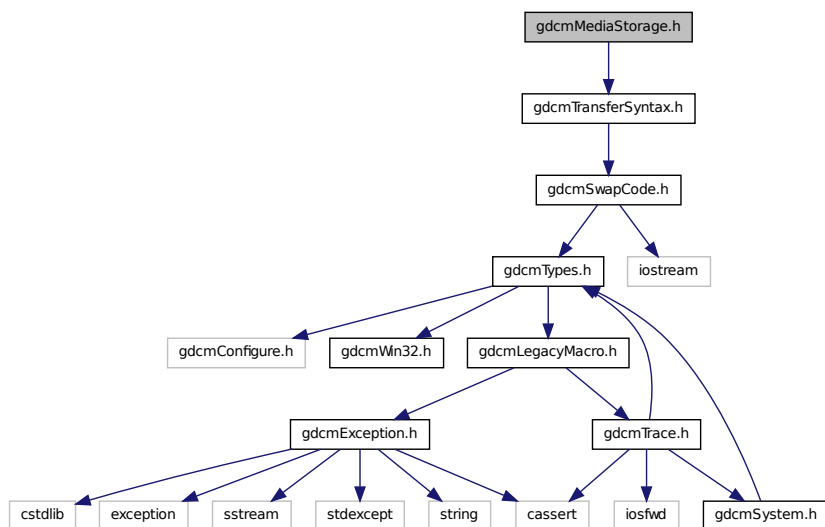
Constant Groups

- [gdcm](#)

26.141 gdcmMediaStorage.h File Reference

```
#include "gdcmTransferSyntax.h"
```

Include dependency graph for `gdcmMediaStorage.h`:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcm::MediaStorage`
MediaStorage.

Namespaces

- `gdcm`

Constant Groups

- `gdcm`

Functions

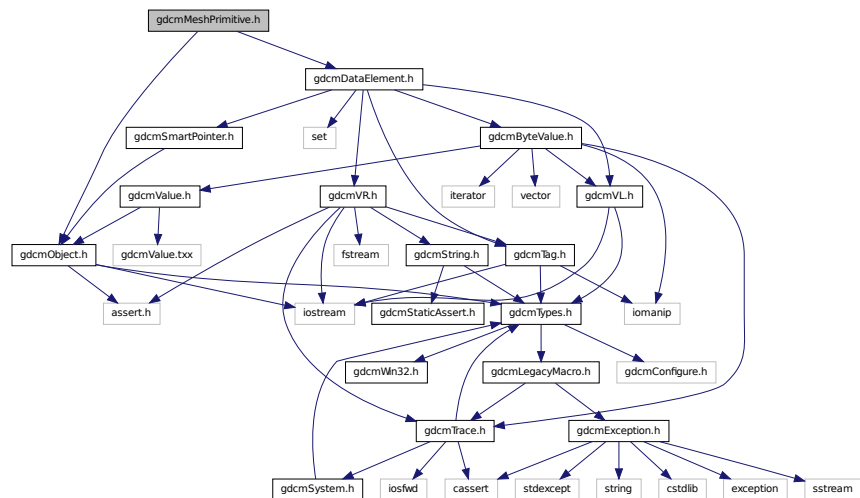
- `std::ostream & gdcm::operator<< (std::ostream &_os, const MediaStorage &ms)`

26.142 gdcmMeshPrimitive.h File Reference

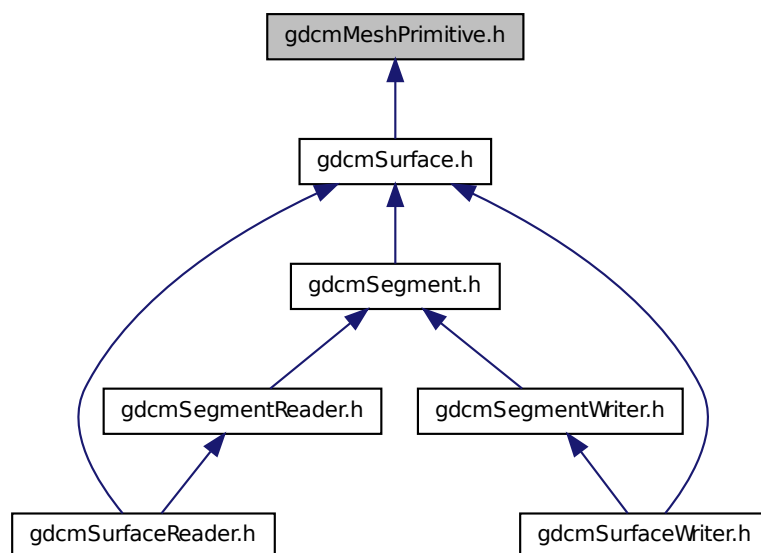
```
#include <gdcmObject.h>
```

```
#include <gdcmDataElement.h>
```

Include dependency graph for gdcmMeshPrimitive.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::MeshPrimitive](#)

This class defines surface mesh primitives. It is designed from surface mesh primitives macro.

Namespaces

- [gdcm](#)

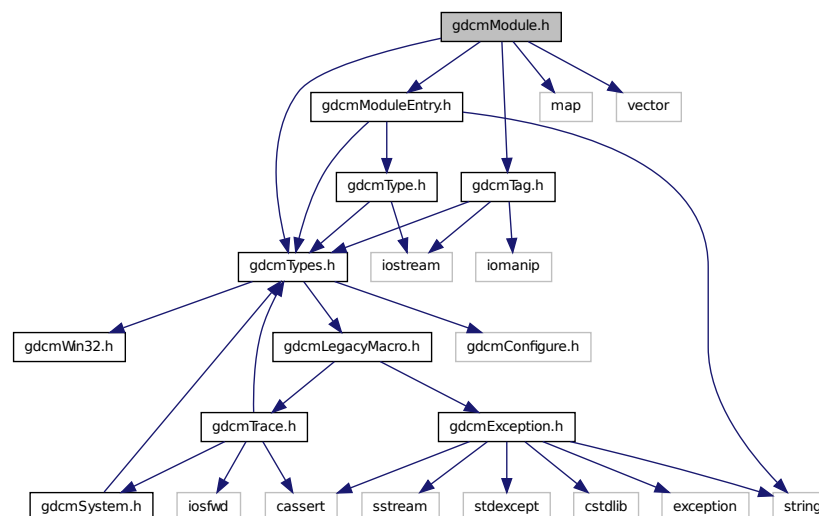
Constant Groups

- [gdcm](#)

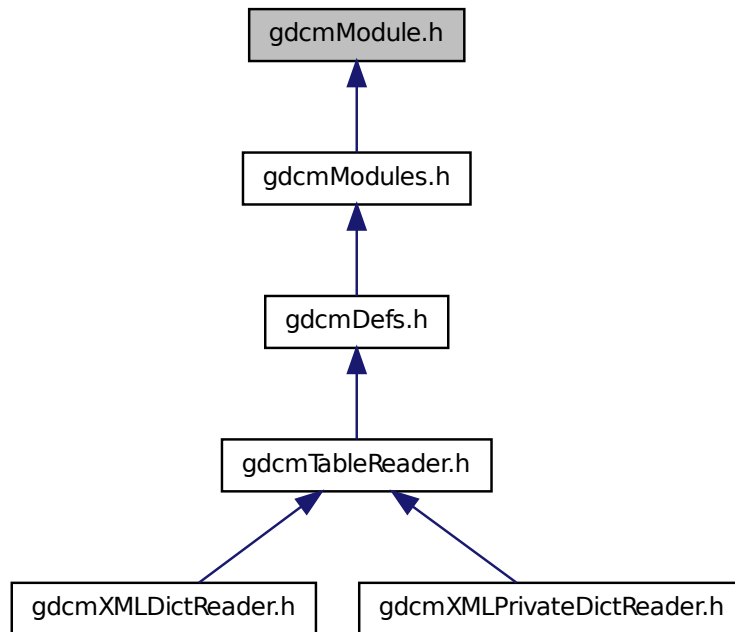
26.143 gdcmModule.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmTag.h"
#include "gdcmModuleEntry.h"
#include <map>
#include <vector>
```

Include dependency graph for gdcmModule.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Module](#)
Class for representing a [Module](#).

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

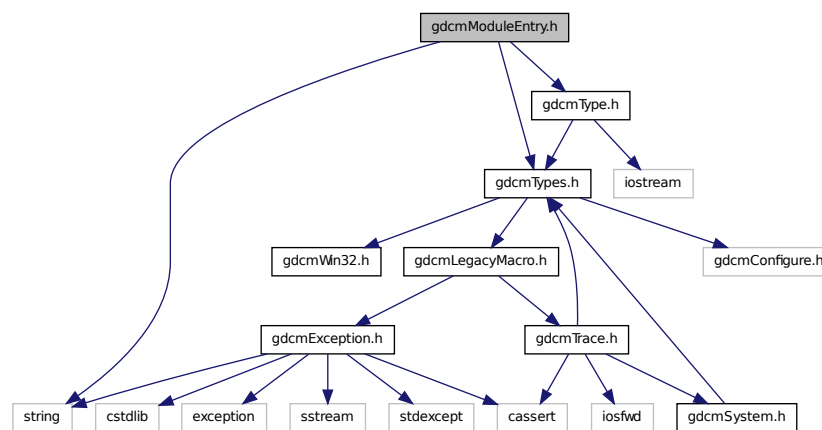
Functions

- `std::ostream & gdcm::operator<< (std::ostream &_os, const Module &_val)`

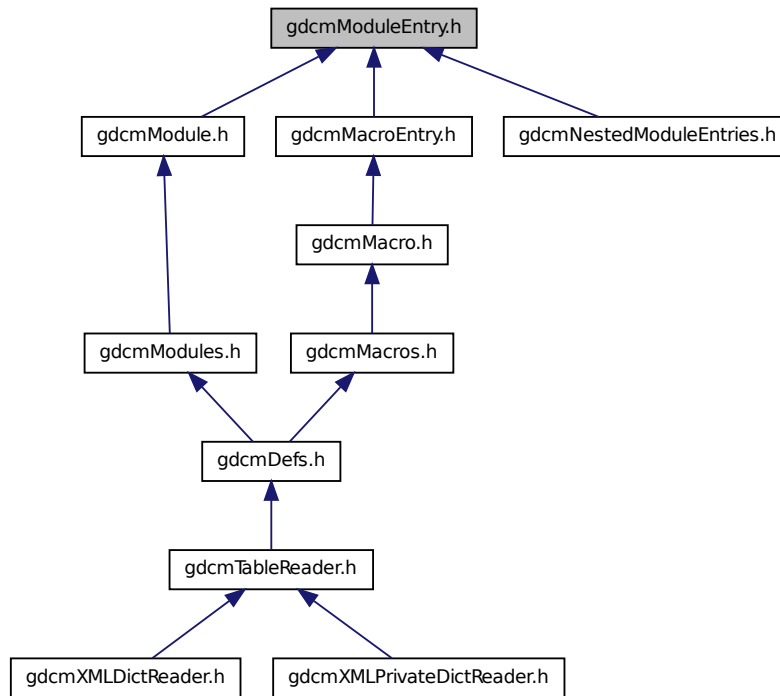
26.144 gdcmModuleEntry.h File Reference

```
#include "gdcmTypes.h"  
#include "gdcmType.h"  
#include <string>
```

Include dependency graph for gdcmModuleEntry.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::ModuleEntry](#)
Class for representing a *ModuleEntry*.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

Typedefs

- typedef ModuleEntry [gdcm::MacroEntry](#)

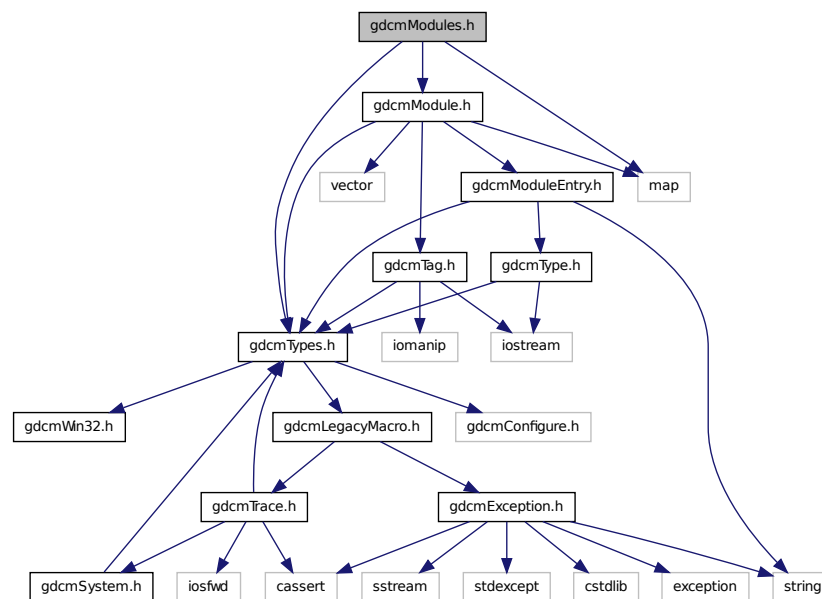
Functions

- std::ostream & [gdcm::operator<<](#) (std::ostream &_os, const ModuleEntry &_val)

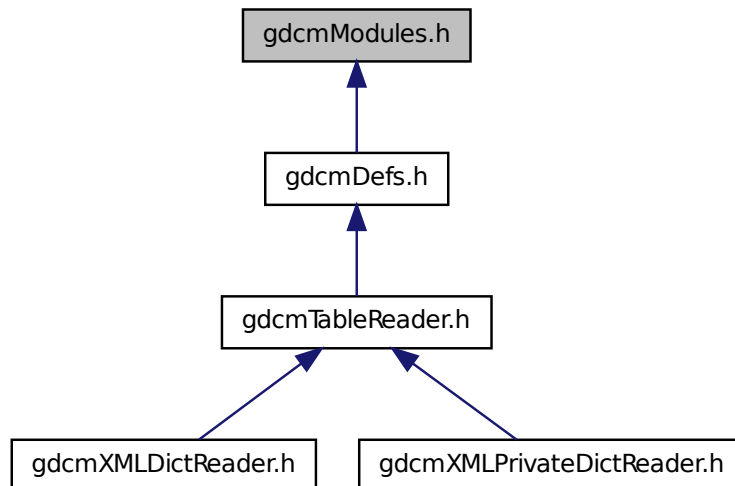
26.145 gdcmModules.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmModule.h"
#include <map>
```

Include dependency graph for gdcmModules.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Modules](#)
Class for representing a [Modules](#).

Namespaces

- [gdcm](#)

Constant Groups

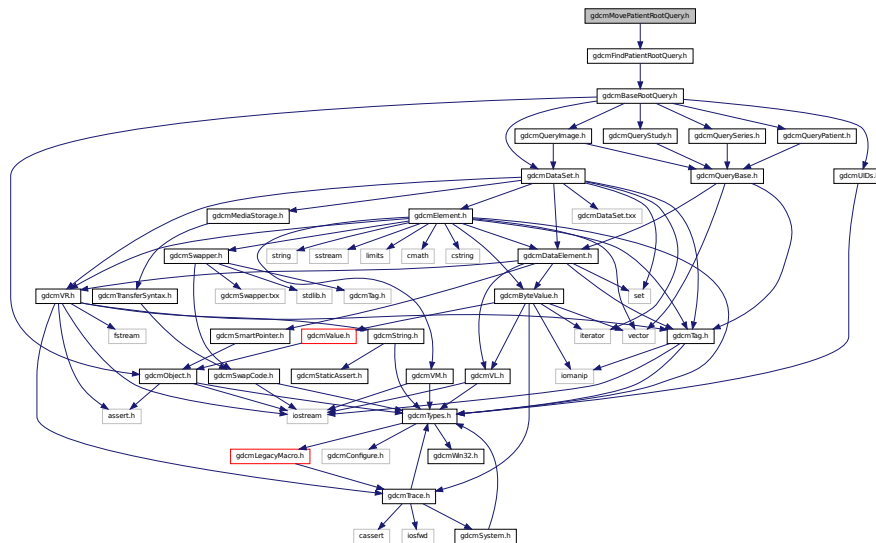
- [gdcm](#)

Functions

- `std::ostream & gdcm::operator<< (std::ostream &_os, const Modules &_val)`

26.146 gdcmMovePatientRootQuery.h File Reference

```
#include "gdcmFindPatientRootQuery.h"
```



- class `gdcm::MoveStudyRootQuery`

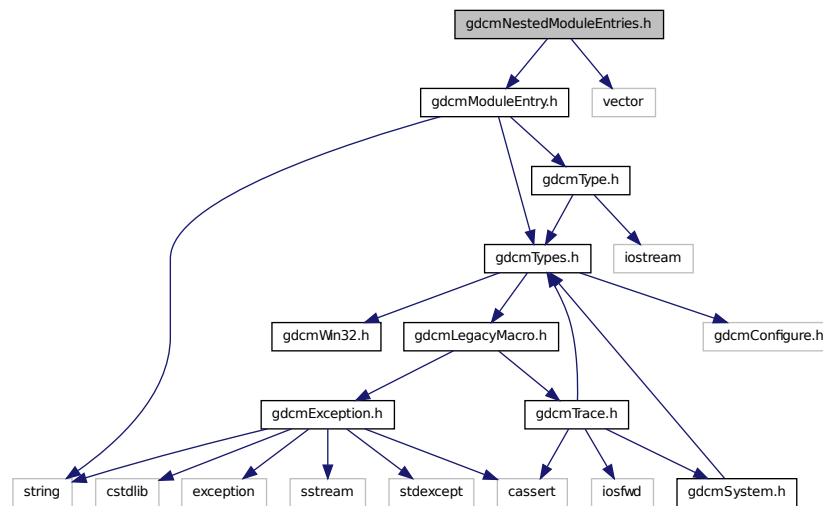
Namespaces

- ## Constant Groups

- ## 26.148 gdcmNestedModuleEntries.h File Reference

Generated on Tue Jul 30 2013 22:32:05 for GDCM by Doxygen

Include dependency graph for `gdcmNestedModuleEntries.h`:



Classes

- class [gdcm::NestedModuleEntries](#)
Class for representing a *NestedModuleEntries*.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

Typedefs

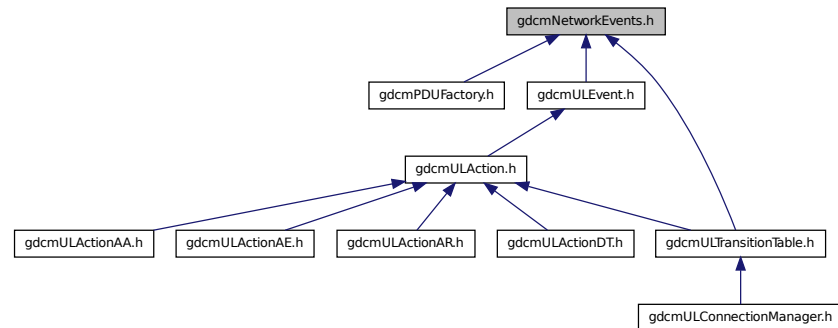
- typedef NestedModuleEntries [gdcm::NestedMacroEntries](#)

Functions

- `std::ostream & gdcm::operator<< (std::ostream &_os, const NestedModuleEntries &_val)`

26.149 gdcNetworkEvents.h File Reference

This graph shows which files directly or indirectly include this file:



Namespaces

- [gdc](#)
- [gdc::network](#)

Constant Groups

- [gdc](#)
- [gdc::network](#)

Enumerations

- `enum gdc::network::EEventID {`
`gdc::network::eAASSOCIATERequestLocalUser = 0,`
`gdc::network::eTransportConnConfirmLocal,`
`gdc::network::eASSOCIATE_ACPDUreceived,`
`gdc::network::eASSOCIATE_RJPDUreceived,`
`gdc::network::eTransportConnIndicLocal,`
`gdc::network::eAASSOCIATE_RQPDUreceived,`
`gdc::network::eAASSOCIATEresponseAccept,`
`gdc::network::eAASSOCIATEresponseReject,`
`gdc::network::ePDATArequest,`
`gdc::network::ePDATATFPDU,`
`gdc::network::eARELEASERequest,`
`gdc::network::eARELEASE_RQPDUReceivedOpen,`
`gdc::network::eARELEASE_RPPDUReceived,`
`gdc::network::eARELEASEResponse,`
`gdc::network::eAABORTRequest,`
`gdc::network::eAABORTPDUReceivedOpen,`
`gdc::network::eTransportConnectionClosed,`
`gdc::network::eARTIMTimerExpired,`
`gdc::network::eUnrecognizedPDUReceived,`
`}`

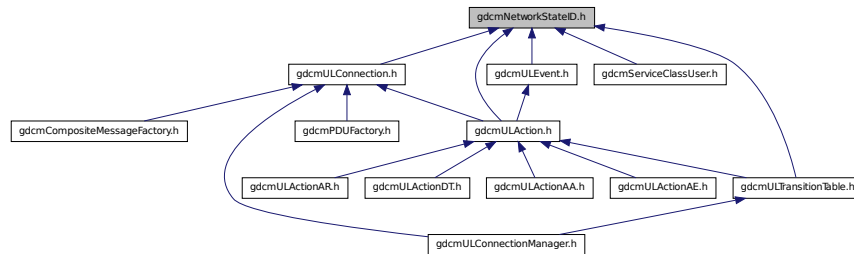
```
gdcmm::network::eEventDoesNotExist }
```

Variables

- const int `gdcmm::network::cMaxEventID` = eEventDoesNotExist

26.150 gdcmmNetworkStateID.h File Reference

This graph shows which files directly or indirectly include this file:



Namespaces

- `gdcmm`
- `gdcmm::network`

Constant Groups

- `gdcmm`
- `gdcmm::network`

Enumerations

- enum `gdcmm::network::EStateID` {
`gdcmm::network::eStaDoesNotExist` = 0,
`gdcmm::network::eSta1Idle` = 1,
`gdcmm::network::eSta2Open` = 2,
`gdcmm::network::eSta3WaitLocalAssoc` = 4,
`gdcmm::network::eSta4LocalAssocDone` = 8,
`gdcmm::network::eSta5WaitRemoteAssoc` = 16,
`gdcmm::network::eSta6TransferReady` = 32,
`gdcmm::network::eSta7WaitRelease` = 64,
`gdcmm::network::eSta8WaitLocalRelease` = 128,
`gdcmm::network::eSta9ReleaseCollisionRqLocal` = 256,
`gdcmm::network::eSta10ReleaseCollisionAc` = 512,
`gdcmm::network::eSta11ReleaseCollisionRq` = 1024,
`gdcmm::network::eSta12ReleaseCollisionAcLocal` = 2048,
`gdcmm::network::eSta13AwaitingClose` = 4096 }

Functions

- int [gdcm::network::GetStateIndex](#) (EStateID inState)

Variables

- const int [gdcm::network::cMaxStateID](#) = 13

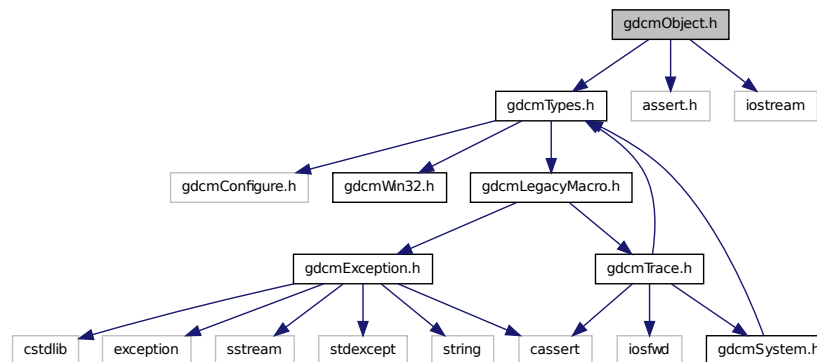
26.151 gdcmObject.h File Reference

```
#include "gdcmTypes.h"
```

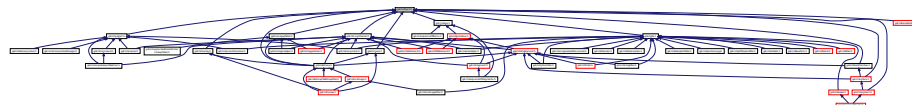
```
#include <assert.h>
```

```
#include <iostream>
```

Include dependency graph for gdcmObject.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Object](#)
Object.
- class [gdcm::SmartPointer< ObjectType >](#)
Class for Smart Pointer.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

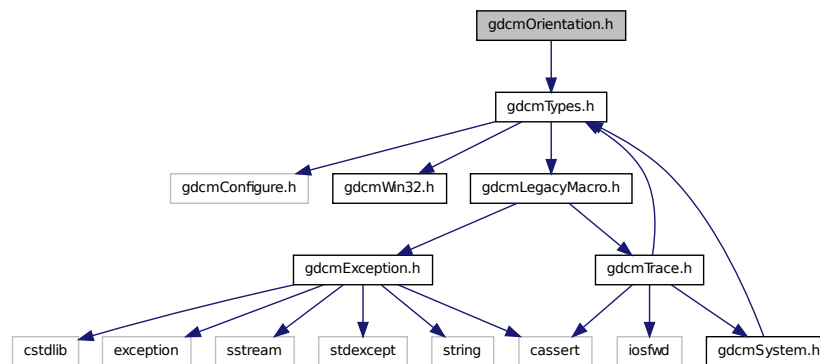
Functions

- `std::ostream & gdcm::operator<< (std::ostream &os, const Object &obj)`

26.152 gdcmOrientation.h File Reference

```
#include "gdcmTypes.h"
```

Include dependency graph for `gdcmOrientation.h`:



Classes

- class [gdcm::Orientation](#)
class to handle [Orientation](#)

Namespaces

- [gdcm](#)

Constant Groups

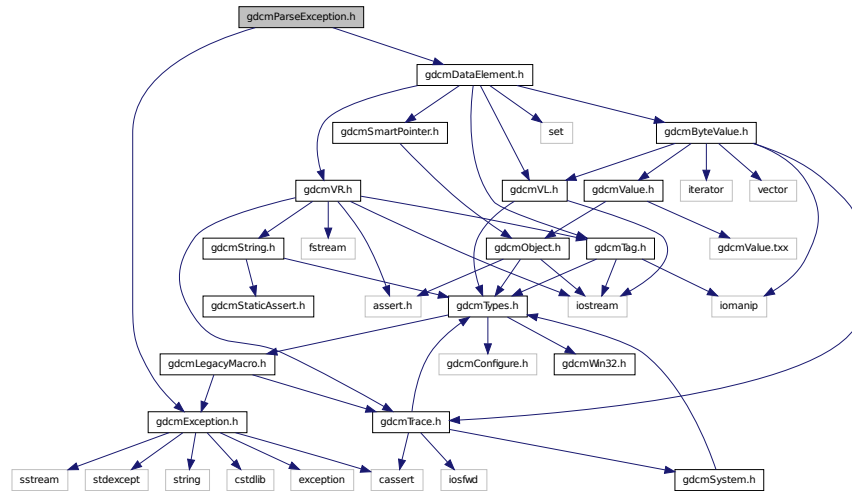
- [gdcm](#)

Functions

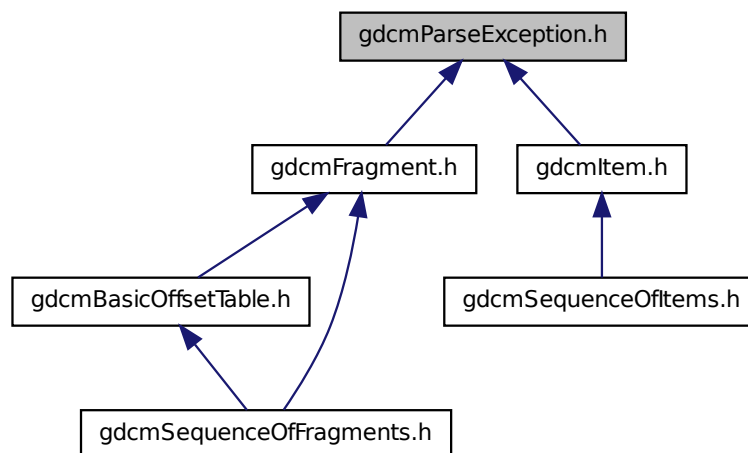
- `std::ostream & gdcm::operator<< (std::ostream &os, const Orientation &o)`

26.154 gdcmParseException.h File Reference

```
#include "gdcmException.h"
#include "gdcmDataElement.h"
Include dependency graph for gdcmParseException.h:
```



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::ParseException](#)

ParseException Standard exception handling object.

Namespaces

- [gdcm](#)

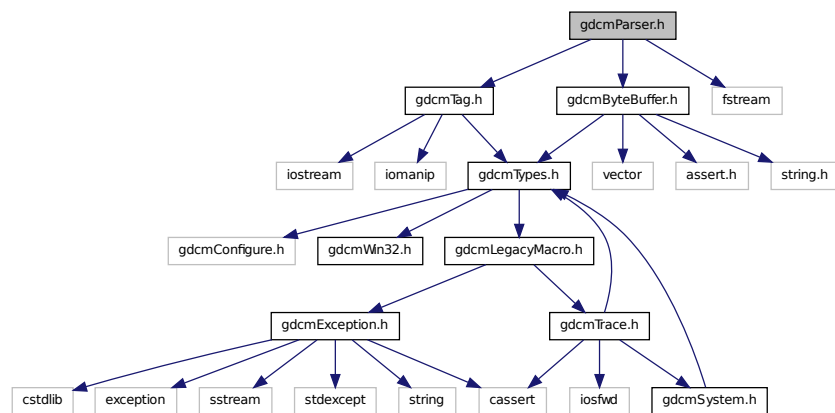
Constant Groups

- [gdcm](#)

26.155 gdcmParser.h File Reference

```
#include "gdcmTag.h"
#include "gdcmByteBuffer.h"
#include <fstream>
```

Include dependency graph for gdcmParser.h:



Classes

- class [gdcm::Parser](#)
Parser ala XML_Parser from expat (SAX)

Namespaces

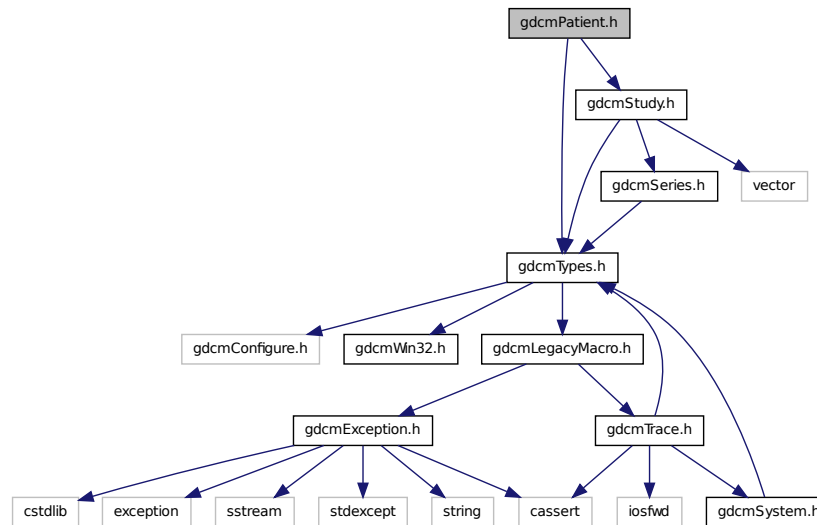
- [gdcm](#)

Constant Groups

- [gdcm](#)

26.156 gdcmPatient.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmStudy.h"
Include dependency graph for gdcmPatient.h:
```



Classes

- class [gdcm::Patient](#)

See PS 3.3 - 2007 DICOM MODEL OF THE REAL-WORLD, p 54.

Namespaces

- [gdcm](#)

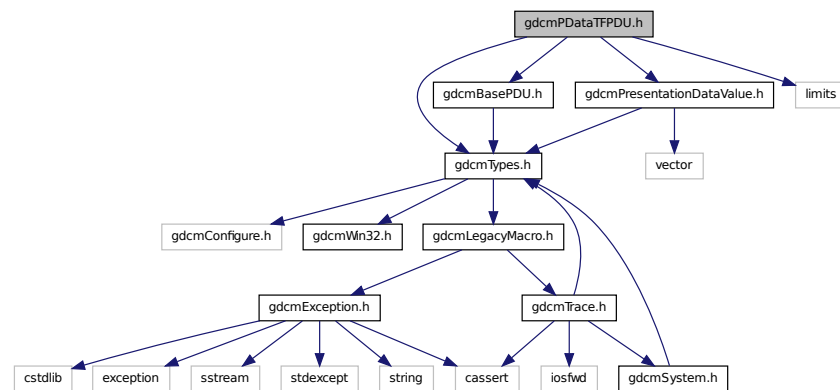
Constant Groups

- [gdcm](#)

26.157 gdcmPDataTFPDU.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmPresentationDataValue.h"
#include "gdcmBasePDU.h"
#include <limits>
```

Include dependency graph for gdcmPDataTFPDU.h:



Classes

- class [gdcm::network::PDataTFPDU](#)

PDataTFPDU Table 9-22 P-DATA-TF PDU FIELDS.

Namespaces

- [gdcm](#)
- [gdcm::network](#)

Constant Groups

- [gdcm](#)
- [gdcm::network](#)

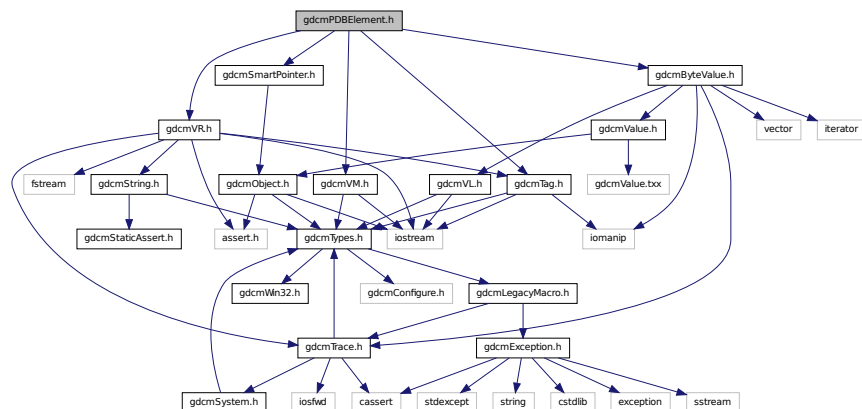
26.158 gdcmPDBelement.h File Reference

```

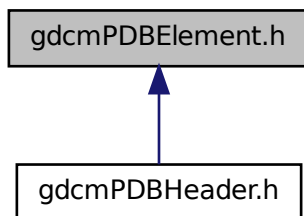
#include "gdcmTag.h"
#include "gdcmVM.h"
#include "gdcmVR.h"
#include "gdcmByteValue.h"
#include "gdcmSmartPointer.h"

```

Include dependency graph for `gdcnPDBElement.h`:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcn::PDBElement`
Class to represent a PDB [Element](#).

Namespaces

- `gdcn`

Constant Groups

- `gdcn`

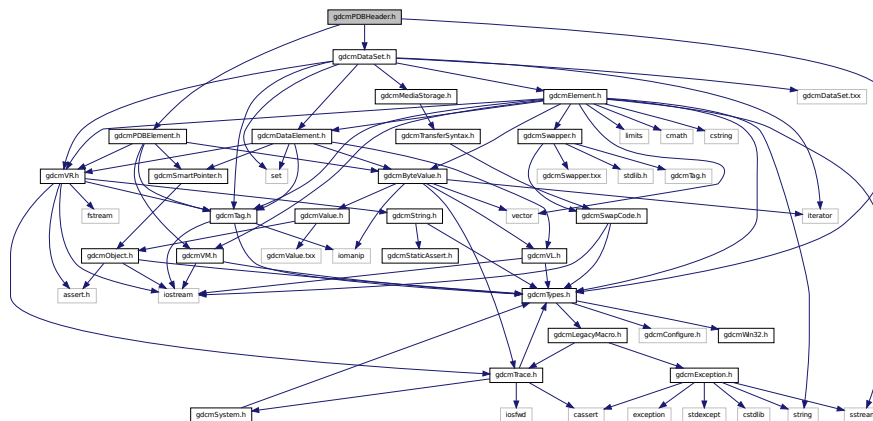
Functions

- `std::ostream & gdcm::operator<< (std::ostream &os, const PDBelement &val)`

26.159 gdcmPDBHeader.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmDataSet.h"
#include "gdcmPDBelement.h"
```

Include dependency graph for gdcmPDBHeader.h:



Classes

- class `gdcm::PDBHeader`
Class for *PDBHeader*.

Namespaces

- `gdcm`

Constant Groups

- `gdcm`

Functions

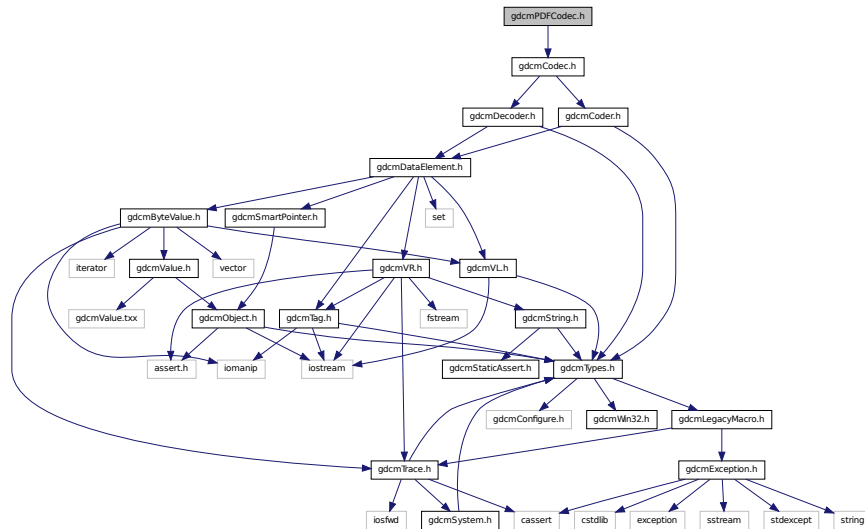
- `std::ostream & gdcm::operator<< (std::ostream &os, const PDBHeader &d)`

26.160 gdcmpdf.man File Reference

26.161 gdcmPDFCodec.h File Reference

```
#include "gdcmCodec.h"
```

Include dependency graph for gdcmPDFCodec.h:



Classes

- class [gdcm::PDFCodec](#)
PDFCodec class.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

26.162 gdcmPDUFactory.h File Reference

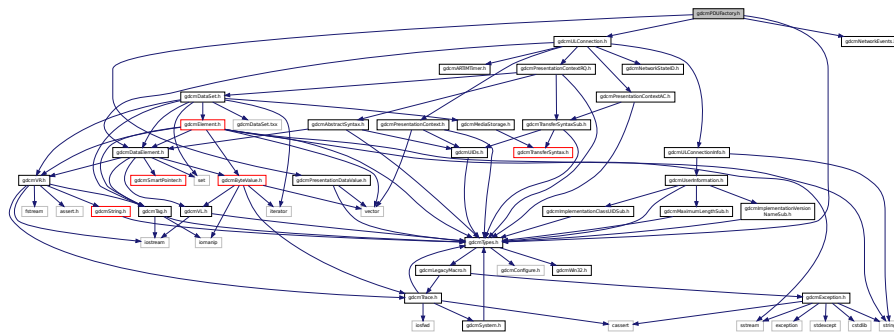
```
#include "gdcmTypes.h"
```

```
#include "gdcmNetworkEvents.h"
```

```
#include "gdcmULConnection.h"
```

```
#include "gdcmPresentationDataValue.h"
```


Include dependency graph for gdcmPDUFactory.h:



Classes

- class [gdcm::network::PDUFactory](#)

PDUFactory basically, given an initial byte, construct the appropriate PDU. This way, the event loop doesn't have to know about all the different PDU types.

Namespaces

- [gdcm](#)
- [gdcm::network](#)

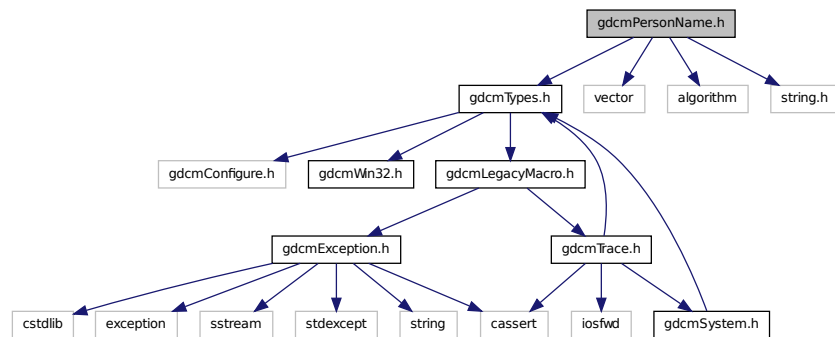
Constant Groups

- [gdcm](#)
- [gdcm::network](#)

26.163 gdcmPersonName.h File Reference

```
#include "gdcmTypes.h"
#include <vector>
#include <algorithm>
#include <string.h>
```

Include dependency graph for `gdcmPersonName.h`:



Classes

- class [gdcm::PersonName](#)

PersonName class.

Namespaces

- [gdcm](#)

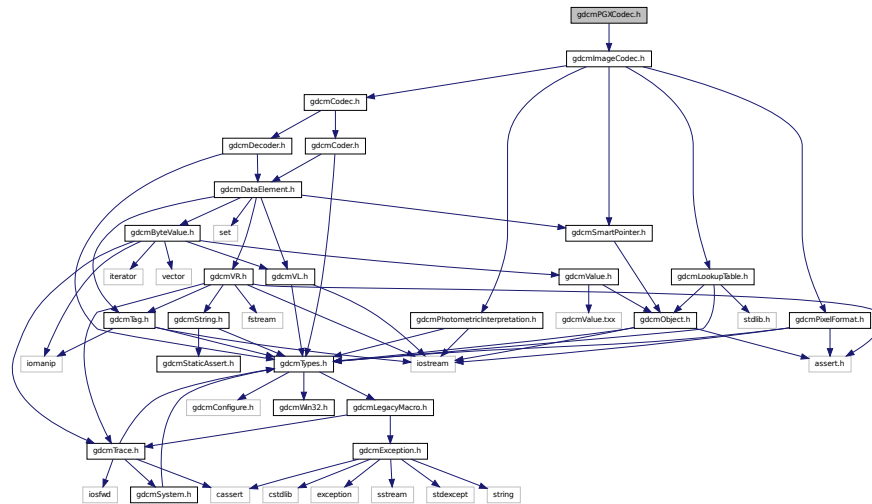
Constant Groups

- [gdcm](#)

26.164 gdcmPGXCodec.h File Reference

```
#include "gdcmImageCodec.h"
```

Include dependency graph for gdcmPGXCodec.h:



Classes

- class [gdcm::PGXCodec](#)

Class to do PGX See PGX as used in JPEG 2000 implementation and reference images.

Namespaces

- [gdcm](#)

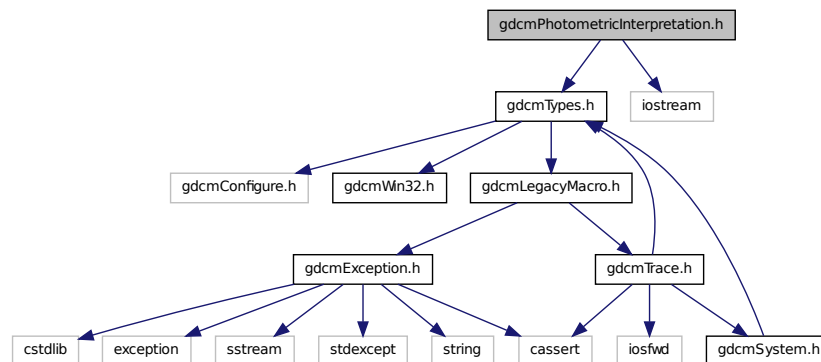
Constant Groups

- [gdcm](#)

26.165 gdcmPhotometricInterpretation.h File Reference

```
#include "gdcmTypes.h"
#include <iostream>
```

Include dependency graph for `gdcmPhotometricInterpretation.h`:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::PhotometricInterpretation](#)
Class to represent an *PhotometricInterpretation*.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

Functions

- `std::ostream & gdcm::operator<< (std::ostream &os, const PhotometricInterpretation &val)`

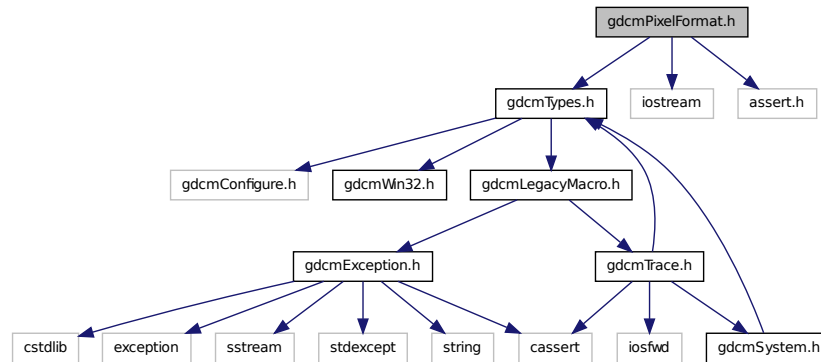
26.166 gdcmPixelFormat.h File Reference

```
#include "gdcmTypes.h"
```

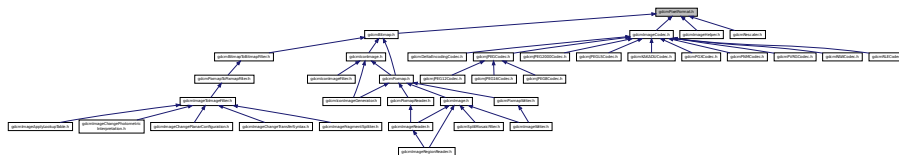
```
#include <iostream>
```

```
#include <assert.h>
```

Include dependency graph for gdcmPixelFormat.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::PixelFormat](#)
PixelFormat.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

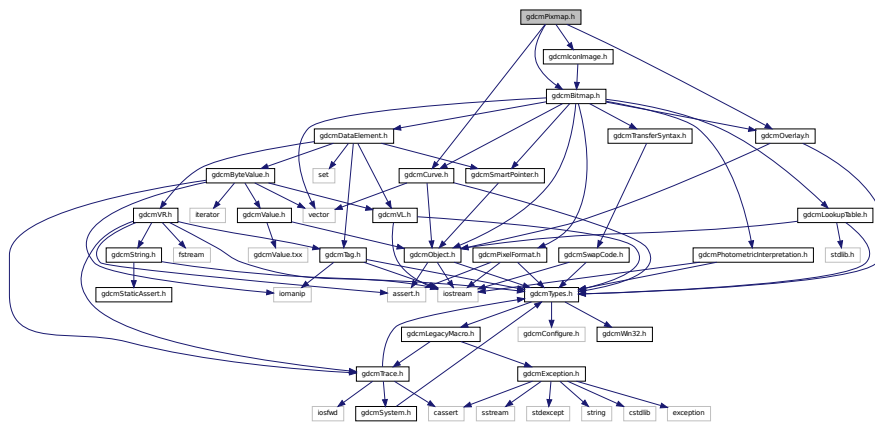
Functions

- `std::ostream & gdcm::operator<< (std::ostream &os, const PixelFormat &pf)`

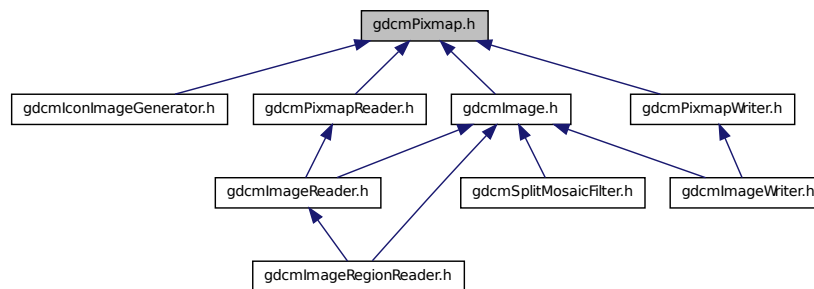
26.167 gdcmPixmap.h File Reference

```
#include "gdcmBitmap.h"
#include "gdcmCurve.h"
#include "gdcmIconImage.h"
#include "gdcmOverlay.h"
```

Include dependency graph for gdcmPixmap.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Pixmap](#)

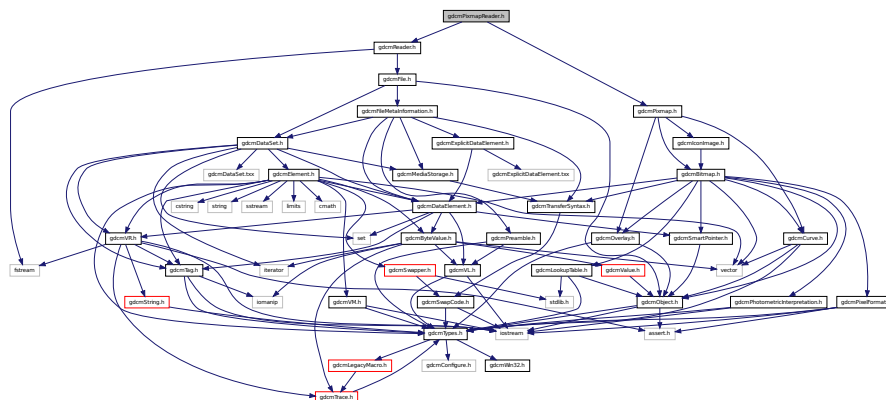
Pixmap class A bitmap based image. Used as parent for both *IconImage* and the main *Pixel Data Image*. It does not contain any World Space information (IPP, IOP)

Namespaces

- [gdcm](#)

- **gdcm**

Include dependency graph for `gdcmPixmapReader.h`:



```
graph BT; gdcmImageRegionReader.h --> gdcmImageReader.h; gdcmImageReader.h --> gdcmPixmapReader.h
```

- class `gdcm::PixmapReader`
PixmapReader.

Namespaces

- [gdcm](#)

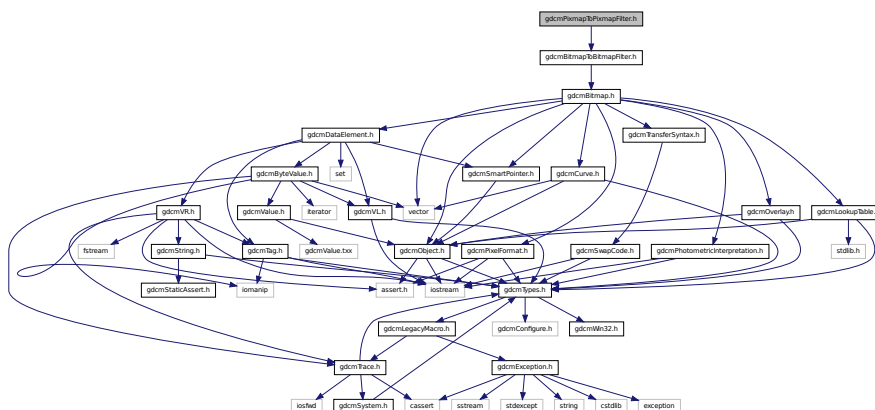
Constant Groups

- [gdcm](#)

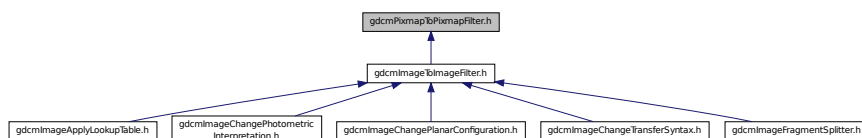
26.169 gdcmPixmapToPixmapFilter.h File Reference

```
#include "gdcmBitmapToBitmapFilter.h"
```

Include dependency graph for `gdcmPixmapToPixmapFilter.h`:



This graph shows which files directly or indirectly include this file:



Classes

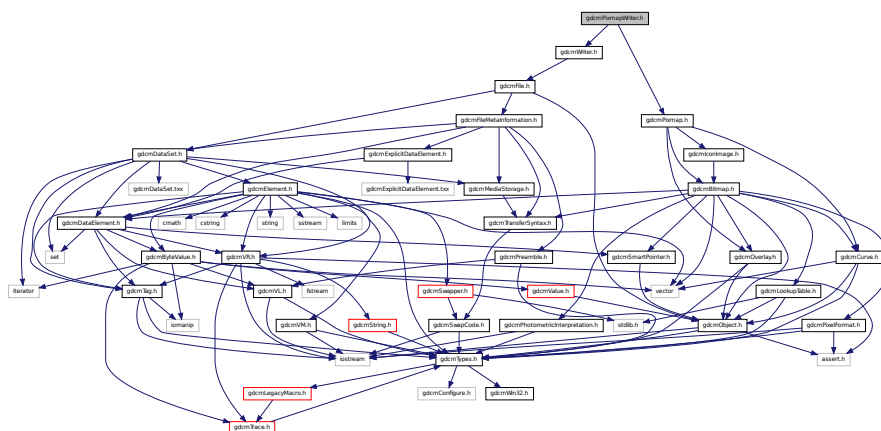
- class [gdcm::PixmapToPixmapFilter](#)
PixmapToPixmapFilter class Super class for all filter taking an image and producing an output image.

Namespaces

- [gdcm](#)

- **gdcm**

Include dependency graph for gdcmPidmapWriter.h:



```

graph BT
    A[gdcmImageWriter.h] --> B[gdcmPixmapWriter.h]

```

- class `gdcm::PixmapWriter`

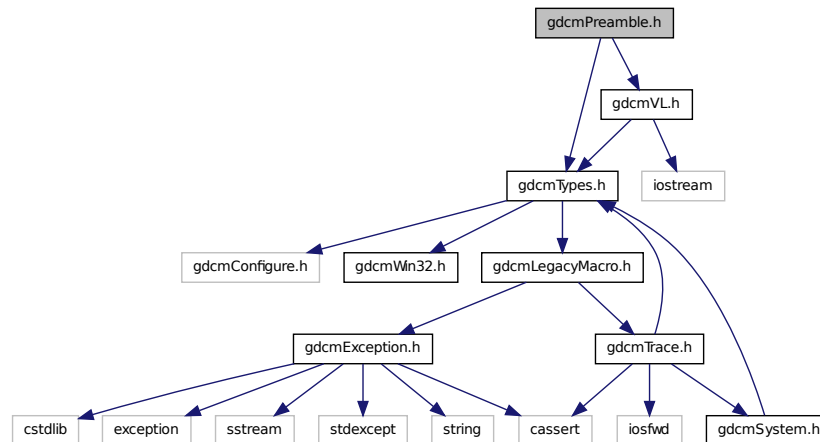
PixmapWriter This class will takes two inputs:

26.172 gdcmPreamble.h File Reference

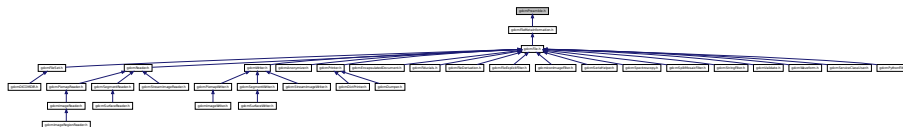
```
#include "gdcmTypes.h"
```

```
#include "gdcmVL.h"
```

Include dependency graph for gdcmPreamble.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Preamble](#)
DICOM Preamble (Part 10)

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

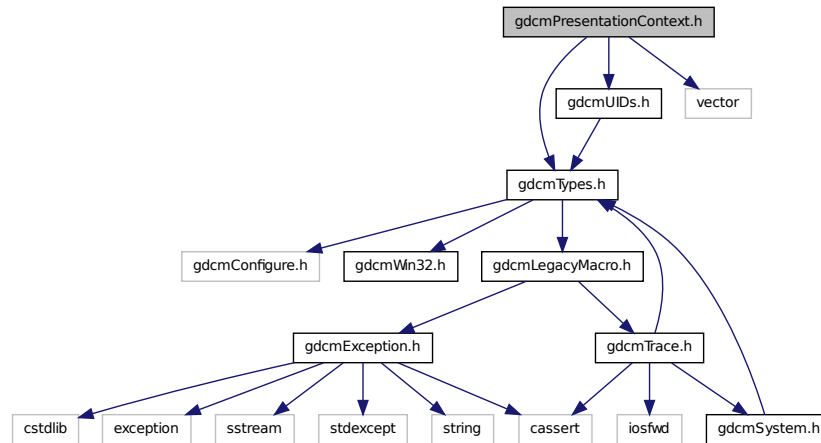
Functions

- `std::ostream & gdcm::operator<< (std::ostream &os, const Preamble &val)`

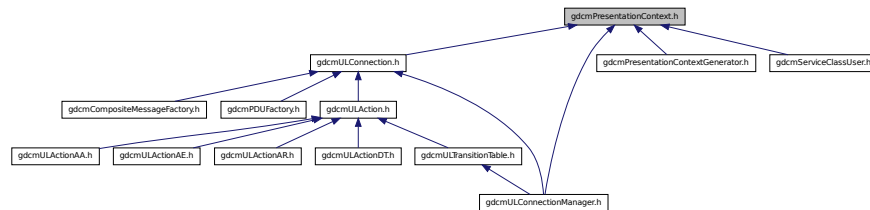
26.173 gdcmPresentationContext.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmUIDs.h"
#include <vector>
```

Include dependency graph for gdcmPresentationContext.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::PresentationContext](#)
PresentationContext.

Namespaces

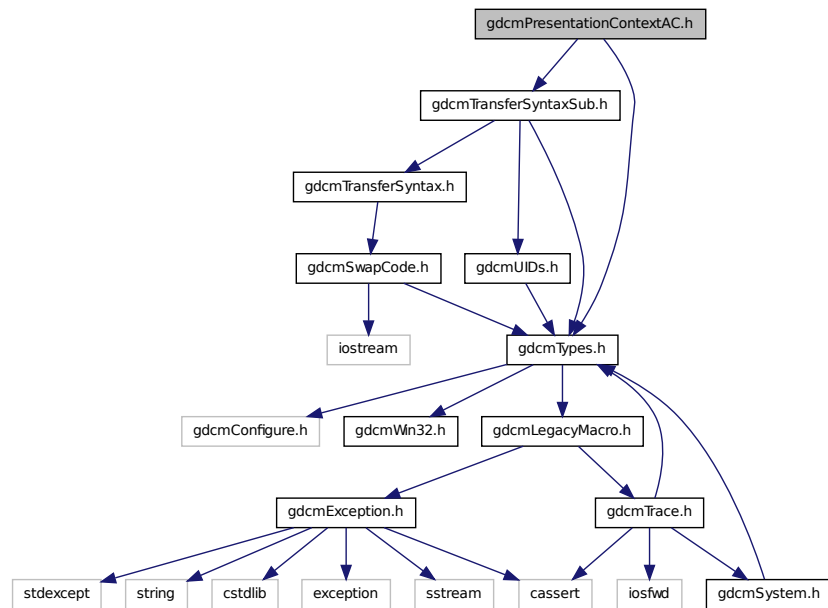
- [gdcm](#)

Constant Groups

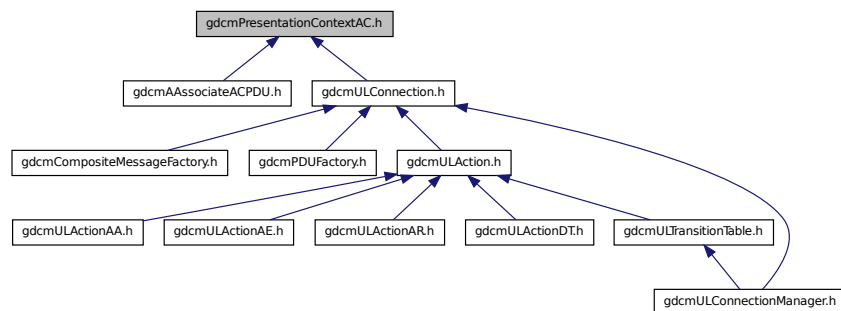
- [gdcm](#)

26.174 gdcmPresentationContextAC.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmTransferSyntaxSub.h"
Include dependency graph for gdcmPresentationContextAC.h:
```



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::network::PresentationContextAC](#)

PresentationContextAC Table 9-18 PRESENTATION CONTEXT ITEM FIELDS.

Namespaces

- [gdcm](#)
- [gdcm::network](#)

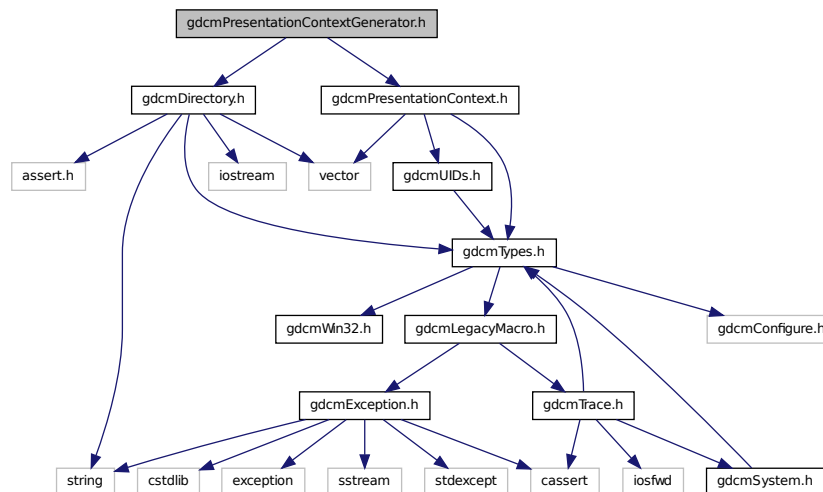
Constant Groups

- [gdcm](#)
- [gdcm::network](#)

26.175 gdcmPresentationContextGenerator.h File Reference

```
#include "gdcmDirectory.h"
#include "gdcmPresentationContext.h"
```

Include dependency graph for gdcmPresentationContextGenerator.h:



Classes

- class [gdcm::PresentationContextGenerator](#)

***PresentationContextGenerator** This class is responsible for generating the proper [PresentationContext](#) that will be used in subsequent operation during a DICOM Query/Retrieve association. The step of the association is very sensible as special care need to be taken to explicitly define what instance are going to be send and how they are encoded.*

Namespaces

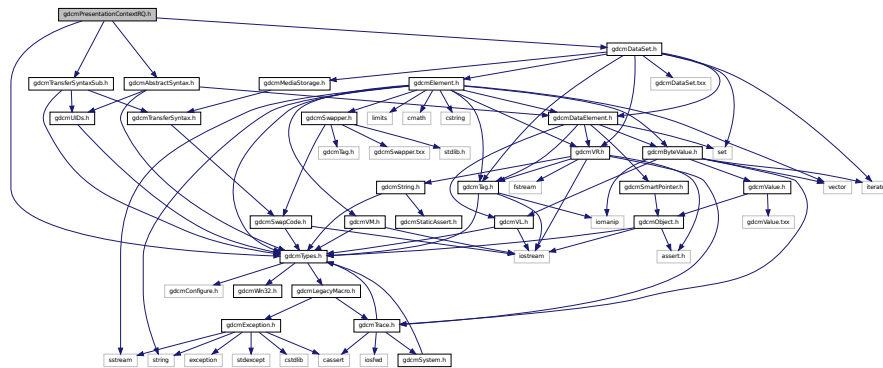
- [gdcm](#)

Constant Groups

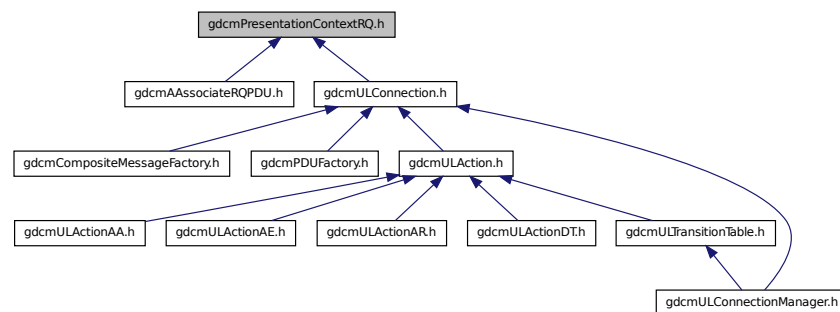
- **gdcm**

26.176 gdcPresentationContextRQ.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmAbstractSyntax.h"
#include "gdcmTransferSyntaxSub.h"
#include "gdcmDataSet.h"
Include dependency graph for gdcmPresentationContextRQ.h:
```



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcm::network::PresentationContextRQ`
PresentationContextRQ Table 9-13 PRESENTATION CONTEXT ITEM FIELDS.

Namespaces

- **gdcm**

- [gdcm::network](#)

Constant Groups

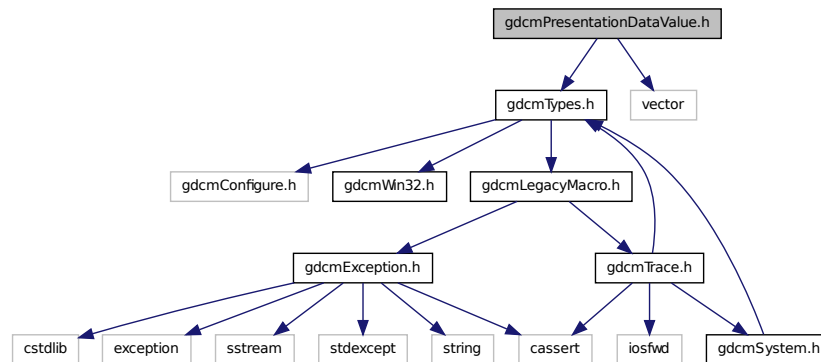
- [gdcm](#)
- [gdcm::network](#)

26.177 gdcmPresentationDataValue.h File Reference

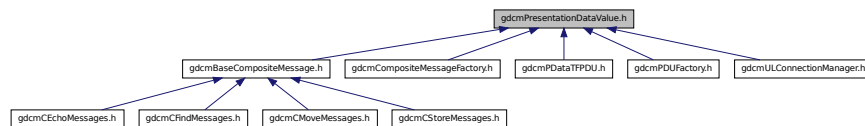
```
#include "gdcmTypes.h"
```

```
#include <vector>
```

Include dependency graph for gdcmPresentationDataValue.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::network::PresentationDataValue](#)

PresentationDataValue Table 9-23 PRESENTATION-DATA-VALUE ITEM FIELDS.

Namespaces

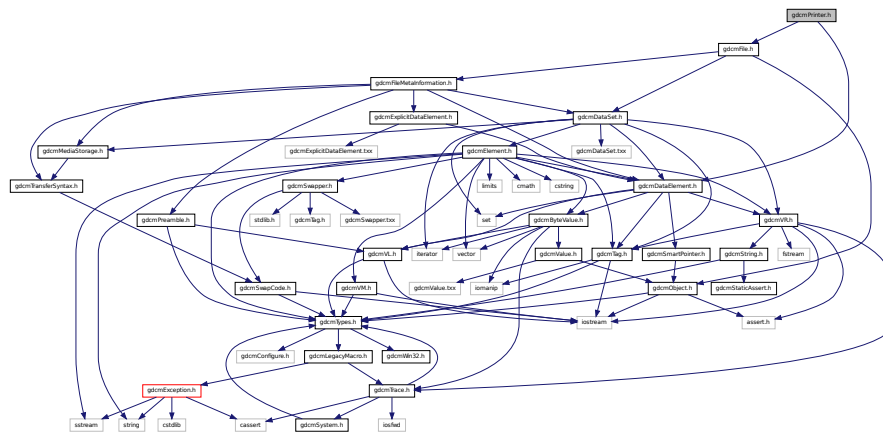
- [gdcm](#)
- [gdcm::network](#)

Constant Groups

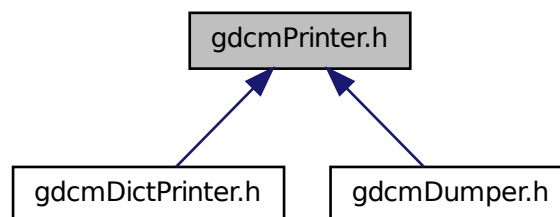
- [gdcm](#)
- [gdcm::network](#)

26.178 gdcmPrinter.h File Reference

```
#include "gdcmFile.h"
#include "gdcmDataElement.h"
Include dependency graph for gdcmPrinter.h:
```



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Printer](#)
Printer class.

Namespaces

- [gdcm](#)

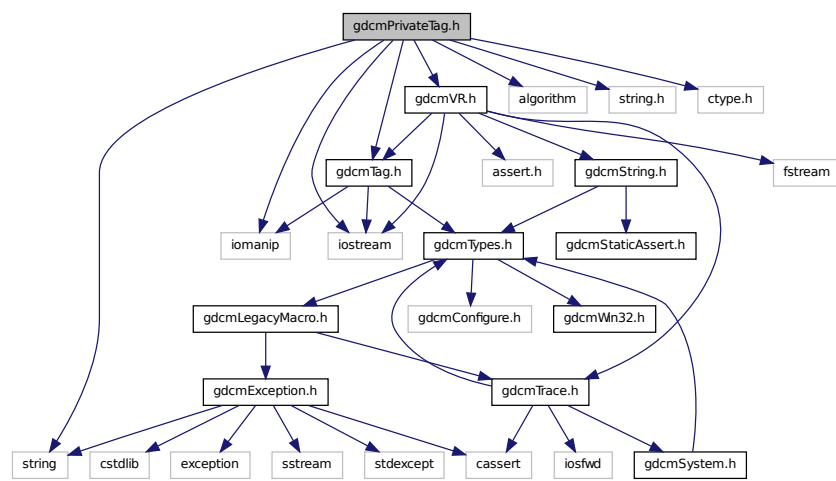
Constant Groups

- [gdcm](#)

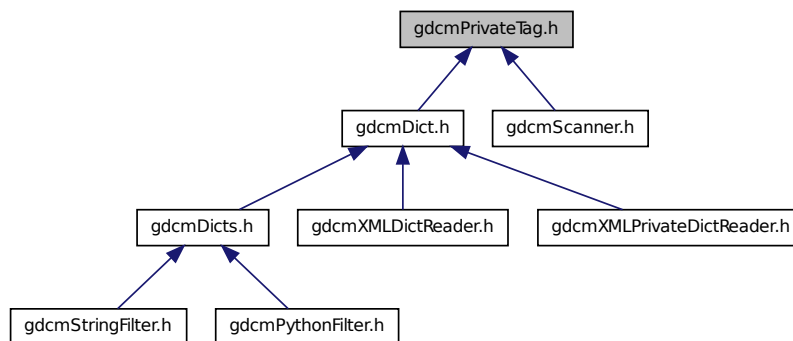
26.179 gdcmPrivateTag.h File Reference

```
#include "gdcmTag.h"
#include "gdcmVR.h"
#include <iostream>
#include <iomanip>
#include <string>
#include <algorithm>
#include <string.h>
#include <ctype.h>
```

Include dependency graph for gdcmPrivateTag.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::PrivateTag](#)

Class to represent a Private DICOM Data [Element](#) ([Attribute](#)) [Tag](#) (Group, [Element](#), Owner)

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

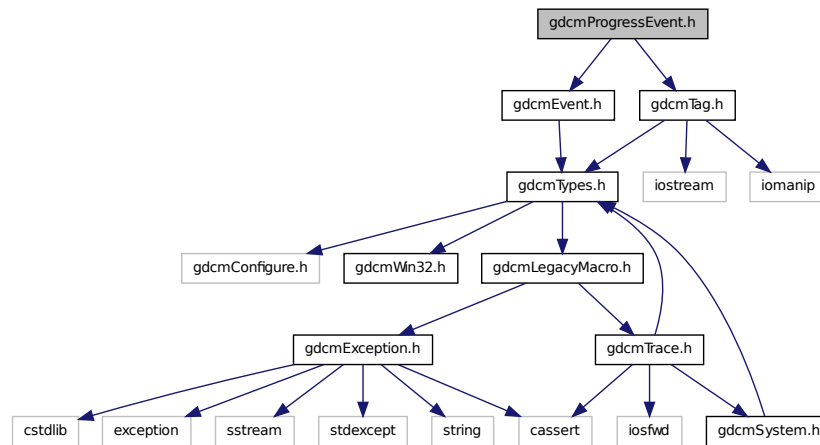
Functions

- `std::ostream & gdcm::operator<< (std::ostream &os, const PrivateTag &val)`

26.180 gdcmProgressEvent.h File Reference

```
#include "gdcmEvent.h"
#include "gdcmTag.h"
```

Include dependency graph for `gdcProgressEvent.h`:



Classes

- class `gdc::ProgressEvent`

ProgressEvent Special type of event triggered during.

Namespaces

- `gdc`

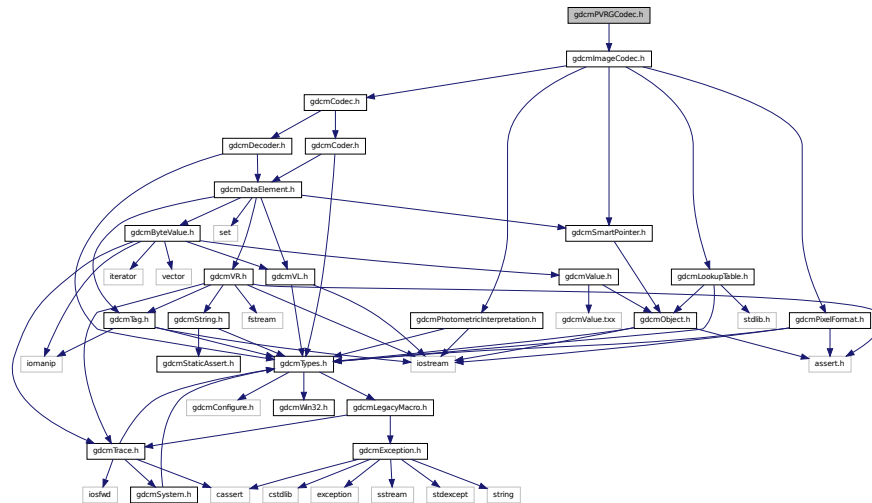
Constant Groups

- `gdc`

26.181 gdcMPVRGCodec.h File Reference

```
#include "gdcImageCodec.h"
```

Include dependency graph for gdcmPVRGCodec.h:



Classes

- class [gdcm::PVRGCodec](#)

PVRGCodec.

Namespaces

- [gdcm](#)

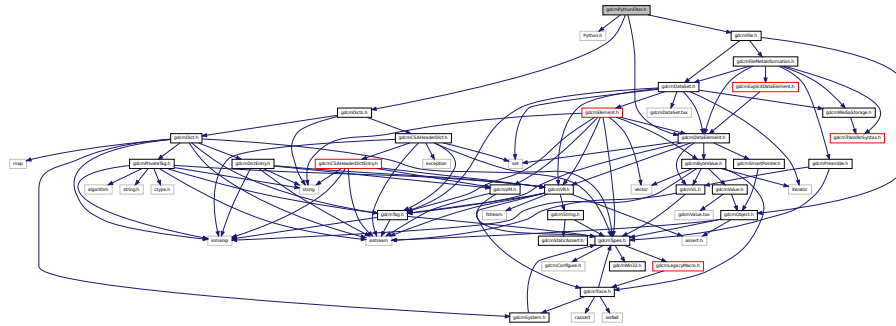
Constant Groups

- [gdcm](#)

26.182 gdcmPythonFilter.h File Reference

```
#include <Python.h>
#include "gdcmDataElement.h"
#include "gdcmDicts.h"
#include "gdcmFile.h"
```

Include dependency graph for `gdcPythonFilter.h`:



Classes

- class `gdc::PythonFilter`

`PythonFilter` `PythonFilter` is the class that make `gdc2.x` looks more like `gdc1` and transform the binary blob contained in a `DataElement` into a string, typically this is a nice feature to have for wrapped language.

Namespaces

- `gdc`

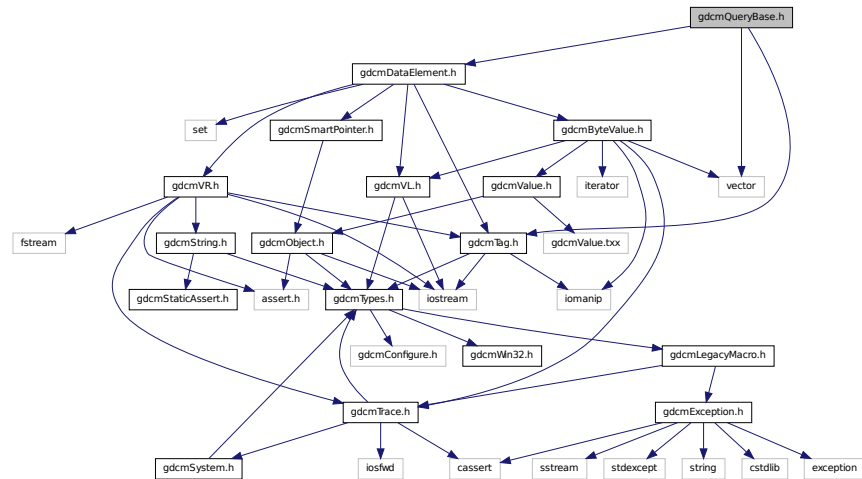
Constant Groups

- `gdc`

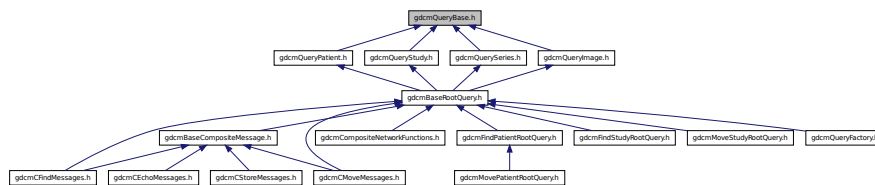
26.183 gdcQueryBase.h File Reference

```
#include "gdcTag.h"
#include "gdcDataElement.h"
#include <vector>
```

Include dependency graph for gdcmQueryBase.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::QueryBase](#)
QueryBase contains: the base class for constructing a query dataset for a C-FIND and a C-MOVE.

Namespaces

- [gdcm](#)

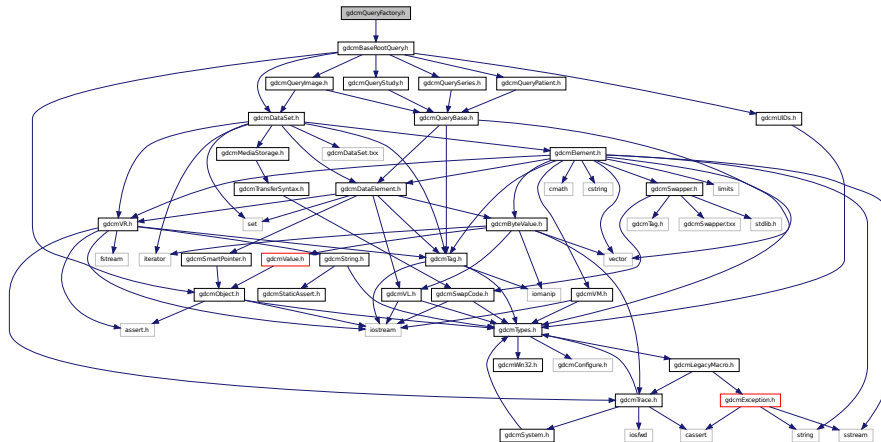
Constant Groups

- [gdcm](#)

Enumerations

- enum [gdcm::ERootType](#) {
[gdcm::ePatientRootType](#),
[gdcm::eStudyRootType](#) }

```
#include "gdcmBaseRootQuery.h"
Include dependency graph for gdcmQueryFactory.h:
```



- class `gdcm::QueryFactory`

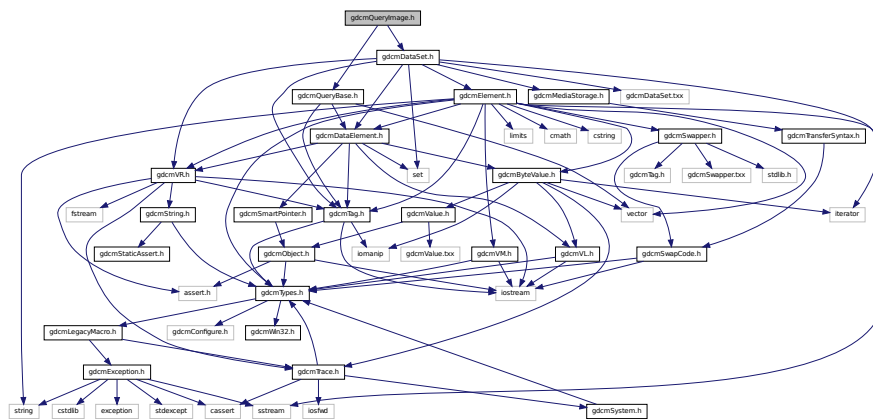
QueryFactory.h.

- **gdcm**

- **gdcm**

- enum `gdcmm::ECharSet` {
 `gdcmm::eLatin1` = 0,
 `gdcmm::eLatin2`,
 `gdcmm::eLatin3`,
 `gdcmm::eLatin4`,
 `gdcmm::eCyrillic`,
 `gdcmm::eArabic`,
 `gdcmm::eGreek`,
 `gdcmm::eHebrew`,
 `gdcmm::eLatin5`,
 `gdcmm::eJapanese`,
 `gdcmm::eThai`,
 `gdcmm::eJapaneseKanjiMultibyte`,
 `gdcmm::eJapaneseSupplementaryKanjiMultibyte`,
 `gdcmm::eKoreanHangulHanjaMultibyte`,
 `gdcmm::eUTF8`,
 `gdcmm::eGB18030` }

```
#include "gdcmQueryBase.h"
#include "gdcmDataSet.h"
Include dependency graph for gdcmQueryImage.h:
```



```

graph TD
    gdcmQuery_h[gdcmQuery.h] --> gdcmBaseRootQuery_h[gdcmBaseRootQuery.h]
    gdcmBaseRootQuery_h --> gdcmCompositeNetworkFunctions_h[gdcmCompositeNetworkFunctions.h]
    gdcmBaseRootQuery_h --> gdcmFindPatientRootQuery_h[gdcmFindPatientRootQuery.h]
    gdcmBaseRootQuery_h --> gdcmFindStudyRootQuery_h[gdcmFindStudyRootQuery.h]
    gdcmBaseRootQuery_h --> gdcmMoveStudyRootQuery_h[gdcmMoveStudyRootQuery.h]
    gdcmBaseRootQuery_h --> gdcmQueryFactory_h[gdcmQueryFactory.h]
    gdcmCompositeNetworkFunctions_h --> gdcmCtnMsgMessages_h[gdcmCtnMsgMessages.h]
    gdcmCompositeNetworkFunctions_h --> gdcmCtchMsgMessages_h[gdcmCtchMsgMessages.h]
    gdcmCompositeNetworkFunctions_h --> gdcmCtclMsgMessages_h[gdcmCtclMsgMessages.h]
    gdcmCompositeNetworkFunctions_h --> gdcmCtclMoveMessages_h[gdcmCtclMoveMessages.h]
    gdcmFindPatientRootQuery_h --> gdcmMovePatientRootQuery_h[gdcmMovePatientRootQuery.h]
  
```


Classes

- class [gdcm::QueryPatient](#)

QueryPatient contains: class to construct a patient-based query for c-find and c-move.

Namespaces

- [gdcm](#)

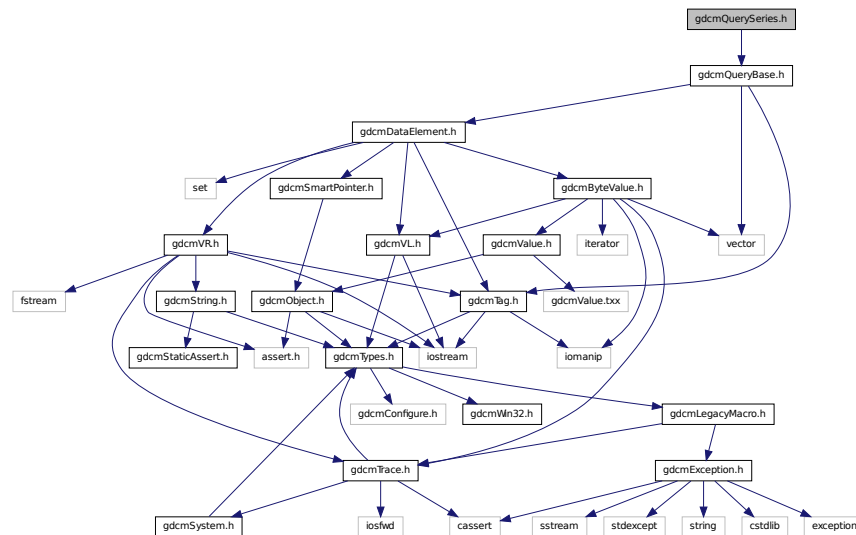
Constant Groups

- [gdcm](#)

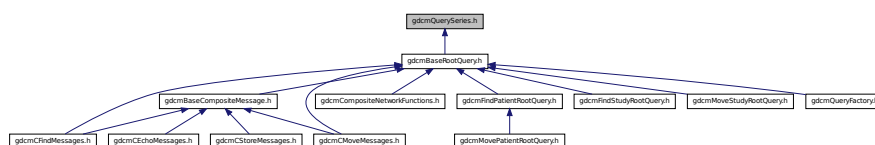
26.187 gdcmQuerySeries.h File Reference

```
#include "gdcmQueryBase.h"
```

Include dependency graph for gdcmQuerySeries.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::QuerySeries](#)

QuerySeries contains: class to construct a series-based query for c-find and c-move.

Namespaces

- [gdcm](#)

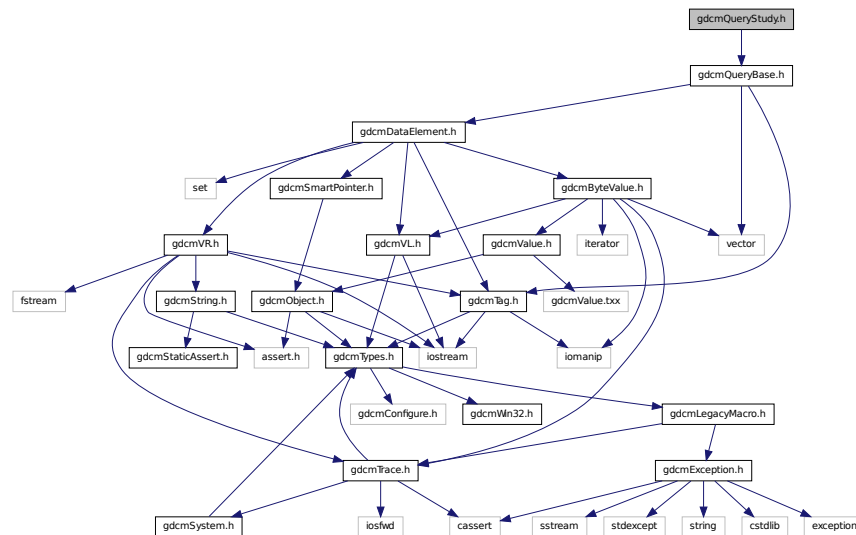
Constant Groups

- [gdcm](#)

26.188 gdcmQueryStudy.h File Reference

```
#include "gdcmQueryBase.h"
```

Include dependency graph for gdcmQueryStudy.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::QueryStudy](#)

QueryStudy.h contains: class to construct a study-based query for C-FIND and C-MOVE.

Namespaces

- [gdcm](#)

Constant Groups

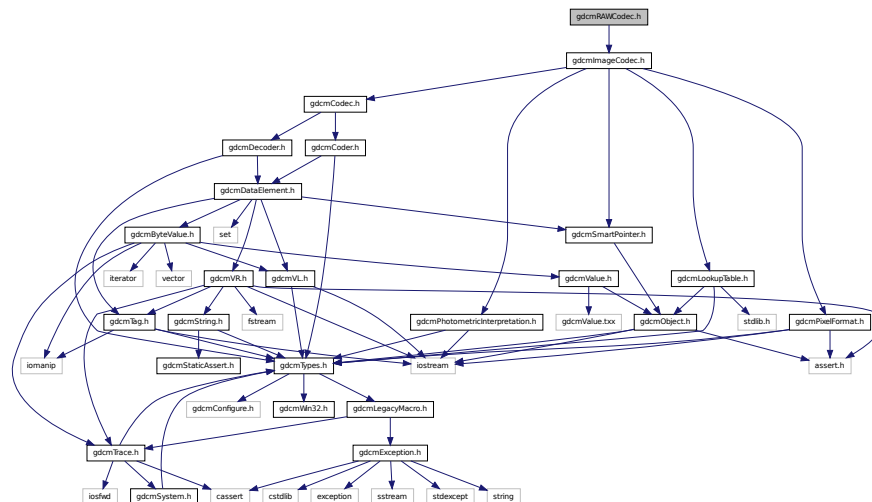
- [gdcm](#)

26.189 gdcmraw.man File Reference

26.190 gdcmRAWCodec.h File Reference

```
#include "gdcmImageCodec.h"
```

Include dependency graph for gdcmRAWCodec.h:



Classes

- class [gdcm::RAWCodec](#)

RAWCodec class.

Namespaces

- [gdcm](#)

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

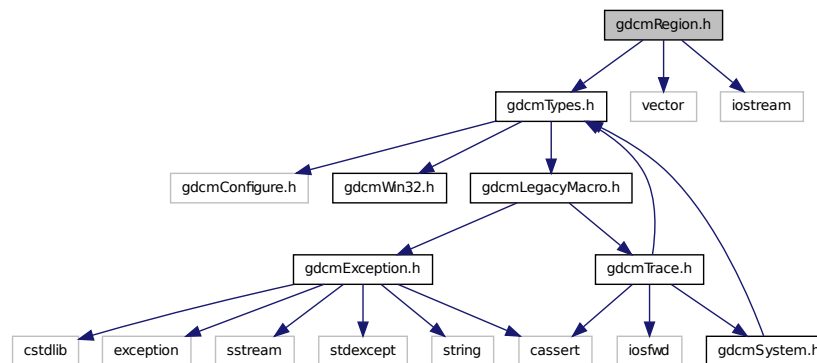
26.192 gdcmRegion.h File Reference

```
#include "gdcmTypes.h"
```

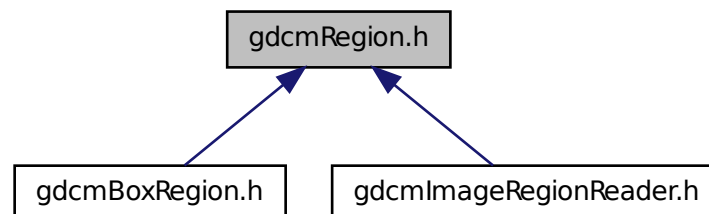
```
#include <vector>
```

```
#include <iostream>
```

Include dependency graph for gdcmRegion.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Region](#)
Class for manipulation region.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

Functions

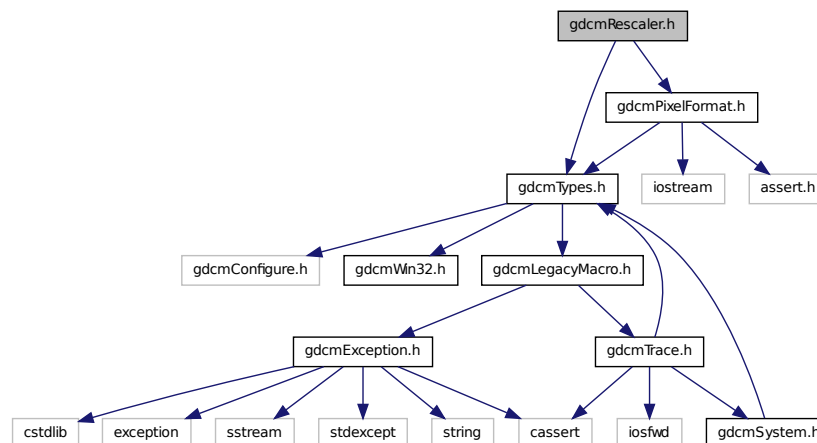
- `std::ostream & gdcm::operator<< (std::ostream &os, const Region &r)`

26.193 gdcmRescaler.h File Reference

```
#include "gdcmTypes.h"
```

```
#include "gdcmPixelFormat.h"
```

Include dependency graph for `gdcmRescaler.h`:



Classes

- class [gdcm::Rescaler](#)
Rescale class This class is meant to apply the linear transform of Stored Pixel [Value](#) to Real World [Value](#). This is mostly found in CT or PET dataset, where the value are stored using one type, but need to be converted to another scale using

a linear transform. There are basically two cases: In CT: the linear transform is generally integer based. E.g. the Stored Pixel [Type](#) is unsigned short 12bits, but to get Hounsfield unit, one need to apply the linear transform:

$$RWV = 1. * SV - 1024$$

So the best scalar to store the Real World [Value](#) will be 16 bits signed type.

Namespaces

- [gdcm](#)

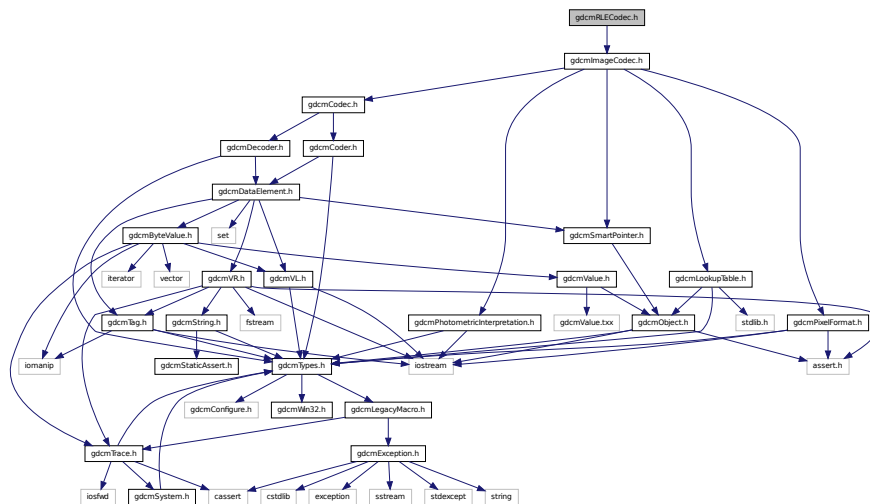
Constant Groups

- [gdcm](#)

26.194 gdcmRLECodec.h File Reference

```
#include "gdcmImageCodec.h"
```

Include dependency graph for gdcmRLECodec.h:



Classes

- class [gdcm::RLECodec](#)
Class to do RLE.

Namespaces

- [gdcm](#)

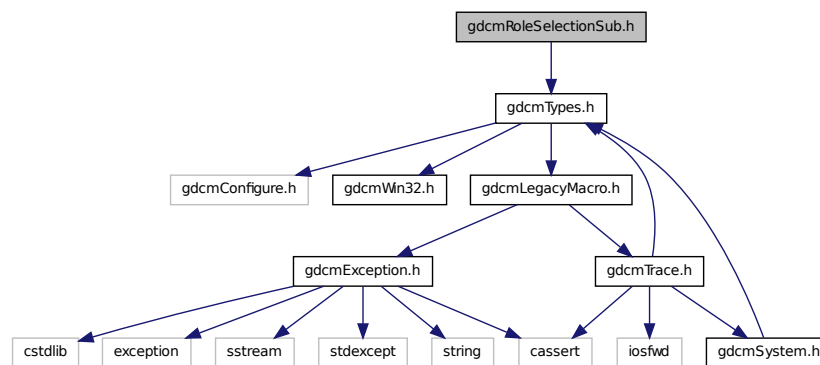
Constant Groups

- [gdcm](#)

26.195 gdcmRoleSelectionSub.h File Reference

```
#include "gdcmTypes.h"
```

Include dependency graph for gdcmRoleSelectionSub.h:



Classes

- class [gdcm::network::RoleSelectionSub](#)

RoleSelectionSub PS 3.7 [Table D.3-9](#) SCP/SCU ROLE SELECTION SUB-ITEM FIELDS (A-ASSOCIATE-RQ)

Namespaces

- [gdcm](#)
- [gdcm::network](#)

Constant Groups

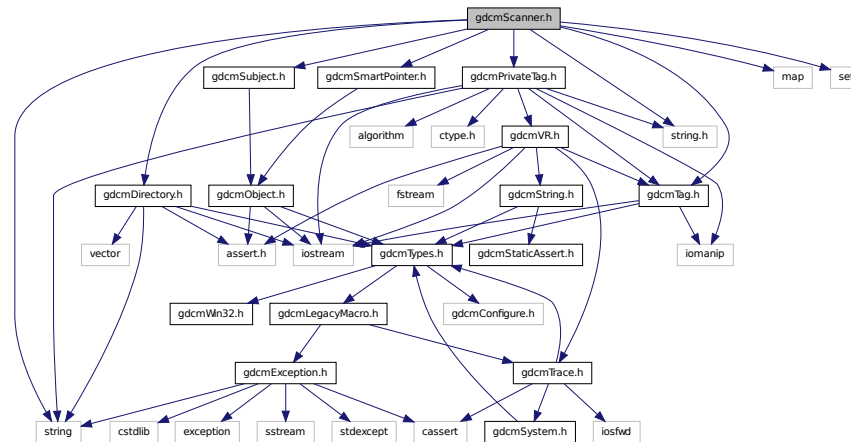
- [gdcm](#)
- [gdcm::network](#)

26.196 gdcmScanner.h File Reference

```
#include "gdcmDirectory.h"
```

```
#include "gdcmSubject.h"
#include "gdcmTag.h"
#include "gdcmPrivateTag.h"
#include "gdcmSmartPointer.h"
#include <map>
#include <set>
#include <string>
#include <string.h>
```

Include dependency graph for gdcmScanner.h:



Classes

- struct [gdcm::Scanner::ltstr](#)
- class [gdcm::Scanner](#)

[Scanner](#) This filter is meant for quickly browsing a [FileSet](#) (a set of files on disk). Special consideration are taken so as to read the minimum amount of information in each file in order to retrieve the user specified set of DICOM [Attribute](#).

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

Functions

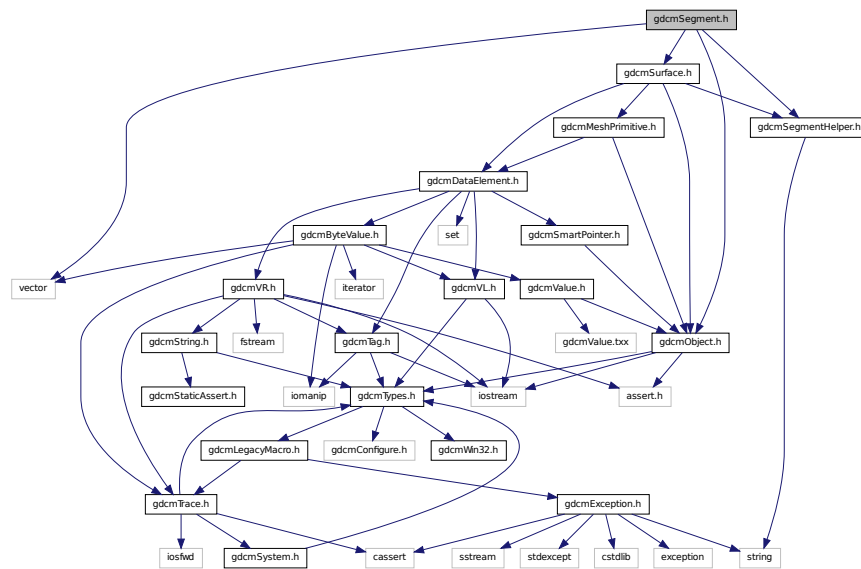
- `std::ostream & gdcm::operator<< (std::ostream &os, const Scanner &s)`

26.197 gdcmscanner.man File Reference

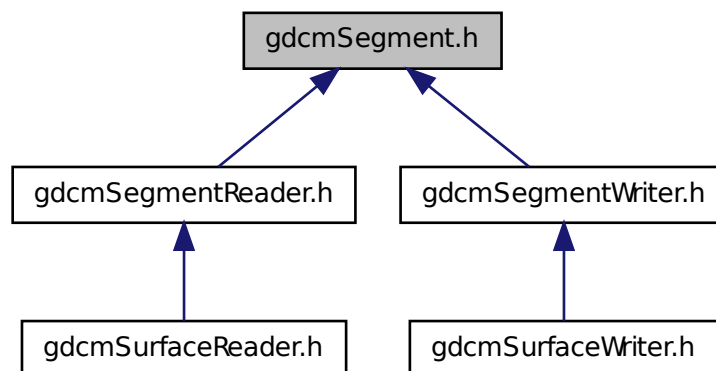
26.198 gdcmscu.man File Reference

26.199 gdcSegment.h File Reference

```
#include <vector>
#include <gdcmObject.h>
#include <gdcmSurface.h>
#include "gdcmSegmentHelper.h"
Include dependency graph for gdcmSegment.h:
```



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Segment](#)

This class defines a segment. It mainly contains attributes of group 0x0062. In addition, it can be associated with surface.

Namespaces

- [gdcm](#)

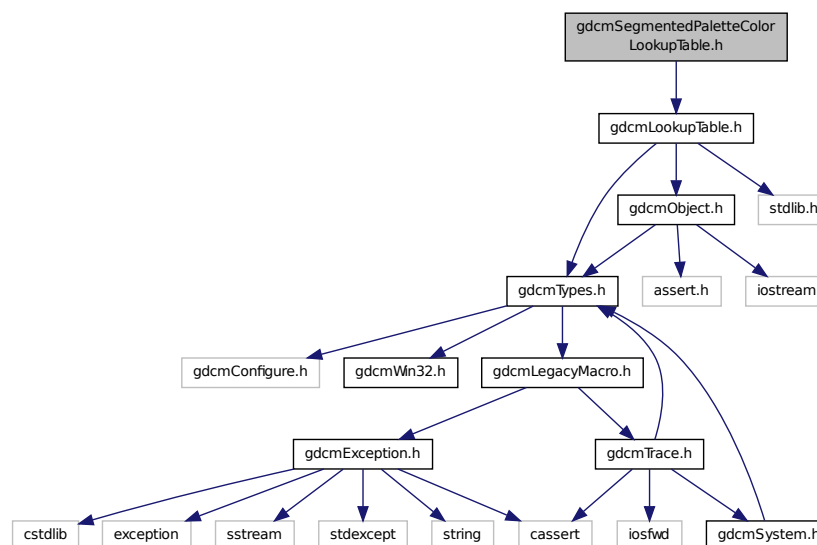
Constant Groups

- [gdcm](#)

26.200 gdcmSegmentedPaletteColorLookupTable.h File Reference

```
#include "gdcmLookupTable.h"
```

Include dependency graph for gdcmSegmentedPaletteColorLookupTable.h:



Classes

- class [gdcm::SegmentedPaletteColorLookupTable](#)
SegmentedPaletteColorLookupTable class.

Namespaces

- [gdcm](#)

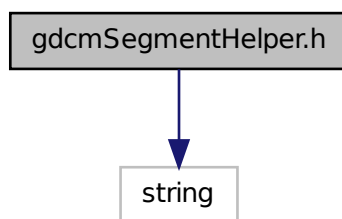
Constant Groups

- [gdcm](#)

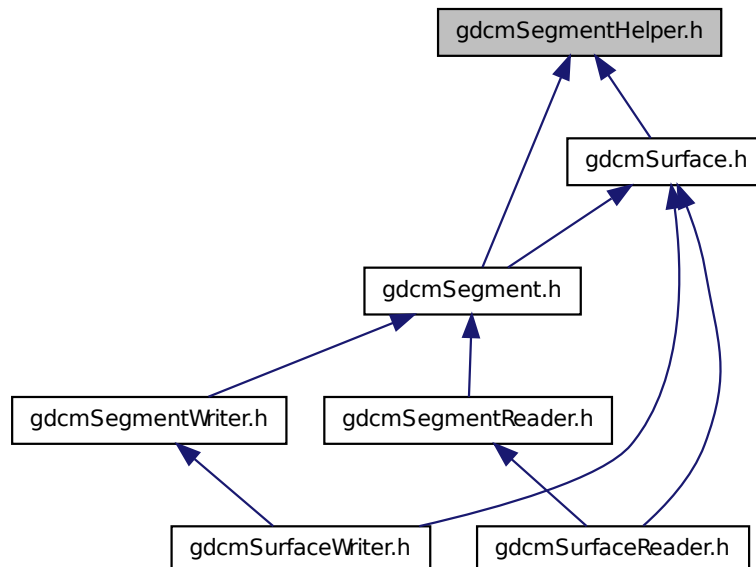
26.201 gdcmSegmentHelper.h File Reference

```
#include <string>
```

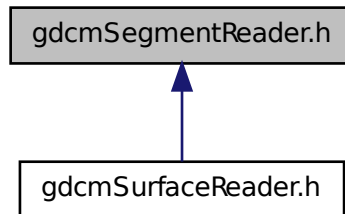
Include dependency graph for gdcmSegmentHelper.h:



This graph shows which files directly or indirectly include this file:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::SegmentReader](#)

This class defines a segment reader. It reads attributes of group 0x0062.

Namespaces

- [gdcm](#)

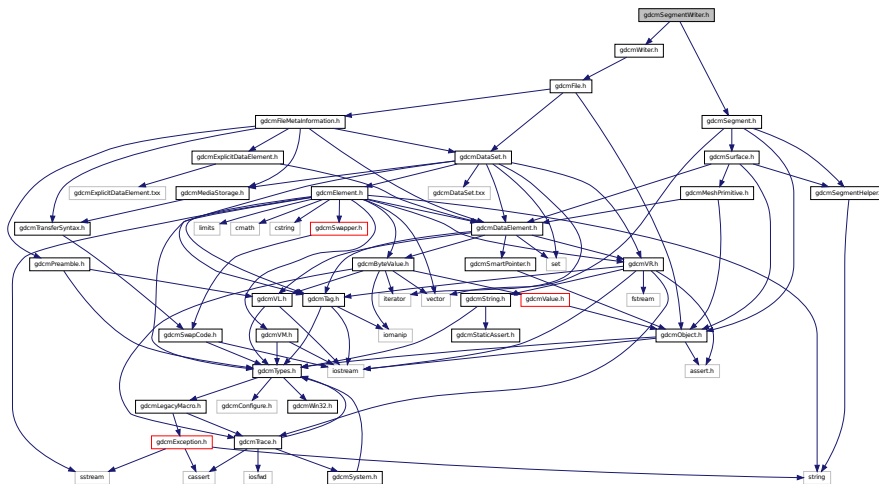
Constant Groups

- [gdcm](#)

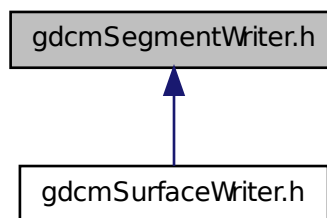
26.203 gdcmSegmentWriter.h File Reference

```
#include <gdcmWriter.h>
#include <gdcmSegment.h>
```


Include dependency graph for gdcmSegmentWriter.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::SegmentWriter](#)

This class defines a segment writer. It writes attributes of group 0x0062.

Namespaces

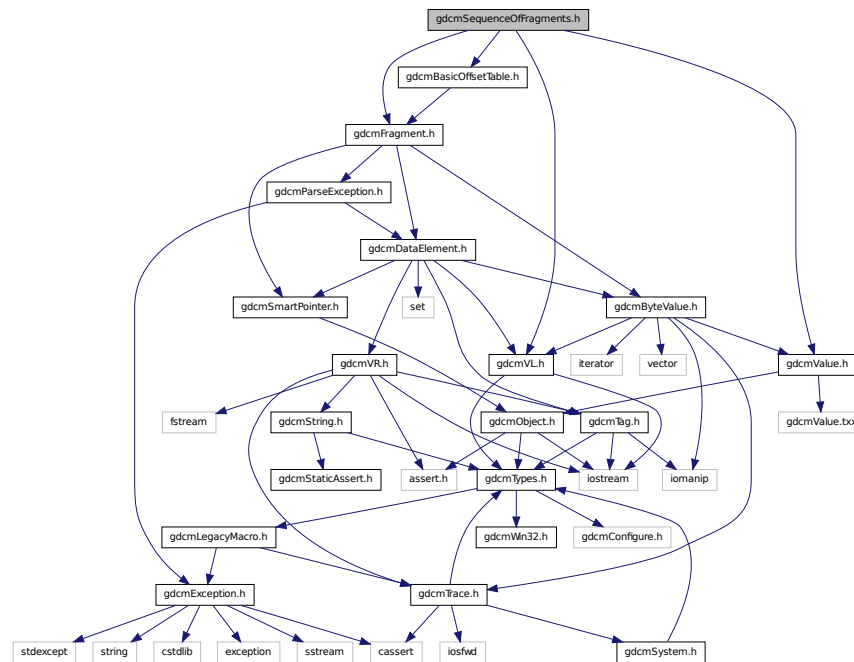
- [gdcm](#)

Constant Groups

- [gdcm](#)

26.204 gdcmSequenceOfFragments.h File Reference

```
#include "gdcmValue.h"
#include "gdcmVL.h"
#include "gdcmFragment.h"
#include "gdcmBasicOffsetTable.h"
Include dependency graph for gdcmSequenceOfFragments.h:
```



Classes

- class [gdcm::SequenceOfFragments](#)
Class to represent a Sequence Of Fragments.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

26.205 gdcmSequenceOfItems.h File Reference

```
#include "gdcmValue.h"
```

- class `gdcmm::SequenceOfItems`
Class to represent a Sequence Of Items (value representation : SQ)

- **gdcm**

- gdc

```
#include "gdcmTag.h"
#include "gdcmSmartPointer.h"
#include "gdcmFile.h"
#include <vector>
#include <string>
#include <map>
```

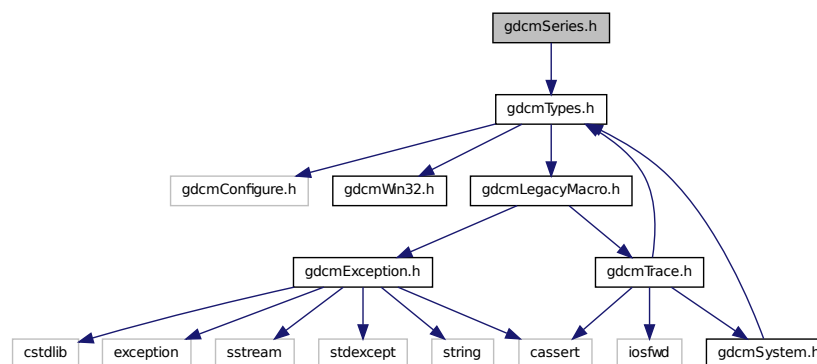

Enumerations

- enum `gdcm::CompOperators` {
`gdcm::GDCM_EQUAL = 0,`
`gdcm::GDCM_DIFFERENT,`
`gdcm::GDCM_GREATER,`
`gdcm::GDCM_GREATEROREQUAL,`
`gdcm::GDCM_LESS,`
`gdcm::GDCM_LESSEQUAL` }
- enum `gdcm::LodModeType` {
`gdcm::LD_ALL = 0x00000000,`
`gdcm::LD_NOSEQ = 0x00000001,`
`gdcm::LD_NOSHADOW = 0x00000002,`
`gdcm::LD_NOSHADOWSEQ = 0x00000004` }

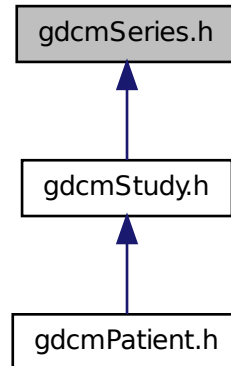
26.207 gdcmSeries.h File Reference

```
#include "gdcmTypes.h"
```

Include dependency graph for `gdcmSeries.h`:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Series](#)

[Series.](#)

Namespaces

- [gdcm](#)

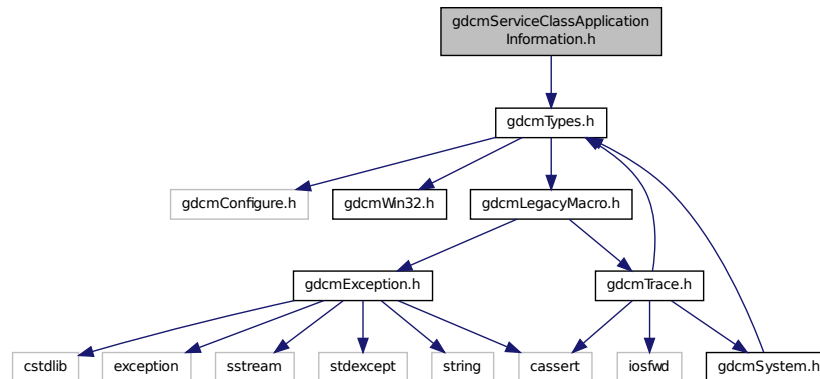
Constant Groups

- [gdcm](#)

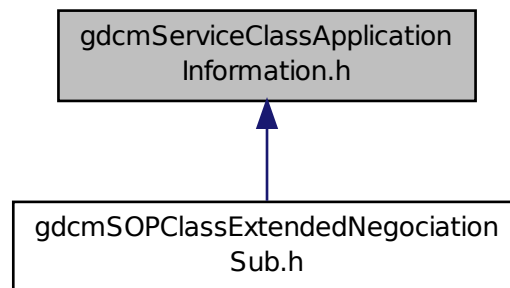
26.208 gdcmServiceClassApplicationInformation.h File Reference

```
#include "gdcmTypes.h"
```

Include dependency graph for gdcmServiceClassApplicationInformation.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::network::ServiceClassApplicationInformation](#)

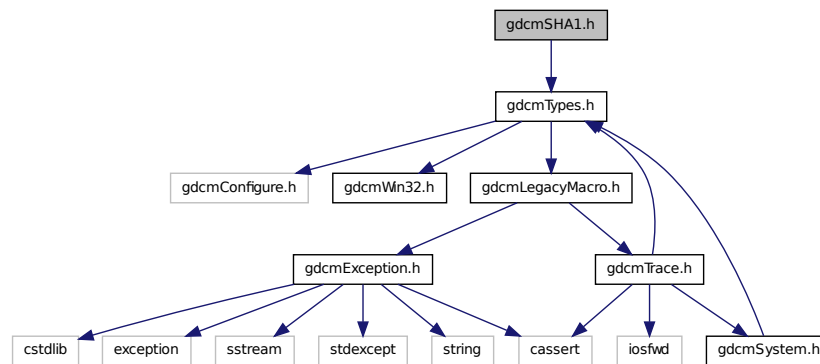
Namespaces

- [gdcm](#)
- [gdcm::network](#)

Constant Groups

- [gdcm](#)
- [gdcm::network](#)

Include dependency graph for gdcmSHA1.h:



Classes

- class `gdcm::SHA1`

Class for [SHA1](#).

Namespaces

- `gdcm`

Constant Groups

- `gdcm`

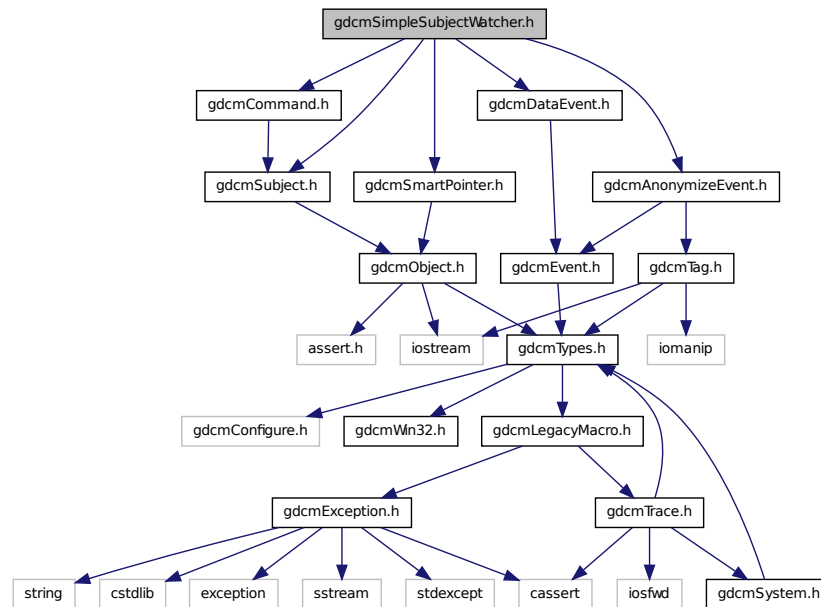
26.211 gdcmSimpleSubjectWatcher.h File Reference

```

#include "gdcmSubject.h"
#include "gdcmCommand.h"
#include "gdcmSmartPointer.h"
#include "gdcmAnonymizeEvent.h"
#include "gdcmDataEvent.h"

```

Include dependency graph for `gdcmSimpleSubjectWatcher.h`:



Classes

- class [gdcm::SimpleSubjectWatcher](#)

SimpleSubjectWatcher This is a typical *Subject* Watcher class. It will observe all events.

Namespaces

- [gdcm](#)

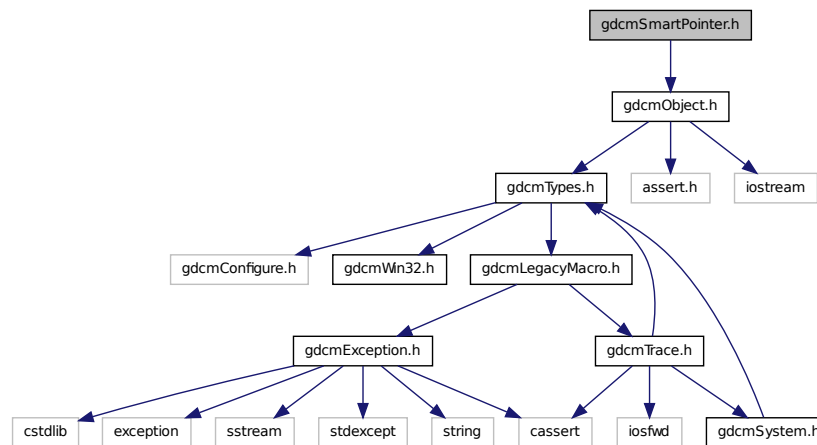
Constant Groups

- [gdcm](#)

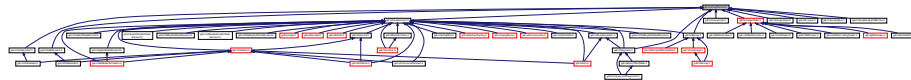
26.212 gdcmSmartPointer.h File Reference

```
#include "gdcmObject.h"
```

Include dependency graph for gdcmSmartPointer.h:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcm::SmartPointer< ObjectType >`
Class for Smart Pointer.

Namespaces

- `gdcm`

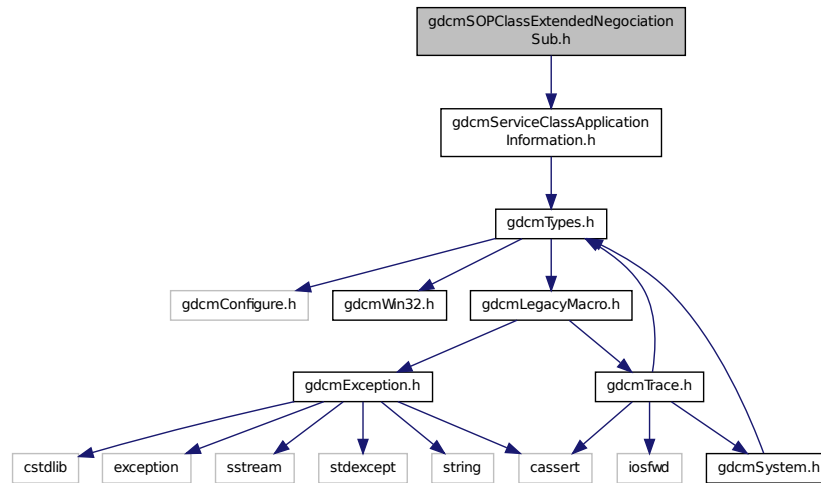
Constant Groups

- `gdcm`

26.213 gdcmSOPClassExtendedNegociationSub.h File Reference

```
#include "gdcmServiceClassApplicationInformation.h"
```

Include dependency graph for `gdcmSOPClassExtendedNegociationSub.h`:



Classes

- class [gdcm::network::SOPClassExtendedNegociationSub](#)

SOPClassExtendedNegociationSub PS 3.7 [Table D.3-11](#) SOP CLASS EXTENDED NEGOTIATION SUB-ITEM FIELDS (A-ASSOCIATE-RQ and A-ASSOCIATE-AC)

Namespaces

- [gdcm](#)
- [gdcm::network](#)

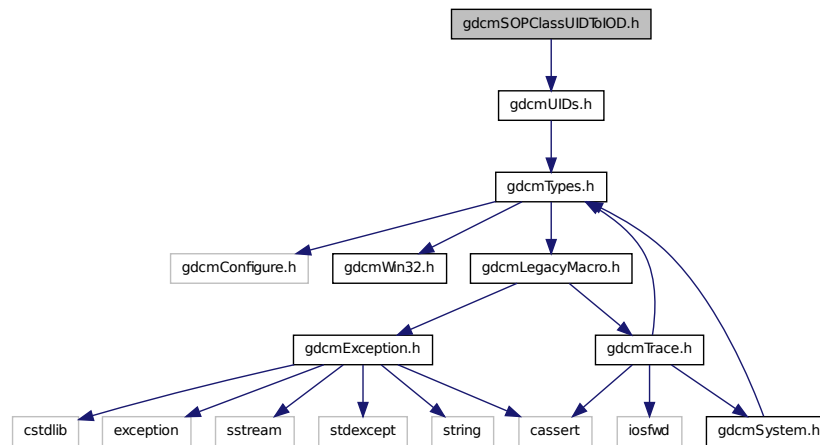
Constant Groups

- [gdcm](#)
- [gdcm::network](#)

26.214 gdcmSOPClassUIDToIOD.h File Reference

```
#include "gdcmUIDs.h"
```

Include dependency graph for gdcmSOPClassUIDToIOD.h:



Classes

- class [gdcm::SOPClassUIDToIOD](#)

Class convert a class SOP Class UID into [IOD](#).

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

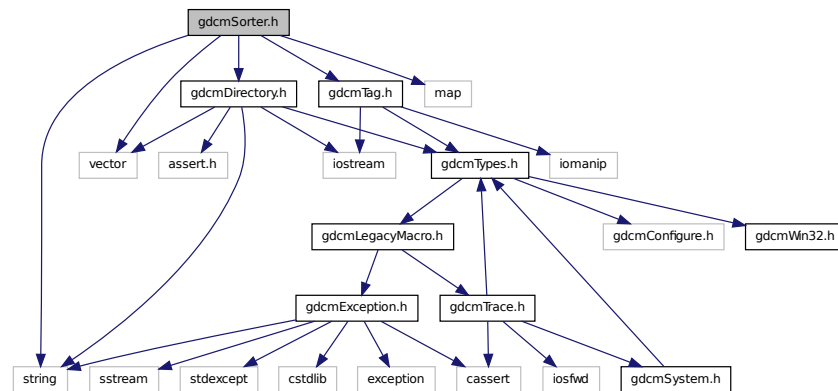
26.215 gdcmSorter.h File Reference

```

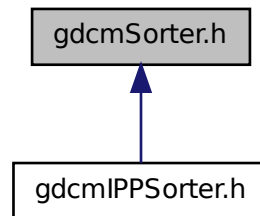
#include "gdcmDirectory.h"
#include "gdcmTag.h"
#include <vector>
#include <string>
#include <map>

```

Include dependency graph for `gdcmSorter.h`:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Sorter](#)

[Sorter](#) General class to do sorting using a custom function You simply need to provide a function of type: [Sorter::Sort-Function](#).

Namespaces

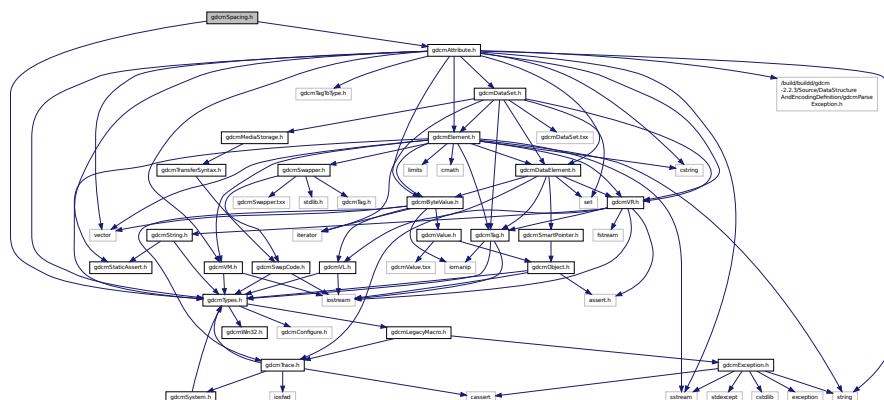
- [gdcm](#)

Constant Groups

- [gdcm](#)

- `std::ostream & gdcm::operator<< (std::ostream &os, const Sorter &s)`

```
#include "gdcmTypes.h"
#include "gdcmAttribute.h"
Include dependency graph for gdcmSpacing.h:
```



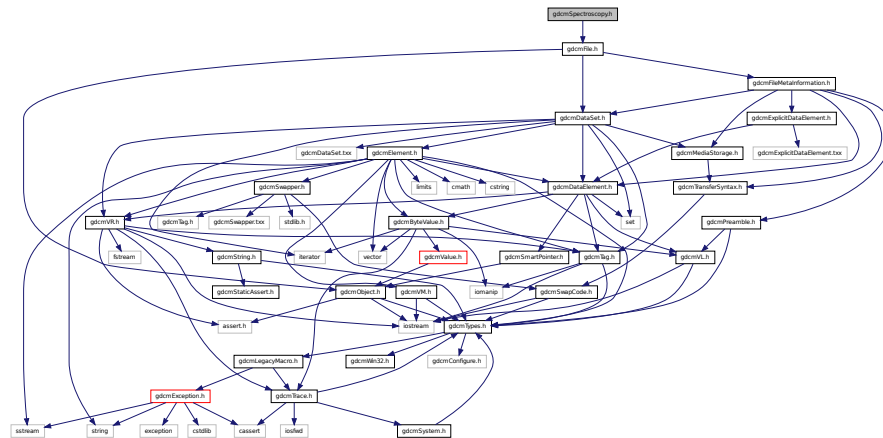
- class `gdcm::Spacing`

Class for *Spacing*.

- **gdcm**

- gdc

```
#include "gdcmFile.h"
```



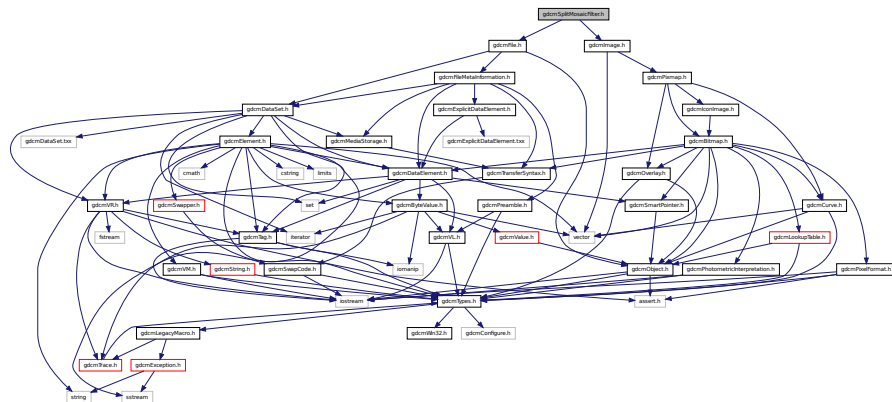
- class `gdcm::Spectroscopy`
Spectroscopy class.

- **gdcm**

- **gdcm**

```
#include "gdcmFile.h"
#include "gdcmImage.h"
```


Include dependency graph for `gdcmSplitMosaicFilter.h`:



Classes

- class `gdcm::SplitMosaicFilter`

SplitMosaicFilter class Class to reshuffle bytes for a SIEMENS Mosaic image Siemens CSA *Image* Header CSA:= Common Siemens Architecture, sometimes also known as Common syngo Architecture.

Namespaces

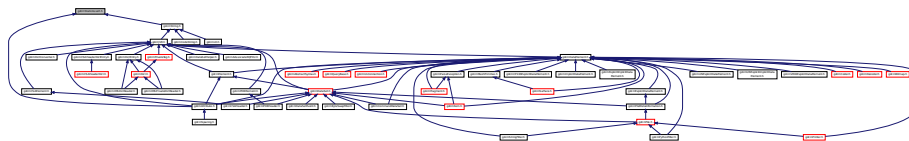
- **gdcm**

Constant Groups

- **gdcm**

26.219 gdcmStaticAssert.h File Reference

This graph shows which files directly or indirectly include this file:



Classes

- struct `gdcm::static_assert_test< x >`
- struct `gdcm::STATIC_ASSERTION_FAILURE< x >`
- struct `gdcm::STATIC_ASSERTION_FAILURE< true >`

Namespaces

- [gdc](#)

Constant Groups

- [gdc](#)

Macros

- `#define GDCM_DO_JOIN(X, Y) GDCM_DO_JOIN2(X,Y)`
- `#define GDCM_DO_JOIN2(X, Y) X##Y`
- `#define GDCM_JOIN(X, Y) GDCM_DO_JOIN(X, Y)`
- `#define GDCM_STATIC_ASSERT(B)`

*The GDCM_JOIN + **LINE** is needed to create a uniq identifier.*

26.219.1 Macro Definition Documentation

26.219.1.1 `#define GDCM_DO_JOIN(X, Y) GDCM_DO_JOIN2(X,Y)`

26.219.1.2 `#define GDCM_DO_JOIN2(X, Y) X##Y`

26.219.1.3 `#define GDCM_JOIN(X, Y) GDCM_DO_JOIN(X, Y)`

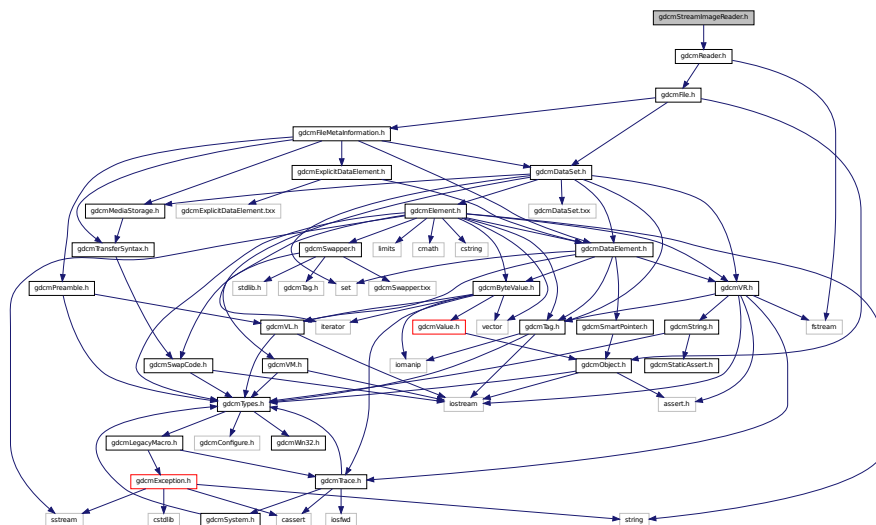
26.219.1.4 `#define GDCM_STATIC_ASSERT(B)`

Value:

```
typedef ::gdc::static_assert_test<\
    sizeof(::gdc::STATIC_ASSERTION_FAILURE< (bool) ( B ) >>)\
    GDCM_JOIN(gdc_static_assert_typedef_, __LINE__)
```

The GDCM_JOIN + **LINE** is needed to create a uniq identifier.

```
#include "gdcmReader.h"
Include dependency graph for gdcmStreamImageReader.h:
```

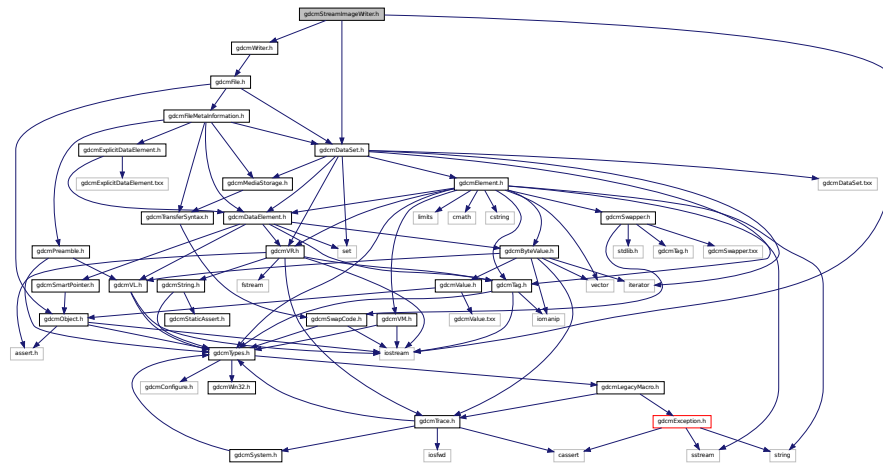


- class `gdcm::StreamImageReader`
StreamImageReader.

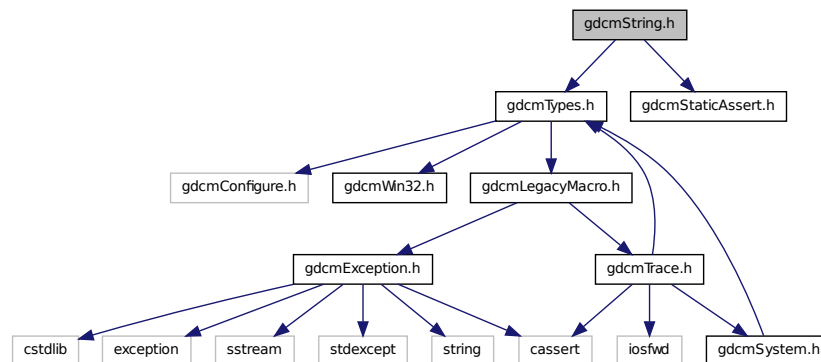
- **gdcm**

- **gdcm**

```
#include "gdcmWriter.h"
#include <iostream>
#include "gdcmDataSet.h"
```



Include dependency graph for gdcmString.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::String< TDelimiter, TMaxLength, TPadChar >](#)
String.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

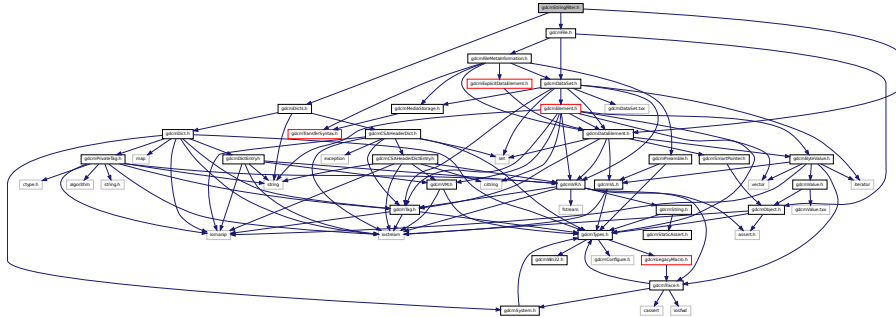
Functions

- template<char TDelimiter, unsigned int TMaxLength, char TPadChar>
std::istream & [gdcm::operator>>](#) (std::istream &is, String< TDelimiter, TMaxLength, TPadChar > &ms)

26.223 gdcmStringFilter.h File Reference

```
#include "gdcmDataElement.h"
```

```
#include "gdcmDicts.h"
#include "gdcmFile.h"
Include dependency graph for gdcmStringFilter.h:
```



Classes

- class [gdcm::StringFilter](#)

[StringFilter](#) [StringFilter](#) is the class that make `gdcm2.x` looks more like `gdcm1` and transform the binary blob contained in a [DataElement](#) into a string, typically this is a nice feature to have for wrapped language.

Namespaces

- [gdcm](#)

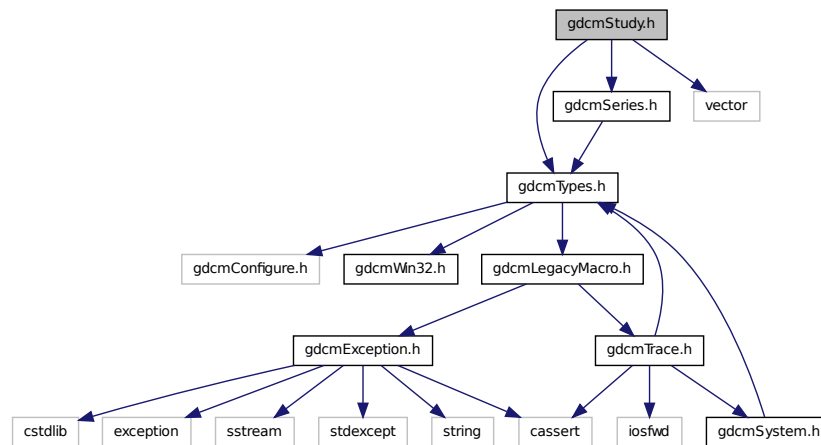
Constant Groups

- [gdcm](#)

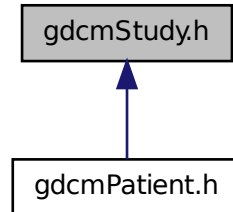
26.224 gdcmStudy.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmSeries.h"
#include <vector>
```

Include dependency graph for gdcmStudy.h:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcm::Study`
Study.

Namespaces

- `gdcm`

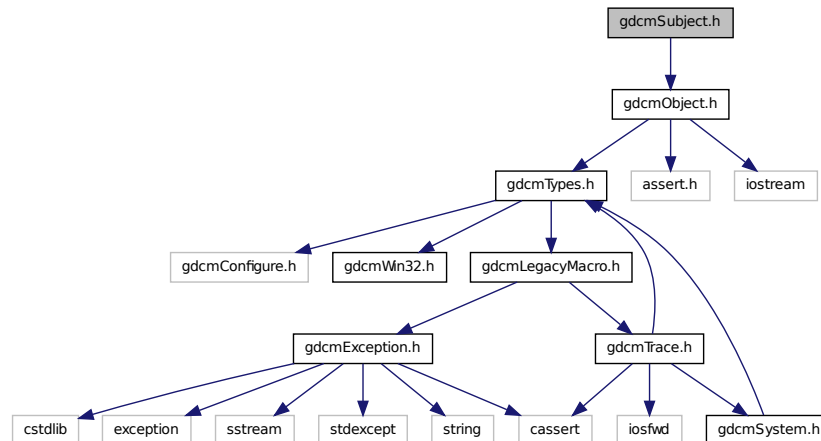
Constant Groups

- `gdcm`

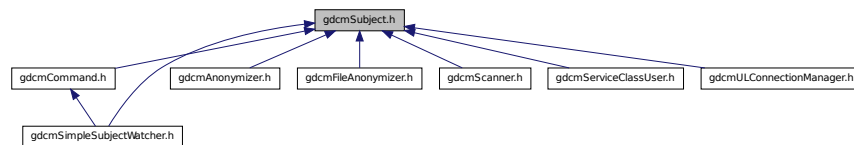
26.225 gdcmSubject.h File Reference

```
#include "gdcmObject.h"
```

Include dependency graph for gdcmSubject.h:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcm::Subject`
Subject.

Namespaces

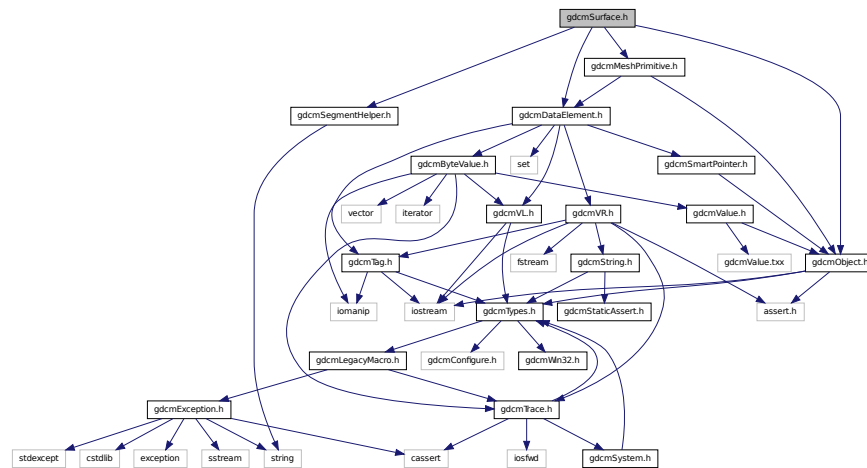
- `gdcm`

Constant Groups

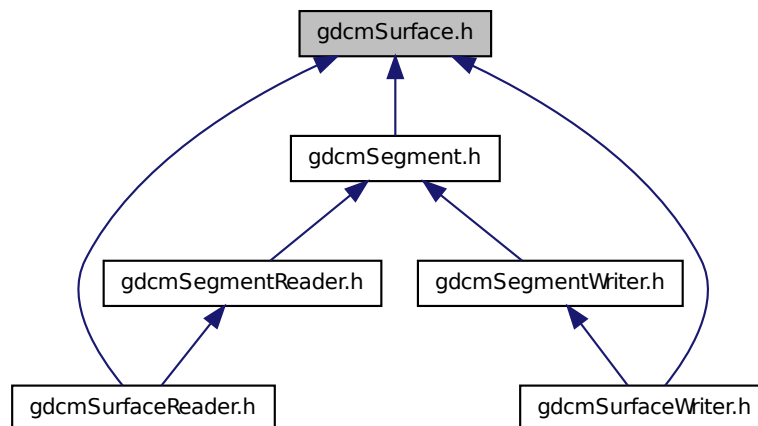
- `gdcm`

26.226 gdcmSurface.h File Reference

```
#include <gdcmObject.h>
#include <gdcmDataElement.h>
#include <gdcmMeshPrimitive.h>
#include "gdcmSegmentHelper.h"
Include dependency graph for gdcmSurface.h:
```



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Surface](#)

This class defines a SURFACE IE. This members are taken from required surface mesh module attributes.

Namespaces

- [gdc](#)

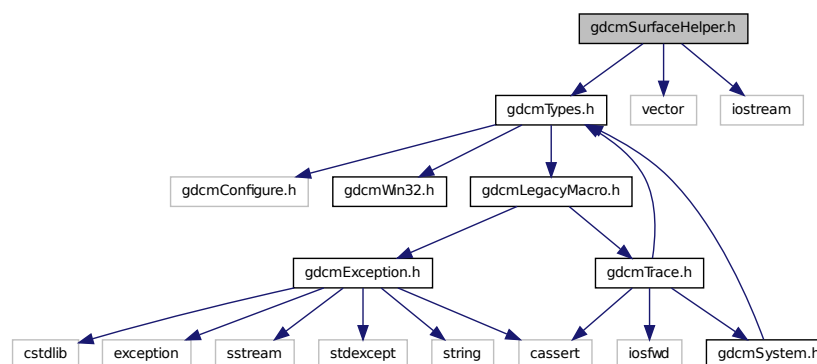
Constant Groups

- [gdc](#)

26.227 gdcSurfaceHelper.h File Reference

```
#include "gdcTypes.h"
#include <vector>
#include <iostream>
```

Include dependency graph for gdcSurfaceHelper.h:



Classes

- class [gdc::SurfaceHelper](#)
SurfaceHelper Helper class for *Surface* object.

Namespaces

- [gdc](#)

Constant Groups

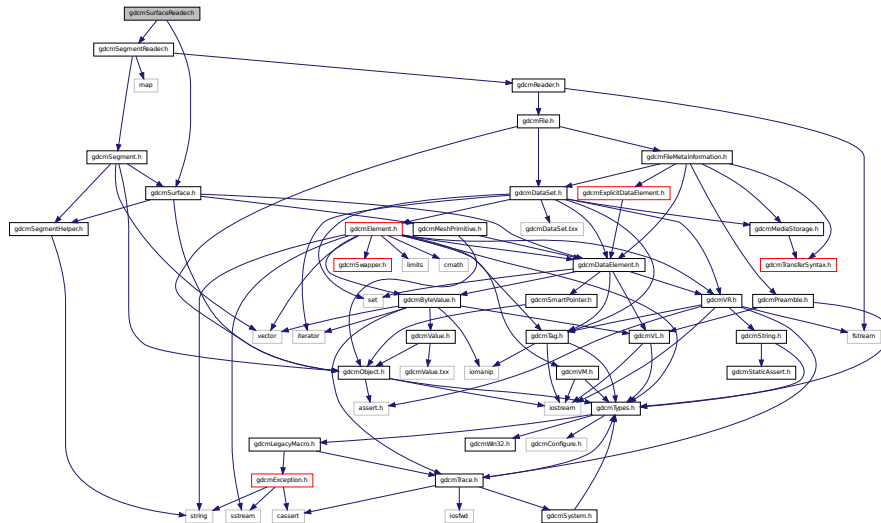
- [gdc](#)

26.228 gdcmSurfaceReader.h File Reference

```
#include <gdcmSegmentReader.h>
```

```
#include <gdcmSurface.h>
```

Include dependency graph for gdcmSurfaceReader.h:



Classes

- class [gdcm::SurfaceReader](#)

This class defines a SURFACE IE reader. It reads surface mesh module attributes.

Namespaces

- [gdcm](#)

Constant Groups

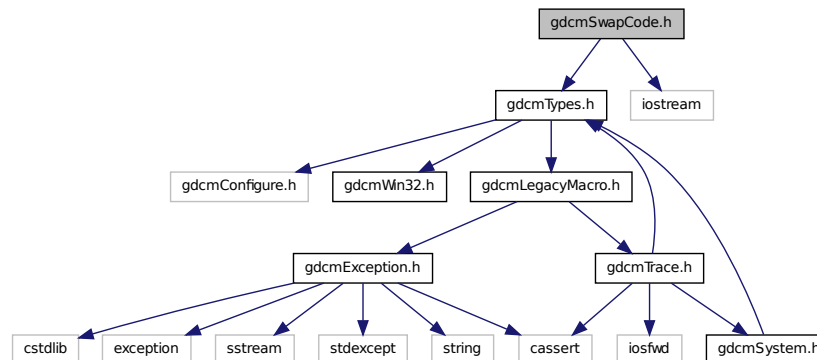
- [gdcm](#)

26.229 gdcmSurfaceWriter.h File Reference

```
#include <gdcmSegmentWriter.h>
```

```
#include <gdcmSurface.h>
```


Include dependency graph for gdcmSwapCode.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::SwapCode](#)
SwapCode representation.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

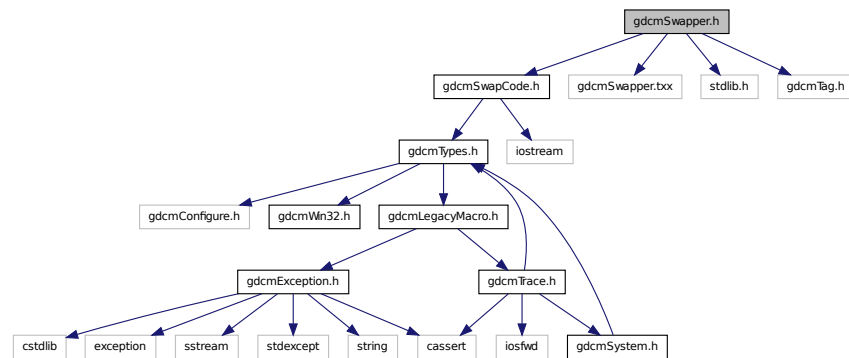
Functions

- `std::ostream & gdcm::operator<< (std::ostream &os, const SwapCode &sc)`

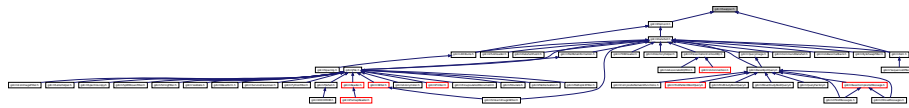
26.231 gdcmSwapper.h File Reference

```
#include "gdcmSwapCode.h"
#include "gdcmSwapper.txx"
```

Include dependency graph for `gdcmSwapper.h`:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcm::SwapperDoOp`
- class `gdcm::SwapperNoOp`

Namespaces

- `gdcm`

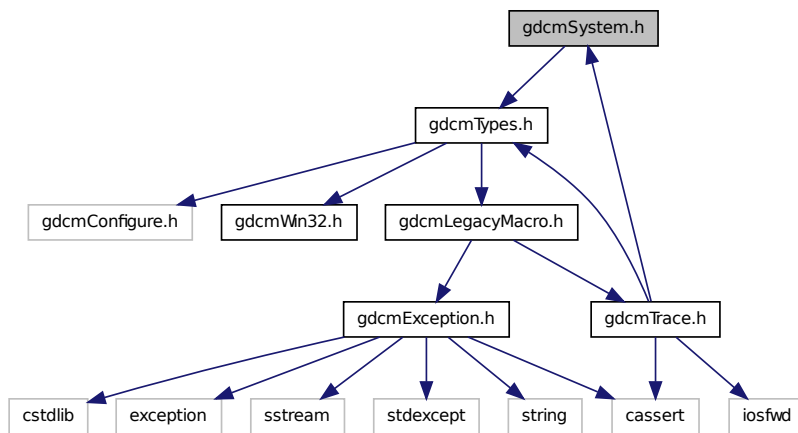
Constant Groups

- `gdcm`

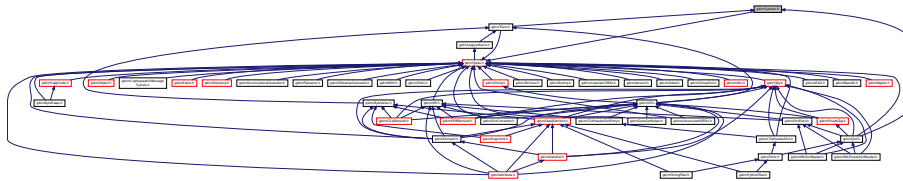
26.232 gdcmSystem.h File Reference

```
#include "gdcmTypes.h"
```

Include dependency graph for gdcmSystem.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::System](#)
Class to do system operation.

Namespaces

- [gdcm](#)

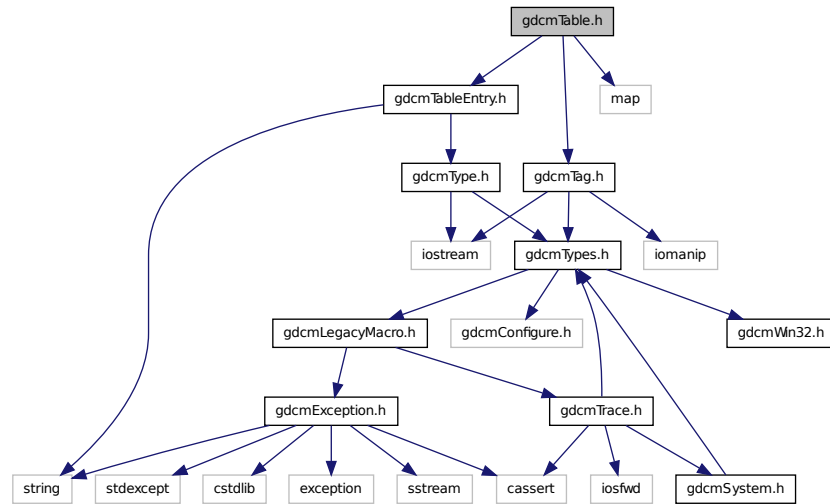
Constant Groups

- [gdcm](#)

26.233 gdcmTable.h File Reference

```
#include "gdcmTableEntry.h"
#include "gdcmTag.h"
#include <map>
```

Include dependency graph for `gdcmTable.h`:



Classes

- class `gdcm::Table`

Table.

Namespaces

- `gdcm`

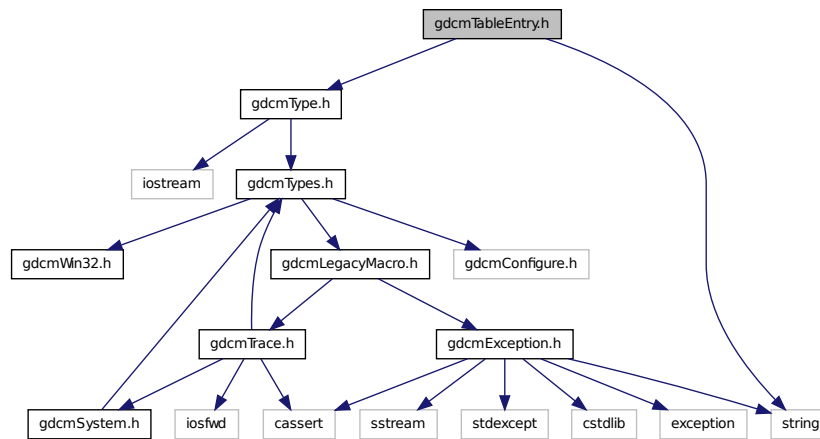
Constant Groups

- `gdcm`

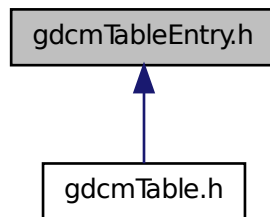
26.234 `gdcmTableEntry.h` File Reference

```
#include "gdcmType.h"
#include <string>
```


Include dependency graph for gdcmTableEntry.h:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcm::TableEntry`
TableEntry.

Namespaces

- `gdcm`

Constant Groups

- `gdcm`

Namespaces

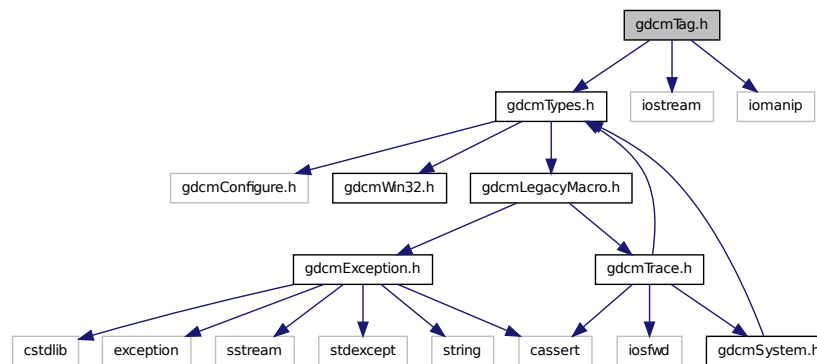
- [gdcm](#)

Constant Groups

- [gdcm](#)

26.236 gdcmTag.h File Reference

```
#include "gdcmTypes.h"
#include <iostream>
#include <iomanip>
Include dependency graph for gdcmTag.h:
```



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Tag](#)

Class to represent a DICOM Data *Element* (*Attribute*) *Tag* (Group, *Element*). Basically an `uint32_t` which can also be expressed as two `uint16_t` (group and element)

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

Functions

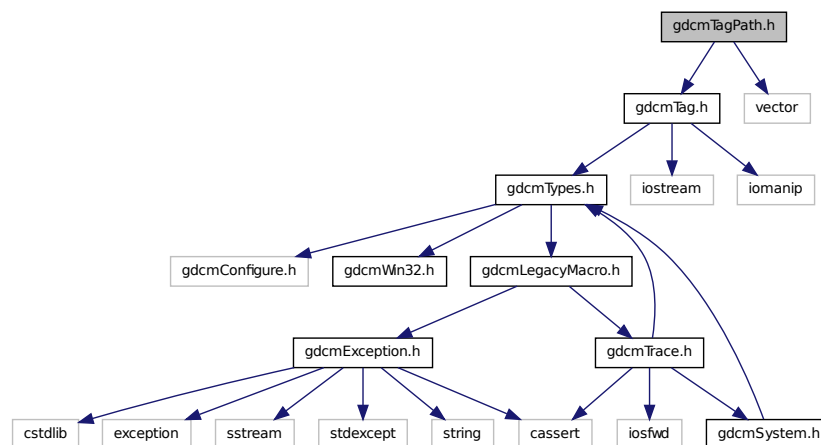
- `std::ostream & gdcm::operator<< (std::ostream &_os, const Tag &_val)`
- `std::istream & gdcm::operator>> (std::istream &_is, Tag &_val)`

26.237 gdcmTagPath.h File Reference

```
#include "gdcmTag.h"
```

```
#include <vector>
```

Include dependency graph for `gdcmTagPath.h`:



Classes

- class [gdcm::TagPath](#)
class to handle a path of tag.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

26.238 gdcmTagToVR.h File Reference

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

Functions

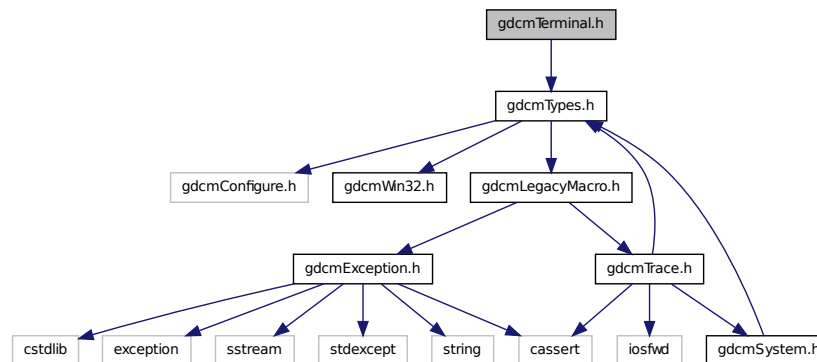
- VR::VRType [gdcm::GetVRFromTag](#) (Tag const &tag)

26.239 gdcmtar.man File Reference

26.240 gdcmTerminal.h File Reference

```
#include "gdcmTypes.h"
```

Include dependency graph for gdcmTerminal.h:



Namespaces

- [gdcm](#)
- [gdcm::terminal](#)

Class for Terminal Allow one to print in color in a shell.

Constant Groups

- [gdcm](#)
- [gdcm::terminal](#)

Class for Terminal Allow one to print in color in a shell.

Enumerations

- enum `gdcmm::terminal::Attribute` {
 `gdcmm::terminal::reset` = 0,
 `gdcmm::terminal::bright` = 1,
 `gdcmm::terminal::dim` = 2,
 `gdcmm::terminal::underline` = 3,
 `gdcmm::terminal::blink` = 5,
 `gdcmm::terminal::reverse` = 7,
 `gdcmm::terminal::hidden` = 8 }
- enum `gdcmm::terminal::Color` {
 `gdcmm::terminal::black` = 0,
 `gdcmm::terminal::red`,
 `gdcmm::terminal::green`,
 `gdcmm::terminal::yellow`,
 `gdcmm::terminal::blue`,
 `gdcmm::terminal::magenta`,
 `gdcmm::terminal::cyan`,
 `gdcmm::terminal::white` }
- enum `gdcmm::terminal::Mode` {
 `gdcmm::terminal::CONSOLE` = 0,
 `gdcmm::terminal::VT100` }

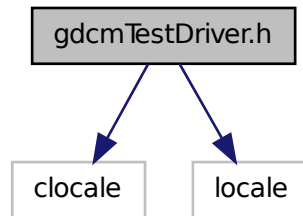
Functions

- `GDCM_EXPORT std::string gdcmm::terminal::setattribute` (Attribute att)
- `GDCM_EXPORT std::string gdcmm::terminal::setbgcolor` (Color c)
- `GDCM_EXPORT std::string gdcmm::terminal::setfgcolor` (Color c)
- `GDCM_EXPORT void gdcmm::terminal::setmode` (Mode m)

26.241 gdcmmTestDriver.h File Reference

```
#include <clocale>
#include <locale>
```

Include dependency graph for gdcmTestDriver.h:

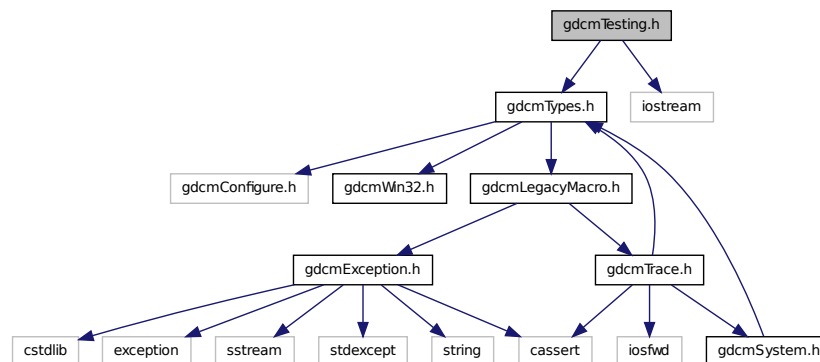


26.242 gdcmTesting.h File Reference

```
#include "gdcmTypes.h"
```

```
#include <iostream>
```

Include dependency graph for gdcmTesting.h:



Classes

- class [gdcm::Testing](#)
class for testing

Namespaces

- [gdcm](#)

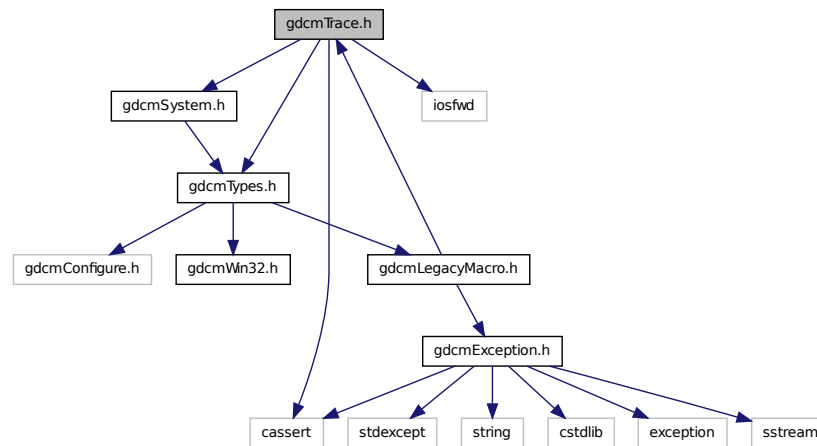
Constant Groups

- [gdcm](#)

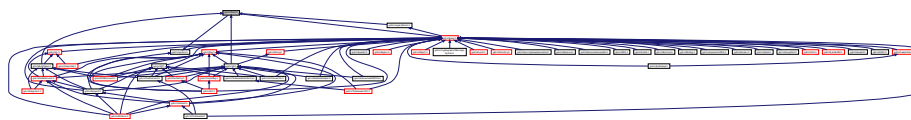
26.243 gdcmTrace.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmSystem.h"
#include <iosfwd>
#include <cassert>
```

Include dependency graph for gdcmTrace.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Trace](#)
Trace.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

Macros

- #define [GDCM_FUNCTION](#) "<unknown>"
- #define [gdcmAssertAlwaysMacro](#)(arg) [gdcmAssertMacro](#)(arg)
AssertAlways.
- #define [gdcmAssertMacro](#)(arg)
Assert.
- #define [gdcmDebugMacro](#)(msg)
Debug.
- #define [gdcmErrorMacro](#)(msg)
Error this is pretty bad, more than just warning It could mean lost of data, something not handle...
- #define [gdcmWarningMacro](#)(msg)
Warning.

26.243.1 Macro Definition Documentation

26.243.1.1 #define [GDCM_FUNCTION](#) "<unknown>"

26.243.1.2 #define [gdcmAssertAlwaysMacro](#)(arg) [gdcmAssertMacro](#)(arg)

[AssertAlways.](#)

Parameters

<i>arg</i>	argument to test An easy solution to pass also a message is to do: gdcmAssertMacro ("my message" && 2 < 3)
------------	--

Referenced by [gdcm::VR::Write\(\)](#).

26.243.1.3 #define [gdcmAssertMacro](#)(arg)

Value:

```
{
    if( !(arg) )
    {
        std::ostringstream osmacro;
        osmacro << "Assert: In " __FILE__ ", line " << __LINE__
        << ", function " << GDCM\_FUNCTION
        << "\n\n";
        std::ostream &_os = gdcm::Trace::GetErrorStream();
        _os << osmacro.str() << std::endl;
        assert ( arg );
    }
}
```

[Assert.](#)

Parameters

<i>arg</i>	argument to test An easy solution to pass also a message is to do: <code>gdcmaAssertMacro("my message" && 2 < 3)</code>
------------	--

Referenced by `gdcma::PixelFormat::SetSamplesPerPixel()`.

26.243.1.4 `#define gdcmaDebugMacro(msg)`

Value:

```
{
    if( gdcma::Trace::GetDebugFlag() )
    {
        std::ostringstream osmacro;
        osmacro << "Debug: In " __FILE__ ", line " << __LINE__
        << ", function " << GDCM_FUNCTION << '\n'
        << "Last system error was: "
        << gdcma::System::GetLastSystemError() << '\n' << msg;
        std::ostream &_os = gdcma::Trace::GetDebugStream();
        _os << osmacro.str() << "\n\n" << std::endl;
    }
}
```

Debug.

Parameters

<i>msg</i>	message part
------------	--------------

Referenced by `gdcma::ByteValue::ByteValue()`, `gdcma::SequenceOfItems::Read()`, `gdcma::Item::Read()`, `gdcma::VR::Read()`, `gdcma::SequenceOfFragments::ReadPreValue()`, `gdcma::SequenceOfFragments::ReadValue()`, and `gdcma::ByteValue::SetLength()`.

26.243.1.5 `#define gdcmaErrorMacro(msg)`

Value:

```
{
    if( gdcma::Trace::GetErrorFlag() )
    {
        std::ostringstream osmacro;
        osmacro << "Error: In " __FILE__ ", line " << __LINE__
        << ", function " << GDCM_FUNCTION << '\n'
        << msg << "\n\n";
        std::ostream &_os = gdcma::Trace::GetErrorStream();
        _os << osmacro.str() << std::endl;
    }
}
```

Error this is pretty bad, more than just warning It could mean lost of data, something not handle...

Parameters

<i>msg</i>	second message part
------------	---------------------

Referenced by `gdcma::CommandDataSet::Insert()`, `gdcma::FileMetaInformation::Insert()`, `gdcma::DataSet::Insert()`, `gdcma::Item::Read()`, and `gdcma::Fragment::ReadBacktrack()`.

26.243.1.6 `#define gdcmaWarningMacro(msg)`

Value:

```

{
    if( gdcm::Trace::GetWarningFlag() )
    {
        std::ostringstream osmacro;
        osmacro << "Warning: In " __FILE__ ", line " << __LINE__
            << ", function " << GDCM_FUNCTION << "\n"
            << msg << "\n\n";
        std::ostream &_os = gdcm::Trace::GetWarningStream();
        _os << osmacro.str() << std::endl;
    }
}

```

Warning.

Parameters

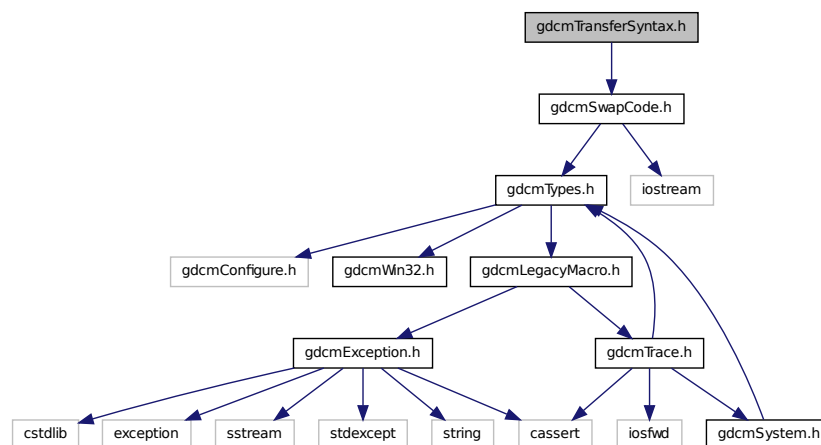
<i>msg</i>	message part
------------	--------------

Referenced by `gdcm::DataSet::InsertDataElement()`, `gdcm::SequenceOfItems::Read()`, `gdcm::Item::Read()`, `gdcm::Fragment::ReadBacktrack()`, `gdcm::Fragment::ReadValue()`, `gdcm::SequenceOfFragments::ReadValue()`, and `gdcm::Item::Write()`.

26.244 gdcmTransferSyntax.h File Reference

```
#include "gdcmSwapCode.h"
```

Include dependency graph for `gdcmTransferSyntax.h`:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::TransferSyntax](#)
Class to manipulate Transfer Syntax.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

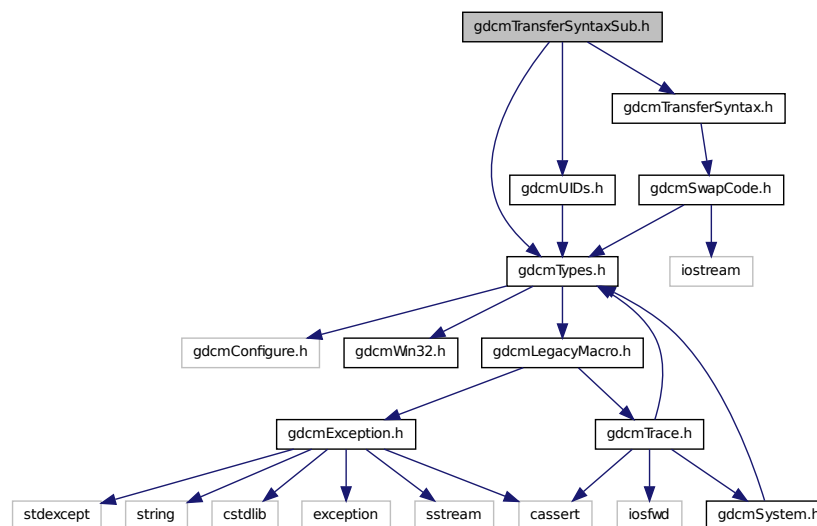
Functions

- `std::ostream & gdcm::operator<< (std::ostream &_os, const TransferSyntax &ts)`

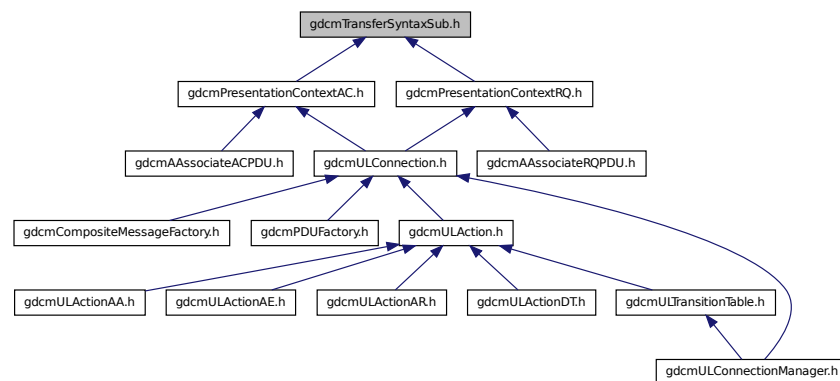
26.245 gdcmTransferSyntaxSub.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmTransferSyntax.h"
#include "gdcmUIDs.h"
```

Include dependency graph for gdcmTransferSyntaxSub.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::network::TransferSyntaxSub](#)

TransferSyntaxSub Table 9-15 TRANSFER SYNTAX SUB-ITEM FIELDS.

Namespaces

- [gdcm](#)
- [gdcm::network](#)

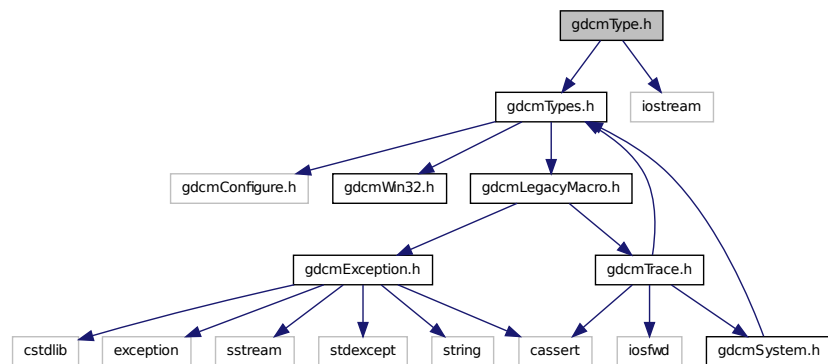
Constant Groups

- [gdcm](#)
- [gdcm::network](#)

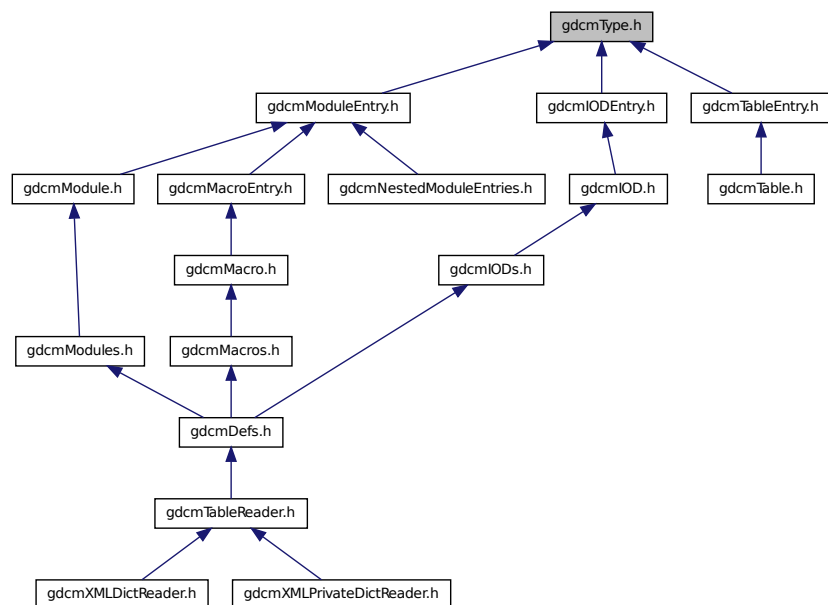
26.246 gdcmType.h File Reference

```
#include "gdcmTypes.h"
#include <iostream>
```

Include dependency graph for `gdcmType.h`:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcm::Type`
Type.

Namespaces

- [gdcm](#)

Constant Groups

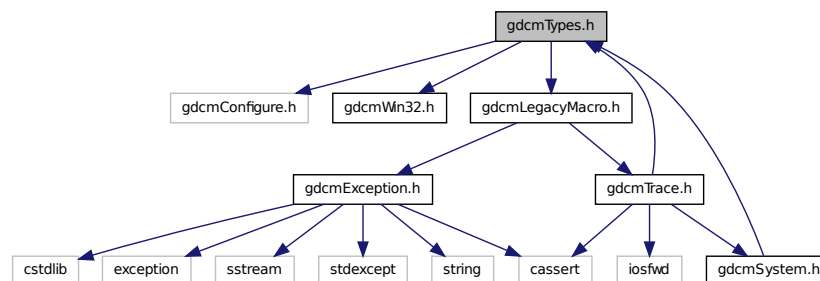
- [gdcm](#)

Functions

- `std::ostream & gdcm::operator<< (std::ostream &_os, const Type &val)`

26.247 gdcmTypes.h File Reference

```
#include "gdcmConfigure.h"
#include "gdcmWin32.h"
#include "gdcmLegacyMacro.h"
Include dependency graph for gdcmTypes.h:
```



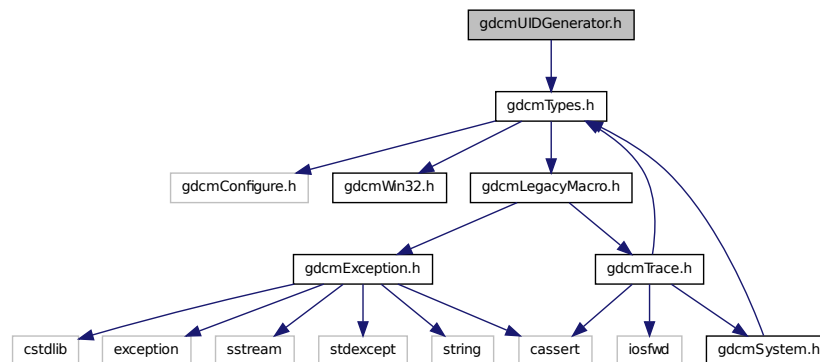
This graph shows which files directly or indirectly include this file:



26.248 gdcmUIDGenerator.h File Reference

```
#include "gdcmTypes.h"
```

Include dependency graph for `gdcmUIDGenerator.h`:



Classes

- class [gdcm::UIDGenerator](#)

Class for generating unique UID.

Namespaces

- [gdcm](#)

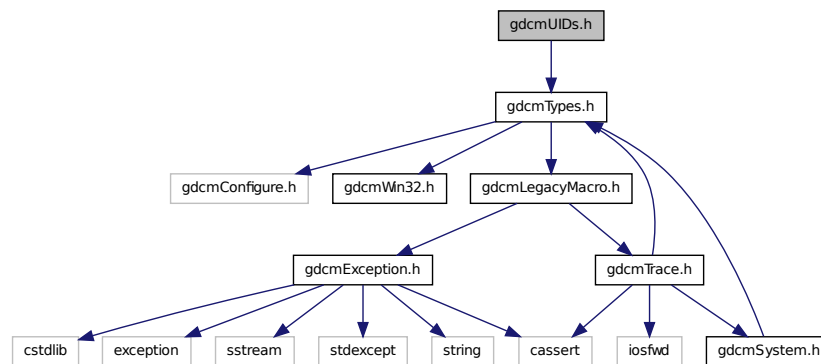
Constant Groups

- [gdcm](#)

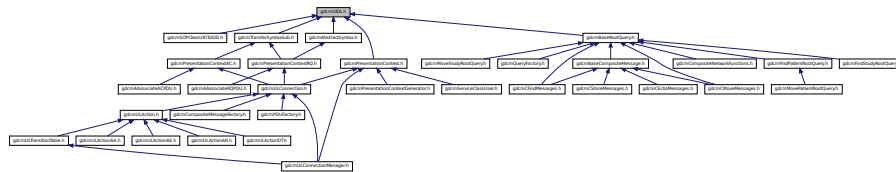
26.249 gdcmUIDs.h File Reference

```
#include "gdcmTypes.h"
```


Include dependency graph for gdcmUIDs.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::UIDs](#)
all known uids

Namespaces

- [gdcm](#)

Constant Groups

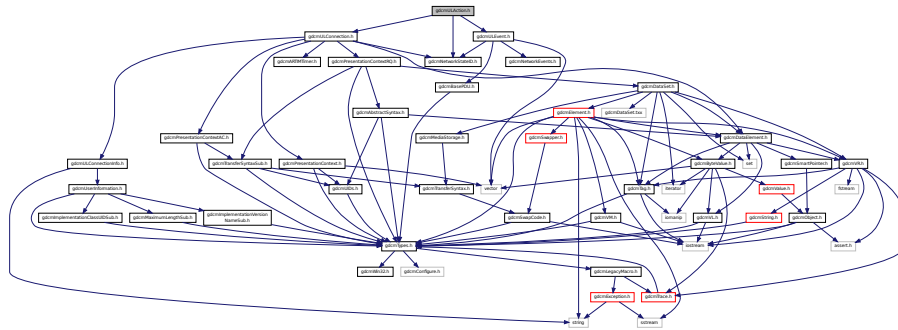
- [gdcm](#)

Functions

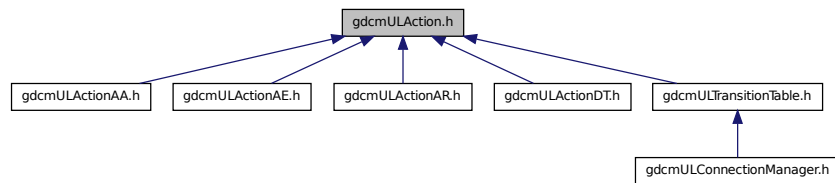
- `std::ostream & gdcm::operator<< (std::ostream &_os, const UIDs &uid)`

26.250 gdcmULAction.h File Reference

```
#include "gdcmNetworkStateID.h"
#include "gdcmULEvent.h"
#include "gdcmULConnection.h"
Include dependency graph for gdcmULAction.h:
```



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::network::ULAction](#)

[ULAction](#) A [ULConnection](#) in a given [ULState](#) can perform certain [ULActions](#). This base class provides the interface for running those [ULActions](#) on a given [ULConnection](#).

Namespaces

- [gdcm](#)
- [gdcm::network](#)

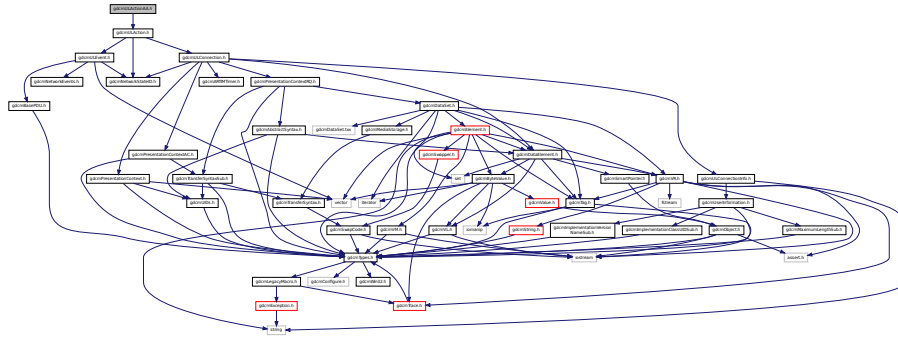
Constant Groups

- [gdcm](#)
- [gdcm::network](#)

26.251 gdcmULActionAA.h File Reference

```
#include "gdcmULAction.h"
```

Include dependency graph for gdcmULActionAA.h:



Classes

- class [gdcm::network::ULActionAA1](#)
- class [gdcm::network::ULActionAA2](#)
- class [gdcm::network::ULActionAA3](#)
- class [gdcm::network::ULActionAA4](#)
- class [gdcm::network::ULActionAA5](#)
- class [gdcm::network::ULActionAA6](#)
- class [gdcm::network::ULActionAA7](#)
- class [gdcm::network::ULActionAA8](#)

Namespaces

- [gdcm](#)
- [gdcm::network](#)

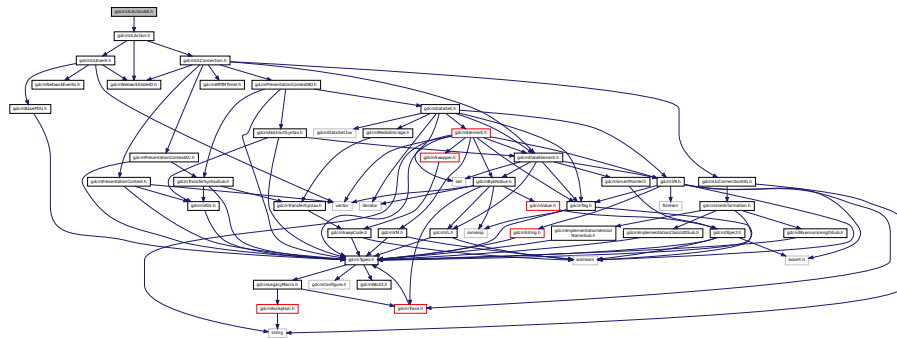
Constant Groups

- [gdcm](#)
- [gdcm::network](#)

26.252 gdcmULActionAE.h File Reference

```
#include "gdcmULAction.h"
```

Include dependency graph for `gdcmULActionAE.h`:



Classes

- class `gdcm::network::ULActionAE1`
- class `gdcm::network::ULActionAE2`
- class `gdcm::network::ULActionAE3`
- class `gdcm::network::ULActionAE4`
- class `gdcm::network::ULActionAE5`
- class `gdcm::network::ULActionAE6`
- class `gdcm::network::ULActionAE7`
- class `gdcm::network::ULActionAE8`

Namespaces

- `gdcm`
- `gdcm::network`

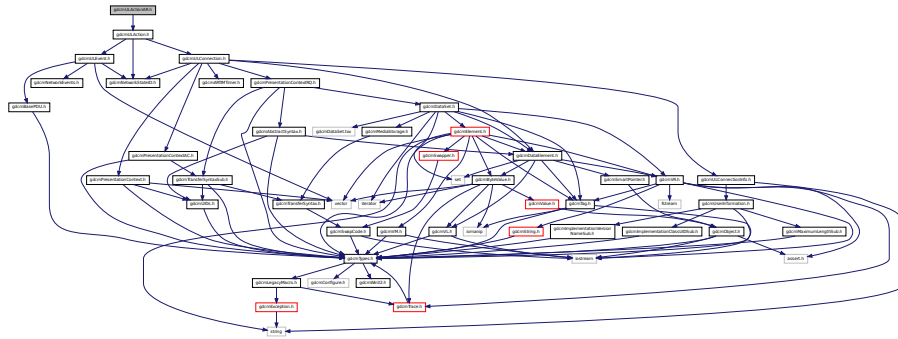
Constant Groups

- `gdcm`
- `gdcm::network`

26.253 gdcmULActionAR.h File Reference

```
#include "gdcmULAction.h"
```

Include dependency graph for gdcmULActionAR.h:



Classes

- class [gdcm::network::ULActionAR1](#)
- class [gdcm::network::ULActionAR10](#)
- class [gdcm::network::ULActionAR2](#)
- class [gdcm::network::ULActionAR3](#)
- class [gdcm::network::ULActionAR4](#)
- class [gdcm::network::ULActionAR5](#)
- class [gdcm::network::ULActionAR6](#)
- class [gdcm::network::ULActionAR7](#)
- class [gdcm::network::ULActionAR8](#)
- class [gdcm::network::ULActionAR9](#)

Namespaces

- [gdcm](#)
- [gdcm::network](#)

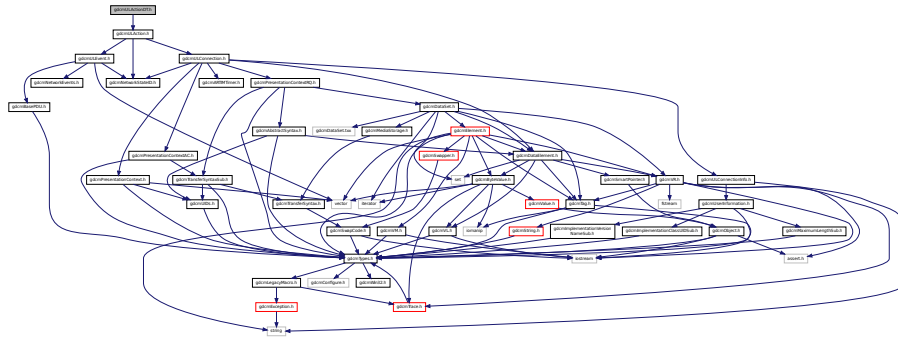
Constant Groups

- [gdcm](#)
- [gdcm::network](#)

26.254 gdcmULActionDT.h File Reference

```
#include "gdcmULAction.h"
```

Include dependency graph for `gdcmULActionDT.h`:



Classes

- class `gdcm::network::ULActionDT1`
- class `gdcm::network::ULActionDT2`

Namespaces

- `gdcm`
- `gdcm::network`

Constant Groups

- `gdcm`
- `gdcm::network`

26.255 gdcmULBasicCallback.h File Reference

```
#include "gdcmULConnectionCallback.h"
#include "gdcmDataSet.h"
#include <vector>
```

- class `gdcm::network::ULBasicCallback`

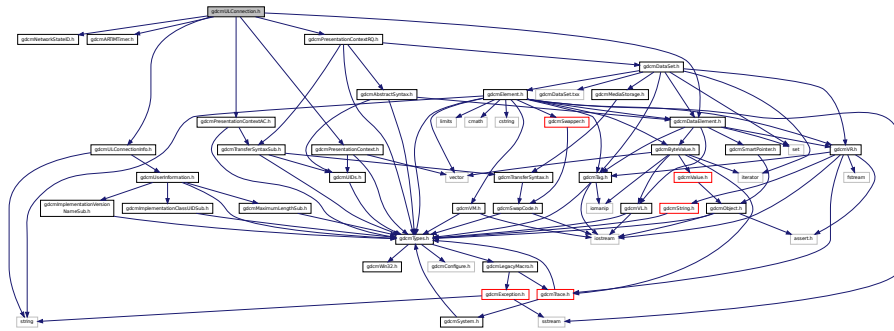
Namespaces

- ## Constant Groups

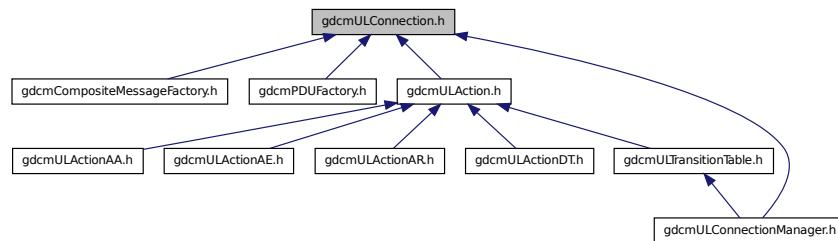
- ## 26.256 gdcmULConnection.h File Reference

Generated on Tue Jul 30 2013 22:32:05 for GDCM by Doxygen

Include dependency graph for `gdcmULConnection.h`:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcm::network::ULConnection`

ULConnection This is the class that contains the socket to another machine, and passes data through itself, as well as maintaining a sense of state.

Namespaces

- `gdcm`
- `gdcm::network`

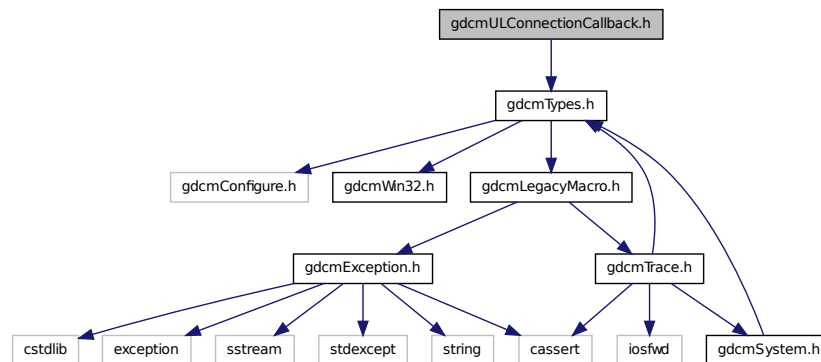
Constant Groups

- `gdcm`
- `gdcm::network`

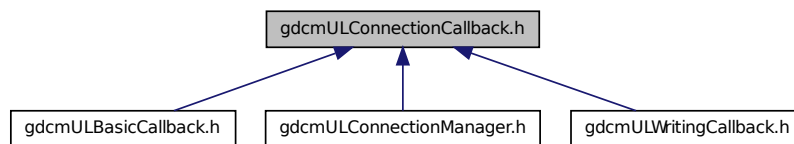
26.257 gdcmULConnectionCallback.h File Reference

```
#include "gdcmTypes.h"
```


Include dependency graph for gdcmULConnectionCallback.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::network::ULConnectionCallback](#)

Namespaces

- [gdcm](#)
- [gdcm::network](#)

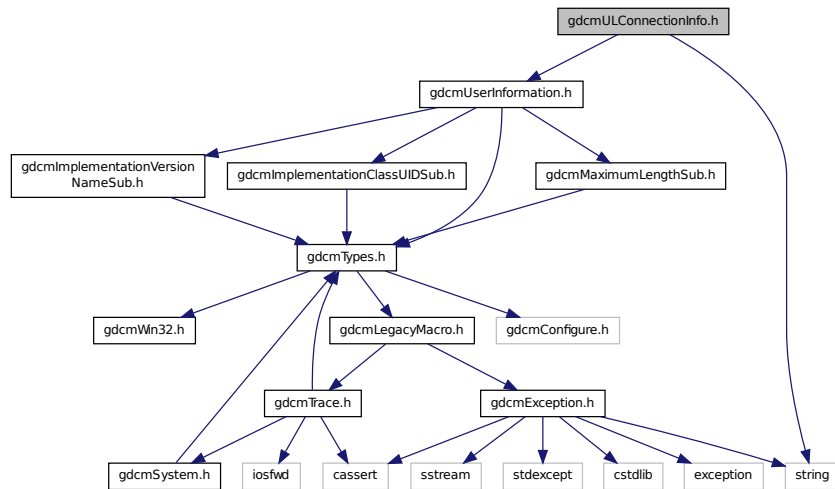
Constant Groups

- [gdcm](#)
- [gdcm::network](#)

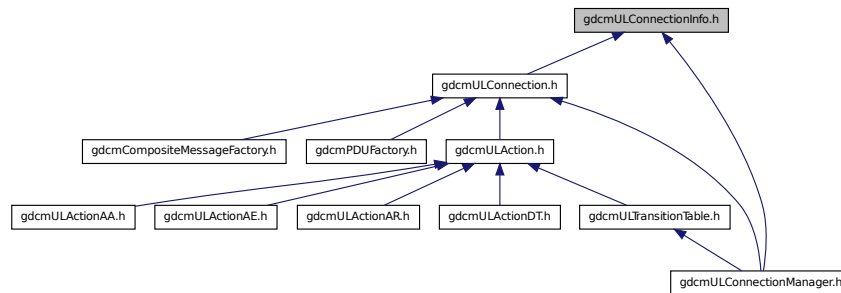
26.258 gdcmULConnectionInfo.h File Reference

```
#include "gdcmUserInformation.h"
#include <string>
```

Include dependency graph for `gdcmULConnectionInfo.h`:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::network::ULConnectionInfo](#)

[ULConnectionInfo](#) this class contains all the information about a particular connection as established by the user. That is, it's: User Information Calling AE Title Called AE Title IP address/computer name IP Port A connection must be established with this information, that's subsequently placed into various primitives for actual communication.

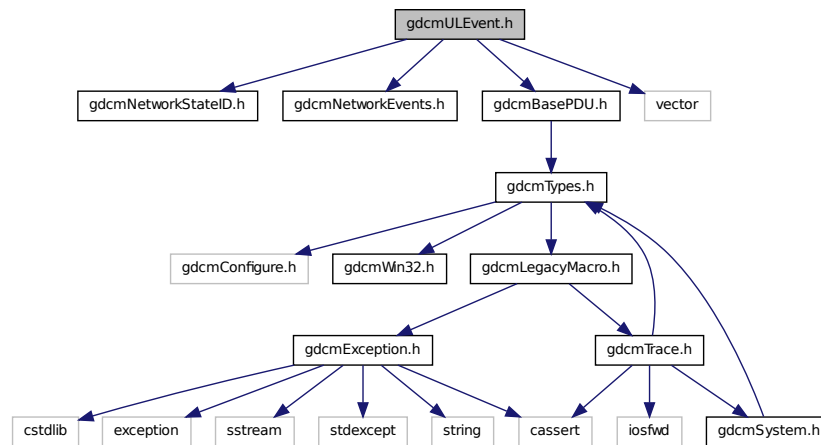
Namespaces

- [gdcm](#)
- [gdcm::network](#)

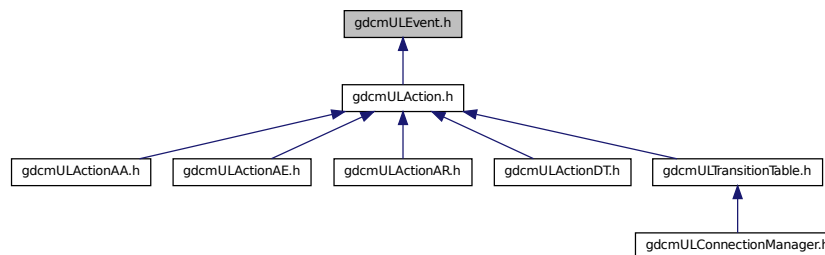
26.260 gdcmULEvent.h File Reference

```
#include "gdcmNetworkStateID.h"
#include "gdcmNetworkEvents.h"
#include "gdcmBasePDU.h"
#include <vector>
```

Include dependency graph for gdcmULEvent.h:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcm::network::UEvent`
UEvent base class for network events.

Namespaces

- `gdcm`
- `gdcm::network`

Constant Groups

- gdc
- gdc::network

26.261 gdcmlTransitionTable.h File Reference

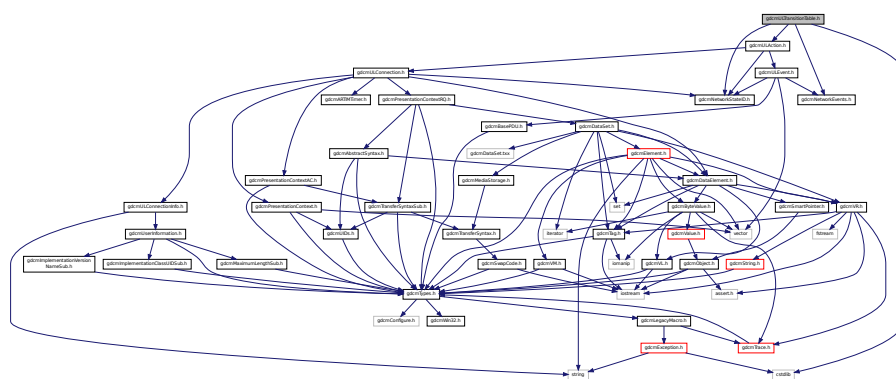
```
#include "gdcmNetworkStateID.h"
```

```
#include "gdcmNetworkEvents.h"
```

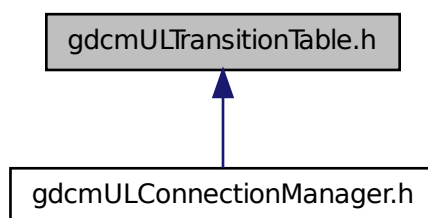
```
#include "gdcmULAction.h"
```

```
#include <cstdlib>
```

Include dependency graph for `gdcmlTransitionTable.h`:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcm::network::TableRow`
- struct `gdcm::network::Transition`
- class `gdcm::network::ULTransitionTable`

ULTransitionTable The transition table of all the ULEvents, new ULActions, and ULStates.

Namespaces

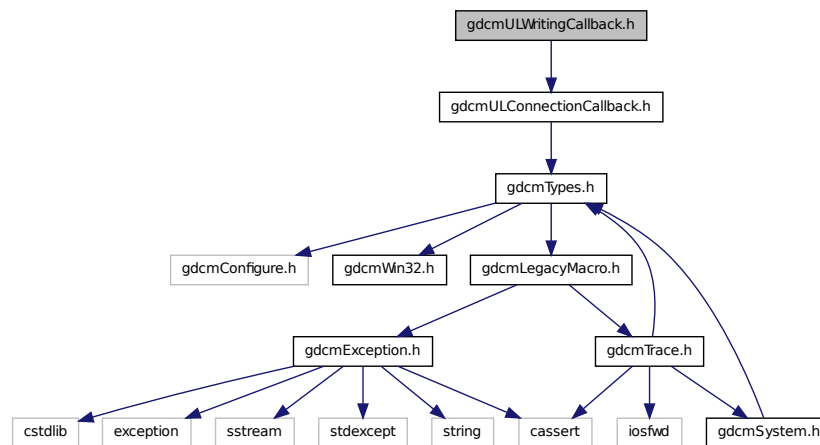
- [gdcm](#)
- [gdcm::network](#)

Constant Groups

- [gdcm](#)
- [gdcm::network](#)

26.262 gdcmULWritingCallback.h File Reference

#include "gdcmULConnectionCallback.h"
 Include dependency graph for gdcmULWritingCallback.h:



Classes

- class [gdcm::network::ULWritingCallback](#)

Namespaces

- [gdcm](#)
- [gdcm::network](#)

Constant Groups

- [gdcm](#)
- [gdcm::network](#)

[illegible]

- class `gdcm::UNExplicitImplicitDataElement`

Namespaces

- **gdcm**

- **gdcm**

```
#include "gdcmTypes.h"
```

```

graph TD
    A[gdcmUnpacker12Bits.h] --> B[gdcmTypes.h]
    B --> C[gdcmConfigure.h]
    B --> D[gdcmWn32.h]
    B --> E[gdcmLegacyMacro.h]
    E --> F[gdcmException.h]
    E --> G[gdcmTrace.h]
    F --> H[cstdlib]
    F --> I[exception]
    F --> J[sstream]
    F --> K[stdexcept]
    F --> L[string]
    F --> M[cassert]
    F --> N[iosfwd]
    G --> N
    G --> O[gdcmSystem.h]
  
```


Classes

- class [gdcm::Unpacker12Bits](#)

Pack/Unpack 12 bits pixel into 16bits.

Namespaces

- [gdcm](#)

Constant Groups

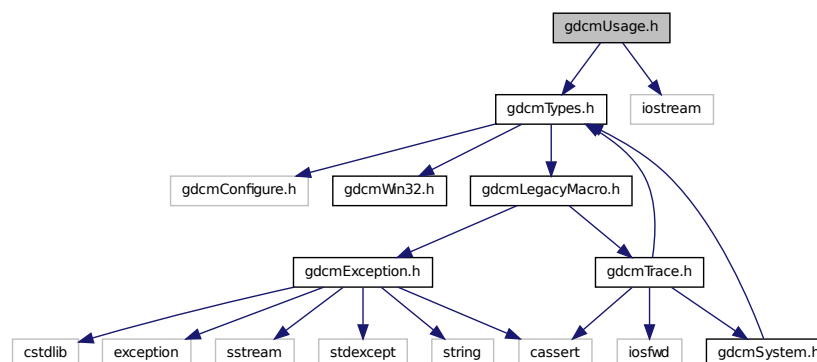
- [gdcm](#)

26.266 gdcmUsage.h File Reference

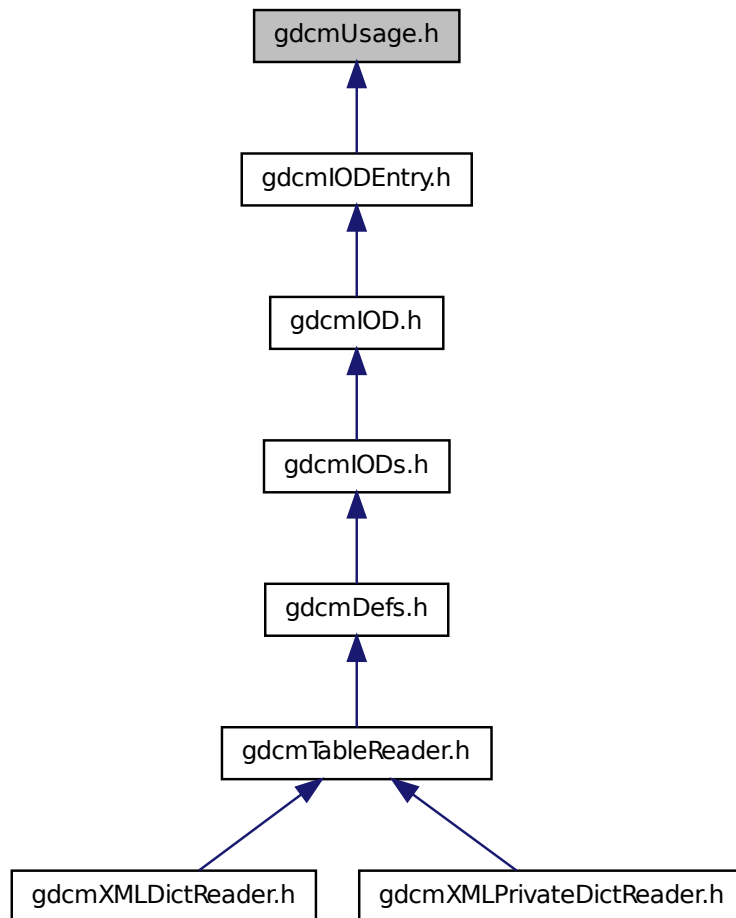
```
#include "gdcmTypes.h"
```

```
#include <iostream>
```

Include dependency graph for gdcmUsage.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Usage](#)
Usage.

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

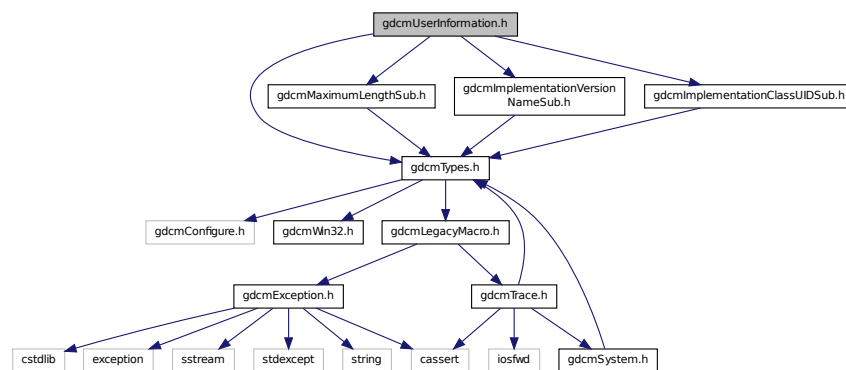
Functions

- `std::ostream & gdcm::operator<< (std::ostream &_os, const Usage &val)`

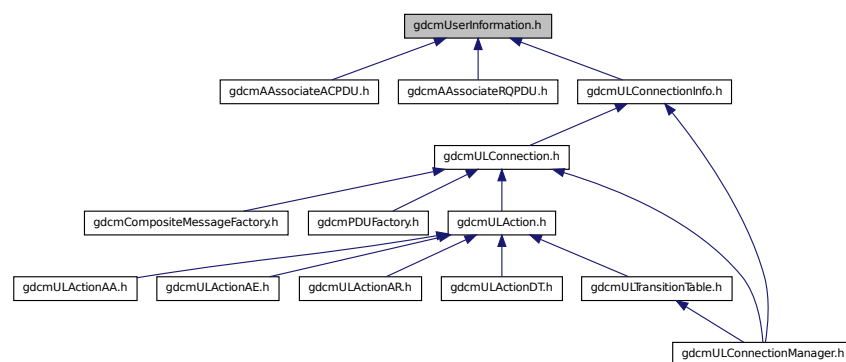
26.267 gdcmUserInformation.h File Reference

```
#include "gdcmTypes.h"
#include "gdcmMaximumLengthSub.h"
#include "gdcmImplementationVersionNameSub.h"
#include "gdcmImplementationClassUIDSub.h"
```

Include dependency graph for gdcmUserInformation.h:



This graph shows which files directly or indirectly include this file:



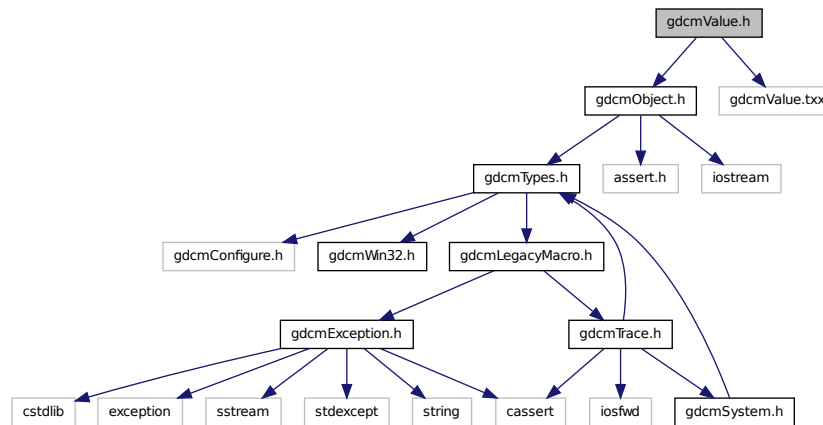
Classes

- class `gdcm::network::UserInformation`

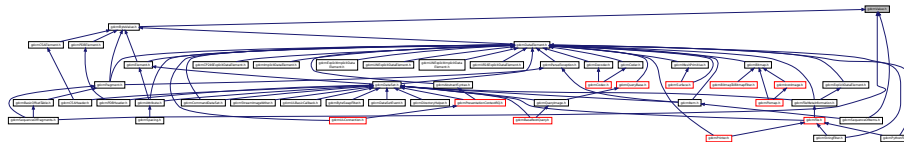
UserInformation Table 9-16 USER INFORMATION ITEM FIELDS.

26.269 gdcmValue.h File Reference

```
#include "gdcmObject.h"
#include "gdcmValue.txx"
Include dependency graph for gdcmValue.h:
```



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Value](#)
Class to represent the value of a Data [Element](#).

Namespaces

- [gdcm](#)

Constant Groups

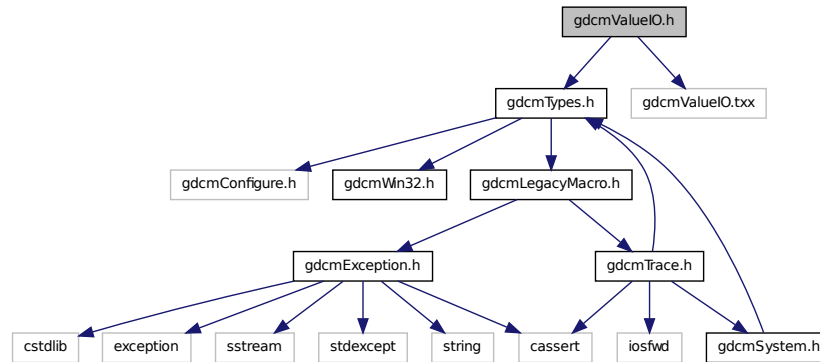
- [gdcm](#)

26.270 gdcmValueIO.h File Reference

```
#include "gdcmTypes.h"
```

```
#include "gdcmValueIO.txx"
```

Include dependency graph for gdcmValueIO.h:



Classes

- class `gdcm::ValueIO< TDE, TSwap, TType >`

Class to dispatch template calls.

Namespaces

- `gdcm`

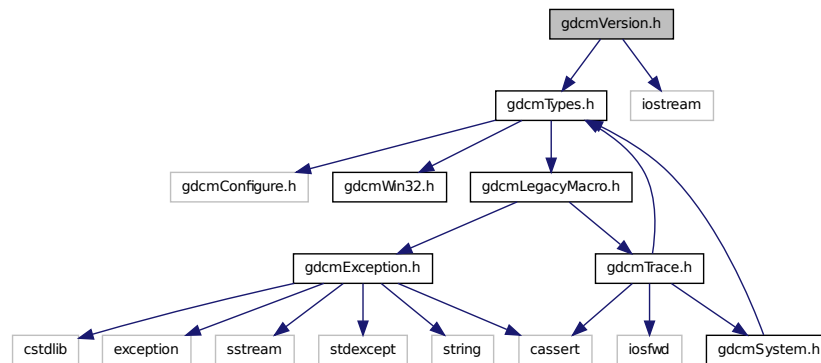
Constant Groups

- `gdcm`

26.271 gdcmVersion.h File Reference

```
#include "gdcmTypes.h"
#include <iostream>
```

Include dependency graph for gdcmVersion.h:



Classes

- class [gdcm::Version](#)
major/minor and build version

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

Functions

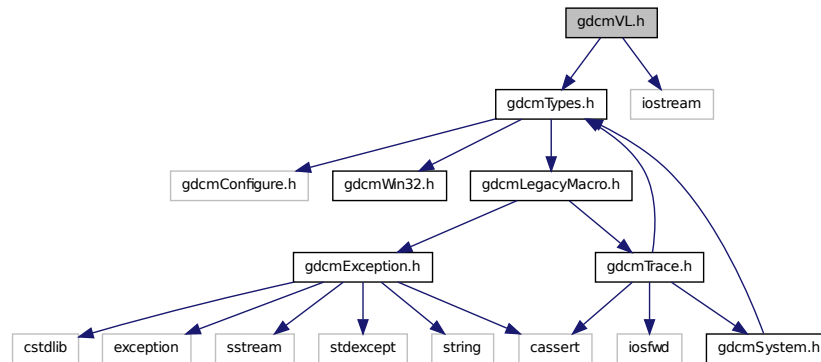
- `std::ostream & gdcm::operator<< (std::ostream &os, const Version &v)`

26.272 gdcviewer.man File Reference

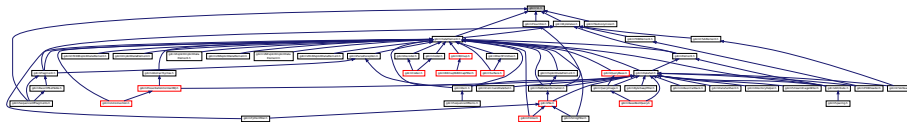
26.273 gdcmVL.h File Reference

```
#include "gdcmTypes.h"
#include <iostream>
```

Include dependency graph for `gdcmVL.h`:



This graph shows which files directly or indirectly include this file:



Classes

- class `gdcm::VL`
Value Length.

Namespaces

- `gdcm`

Constant Groups

- `gdcm`

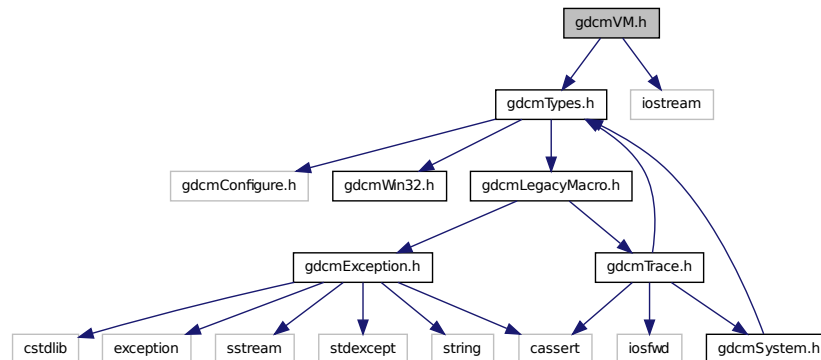
Functions

- `std::ostream & gdcm::operator<< (std::ostream &os, const VL &val)`

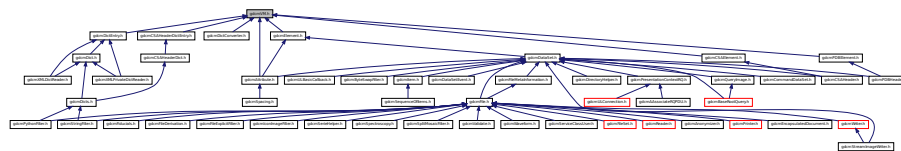
26.274 gdcmVM.h File Reference

```
#include "gdcmTypes.h"
#include <iostream>
```


Include dependency graph for gdcmVM.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::VM](#)
Value Multiplicity Looking at the DICOMV3 dict only there is very few cases: 1 2 3 4 5 6 8 16 24 1-2 1-3 1-8 1-32 1-99 1-n 2-2n 2-n 3-3n 3-n.
- struct [gdcm::VMToLength< T >](#)

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

Macros

- #define [TYPETOLENGTH](#)(type, length)

Functions

- std::ostream & [gdcm::operator<<](#) (std::ostream &_os, const VM &_val)

26.274.1 Macro Definition Documentation

26.274.1.1 #define TYPETOLENGTH(type, length)

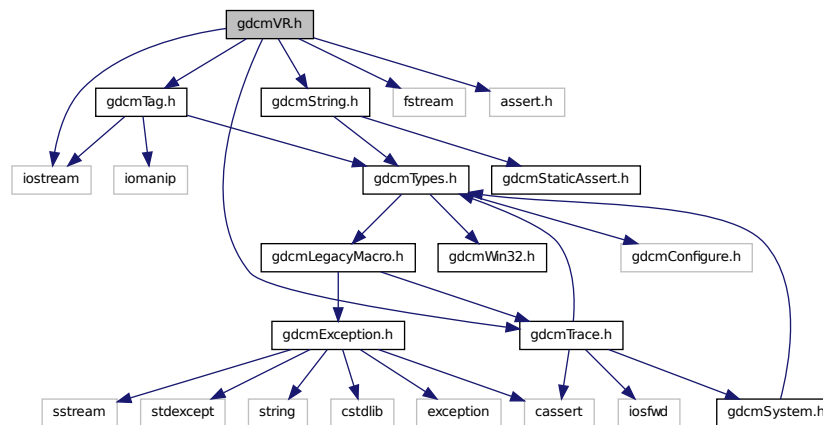
Value:

```
template<> struct VMToLength<VM::type> \
{ enum { Length = length }; };
```

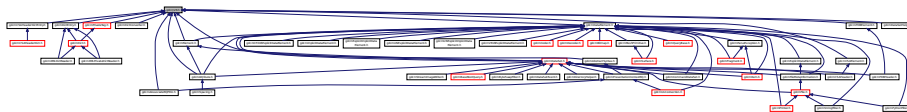
26.275 gdcmVR.h File Reference

```
#include "gdcmTag.h"
#include "gdcmTrace.h"
#include "gdcmString.h"
#include <iostream>
#include <fstream>
#include <assert.h>
```

Include dependency graph for gdcmVR.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct [gdcm::UI](#)
- class [gdcm::VR](#)

VR class This is adapted from DICOM standard The biggest difference is the INVALID VR and the composite one that differ from standard (more like an addition) This allow us to represent all the possible case express in the DICOMV3 dict.

- struct [gdcm::VRToEncoding< T >](#)
- struct [gdcm::VRToType< T >](#)

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

Macros

- #define [TYPETOENCODING](#)(type, rep, rtype)
- #define [VRTypeTemplateCase](#)(type)

Typedefs

- typedef String<'\\', 16 > [gdcm::AECComp](#)
- typedef String<'\\', 64 > [gdcm::ASComp](#)
- typedef String<'\\', 16 > [gdcm::CSCComp](#)
- typedef String<'\\', 64 > [gdcm::DACComp](#)
- typedef String<'\\', 64 > [gdcm::DTComp](#)
- typedef String<'\\', 64 > [gdcm::LOComp](#)
- typedef String<'\\', 64 > [gdcm::LTComp](#)
- typedef String<'\\', 64 > [gdcm::PNComp](#)
- typedef String<'\\', 64 > [gdcm::SHComp](#)
- typedef String<'\\', 64 > [gdcm::STComp](#)
- typedef String<'\\', 16 > [gdcm::TMComp](#)
- typedef String<'\\', 64, 0 > [gdcm::UIComp](#)
- typedef String<'\\', 64 > [gdcm::UTComp](#)

Functions

- std::ostream & [gdcm::operator<<](#) (std::ostream &_os, const VR &val)
- std::ostream & [gdcm::operator<<](#) (std::ostream &_os, const UI &_val)
- [gdcm::TYPETOENCODING](#) (SQ, VRBINARY, unsigned char) TYPETOENCODING(UN

Variables

- [gdcm::VRBINARY](#)

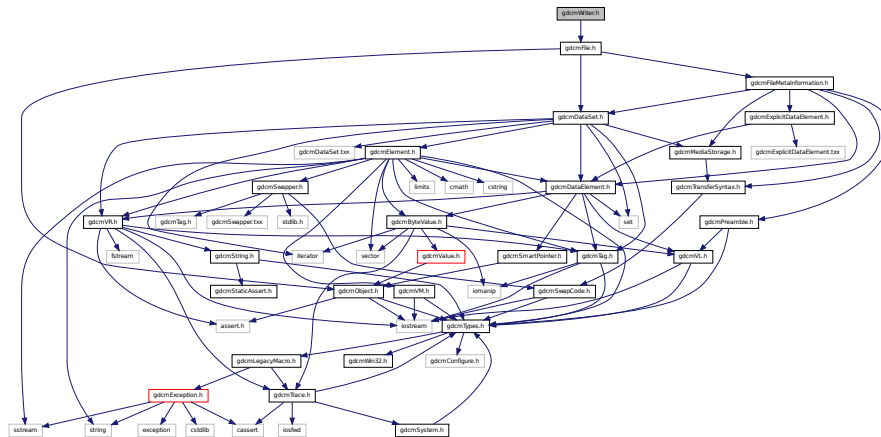
26.278.1 Macro Definition Documentation

26.278.1.1 #define GDCM_EXPORT

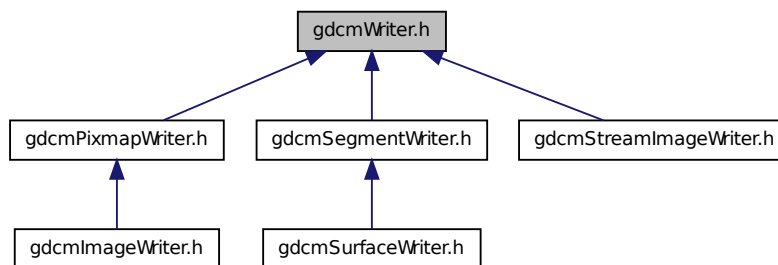
26.279 gdcmWriter.h File Reference

```
#include "gdcmFile.h"
```

Include dependency graph for gdcmWriter.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [gdcm::Writer](#)

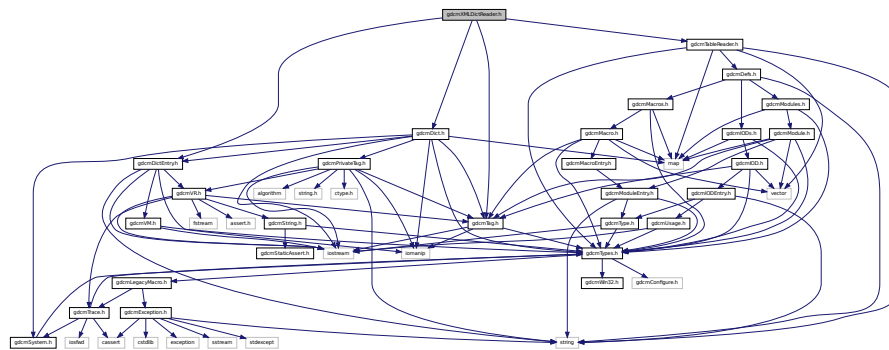
Writer ala DOM (Document *Object* Model) This class is a non-validating writer, it will only performs well- formedness check only.

Namespaces

- [gdcm](#)

- **gdcm**

```
#include "gdcmTableReader.h"
#include "gdcmDict.h"
#include "gdcmDictEntry.h"
#include "gdcmTag.h"
Include dependency graph for gdcmXMLDictReader.h:
```



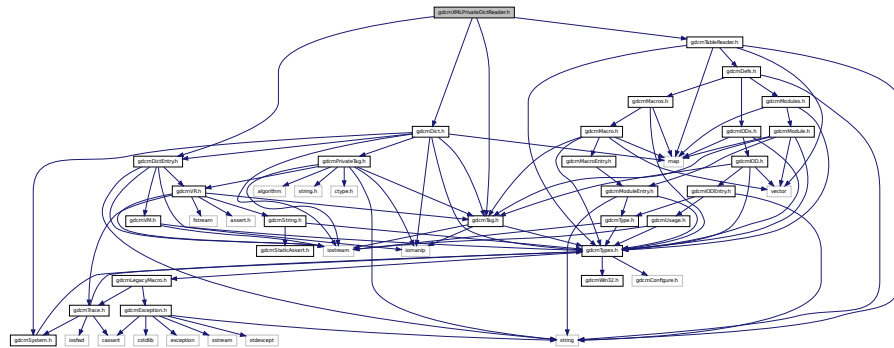
- class `gdcm::XMLDictReader`
Class for representing a `XMLDictReader`.

- **gdcm**

- **gdcm**

```
#include "gdcmTableReader.h"
#include "gdcmDict.h"
#include "gdcmDictEntry.h"
#include "gdcmTag.h"
```

Include dependency graph for `gdcmXMLPrivateDictReader.h`:



Classes

- class [gdcm::XMLPrivateDictReader](#)

Class for representing a [XMLPrivateDictReader](#).

Namespaces

- [gdcm](#)

Constant Groups

- [gdcm](#)

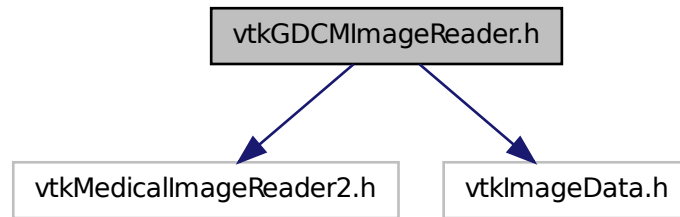
26.282 README.txt File Reference

26.283 TestsList.txt File Reference

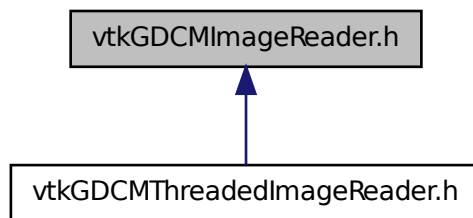
26.284 vtkGDCMImageReader.h File Reference

```
#include "vtkMedicalImageReader2.h"
#include "vtkImageData.h"
```


Include dependency graph for vtkGDCMImageReader.h:



This graph shows which files directly or indirectly include this file:



Classes

- class [vtkGDCMImageReader](#)

Namespaces

- [gdc](#)

Constant Groups

- [gdc](#)

Macros

- `#define VTK_CMYK 8`
- `#define VTK_INVERSE_LUMINANCE 5`

- `#define VTK_LOOKUP_TABLE` 6
- `#define VTK_YBR` 7

26.284.1 Macro Definition Documentation

26.284.1.1 `#define VTK_CMYK` 8

26.284.1.2 `#define VTK_INVERSE_LUMINANCE` 5

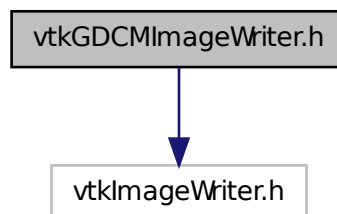
26.284.1.3 `#define VTK_LOOKUP_TABLE` 6

26.284.1.4 `#define VTK_YBR` 7

26.285 vtkGDCMImageWriter.h File Reference

```
#include "vtkImageWriter.h"
```

Include dependency graph for vtkGDCMImageWriter.h:



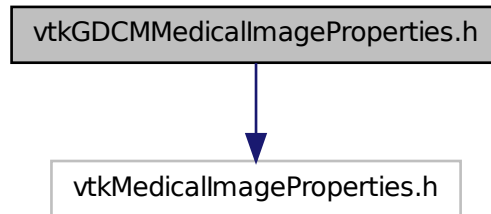
Classes

- class `vtkGDCMImageWriter`

26.286 vtkGDCMMedicalImageProperties.h File Reference

```
#include "vtkMedicalImageProperties.h"
```

Include dependency graph for vtkGDCMMedicalImageProperties.h:



Classes

- class [vtkGDCMMedicalImageProperties](#)

Namespaces

- [gdc](#)

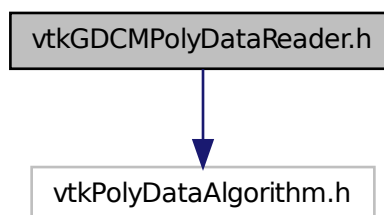
Constant Groups

- [gdc](#)

26.287 vtkGDCMPolyDataReader.h File Reference

```
#include "vtkPolyDataAlgorithm.h"
```

Include dependency graph for vtkGDCMPolyDataReader.h:



Classes

- class [vtkGDCMPolyDataReader](#)

Namespaces

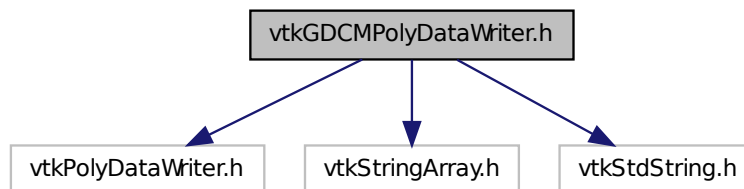
- [gdc](#)m

Constant Groups

- [gdc](#)m

26.288 vtkGDCMPolyDataWriter.h File Reference

```
#include "vtkPolyDataWriter.h"
#include "vtkStringArray.h"
#include "vtkStdString.h"
Include dependency graph for vtkGDCMPolyDataWriter.h:
```



Classes

- class [vtkGDCMPolyDataWriter](#)

Namespaces

- [gdc](#)m

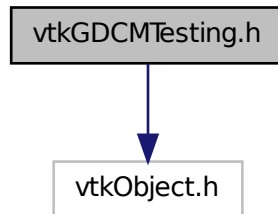
Constant Groups

- [gdc](#)m

26.289 vtkGDCMTesting.h File Reference

```
#include "vtkObject.h"
```

Include dependency graph for vtkGDCMTesting.h:



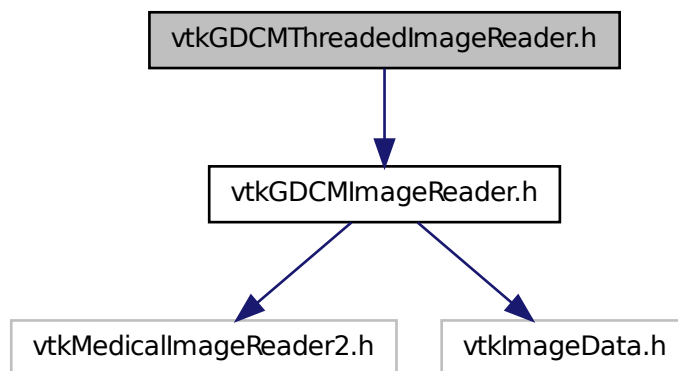
Classes

- class [vtkGDCMTesting](#)

26.290 vtkGDCMThreadedImageReader.h File Reference

```
#include "vtkGDCMImageReader.h"
```

Include dependency graph for vtkGDCMThreadedImageReader.h:



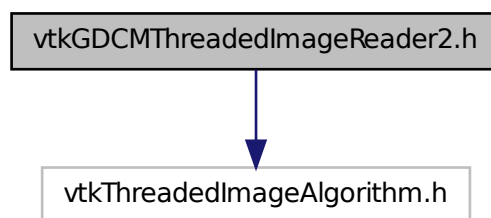
Classes

- class [vtkGDCMThreadedImageReader](#)

26.291 vtkGDCMThreadedImageReader2.h File Reference

```
#include "vtkThreadedImageAlgorithm.h"
```

Include dependency graph for vtkGDCMThreadedImageReader2.h:



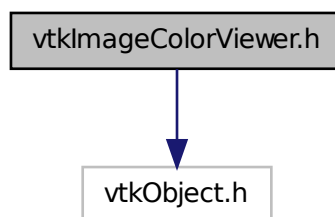
Classes

- class [vtkGDCMThreadedImageReader2](#)

26.292 vtkImageColorViewer.h File Reference

```
#include "vtkObject.h"
```

Include dependency graph for vtkImageColorViewer.h:



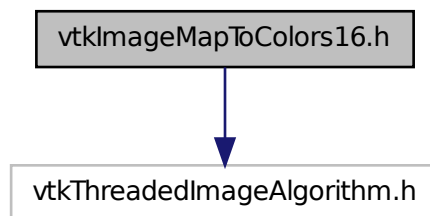
Classes

- class [vtkImageColorViewer](#)

26.293 vtkImageMapToColors16.h File Reference

```
#include "vtkThreadedImageAlgorithm.h"
```

Include dependency graph for vtkImageMapToColors16.h:



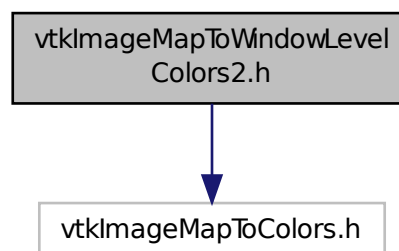
Classes

- class [vtkImageMapToColors16](#)

26.294 vtkImageMapToWindowLevelColors2.h File Reference

```
#include "vtkImageMapToColors.h"
```

Include dependency graph for vtkImageMapToWindowLevelColors2.h:



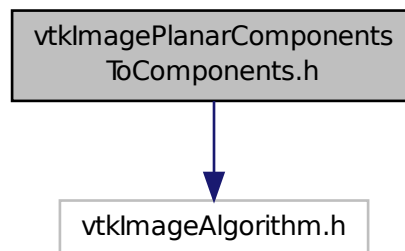
Classes

- class [vtkImageMapToWindowLevelColors2](#)

26.295 vtkImagePlanarComponentsToComponents.h File Reference

```
#include "vtkImageAlgorithm.h"
```

Include dependency graph for vtkImagePlanarComponentsToComponents.h:



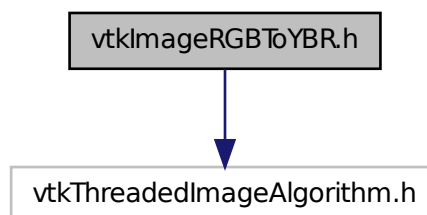
Classes

- class [vtkImagePlanarComponentsToComponents](#)

26.296 vtkImageRGBToYBR.h File Reference

```
#include "vtkThreadedImageAlgorithm.h"
```

Include dependency graph for vtkImageRGBToYBR.h:



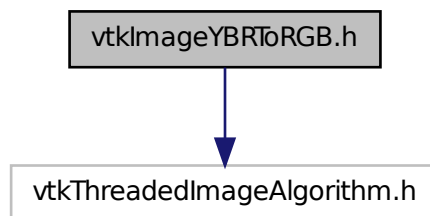
Classes

- class [vtkImageRGBToYBR](#)

26.297 vtkImageYBRToRGB.h File Reference

```
#include "vtkThreadedImageAlgorithm.h"
```

Include dependency graph for vtkImageYBRToRGB.h:



Classes

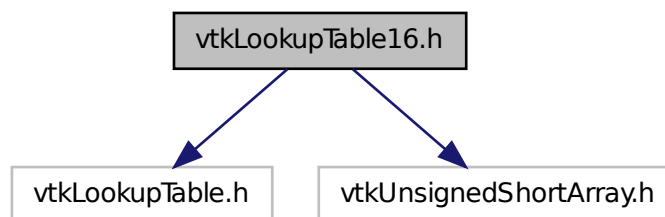
- class [vtkImageYBRToRGB](#)

26.298 vtkLookupTable16.h File Reference

```
#include "vtkLookupTable.h"
```

```
#include "vtkUnsignedShortArray.h"
```

Include dependency graph for vtkLookupTable16.h:



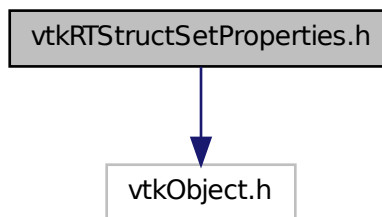
Classes

- class [vtkLookupTable16](#)

26.299 vtkRTStructSetProperties.h File Reference

```
#include "vtkObject.h"
```

Include dependency graph for vtkRTStructSetProperties.h:



Classes

- class [vtkRTStructSetProperties](#)

Chapter 27

Example Documentation

27.1 AWTMedical3.java

```
/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/
package examples;

import vtk.*;
//import gdcm.*;

import vtk.util.VtkPanelContainer;
import vtk.util.VtkPanelUtil;
import vtk.util.VtkUtil;

import java.util.ArrayList;

import javax.swing.*;
import java.awt.*;
import java.io.File;

public class AWTMedical3 extends JComponent implements VtkPanelContainer {

    private vtkPanel renWin;

    vtkImageData ReadDataFile(File inSelectedFile){

        vtkImageData outImageData = null;
        Directory theDir = new Directory();

        String theInputDirectory = inSelectedFile.getPath();
        theDir.Load(theInputDirectory);

        Scanner theScanner = new Scanner();
        Tag theStudyTag = new Tag(0x0020,0x000d);
        Tag theSeriesTag = new Tag(0x0020,0x000e);
        theScanner.AddTag(theStudyTag); //get studies,
        theScanner.AddTag(theSeriesTag); //get studies,
        theScanner.Scan(theDir.GetFilenames());

        FilenamesType theStudyValues = theScanner.GetOrderedValues(theStudyTag);
        long theNumStudies = theStudyValues.size();
        //for now, take the first study, and nothing else.
        //and the return is actually not FilenamesType, just a
        //vector of strings
    }
}
```

```

    if (theNumStudies != 1)
        return outImageData;
    String theStudyVal = theStudyValues.get(0);
    //now, get all the values from the scanner that are in that
    //study, then from that get their different series
    FilenamesType theFilenames =
        theScanner.GetAllFilenamesFromTagToValue(theStudyTag, theStudyVal);

    //from that set of filenames, isolate individual series
    //conclude that singleton series = RT struct (can do further
    //checking for things like MIPs and the like)
    //and multiple series entries = volumetric data
    theScanner.Scan(theFilenames);
    FilenamesType theSeriesValues = theScanner.GetOrderedValues(theSeriesTag);
    String studyUID = theScanner.GetValue(theScanner.GetFilenames().get(0), theStudyTag);
    long theNumSeries = theSeriesValues.size();
    for (int i = 0; i < theNumSeries; i++) {
        FilenamesType theSeriesFiles =
            theScanner.GetAllFilenamesFromTagToValue(theSeriesTag, theSeriesValues.get(i));
        long theNumFilesInSeries = theSeriesFiles.size();
        if (theNumFilesInSeries > 1) { //assume it's CT or volumetric data
            //for now, assume a single volume
            //could have multiples, like PET and CT

            IPPSorter sorter = new IPPSorter();
            sorter.SetComputeZSpacing(true);
            sorter.SetZSpacingTolerance(0.001);
            Boolean sorted = sorter.Sort(theSeriesFiles);
            if (!sorted){
                //need some better way to handle failures here
                return outImageData;
            }

            FilenamesType sortedFT = sorter.GetFilenames();
            long theSize = sortedFT.size();
            vtkStringArray sa = new vtkStringArray();
            ArrayList<String> theStrings = new ArrayList<String>();

            vtkGDCMImageReader gdcmReader = new
            vtkGDCMImageReader();
            for (int j = 0; j < theSize; j++) {
                String theFileName = sortedFT.get(j);
                if (gdcmReader.CanReadFile(theFileName) > 0){
                    theStrings.add(theFileName);
                    sa.InsertNextValue(theFileName);
                } else {
                    //this is a busted series
                    //need some more appropriate error here
                    return outImageData;
                }
            }

            gdcmReader.SetFileNames(sa);

            gdcmReader.Update();

            outImageData = gdcmReader.GetOutput(); //the zeroth output should be the image
        }
    }
    String theImageInfo = "";
    if (outImageData != null){
        theImageInfo = outImageData.Print();
    }
    return outImageData;
}

//this function is a rewrite of Medical3 to see if data can
//be loaded via gdcm easily
public AWTMedical3(File inFile) {
    // Create the buttons.
    renWin = new vtkPanel();

    vtkImageData theImageData = ReadDataFile(inFile);

    // An isosurface, or contour value of 500 is known to correspond to the
    // skin of the patient. Once generated, a vtkPolyDataNormals filter is
    // is used to create normals for smooth surface shading during rendering.
    // The triangle stripper is used to create triangle strips from the
    // isosurface these render much faster on some systems.
    vtkContourFilter skinExtractor = new vtkContourFilter();
    skinExtractor.SetInput(theImageData);

```

```

skinExtractor.SetValue(0, 500);
vtkPolyDataNormals skinNormals = new vtkPolyDataNormals();
skinNormals.SetInput(skinExtractor.GetOutput());
skinNormals.SetFeatureAngle(60.0);
//      vtkStripper skinStripper = new vtkStripper();
//      skinStripper.SetInput(skinNormals.GetOutput());
vtkPolyDataMapper skinMapper = new vtkPolyDataMapper();
skinMapper.SetInput(skinNormals.GetOutput());
skinMapper.ScalarVisibilityOff();
vtkActor skin = new vtkActor();
skin.SetMapper(skinMapper);
skin.GetProperty().SetDiffuseColor(1, .49, .25);
skin.GetProperty().SetSpecular(.3);
skin.GetProperty().SetSpecularPower(20);

// An isosurface, or contour value of 1150 is known to correspond to the
// skin of the patient. Once generated, a vtkPolyDataNormals filter is
// is used to create normals for smooth surface shading during rendering.
// The triangle stripper is used to create triangle strips from the
// isosurface these render much faster on some systems.
vtkContourFilter boneExtractor = new vtkContourFilter();
boneExtractor.SetInput(theImageData);
boneExtractor.SetValue(0, 1150);
vtkPolyDataNormals boneNormals = new vtkPolyDataNormals();
boneNormals.SetInput(boneExtractor.GetOutput());
boneNormals.SetFeatureAngle(60.0);
vtkStripper boneStripper = new vtkStripper();
boneStripper.SetInput(boneNormals.GetOutput());
vtkPolyDataMapper boneMapper = new vtkPolyDataMapper();
boneMapper.SetInput(boneStripper.GetOutput());
boneMapper.ScalarVisibilityOff();
vtkActor bone = new vtkActor();
bone.SetMapper(boneMapper);
bone.GetProperty().SetDiffuseColor(1, 1, .9412);

// An outline provides context around the data.
vtkOutlineFilter outlineData = new vtkOutlineFilter();
outlineData.SetInput(theImageData);
vtkPolyDataMapper mapOutline = new vtkPolyDataMapper();
mapOutline.SetInput(outlineData.GetOutput());
vtkActor outline = new vtkActor();
outline.SetMapper(mapOutline);
outline.GetProperty().SetColor(0, 0, 0);

// Now we are creating three orthogonal planes passing through the
// volume. Each plane uses a different texture map and therefore has
// different coloration.

// Start by creating a black/white lookup table.
vtkLookupTable bwLut = new vtkLookupTable();
bwLut.SetTableRange(0, 2000);
bwLut.SetSaturationRange(0, 0);
bwLut.SetHueRange(0, 0);
bwLut.SetValueRange(0, 1);
bwLut.Build();

// Now create a lookup table that consists of the full hue circle (from
// HSV);.
vtkLookupTable hueLut = new vtkLookupTable();
hueLut.SetTableRange(0, 2000);
hueLut.SetHueRange(0, 1);
hueLut.SetSaturationRange(1, 1);
hueLut.SetValueRange(1, 1);
hueLut.Build();

// Finally, create a lookup table with a single hue but having a range
// in the saturation of the hue.
vtkLookupTable satLut = new vtkLookupTable();
satLut.SetTableRange(0, 2000);
satLut.SetHueRange(.6, .6);
satLut.SetSaturationRange(0, 1);
satLut.SetValueRange(1, 1);
satLut.Build();

// Create the first of the three planes. The filter vtkImageMapToColors
// maps the data through the corresponding lookup table created above.
// The vtkImageActor is a type of vtkProp and conveniently displays an
// image on a single quadrilateral plane. It does this using texture
// mapping and as a result is quite fast. (Note: the input image has to
// be unsigned char values, which the vtkImageMapToColors produces.);
// Note also that by specifying the DisplayExtent, the pipeline

```

```

// requests data of this extent and the vtkImageMapToColors only
// processes a slice of data.
vtkImageMapToColors saggitalColors = new vtkImageMapToColors();
saggitalColors.SetInput(theImageData);
saggitalColors.SetLookupTable(bwLut);
vtkImageActor saggital = new vtkImageActor();
saggital.SetInput(saggitalColors.GetOutput());
saggital.SetDisplayExtent(32, 32, 0, 63, 0, 92);

// Create the second (axial); plane of the three planes. We use the same
// approach as before except that the extent differs.
vtkImageMapToColors axialColors = new vtkImageMapToColors();
axialColors.SetInput(theImageData);
axialColors.SetLookupTable(hueLut);
vtkImageActor axial = new vtkImageActor();
axial.SetInput(axialColors.GetOutput());
axial.SetDisplayExtent(0, 63, 0, 63, 46, 46);

// Create the third (coronal); plane of the three planes. We use the same
// approach as before except that the extent differs.
vtkImageMapToColors coronalColors = new vtkImageMapToColors();
coronalColors.SetInput(theImageData);
coronalColors.SetLookupTable(satLut);
vtkImageActor coronal = new vtkImageActor();
coronal.SetInput(coronalColors.GetOutput());
coronal.SetDisplayExtent(0, 63, 32, 32, 0, 92);

// It is convenient to create an initial view of the data. The FocalPoint
// and Position form a vector direction. Later on (ResetCamera() method)
// this vector is used to position the camera to look at the data in
// this direction.
vtkCamera aCamera = new vtkCamera();
aCamera.SetViewUp(0, 0, -1);
aCamera.SetPosition(0, 1, 0);
aCamera.SetFocalPoint(0, 0, 0);
aCamera.ComputeViewPlaneNormal();

// Actors are added to the renderer. An initial camera view is created.
// The Dolly() method moves the camera towards the FocalPoint,
// thereby enlarging the image.
renWin.GetRenderer().AddActor(saggital);
renWin.GetRenderer().AddActor(axial);
renWin.GetRenderer().AddActor(coronal);
renWin.GetRenderer().AddActor(outline);
renWin.GetRenderer().AddActor(skin);
renWin.GetRenderer().AddActor(bone);

// Turn off bone for this example.
bone.VisibilityOff();

// Set skin to semi-transparent.
skin.GetProperty().SetOpacity(0.5);

// An initial camera view is created. The Dolly() method moves
// the camera towards the FocalPoint, thereby enlarging the image.
renWin.GetRenderer().SetActiveCamera(aCamera);
renWin.GetRenderer().ResetCamera();
aCamera.Dolly(1.5);

// Set a background color for the renderer and set the size of the
// render window (expressed in pixels).
renWin.GetRenderer().SetBackground(1, 1, 1);
VtkPanelUtil.setSize(renWin, 640, 480);

// Note that when camera movement occurs (as it does in the Dolly()
// method), the clipping planes often need adjusting. Clipping planes
// consist of two planes: near and far along the view direction. The
// near plane clips out objects in front of the plane the far plane
// clips out objects behind the plane. This way only what is drawn
// between the planes is actually rendered.
renWin.GetRenderer().ResetCameraClippingRange();

// Setup panel
setLayout(new BorderLayout());
add(renWin, BorderLayout.CENTER);
}

public vtkPanel getRenWin() {
    return renWin;
}

```

```

    }

    public static void main(String s[]) {
        if (s.length == 0){
            return; //need a filename here
        }
        File theFile = new File(s[0]);
        //File theFile = new
        File("/Users/mmroden/Documents/MVSDownloadDirectory/Documents/1.2.840.113704.1.111.3384.1271766367.5/");
        AWTMedical3 panel = new AWTMedical3(theFile);

        JFrame frame = new JFrame("AWTMedical3");
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.getContentPane().add("Center", panel);
        frame.pack();
        frame.setVisible(true);
    }
}

```

27.2 BasicAnonymizer.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/

/*
 * Usage:
 * $ export LD_LIBRARY_PATH=$HOME/Projects/gdcm/debug-gcc/bin
 * $ mono bin/BasicAnonymizer.exe gdcmData/012345.002.050.dcm out.dcm
 */
using System;
using gdcm;

public class MyWatcher : SimpleSubjectWatcher
{
    public MyWatcher(Subject s):base(s,"Override String"){
        protected override void StartFilter() {
            System.Console.WriteLine( "This is my start" );
        }
        protected override void EndFilter(){
            System.Console.WriteLine( "This is my end" );
        }
        protected override void ShowProgress(Subject caller, Event evt){
            ProgressEvent pe = ProgressEvent.Cast(evt);
            System.Console.WriteLine( "This is my progress: " + pe.GetProgress() );
        }
        protected override void ShowIteration(){
            System.Console.WriteLine( "This is my iteration" );
        }
        protected override void ShowAnonymization(Subject caller, Event evt){
/*
 * A couple of explanation are necessary here to understand how SWIG work
 * http://www.swig.org/Doc1.3/Java.html#adding_downcasts
 *
 * System.Console.WriteLine( "This is my Anonymization. Type: " + evt.GetEventName() );
 * System.Type type = evt.GetType();
 * System.Console.WriteLine( "This is my Anonymization. System.Type: " + type.ToString() );
 * System.Console.WriteLine( "This is my Anonymization. CheckEvent: " + ae.CheckEvent( evt ) );
 * System.Console.WriteLine( "This is my Anonymization. Processing Tag #" + ae.GetTag().toString() );
 */
            AnonymizeEvent ae = AnonymizeEvent.Cast(evt);
            if( ae != null )
            {
                Tag t = ae.GetTag();
                System.Console.WriteLine( "This is my Anonymization. Processing Tag #" + t.toString() );
            }
        }
    }
}

```

```

    }
    else
    {
        System.Console.WriteLine( "This is my Anonymization. Unhandled Event type: " + evt.GetEventName() );
    }
}
protected override void ShowAbort(){
    System.Console.WriteLine( "This is my abort" );
}
}

public class BasicAnonymizer
{
    public static int Main(string[] args)
    {
        gdcm.Global global = gdcm.Global.GetInstance();
        if( !global.LoadResourcesFiles() )
        {
            System.Console.WriteLine( "Could not LoadResourcesFiles" );
            return 1;
        }

        string file1 = args[0];
        string file2 = args[1];
        Reader reader = new Reader();
        reader.SetFileName( file1 );
        bool ret = reader.Read();
        if( !ret )
        {
            return 1;
        }

        string certpath = gdcm.Filename.Join(gdcm.Testing.GetSourceDirectory(), "
            /Testing/Source/Data/certificate.pem" );
        gdcm.CryptographicMessageSyntax cms = new gdcm.CryptographicMessageSyntax();
        if( !cms.ParseCertificateFile( certpath ) )
        {
            return 1;
        }

        //Anonymizer ano = new Anonymizer();
        SmartPtrAno sano = Anonymizer.New();
        Anonymizer ano = sano.__ref__();

        //SimpleSubjectWatcher watcher = new SimpleSubjectWatcher(ano, "Anonymizer");
        MyWatcher watcher = new MyWatcher(ano);

        ano.SetFile( reader.GetFile() );
        ano.SetCryptographicMessageSyntax( cms );
        if( !ano.BasicApplicationLevelConfidentialityProfile() )
        {
            return 1;
        }

        Writer writer = new Writer();
        writer.SetFileName( file2 );
        writer.SetFile( ano.GetFile() );
        ret = writer.Write();
        if( !ret )
        {
            return 1;
        }

        return 0;
    }
}

```

27.3 BasicImageAnonymizer.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

```


This software is distributed WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the above copyright notice for more information.

```

=====*/

/*
*/
using System;
using gdcm;

public class BasicImageAnonymizer
{
    public static int Main(string[] args)
    {
        string filename = args[0];

        // instanciate the reader:
        gdcm.ImageReader reader = new gdcm.ImageReader();
        reader.SetFileName( filename );

        if (!reader.Read()) return 1;

        Image ir = reader.GetImage();

        uint[] dims = {0, 0, 0};
        dims[0] = ir.GetDimension(0);
        dims[1] = ir.GetDimension(1);
        dims[2] = ir.GetDimension(2);
        System.Console.WriteLine( "Dim:" + dims[0] );
        System.Console.WriteLine( "Dim:" + dims[1] );
        System.Console.WriteLine( "Dim:" + dims[2] );

        // buffer to get the pixels
        byte[] buffer = new byte[ ir.GetBufferLength()];
        System.Console.WriteLine( "Dim:" + ir.GetBufferLength() );
        ir.GetBuffer( buffer );

        for (uint z = 0; z < dims[2]; z++)
        {
            for (uint y = 0; y < dims[1] / 2; y++) // only half Y
            {
                for (uint x = 0; x < dims[0] / 2; x++) // only half X
                {
                    buffer[ (z * dims[1] + y) * dims[0] + x ] = 0; // works when pixel type == UINT8
                }
            }
        }

        DataElement pixeldata = new DataElement( new Tag(0x7fe0,0x0010) );
        pixeldata.SetByteValue( buffer, new VL( (uint)buffer.Length ) );
        ir.SetDataElement( pixeldata );
        ir.SetTransferSyntax( new TransferSyntax( TransferSyntax.TSType.ExplicitVRLittleEndian ) );

        ImageChangeTransferSyntax change = new ImageChangeTransferSyntax();
        change.SetTransferSyntax( new TransferSyntax( TransferSyntax.TSType.JPEGLSLossless ) );
        change.SetInput( ir );
        if( !change.Change() )
        {
            System.Console.WriteLine( "Could not change: " + filename );
            return 1;
        }

        ImageWriter writer = new ImageWriter();
        writer.SetFileName( "out.dcm" );
        writer.SetFile( reader.GetFile() );
        writer.SetImage( change.GetOutput() );
        bool ret = writer.Write();
        if( !ret )
        {
            return 1;
        }

        return 0;
    }
}

```

27.4 CastConvertPhilips.py

```

1 #####
2 #
3 #   Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 #   Copyright (c) 2006-2011 Mathieu Malaterre
6 #   All rights reserved.
7 #   See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.
8 #
9 #   This software is distributed WITHOUT ANY WARRANTY; without even
10 #   the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 #   PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 """
16 Usage:
17
18     python --public /path/to/directory/
19 or
20     python --private /path/to/directory/
21
22     python --public --extension bak /path/to/directory/
23
24     rename -f 's/\.bak$/' *.bak
25
26 TODO:
27 http://docs.python.org/library/optparse.html#module-optparse
28 """
29
30 import vtkgdcm
31 import vtk
32 import sys
33 import gdcm
34
35 def ProcessOneFilePublic(filename, outfilename, tmpfile):
36     gdcm.ImageHelper.SetForceRescaleInterceptSlope(True)
37     vtkreader = vtkgdcm.vtkGDCMImageReader()
38     vtkreader.SetFileName( filename )
39     vtkreader.Update()
40
41     cast = vtk.vtkImageCast()
42     cast.SetInput( vtkreader.GetOutput() )
43     cast.SetOutputScalarTypeToUnsignedShort()
44
45     # vtkGDCMImageWriter does not support Sequence, so let's write a tmp file first:
46     # Some operation will actually be discarded (we simply need a temp storage)
47     vtkwriter = vtkgdcm.vtkGDCMImageWriter()
48     vtkwriter.SetFileName( tmpfile )
49     vtkwriter.SetMedicalImageProperties( vtkreader.GetMedicalImageProperties() )
50     vtkwriter.SetDirectionCosines( vtkreader.GetDirectionCosines() )
51     print "Format:", vtkreader.GetImageFormat()
52     vtkwriter.SetImageFormat( vtkreader.GetImageFormat() )
53     vtkwriter.SetInput( cast.GetOutput() )
54     #vtkwriter.Update()
55     vtkwriter.Write()
56
57     # ok now rewrite the exact same file as the original (keep all info)
58     # but use the Pixel Data Element from the written file
59     tmpreader = gdcm.ImageReader()
60     tmpreader.SetFileName( tmpfile )
61     if not tmpreader.Read():
62         sys.exit(1)
63
64     reader = gdcm.Reader()
65     reader.SetFileName( filename )
66     if not reader.Read():
67         sys.exit(1)
68
69     # Make sure to remove Slope/Rescale to avoid re-execution
70     ds = reader.GetFile().GetDataSet()
71     tags = [
72         gdcm.Tag(0x0028,0x1052),
73         gdcm.Tag(0x0028,0x1053),
74         gdcm.Tag(0x0028,0x1053),
75     ]
76     for tag in tags:
77         ds.Remove( tag )
78

```

```

79 writer = gdcM.ImageWriter()
80 writer.SetFileName( outfilename )
81 # Pass image from vtk written file
82 writer.SetImage( tmpreader.GetImage() )
83 # pass dataset from initial 'reader'
84 writer.SetFile( reader.GetFile() )
85 if not writer.Write():
86     sys.exit(1)
87
88 def ProcessOneFilePrivate(filename, outfilename, tmpfile):
89     vtkreader = vtkgdcM.vtkGDCMImageReader()
90     vtkreader.SetFileName( filename )
91     vtkreader.Update()
92
93
94 # (2005,1409)      DS      4      0.0
95 # (2005,140a)      DS      16     1.52283272283272
96
97 # (2005,0014)      LO      26     Philips MR Imaging DD 005
98 tag1 = gdcM.PrivateTag(0x2005,0x09,"Philips MR Imaging DD 005")
99 tag2 = gdcM.PrivateTag(0x2005,0x0a,"Philips MR Imaging DD 005")
100
101
102
103 # Need to access some private tags, reread the file (for now):
104 reader = gdcM.Reader()
105 reader.SetFileName( filename )
106 if not reader.Read():
107     sys.exit(1)
108
109 ds = reader.GetFile().GetDataSet()
110
111 el1 = ds.GetDataElement( tag1 )
112 el2 = ds.GetDataElement( tag2 )
113
114
115 #pf = gdcM.PythonFilter()
116 #pf.SetFile( reader.GetFile() )
117 #print el1.GetTag()
118
119 print el1.GetByteValue()
120 v1 = eval(el1.GetByteValue().GetBuffer())
121 print el2.GetByteValue()
122 v2 = eval(el2.GetByteValue().GetBuffer())
123
124 print v1
125 shift = v1
126 print v2
127 scale = v2
128
129 ss = vtk.vtkImageShiftScale()
130 ss.SetInput( vtkreader.GetOutput() )
131 # because VTK image shift / scale convention is inverted from DICOM make sure shift is 0
132 assert shift == 0
133 ss.SetShift( shift )
134 ss.SetScale( scale )
135 ss.SetOutputScalarTypeToUnsignedShort ( )
136 ss.Update()
137
138 # vtkGDCMImageWriter does not support Sequence, so let's write a tmp file first:
139 # Some operation will actually be discarded (we simply need a temp storage)
140 vtkwriter = vtkgdcM.vtkGDCMImageWriter()
141 vtkwriter.SetFileName( tmpfile )
142 vtkwriter.SetMedicalImageProperties( vtkreader.GetMedicalImageProperties() )
143 vtkwriter.SetDirectionCosines( vtkreader.GetDirectionCosines() )
144 vtkwriter.SetImageFormat( reader.GetImageFormat() )
145 # do not pass shift/scale again
146 vtkwriter.SetInput( ss.GetOutput() )
147 #vtkwriter.Update()
148 vtkwriter.Write()
149
150 # ok now rewrite the exact same file as the original (keep all info)
151 # but use the Pixel Data Element from the written file
152 tmpreader = gdcM.ImageReader()
153 tmpreader.SetFileName( tmpfile )
154 if not tmpreader.Read():
155     sys.exit(1)
156
157 writer = gdcM.ImageWriter()
158 writer.SetFileName( outfilename )
159 # Pass image from vtk written file

```

```

160 writer.SetImage( tmpreader.GetImage() )
161 # pass dataset from initial 'reader'
162 writer.SetFile( reader.GetFile() )
163 if not writer.Write():
164     sys.exit(1)
165
166 if __name__ == "__main__":
167
168     gdcmm.Trace.DebugOff()
169     gdcmm.Trace.WarningOff()
170     #filename = sys.argv[1]
171     #outfilename = sys.argv[2]
172     tmpfile = "/tmp/philips_rescaled.dcm"
173     #ProcessOneFile( filename, outfilename, tmpfile )
174     rescaletype = sys.argv[1]
175     assert rescaletype == "--public" or rescaletype == "--private"
176     dirname = sys.argv[2]
177     d = gdcmm.Directory()
178     d.Load( dirname )
179
180     for f in d.GetFilenames():
181         #print f
182         ProcessOneFilePublic( f, f + ".bak", tmpfile )
183
184
185 print "success"

```

27.5 ChangeSequenceUltrasound.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcmm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "gdcmmReader.h"
#include "gdcmmWriter.h"
#include "gdcmmSmartPointer.h"
#include "gdcmmDataSetHelper.h"

/*
./ChangeSequenceUltrasound gdcmmData/D_CLUNIE_CT1_J2KI.dcm myoutput.dcm

This is the exact C++ translation of the original python example: ManipulateSequence.py
*/

int main(int argc, char* argv[] )
{
    if( argc < 0 )
    {
        return 1;
    }
    const char *filename = argv[1];
    const char *outfilename = argv[2];

    gdcmm::Reader reader;
    reader.SetFileName( filename );
    if (! reader.Read() )
    {
        return 1;
    }

    gdcmm::File &file = reader.GetFile();
    gdcmm::DataSet &ds = file.GetDataSet();
    gdcmm::Tag tsis(0x0008,0x2112); // SourceImageSequence
    if ( ds.FindDataElement( tsis ) )
    {
        const gdcmm::DataElement &sis = ds.GetDataElement( tsis );
        gdcmm::SmartPointer<gdcmm::SequenceOfItems> sqsis = sis.
            GetValueAsSQ();

```

```

if ( sqsis && sqsis->GetNumberOfItems() )
{
    gdc::Item &item1 = sqsis->GetItem(1);
    gdc::DataSet &nestedds = item1.GetNestedDataSet();
    gdc::Tag tprcs(0x0040,0xa170); // PurposeOfReferenceCodeSequence
    if( nestedds.FindDataElement( tprcs ) )
    {
        const gdc::DataElement &prcs = nestedds.GetDataElement( tprcs );
        gdc::SmartPointer<gdc::SequenceOfItems> sqprcs = prcs.
        GetValueAssQ();
        if ( sqprcs && sqprcs->GetNumberOfItems() )
        {
            gdc::Item &item2 = sqprcs->GetItem(1);
            gdc::DataSet &nestedds2 = item2.GetNestedDataSet();
            // (0008,0104) LO [Uncompressed predecessor] # 24, 1 CodeMeaning
            gdc::Tag tcm(0x0008,0x0104);
            if( nestedds2.FindDataElement( tcm ) )
            {
                gdc::DataElement cm = nestedds2.GetDataElement( tcm );
                std::string mystr = "GDCM was here";
                cm.SetByteValue( mystr.c_str(), (uint32_t)mystr.size() );
                nestedds2.Replace( cm );
            }
        }
    }
}

gdc::Writer writer;
writer.SetFile( file );
writer.SetFileName( outfilename );
if ( !writer.Write() )
{
    return 1;
}

return 0;
}

```

27.6 CheckBigEndianBug.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdc.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
/*
 * WARNING: This is a dev tool, do not use !
 *
 * Usage: after a gdcconv, you would like to know if the conversion process is acceptable
 * sometime a vbindiff is acceptable, sometime it is not. In the case of the famous Philips
 * Little/Big Endian Explicit Transfer Syntax it is not easy to compare two files. However
 * this only impact byte ordering, thus we can compute byte-independant information to still
 * compare the files.
 */

#include "gdcmImageReader.h"
#include "gdcmImage.h"
#include "gdcmWriter.h"
#include "gdcmAttribute.h"
#include "gdcmSystem.h"

#include <iostream>
#include <fstream>

int main(int argc, char *argv[])
{
    if( argc < 3 )
    {

```

```

    std::cerr << argv[0] << " input1.dcm input2.dcm" << std::endl;
    return 1;
}
const char *filename1 = argv[1];
const char *filename2 = argv[2];

gdcm::ImageReader reader1;
reader1.SetFileName( filename1 );
if( !reader1.Read() )
{
    std::cerr << "Could not read: " << filename1 << std::endl;
    return 1;
}

gdcm::ImageReader reader2;
reader2.SetFileName( filename2 );
if( !reader2.Read() )
{
    std::cerr << "Could not read: " << filename2 << std::endl;
    return 1;
}

// TODO: need a DataSet== operator implementation

std::cout << "Both files can be read and looks like DICOM" << std::endl;

size_t s1 = gdcm::System::FileSize(filename1);
size_t s2 = gdcm::System::FileSize(filename2);

if( s1 != s2 )
{
    std::cout << "Size mismatch: " << s1 << " != " << s2 << std::endl;
    return 1;
}
else
{
    std::cout << "Size match: " << s1 << " = " << s2 << std::endl;
}

std::ifstream is1( filename1 );
char *buffer1 = new char[s1];
is1.read(buffer1, s1);

std::ifstream is2( filename2 );
char *buffer2 = new char[s2];
is2.read(buffer2, s2);

assert( s1 == s2 );
if( memcmp(buffer1, buffer2, s1 ) == 0 )
{
    std::cout << "memcmp succeed ! File are bit identical" << std::endl;
}
else
{
    std::cout << "memcmp failed!" << std::endl;
}

// Hum...memcmp failed, for big endian/ little endian inversion the histogram of bytes
// should still be the same. So let's compute it
// buffer2[0] = 1; // let's make the test fail
std::multiset<char> set1( buffer1, buffer1 + s1 );
std::multiset<char> set2( buffer2, buffer2 + s2 );

if( set1 == set2 )
{
    std::cout << "set1 == set2. Byte histogram seems valid" << std::endl;
}
else
{
    std::cout << "set1 != set2" << std::endl;
}
delete[] buffer1;
delete[] buffer2;

return 0;
}

```

27.7 ClinicalTrialAnnotate.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
/*
 * Dummy implementation of C.7.1.3 Clinical Trial Subject Module
 *
 * Usage:
 * ClinicalTrialAnnotate gdcmData/012345.002.050.dcm out.dcm
 */

#include "gdcmReader.h"
#include "gdcmWriter.h"
#include "gdcmAnonymizer.h"

int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        std::cerr << argv[0] << " input.dcm output.dcm" << std::endl;
        return 1;
    }
    const char *filename = argv[1];
    const char *outfilename = argv[2];

    gdcm::Reader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        std::cerr << "Could not read: " << filename << std::endl;
        return 1;
    }

    // The output of gdcm::Reader is a gdcm::File
    //gdcm::File &file = reader.GetFile();

    // the dataset is the the set of element we are interested in:
    //gdcm::DataSet &ds = file.GetDataSet();

    gdcm::Anonymizer ano;
    ano.SetFile( reader.GetFile() );
    ano.RemoveGroupLength();
    ano.RemovePrivateTags();

    // PS 3.3 - 2008
    // C.7.1.3 Clinical Trial Subject Module
    // <entry group="0012" element="0010" vr="LO" vm="1" name="Clinical Trial Sponsor Name"/>
    ano.Replace( gdcm::Tag(0x12,0x10), "BigCompany name" );
    // <entry group="0012" element="0020" vr="LO" vm="1" name="Clinical Trial Protocol ID"/>
    ano.Replace( gdcm::Tag(0x12,0x20), "My Clinical Trial Protocol ID" );
    // <entry group="0012" element="0021" vr="LO" vm="1" name="Clinical Trial Protocol Name"/>
    ano.Replace( gdcm::Tag(0x12,0x21), "My Clinical Trial Protocol Name" );
    // <entry group="0012" element="0030" vr="LO" vm="1" name="Clinical Trial Site ID"/>
    ano.Replace( gdcm::Tag(0x12,0x30), "My Clinical Trial Site ID" );
    // <entry group="0012" element="0031" vr="LO" vm="1" name="Clinical Trial Site Name"/>
    ano.Replace( gdcm::Tag(0x12,0x31), "My Clinical Trial Site Name" );
    // <entry group="0012" element="0040" vr="LO" vm="1" name="Clinical Trial Subject ID"/>
    ano.Replace( gdcm::Tag(0x12,0x40), "My Clinical Trial Subject ID" );
    // <entry group="0012" element="0042" vr="LO" vm="1" name="Clinical Trial Subject Reading ID"/>
    ano.Replace( gdcm::Tag(0x12,0x42), "My Clinical Trial Subject Reading ID" );

    gdcm::Writer writer;
    writer.SetFile( reader.GetFile() );
    writer.SetFileName( outfile );
    if( !writer.Write() )
    {
        return 1;
    }
}

```

```

    return 0;
}

```

27.8 ClinicalTrialIdentificationWorkflow.cs

This is a C# example on how to use [gdcm::Anonymizer](#)

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/

/*
 * Typical usage on UNIX:
 * $ export LD_LIBRARY_PATH=$HOME/Projects/gdcm/debug-gcc/bin
 * $ mono bin/ClinicalTrialIdentificationWorkflow.exe input_dir output_dir
 */
using System;
using gdcm;

public class MyWatcher : SimpleSubjectWatcher
{
    public MyWatcher(Subject s):base(s,"Override String"){
    protected override void StartFilter() {
        System.Console.WriteLine( "This is my start" );
    }
    protected override void EndFilter(){
        System.Console.WriteLine( "This is my end" );
    }
    protected override void ShowProgress(Subject caller, Event evt){
        ProgressEvent pe = ProgressEvent.Cast(evt);
        System.Console.WriteLine( "This is my progress: " + pe.GetProgress() );
    }
    protected override void ShowIteration(){
        System.Console.WriteLine( "This is my iteration" );
    }
    protected override void ShowAnonymization(Subject caller, Event evt){
/*
 * A couple of explanation are necessary here to understand how SWIG work
 * http://www.swig.org/Doc1.3/Java.html#adding_downcasts
 *
 * System.Console.WriteLine( "This is my Anonymization. Type: " + evt.GetEventName() );
 * System.Type type = evt.GetType();
 * System.Console.WriteLine( "This is my Anonymization. System.Type: " + type.ToString() );
 * System.Console.WriteLine( "This is my Anonymization. CheckEvent: " + ae.CheckEvent( evt ) );
 * System.Console.WriteLine( "This is my Anonymization. Processing Tag #" + ae.GetTag().toString() );
 */
        AnonymizeEvent ae = AnonymizeEvent.Cast(evt);
        if( ae != null )
        {
            Tag t = ae.GetTag();
            System.Console.WriteLine( "This is my Anonymization. Processing Tag #" + t.toString() );
        }
        else
        {
            System.Console.WriteLine( "This is my Anonymization. Unhandled Event type: " + evt.GetEventName() );
        }
    }
    protected override void ShowAbort(){
        System.Console.WriteLine( "This is my abort" );
    }
}

public class ClinicalTrialIdentificationWorkflow
{
    public static bool ProcessOneFile( gdcm.Anonymizer ano , string filename, string outfilename )
    {

```



```

Reader reader = new Reader();
reader.SetFileName( filename );
bool ret = reader.Read();
if( !ret )
{
    return false;
}
// Pass in the file:
ano.SetFile( reader.GetFile() );

// First step, let's protect all Patient information as per
// PS 3.15 / E.1 / Basic Application Level Confidentiality Profile
if( !ano.BasicApplicationLevelConfidentialityProfile() )
{
    return false;
}

// Now let's pass in all Clinical Trial fields
// PS 3.3 - 2008 / C.7.1.3 Clinical Trial Subject Module
/*
Clinical Trial Sponsor Name (0012,0010) 1 The name of the clinical trial sponsor. See C.7.1.3.1.1.
Clinical Trial Protocol ID (0012,0020) 1 Identifier for the noted protocol. See C.7.1.3.1.2.
Clinical Trial Protocol Name (0012,0021) 2 The name of the clinical trial protocol. See C.7.1.3.1.3.
Clinical Trial Site ID (0012,0030) 2 The identifier of the site responsible for submitting clinical
    trial data. See C.7.1.3.1.4.
Clinical Trial Site Name (0012,0031) 2 Name of the site responsible for submitting clinical trial data.
    See C.7.1.3.1.5
Clinical Trial Subject ID (0012,0040) 1C The assigned identifier for the clinical trial subject. See
    C.7.1.3.1.6. Shall be present if Clinical Trial Subject Reading ID (0012,0042) is absent. May be present
    otherwise.
Clinical Trial Subject Reading ID (0012,0042) 1C Identifies the subject for blinded evaluations. Shall
    be present if Clinical Trial Subject ID (0012,0040) is absent. May be present otherwise. See C.7.1.3.1.7.
*/
ano.Replace( new gdcm.Tag(0x0012,0x0010), "MySponsorName");
ano.Replace( new gdcm.Tag(0x0012,0x0020), "MyProtocolID");
ano.Replace( new gdcm.Tag(0x0012,0x0021), "MyProtocolName");
ano.Replace( new gdcm.Tag(0x0012,0x0030), "MySiteId");
ano.Replace( new gdcm.Tag(0x0012,0x0031), "MySiteName");
ano.Replace( new gdcm.Tag(0x0012,0x0040), "MySponsorId");
ano.Replace( new gdcm.Tag(0x0012,0x0050), "MyTPId");
ano.Replace( new gdcm.Tag(0x0012,0x0051), "MyTPDescription");

// The following two are not required as they are guaranteed to be filled in by the
// Basic Application Level Confidentiality Profile. Only override if you understand what
// you are doing
//ano.Replace( new gdcm.Tag(0x0012,0x0062), "YES");
//ano.Replace( new gdcm.Tag(0x0012,0x0063), "My Super Duper Anonymization Overload");

// We might be generating a subdirectory. Let's make sure the subdir exist:
gdcm.FileName fn = new gdcm.FileName( outfilename );
string subdir = fn.GetPath();
if( !gdcm.PosixEmulation.MakeDirectory( subdir ) )
{
    return false;
}

gdcm.FileMetaInformation fmi = ano.GetFile().GetHeader();
// The following three lines make sure to regenerate any value:
fmi.Remove( new gdcm.Tag(0x0002,0x0012) );
fmi.Remove( new gdcm.Tag(0x0002,0x0013) );
fmi.Remove( new gdcm.Tag(0x0002,0x0016) );

Writer writer = new Writer();
writer.SetFileName( outfilename );
writer.SetFile( ano.GetFile() );
ret = writer.Write();
if( !ret )
{
    return false;
}

return true;
}

public static int Main(string[] args)
{
    gdcm.FileMetaInformation.SetSourceApplicationEntityTitle( "My ClinicalTrial App" );

    // http://www.oid-info.com/get/1.3.6.1.4.17434
    string THERALYS_ORG_ROOT = "1.3.6.1.4.17434";
    gdcm.UIDGenerator.SetRoot( THERALYS_ORG_ROOT );

```

```

System.Console.WriteLine( "Root dir is now: " + gdcml.UIDGenerator.GetRoot() );

gdcml.Global global = gdcml.Global.GetInstance();
if( !global.LoadResourcesFiles() )
{
    System.Console.WriteLine( "Could not LoadResourcesFiles" );
    return 1;
}

if( args.Length != 2 )
{
    System.Console.WriteLine( "Usage:" );
    System.Console.WriteLine( "ClinicalTrialIdentificationWorkflow input_dir output_dir" );
    return 1;
}
string dir1 = args[0];
string dir2 = args[1];

// Check input is valid:
if( !gdcml.PosixEmulation.FileIsDirectory(dir1) )
{
    System.Console.WriteLine( "Input directory: " + dir1 + " does not exist. Sorry" );
    return 1;
}
if( !gdcml.PosixEmulation.FileIsDirectory(dir2) )
{
    System.Console.WriteLine( "Output directory: " + dir2 + " does not exist. Sorry" );
    return 1;
}

// Recursively search all file within this toplevel directory:
Directory d = new Directory();
uint nfiles = d.Load( dir1, true );
if(nfiles == 0) return 1;

// Let's use the pre-shipped certificate of GDCM.
string certpath = gdcml.Filename.Join(gdcml.Testing.GetSourceDirectory(), "
/Testing/Source/Data/certificate.pem" );
gdcml.CryptographicMessageSyntax cms = new gdcml.CryptographicMessageSyntax();
if( !cms.ParseCertificateFile( certpath ) )
{
    System.Console.WriteLine( "PEM Certificate : " + certpath + " could not be read. Sorry" );
    return 1;
}

//Anonymizer ano = new Anonymizer();
// A reference to an actual C++ instance is required here:
SmartPtrAno sano = Anonymizer.New();
Anonymizer ano = sano.__ref__();

//SimpleSubjectWatcher watcher = new SimpleSubjectWatcher(ano, "Anonymizer");
MyWatcher watcher = new MyWatcher(ano);

// Explicitely specify the Cryptographic Message Syntax to use:
ano.SetCryptographicMessageSyntax( cms );

// Process all filenames:
FilenamesType filenames = d.GetFilenames();
for( uint i = 0; i < nfiles; ++i )
{
    string filename = filenames[ (int)i ];
    string outfilename = filename.Replace( dir1, dir2 );
    System.Console.WriteLine( "Filename: " + filename );
    System.Console.WriteLine( "Out Filename: " + outfilename );
    if( !ProcessOneFile( ano , filename, outfilename ) )
    {
        System.Console.WriteLine( "Could not process filename: " + filename );
        return 1;
    }
}

return 0;
}
}

```

27.9 CompressImage.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
/*
 *
 */

#include "gdcmImageReader.h"
#include "gdcmImage.h"
#include "gdcmWriter.h"
#include "gdcmAttribute.h"
#include "gdcmImageWriter.h"
#include "gdcmImageChangeTransferSyntax.h"

#include <iostream>
#include <fstream>

int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        std::cerr << argv[0] << " input.dcm output.dcm" << std::endl;
        return 1;
    }
    const char *filename = argv[1];
    const char *outfilename = argv[2];

    gdcm::ImageReader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        std::cerr << "Could not read: " << filename << std::endl;
        return 1;
    }

    // The output of gdcm::Reader is a gdcm::File
    //gdcm::File &file = reader.GetFile();

    // the dataset is the the set of element we are interested in:
    //gdcm::DataSet &ds = file.GetDataSet();

    const gdcm::Image &image = reader.GetImage();
    image.Print( std::cout );

    gdcm::ImageChangeTransferSyntax change;
    change.SetTransferSyntax(
        gdcm::TransferSyntax::JPEG2000Lossless );
    change.SetTransferSyntax(
        gdcm::TransferSyntax::JPEGLosslessProcess14_1 );
    //change.SetTransferSyntax( gdcm::TransferSyntax::JPEGBaselineProcess1 );
    //change.SetTransferSyntax( image.GetTransferSyntax() );
    change.SetInput( image );
    bool b = change.Change();
    if( !b )
    {
        std::cerr << "Could not change the Transfer Syntax" << std::endl;
        return 1;
    }

    //std::ofstream out( outfile );
    //image.GetBuffer2(out);
    //out.close();
    gdcm::ImageWriter writer;
    writer.SetImage( change.GetOutput() );
    writer.SetFile( reader.GetFile() );
    writer.SetFileName( outfile );
    if( !writer.Write() )
    {

```

```

    return 1;
}

return 0;
}

```

27.10 CompressLossyJPEG.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/

/*
 * Usage:
 * $ export LD_LIBRARY_PATH=$HOME/Perso/gdcm/debug-gcc/bin
 * $ mono bin/CompressLossyJPEG.exe input.dcm output.dcm
 */

using System;
using gdcm;

public class CompressLossyJPEG
{
    public static int Main(string[] args)
    {
        if( args.Length < 2 )
        {
            System.Console.WriteLine( " input.dcm output.dcm" );
            return 1;
        }
        string filename = args[0];
        string outfilename = args[1];

        ImageReader reader = new ImageReader();
        reader.SetFileName( filename );
        if( !reader.Read() )
        {
            System.Console.WriteLine( "Could not read: " + filename );
            return 1;
        }

        // The output of gdcm::Reader is a gdcm::File
        File file = reader.GetFile();

        // the dataset is the the set of element we are interested in:
        DataSet ds = file.GetDataSet();

        Image image = reader.GetImage();
        //image.Print( cout );

        ImageChangeTransferSyntax change = new ImageChangeTransferSyntax();
        TransferSyntax targetts = new TransferSyntax( TransferSyntax.TSType.JPEGBaselineProcess1 );
        change.SetTransferSyntax( targetts );

        // Setup our JPEGCodec, warning it should be compatible with JPEGBaselineProcess1
        JPEGCodec jpegcodec = new JPEGCodec();
        if( !jpegcodec.CanCode( targetts ) )
        {
            System.Console.WriteLine( "Something went really wrong, JPEGCodec cannot handle JPEGBaselineProcess1" );
            return 1;
        }
        jpegcodec.SetLossless( false );
        jpegcodec.SetQuality( 50 ); // poor quality !
        change.SetUserCodec( jpegcodec ); // specify the codec to use to the ImageChangeTransferSyntax

        change.SetInput( image );
        bool b = change.Change();
    }
}

```

```

    if( !b )
    {
        System.Console.WriteLine( "Could not change the Transfer Syntax" );
        return 1;
    }

    ImageWriter writer = new ImageWriter();
    writer.SetImage( (gdcm.Image)change.GetOutput() );
    writer.SetFile( reader.GetFile() );
    writer.SetFileName( outfilename );
    if( !writer.Write() )
    {
        System.Console.WriteLine( "Could not write: " + outfilename );
        return 1;
    }

    return 0;
}
}

```

27.11 Convert16BitsTo8Bits.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "vtkGDCMImageReader.h"
#include "vtkGDCMImageWriter.h"
#include "vtkImageData.h"
#include "vtkImageCast.h"

#include "gdcmTesting.h"
// The following file is 16/16/15 but the scalar range of the image is [0,192]
// it could be safely stored as 8bits instead:
// gdcmData/012345.002.050.dcm

int main(int, char *[])
{
    const char *directory = gdcm::Testing::GetDataRoot();
    if(!directory) return 1;
    std::string file = std::string(directory) + "/012345.002.050.dcm";
    std::cout << file << std::endl;

    vtkGDCMImageReader *reader = vtkGDCMImageReader::New();
    reader->SetFileName( file.c_str() );
    reader->Update();
    //reader->GetOutput()->Print( std::cout );

    vtkImageCast *cast = vtkImageCast::New();
    cast->SetInput( reader->GetOutput() );
    cast->SetOutputScalarTypeToUnsignedChar();

    vtkGDCMImageWriter *writer = vtkGDCMImageWriter::New();
    writer->SetFileName( "/tmp/cast.dcm" );
    writer->SetInput( cast->GetOutput() );
    writer->SetImageFormat( reader->GetImageFormat() );
    writer->SetMedicalImageProperties( reader->GetMedicalImageProperties() );
    writer->SetDirectionCosines( reader->GetDirectionCosines() );
    writer->SetShift( reader->GetShift() );
    writer->SetScale( reader->GetScale() );
    writer->Write();

    reader->Delete();
    cast->Delete();
    writer->Delete();
}

```

```

    return 0;
}

```

27.12 ConvertMPL.py

```

1 #####
2 #
3 #   Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 #   Copyright (c) 2006-2011 Mathieu Malaterre
6 #   All rights reserved.
7 #   See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.
8 #
9 #   This software is distributed WITHOUT ANY WARRANTY; without even
10 #   the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 #   PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 """
16 display a DICOM image with matplotlib via numpy
17
18 Caveats:
19 - Does not support UINT12/INT12
20
21 Usage:
22
23 python ConvertNumpy.py "IM000000"
24
25 Thanks:
26 plotting example - Ray Schumacher 2009
27 """
28
29 import gdcm
30 import numpy
31 from pylab import *
32
33
34 def get_gdcm_to_numpy_typemap():
35     """Returns the GDCM Pixel Format to numpy array type mapping."""
36     _gdcm_np = {gdcm.PixelFormat.UINT8 :numpy.int8,
37                 gdcm.PixelFormat.INT8  :numpy.uint8,
38                 gdcm.PixelFormat.UINT16:numpy.uint16,
39                 gdcm.PixelFormat.INT16 :numpy.int16,
40                 gdcm.PixelFormat.UINT32 :numpy.uint32,
41                 gdcm.PixelFormat.INT32  :numpy.int32,
42                 gdcm.PixelFormat.FLOAT32:numpy.float32,
43                 gdcm.PixelFormat.FLOAT64:numpy.float64 }
44     return _gdcm_np
45
46 def get_numpy_array_type(gdcm_pixel_format):
47     """Returns a numpy array typecode given a GDCM Pixel Format."""
48     return get_gdcm_to_numpy_typemap()[gdcm_pixel_format]
49
50 def gdcm_to_numpy(image):
51     """Converts a GDCM image to a numpy array.
52     """
53     pf = image.GetPixelFormat().GetScalarType()
54     print 'pf', pf
55     print image.GetPixelFormat().GetScalarTypeAsString()
56     assert pf in get_gdcm_to_numpy_typemap().keys(), \
57         "Unsupported array type %s"%pf
58     d = image.GetDimension(0), image.GetDimension(1)
59     print 'Image Size: %d x %d' % (d[0], d[1])
60     dtype = get_numpy_array_type(pf)
61     gdcm_array = image.GetBuffer()
62     ## use float for accurate scaling
63     result = numpy.frombuffer(gdcm_array, dtype=dtype).astype(float)
64     ## optional gamma scaling
65     #maxV = float(result[result.argmax()])
66     #result = result + .5*(maxV-result)
67     #result = numpy.log(result+50) ## apprpx background level
68     result.shape = d
69     return result
70
71 if __name__ == "__main__":
72     import sys

```

```

73  r = gdcm.ImageReader()
74  filename = sys.argv[1]
75  r.SetFileName( filename )
76  if not r.Read(): sys.exit(1)
77  numpy_array = gdcm_to_numpy( r.GetImage() )
78
79  subplot(111)# one plot, on left
80  title(filename)
81  ## many colormaps are available
82  imshow(numpy_array, interpolation='bilinear', cmap=cm.jet)
83  ## set the plot sizes and placement
84  subplots_adjust(bottom=0.1, right=0.8, top=0.9)
85  cax = axes([0.85, 0.1, 0.075, 0.8])
86  colorbar(cax=cax)
87  title('values')
88  get_current_fig_manager().window.title('plot')
89  show()

```

27.13 ConvertMultiFrameToSingleFrame.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "vtkGDCMImageReader.h"
#include "vtkGDCMImageWriter.h"
#include "vtkImageData.h"
#include "vtkStringArray.h"

#include "gdcmTesting.h"
#include "gdcmFilenameGenerator.h"

int main(int argc, char *argv[])
{
    std::string filename;
    if( argc <= 1 )
    {
        const char *directory = gdcm::Testing::GetDataRoot();
        if(!directory) return 1;
        std::string file = std::string(directory) + "/US-PAL-8-10x-echo.dcm";
        filename = file;
    }
    else
    {
        filename = argv[1];
    }
    std::cout << "file: " << filename << std::endl;

    vtkGDCMImageReader *reader = vtkGDCMImageReader::New();
    reader->SetFileName( filename.c_str() );
    reader->Update();
    //reader->GetOutput()->Print( std::cout );

    int dims[3];
    reader->GetOutput()->GetDimensions( dims );

    std::ostream os;
    os << "singleframe";
    os << "%04d.dcm";
    gdcm::FilenameGenerator fg;
    fg.SetPattern( os.str().c_str() );
    unsigned int nfiles = dims[2];
    fg.SetNumberOfFileNames( nfiles );
    bool b = fg.Generate();
    if( !b )
    {
        std::cerr << "FilenameGenerator::Generate() failed" << std::endl;
        return 1;
    }
}

```

```

    }
    if( !fg.GetNumberOfFileNames() )
    {
        std::cerr << "FilenameGenerator::Generate() failed somehow..." << std::endl;
        return 1;
    }

    // By default write them as Secondary Capture (for portability)
    vtkGDCMImageWriter *writer = vtkGDCMImageWriter::New();
    vtkStringArray *filenames = vtkStringArray::New();
    for(unsigned int i = 0; i < fg.GetNumberOfFileNames(); ++i)
    {
        filenames->InsertNextValue( fg.GetFilename(i) );
    }
    assert( filenames->GetNumberOfValues() == (int)fg.GetNumberOfFileNames() );
    writer->SetFileNames( filenames );
    filenames->Delete();
    writer->SetFileDimensionality( 2 );
    writer->SetInput( reader->GetOutput() );
    writer->SetImageFormat( reader->GetImageFormat() );
    writer->Write();

    reader->Delete();
    writer->Delete();

    return 0;
}

```

27.14 ConvertNumpy.py

```

1 #####
2 #
3 #   Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 #   Copyright (c) 2006-2011 Mathieu Malaterre
6 #   All rights reserved.
7 #   See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.
8 #
9 #   This software is distributed WITHOUT ANY WARRANTY; without even
10 #   the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 #   PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 """
16 This module add support for converting a gdcm.Image to a numpy array.
17
18 Caveats:
19 - Does not support UINT12/INT12
20
21 Removed:
22 - float16 is defined in GDCM API but no implementation exist for it ...
23 """
24
25 import gdcm
26 import numpy
27
28 def get_gdcm_to_numpy_typemap():
29     """Returns the GDCM Pixel Format to numpy array type mapping."""
30     _gdcm_np = {gdcm.PixelFormat.UINT8 :numpy.int8,
31                 gdcm.PixelFormat.INT8 :numpy.uint8,
32                 #gdcm.PixelFormat.UINT12 :numpy.uint12,
33                 #gdcm.PixelFormat.INT12 :numpy.int12,
34                 gdcm.PixelFormat.UINT16 :numpy.uint16,
35                 gdcm.PixelFormat.INT16 :numpy.int16,
36                 gdcm.PixelFormat.UINT32 :numpy.uint32,
37                 gdcm.PixelFormat.INT32 :numpy.int32,
38                 #gdcm.PixelFormat.FLOAT16:numpy.float16,
39                 gdcm.PixelFormat.FLOAT32:numpy.float32,
40                 gdcm.PixelFormat.FLOAT64:numpy.float64 }
41     return _gdcm_np
42
43 def get_numpy_array_type(gdcm_pixel_format):
44     """Returns a numpy array typecode given a GDCM Pixel Format."""
45     return get_gdcm_to_numpy_typemap()[gdcm_pixel_format]
46
47 def gdcm_to_numpy(image):

```



```

48     """Converts a GDCM image to a numpy array.
49     """
50     pf = image.GetPixelFormat()
51
52     assert pf.GetScalarType() in get_gdcm_to_numpy_tymap().keys(), \
53         "Unsupported array type %s"%pf
54
55     shape = image.GetDimension(0) * image.GetDimension(1), pf.GetSamplesPerPixel()
56     if image.GetNumberOfDimensions() == 3:
57         shape = shape[0] * image.GetDimension(2), shape[1]
58
59     dtype = get_numpy_array_type(pf.GetScalarType())
60     gdcm_array = image.GetBuffer()
61     result = numpy.frombuffer(gdcm_array, dtype=dtype)
62     result.shape = shape
63     return result
64
65 if __name__ == "__main__":
66     import sys
67     r = gdcm.ImageReader()
68     filename = sys.argv[1]
69     r.SetFileName( filename )
70     if not r.Read():
71         sys.exit(1)
72
73     numpy_array = gdcm_to_numpy( r.GetImage() )
74     print numpy_array

```

27.15 ConvertPIL.py

```

1 #####
2 #
3 #   Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 #   Copyright (c) 2006-2011 Mathieu Malaterre
6 #   All rights reserved.
7 #   See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.
8 #
9 #   This software is distributed WITHOUT ANY WARRANTY; without even
10 #   the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 #   PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 """
16 save a DICOM image with PIL via numpy
17
18 Caveats:
19 - Does not support UINT12/INT12
20
21 Usage:
22
23 python ConvertNumpy.py "IM000000"
24
25 Thanks:
26 plotting example - Ray Schumacher 2009
27 """
28
29 import gdcm
30 import numpy
31 from PIL import Image, ImageOps
32
33
34 def get_gdcm_to_numpy_tymap():
35     """Returns the GDCM Pixel Format to numpy array type mapping."""
36     _gdcm_np = {gdcm.PixelFormat.UINT8 :numpy.int8,
37                 gdcm.PixelFormat.INT8  :numpy.uint8,
38                 gdcm.PixelFormat.UINT16:numpy.uint16,
39                 gdcm.PixelFormat.INT16 :numpy.int16,
40                 gdcm.PixelFormat.UINT32 :numpy.uint32,
41                 gdcm.PixelFormat.INT32  :numpy.int32,
42                 gdcm.PixelFormat.FLOAT32:numpy.float32,
43                 gdcm.PixelFormat.FLOAT64:numpy.float64 }
44     return _gdcm_np
45
46 def get_numpy_array_type(gdcm_pixel_format):
47     """Returns a numpy array typecode given a GDCM Pixel Format."""

```

```

48     return get_gdcm_to_numpy_typemap()[gdcm_pixel_format]
49
50 def gdcm_to_numpy(image):
51     """Converts a GDCM image to a numpy array.
52     """
53     pf = image.GetPixelFormat().GetScalarType()
54     print 'pf', pf
55     print image.GetPixelFormat().GetScalarTypeAsString()
56     assert pf in get_gdcm_to_numpy_typemap().keys(), \
57         "Unsupported array type %s"%pf
58     d = image.GetDimension(0), image.GetDimension(1)
59     print 'Image Size: %d x %d' % (d[0], d[1])
60     dtype = get_numpy_array_type(pf)
61     gdcm_array = image.GetBuffer()
62     result = numpy.frombuffer(gdcm_array, dtype=dtype)
63     maxV = float(result[result.argmax()])
64     ## linear gamma adjust
65     #result = result + .5*(maxV-result)
66     ## log gamma
67     result = numpy.log(result+50) ## 50 is apprx background level
68     maxV = float(result[result.argmax()])
69     result = result*(2.**8/maxV) ## histogram stretch
70     result.shape = d
71     return result
72
73 if __name__ == "__main__":
74     import sys
75     r = gdcm.ImageReader()
76     filename = sys.argv[1]
77     r.SetFileName( filename )
78     if not r.Read(): sys.exit(1)
79     numpy_array = gdcm_to_numpy( r.GetImage() )
80     ## L is 8 bit grey
81     ## http://www.pythonware.com/library/pil/handbook/concepts.htm
82     pilImage = Image.frombuffer('L',
83                                numpy_array.shape,
84                                numpy_array.astype(numpy.uint8),
85                                'raw','L',0,1)
86     ## cutoff removes background noise and spikes
87     pilImage = ImageOps.autocontrast(pilImage, cutoff=.1)
88     pilImage.save(sys.argv[1]+' .jpg')

```

27.16 ConvertRGBToLuminance.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "vtkGDCMImageReader.h"
#include "vtkGDCMImageWriter.h"
#include "vtkImageData.h"
#include "vtkImageLuminance.h"

#include "gdcmTesting.h"

// There is no such thing as MR Image Storage + Photometric Interpretation = RGB
// let's rewrite that into a proper single component image:
int main(int, char *[])
{
    const char *directory = gdcm::Testing::GetDataRoot();
    if(!directory) return 1;
    std::string file = std::string(directory) + "/SIEMENS-MR-RGB-16Bits.dcm";
    std::cout << file << std::endl;

    vtkGDCMImageReader *reader = vtkGDCMImageReader::New();
    reader->SetFileName( file.c_str() );
    reader->Update();
    //reader->GetOutput()->Print( std::cout );

```

```

vtkImageLuminance *luminance = vtkImageLuminance::New();
luminance->SetInput( reader->GetOutput() );

vtkGDCMImageWriter *writer = vtkGDCMImageWriter::New();
writer->SetFileName( "/tmp/bla.dcm" );
writer->SetInput( luminance->GetOutput() );
//writer->SetImageFormat( reader->GetImageFormat() ); // Do NOT pass image format
writer->SetMedicalImageProperties( reader->GetMedicalImageProperties() );
writer->SetDirectionCosines( reader->GetDirectionCosines() );
writer->SetShift( reader->GetShift() );
writer->SetScale( reader->GetScale() );
writer->Write();

// TODO:
//vtkImageAppendComponents.h

reader->Delete();
luminance->Delete();
writer->Delete();

return 0;
}

```

27.17 ConvertSingleBitTo8Bits.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "vtkGDCMImageReader.h"
#include "vtkGDCMImageWriter.h"
#include "vtkImageData.h"
#include "vtkImageCast.h"
#include "vtkPointData.h"
#include "vtkBitArray.h"
#include "vtkUnsignedCharArray.h"

int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        return 1;
    }
    const char *filename = argv[1];
    const char *outfilename = argv[2];

    vtkGDCMImageReader *reader = vtkGDCMImageReader::New();
    reader->SetFileName( filename );
    reader->Update();
    //reader->GetOutput()->Print( std::cout );

    vtkDataArray* array = reader->GetOutput()->GetPointData()->GetScalars();
    vtkBitArray *barray = vtkBitArray::SafeDownCast( array );
    if( !barray ) return false;
    vtkIdType nvalues = array->GetNumberOfTuples();
    vtkUnsignedCharArray *uarray = vtkUnsignedCharArray::New();
    uarray->SetNumberOfTuples( nvalues );
    for(vtkIdType i = 0; i < nvalues; ++i)
    {
        uarray->SetValue( i, (unsigned char)barray->GetValue(i) );
    }

    vtkImageData *copy = vtkImageData::New();
    copy->SetScalarType( VTK_UNSIGNED_CHAR );
    copy->SetExtent( reader->GetOutput()->GetExtent() );
    copy->AllocateScalars();

```

```

//uarray->Print( std::cout );
//copy->GetPointData()->GetScalars()->Print( std::cout );
copy->GetPointData()->SetScalars( uarray );
uarray->Delete();

vtkGDCMImageWriter *writer = vtkGDCMImageWriter::New();
writer->SetFileName( outfilename );
//writer->SetInput( cast->GetOutput() );
writer->SetInput( copy );
writer->SetImageFormat( reader->GetImageFormat() );
writer->SetMedicalImageProperties( reader->GetMedicalImageProperties() );
writer->SetDirectionCosines( reader->GetDirectionCosines() );
writer->SetShift( reader->GetShift() );
writer->SetScale( reader->GetScale() );
writer->SetFileDimensionality( reader->GetFileDimensionality() );
writer->Write();

reader->Delete();
copy->Delete();
writer->Delete();

return 0;
}

```

27.18 ConvertToQImage.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/
/*
 * This example shows how to setup the pipeline from a gdcm::ImageReader into a
 * Qt QImage data structure.
 * It only handles 2D image.
 *
 * Ref:
 * http://doc.trolltech.com/4.5/qimage.html
 *
 * Usage:
 * ConvertToQImage gdcmData/012345.002.050.dcm output.png
 *
 * Thanks:
 * Sylvain ADAM (sylvain51 hotmail com) for contributing this example
 */

#include "gdcmImageReader.h"
#include <QImage>
#include <QImageWriter>

bool ConvertToFormat_RGB888(gdcm::Image const & gimage, char *buffer, QImage* &imageQt)
{
    const unsigned int* dimension = gimage.GetDimensions();

    unsigned int dimX = dimension[0];
    unsigned int dimY = dimension[1];

    gimage.GetBuffer(buffer);

    // Let's start with the easy case:
    if( gimage.GetPhotometricInterpretation() ==
        gdcm::PhotometricInterpretation::RGB )
    {
        if( gimage.GetPixelFormat() != gdcm::PixelFormat::UINT8 )
        {
            return false;
        }
        unsigned char *ubuffer = (unsigned char*)buffer;

```

```

    // QImage::Format_RGB888 13 The image is stored using a 24-bit RGB format (8-8-8).
    imageQt = new QImage((unsigned char *)ubuffer, dimX, dimY, 3*dimX, QImage::Format_RGB888);
}
else if( gimage.GetPhotometricInterpretation() ==
    gdcmm::PhotometricInterpretation::MONOCHROME2 )
{
    if( gimage.GetPixelFormat() == gdcmm::PixelFormat::UINT8 )
    {
        // We need to copy each individual 8bits into R / G and B:
        unsigned char *ubuffer = new unsigned char[dimX*dimY*3];
        unsigned char *pubuffer = ubuffer;
        for(unsigned int i = 0; i < dimX*dimY; i++)
        {
            *pubuffer++ = *buffer;
            *pubuffer++ = *buffer;
            *pubuffer++ = *buffer++;
        }

        imageQt = new QImage(ubuffer, dimX, dimY, QImage::Format_RGB888);
    }
    else if( gimage.GetPixelFormat() == gdcmm::PixelFormat::INT16 )
    {
        // We need to copy each individual 16bits into R / G and B (truncate value)
        short *buffer16 = (short*)buffer;
        unsigned char *ubuffer = new unsigned char[dimX*dimY*3];
        unsigned char *pubuffer = ubuffer;
        for(unsigned int i = 0; i < dimX*dimY; i++)
        {
            // Scalar Range of gdcmmData/012345.002.050.dcm is [0,192], we could simply do:
            // *pubuffer++ = *buffer16;
            // *pubuffer++ = *buffer16;
            // *pubuffer++ = *buffer16;
            // instead do it right:
            *pubuffer++ = (unsigned char)std::min(255, (32768 + *buffer16) / 255);
            *pubuffer++ = (unsigned char)std::min(255, (32768 + *buffer16) / 255);
            *pubuffer++ = (unsigned char)std::min(255, (32768 + *buffer16) / 255);
            buffer16++;
        }

        imageQt = new QImage(ubuffer, dimX, dimY, QImage::Format_RGB888);
    }
    else
    {
        std::cerr << "Pixel Format is: " << gimage.GetPixelFormat() << std::endl;
        return false;
    }
}
else
{
    std::cerr << "Unhandled PhotometricInterpretation: " << gimage.
        GetPhotometricInterpretation() << std::endl;
    return false;
}

return true;
}

int main(int argc, char *argv[])
{
    if( argc < 2 )
    {
        return 1;
    }
    const char *filename = argv[1];
    const char *outfilename = argv[2];

    gdcmm::ImageReader ir;
    ir.SetFileName( filename );
    if(!ir.Read())
    {
        //Read failed
        return 1;
    }

    std::cout<<"Getting image from ImageReader..."<<std::endl;

    const gdcmm::Image &gimage = ir.GetImage();
    std::vector<char> vbuffer;
    vbuffer.resize( gimage.GetBufferLength() );
    char *buffer = &vbuffer[0];

```

```

 QImage *imageQt = NULL;
 if( !ConvertToFormat_RGB888( gimage, buffer, imageQt ) )
 {
     return 1;
 }

 QImageWriter writer;
 writer.setFormat("png");
 writer.setFileName( outfilename );
 if( !writer.write( *imageQt ) )
 {
     return 1;
 }

 return 0;
}

```

27.19 CreateARGBImage.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
/*
 * http://www.w3.org/Graphics/PNG/inline-alpha.html
 * alphatest.png: PNG image data, 380 x 287, 8-bit/color RGBA, non-interlaced
 *
 * $ convert alphatest.png alphatest.rgb
 */

#include "gdcmImageReader.h"
#include "gdcmSequenceOfFragments.h"
#include "gdcmSystem.h"
#include "gdcmImageWriter.h"

#include <iostream>
#include <fstream>

int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        std::cerr << argv[0] << " input.rgb output.dcm" << std::endl;
        return 1;
    }
    const char *filename = argv[1];
    const char *outfilename = argv[2];

    size_t len = gdcm::System::FileSize(filename);
    std::ifstream is(filename);

    char * buf = new char[len];
    is.read(buf, len);

    gdcm::ImageWriter writer;
    gdcm::Image &image = writer.GetImage();
    image.SetNumberOfDimensions( 2 );
    unsigned int dims[3] = {};
    dims[0] = 380;
    dims[1] = 287;
    image.SetDimensions( dims );
    gdcm::PixelFormat pf = gdcm::PixelFormat::UINT8;
    pf.SetSamplesPerPixel( 4 );
    image.SetPixelFormat( pf );
    gdcm::PhotometricInterpretation pi =
        gdcm::PhotometricInterpretation::ARGB;
    image.SetPhotometricInterpretation( pi );
    image.SetTransferSyntax(

```

```

        gdcmm::TransferSyntax::ExplicitVRLittleEndian );

gdcmm::DataElement pixeldata( gdcmm::Tag(0x7fe0,0x0010) );
pixeldata.SetByteValue( buf, (uint32_t)len );
image.SetDataElement( pixeldata );

writer.SetFileName( outfilename );
if( !writer.Write() )
{
    return 1;
}
delete[] buf;

return 0;
}

```

27.20 CreateCMYKImage.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcmm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
/*
 * http://www.w3.org/Graphics/PNG/inline-alpha.html
 * alphatest.png: PNG image data, 380 x 287, 8-bit/color RGBA, non-interlaced
 *
 * $ convert alphatest.png alphatest.cmyk
 */

#include "gdcmmImageReader.h"
#include "gdcmmSequenceOfFragments.h"
#include "gdcmmSystem.h"
#include "gdcmmImageWriter.h"

#include <iostream>
#include <fstream>

int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        std::cerr << argv[0] << " input.cmyk output.dcm" << std::endl;
        return 1;
    }
    const char *filename = argv[1];
    const char *outfilename = argv[2];

    size_t len = gdcmm::System::FileSize(filename);
    std::ifstream is(filename);

    char * buf = new char[len];
    is.read(buf, len);

    gdcmm::ImageWriter writer;
    gdcmm::Image &image = writer.GetImage();
    image.SetNumberOfDimensions( 2 );
    unsigned int dims[3] = {};
    dims[0] = 380;
    dims[1] = 287;
    image.SetDimensions( dims );
    gdcmm::PixelFormat pf = gdcmm::PixelFormat::UINT8;
    pf.SetSamplesPerPixel( 4 );
    image.SetPixelFormat( pf );
    gdcmm::PhotometricInterpretation pi =
        gdcmm::PhotometricInterpretation::CMYK;
    image.SetPhotometricInterpretation( pi );
    image.SetTransferSyntax(

```

```

        gdcm::TransferSyntax::ExplicitVRLittleEndian );

gdcm::DataElement pixeldata( gdcm::Tag(0x7fe0,0x0010) );
pixeldata.SetByteValue( buf, (uint32_t)len );
image.SetDataElement( pixeldata );

writer.SetFileName( outfilename );
if( !writer.Write() )
{
    return 1;
}
delete[] buf;

return 0;
}

```

27.21 CreateJPIPDataSet.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/
/*
 * This example was created during the GSOC 2011 project for
 * JPIP
 */
#include "gdcmAnonymizer.h"
#include "gdcmWriter.h"
#include "gdcmUIDGenerator.h"
#include "gdcmFile.h"
#include "gdcmTag.h"
#include "gdcmSystem.h"
#include "gdcmAttribute.h"

int main(int argc, char *argv[])
{
    if( argc < 2 )
    {
        std::cerr << argv[0] << " output.dcm" << std::endl;
        return 1;
    }
    const char *outfilename = argv[1];

    gdcm::Writer w;
    gdcm::File &file = w.GetFile();
    gdcm::DataSet &ds = file.GetDataSet();
    //w.SetCheckFileMetaInformation( true );
    w.SetFileName( outfilename );

    file.GetHeader().SetDataSetTransferSyntax(
        gdcm::TransferSyntax::JPIPReferenced );

    gdcm::Anonymizer anon;
    anon.SetFile( file );

    gdcm::MediaStorage ms =
        gdcm::MediaStorage::SecondaryCaptureImageStorage;

    gdcm::UIDGenerator gen;
    anon.Replace( gdcm::Tag(0x0008,0x16), ms.GetString() );
    std::cout << ms.GetString() << std::endl;
    anon.Replace( gdcm::Tag(0x0008,0x18), gen.Generate() );
    //
    anon.Replace( gdcm::Tag(0x0010,0x10), "JPIP^EXAMPLE" );
    anon.Replace( gdcm::Tag(0x0010,0x20), "012345" );
    anon.Empty( gdcm::Tag(0x0010,0x30) );
    anon.Empty( gdcm::Tag(0x0010,0x40) );
    anon.Empty( gdcm::Tag(0x0008,0x20) );

```



```

anon.Empty( gdcM::Tag(0x0008,0x30) );
anon.Empty( gdcM::Tag(0x0008,0x90) );
anon.Empty( gdcM::Tag(0x0020,0x10) );
anon.Empty( gdcM::Tag(0x0020,0x11) );
anon.Empty( gdcM::Tag(0x0008,0x50) );
anon.Empty( gdcM::Tag(0x0020,0x0013) );
anon.Replace( gdcM::Tag(0x0020,0xd), gen.Generate() );
anon.Replace( gdcM::Tag(0x0020,0xe), gen.Generate() );
anon.Replace( gdcM::Tag(0x0008,0x64), "WSD " );

gdcM::Attribute<0x0028,0x7FE0> at;
at.SetValue( "http://dicom.example.com/jpipserver.cgi?target=img.jp2" );
ds.Insert( at.GetAsDataElement() );

// Need to retrieve the PixelFormat information from the given file

if (!w.Write() )
{
    std::cerr << "Could not write: " << outfilename << std::endl;
    return 1;
}

return 0;
}

```

27.22 CreateRAWStorage.py

```

1 #####
2 #
3 #   Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 #   Copyright (c) 2006-2011 Mathieu Malaterre
6 #   All rights reserved.
7 #   See Copyright.txt or http://gdcM.sourceforge.net/Copyright.html for details.
8 #
9 #   This software is distributed WITHOUT ANY WARRANTY; without even
10 #   the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 #   PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 """
16 <uid value="1.2.840.10008.5.1.4.1.1.66" name="Raw Data Storage" type="SOP Class" part="PS 3.4" retired=
17   "false"/>
18 """
19
20 import gdcM
21 import sys,os
22
23 if __name__ == "__main__":
24     r = gdcM.Reader()
25     # Will require Testing...
26     dataroot = gdcM.Testing.GetDataRoot()
27     filename = os.path.join( dataroot, '012345.002.050.dcm' )
28     r.SetFileName( filename )
29     r.Read()
30     f = r.GetFile()
31     ds = f.GetDataSet()
32
33     uid = "1.2.840.10008.5.1.4.1.1.66"
34     # f = gdcM.File()
35     # ds = f.GetDataSet()
36     de = gdcM.DataElement( gdcM.Tag(0x0008,0x0016) )
37     de.SetByteValue( uid, gdcM.VL(len(uid)) )
38     vr = gdcM.VR( gdcM.VR.UI )
39     de.SetVR( vr )
40     ds.Replace( de )
41
42     ano = gdcM.Anonymizer()
43     ano.SetFile( r.GetFile() )
44     ano.RemovePrivateTags()
45     ano.RemoveGroupLength()
46     taglist = [
47         gdcM.Tag(0x0008,0x0008),
48         gdcM.Tag(0x0008,0x0022),
49         gdcM.Tag(0x0008,0x0032),
50         gdcM.Tag(0x0008,0x2111),

```

```

50  gdcM.Tag(0x0008,0x1150),
51  gdcM.Tag(0x0008,0x1155),
52  gdcM.Tag(0x0008,0x0100),
53  gdcM.Tag(0x0008,0x0102),
54  gdcM.Tag(0x0008,0x0104),
55  gdcM.Tag(0x0040,0xa170),
56  gdcM.Tag(0x0008,0x2112),
57  gdcM.Tag(0x0008,0x0100),
58  gdcM.Tag(0x0008,0x0102),
59  gdcM.Tag(0x0008,0x0104),
60  gdcM.Tag(0x0008,0x9215),
61  gdcM.Tag(0x0018,0x0010),
62  gdcM.Tag(0x0018,0x0022),
63  gdcM.Tag(0x0018,0x0050),
64  gdcM.Tag(0x0018,0x0060),
65  gdcM.Tag(0x0018,0x0088),
66  gdcM.Tag(0x0018,0x0090),
67  gdcM.Tag(0x0018,0x1040),
68  gdcM.Tag(0x0018,0x1100),
69  gdcM.Tag(0x0018,0x1110),
70  gdcM.Tag(0x0018,0x1111),
71  gdcM.Tag(0x0018,0x1120),
72  gdcM.Tag(0x0018,0x1130),
73  gdcM.Tag(0x0018,0x1150),
74  gdcM.Tag(0x0018,0x1151),
75  gdcM.Tag(0x0018,0x1152),
76  gdcM.Tag(0x0018,0x1160),
77  gdcM.Tag(0x0018,0x1190),
78  gdcM.Tag(0x0018,0x1210),
79  gdcM.Tag(0x0020,0x0012),
80  gdcM.Tag(0x0020,0x0032),
81  gdcM.Tag(0x0020,0x0037),
82  gdcM.Tag(0x0020,0x1041),
83  gdcM.Tag(0x0020,0x4000),
84  gdcM.Tag(0x0028,0x0002),
85  gdcM.Tag(0x0028,0x0004),
86  gdcM.Tag(0x0028,0x0010),
87  gdcM.Tag(0x0028,0x0011),
88  gdcM.Tag(0x0028,0x0030),
89  gdcM.Tag(0x0028,0x0100),
90  gdcM.Tag(0x0028,0x0101),
91  gdcM.Tag(0x0028,0x0102),
92  gdcM.Tag(0x0028,0x0103),
93  gdcM.Tag(0x0028,0x1052),
94  gdcM.Tag(0x0028,0x1053),
95  gdcM.Tag(0x0028,0x2110),
96  gdcM.Tag(0x0028,0x2112),
97  gdcM.Tag(0x7fe0,0x0010),
98  gdcM.Tag(0x0018,0x0020),
99  gdcM.Tag(0x0018,0x0021),
100 gdcM.Tag(0x0018,0x0023),
101 gdcM.Tag(0x0018,0x0025),
102 gdcM.Tag(0x0018,0x0080),
103 gdcM.Tag(0x0018,0x0081),
104 gdcM.Tag(0x0018,0x0083),
105 gdcM.Tag(0x0018,0x0084),
106 gdcM.Tag(0x0018,0x0085),
107 gdcM.Tag(0x0018,0x0086),
108 gdcM.Tag(0x0018,0x0087),
109 gdcM.Tag(0x0018,0x0091),
110 gdcM.Tag(0x0018,0x0093),
111 gdcM.Tag(0x0018,0x0094),
112 gdcM.Tag(0x0018,0x0095),
113 gdcM.Tag(0x0018,0x1088),
114 gdcM.Tag(0x0018,0x1090),
115 gdcM.Tag(0x0018,0x1094),
116 gdcM.Tag(0x0018,0x1250),
117 gdcM.Tag(0x0018,0x1251),
118 gdcM.Tag(0x0018,0x1310),
119 gdcM.Tag(0x0018,0x1312),
120 gdcM.Tag(0x0018,0x1314),
121 gdcM.Tag(0x0018,0x1315),
122 gdcM.Tag(0x0018,0x1316),
123 gdcM.Tag(0x0020,0x0110),
124 gdcM.Tag(0x0028,0x0120),
125 gdcM.Tag(0x0028,0x1050),
126 gdcM.Tag(0x0028,0x1051)
127 ]
128 for tag in taglist:
129     #print tag
130     ano.Remove( tag )

```

```

131
132 # special handling
133 gen = gdcM.UIDGenerator()
134 ano.Replace( gdcM.Tag(0x0008,0x9123), gen.Generate() )
135 #ano.Empty( gdcM.Tag(0x0040,0x0555) )
136
137
138 #
139 # uid = gen.Generate()
140 # de.SetTag( gdcM.Tag(0x0008,0x0018) )
141 # de.SetByteValue( uid, gdcM.VL(len(uid)) )
142 # ds.Insert( de )
143
144 # init FMI now:
145 #fmi = f.GetHeader()
146 #ts = gdcM.TransferSyntax()
147 #print ts
148 #fmi.SetDataSetTransferSyntax( ts ) # default
149 #print fmi.GetDataSetTransferSyntax()
150 #de.SetTag( gdcM.Tag(0x0002,0x0010) )
151 #uid = "1.2.840.10008.1.2"
152 #de.SetByteValue( uid, gdcM.VL(len(uid)) )
153 #fmi.Insert( de )
154 # f.SetHeader( r.GetFile().GetHeader() )
155
156 writer = gdcM.Writer()
157 writer.SetFile( ano.GetFile() )
158 writer.SetFileName( "rawstorage.dcm" );
159 writer.Write()

```

27.23 csa2img.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
/*
 * I do not know what the format is, just guessing from info found on the net:
 *
 * http://atonal.ucdavis.edu/matlab/fmri/spm5/spm_dicom_convert.m
 *
 * This example is an attempt at understanding the format used by SIEMENS
 * their "SIEMENS CSA NON-IMAGE" DICOM file (1.3.12.2.1107.5.9.1)
 *
 * Everything done in this code is for the sole purpose of writing interoperable
 * software under Sect. 1201 (f) Reverse Engineering exception of the DMCA.
 * If you believe anything in this code violates any law or any of your rights,
 * please contact us (gdcm-developers@lists.sourceforge.net) so that we can
 * find a solution.
 *
 */
#include "gdcMReader.h"
#include "gdcMImageReader.h"
#include "gdcMImageWriter.h"
#include "gdcMCSAHeader.h"
#include "gdcMAttribute.h"
#include "gdcMPrivateTag.h"

#include <math.h>

int main(int argc, char *argv [])
{
    if( argc < 2 ) return 1;
    // gdcMDataExtra/gdcMNonImageData/exCSA_Non-Image_Storage.dcm
    // PHANTOM.MR.CARDIO_COEUR_S_QUENCE_DE_REP_RAGE.9.257.2008.03.20.14.53.25.578125.43151705.IMA
    const char *filename = argv[1];

    gdcM::Reader reader; // Do not use ImageReader

```

```

reader.SetFileName( filename );
if( !reader.Read() )
{
    std::cerr << "Failed to read: " << filename << std::endl;
    return 1;
}

gdcm::CSAHeader csa;
const gdcm::DataSet& ds = reader.GetFile().GetDataSet();

const gdcm::PrivateTag &t1 = csa.GetCSAImageHeaderInfoTag();
//std::cout << t1 << std::endl;
//const gdcm::PrivateTag &t2 = csa.GetCSASeriesHeaderInfoTag();

if( ds.FindDataElement( t1 ) )
{
    csa.LoadFromDataElement( ds.GetDataElement( t1 ) );
    csa.Print( std::cout );
}

int dims[2] = {};
if( csa.FindCSAElementByName( "Columns" ) )
{
    const gdcm::CSAElement &cse1 = csa.GetCSAElementByName( "Columns" )
    ;
    std::cout << cse1 << std::endl;
    //const gdcm::ByteValue *bv = cse1.GetByteValue();
    gdcm::Element<gdcm::VR::IS, gdcm::VM::VM1> el;
    el.Set( cse1.GetValue() );
    dims[0] = el.GetValue();
    std::cout << "Columns:" << el.GetValue() << std::endl;
}

if( csa.FindCSAElementByName( "Rows" ) )
{
    const gdcm::CSAElement &cse2 = csa.GetCSAElementByName( "Rows" );
    std::cout << cse2 << std::endl;
    gdcm::Element<gdcm::VR::IS, gdcm::VM::VM1> el2;
    el2.Set( cse2.GetValue() );
    dims[1] = el2.GetValue();
    std::cout << "Rows:" << el2.GetValue() << std::endl;
}

double spacing[2] = { 1. , 1. };
bool spacingfound = false;
if( csa.FindCSAElementByName( "PixelSpacing" ) )
{
    const gdcm::CSAElement &cse3 = csa.GetCSAElementByName( "PixelSpacing" );
    if( !cse3.IsEmpty() )
    {
        std::cout << cse3 << std::endl;
        gdcm::Element<gdcm::VR::DS, gdcm::VM::VM2> el3;
        el3.Set( cse3.GetValue() );
        spacing[0] = el3.GetValue(0);
        spacing[1] = el3.GetValue(1);
        std::cout << "PixelSpacing:" << el3.GetValue() << "," << el3.
            GetValue(1) << std::endl;
        spacingfound = true;
    }
}

if( !spacingfound )
{
    std::cerr << "Problem with PixelSpacing" << std::endl;
    //return 1;
}

if( !dims[0] || !dims[1] )
{
    std::cerr << "Problem with dims" << std::endl;
    return 1;
}

gdcm::ImageWriter writer;

gdcm::Image &image = writer.GetImage();
image.SetNumberOfDimensions( 2 ); // good default
image.SetDimension(0, dims[0] );
image.SetDimension(1, dims[1] );
image.SetSpacing(0, spacing[0] );
image.SetSpacing(1, spacing[1] );
gdcm::PixelFormat pixeltype = gdcm::PixelFormat::INT16; //

```

```

        bytewidth = spm_type('int16','bits')/8;

//unsigned long l = image.GetBufferLength();
//const int p = 1 / (dims[0] * dims[1]);

//image.SetNumberOfDimensions( 3 );
//image.SetDimension(2, p / pixeltype.GetPixelSize() );

gdcm::PhotometricInterpretation pi;
pi = gdcm::PhotometricInterpretation::MONOCHROME2;
//pixeltype.SetSamplesPerPixel( );
image.SetPhotometricInterpretation( pi );
image.SetPixelFormat( pixeltype );
//image.SetIntercept( inputimage.GetIntercept() );
//image.SetSlope( inputimage.GetSlope() );

//gdcm::DataElement pixeldata( gdcm::Tag(0x7fe1,0x1010) );
//pixeldata.SetByteValue( &outbuf[0], outbuf.size() );
gdcm::PrivateTag csananimaget(0x7fe1,0x10,"SIEMENS CSA NON-IMAGE");
const gdcm::DataElement &pixeldata = ds.GetDataElement( csananimaget );
image.SetDataElement( pixeldata );

std::string outfilename = "outcsa.dcm";
//writer.SetFile( reader.GetFile() );
writer.SetFileName( outfilename.c_str() );
if( !writer.Write() )
{
    std::cerr << "could not write: " << outfilename << std::endl;
    return 1;
}

return 0;
}

```

27.24 CStoreQtProgress.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
/*
 * This small example show how one can use the virtual function
 * mechanism of the SimpleSubjectWatcher class to redirect progress
 * report to a custom Qt classes
 *
 * http://doc.qt.nokia.com/latest/qprogressdialog.html
 *
 * Usage:
 * CStoreQtProgress dicom.example.com 11112 gdcmData/MR_Spectroscopy_SIEMENS_OF.dcm
 *
 */

#include "gdcmServiceClassUser.h"
#include "gdcmSimpleSubjectWatcher.h"
#include "gdcmProgressEvent.h"
#include "gdcmDirectory.h"
#include "gdcmPresentationContextGenerator.h"

#include <QApplication>
#include <QProgressDialog>
#include <QVBoxLayout>

namespace gdcm {
/*
 * This class is a little more complicated than what this example demonstrate
 * This watcher is capable of handling nested progress. Since the Progress
 * grows from [0 to 1] on a per file basis and we only have one instance of a

```

```

* watcher per association, we need some calculation to compute the global
* (total) progress
* In fact we simply divide the per-file progress by the number of files.
*
* This QtWatcher class will then update the progress bar according to the
* progress.
*/
class MyQtWatcher : public SimpleSubjectWatcher
{
    size_t nfiles;
    double progress;
    size_t index;
    double refprogress;
    QWidget* win;
    QProgressDialog* qtprogress;
public:
    MyQtWatcher(Subject * s, const char *comment = "", QWidget *w = NULL, QProgressDialog* p = NULL, size_t n
        = 1):
        SimpleSubjectWatcher(s,comment),nfiles(n),progress(0),index(0),refprogress(0),win(w),qtprogress(p) {}
    void ShowIteration()
    {
        index++;
        assert( index <= nfiles );
        // update refprogress (we are moving to the next file)
        refprogress = progress;
    }
    void ShowProgress(Subject *, const Event &evt)
    {
        // Retrieve the ProgressEvent:
        const ProgressEvent &pe = dynamic_cast<const ProgressEvent&>(evt);
        // compute global progress:
        progress = refprogress + (1. / (double)nfiles ) * pe.GetProgress();
        // Print Global and local progress to stdout:
        std::cout << "Global Progress: " << progress << " per file progress " << pe.GetProgress() << std::endl;
        //set progress value in the QtProgress bar
        int i = (int)(progress * 100 + 0.5); // round to next int
        qtprogress->setValue(i);
        win->show();
    }
    virtual void ShowDataSet(Subject *caller, const Event &evt)
    {
        (void)caller;
        (void)evt;
    }
};
} // end namespace gdcm

int main(int argc, char *argv[])
{
    if( argc < 4 )
    {
        std::cerr << argv[0] << " remote_server port filename" << std::endl;
        return 1;
    }
    QApplication a(argc, argv);

    std::ostringstream error_log;
    gdcm::Trace::SetErrorStream( error_log );

    const char *remote = argv[1];
    int portno = atoi(argv[2]);
    const char *filename = argv[3];

    QVBoxLayout* layout = new QVBoxLayout;
    QWidget* win = new QWidget;

    QProgressDialog* progress = new QProgressDialog("Sending data...", "Cancel", 0, 100);
    progress->setWindowModality(Qt::WindowModal);

    layout->addWidget( progress,Qt::AlignCenter);
    win->setLayout( layout);

    gdcm::SmartPointer<gdcm::ServiceClassUser> scup = new
        gdcm::ServiceClassUser;
    gdcm::ServiceClassUser &scu = *scup;
    //gdcm::SimpleSubjectWatcher w( &scu, "TestServiceClassUser" );
    // let's use a more complicated progress reported in this example
    gdcm::MyQtWatcher w( &scu, "QtWatcher", win, progress );

    scu.SetHostname( remote );
    scu.SetPort( (uint16_t)portno );

```

```

scu.SetTimeout( 1000 );
scu.SetCalledAETitle( "GDCM_STORE" );

if( !scu.InitializeConnection() )
{
    std::cerr << "Could not InitializeConnection" << std::endl;
    return 1;
}

gdcmm::Directory::FileNamesType filenames;
filenames.push_back( filename );

// setup the PC(s) based on the filenames:
gdcmm::PresentationContextGenerator generator;
if( !generator.GenerateFromFilenames(filenames) )
{
    std::cerr << "Could not GenerateFromFilenames" << std::endl;
    return 1;
}

// Setup PresentationContext(s)
scu.SetPresentationContexts( generator.
    GetPresentationContexts() );

// Start ASSOCIATION
if( !scu.StartAssociation() )
{
    std::cerr << "Could not Start" << std::endl;
    return 1;
}

// Send C-STORE
if( !scu.SendStore( filename ) )
{
    std::cerr << "Could not Store" << std::endl;
    std::cerr << "Error log is:" << std::endl;
    std::cerr << error_log.str() << std::endl;
    return 1;
}

// Stop ASSOCIATION
if( !scu.StopAssociation() )
{
    std::cerr << "Could not Stop" << std::endl;
    return 1;
}

win->show();

return a.exec();
}

```

27.25 DecompressImage.cs

This is a C# example on how to use [gdcmm::Image](#)

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcmm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/

/*
 * Usage:
 * $ export LD_LIBRARY_PATH=$HOME/Projects/gdcmm/debug-gcc/bin
 * $ mono bin/DecompressImage.exe gdcmmData/012345.002.050.dcm decompress.dcm
 */
using System;

```

```

using gdcm;

public class DecompressImage
{
    public static int Main(string[] args)
    {
        string file1 = args[0];
        string file2 = args[1];
        ImageReader reader = new ImageReader();
        reader.SetFileName( file1 );
        bool ret = reader.Read();
        if( !ret )
        {
            return 1;
        }

        Image image = new Image();
        Image ir = reader.GetImage();

        image.SetNumberOfDimensions( ir.GetNumberOfDimensions() );

        //Just for fun:
        //int dircos = ir.GetDirectionCosines();
        //t = gdcm.Orientation.GetType(dircos);
        //int l = gdcm.Orientation.GetLabel(t);
        //System.Console.WriteLine( "Orientation label:" + l );

        // Set the dimensions,
        // 1. either one at a time
        //image.SetDimension(0, ir.GetDimension(0) );
        //image.SetDimension(1, ir.GetDimension(1) );

        // 2. the array at once
        uint[] dims = {0, 0};
        // Just for fun let's invert the dimensions:
        dims[0] = ir.GetDimension(1);
        dims[1] = ir.GetDimension(0);
        ir.SetDimensions( dims );

        PixelFormat pixeltype = ir.GetPixelFormat();
        image.SetPixelFormat( pixeltype );

        PhotometricInterpretation pi = ir.GetPhotometricInterpretation();
        image.SetPhotometricInterpretation( pi );

        DataElement pixeldata = new DataElement( new Tag(0x7fe0,0x0010) );
        byte[] str1 = new byte[ ir.GetBufferLength()];
        ir.GetBuffer( str1 );
        //System.Console.WriteLine( ir.GetBufferLength() );
        pixeldata.SetByteValue( str1, new VL( (uint)str1.Length ) );
        //image.SetDataElement( pixeldata );
        ir.SetDataElement( pixeldata );

        ImageWriter writer = new ImageWriter();
        writer.SetFileName( file2 );
        writer.SetFile( reader.GetFile() );
        writer.SetImage( ir );
        ret = writer.Write();
        if( !ret )
        {
            return 1;
        }

        return 0;
    }
}

```

27.26 DecompressImage.java

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

```



```

    This software is distributed WITHOUT ANY WARRANTY; without even
    the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
    PURPOSE. See the above copyright notice for more information.

=====*/

/*
 * This example will take in a DICOM file, and tries to decompress it (actually write it
 * as ImplicitVRLittleEndian Transfer Syntax).
 *
 * Compilation:
 * $ CLASSPATH=gdc.jar javac ../../gdc/Examples/Java/DecompressImage.java -d .
 *
 * Usage:
 * $ LD_LIBRARY_PATH=. CLASSPATH=gdc.jar:. java DecompressImage gdcData/012345.002.050.dcm out.dcm
 */
import gdc.*;

public class DecompressImage
{
    public static void main(String[] args) throws Exception
    {
        String file1 = args[0];
        String file2 = args[1];
        ImageReader reader = new ImageReader();
        reader.SetFileName( file1 );
        boolean ret = reader.Read();
        if( !ret )
        {
            throw new Exception("Could not read: " + file1 );
        }

        ImageChangeTransferSyntax change = new ImageChangeTransferSyntax();
        change.SetTransferSyntax( new TransferSyntax(TransferSyntax.TSType.ImplicitVRLittleEndian) );
        change.SetInput( reader.GetImage() );
        if( !change.Change() )
        {
            throw new Exception("Could not change: " + file1 );
        }

        Image out = change.GetOutput();
        System.out.println( out.toString() );

        // Set the Source Application Entity Title
        FileMetaInformation.SetSourceApplicationEntityTitle( "Just For Fun" );

        ImageWriter writer = new ImageWriter();
        writer.SetFileName( file2 );
        writer.SetFile( reader.GetFile() );
        writer.SetImage( out );
        ret = writer.Write();
        if( !ret )
        {
            throw new Exception("Could not write: " + file2 );
        }
    }
}

```

27.27 DecompressImage.py

```

1 #####
2 #
3 # Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 # Copyright (c) 2006-2011 Mathieu Malaterre
6 # All rights reserved.
7 # See Copyright.txt or http://gdc.sourceforge.net/Copyright.html for details.
8 #
9 # This software is distributed WITHOUT ANY WARRANTY; without even
10 # the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 # PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 """

```

```

16 Usage:
17
18 python DecompressImage.py gdcmlData/012345.002.050.dcm decompress.dcm
19 """
20
21 import gdcml
22 import sys
23
24 if __name__ == "__main__":
25
26     file1 = sys.argv[1]
27     file2 = sys.argv[2]
28
29     r = gdcml.ImageReader()
30     r.SetFileName( file1 )
31     if not r.Read():
32         sys.exit(1)
33
34     image = gdcml.Image()
35     ir = r.GetImage()
36
37     image.SetNumberOfDimensions( ir.GetNumberOfDimensions() );
38     dims = ir.GetDimensions();
39     print ir.GetDimension(0);
40     print ir.GetDimension(1);
41     print "Dims:", dims
42
43     # Just for fun:
44     dircos = ir.GetDirectionCosines()
45     t = gdcml.Orientation.GetType(dircos)
46     l = gdcml.Orientation.GetLabel(t)
47     print "Orientation label:", l
48
49     image.SetDimension(0, ir.GetDimension(0) );
50     image.SetDimension(1, ir.GetDimension(1) );
51
52     pixeltype = ir.GetPixelFormat();
53     image.SetPixelFormat( pixeltype );
54
55     pi = ir.GetPhotometricInterpretation();
56     image.SetPhotometricInterpretation( pi );
57
58     pixeldata = gdcml.DataElement( gdcml.Tag(0x7fe0,0x0010) )
59     str1 = ir.GetBuffer()
60     #print ir.GetBufferLength()
61     pixeldata.SetByteValue( str1, gdcml.VL( len(str1) ) )
62     image.SetDataElement( pixeldata )
63
64     w = gdcml.ImageWriter()
65     w.SetFileName( file2 )
66     w.SetFile( r.GetFile() )
67     w.SetImage( image )
68     if not w.Write():
69         sys.exit(1)

```

27.28 DecompressImageMultiframe.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcml.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/

/*
$ gdcminfo ~/Desktop/angiogram-06.dcm
MediaStorage is 1.2.840.10008.5.1.4.1.1.12.1 [X-Ray Angiographic Image Storage]
TransferSyntax is 1.2.840.10008.1.2.4.50 [JPEG Baseline (Process 1): Default Transfer Syntax for Lossy JPEG
8 Bit Image Compression]
NumberOfDimensions: 3

```

```

Dimensions: (512,512,355)
Origin: (0,0,0)
Spacing: (1,1,40)
DirectionCosines: (1,0,0,0,1,0)
Rescale Intercept/Slope: (0,1)
SamplesPerPixel :1
BitsAllocated :8
BitsStored :8
HighBit :7
PixelRepresentation:0
ScalarType found :UINT8
PhotometricInterpretation: MONOCHROME2
PlanarConfiguration: 0
TransferSyntax: 1.2.840.10008.1.2.4.50
Orientation Label: AXIAL
*/

/*
 * Description:
 *
 * Assume we have a file angiogram-06.dcm as described above.
 * the following program will decompress directly from the extracted jpeg stream.
 *
 * First step extract the jpeg stream (but not the Basic Offset Table):
 *
 * $ gdcmmraw -i angiogram-06.dcm -o /tmp/output/chris --split-frags --pattern %d.jpg
 *
 * Check that indeed there are 355 files, while there are 356 fragments in the original DICOM file, since
 * gdcmmraw always skip the first fragment (Basic Offset Table).
 *
 * Now from those individual jpeg stream, recreate a fake gdcmm.DataElement...
 *
 * Usage:
 *
 * $ export LD_LIBRARY_PATH=$HOME/Projects/gdcm/debug-gcc/bin
 * $ mono ./bin/DecompressImageMultiframe.exe /tmp/output
 */
using System;
using gdcm;

public class DecompressImageMultiframe
{
    public static int Main(string[] args)
    {
        string directory = args[0];
        gdcm.Directory dir = new gdcm.Directory();
        uint nfiles = dir.Load(directory);
        //System.Console.WriteLine(dir.toString());
        gdcm.FilenamesType filenames = dir.GetFilenames();

        Image image = new Image();
        image.SetNumberOfDimensions( 3 ); // important for now
        DataElement pixeldata = new DataElement( new gdcm.Tag(0x7fe0,0x0010) );

        // Create a new SequenceOfFragments C++ object, store it as a SmartPointer :
        SmartPtrFrag sq = SequenceOfFragments.New();

        // Yeah, the file are not guarantee to be in order, please adapt...
        for(uint i = 0; i < nfiles; ++i)
        {
            System.Console.WriteLine( filenames[(int)i] );
            string file = filenames[(int)i];
            System.IO.FileStream infile =
                new System.IO.FileStream(file, System.IO.FileMode.Open, System.IO.FileAccess.Read);
            uint fsize = gdcm.PosixEmulation.FileSize(file);

            byte[] jstream = new byte[fsize];
            infile.Read(jstream, 0 , jstream.Length);

            Fragment frag = new Fragment();
            frag.SetByteValue( jstream, new gdcm.VL( (uint)jstream.Length) );
            sq.AddFragment( frag );
        }

        // Pass by reference:
        pixeldata.SetValue( sq.__ref__() );

        // insert:
        image.SetDataElement( pixeldata );

        // JPEG use YBR to achieve better compression ratio by default (not RGB)
    }
}

```

```

// FIXME hardcoded:
PhotometricInterpretation pi = new PhotometricInterpretation( PhotometricInterpretation.PIType.
    MONOCHROME2 );
image.SetPhotometricInterpretation( pi );
// FIXME hardcoded:
PixelFormat pixeltype = new PixelFormat(1,8,8,7);
image.SetPixelFormat( pixeltype );

// FIXME hardcoded:
image.SetTransferSyntax( new TransferSyntax( TransferSyntax.TSType.JPEGLosslessProcess14_1 ) );
image.SetDimension(0, 512);
image.SetDimension(1, 512);
image.SetDimension(2, 355);

// Decompress !
byte[] decompressedData = new byte[(int)image.GetBufferLength()];
image.GetBuffer(decompressedData);

// Write out the decompressed bytes
System.Console.WriteLine(image.toString());
using (System.IO.Stream stream =
    System.IO.File.Open(@"tmp/dd.raw",
        System.IO.FileMode.Create))
{
    System.IO.BinaryWriter writer = new System.IO.BinaryWriter(stream);
    writer.Write(decompressedData);
}

return 0;
}
}

```

27.29 DecompressJPEGFile.cs

This is a C# example on how to use [gdcm::SequenceOfFragments](#)

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/

/*
 * Usage:
 * $ export LD_LIBRARY_PATH=$HOME/Projects/gdcm/debug-gcc/bin
 * $ mono bin/DecompressJPEGFile.exe somejpegfile.jpg
 */
using System;
using gdcm;

public class DecompressJPEGFile
{
    public static int Main(string[] args)
    {
        string file1 = args[0];
        System.IO.FileStream infile =
            new System.IO.FileStream(file1, System.IO.FileMode.Open, System.IO.FileAccess.Read);
        uint fsize = gdcm.PosixEmulation.FileSize(file1);

        byte[] jstream = new byte[fsize];
        infile.Read(jstream, 0, jstream.Length);

        Trace.DebugOn();
        Image image = new Image();
        image.SetNumberOfDimensions( 2 ); // important for now
        DataElement pixeldata = new DataElement( new gdcm.Tag(0x7fe0,0x0010) );
    }
}

```

```

// DO NOT set a ByteValue here, JPEG is a particular kind of encapsulated syntax
// in which can one cannot use a simple byte array for storage. Instead, see
// gdcm.SequenceOfFragments
//pixeldata.SetByteValue( jstream, new gdcm.VL( (uint)jstream.Length ) );

// Create a new SequenceOfFragments C++ object, store it as a SmartPointer :
SmartPtrFrag sq = SequenceOfFragments.New();
Fragment frag = new Fragment();
frag.SetByteValue( jstream, new gdcm.VL( (uint)jstream.Length ) );
// Single file => single fragment
sq.AddFragment( frag );
// Pass by reference:
pixeldata.SetValue( sq.__ref__() );

// insert:
image.SetDataElement( pixeldata );

// JPEG use YBR to achieve better compression ratio by default (not RGB)
// FIXME hardcoded:
PhotometricInterpretation pi = new PhotometricInterpretation( PhotometricInterpretation.PIType.YBR_FULL
);
image.SetPhotometricInterpretation( pi );
// FIXME hardcoded:
PixelFormat pixeltype = new PixelFormat(3,8,8,7);
image.SetPixelFormat( pixeltype );

// FIXME hardcoded:
image.SetTransferSyntax( new TransferSyntax( TransferSyntax.TSType.JPEGLosslessProcess14_1 ) );
image.SetDimension(0, 692);
image.SetDimension(1, 721);

// Decompress !
byte[] decompressedData = new byte[(int)image.GetBufferLength()];
image.GetBuffer(decompressedData);

// Write out the decompressed bytes
System.Console.WriteLine(image.toString());
using (System.IO.Stream stream =
    System.IO.File.Open(@"tmp/dd.raw",
        System.IO.FileMode.Create))
{
    System.IO.BinaryWriter writer = new System.IO.BinaryWriter(stream);
    writer.Write(decompressedData);
}

return 0;
}
}

```

27.30 DecompressPixmap.java

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/

/*
 * This example will take in a DICOM file, and tries to decompress it (actually write it
 * as ImplicitVRLittleEndian Transfer Syntax).
 *
 * Compilation:
 * $ CLASSPATH=gdcm.jar javac ../../gdcm/Examples/Java/DecompressPixmap.java -d .
 *
 * Usage:
 * $ LD_LIBRARY_PATH=. CLASSPATH=gdcm.jar:. java DecompressPixmap gdcmData/012345.002.050.dcm out.dcm
 */
import gdcm.*;

```

```

public class DecompressPixmap
{
    public static void main(String[] args) throws Exception
    {
        String file1 = args[0];
        String file2 = args[1];
        PixmapReader reader = new PixmapReader();
        reader.SetFileName( file1 );
        boolean ret = reader.Read();
        if( !ret )
        {
            throw new Exception("Could not read: " + file1 );
        }

        ImageChangeTransferSyntax change = new ImageChangeTransferSyntax();
        change.SetTransferSyntax( new TransferSyntax(TransferSyntax.TSType.ImplicitVRLittleEndian) );
        PixmapToPixmapFilter filter = (PixmapToPixmapFilter)change;
        filter.SetInput( reader.GetPixmap() );
        if( !change.Change() )
        {
            throw new Exception("Could not change: " + file1 );
        }

        // The following does not work in Java/swig 2.0.7
        // Pixmap p = ((PixmapToPixmapFilter)change).GetOutput();
        Pixmap p = change.GetOutputAsPixmap(); // be explicit
        // System.out.println( p.toString() );

        // Set the Source Application Entity Title
        FileMetaInformation.SetSourceApplicationEntityTitle( "Just For Fun" );

        PixmapWriter writer = new PixmapWriter();
        writer.SetFileName( file2 );
        writer.SetFile( reader.GetFile() );
        writer.SetImage( p );
        ret = writer.Write();
        if( !ret )
        {
            throw new Exception("Could not write: " + file2 );
        }
    }
}

```

27.31 DiffFile.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcms.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/
#include "gdcmReader.h"

int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        std::cerr << argv[0] << " input1.dcm input2.dcm" << std::endl;
        return 1;
    }
    const char *filename1 = argv[1];
    const char *filename2 = argv[2];

    gdcm::Reader reader1;
    reader1.SetFileName( filename1 );
    if( !reader1.Read() )
    {
        return 1;
    }
}

```

```

    }

    gdcM::Reader reader2;
    reader2.SetFileName( filename2 );
    if( !reader2.Read() )
    {
        return 1;
    }

    const gdcM::File &file1 = reader1.GetFile();
    const gdcM::File &file2 = reader2.GetFile();

    const gdcM::DataSet &ds1 = file1.GetDataSet();
    const gdcM::DataSet &ds2 = file2.GetDataSet();

    gdcM::DataSet::ConstIterator it1 = ds1.Begin();
    gdcM::DataSet::ConstIterator it2 = ds2.Begin();

    const gdcM::DataElement &de1 = *it1;
    const gdcM::DataElement &de2 = *it2;
    if( de1 == de2 )
    {
    }
    while( it1 != ds1.End() && it2 != ds2.End() && *it1 == *it2 )
    {
        ++it1;
        ++it2;
    }

    if( it1 != ds1.End() || it2 != ds2.End() )
    {
        std::cerr << "Problem with:" << std::endl;
        if( it1 != ds1.End() )
        {
            std::cerr << "ds1: " << *it1 << std::endl;
        }
        if( it2 != ds2.End() )
        {
            std::cerr << "ds2: " << *it2 << std::endl;
        }
        return 1;
    }

    return 0;
}

```

27.32 DiscriminateVolume.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcM.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "gdcMScanner.h"
#include "gdcMTesting.h"
#include "gdcMIPPSorter.h"
#include "gdcMDirectionCosines.h"
#include <cmath>

/*
 * The following example is a basic sorted which should work in generic cases.
 * It sort files based on:
 * Study Instance UID
 * Series Instance UID
 * Frame of Reference UID
 * Image Orientation (Patient)
 * Image Position (Patient) (Sorting based on IPP + IOP)
 */

```

```

namespace gdcmm {
    const Tag t1(0x0020,0x000d); // Study Instance UID
    const Tag t2(0x0020,0x000e); // Series Instance UID
    const Tag t3(0x0020,0x0052); // Frame of Reference UID
    const Tag t4(0x0020,0x0037); // Image Orientation (Patient)

class DiscriminateVolume
{
private:
    std::vector< Directory::FilenameType > SortedFiles;
    std::vector< Directory::FilenameType > UnsortedFiles;

    Directory::FilenameType GetAllFileNamesFromTagToValue(
        Scanner const & s, Directory::FilenameType const & filesSubset, Tag const & t,
        const char *valueref)
    {
        Directory::FilenameType theReturn;
        if( valueref )
        {
            size_t len = strlen( valueref );
            Directory::FilenameType::const_iterator file = filesSubset.begin();
            for(; file != filesSubset.end(); ++file)
            {
                const char *filename = file->c_str();
                const char * value = s.GetValue(filename, t);
                if( value && strncmp(value, valueref, len ) == 0 )
                {
                    theReturn.push_back( filename );
                }
            }
        }
        return theReturn;
    }

void ProcessAIOP(Scanner const & , Directory::FilenameType const & subset, const
    char *iopval)
{
    std::cout << "IOP: " << iopval << std::endl;
    IPPSorter ipp;
    ipp.SetComputeZSpacing( true );
    ipp.SetZSpacingTolerance( 1e-3 ); // ??
    bool b = ipp.Sort( subset );
    if( !b )
    {
        // If you reach here this means you need one more parameter to discriminat this
        // series. Eg. T1 / T2 intertwined. Multiple Echo (0018,0081)
        std::cerr << "Failed to sort: " << subset.begin()->c_str() << std::endl;
        for(
            Directory::FilenameType::const_iterator file = subset.begin();
            file != subset.end(); ++file)
        {
            std::cerr << *file << std::endl;
        }
        UnsortedFiles.push_back( subset );
        return ;
    }
    ipp.Print( std::cout );
    SortedFiles.push_back( ipp.GetFileNames() );
}

void ProcessAFrameOfRef(Scanner const & s, Directory::FilenameType const & subset,
    const char * frameuid)
{
    // In this subset of files (belonging to same series), let's find those
    // belonging to the same Frame ref UID:
    Directory::FilenameType files = GetAllFileNamesFromTagToValue(
        s, subset, t3, frameuid);

    std::set< std::string > iopset;

    for(
        Directory::FilenameType::const_iterator file = files.begin();
        file != files.end(); ++file)
    {
        //std::cout << *file << std::endl;
        const char * value = s.GetValue(file->c_str(), gdcmm::t4 );
        assert( value );
        iopset.insert( value );
    }
    size_t n = iopset.size();
    if ( n == 0 )

```



```

    {
        assert( files.empty() );
        return;
    }

    std::cout << "Frame of Ref: " << frameuid << std::endl;
    if ( n == 1 )
    {
        ProcessAIOP(s, files, iopset.begin()->c_str() );
    }
    else
    {
        const char *f = files.begin()->c_str();
        std::cerr << "More than one IOP: " << f << std::endl;
        // Make sure that there is actually 'n' different IOP
        gdcm::DirectionCosines ref;
        gdcm::DirectionCosines dc;
        for(
            std::set< std::string >::const_iterator it = iopset.begin();
            it != iopset.end(); ++it )
        {
            ref.SetFromString( it->c_str() );
            for(
                Directory::FileNamesType::const_iterator file = files.begin();
                file != files.end(); ++file )
            {
                std::string value = s.GetValue(file->c_str(), gdcm::t4 );
                if( value != it->c_str() )
                {
                    dc.SetFromString( value.c_str() );
                    const double crossdot = ref.CrossDot(dc);
                    const double eps = std::fabs( 1. - crossdot );
                    if( eps < 1e-6 )
                    {
                        std::cerr << "Problem with IOP discrimination: " << file->c_str()
                            << " " << it->c_str() << std::endl;
                        return;
                    }
                }
            }
        }
        // If we reach here this means there is actually 'n' different IOP
        for(
            std::set< std::string >::const_iterator it = iopset.begin();
            it != iopset.end(); ++it )
        {
            const char *iopvalue = it->c_str();
            Directory::FileNamesType iopfiles = GetAllFileNamesFromTagToValue(
                s, files, t4, iopvalue );
            ProcessAIOP(s, iopfiles, iopvalue );
        }
    }
}

void ProcessASeries(Scanner const & s, const char * seriesuid)
{
    std::cout << "Series: " << seriesuid << std::endl;
    // let's find all files belonging to this series:
    Directory::FileNamesType seriesfiles = GetAllFileNamesFromTagToValue(
        s, s.GetFileNames(), t2, seriesuid);

    gdcm::Scanner::ValueType vt3 = s.GetValues(t3);
    for(
        gdcm::Scanner::ValueType::const_iterator it = vt3.begin();
        it != vt3.end(); ++it )
    {
        ProcessAFrameOfRef(s, seriesfiles, it->c_str());
    }
}

void ProcessAStudy(Scanner const & s, const char * studyuid)
{
    std::cout << "Study: " << studyuid << std::endl;
    gdcm::Scanner::ValueType vt2 = s.GetValues(t2);
    for(
        gdcm::Scanner::ValueType::const_iterator it = vt2.begin();
        it != vt2.end(); ++it )
    {
        ProcessASeries(s, it->c_str());
    }
}

```

```

public:

void Print( std::ostream & os )
{
    os << "Sorted Files: " << std::endl;
    for(
        std::vector< Directory::FilenameType >::const_iterator it = SortedFiles.begin();
        it != SortedFiles.end(); ++it )
    {
        os << "Group: " << std::endl;
        for(
            Directory::FilenameType::const_iterator file = it->begin();
            file != it->end(); ++file)
        {
            os << *file << std::endl;
        }
    }
    os << "Unsorted Files: " << std::endl;
    for(
        std::vector< Directory::FilenameType >::const_iterator it = UnsortedFiles.begin();
        it != UnsortedFiles.end(); ++it )
    {
        os << "Group: " << std::endl;
        for(
            Directory::FilenameType::const_iterator file = it->begin();
            file != it->end(); ++file)
        {
            os << *file << std::endl;
        }
    }
}

std::vector< Directory::FilenameType > const & GetSortedFiles() const { return SortedFiles; }
std::vector< Directory::FilenameType > const & GetUnsortedFiles() const { return UnsortedFiles; }

void ProcessIntoVolume( Scanner const & s )
{
    gdcm::Scanner::ValueType vt1 = s.GetValues( gdcm::t1 );
    for(
        gdcm::Scanner::ValueType::const_iterator it = vt1.begin();
        ; it != vt1.end(); ++it )
    {
        ProcessAStudy( s, it->c_str() );
    }
}

};

} // namespace gdcm

int main(int argc, char *argv[])
{
    std::string dir1;
    if( argc < 2 )
    {
        const char *extradataroot = NULL;
#ifdef GDCM_BUILD_TESTING
        extradataroot = gdcm::Testing::GetDataExtraRoot();
#endif
        if( !extradataroot )
        {
            return 1;
        }
        dir1 = extradataroot;
        dir1 += "/gdcmSampleData/ForSeriesTesting/VariousIncidences/ST1";
    }
    else
    {
        dir1 = argv[1];
    }

    gdcm::Directory d;
    d.Load( dir1.c_str(), true ); // recursive !

    gdcm::Scanner s;
    s.AddTag( gdcm::t1 );
    s.AddTag( gdcm::t2 );
    s.AddTag( gdcm::t3 );
    s.AddTag( gdcm::t4 );
}

```

```

bool b = s.Scan( d.GetFilesNames() );
if( !b )
{
    std::cerr << "Scanner failed" << std::endl;
    return 1;
}

gdcm::DiscriminateVolume dv;
dv.ProcessIntoVolume( s );
dv.Print( std::cout );

return 0;
}

```

27.33 DumbAnonymizer.py

```

1 #####
2 #
3 # Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 # Copyright (c) 2006-2011 Mathieu Malaterre
6 # All rights reserved.
7 # See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.
8 #
9 # This software is distributed WITHOUT ANY WARRANTY; without even
10 # the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 # PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 """
16 This example shows how one can use the gdcm.Anonymizer in 'dumb' mode.
17 This class becomes really handy when one knows which particular tag to fill in.
18
19 Usage:
20
21 python DumbAnonymizer.py gdcmData/012345.002.050.dcm out.dcm
22
23 """
24
25 import gdcm
26
27 # http://www.oid-info.com/get/1.3.6.1.4.17434
28 THERALYS_ORG_ROOT = "1.3.6.1.4.17434"
29
30 tag_rules={
31     # Value
32     (0x0012,0x0010):("Value","MySponsorName"),
33     (0x0012,0x0020):("Value","MyProtocolID"),
34     (0x0012,0x0021):("Value","MyProtocolName"),
35     (0x0012,0x0062):("Value","YES"),
36     (0x0012,0x0063):("Value","MyDeidentificationMethod"),
37
38     # Method
39     (0x0002,0x0003):("Method","GenerateMSOPIId"),
40     (0x0008,0x1155):("Method","GenerateMSOPIId"),
41     (0x0008,0x0018):("Method","GenerateMSOPIId"),
42     (0x0010,0x0010):("Method","GetSponsorInitials"),
43     (0x0010,0x0020):("Method","GetSponsorId"),
44     (0x0012,0x0030):("Method","GetSiteId"),
45     (0x0012,0x0031):("Method","GetSiteName"),
46     (0x0012,0x0040):("Method","GetSponsorId"),
47     (0x0012,0x0050):("Method","GetTPId"),
48     (0x0018,0x0022):("Method","KeepIfExist"),
49     (0x0018,0x1315):("Method","KeepIfExist"),
50     (0x0020,0x000d):("Method","GenerateStudyId"),
51     (0x0020,0x000e):("Method","GenerateSeriesId"),
52     (0x0020,0x1002):("Method","GetNumberOfFrames"),
53     (0x0020,0x0020):("Method","GetPatientOrientation"),
54
55     # Other:
56     (0x0012,0x0051):("Patient Field","Type Examen"),
57     (0x0018,0x1250):("Sequence Field","Receive Coil"),
58     (0x0018,0x0088):("Sequence Field","Spacing Between Slice"),
59     (0x0018,0x0095):("Sequence Field","Pixel Bandwidth"),
60     (0x0018,0x0082):("Sequence Field","Inversion Time"),
61 }

```

```

62 class MyAnon:
63     def __init__(self):
64         self.studyuid = None
65         self.seriesuid = None
66         generator = gdcmm.UIDGenerator()
67         if not self.studyuid:
68             self.studyuid = generator.Generate()
69         if not self.seriesuid:
70             self.seriesuid = generator.Generate()
71     def GetSponsorInitials(self):
72         return "dummy^foobar"
73     def GenerateStudyId(self):
74         return self.studyuid
75     def GenerateSeriesId(self):
76         return self.seriesuid
77     #def GenerateMSOPIId(self):
78     def GenerateMSOPIId(self):
79         generator = gdcmm.UIDGenerator()
80         return generator.Generate()
81     def GetSiteId(self):
82         return "MySiteId"
83     def GetSiteName(self):
84         return "MySiteName"
85     def GetSponsorId(self):
86         return "MySponsorId"
87     def GetTPId(self):
88         return "MyTP"
89
90 if __name__ == "__main__":
91     import sys
92     gdcmm.FileMetaInformation.SetSourceApplicationEntityTitle
93     ( "DumbAnonymizer" )
94     gdcmm.UIDGenerator.SetRoot( THERALYS_ORG_ROOT )
95
96     r = gdcmm.Reader()
97     filename = sys.argv[1]
98     r.SetFileName( filename )
99     if not r.Read(): sys.exit(1)
100
101     obj = MyAnon()
102
103     w = gdcmm.Writer()
104     ano = gdcmm.Anonymizer()
105     ano.SetFile( r.GetFile() )
106     ano.RemoveGroupLength()
107     for tag,rule in tag_rules.items():
108         if rule[0] == 'Value':
109             print tag,rule
110             ano.Replace( gdcmm.Tag( tag[0], tag[1] ), rule[1] )
111         elif rule[0] == 'Method':
112             print tag,rule
113             # result = locals()[rule[1]]()
114             methodname = rule[1]
115             if hasattr(obj, methodname):
116                 _member = getattr(obj, methodname)
117                 result = _member()
118                 ano.Replace( gdcmm.Tag( tag[0], tag[1] ), result )
119             else:
120                 print "Problem with: ", methodname
121
122     outfilename = sys.argv[2]
123     w.SetFileName( outfilename )
124     w.SetFile( ano.GetFile() )
125     if not w.Write(): sys.exit(1)

```

27.34 DumpADAC.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcmm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR

```

PURPOSE. See the above copyright notice for more information.

```

=====*/
/*
 * the goal of this example is to mimic the behavior of disp_img_header
 * see http://www.gmecorp-usa.com/IM/NM/GC/ADAC/SV/adactechtips/Released\_01Q3.pdf
 */
#include "gdcmReader.h"
#include "gdcmPrivateTag.h"
#include "gdcmAttribute.h"
#include "gdcmImageWriter.h"

#include <iostream>
#include <fstream>
#include <vector>

#include <string.h>
#include <assert.h>
#include <stdint.h>

struct dict
{
    uint16_t key;
    const char *name;
};

dict Array[] = {
    { 0x01, "Patient name" },
    { 0x02, "Patient ID" },
    { 0x03, "Patient sex" },
    { 0x04, "Patient age" },
    { 0x05, "Patient height" },
    { 0x06, "Patient weight" },
    { 0x07, "Exam date" },
    { 0x08, "Dose admin. time" },
    { 0x09, "Unique exam key" },
    { 0x0a, "Exam procedure" },
    { 0x0b, "Referring physician" },
    { 0x0c, "Attending physician" },
    { 0x0d, "Imaging modality" },
    { 0x0e, "Hospital ID" },
    { 0x0f, "Histogram crv file" },
    { 0x10, "Acq. start time" },
    { 0x11, "Object data type" },
    { 0x12, "Image viewid" },
    { 0x13, "Imaging device name" },
    { 0x14, "Device serial number" },
    { 0x15, "Collimator" },
    { 0x16, "Software version" },
    { 0x17, "Radiopharmaceutical #1" },
    { 0x18, "Energy window #1 center" },
    { 0x19, "Radiopharmaceutical #2" },
    { 0x1a, "Energy window #1 width" },
    { 0x1b, "Isotope imaging mode" },
    { 0x1c, "Energy window #2 center" },
    { 0x1d, "Energy window #2 width" },
    { 0x1e, "Energy window #3 center" },
    { 0x1f, "Energy window #3 width" },
    { 0x20, "Energy window #4 center" },
    { 0x21, "Energy window #4 width" },
    { 0x22, "??Energy window #5 center" },
    { 0x23, "??Energy window #5 width" },
    { 0x24, "Patient orientation" },
    { 0x25, "Spatial resolution" },
    { 0x26, "Slice thickness" },
    { 0x27, "Image X dimension" },
    { 0x28, "Image Y dimension" },
    { 0x29, "Image Z dimension" },
    { 0x2a, "Image pixel width" },
    { 0x2b, "Uniformity corr. file" },
    { 0x2c, "Acquisition zoom factor" },
    { 0x2d, "Total counts in set" },
    { 0x2e, "Time / frame" },
    { 0x2f, "Total acq. time" },
    { 0x30, "Maximum pixel value" },
    { 0x31, "Minimum pixel value" },
    { 0x32, "R-R interval time" },
    { 0x33, "Percent of cycle imaged" },
    { 0x34, "# of cycles accepted" },
    { 0x35, "# of cycles rejected" },
    { 0x36, "Approximate ED frame" },

```

```

{ 0x37, "Approximate ES frame" },
{ 0x38, "Approximate EF" },
{ 0x39, "Starting angle" },
{ 0x3a, "Degrees of rotation" },
{ 0x3b, "Direction of rotation" },
{ 0x3c, "Cont. or step/shoot" },
{ 0x3d, "Lim recon start frame" },
{ 0x3e, "Upper window grey shade" },
{ 0x3f, "Lower lvl grey shade" },
{ 0x40, "Associated color map" },
{ 0x41, "Custom color map file" },
{ 0x42, "Manipulated image" },
{ 0x43, "Axis of rotation corr." },
{ 0x44, "Reorientation azimuth" },
{ 0x45, "Reorientation elevation" },
{ 0x46, "Filter type" },
{ 0x47, "Filter order" },
{ 0x48, "Filter cutoff frequency" },
{ 0x49, "Reconstruction type" },
{ 0x4a, "Attenuation coefficient" },
{ 0x4b, "Associated parent file" },
{ 0x4c, "Unique patient key" },
{ 0x52, "Normalization crv file" },
{ 0x53, "Unique object key" },
{ 0x54, "This phase of VFR is" },
{ 0x55, "True color value" },
{ 0x56, "# of sets of x,y,z grps" },
{ 0x57, "Scale factor of set" },
{ 0x6d, "Date of birth" },
{ 0x6e, "Directional orientation" },
{ 0x6f, "Number of VFR studies" },
{ 0x70, "R-R low tolerance" },
{ 0x71, "R-R high tolerance" },
{ 0x72, "Prog specific results:" },

{ 0x99, NULL }
};

void printname( int , int , uint16_t v )
{
    if( v == 0x1 )
    {
        std::cout << "DATABASE PARAMETERS" << std::endl;
        std::cout << "_____" << std::endl;
    }
    else if( v == 0x27 )
    {
        std::cout << "IMAGE PARAMETERS" << std::endl;
        std::cout << "_____" << std::endl;
    }
    else if( v == 0x13 )
    {
        std::cout << "EXTRA PARAMETERS" << std::endl;
        std::cout << "_____" << std::endl;
    }
    else if( v == 0x2e )
    {
        std::cout << "*** NOT CURRENTLY USED : " << std::endl;
    }
    static const unsigned int n = sizeof( Array ) / sizeof( *Array ) - 1;
    for( unsigned int i = 0; i < n; ++i )
    {
        if( v == Array[i].key )
        {
            std::cout << /*" " << std::dec << len << ", " << mult << " " << */ Array[i].name;
            std::cout << " : ";
            return;
        }
    }
    std::cout << /*"\t# " << std::dec << len << ", " << mult << */ std::hex << v << "\t: ";
}

uint16_t readint16(std::istream &is )
{
    uint16_t val;
    is.read( (char*)&val, sizeof( val ));
    return (uint16_t)((val>>8) | (val<<8));
}

uint32_t readint32(std::istream &is )
{

```

```

uint32_t val;
is.read( (char*)&val, sizeof( val ));
val= ((val<<8)&0xFF00FF00) | ((val>>8)&0x00FF00FF);
return (val>>16) | (val<<16);
}

float readfloat32(std::istream &is )
{
    union { uint32_t val; float f;} dual;
    dual.val = readint32(is);
    return dual.f;
}

struct el
{
    uint16_t v1;
    uint16_t v2;
    uint16_t v3;
    void read( std::istream & is )
    {
        v1 = readint16(is);
        v2 = readint16(is);
        v3 = readint16(is);
    }
    void print( std::ostream & os )
    {
        os << std::hex << v1 << "\t" << v2 << "\t" << v3 << std::endl;
    }
};

std::vector<el> Vel;

void readelement( std::istream & is )
{
    el e;
    e.read( is );
    Vel.push_back( e );
}

void printascii( uint16_t tag, const char *buffer, size_t len )
{
    std::ostream & os = std::cout;
    if( tag == 0x72 )
    {
        os << "\n ";
        for(size_t i = 0; i < len; ++i)
        {
            const char &c = buffer[i];
            if( c == 0x0 ) os << "!";
            else if( c == 0x0f ) os << " ";
            else if( c == 0x17 ) os << ":";
            else if( c == 0x14 ) os << ":";
            else if( c == 0x10 ) os << ":";
            else if( c == 0x16 ) os << ":";
            else if( c == 0x08 ) os << ":";
            else if( c == 0x0b ) os << ":";
            else if( c == 0x0e ) os << ":";
            else if( c == 0x07 ) os << ":";
            else os << c;
        }
        os << "\n";
    }
    else
    {
        (void)len;
        os << " " << buffer << "\n";
    }
}

bool DumpADAC( std::istream & is )
{
    std::ostream &os = std::cout;

    char magic[6 + 1];
    magic[6] = 0;
    is.read( magic, 6);
    // std::cout << magic << "\n";
    assert( strcmp( magic, "adac01" ) == 0 );
    int c = is.get();
    assert( c == 0 ); (void)c;
    c = is.get();
}

```

```

    assert( c == 'X' );

    uint16_t v;
    v = readint16(is);
    // std::cout << v << std::endl;
    assert( v == 512 ); (void)v; // ??

    int nel = 87;
    for (int i = 0; i <= nel; ++i )
    {
        readelement( is );
    }

    char buffer[512];
    for( int i = 0; i <= nel; ++i )
    {
        const el &e = Vel[i];
        int diff;
        if( i == nel )
        {
            diff = 2048 - e.v3;
            if( diff > 512 ) diff = 512;
        }
        else
        {
            const el &enext = Vel[i+1];
            diff = enext.v3 - e.v3;
        }
        is.seekg( e.v3, std::ios::beg );
        //std::cout << "(" << std::hex << std::setw( 2 ) << std::setfill( '0' ) << e.v1 << ")" " << std::hex <<
            std::setw( 3 ) << std::setfill( '0' ) << e.v2 << " ";
        printname( diff, 0, e.v1 );
        int mult = 1;
        if( e.v2 == 0 )
        {
            is.read( buffer, diff);
            buffer[ diff ] = 0;
            printascii( e.v1, buffer, diff);
        }
        else if( e.v2 == 0x100 )
        {
            mult = diff / 2;
            assert( diff == 2 * mult );
            for ( int ii = 0; ii < mult; ++ii )
            {
                if ( ii ) os << "\\ ";
                uint16_t val = readint16(is);
                os << " " << std::dec << val << " ";
            }
        }
        else if( e.v2 == 0x200 )
        {
            assert( diff == 4 );
            uint32_t val = readint32(is);
            os << " " << std::dec << val << " ";
        }
        else if( e.v2 == 0x300 )
        {
            assert( diff == 4 );
            float val = readfloat32(is);
            os << " " << std::dec << val << " ";
        }
        else
        {
            assert( 0 );
        }
        os << std::endl;
    }
    return true;
}

int main(int argc, char *argv[])
{
    if( argc < 2 ) return 1;
    const char *filename = argv[1];
    gdcm::Reader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        std::cerr << "Failed to read: " << filename << std::endl;
        return 1;
    }
}

```



```

    }
    const gdcm::DataSet& ds = reader.GetFile().GetDataSet();

    // (0019,1061) UN (OB) 61\64\61\63\30          # 2048,1 Ver200 ADAC Pegasys Headers
    const gdcm::PrivateTag tver200adacpegasysheaders(0x0019,0x61,"ADAC_IMG");
    if( !ds.FindDataElement( tver200adacpegasysheaders ) ) return 1;
    const gdcm::DataElement& ver200adacpegasysheaders = ds.
        GetDataElement( tver200adacpegasysheaders );
    if ( ver200adacpegasysheaders.IsEmpty() ) return 1;
    const gdcm::ByteValue * bv = ver200adacpegasysheaders.
        GetByteValue();

    // (0019,1021) US 1                          # 2,1 Ver200 Number of ADAC Headers
    // TODO

    // (0019,1041) IS [2048\221184 ] # 12,1-n Ver200 ADAC Header/Image Size
    if( bv->GetLength() != 2048 ) return 1;

    gdcm::Element<gdcm::VR::IS,gdcm::VM::VM2> el;
    const gdcm::PrivateTag tver200adacheaderimagesize(0x0019,0x41,"ADAC_IMG");
    if( !ds.FindDataElement( tver200adacheaderimagesize ) ) return 1;
    const gdcm::DataElement& ver200adacheaderimagesize = ds.
        GetDataElement( tver200adacheaderimagesize );
    el.SetFromDataElement( ver200adacheaderimagesize );
    if( el.GetValue(0) != 2048 ) return 1;

    std::iostream is;
    std::string dup( bv->GetPointer(), bv->GetLength() );
    is.str( dup );
    bool b = DumpADAC( is );
    if( !b ) return 1;

    return 0;
}

```

27.35 DumpGEMSMovieGroup.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "gdcmReader.h"
#include "gdcmImage.h"
#include "gdcmImageWriter.h"
#include "gdcmDataElement.h"
#include "gdcmPrivateTag.h"
#include "gdcmUIDGenerator.h"

#include <iostream>
#include <string>

#include <map>

bool PrintNameValueMapping( gdcm::SequenceOfItems *sqi_values,
gdcm::SequenceOfItems *sqi_names, std::string const & indent )
{
    using namespace gdcm;
    // prepare names mapping:
    typedef VRToType<VR::UL>::Type UL;
    std::map< UL, std::string > names;
    assert( sqi_names );
    assert( sqi_values );
    SequenceOfItems::SizeType s = sqi_names->
        GetNumberOfItems();
    PrivateTag tindex(0x7fe1,0x71,"GEMS_Ultrasound_MovieGroup_001");
    PrivateTag tname (0x7fe1,0x72,"GEMS_Ultrasound_MovieGroup_001");

```

```

// First sequence contains all possible names (this is a dict)
for( SequenceOfItems::SizeType i = 1; i <= s; ++i )
{
    const Item & item = sqi_names->GetItem( i );
    const DataSet & ds = item.GetNestedDataSet();
    if( !ds.FindDataElement( tindex )
        || !ds.FindDataElement( tname ) )
    {
        return false;
    }
    const DataElement & index = ds.GetDataElement( tindex );
    const DataElement & name = ds.GetDataElement( tname );
    if( index.IsEmpty() || name.IsEmpty() )
    {
        return false;
    }
    gdcmm::Element<VR::UL, VM::VM1> el1;
    el1.SetFromDataElement( index );

    gdcmm::Element<VR::LO, VM::VM1> el2;
    el2.SetFromDataElement( name );
    // std::cout << el1.GetValue() << " " << el2.GetValue() << std::endl;
    names.insert( std::make_pair( el1.GetValue(), el2.GetValue() ) );
}

SequenceOfItems::SizeType s2 = sqi_values->
    GetNumberOfItems();
assert( s2 <= s );
PrivateTag tindex2(0x7fe1,0x48,"GEMS_Ultrasound_MovieGroup_001");
for( SequenceOfItems::SizeType i = 1; i <= s2; ++i )
{
    const Item & item = sqi_values->GetItem( i );
    const DataSet & ds = item.GetNestedDataSet();
    if( !ds.FindDataElement( tindex2 ) )
    {
        return false;
    }
    const DataElement & index2 = ds.GetDataElement( tindex2 );
    if( index2.IsEmpty() )
    {
        return false;
    }
    gdcmm::Element<VR::FD, VM::VM1_2> el1;
    el1.SetFromDataElement( index2 );

    UL copy = (UL)el1.GetValue();
    #if 1
    std::cout << indent;
    std::cout << " ( " << names[ copy ];
    #endif
    // (7fe1,1052) FD 1560 # 8,1 ?
    // (7fe1,1057) LT [MscSkelSup] # 10,1 ?
    //PrivateTag tvalue(0x7fe1,0x52,"GEMS_Ultrasound_MovieGroup_001");
    PrivateTag tvalueint(0x7fe1,0x49,"GEMS_Ultrasound_MovieGroup_001"); // UL
    PrivateTag tvaluefloat1(0x7fe1,0x51,"GEMS_Ultrasound_MovieGroup_001"); // FL
    PrivateTag tvaluefloat(0x7fe1,0x52,"GEMS_Ultrasound_MovieGroup_001"); // FD
    PrivateTag tvalueu1(0x7fe1,0x53,"GEMS_Ultrasound_MovieGroup_001"); // UL
    PrivateTag tvalues1(0x7fe1,0x54,"GEMS_Ultrasound_MovieGroup_001"); // SL
    PrivateTag tvalueob(0x7fe1,0x55,"GEMS_Ultrasound_MovieGroup_001"); // OB
    PrivateTag tvaluetext(0x7fe1,0x57,"GEMS_Ultrasound_MovieGroup_001"); // LT
    PrivateTag tvaluefd(0x7fe1,0x77,"GEMS_Ultrasound_MovieGroup_001"); // FD / 1-N
    PrivateTag tvalues13(0x7fe1,0x79,"GEMS_Ultrasound_MovieGroup_001"); // SL / 1-N
    PrivateTag tvalues12(0x7fe1,0x86,"GEMS_Ultrasound_MovieGroup_001"); // SL ??
    PrivateTag tvaluefd1(0x7fe1,0x87,"GEMS_Ultrasound_MovieGroup_001"); // FD / 1-N
    PrivateTag tvaluefloat2(0x7fe1,0x88,"GEMS_Ultrasound_MovieGroup_001"); // FD ??
    #if 1
    std::cout << " ) = ";
    #endif
    if( ds.FindDataElement( tvalueint ) )
    {
        const DataElement & value = ds.GetDataElement( tvalueint );
        gdcmm::Element<VR::UL,VM::VM1> el2;
        el2.SetFromDataElement( value );
        std::cout << el2.GetValue() << std::endl;
    }
    else if( ds.FindDataElement( tvaluefloat1 ) )
    {
        const DataElement & value = ds.GetDataElement( tvaluefloat1 );
        gdcmm::Element<VR::FL,VM::VM1> el2;
        el2.SetFromDataElement( value );
        std::cout << el2.GetValue() << std::endl;
    }
}

```

```

    }
    else if( ds.FindDataElement( tvaluefloat ) )
    {
        const DataElement & value = ds.GetDataElement( tvaluefloat );
        gdcmm::Element<VR::FD,VM::VM1> el2;
        el2.SetFromDataElement( value );
        std::cout << el2.GetValue() << std::endl;
    }
    else if( ds.FindDataElement( tvalues1 ) )
    {
        const DataElement & value = ds.GetDataElement( tvalues1 );
        gdcmm::Element<VR::SL,VM::VM1> el2;
        el2.SetFromDataElement( value );
        std::cout << el2.GetValue() << std::endl;
    }
    else if( ds.FindDataElement( tvalueul ) )
    {
        const DataElement & value = ds.GetDataElement( tvalueul );
        gdcmm::Element<VR::UL,VM::VM1_n> el2;
        el2.SetFromDataElement( value );
        assert( el2.GetLength() == 1 );
        std::cout << el2.GetValue() << std::endl;
    }
    else if( ds.FindDataElement( tvalueob ) )
    {
        const DataElement & value = ds.GetDataElement( tvalueob );
        gdcmm::Element<VR::SL,VM::VM1> el2;
        // el2.SetFromDataElement( value );
        // std::cout << el2.GetValue() << std::endl;
        std::cout << value << std::endl;
    }
    else if( ds.FindDataElement( tvaluetext ) )
    {
        const DataElement & value = ds.GetDataElement( tvaluetext );
        gdcmm::Element<VR::LT,VM::VM1> el2;
        el2.SetFromDataElement( value );
        std::cout << el2.GetValue() << std::endl;
    }
    else if( ds.FindDataElement( tvaluesl2 ) )
    {
        const DataElement & value = ds.GetDataElement( tvaluesl2 );
        gdcmm::Element<VR::SL,VM::VM1_n> el2;
        el2.SetFromDataElement( value );
        el2.Print( std::cout );
        assert( el2.GetLength() == 4 );
        std::cout << std::endl;
    }
    else if( ds.FindDataElement( tvaluesl3 ) )
    {
        const DataElement & value = ds.GetDataElement( tvaluesl3 );
        gdcmm::Element<VR::SL,VM::VM1_n> el2;
        el2.SetFromDataElement( value );
        el2.Print( std::cout );
        // assert( el2.GetLength() == 4 );
        std::cout << std::endl;
    }
    else if( ds.FindDataElement( tvaluefd ) )
    {
        const DataElement & value = ds.GetDataElement( tvaluefd );
        gdcmm::Element<VR::FD,VM::VM1_n> el2;
        el2.SetFromDataElement( value );
        el2.Print( std::cout );
        // assert( el2.GetLength() == 4 || el2.GetLength() == 3 || el2.GetLength() == 8 );
        std::cout << std::endl;
    }
    else if( ds.FindDataElement( tvaluefloat2 ) )
    {
        const DataElement & value = ds.GetDataElement( tvaluefloat2 );
        gdcmm::Element<VR::FD,VM::VM1_n> el2;
        el2.SetFromDataElement( value );
        el2.Print( std::cout );
        assert( el2.GetLength() == 2 );
        std::cout << std::endl;
    }
    else if( ds.FindDataElement( tvaluefd1 ) )
    {
        const DataElement & value = ds.GetDataElement( tvaluefd1 );
        gdcmm::Element<VR::FD,VM::VM1_n> el2;
        el2.SetFromDataElement( value );
        el2.Print( std::cout );
        assert( el2.GetLength() == 4 );
    }

```

```

        std::cout << std::endl;
    }
    else
    {
        std::cout << "(no value)" << std::endl;
        //      std::cout << ds << std::endl;
        assert( ds.Size() == 2 );
    }
}
return true;
}

bool PrintNameValueMapping2( gdcm::PrivateTag const & privtag, const
    gdcm::DataSet & ds ,
gdcm::SequenceOfItems *sqi_names, std::string const & indent )
{
    if( !ds.FindDataElement( privtag ) ) return 1;
    const gdcm::DataElement& seq_values = ds.GetDataElement( privtag );
    gdcm::SmartPointer<gdcm::SequenceOfItems> sqi = seq_values.
        GetValueAsSQ();

    return PrintNameValueMapping( sqi, sqi_names, indent);
}

bool PrintNameValueMapping3( gdcm::PrivateTag const & privtag1,
    gdcm::PrivateTag const & privtag2, const gdcm::DataSet & ds ,
gdcm::SequenceOfItems *sqi_names, std::string const & indent )
{
    if( !ds.FindDataElement( privtag1 ) )
    {
        assert( 0 );
        return false;
    }
    const gdcm::DataElement& values10name = ds.GetDataElement( privtag1 );
    gdcm::Element<gdcm::VR::LO, gdcm::VM::VM1> el;
    el.SetFromDataElement( values10name );
    std::cout << std::endl;
    std::cout << " <" << el.GetValue().c_str() << ">" << std::endl;

    return PrintNameValueMapping2( privtag2, ds, sqi_names, indent);
}

bool print73( gdcm::DataSet const & ds10, gdcm::SequenceOfItems *sqi_dict
    , std::string const & indent )
{
    const gdcm::PrivateTag tseq_values73(0x7fe1, 0x73, "GEMS_Ultrasound_MovieGroup_001");
    if( !ds10.FindDataElement( tseq_values73 ) )
    {
        std::cout << indent << "No group 73" << std::endl;
        return false;
    }
    const gdcm::DataElement& seq_values73 = ds10.GetDataElement( tseq_values73
    );
    gdcm::SmartPointer<gdcm::SequenceOfItems> sqi_values73 =
        seq_values73.GetValueAsSQ();

    size_t ni3 = sqi_values73->GetNumberOfItems();
    for( size_t i3 = 1; i3 <= ni3; ++i3 )
    {
        gdcm::Item &item_73 = sqi_values73->GetItem(i3);
        gdcm::DataSet &ds73 = item_73.GetNestedDataSet();
        assert( ds73.Size() == 3 );

        const gdcm::PrivateTag tseq_values74name(0x7fe1, 0x74, "GEMS_Ultrasound_MovieGroup_001");
        const gdcm::PrivateTag tseq_values75(0x7fe1, 0x75, "GEMS_Ultrasound_MovieGroup_001");
        PrintNameValueMapping3( tseq_values74name, tseq_values75, ds73, sqi_dict, indent);
        std::cout << std::endl;
    }
    return true;
}

bool print83( gdcm::DataSet const & ds10, gdcm::SequenceOfItems *sqi_dict
    , std::string const & indent )
{
    const gdcm::PrivateTag tseq_values83(0x7fe1, 0x83, "GEMS_Ultrasound_MovieGroup_001");
    if( !ds10.FindDataElement( tseq_values83 ) )
    {
        std::cout << indent << "No group 83" << std::endl;
        return false;
    }
    const gdcm::DataElement& seq_values83 = ds10.GetDataElement( tseq_values83

```

```

    );
    gdcmm::SmartPointer<gdcmm::SequenceOfItems> sqi_values83 =
        seq_values83.GetValueAsSQ();

    size_t ni3 = sqi_values83->GetNumberOfItems();
    for( size_t i3 = 1; i3 <= ni3; ++i3 )
    {
        gdcmm::Item &item_83 = sqi_values83->GetItem(i3);
        gdcmm::DataSet &ds83 = item_83.GetNestedDataSet();
        assert( ds83.Size() == 3 );

        const gdcmm::PrivateTag tseq_values84name(0x7fe1,0x84,"GEMS_Ultrasound_MovieGroup_001");
        const gdcmm::PrivateTag tseq_values85(0x7fe1,0x85,"GEMS_Ultrasound_MovieGroup_001");
        PrintNameValueMapping3( tseq_values84name, tseq_values85, ds83, sqi_dict, indent);
        std::cout << std::endl;
    }
    return true;
}

bool PrintNameValueMapping4( gdcmm::PrivateTag const & privtag0, const
    gdcmm::DataSet & subds, gdcmm::PrivateTag const & privtag1,
    gdcmm::PrivateTag const & privtag2,
    gdcmm::SequenceOfItems *sqi_dict, std::string const & indent )
{
    (void)indent;
    if( !subds.FindDataElement( privtag0 ) )
    {
        assert( 0 );
        return 1;
    }
    const gdcmm::DataElement& seq_values10 = subds.GetDataElement( privtag0 );
    gdcmm::SmartPointer<gdcmm::SequenceOfItems> sqi_values10 =
        seq_values10.GetValueAsSQ();

    size_t nil = sqi_values10->GetNumberOfItems();
    // assert( nil == 1 );
    for( size_t i1 = 1; i1 <= nil; ++i1 )
    {
        gdcmm::Item &item_10 = sqi_values10->GetItem(i1);
        gdcmm::DataSet &ds10 = item_10.GetNestedDataSet();
        assert( ds10.Size() == 2 + 3 );
        // (7fe1,0010)
        // (7fe1,1012)
        // (7fe1,1018)
        // (7fe1,1020)
        // (7fe1,1083)

        PrintNameValueMapping3( privtag1, privtag2, ds10, sqi_dict, " " );
        std::cout << std::endl;

        const gdcmm::PrivateTag tseq_values20(0x7fe1,0x20,"GEMS_Ultrasound_MovieGroup_001");
        if( !ds10.FindDataElement( tseq_values20 ) )
        {
            assert( 0 );
            return 1;
        }
        const gdcmm::DataElement& seq_values20 = ds10.GetDataElement(
            tseq_values20 );
        gdcmm::SmartPointer<gdcmm::SequenceOfItems> sqi_values20 =
            seq_values20.GetValueAsSQ();

        size_t ni2 = sqi_values20->GetNumberOfItems();
        //assert( ni == 1 );
        for( size_t i2 = 1; i2 <= ni2; ++i2 )
        {
            gdcmm::Item &item_20 = sqi_values20->GetItem(i2);
            gdcmm::DataSet &ds20 = item_20.GetNestedDataSet();
            size_t count = ds20.Size(); (void)count;
            assert( ds20.Size() == 2 + 3 || ds20.Size() == 2 + 2 );
            // (7fe1,0010)
            // (7fe1,1024)
            // (7fe1,1026)
            // (7fe1,1036)
            // (7fe1,1083) (*)

            const gdcmm::PrivateTag tseq_values20name(0x7fe1,0x24,"GEMS_Ultrasound_MovieGroup_001"
            );
            const gdcmm::PrivateTag tseq_values26(0x7fe1,0x26,"GEMS_Ultrasound_MovieGroup_001");
            PrintNameValueMapping3( tseq_values20name, tseq_values26, ds20, sqi_dict, " ");
            std::cout << std::endl;

```

```

        print83(ds20, sqi_dict, "    ");
    }

    print83(ds10, sqi_dict, "    ");
}
return true;
}

int main(int argc, char *argv[])
{
    if( argc < 2 ) return 1;
    using namespace gdcm;
    const char *filename = argv[1];
    gdcm::Reader reader;
    reader.SetFileName( filename );
    reader.Read();

    gdcm::File &file = reader.GetFile();
    gdcm::DataSet &ds = file.GetDataSet();
    const PrivateTag tseq(0x7fe1,0x1,"GEMS_Ultrasound_MovieGroup_001");

    if( !ds.FindDataElement( tseq ) ) return 1;
    const DataElement& seq = ds.GetDataElement( tseq );

    SmartPointer<SequenceOfItems> sqi = seq.GetValueAsSQ();
    assert( sqi->GetNumberOfItems() == 1 );

    Item &item = sqi->GetItem(1);
    DataSet &subds = item.GetNestedDataSet();

    const PrivateTag tseq_dict(0x7fe1,0x70,"GEMS_Ultrasound_MovieGroup_001");
    if( !subds.FindDataElement( tseq_dict ) ) return 1;
    const DataElement& seq_dict = subds.GetDataElement( tseq_dict );
    SmartPointer<SequenceOfItems> sqi_dict = seq_dict.GetValueAsSQ();

    const PrivateTag tseq_values8(0x7fe1,0x8,"GEMS_Ultrasound_MovieGroup_001");
    if( !subds.FindDataElement( tseq_values8 ) ) return 1;
    const DataElement& seq_values8 = subds.GetDataElement( tseq_values8 );
    SmartPointer<SequenceOfItems> sqi_values8 = seq_values8.GetValueAsSQ();

    const PrivateTag tseq_values8name(0x7fe1,0x2,"GEMS_Ultrasound_MovieGroup_001");
    if( !subds.FindDataElement( tseq_values8name ) ) return 1;
    const DataElement& values8name = subds.GetDataElement( tseq_values8name );
{
    Element<VR::LO,VM::VM1> el;
    el.SetFromDataElement( values8name );
    std::cout << el.GetValue() << std::endl;
}

    size_t count = subds.Size(); (void)count;
    assert( subds.Size() == 3 + 2 + 1 || subds.Size() == 3 + 2 + 2 );

    // (7fe1,0010) # 30,1 Private Creator
    // (7fe1,1002) # 8,1 US MovieGroup Value 0008 Name
    // (7fe1,1003) # 4,1 ?
    // (7fe1,1008) # 8140,1 US MovieGroup Value 0008 Sequence
    // (7fe1,1010) # 1372196,1 ?
    // (7fe1,1070) # 33684,1 US MovieGroup Dict
    // (7fe1,1073) (*)
    PrintNameValueMapping( sqi_values8, sqi_dict, "    ");

    const PrivateTag tseq_values10(0x7fe1,0x10,"GEMS_Ultrasound_MovieGroup_001");
    const PrivateTag tseq_values10name(0x7fe1,0x12,"GEMS_Ultrasound_MovieGroup_001");
    const PrivateTag tseq_values18(0x7fe1,0x18,"GEMS_Ultrasound_MovieGroup_001");
    PrintNameValueMapping4( tseq_values10, subds, tseq_values10name, tseq_values18, sqi_dict,"    ");

    print73( subds, sqi_dict, "    ");

#ifdef 0
    gdcm::DataSet::ConstIterator it = subds.Begin();
    for( ; it != subds.End(); ++it )
    {
        const gdcm::DataElement &de = *it;
        std::cout << de.GetTag() << std::endl;
    }
#endif

    return 0;
}

```

27.36 DumpImageHeaderInfo.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
/*
 * Dump TOSHIBA MDW HEADER / Image Header Info
 */
#include "gdcmReader.h"
#include "gdcmPrivateTag.h"
#include "gdcmAttribute.h"
#include "gdcmImageWriter.h"

#include <iostream>
#include <fstream>
#include <vector>

#include <string.h>
#include <assert.h>
#include <stdint.h>

struct element
{
    std::istream & read( std::istream & is );
};

std::istream & element::read( std::istream & is )
{
    static const uint32_t ref = 0xe000fffe;
    std::ostream &os = std::cout;
    if( is.eof() )
    {
        return is;
    }
    uint32_t magic;
    if( !is.read( (char*)&magic, sizeof(magic) ) )
    {
        return is;
    }
    //os << magic << std::endl;
    assert( magic == ref );

    uint32_t l;
    is.read( (char*)&l, sizeof(l) );
    //os << l << std::endl;

    char str[17];
    str[16] = 0;
    is.read( str, 16 );
    os << str << " (" << l << ")" << std::endl;
    std::vector<char> bytes;
    bytes.resize( 1 - 16 );
    if( bytes.size() )
    {
        is.read( &bytes[0], 1 - 16 );
    }
    //os << "pos:" << is.tellg() << std::endl;

    if( strcmp(str, "TUSREMEASUREMENT" ) == 0 )
    {
        const char *p = &bytes[0];
        uint32_t val;
        memcpy( (char*)&val, p, sizeof(val) );
        os << " " << val << std::endl;
        p += sizeof(val);
        memcpy( (char*)&val, p, sizeof(val) );
        os << " " << val << std::endl;
        p += sizeof(val);
        memcpy( (char*)&val, p, sizeof(val) );
        os << " " << val << std::endl;
    }
}

```

```

    p += sizeof(val);
    memcpy( (char*)&val, p, sizeof(val) );
    os << " " << val << std::endl;
    p += sizeof(val);
    memcpy( (char*)&val, p, sizeof(val) );
    os << " " << val << std::endl;
    p += sizeof(val);
    memcpy( (char*)&val, p, sizeof(val) );
    os << " " << val << std::endl;
    p += sizeof(val);
    #if 0
        float f;
        memcpy( (char*)&f, p, sizeof(f) );
        os << " " << f << std::endl;
        p += sizeof(f);
    #else
        memcpy( (char*)&val, p, sizeof(val) );
        os << " " << val << std::endl;
        p += sizeof(val);
    #endif
    memcpy( (char*)&val, p, sizeof(val) );
    os << " " << val << std::endl;
    p += sizeof(val);
    char str2[17];
    memcpy( str2, p, 16 );
    str2[16] = 0;
    os << " " << str2 << std::endl;
}

#if 0
    std::ofstream out( str, std::ios::binary );
    out.write( (char*)&magic, sizeof( magic ) );
    out.write( (char*)&l, sizeof( l ) );
    out.write( str, 16 );
    out.write( &bytes[0], bytes.size() );
#endif
return is;
}

static bool DumpImageHeaderInfo( std::istream & is, size_t reflen )
{
    // TUSNONIMAGESTAM (5176)
    // TUSREMEASUREMEN (1352)
    // TUSBSINGLELAYOU (16)
    // TUSCLIPPARAMETE (104)

    element el;
    while( el.read( is ) )
    {
        //size_t pos = is.tellg();
        //assert( pos == reflen );
        (void)reflen;

        return true;
    }
}

int main(int argc, char *argv[])
{
    if( argc < 2 ) return 1;
    const char *filename = argv[1];
    gdcm::Reader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        std::cerr << "Failed to read: " << filename << std::endl;
        return 1;
    }
    const gdcm::DataSet& ds = reader.GetFile().GetDataSet();

    const gdcm::PrivateTag timageheaderinfo(0x0029,0x10,"TOSHIBA MDW HEADER");
    if( !ds.FindDataElement( timageheaderinfo ) ) return 1;
    const gdcm::DataElement& imageheaderinfo = ds.GetDataElement(
        timageheaderinfo );
    if ( imageheaderinfo.IsEmpty() ) return 1;
    const gdcm::ByteValue * bv = imageheaderinfo.GetByteValue();

    std::stringstream is;
    std::string dup( bv->GetPointer(), bv->GetLength() );
    is.str( dup );
    bool b = DumpImageHeaderInfo( is, bv->GetLength() );
}

```



```

    if( !b ) return 1;

#if 0
    const float d1 = 0.00416666668839752674; // 89 88 88 3B // 0x44c
    //const float d1 = 0.053231674455417881;
    const float d2 = 0.10828025639057159; // 0A C2 DD 3D // 0x1ac
    //const float d1 = 0.17869562069272813;
    //const unsigned int d2 = 4294967280;
    const float d3 = 0.10828025639057159; // 0A C2 DD 3D // 0x15c
    const int32_t d4 = 134;
    const uint32_t d5 = 1153476;
    std::ofstream t("/tmp/debug", std::ios::binary );
    //t.write( (char*)&d0, sizeof( d0 ) );
    t.write( (char*)&d1, sizeof( d1 ) );
    t.write( (char*)&d2, sizeof( d2 ) );
    t.write( (char*)&d3, sizeof( d3 ) );
    t.write( (char*)&d4, sizeof( d4 ) );
    t.write( (char*)&d5, sizeof( d5 ) );
    t.close();
#endif

    return 0;
}

```

27.37 DumpToSQLITE3.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
/*
 * Ref:
 * http://massmail.spl.harvard.edu/public-archives/slicer-devel/2010/004408.html
 *
 * Implementation details:
 * http://www.sqlite.org/c3ref/bind_blob.html
 * http://www.adp-gmbh.ch/sqlite/bind_insert.html
 */
#include "gdcmScanner.h"
#include "gdcmDirectory.h"
#include "gdcmTag.h"
#include "gdcmTrace.h"

#include "sqlite3.h"

#include <stdio.h>
#include <time.h>

int main(int argc, char *argv[])
{
    if( argc < 2 )
    {
        return 1;
    }
    time_t time_start = time(0);

    gdcm::Trace::SetDebug( false );
    gdcm::Trace::SetWarning( false );
    const char *inputdirectory = argv[1];

    gdcm::Directory d;
    unsigned int nfiles = d.Load( inputdirectory, true);

    gdcm::Scanner s;
    using gdcm::Tag;
    s.AddTag( Tag(0x20,0xd) ); // Study Instance UID
    s.AddTag( Tag(0x20,0xe) ); // Series Instance UID

```

```

bool b0 = s.Scan( d.GetFileNames() );
if( !b0 ) return 1;
time_t time_scanner = time(0);

std::cout << "Finished loading data from : " << nfiles << " files" << std::endl;

// MappingType const &mappings = s.GetMappings();

sqlite3* db;
sqlite3_open("./dicom.db", &db);

if(db == 0)
{
    std::cerr << "Could not open database." << std::endl;
    return 1;
}

const char sql_stmt[] = "create table browser (seriesuid, studyuid)";
int ret;

char *errmsg;
ret = sqlite3_exec(db, sql_stmt, 0, 0, &errmsg);

if(ret != SQLITE_OK)
{
    printf("Error in statement: %s [%s].\n", sql_stmt, errmsg);
    return 1;
}
using gdc::Directory;
using gdc::Scanner;
const Directory::FileNamesType& files = d.GetFileNames();
Directory::FileNamesType::const_iterator file = files.begin();

sqlite3_stmt *stmt;
if ( sqlite3_prepare(
    db,
    "insert into browser values (?,?)", // stmt
    -1, // If than zero, then stmt is read up to the first nul terminator
    &stmt,
    0 // Pointer to unused portion of stmt
)
!= SQLITE_OK)
{
    printf("\nCould not prepare statement.");
    return 1;
}
//printf("\nThe statement has %d wildcards\n", sqlite3_bind_parameter_count(stmt));
for(; file != files.end(); ++file)
{
    const char *filename = file->c_str();
    bool b = s.IsKey(filename);
    if( b )
    {
        const Scanner::TagToValue &mapping = s.GetMapping(filename);
        Scanner::TagToValue::const_iterator it = mapping.begin();

        sqlite3_reset(stmt);

        for( int index = 1; it != mapping.end(); ++it, ++index)
        {
            //const Tag &tag = it->first;
            const char *value = it->second;

            if (sqlite3_bind_text (
                stmt,
                index, // Index of wildcard
                value,
                (int)strlen(value), // length of text
                SQLITE_STATIC // SQLite assumes that the information is in static
            )
            != SQLITE_OK)
            {
                printf("\nCould not bind int.\n");
                return 1;
            }
        }
        if (sqlite3_step(stmt) != SQLITE_DONE)
        {
            printf("\nCould not step (execute) stmt.\n");
            return 1;
        }
    }
}

```

```

    }
}

sqlite3_close(db);

time_t time_sqlite = time(0);

std::cout << "Time to scan DICOM files: " << (time_scanner - time_start) << std::endl;
std::cout << "Time to build SQLITE3: " << (time_sqlite - time_scanner) << std::endl;

return 0;
}

```

27.38 DuplicatePCDE.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcml.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "gdcmlReader.h"
#include "gdcmlWriter.h"
#include "gdcmlItem.h"
#include "gdcmlImageReader.h"
#include "gdcmlSequenceOfItems.h"
#include "gdcmlFile.h"
#include "gdcmlTag.h"
/*
Usage:
DuplicatePCDE gdcmlData/D_CLUNIE_CT1_J2KI.dcm out.dcm

aka:
medical.nema.org/medical/dicom/DataSets/WG04/IMAGES/J2KI/CT1_J2KI

See:
gdcmlConformanceTests/CT1_J2KI_DuplicatePCDE.dcm

Original thread can be found at:

http://groups.google.com/group/comp.protocols.dicom/browse_thread/thread/82f28c4db28963af

Question:
1.
There is no restriction for a specific Private Creator Data Element
(PCDE) to be unique within the same group, right ?
Decoders of Private Data would have to handle the case where a PCDE
would be repeated and should NOT stop on the first instance of a
particular PCDE, right ?

Eg. when searching for the tag associated with
(0x0029,0x0010,"SIEMENS CSA HEADER") in the following (pseudo)
dataset:

(0029,0010) LO [SIEMENS CSA HEADER] # 18, 1
PrivateCreator
(0029,0011) LO [SIEMENS MEDCOM HEADER] # 22, 1
PrivateCreator
(0029,0012) LO [SIEMENS MEDCOM HEADER2] # 22, 1
PrivateCreator
(0029,0013) LO [SIEMENS CSA HEADER] # 18, 1
PrivateCreator
(0029,1008) CS [IMAGE NUM 4] # 12, 1
CSAImageHeaderType
(0029,1009) LO [20050723] # 8, 1
CSAImageHeaderVersion
(0029,1010) OB 53\56\31\30\04\03\02\01\38\00\00\00\4d
\00\00\00\45\63\68\6f\4c\69... # 6788, 1 CSAImageHeaderInfo

```

```

(0029,1018) CS [MR] # 2, 1
CSAHeaderType
(0029,1019) LO [20050723] # 8, 1
CSAHeaderVersion
(0029,1020) OB 53\56\31\30\04\03\02\01\2c\00\00\00\4d
\00\00\00\55\73\65\64\50\61... # 51520, 1 CSAHeaderInfo
(0029,1131) LO [4.0.163088300] # 14, 1
PMTFInformation1
(0029,1132) UL 32768 # 4, 1
PMTFInformation2
(0029,1133) UL 0 # 4, 1
PMTFInformation3
(0029,1134) CS [DB TO DICOM] # 12, 1
PMTFInformation4
(0029,1260) ?? 63\6f\6d\20 # 4, 1
Unknown Tag & Data
(0029,1310) OB 53\56\31\30\04\03\02\01\38\00\00\00\4d
\00\00\00\45\63\68\6f\4c\69... # 6788, 1 CSAImageHeaderInfo

```

one should return two instances, correct ?

Answer:

I would say that this is covered in principle by the PS 3.5 7.1
 "The Data Elements ... shall occur at most once in a Data Set"
 rule, since the data element is defined by the tuple
 (private creator,gggg,ee) where xxee is the element
 number and xx is arbitrary and has no inherent meaning and
 does not serve to disambiguate the data element.

E.g.:

```

(0019,0030) Private Creator ID = "Smith"
...
(0019,0032) Private Creator ID = "Smith"
...
(0019,3015) Fractal Index = "32"
...
(0019,3215) Fractal Index = "32"

```

would be illegal because even though they are assigned different
 (completely arbitrary) blocks, with the same group, element
 number and private creator, (0019,3015) and (0019,3215) are the
 "same" data element.

*/

```

int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        std::cerr << argv[0] << " input.dcm output.dcm" << std::endl;
        return 1;
    }
    const char *filename = argv[1];
    const char *outfilename = argv[2];
    gdcm::Reader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        return 1;
    }

    gdcm::File &file = reader.GetFile();
    gdcm::DataSet &ds = file.GetDataSet();

    // Let's get all private element from group 0x9:
    /*
(0009,0010) LO [GEMS_IDEN_01] # 12,1 Private Creator
(0009,1001) LO [GE_GENESIS_FF ] # 14,1 Full fidelity
(0009,1002) SH [CT01] # 4,1 Suite id
(0009,1004) SH [HiSpeed CT/i] # 12,1 Product id
(0009,1027) SL 862399669 # 4,1 Image actual date
(0009,1030) SH (no value) # 0,1 Service id
(0009,1031) SH (no value) # 0,1 Mobile location number
(0009,10e6) SH [05] # 2,1 Genesis Version - now
(0009,10e7) UL 973283917 # 4,1 Exam Record checksum
(0009,10e9) SL 862399669 # 4,1 Actual series data time stamp
*/
    gdcm::Tag start(0x0009,0x0);
    // Create a temporary duplicate dataset, since we cannot insert data element as we go over them (std::set
    // would reorganize itself as we go over it ...)

```

```

gdcmm::DataSet dup;
gdcmm::Tag new_private(0x0009,0x0);
while (start.GetGroup() == 0x9 )
{
    const gdcmm::DataElement& de = ds.FindNextDataElement(start);
    const gdcmm::Tag &t = de.GetTag();
    if( t.IsPrivateCreator() )
    {
        std::cout << t << std::endl;
        // Ok let's duplicate into the next available attribute:
        gdcmm::DataElement duplicate = de;
        duplicate.GetTag().SetElement( (uint16_t)(t.GetElement() + 1) );
        dup.Insert( duplicate );
        new_private = duplicate.GetTag();
    }
    else if( t.IsPrivate() && !t.IsPrivateCreator() )
    {
        //std::cout << de << std::endl;
        std::string owner = ds.GetPrivateCreator( de.GetTag() );
        //std::cout << owner << std::endl;
        gdcmm::DataElement duplicate = de;
        duplicate.GetTag().SetPrivateCreator( new_private );
        if( const gdcmm::ByteValue *bv = duplicate.GetByteValue() )
        {
            // Warning: when doing : duplicate = de, only the pointer to the ByteValue is passed
            // (to avoid large memory duplicate). We need to explicitly duplicate the bytevalue ourselves:
            gdcmm::ByteValue *dupbv = new gdcmm::ByteValue( bv->GetPointer(),
                bv->GetLength() );
            // Let's recognize the duplicated ASCII-type elements:
            if( duplicate.GetVR() & gdcmm::VR::VRASCII )
                dupbv->Fill( 'X' );
            duplicate.SetValue( *dupbv );
        }
        dup.Insert( duplicate );
    }
    start = t;
    // move to next possible 'public' element
    start.SetElement( (uint16_t)(start.GetElement() + 1) );
}

gdcmm::DataSet::ConstIterator it = dup.Begin();
for( ; it != dup.End(); ++it )
{
    ds.Insert( *it );
}

gdcmm::Writer w;
w.SetFile( file );
w.SetFileName( outfilename );
if ( !w.Write() )
{
    return 1;
}

return 0;
}

```

27.39 ELSCINT1WaveToText.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcmm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "gdcmmReader.h"
#include "gdcmmPrivateTag.h"

/*
 * This example shows how to read a Wave Information tag from ELSCINT1

```

```

* The wave information is stored in Tag (01e1,18,ELSCINT1) hidden in a
* Secondary Capture Image Storage (usually a 'N' Symbol is shown)
*
* Everything done in this code is for the sole purpose of writing interoperable
* software under Sect. 1201 (f) Reverse Engineering exception of the DMCA.
* If you believe anything in this code violates any law or any of your rights,
* please contact us (gdcmm-developers@lists.sourceforge.net) so that we can
* find a solution.
*
* Everything you do with this code is at your own risk, since decompression
* algorithm was not written from specification documents.
*
* Special thanks to:
* Gauthier Bouilhol
*/

template <typename T>
bool dumpargs(std::ostream & os, T c1, T c2, T c3, T c4, T c5, T c6, T c7, T c8)
{
    static const char sep = '\t';
    os << c1 << sep << c2 << sep << c3 << sep << c4 << sep << c5 << sep << c6 << sep << c7 << sep << c8;
    os << std::endl;
    return true;
}

bool wave2stream( std::ostream &text_file, const char *in, size_t len )
{
    short * buffer = (short*)in;
    size_t length = len / sizeof( short );
    text_file << "COMPLETE_WAVE" << '\t' << "MASK" << '\t' << "AQUISITION_PROFIL" << '\t' << "
    END-INHALE" << '\t' << "END-EXHALE" << '\t' << "AQUISITION_WAVE" << '\t' << "WAVE_STATISTICS" << '\t' << "MASK"
    << std::endl;
    for (size_t i=0;i<length-76;i+=2)
    {
        if ( i < 74 )
        {
            if (buffer[i+75] == 0)
                text_file << buffer[i+74] << '\t' << buffer[i+75] << '\t' << 0 << '\t' << " " << '\t' << buffer[i] << '\t' << buffer
                << '\t' << " " << '\t' << " " << '\t' << buffer[i]
            [i+1] << std::endl;
            if (buffer[i+75] == 16384)
                text_file << buffer[i+74] << '\t' << buffer[i+75] << '\t' << 0 << '\t' << " " << '\t' <<
                buffer[i+74] << '\t' << " " << '\t' << buffer[i] << '\t' << buffer
            [i+1] << std::endl;
            if (buffer[i+75] == 256)
                text_file << buffer[i+74] << '\t' << buffer[i+75] << '\t' << 0 << '\t' << " " << '\t' << buffer
                << '\t' << buffer[i+74] << '\t' << " " << '\t' << buffer[i] << '\t' << buffer
            [i+1] << std::endl;
            if (buffer[i+75] == -32768)
                text_file << buffer[i+74] << '\t' << buffer[i+75] << '\t' << 1 << '\t' << " " << '\t' << buffer
                << '\t' << buffer[i+74] << '\t' << buffer[i] << '\t' << buffer
            [i+1] << std::endl;
            if (buffer[i+75] == -16384)
                text_file << buffer[i+74] << '\t' << buffer[i+75] << '\t' << 1 << '\t' << " " << '\t' <<
                buffer[i+74] << '\t' << buffer[i+74] << '\t' << buffer[i] << '\t' << buffer
            [i+1] << std::endl;
            if (buffer[i+75] == -32512)
                text_file << buffer[i+74] << '\t' << buffer[i+75] << '\t' << 1 << '\t' << " " << '\t' << " "
                << '\t' << buffer[i+74] << '\t' << buffer[i+74] << '\t' << buffer[i] << '\t' << buffer
            [i+1] << std::endl;
        }
        else
        {
            if (buffer[i+75] == 0)
                text_file << buffer[i+74] << '\t' << buffer[i+75] << '\t' << 0 << '\t' << " " << '\t' << " "
                << '\t' << " " << '\t' << " "
            << std::endl;
            if (buffer[i+75] == 16384)
                text_file << buffer[i+74] << '\t' << buffer[i+75] << '\t' << 0 << '\t' << " " << '\t' <<
                buffer[i+74] << '\t' << " " << '\t' << " " << '\t' << " "
            << std::endl;
            if (buffer[i+75] == 256)
                text_file << buffer[i+74] << '\t' << buffer[i+75] << '\t' << 0 << '\t' << " " << '\t' << " "
                << '\t' << buffer[i+74] << '\t' << " " << '\t' << " "
            << std::endl;
            if (buffer[i+75] == -32768)
                text_file << buffer[i+74] << '\t' << buffer[i+75] << '\t' << 1 << '\t' << " " << '\t' << " "
                << '\t' << buffer[i+74] << '\t' << " " << '\t' << " "
            << std::endl;
            if (buffer[i+75] == -16384)
                text_file << buffer[i+74] << '\t' << buffer[i+75] << '\t' << 1 << '\t' <<

```

```

        buffer[i+74] << '\t' << " " << '\t' << buffer[i+74] << '\t' << " " << '\t' << " "
        << std::endl;
        if (buffer[i+75] == -32512)
            text_file << buffer[i+74] << '\t' << buffer[i+75] << '\t' << 1 << '\t' << " "
            << '\t' << buffer[i+74] << '\t' << buffer[i+74] << '\t' << " " << '\t' << " "
            << std::endl;
    }
}

return true;
}

int main(int argc, char *argv [])
{
    if( argc < 3 ) return 1;
    const char *filename = argv[1];
    const char *outfilename = argv[2];
    gdcm::Reader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        std::cerr << "Failed to read: " << filename << std::endl;
        return 1;
    }
    const gdcm::DataSet& ds = reader.GetFile().GetDataSet();

    const gdcm::PrivateTag twave(0x01e1,0x18,"ELSCINT1");
    if( !ds.FindDataElement( twave ) ) return 1;
    const gdcm::DataElement& wave = ds.GetDataElement( twave );
    if ( wave.IsEmpty() ) return 1;
    const gdcm::ByteValue * bv = wave.GetByteValue();
    assert( bv );

    std::ofstream os( outfile );
    // Dump that to a CSV file:
    wave2stream( os, bv->GetPointer(), bv->GetLength() );
    os.close();

    return 0;
}

```

27.40 EncapsulateFileInRawData.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "gdcmAnonymizer.h"
#include "gdcmWriter.h"
#include "gdcmUIDGenerator.h"
#include "gdcmFile.h"
#include "gdcmTag.h"
#include "gdcmSystem.h"

#include "magic.h" // libmagic, API to file command line tool

/*
 * Let say you want to encapsulate a file type that is not defined in DICOM (exe, zip, png)
 * PNG is a bad example, unless it contains transparency (which has been deprecated).
 * It will take care of dispatching each chunk to an appropriate data item (pretty much like
 * WaveformData)
 *
 * Usage:
 * ./EncapsulateFileInRawData large_input_file.exe large_input_file.dcm
 */

// TODO:
// $ file -bi /tmp/gdcm-2.1.0.pdf

```

```

int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        std::cerr << argv[0] << " inputfile output.dcm" << std::endl;
        return 1;
    }
    const char *filename = argv[1];
    const char *outfilename = argv[2];

    if( !gdcm::System::FileExists( filename ) ) return 1;

    size_t s = gdcm::System::FileSize(filename);

    magic_t cookie = magic_open(MAGIC_NONE);
    const char * file_type = magic_file(cookie, filename);
    magic_close(cookie);

    gdcm::Writer w;
    gdcm::File &file = w.GetFile();
    gdcm::DataSet &ds = file.GetDataSet();
    //w.SetCheckFileMetaInformation( true );
    w.SetFileName( outfile );

    file.GetHeader().SetDataSetTransferSyntax(
        gdcm::TransferSyntax::ImplicitVRLittleEndian );

    gdcm::Anonymizer anon;
    anon.SetFile( file );

    gdcm::MediaStorage ms = gdcm::MediaStorage::RawDataStorage
        ;

    gdcm::UIDGenerator gen;
    anon.Replace( gdcm::Tag(0x0008,0x16), ms.GetString() );
    std::cout << ms.GetString() << std::endl;
    anon.Replace( gdcm::Tag(0x0008,0x18), gen.Generate() );

    if ( !w.Write() )
    {
        std::cerr << "Could not write: " << outfile << std::endl;
        return 1;
    }

    return 0;
}

```

27.41 ExtractEncapsulatedFile.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/

/*
 * This example shows how one from C# context can extract a binary blob
 * and write out as a file.
 * This example is meant for pdf encapsulated file, but can be adapted for other type
 * of binary blob.
 *
 * DICOM file is:
 * ...
 * (0042,0010) ST (no value available) # 0, 0 DocumentTitle
 * (0042,0011) OB 25\50\44\46\2d\31\2e\32\20\0d\25\2e\3\cf\d3\20\0d\31\30\20\30\20... # 40718, 1
 * EncapsulatedDocument
 * (0042,0012) LO [application/pdf] # 16, 1 MIMETypeOfEncapsulatedDocument
 * ...
 */

```



```

*
* Usage:
* $ export LD_LIBRARY_PATH=$HOME/Projects/gdcm/debug-gcc/bin
* $ mono bin/ExtractEncapsulatedFile.exe some_pdf_encapsulated.dcm
*/
using System;
using gdcm;

public class ExtractEncapsulatedFile
{
    public static int Main(string[] args)
    {
        string file = args[0];
        Reader reader = new Reader();
        reader.SetFileName( file );
        bool ret = reader.Read();
        if( !ret )
        {
            return 1;
        }

        File f = reader.GetFile();
        DataSet ds = f.GetDataSet();
        Tag tencapsulated_stream = new Tag(0x0042,0x0011); // Encapsulated Document
        if( !ds.FindDataElement( tencapsulated_stream ) )
        {
            return 1;
        }
        // else
        DataElement de = ds.GetDataElement( tencapsulated_stream );
        ByteValue bv = de.GetByteValue();
        uint len = bv.GetLength();
        byte[] encapsulated_stream = new byte[len];
        bv.GetBuffer( encapsulated_stream, len );

        // Write out the decompressed bytes
        //System.Console.WriteLine(image.toString());
        using (System.IO.Stream stream =
            System.IO.File.Open(@"tmp/dd.pdf",
                System.IO.FileMode.Create))
        {
            System.IO.BinaryWriter writer = new System.IO.BinaryWriter(stream);
            writer.Write( encapsulated_stream );
        }

        return 0;
    }
}

```

27.42 ExtractEncryptedContent.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "gdcmReader.h"

#include <fstream>

/*

openssl smime -encrypt -binary -aes256 -in outputfile.dcm -inform DER -out outputfile.der -outform DER ../
trunk/Testing/Source/Data/certificate.pem

openssl smime -decrypt -binary -in out.der -inform DER -out outputfile.dcm -outform DER -inkey ../trunk/
Testing/Source/Data/privatekey.pem ../trunk/Testing/Source/Data/certificate.pem

```

```

*/
int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        std::cerr << argv[0] << " input.dcm output.der" << std::endl;
        return 1;
    }
    const char *filename = argv[1];
    const char *outfilename = argv[2];

    gdcm::Reader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        return 1;
    }

    gdcm::File &file = reader.GetFile();
    gdcm::DataSet &ds = file.GetDataSet();

    const gdcm::DataElement &EncryptedAttributesSequence = ds.
        GetDataElement( gdcm::Tag( 0x0400,0x0500 ) );

    gdcm::SequenceOfItems *sqi = EncryptedAttributesSequence.
        GetValueAsSQ();

    if ( !sqi || sqi->GetNumberOfItems() != 1 ) return 1;

    gdcm::Item &item = sqi->GetItem(1);

    gdcm::DataSet &nestedds = item.GetNestedDataSet();

    if( ! nestedds.FindDataElement( gdcm::Tag( 0x0400,0x0520 ) ) ) return 1;

    const gdcm::DataElement &EncryptedContent = nestedds.
        GetDataElement( gdcm::Tag( 0x0400,0x0520 ) );

    const gdcm::ByteValue *bv = EncryptedContent.GetByteValue();

    std::ofstream of( outfile );
    of.write( bv->GetPointer(), bv->GetLength() );
    of.close();

    return 0;
}

```

27.43 ExtractIconFromFile.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
/*
 * This example shows how to either retrieve an Icon if present somewhere
 * in the file, or else generate one.
 */
#include "gdcmImageReader.h"
#include "gdcmPNMCodec.h"
#include "gdcmIconImageFilter.h"
#include "gdcmIconImageGenerator.h"

bool WriteIconAsPNM(const char* filename, const gdcm::IconImage& icon)
{
    gdcm::PNMCodec pnm;
    pnm.SetDimensions( icon.GetDimensions() );
    pnm.SetPixelFormat( icon.GetPixelFormat() );

```

```

    pnm.SetPhotometricInterpretation( icon.
        GetPhotometricInterpretation() );
    pnm.SetLUT( icon.GetLUT() );
    const gdcm::DataElement& in = icon.GetDataElement();
    bool b = pnm.Write( filename, in );
    assert( b ); (void)b;
    return true;
}

int main(int argc, char *argv [])
{
    if( argc < 2 ) return 1;
    const char *filename = argv[1];
    gdcm::ImageReader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        std::cerr << "Failed to read (or not image): " << filename << std::endl;
        return 1;
    }

    gdcm::IconImageFilter iif;
    iif.SetFile( reader.GetFile() );
    bool b = iif.Extract();

    if( b )
    {
        const gdcm::IconImage &icon = iif.GetIconImage(0);
        icon.Print( std::cout );

        if( !icon.GetTransferSyntax().IsEncapsulated() )
        {
            // Let's write out this icon as PNM file
            WriteIconAsPNM("icon.ppm", icon);
        }
        else if( icon.GetTransferSyntax() ==
            gdcm::TransferSyntax::JPEGBaselineProcess1
            || icon.GetTransferSyntax() ==
            gdcm::TransferSyntax::JPEGExtendedProcess2_4
        )
        {
            const gdcm::DataElement& in = icon.GetDataElement();
            const gdcm::ByteValue *bv = in.GetByteValue();
            assert( bv );
            std::ofstream out( "icon.jpg" );
            out.write( bv->GetPointer(), bv->GetLength() );
            out.close();
        }
    }
    else
    {
        assert( iif.GetNumberOfIconImages() == 0 );
        std::cerr << "No Icon Found anywhere in file" << std::endl;

        const gdcm::Image &img = reader.GetImage();
        gdcm::IconImageGenerator iig;
        iig.AutoPixelMinMax(true);
        iig.SetPixmap( img );
        const unsigned int idims[2] = { 64, 64 };
        iig.SetOutputDimensions( idims );
        //iig.SetPixelMinMax(60, 868);
        if( !iig.Generate() ) return 1;
        const gdcm::IconImage &icon = iig.GetIconImage();
        WriteIconAsPNM("icon.ppm", icon);
    }

    return 0;
}

```

27.44 ExtractImageRegion.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.

```

See Copyright.txt or <http://gdcm.sourceforge.net/Copyright.html> for details.

This software is distributed WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the above copyright notice for more information.

```

=====*/

/*
 * This small code shows how to use the gdcm.ImageRegionReader API
 * In this example we are taking each frame by frame and dump them to
 * /tmp/frame.raw.
 *
 * Usage:
 * $ bin/ExtractImageRegion.exe input.dcm
 *
 * Example:
 * $ bin/ExtractImageRegion.exe gdcmData/012345.002.050.dcm
 * $ md5sum /tmp/frame.raw
 * d594a5e2fde12f32b6633ca859b4d4a6 /tmp/frame.raw
 * $ gdcmInfo --md5sum gdcmData/012345.002.050.dcm
 * [...]
 * md5sum: d594a5e2fde12f32b6633ca859b4d4a6
 */
using System;
using gdcm;

public class ExtractImageRegion
{
    public static int Main(string[] args)
    {
        string filename = args[0];

        // instanciate the reader:
        gdcm.ImageRegionReader reader = new gdcm.ImageRegionReader();
        reader.SetFileName( filename );

        // pull DICOM info:
        if (!reader.ReadInformation()) return 1;
        // Get file infos
        gdcm.File f = reader.GetFile();

        // get some info about image
        UIntArrayType dims = ImageHelper.GetDimensionsValue(f);
        PixelFormat pf = ImageHelper.GetPixelFormatValue (f);
        int pixelsize = pf.GetPixelSize();

        // buffer to get the pixels
        byte[] buffer = new byte[ dims[0] * dims[1] * pixelsize ];

        // define a simple box region.
        BoxRegion box = new BoxRegion();
        for (uint z = 0; z < dims[2]; z++)
        {
            // Define that I want the image 0, full size (dimx x dimy pixels)
            // and do that for each z:
            box.SetDomain(0, dims[0] - 1, 0, dims[1] - 1, z, z);
            //System.Console.WriteLine( box.ToString() );
            reader.SetRegion( box );

            // reader will try to load the uncompressed image region into buffer.
            // the call returns an error when buffer.Length is too small. For instance
            // one can call:
            // uint buf_len = reader.ComputeBufferLength(); // take into account pixel size
            // to get the exact size of minimum buffer
            if (reader.ReadIntoBuffer(buffer, (uint)buffer.Length))
            {
                using (System.IO.Stream stream =
                    System.IO.File.Open(@"tmp/frame.raw",
                        System.IO.FileMode.Create))
                {
                    System.IO.BinaryWriter writer = new System.IO.BinaryWriter(stream);
                    writer.Write(buffer);
                }
            }
            else
            {
                throw new Exception("can't read pixels error");
            }
        }
    }
}

```

```

    return 0;
}

```

27.45 Extracting_All_Resolution.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/
// This work was realised during the GSOC 2011 by Manoj Alwani

#include <fstream>
#include <openjpeg.h>
#include <stdint.h>
#include <string.h>
#include <assert.h>
#include <gdcm_j2k.h>
#include <gdcm_jp2.h>
#include <iostream>
#include <cstring>
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include <math.h>
#include "gdcmImageReader.h"
#include "gdcmSequenceOfItems.h"
#include "gdcmSystem.h"
#include <fstream>

#include "gdcmMediaStorage.h"
#include "gdcmWriter.h"
#include "gdcmItem.h"
#include "gdcmImageReader.h"
#include "gdcmAttribute.h"
#include "gdcmFile.h"
#include "gdcmTag.h"
#include "gdcmTransferSyntax.h"
#include "gdcmUIDGenerator.h"
#include "gdcmAnonymizer.h"
#include "gdcmStreamImageWriter.h"
#include "gdcmImageHelper.h"
#include "gdcmTrace.h"

void error_callback(const char *msg, void *) {
    (void)msg;
}
void warning_callback(const char *msg, void *) {
    (void)msg;
}
void info_callback(const char *msg, void *) {
    (void)msg;
}

bool Write_Resolution(gdcm::StreamImageWriter & theStreamWriter, const char *
    filename, int res, std::ostream& of, int flag, gdcm::SequenceOfItems *sq, int
    No_Of_Resolutions)
{
    std::ifstream is;
    is.open( filename );
    opj_dparameters_t parameters; /* decompression parameters */
    opj_event_mgr_t event_mgr; /* event manager */
    opj_dinfo_t* dinfo; /* handle to a decompressor */
    opj_cio_t *cio;
    opj_image_t *image = NULL;

```

```

// FIXME: Do some stupid work:
is.seekg( 0, std::ios::end);
std::streampos buf_size = is.tellg();
char *dummy_buffer = new char[(unsigned int)buf_size];
is.seekg(0, std::ios::beg);
is.read( dummy_buffer, buf_size);
unsigned char *src = (unsigned char*)dummy_buffer;
uint32_t file_length = (uint32_t)buf_size; // 32bits truncation should be ok since DICOM cannot have
        larger than 2Gb image

/* configure the event callbacks (not required) */
memset(&event_mgr, 0, sizeof(opj_event_mgr_t));
event_mgr.error_handler = error_callback;
event_mgr.warning_handler = warning_callback;
event_mgr.info_handler = info_callback;

/* set decoding parameters to default values */
opj_set_default_decoder_parameters(&parameters);

// default blindly copied
parameters.cp_layer=0;
parameters.cp_reduce= res;
// parameters.decode_format=-1;
// parameters.cod_format=-1;

const char jp2magic[] = "\x00\x00\x00\x0C\x6A\x50\x20\x20\x0D\x0A\x87\x0A";
if( memcmp( src, jp2magic, sizeof(jp2magic) ) == 0 )
{
    /* JPEG-2000 compressed image data ... sigh */
    // gdcmData/ELSCINT1_JP2vsJ2K.dcm
    // gdcmData/MAROTECH_CT_JP2Lossy.dcm
    //gdcmWarningMacro( "J2K start like JPEG-2000 compressed image data instead of codestream" );
    parameters.decode_format = 1; //JP2_CFMT;
    //assert(parameters.decode_format == JP2_CFMT);
}
else
{
    /* JPEG-2000 codestream */
    //parameters.decode_format = J2K_CFMT;
    //assert(parameters.decode_format == J2K_CFMT);
    assert( 0 );
}
parameters.cod_format = 11; // PGX_DFMT;
//assert(parameters.cod_format == PGX_DFMT);

/* get a decoder handle */
dinfo = opj_create_decompress(CODEC_JP2);

/* catch events using our callbacks and give a local context */
opj_set_event_mgr((opj_common_ptr)dinfo, &event_mgr, NULL);

/* setup the decoder decoding parameters using user parameters */
opj_setup_decoder(dinfo, &parameters);

/* open a byte stream */
cio = opj_cio_open((opj_common_ptr)dinfo, src, file_length);

/* decode the stream and fill the image structure */
image = opj_decode(dinfo, cio);
if(!image) {
    opj_destroy_decompress(dinfo);
    opj_cio_close(cio);
    //gdcmErrorMacro( "opj_decode failed" );
    return 1;
}

    opj_cp_t * cp = ((opj_jp2_t*)dinfo->jp2_handle)->j2k->cp;
    opj_tcp_t *tcp = &cp->tcps[0];
    opj_tccp_t *tccp = &tcp->tccps[0];
    /* std::cout << "\n No of Cols In Image" << image->x1;
    std::cout << "\n No of Rows In Image" << image->y1;
    std::cout << "\n No of Components in Image" << image->numcomps;
    std::cout << "\n No of Resolutions"<< tccp->numresolutions << "\n";
*/

    opj_j2k_t* j2k = NULL;
    opj_jp2_t* jp2 = NULL;
    jp2 = (opj_jp2_t*)dinfo->jp2_handle;
    int reversible = jp2->j2k->cp->tcps->tccps->qmfbid;
    //std:: cout << reversible;
    int compno = 0;

```

```

        opj_image_comp_t *comp = &image->comps[compno];
        int Dimensions[2];
        Dimensions[0]= comp->w;
        Dimensions[1] = comp->h;
        opj_cio_close(cio);
        unsigned long len = Dimensions[0]*Dimensions[1] * image->numcomps;
        //std::cout << "\nTest " <<image->comps[0].factor;
        char *raw = new char[len];
    for (unsigned int compno = 0; compno < (unsigned int)image->numcomps; compno++)
    {
        opj_image_comp_t *comp = &image->comps[compno];

        int w = image->comps[compno].w;
        int h = image->comps[compno].h;
        uint8_t *data8 = (uint8_t*)raw + compno;
        for (int i = 0; i < w * h ; i++)
        {
            int v = image->comps[compno].data[i];
            *data8 = (uint8_t)v;
            data8 += image->numcomps;
        }
    }

    gdcmm::Writer w;
    gdcmm::File &file = w.GetFile();
    gdcmm::DataSet &ds = file.GetDataSet();

    file.GetHeader().SetDataSetTransferSyntax(
        gdcmm::TransferSyntax::ExplicitVRLittleEndian );

    gdcmm::UIDGenerator uid;
    gdcmm::DataElement de( gdcmm::Tag(0x8,0x18) ); // SOP Instance UID
    de.SetVR( gdcmm::VR::UI );
    const char *u = uid.Generate();
    de.SetByteValue( u, strlen(u) );
    ds.Insert( de );

    gdcmm::DataElement del( gdcmm::Tag(0x8,0x16) );
    del.SetVR( gdcmm::VR::UI );
    gdcmm::MediaStorage ms( gdcmm::MediaStorage::CTImageStorage
        );
    del.SetByteValue( ms.GetString(), strlen(ms.GetString()) );
    ds.Insert( del );

    const char mystr[] = "MONOCHROME2 ";
    gdcmm::DataElement de2( gdcmm::Tag(0x28,0x04) );
    //de.SetTag(gdcmm::Tag(0x28,0x04));
    de2.SetVR( gdcmm::VR::CS );
    de2.SetByteValue(mystr, strlen(mystr));
    ds.Insert( de2 );

    gdcmm::Attribute<0x0028,0x0010> row = {image->comps[0].w};
    //row.SetValue(512);
    ds.Insert( row.GetAsDataElement() );
    // w.SetCheckFileMetaInformation( true );
    gdcmm::Attribute<0x0028,0x0011> col = {image->comps[0].h};
    ds.Insert( col.GetAsDataElement() );
    gdcmm::Attribute<0x0028,0x0008> Number_Of_Frames = {1};
    ds.Insert( Number_Of_Frames.GetAsDataElement() );

    gdcmm::Attribute<0x0028,0x0100> at = {8};
    ds.Insert( at.GetAsDataElement() );

    gdcmm::Attribute<0x0028,0x0002> at1 = {image->numcomps};
    ds.Insert( at1.GetAsDataElement() );

    gdcmm::Attribute<0x0028,0x0101> at2 = {8};
    ds.Insert( at2.GetAsDataElement() );

    gdcmm::Attribute<0x0028,0x0102> at3 = {7};
    ds.Insert( at3.GetAsDataElement() );

    if (flag == 1)
    {
        for (int i=0; i < No_Of_Resolutions; i++)
        {
            int a = 1;

```

```

int b = 1;

while(a!=(No_Of_Resolutions)-i))
{
    b = b*2;
    a = a+1;
}
uint16_t row = (image->y1)/b;
uint16_t col = (image->x1)/b;
//std::cout << row;
gdcm::Element<gdcm::VR::IS, gdcm::VM::VM1> el2;
el2.SetValue(i+1);
gdcm::DataElement rfn = el2.GetAsDataElement(); //ulr --> upper
    left row
rfn.SetTag( gdcm::Tag(0x0008,0x1160) );

gdcm::Element<gdcm::VR::US, gdcm::VM::VM2> el;
el.SetValue(1,0);
el.SetValue(1,1);
gdcm::DataElement ulr = el.GetAsDataElement(); //ulr --> upper
    left col/row
ulr.SetTag( gdcm::Tag(0x0048,0x0201) );

gdcm::Element<gdcm::VR::US, gdcm::VM::VM2> el1;
el1.SetValue(col,0);
el1.SetValue(row,1);
gdcm::DataElement brr = el1.GetAsDataElement();
brr.SetTag( gdcm::Tag(0x0048,0x0202) ); //brr --> bottom right col/row
gdcm::Item it;
gdcm::DataSet &nds = it.GetNestedDataSet();
nds.Insert( rfn );
nds.Insert( ulr );
nds.Insert( brr );

sq->AddItem(it);
}

gdcm::Writer w1;
gdcm::File &file1 = w1.GetFile();
gdcm::DataSet &ds1 = file1.GetDataSet();
file1.GetHeader().SetDataSetTransferSyntax(
    gdcm::TransferSyntax::ExplicitVRLittleEndian );

gdcm::UIDGenerator uid1;
gdcm::DataElement dea( gdcm::Tag(0x8,0x18) ); // SOP Instance UID
dea.SetVR( gdcm::VR::UI );
const char *ul = uid1.Generate();
dea.SetByteValue( ul, strlen(ul) );
ds1.Insert( dea );

gdcm::DataElement deb( gdcm::Tag(0x8,0x16) );
deb.SetVR( gdcm::VR::UI );
gdcm::MediaStorage ms1(
    gdcm::MediaStorage::VLWholeSlideMicroscopyImageStorage
);
deb.SetByteValue( ms1.GetString(), strlen(ms1.GetString()) );
ds1.Insert( deb );

const char mystr1[] = "MONOCHROME2 ";
gdcm::DataElement dec( gdcm::Tag(0x28,0x04) );
//de.SetTag(gdcm::Tag(0x28,0x04));
dec.SetVR( gdcm::VR::CS );
dec.SetByteValue(mystr, strlen(mystr1));
ds1.Insert( dec );

gdcm::Attribute<0x0028,0x0010> row1 = {image->y1};
//row.SetValue(512);
ds1.Insert( row1.GetAsDataElement() );
// w.SetCheckFileMetaInformation( true );
gdcm::Attribute<0x0028,0x0011> col1 = {image->x1};
ds1.Insert( col1.GetAsDataElement() );
gdcm::Attribute<0x0028,0x0008> Number_Of_Frames1 = {tccp->numresolutions};
ds1.Insert( Number_Of_Frames1.GetAsDataElement() );

gdcm::Attribute<0x0028,0x0100> ata = {8};
ds1.Insert( ata.GetAsDataElement() );

gdcm::Attribute<0x0028,0x0002> atb = {image->numcomps};
ds1.Insert( atb.GetAsDataElement() );

gdcm::Attribute<0x0028,0x0101> atc = {8};

```



```

    dsl.Insert( atc.GetAsDataElement() );

    gdcm::Attribute<0x0028,0x0102> atd = {7};
    dsl.Insert( atd.GetAsDataElement() );

    theStreamWriter.SetFile(file1);

    gdcm::DataElement des( gdcm::Tag(0x0048,0x0200) );
    des.SetVR(gdcm::VR::SQ);
    //des.SetVR(gdcm::VM::VM1);
    des.SetValue(*sq);
    des.SetVLToUndefined();

    dsl.Insert( des );

    if (!theStreamWriter.WriteImageInformation()){
        std::cerr << "unable to write image information" << std::endl;
        return 1; //the CanWrite function should prevent getting here, else,
        //that's a test failure
    }
}

theStreamWriter.SetFile(file);

if (!theStreamWriter.CanWriteFile()){
    delete [] raw;
    std::cout << "Not able to write";
    return 0; //this means that the file was unwritable, period.
    //very similar to a ReadImageInformation failure
}
else
    std::cout<<"\nable to read";

// Important to write here
std::vector<unsigned int> extent = gdcm::ImageHelper::GetDimensionsValue
    (file);

unsigned short xmax = extent[0];
unsigned short ymax = extent[1];
unsigned short theChunkSize = 4;
unsigned short ychunk = extent[1]/theChunkSize; //go in chunk sizes of theChunkSize
unsigned short zmax = extent[2];
std::cout << "\n" << xmax << "\n" << ymax << "\n" << zmax << "\n" << image->numcomps << "\n";

if (xmax == 0 || ymax == 0)
{
    std::cerr << "Image has no size, unable to write zero-sized image." << std::endl;
    return 0;
}

int z, y, nexty;
unsigned long prevLen = 0; //when going through the char buffer, make sure to grab
//the bytes sequentially. So, store how far you got in the buffer with each iteration.
for (z = 0; z < zmax; ++z){
    for (y = 0; y < ymax; y += ychunk){
        nexty = y + ychunk;
        if (nexty > ymax) nexty = ymax;
        theStreamWriter.DefinePixelExtent(0, xmax, y, nexty, z, z+1);
        unsigned long len = theStreamWriter.DefineProperBufferLength();
        std::cout << "\n" << len;
        char* finalBuffer = new char[len];
        memcpy(finalBuffer, &(raw[prevLen]), len);
        std::cout << "\nable to write";
        if (!theStreamWriter.Write(finalBuffer, len)){
            std::cerr << "writing failure:" << "output.dcm" << " at y = " << y << " and z = " << z <<
            std::endl;
            delete [] raw;
            delete [] finalBuffer;
            return 1;
        }
        delete [] finalBuffer;
        prevLen += len;
    }
}
delete raw;

delete[] src; //FIXME

```

```

if(dinfo) {
    opj_destroy_decompress(dinfo);
}

opj_image_destroy(image);

return true;
}

bool Different_Resolution( gdcm::StreamImageWriter & theStreamWriter, const char *
    filename, int res, std::ostream& of)
{
    //std::vector<std::string>::const_iterator it = filenames.begin();
    bool b = true;
    int flag = 1;

    gdcm::SmartPointer<gdcm::SequenceOfItems> sq = new
        gdcm::SequenceOfItems();
    sq->SetLengthToUndefined();

    for(int i = res-1 ; i>=0; --i)
    {
        b = b && Write_Resolution( theStreamWriter, filename, i, of ,flag,sq,res);
        // b = b && Get_Resolution( theStreamWriter, filename, i, of ,0);
        flag = 0;
    }
    //b = b && Get_Lowest_Resolution( writer, sq, filename, res-1 );
    //b = b && PopulateSingeFile( writer, sq, jpeg, filename2 );
    //image.SetDimension(2, res )
    return b;
}

int main(int argc, char *argv[])
{
    if( argc < 4 )
    {
        std::cerr << argv[0] << " input.jp2 output.dcm No. Of Resolutions " << std::endl;
        return 1;
    }
    const char *filename = argv[1];
    const char *outfilename = argv[2];
    char *resolutions = argv[3];
    int res = int((*resolutions)-48);
    //std:: cout << "\nres"<< res;
    gdcm::StreamImageWriter theStreamWriter;

    std::ofstream of;
    of.open( outfile, std::ios::out | std::ios::binary );
    theStreamWriter.SetStream(of);

    if( !Different_Resolution( theStreamWriter, filename,res,of ) ) return 1;

    uint16_t firstTag1 = 0xfffe;
    uint16_t secondTag1 = 0xe0dd;
    uint32_t thirdTag1 = 0x00000000;
    //uint16_t fourthTag1 = 0xffff;
    const int theBufferSize1 = 2*sizeof(uint16_t)+sizeof(uint32_t);
    char* tmpBuffer2 = new char[theBufferSize1];
    memcpy(&(tmpBuffer2[0]), &firstTag1, sizeof(uint16_t));
    memcpy(&(tmpBuffer2[sizeof(uint16_t)]), &secondTag1, sizeof(uint16_t));
    memcpy(&(tmpBuffer2[2*sizeof(uint16_t)]), &thirdTag1, sizeof(uint32_t));
    //memcpy(&(tmpBuffer2[3*sizeof(uint16_t)]), &fourthTag1, sizeof(uint16_t));
    assert( of && !of.eof() && of.good() );
    of.write(tmpBuffer2, theBufferSize1);
    of.flush();
    assert( of );

    return 0;
}

```

27.46 ExtractOneFrame.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/

/*
 * This small code shows how to use the gdcm.StreamImageReader API
 * to read a single (whole) frame at a time
 * The API allow extracting a smaller extent of the frame of course.
 * It will write out the extracted frame in /tmp/frame.raw
 *
 * Usage:
 * $ bin/ExtractOneFrame.exe input.dcm
 */
using System;
using gdcm;

public class ExtractOneFrame
{
    public static int Main(string[] args)
    {
        string filename = args[0];

        gdcm.StreamImageReader reader = new gdcm.StreamImageReader();

        reader.SetFileName( filename );

        if (!reader.ReadImageInformation()) return 1;
        // Get file infos
        gdcm.File f = reader.GetFile();

        // get some info about image
        UIntArrayType extent = ImageHelper.GetDimensionsValue(f);
        //System.Console.WriteLine( extent[0] );
        uint dimx = extent[0];
        //System.Console.WriteLine( extent[1] );
        uint dimy = extent[1];
        //System.Console.WriteLine( extent[2] );
        uint dimz = extent[2];
        PixelFormat pf = ImageHelper.GetPixelFormatValue( f);
        int pixelsize = pf.GetPixelSize();
        //System.Console.WriteLine( pixelsize );

        // buffer to get the pixels
        byte[] buffer = new byte[ dimx * dimy * pixelsize ];

        for (int i = 0; i < dimz; i++)
        {
            // Define that I want the image 0, full size (dimx x dimy pixels)
            reader.DefinePixelExtent(0, (ushort)dimx, 0, (ushort)dimy, (ushort)i, (ushort)(i+1));
            uint buf_len = reader.DefineProperBufferLength(); // take into account pixel size
            //System.Console.WriteLine( buf_len );
            if( buf_len > buffer.Length )
            {
                throw new Exception("buffer is too small for target");
            }

            if (reader.Read(buffer, (uint)buffer.Length))
            {
                using (System.IO.Stream stream =
                    System.IO.File.Open(@"tmp/frame.raw",
                        System.IO.FileMode.Create))
                {
                    System.IO.BinaryWriter writer = new System.IO.BinaryWriter(stream);
                    writer.Write(buffer);
                }
            }
            else
            {

```

```

        throw new Exception("can't read pixels error");
    }
}

return 0;
}
}

```

27.47 Fake_Image_Using_Stream_Image_Writer.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcml.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
// This work was realised during the GSOC 2011 by Manoj Alwani

#include "gdcmlReader.h"
#include "gdcmlMediaStorage.h"
#include "gdcmlWriter.h"
#include "gdcmlItem.h"
#include "gdcmlImageReader.h"
#include "gdcmlAttribute.h"
#include "gdcmlFile.h"
#include "gdcmlTag.h"
#include "gdcmlTransferSyntax.h"
#include "gdcmlUIDGenerator.h"
#include "gdcmlAnonymizer.h"
#include "gdcmlStreamImageWriter.h"
#include "gdcmlImageHelper.h"
#include "gdcmlTrace.h"

int main(int, char *[])
{
    char * buffer = new char[ 256 * 256 *3 ];
    // *p = (uint8_t*)buffer;
    char * p = buffer;

    gdcml::Trace::DebugOn();
    gdcml::Trace::WarningOn();

    for(int row = 0; row < 256; ++row)
    {
        for(int col = 0; col < 256; ++col)
            //for(int b = 0; b < 256; ++b)
            {
                *p++ = 255;
                *p++ = 0;
                *p++ = 0;
            }
    }

    gdcml::Writer w;
    gdcml::File &file = w.GetFile();
    gdcml::DataSet &ds = file.GetDataSet();

    file.GetHeader().SetDataSetTransferSyntax(
        gdcml::TransferSyntax::ExplicitVRLittleEndian );

    gdcml::UIDGenerator uid;
    gdcml::DataElement de( gdcml::Tag(0x8,0x18) ); // SOP Instance UID
    de.SetVR( gdcml::VR::UI );
    const char *u = uid.Generate();
    de.SetByteValue( u, strlen(u) );
    ds.Insert( de );

    gdcml::DataElement del( gdcml::Tag(0x8,0x16) );
    del.SetVR( gdcml::VR::UI );

```

```

gdcM::MediaStorage ms(
    gdcM::MediaStorage::VLWholeSlideMicroscopyImageStorage
);
del.SetByteValue( ms.GetString(), strlen(ms.GetString()));
ds.Insert( del );

const char mystr[] = "RGB";
gdcM::DataElement de2( gdcM::Tag(0x28,0x04) );
//de.SetTag(gdcM::Tag(0x28,0x04));
de2.SetVR( gdcM::VR::CS );
de2.SetByteValue(mystr, strlen(mystr));
ds.Insert( de2 );

gdcM::Attribute<0x0028,0x0010> row = {256};
//row.SetValue(512);
ds.Insert( row.GetAsDataElement() );
// w.SetCheckFileMetaInformation( true );
gdcM::Attribute<0x0028,0x0011> col = {256};
ds.Insert( col.GetAsDataElement() );

gdcM::Attribute<0x0028,0x0008> Number_Of_Frames = {1};
ds.Insert( Number_Of_Frames.GetAsDataElement() );

gdcM::Attribute<0x0028,0x0100> at = {8};
ds.Insert( at.GetAsDataElement() );

gdcM::Attribute<0x0028,0x0002> at1 = {3}; //bits per pixel
ds.Insert( at1.GetAsDataElement() );

gdcM::Attribute<0x0028,0x0101> at2 = {8};
ds.Insert( at2.GetAsDataElement() );

gdcM::Attribute<0x0028,0x0102> at3 = {7};
ds.Insert( at3.GetAsDataElement() );

gdcM::Attribute<0x0028,0x0006> at4 = {0};
ds.Insert( at4.GetAsDataElement() );

gdcM::Attribute<0x0028,0x0103> at5 = {0};
ds.Insert( at5.GetAsDataElement() );

//de.SetTag(gdcM::Tag(0x7fe0,0x0010));
//ds.Insert(de);

gdcM::StreamImageWriter theStreamWriter;
gdcM::SmartPointer<gdcM::SequenceOfItems> sq = new
    gdcM::SequenceOfItems();
sq->SetLengthToUndefined();

uint16_t row1 = 256;
uint16_t col1 = 256;
//std::cout << row;

gdcM::Element<gdcM::VR::IS,gdcM::VM::VM1> el2;
el2.SetValue(1);
gdcM::DataElement rfn = el2.GetAsDataElement(); //rfn --->
    reference frame number
rfn.SetTag( gdcM::Tag(0x0008,0x1160) );

gdcM::Element<gdcM::VR::US,gdcM::VM::VM2> el;
el.SetValue(1,0);
el.SetValue(1,1);
gdcM::DataElement ulr = el.GetAsDataElement(); //ulr --> upper
    left col/row
ulr.SetTag( gdcM::Tag(0x0048,0x0201) );

gdcM::Element<gdcM::VR::US,gdcM::VM::VM2> el1;
el1.SetValue(col1,0);
el1.SetValue(row1,1);
gdcM::DataElement brr = el1.GetAsDataElement();
brr.SetTag( gdcM::Tag(0x0048,0x0202) ); //brr --> bottom right col/row

gdcM::Item it;
gdcM::DataSet &nds = it.GetNestedDataSet();
nds.Insert( rfn );
nds.Insert( ulr );
nds.Insert( brr );

sq->AddItem(it);

gdcM::DataElement des( gdcM::Tag(0x0048,0x0200) );

```

```

des.SetVR(gdcm::VR::SQ);
des.SetValue(*sq);
des.SetVLToUndefined();

ds.Insert(des);

theStreamWriter.SetFile(file);

std::ofstream of;
of.open( "output.dcm", std::ios::out | std::ios::binary );
theStreamWriter.SetStream(of);

if (!theStreamWriter.CanWriteFile()){
    delete [] buffer;
    std::cout << "Not able to write";
    return 0; //this means that the file was unwritable, period.
    //very similar to a ReadImageInformation failure
}
else
    std::cout<<"\nable to read";

if (!theStreamWriter.WriteImageInformation()){
    std::cerr << "unable to write image information" << std::endl;
    delete [] buffer;
    return 1; //the CanWrite function should prevent getting here, else,
    //that's a test failure
}

std::vector<unsigned int> extent =
    gdcm::ImageHelper::GetDimensionsValue(file);

unsigned short xmax = extent[0];
unsigned short ymax = extent[1];
unsigned short theChunkSize = 1;
unsigned short ychunk = extent[1]/theChunkSize; //go in chunk sizes of theChunkSize
unsigned short zmax = extent[2];

std::cout << xmax << ymax << zmax;

if (xmax == 0 || ymax == 0)
{
    std::cerr << "Image has no size, unable to write zero-sized image." << std::endl;
    return 0;
}

int z, y, nexty;
unsigned long prevLen = 0; //when going through the char buffer, make sure to grab
//the bytes sequentially. So, store how far you got in the buffer with each iteration.
for (z = 0; z < zmax; ++z){
    for (y = 0; y < ymax; y += ychunk){
        nexty = y + ychunk;
        if (nexty > ymax) nexty = ymax;
        theStreamWriter.DefinePixelExtent(0, xmax, y, nexty, z, z+1);
        unsigned long len = theStreamWriter.DefineProperBufferLength();
        std::cout << "\n" << len;
        char* finalBuffer = new char[len];
        memcpy(finalBuffer, &(buffer[prevLen]), len);
        std::cout << "\nable to write";
        if (!theStreamWriter.Write(finalBuffer, len)){
            std::cerr << "writing failure:" << "output.dcm" << " at y = " << y << " and z = " << z <<
            std::endl;
            delete [] buffer;
            delete [] finalBuffer;
            return 1;
        }
        delete [] finalBuffer;
        prevLen += len;
    }
}
delete buffer;

uint16_t firstTag1 = 0xffff;
uint16_t secondTag1 = 0xe0dd;
uint32_t thirdTag1 = 0x00000000;
//uint16_t fourthTag1 = 0xffff;
const int theBufferSize1 = 2*sizeof(uint16_t)+sizeof(uint32_t);
char* tmpBuffer2 = new char[theBufferSize1];
memcpy(&(tmpBuffer2[0]), &firstTag1, sizeof(uint16_t));
memcpy(&(tmpBuffer2[sizeof(uint16_t)]), &secondTag1, sizeof(uint16_t));

```

```

memcpy(&(tmpBuffer2[2*sizeof(uint16_t)]), &thirdTag1, sizeof(uint32_t));
//memcpy(&(tmpBuffer2[3*sizeof(uint16_t)]), &fourthTag1, sizeof(uint16_t));
assert( of && !of.eof() && of.good() );
of.write(tmpBuffer2, theBufferSize);
of.flush();
assert( of );

    return 0;
}

```

27.48 FileAnonymize.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcml.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/

/*
 * Simple C# example
 *
 * Usage:
 * $ mono bin/FileAnonymize.exe input.dcm output.dcm
 */
using System;
using gdcml;

public class FileAnonymize
{
    public static int Main(string[] args)
    {
        string filename = args[0];
        string outfilename = args[1];

        gdcml.FileAnonymizer fa = new gdcml.FileAnonymizer();
        fa.SetInputFileName( filename );
        fa.SetOutputFileName( outfilename );

        // Empty Operations
        // It will create elements, since those tags are non-registered public elements (2011):
        fa.Empty( new Tag(0x0008,0x1313) );
        fa.Empty( new Tag(0x0008,0x1317) );
        // Remove Operations
        // The following Tag are actually carefully chosen, since they refer to SQ:
        fa.Remove( new Tag(0x0008,0x2112) );
        fa.Remove( new Tag(0x0008,0x9215) );
        // Replace Operations
        // do not call replace operation on SQ attribute !
        fa.Replace( new Tag(0x0018,0x5100), "MYVALUE " );
        fa.Replace( new Tag(0x0008,0x1160), "MYOTHERVAL" );

        if( !fa.Write() )
        {
            System.Console.WriteLine( "Could not write" );
            return 1;
        }

        return 0;
    }
}

```

27.49 FileAnonymize.java

```

/*=====

```

```

Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/

import gdcm.*;

public class FileAnonymize
{
    public static class MyWatcher extends SimpleSubjectWatcher
    {
        public MyWatcher(Subject s) { super(s,"Override String"); }
        protected void ShowProgress(Subject caller, Event evt)
        {
            ProgressEvent pe = ProgressEvent.Cast(evt);
            System.out.println( "This is my progress: " + pe.GetProgress() );
        }
    }

    public static void main(String[] args) throws Exception
    {
        String input = args[0];
        String output = args[1];

        FileAnonymizer fa = new FileAnonymizer();
        fa.SetInputFileName( input );
        fa.SetOutputFileName( output );

        // Empty Operations
        // It will create elements, since those tags are non-registered public elements (2011):
        fa.Empty( new Tag(0x0008,0x1313) );
        fa.Empty( new Tag(0x0008,0x1317) );
        // Remove Operations
        // The following Tag are actually carefully chosen, since they refer to SQ:
        fa.Remove( new Tag(0x0008,0x2112) );
        fa.Remove( new Tag(0x0008,0x9215) );
        // Replace Operations
        // do not call replace operation on SQ attribute !
        fa.Replace( new Tag(0x0018,0x5100), "MYVALUE " );
        fa.Replace( new Tag(0x0008,0x1160), "MYOTHERVAL" );

        if( !fa.Write() )
        {
            System.out.println( "Could not write" );
            return;
        }

        System.out.println( "success" );
    }
}

```

27.50 FindAllPatientName.py

```

1 #####
2 #
3 # Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 # Copyright (c) 2006-2011 Mathieu Malaterre
6 # All rights reserved.
7 # See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.
8 #
9 # This software is distributed WITHOUT ANY WARRANTY; without even
10 # the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 # PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14 ""
15 This example shows how one can use the gdcm.CompositeNetworkFunctions class
16 for executing a C-FIND query

```



```

17 It will print the list of patient name found
18
19 Usage:
20
21 python FindAllPatientName.py
22
23 """
24
25 import gdcM
26
27 # Patient Name
28 tag = gdcM.Tag(0x10,0x10)
29 de = gdcM.DataElement(tag)
30
31 # Search all patient name where string match 'F*'
32 de.SetByteValue('F*',gdcM.VL(2))
33
34 ds = gdcM.DataSet()
35 ds.Insert(de)
36
37 cnf = gdcM.CompositeNetworkFunctions()
38 theQuery = cnf.ConstructQuery(gdcM.ePatientRootType,gdcM.ePatient,ds)
39
40 #print theQuery.ValidateQuery()
41
42 # prepare the variable for output
43 ret = gdcM.DataSetArrayType()
44
45 # Execute the C-FIND query
46 cnf.CFind('dicom.example.com',11112,theQuery,ret,'GDCM_PYTHON','ANY-SCP')
47
48 for i in range(0,ret.size()):
49     print "Patient #",i
50     print ret[i]

```

27.51 FixBrokenJ2K.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcM.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "gdcMReader.h"
#include "gdcMWriter.h"
#include "gdcMImageReader.h"
#include "gdcMSequenceOfFragments.h"
#include "gdcMFile.h"

// http://www.lost.in.ua/dicom/c.dcm
//
// -> BuggyJ2Kvvvua-fixed2-j2k.dcm

/*
 * This program attempts to fix a broken J2K/DICOM:
 * It contains 2 bugs:
 * 1. The first 8 bytes seems to be random bytes: remove them
 * 2. YCC is set to 1, while image is grayscale need to set it back to 0
 *
 * Ref:
 * It's a software from http://rentgenprom.ru/ , shipped with universal digital radiographic units
 * "ProScan-2000". The Ukrainian manufacturer developed own digital radiographic unit and it is
 * compatible with software from "ProScan-2000".
 */
int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        std::cerr << argv[0] << " input.dcm output.dcm" << std::endl;
        return 1;
    }
}

```

```

    }
    const char *filename = argv[1];
    const char *outfilename = argv[2];
    gdcm::Reader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        return 1;
    }

    gdcm::File &file = reader.GetFile();
    const gdcm::DataElement &pixeldata0 = file.GetDataSet().
        GetDataElement( gdcm::Tag(0x7fe0,0x0010) );
    const gdcm::SequenceOfFragments *sqf = pixeldata0.
        GetSequenceOfFragments();
    if( !sqf )
    {
        return 1;
    }
    const gdcm::Fragment &frag0 = sqf->GetFragment(0);

    const gdcm::ByteValue *bv = frag0.GetByteValue();
    const char *ptr = bv->GetPointer();
    size_t len = bv->GetLength();

    const char sig[] = "\x00\x00\x00\x00\x6A\x70\x32\x63";
    if( memcmp(ptr, sig, sizeof(sig) != 0 ) )
    {
        std::cerr << "magic random signature not found" << std::endl;
        return 1;
    }

    // Apparently the flag to enable a color transform on 3 color components is set in
    // the COD marker. (YCC is byte[6] in the COD marker)
    // we need to disable this flag;
    const char *cod_marker = ptr + 0x35; /* 0x2d + 0x8 */ // FIXME
    if( cod_marker[0] == (char)0xff && cod_marker[1] == 0x52 )
    {
        // found start of COD
        if( cod_marker[6+2] == 1 )
        {
            // Change in place:
            *((char*)cod_marker + 6+2) = 0;
            // Prepare a new DataElement:
            gdcm::DataElement pixeldata( gdcm::Tag(0x7fe0,0x0010) );
            pixeldata.SetVR( gdcm::VR::OB );
            gdcm::SmartPointer<gdcm::SequenceOfFragments> sq = new
            gdcm::SequenceOfFragments;

            gdcm::Fragment frag;
            // remove 8 first bytes:
            frag.SetByteValue( ptr + 8, (uint32_t)(len - 8) );
            sq->AddFragment( frag );
            pixeldata.SetValue( *sq );
            file.GetDataSet().Replace( pixeldata );
        }
        else
        {
            return 1;
        }
    }
    else
    {
        std::cerr << "COD not found" << (int)cod_marker[0] << std::endl;
        return 1;
    }

    gdcm::Writer writer;
    writer.SetFile( reader.GetFile() );
    writer.SetFileName( outfile );
    writer.CheckFileMetaInformationOff();
    if( !writer.Write() )
    {
        std::cerr << "Could not write" << std::endl;
    }

    // paranoid check:
    gdcm::ImageReader ireader;
    ireader.SetFileName( outfile );
    if( !ireader.Read() )
    {

```

```

        std::cerr << "file written is still not valid, please report" << std::endl;
        return 1;
    }

    return 0;
}

```

27.52 FixCommaBug.py

```

1 #####
2 #
3 #   Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 #   Copyright (c) 2006-2011 Mathieu Malaterre
6 #   All rights reserved.
7 #   See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.
8 #
9 #       This software is distributed WITHOUT ANY WARRANTY; without even
10 #       the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 #       PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 """
16 Using LC_NUMERIC set to something not compatible with "C" it is possible to write out "," instead of
17 "." as required by the DICOM standard
18 Issue is still current (IMHO) with gdcm 2.0.9
19 """
20
21 import gdcm
22 import sys
23
24 filename = sys.argv[1]
25 outname = sys.argv[2]
26
27 # read
28 r = gdcm.Reader()
29 r.SetFileName( filename )
30 if not r.Read():
31     print "not valid"
32     sys.exit(1)
33
34 file = r.GetFile()
35 dataset = file.GetDataSet()
36
37 ano = gdcm.Anonymizer()
38 ano.SetFile( file )
39
40 tags = [
41     gdcm.Tag(0x0018,0x1164),
42     gdcm.Tag(0x0018,0x0088),
43     gdcm.Tag(0x0018,0x0050),
44     gdcm.Tag(0x0028,0x0030),
45 ]
46
47 for tag in tags:
48     print tag
49     if dataset.FindElement( tag ):
50         pixelspacing = dataset.GetDataElement( tag )
51         #print pixelspacing
52         bv = pixelspacing.GetByteValue()
53         str = bv.GetBuffer()
54         #print bv.GetLength()
55         #print len(str)
56         new_str = str.replace(",",".")
57         # Need to explicitly pass bv.GetLength() to remove any trailing garbage
58         ano.Replace( tag, new_str, bv.GetLength() )
59
60 #print dataset
61
62 w = gdcm.Writer()
63 w.SetFile( file )
64 w.SetFileName( outname )
65 if not w.Write():
66     print "Cannot write"
67     sys.exit(1)

```

```

68
69 # paranoid:
70 image_reader = gdcm.ImageReader()
71 image_reader.SetFileName( outname )
72 if not image_reader.Read():
73     print "there is still a comma"
74     sys.exit(1)
75
76 print "Sucess!"
77 sys.exit(0) # success

```

27.53 FixJAIBugJPEGLS.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "gdcmReader.h"
#include "gdcmWriter.h"
#include "gdcmImageReader.h"

#include <fstream>

#include "gdcm_charls.h"

/*
 * This small example should show how one can handle the famous JAI-JPEGLS bug
 * It will take in as invalid DICOM/JAI-JPEG-LS and write out as Explicit Little
 * Endian. One can use 'gdcmconv --jpegls' to recompress properly
 *
 * References:
 * http://charls.codeplex.com/discussions/230307?ProjectName=charls
 * http://charls.codeplex.com/workitem/7297
 * http://www.dcm4che.org/jira/browse/DCM-442
 * http://www.dcm4che.org/jira/browse/DCMEE-1144
 * http://java.net/jira/browse/JAI_IMAGEIO_CORE-183
 *
 * Explanation of the issue:
 *
 * Seems, the error is in the calculation of the default values for thresholds T1,
 * T2, T3, in particular min(MAXVAL, 4095) is not applied in
 *
 * FACTOR = (min(MAXVAL, 4095) + 128)/256
 *
 * as specified in http://www.itu.int/rec/T-REC-T.87-199806-I/en .
 */
int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        std::cerr << argv[0] << " input.dcm output.dcm" << std::endl;
        return 1;
    }
    const char *filename = argv[1];
    const char *outfilename = argv[2];
    gdcm::FileMetaInformation::SetSourceApplicationEntityTitle
        ( "FixJAIBugJPEGLS" );

    gdcm::ImageReader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        return 1;
    }

    gdcm::Image &image = reader.GetImage();
    //unsigned long len = image.GetBufferLength();

```

```

const gdcm::DataElement & in =
    reader.GetFile().GetDataSet().GetDataElement(
        gdcm::Tag(0x7fe0,0x0010) );
const gdcm::SequenceOfFragments *sf = in.
    GetSequenceOfFragments();
if( !sf )
{
    std::cerr << "No pixel data (or not encapsulated)" << std::endl;
    return 1;
}
const unsigned int *dims = image.GetDimensions();
if ( sf->GetNumberOfFragments() != dims[2] )
{
    std::cerr << "Unsupported" << std::endl;
    return 1;
}

// unsigned long totalLen = sf->ComputeByteLength();
std::vector<BYTE> rgbyteOutall;
for(unsigned int i = 0; i < sf->GetNumberOfFragments(); ++i)
{
    const gdcm::Fragment &frag = sf->GetFragment(i);
    if( frag.IsEmpty() ) return 1;
    const gdcm::ByteValue *bv = frag.GetByteValue();
    if( !bv ) return 1;
    unsigned long totalLen = bv->GetLength();

    std::vector<char> vbuffer;
    vbuffer.resize( totalLen );
    char *buffer = &vbuffer[0];
    bv->GetBuffer(buffer, totalLen);
    const BYTE* pbyteCompressed0 = (const BYTE*)buffer;
    while( totalLen > 0 && pbyteCompressed0[totalLen-1] != 0xd9 )
    {
        totalLen--;
    }

    JlsParameters metadata;
    if (JpegLsReadHeader(buffer, totalLen, &metadata) != OK)
    {
        std::cerr << "Cant parse jpegls" << std::endl;
        return false;
    }

    std::cout << metadata.width << std::endl;
    std::cout << metadata.height << std::endl;
    std::cout << metadata.bitspersample << std::endl;

    gdcm::PixelFormat const & pf = image.GetPixelFormat();
    std::cout << pf << std::endl;

    // http://charls.codeplex.com/discussions/230307?ProjectName=charls
    unsigned char marker_lse_13[] = {
        0xFF, 0xF8, 0x00, 0x0D,
        0x01,
        0x1F, 0xFF,
        0x00, 0x22, // T1 = 34
        0x00, 0x83, // T2 = 131
        0x02, 0x24, // T3 = 548
        0x00, 0x40
    };

    unsigned char marker_lse_14[] = {
        0xFF, 0xF8, 0x00, 0x0D,
        0x01,
        0x3F, 0xFF,
        0x00, 0x42, // T1 = 66
        0x01, 0x03, // T2 = 259
        0x04, 0x44, // T3 = 1092
        0x00, 0x40
    };

    unsigned char marker_lse_15[] = {
        0xFF, 0xF8, 0x00, 0x0D,
        0x01,
        0x7F, 0xFF,
        0x00, 0x82, // T1 = 130
        0x02, 0x03, // T2 = 515
        0x08, 0x84, // T3 = 2180
        0x00, 0x40
    };
};

```

```

    unsigned char marker_lse_16[] = {
        0xFF, 0xF8, 0x00, 0x0D,
        0x01,
        0xFF, 0xFF,
        0x01, 0x02, // T1 = 258
        0x04, 0x03, // T2 = 1027
        0x11, 0x04, // T3 = 4356
        0x00, 0x40
    };

    const unsigned char *marker_lse = NULL;
    switch( metadata.bitspersample )
    {
    case 13:
        marker_lse = marker_lse_13;
        break;
    case 14:
        marker_lse = marker_lse_14;
        break;
    case 15:
        marker_lse = marker_lse_15;
        break;
    case 16:
        marker_lse = marker_lse_16;
        break;
    }
    if( !marker_lse )
    {
        std::cerr << "Cant handle: " << metadata.bitspersample << std::endl;
        return 1;
    }

    // FIXME: One should recompute the value for 0x0F
    vbuffer.insert( vbuffer.begin() + 0x0F, marker_lse, marker_lse+15);

#ifdef 0
    std::ofstream of( "/tmp/d.jls" );
    of.write( &vbuffer[0], vbuffer.size() );
    of.close();
#endif

    const char *pbyteCompressed = &vbuffer[0];
    size_t cbyteCompressed = vbuffer.size(); // updated legnth

    JlsParameters params;
    JpegLsReadHeader(pbyteCompressed, cbyteCompressed, &params);

    std::vector<BYTE> rgbyteOut;
    //rgbyteOut.resize( image.GetBufferLength() );
    rgbyteOut.resize(params.height * params.width * ((params.bitspersample + 7)
        / 8) * params.components);

    JLS_ERROR result =
        JpegLsDecode(&rgbyteOut[0], rgbyteOut.size(), pbyteCompressed, cbyteCompressed, &params );
    if (result != OK)
    {
        std::cerr << "Could not patch JAI-JPEGLS" << std::endl;
        return 1;
    }
    rgbyteOutall.insert( rgbyteOutall.end(), rgbyteOut.begin(), rgbyteOut.end() );
}

gdcm::DataElement pixeldata( gdcm::Tag(0x7fe0,0x0010) );
pixeldata.SetVR( gdcm::VR::OW );
pixeldata.SetByteValue( (char*)&rgbyteOutall[0], (uint32_t)rgbyteOutall.size() );

// Add the pixel data element
reader.GetFile().GetDataSet().Replace( pixeldata );
reader.GetFile().GetHeader().SetDataSetTransferSyntax(
    gdcm::TransferSyntax::ExplicitVRLittleEndian);

gdcm::Writer writer;
writer.SetFileName( outfilename );
writer.SetFile( reader.GetFile() );
writer.Write();

std::cout << "Success !" << std::endl;

return 0;

```

```
}

```

27.54 gdcmmorthoplanes.cxx

```
/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcmm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/

#include "vtkActor.h"
#include "vtkCamera.h"
#include "vtkMatrix4x4.h"
#include "vtkTransform.h"
#include "vtkAssembly.h"
#include "vtkCellPicker.h"
#include "vtkCommand.h"
#include "vtkImageActor.h"
#include "vtkImageMapToColors.h"
#include "vtkImageOrthoPlanes.h"
#include "vtkImagePlaneWidget.h"
#include "vtkImageReader.h"
#include "vtkInteractorEventRecorder.h"
#include "vtkLookupTable.h"
#include "vtkOutlineFilter.h"
#include "vtkPolyDataMapper.h"
#include "vtkProperty.h"
#include "vtkRenderWindow.h"
#include "vtkRenderWindowInteractor.h"
#include "vtkRenderer.h"
#include "vtkVolume16Reader.h"
#include "vtkImageData.h"
#include "vtkImageChangeInformation.h"
#include "vtkOrientationMarkerWidget.h"
#include "vtkAnnotatedCubeActor.h"
#include "vtkAxesActor.h"
#include "vtkCaptionActor2D.h"
#include "vtkTextProperty.h"
#include "vtkPropAssembly.h"

#include "vtkGDCMImageReader.h"
#include "vtkGDCMImageWriter.h"
#include "vtkStringArray.h"

#include "gdcmmSystem.h"
#include "gdcmmDirectory.h"
#include "gdcmmIPPSorter.h"

#ifdef vtkFloatingPointType
#define vtkFloatingPointType float
#endif

//-----
class vtkOrthoPlanesCallback : public vtkCommand
{
public:
    static vtkOrthoPlanesCallback *New()
    { return new vtkOrthoPlanesCallback; }

    void Execute( vtkObject *caller, unsigned long vtkNotUsed( event ),
                  void *callData )
    {
        vtkImagePlaneWidget* self =
            reinterpret_cast< vtkImagePlaneWidget* >( caller );
        if(!self) return;

        double* wl = static_cast<double*>( callData );

        if ( self == this->WidgetX )

```

```

    {
        this->WidgetY->SetWindowLevel(wl[0],wl[1],1);
        this->WidgetZ->SetWindowLevel(wl[0],wl[1],1);
    }
    else if( self == this->WidgetY )
    {
        this->WidgetX->SetWindowLevel(wl[0],wl[1],1);
        this->WidgetZ->SetWindowLevel(wl[0],wl[1],1);
    }
    else if( self == this->WidgetZ )
    {
        this->WidgetX->SetWindowLevel(wl[0],wl[1],1);
        this->WidgetY->SetWindowLevel(wl[0],wl[1],1);
    }
}

vtkOrthoPlanesCallback():WidgetX( 0 ), WidgetY( 0 ), WidgetZ ( 0 ) {}

vtkImagePlaneWidget* WidgetX;
vtkImagePlaneWidget* WidgetY;
vtkImagePlaneWidget* WidgetZ;
};

int main( int argc, char *argv[] )
{
    //char* fname = vtkTestUtilities::ExpandDataFileName(argc, argv, "Data/headsq/quarter");

    //vtkVolume16Reader* v16 = vtkVolume16Reader::New();
    // v16->SetDataDimensions( 64, 64);
    // v16->SetDataByteOrderToLittleEndian();
    // v16->SetImageRange( 1, 93);
    // v16->SetDataSpacing( 3.2, 3.2, 1.5);
    // v16->SetFilePrefix( fname );
    // v16->SetDataMask( 0x7fff);
    // v16->Update();
    std::vector<std::string> filenames;
    if( argc < 2 )
    {
        std::cerr << argv[0] << " filename1.dcm [filename2.dcm ...]\n";
        return 1;
    }
    else
    {
        // Is it a single directory ? If so loop over all files contained in it:
        const char *filename = argv[1];
        if( argc == 2 && gdcm::System::FileIsDirectory( filename ) )
        {
            std::cout << "Loading directory: " << filename << std::endl;
            bool recursive = false;
            gdcm::Directory d;
            d.Load(filename, recursive);
            gdcm::Directory::FileNamesType const &files = d.
            GetFileNames();
            for( gdcm::Directory::FileNamesType::const_iterator it = files.begin(); it != files.end(); ++it )
            {
                filenames.push_back( it->c_str() );
            }
        }
        else // list of files passed directly on the cmd line:
            // discard non-existing or directory
        {
            for(int i=1; i < argc; ++i)
            {
                filename = argv[i];
                if( gdcm::System::FileExists( filename ) )
                {
                    if( gdcm::System::FileIsDirectory( filename ) )
                    {
                        std::cerr << "Discarding directory: " << filename << std::endl;
                    }
                    else
                    {
                        filenames.push_back( filename );
                    }
                }
            }
            else
            {
                std::cerr << "Discarding non existing file: " << filename << std::endl;
            }
        }
    }
}

```



```

        //names->Print( std::cout );
    }

    vtkGDCMImageReader * reader = vtkGDCMImageReader::New();
    double ippzspacing;
    if( filenames.size() > 1 )
    {
        //gdcmm::Trace::DebugOn();
        //gdcmm::Trace::WarningOn();
        gdcmm::IPPSorter s;
        s.SetComputeZSpacing( true );
        s.SetZSpacingTolerance( 1e-3 );
        bool b = s.Sort( filenames );
        if( !b )
        {
            std::cerr << "Failed to sort files" << std::endl;
            return 1;
        }
        std::cout << "Sorting succeeded:" << std::endl;
        s.Print( std::cout );

        std::cout << "Found z-spacing:" << std::endl;
        std::cout << s.GetZSpacing() << std::endl;
        ippzspacing = s.GetZSpacing();

        const std::vector<std::string> & sorted = s.GetFiles();
        vtkStringArray *files = vtkStringArray::New();
        std::vector< std::string >::const_iterator it = sorted.begin();
        for( ; it != sorted.end(); ++it )
        {
            const std::string &f = *it;
            files->InsertNextValue( f.c_str() );
        }
        reader->SetFileNames( files );
        //reader->SetFileLowerLeft( 1 );
        reader->Update(); // important
        files->Delete();
    }
    else
    {
        reader->SetFileName( argv[1] );
        reader->Update(); // important
        ippzspacing = reader->GetOutput()->GetSpacing()[2];
        ippzspacing = 4;
    }

    //reader->GetOutput()->Print( std::cout );
    //vtkFloatingPointType range[2];
    //reader->GetOutput()->GetScalarRange(range);
    //std::cout << "Range: " << range[0] << " " << range[1] << std::endl;

    const vtkFloatingPointType *spacing = reader->GetOutput()->GetSpacing();

    vtkImageChangeInformation *vl6 = vtkImageChangeInformation::New();
    vl6->SetInput( reader->GetOutput() );
    vl6->SetOutputSpacing( spacing[0], spacing[1], ippzspacing );
    vl6->Update();

#ifdef 0
    vtkGDCMImageWriter *writer = vtkGDCMImageWriter::New();
    writer->SetInput( vl6->GetOutput() );
    writer->SetFileLowerLeft( reader->GetFileLowerLeft() );
    writer->SetDirectionCosines( reader->GetDirectionCosines() );
    writer->SetImageFormat( reader->GetImageFormat() );
    writer->SetFileDimensionality( 3 ); //reader->GetFileDimensionality();
    writer->SetMedicalImageProperties( reader->GetMedicalImageProperties() );
    writer->SetShift( reader->GetShift() );
    writer->SetScale( reader->GetScale() );
    writer->SetFileName( "out.dcm" );
    writer->Write();
#endif

    vtkOutlineFilter* outline = vtkOutlineFilter::New();
    outline->SetInputConnection(vl6->GetOutputPort());

    vtkPolyDataMapper* outlineMapper = vtkPolyDataMapper::New();
    outlineMapper->SetInputConnection(outline->GetOutputPort());

    vtkActor* outlineActor = vtkActor::New();
    outlineActor->SetMapper( outlineMapper);

```

```

vtkRenderer* ren1 = vtkRenderer::New();
vtkRenderer* ren2 = vtkRenderer::New();

vtkRenderWindow* renWin = vtkRenderWindow::New();
renWin->AddRenderer(ren2);
renWin->AddRenderer(ren1);

vtkRenderWindowInteractor* iren = vtkRenderWindowInteractor::New();
iren->SetRenderWindow(renWin);

vtkCellPicker* picker = vtkCellPicker::New();
picker->SetTolerance(0.005);

vtkProperty* ipwProp = vtkProperty::New();
//assign default props to the ipw's texture plane actor

vtkImagePlaneWidget* planeWidgetX = vtkImagePlaneWidget::New();
planeWidgetX->SetInteractor(iren);
planeWidgetX->SetKeyPressActivationValue('x');
planeWidgetX->SetPicker(picker);
planeWidgetX->RestrictPlaneToVolumeOn();
planeWidgetX->GetPlaneProperty()->SetColor(1,0,0);
planeWidgetX->SetTexturePlaneProperty(ipwProp);
planeWidgetX->TextureInterpolateOff();
planeWidgetX->SetResliceInterpolateToNearestNeighbour();
planeWidgetX->SetInput(v16->GetOutput());
planeWidgetX->SetPlaneOrientationToXAxes();
//planeWidgetX->SetSliceIndex(32);
planeWidgetX->DisplayTextOn();
planeWidgetX->On();
planeWidgetX->InteractionOff();
planeWidgetX->InteractionOn();

vtkImagePlaneWidget* planeWidgetY = vtkImagePlaneWidget::New();
planeWidgetY->SetInteractor(iren);
planeWidgetY->SetKeyPressActivationValue('y');
planeWidgetY->SetPicker(picker);
planeWidgetY->GetPlaneProperty()->SetColor(1,1,0);
planeWidgetY->SetTexturePlaneProperty(ipwProp);
planeWidgetY->TextureInterpolateOn();
planeWidgetY->SetResliceInterpolateToLinear();
planeWidgetY->SetInput(v16->GetOutput());
planeWidgetY->SetPlaneOrientationToYAxes();
//planeWidgetY->SetSlicePosition(102.4);
planeWidgetY->SetLookupTable(planeWidgetX->GetLookupTable());
planeWidgetY->DisplayTextOn();
planeWidgetY->UpdatePlacement();
planeWidgetY->On();

vtkImagePlaneWidget* planeWidgetZ = vtkImagePlaneWidget::New();
planeWidgetZ->SetInteractor(iren);
planeWidgetZ->SetKeyPressActivationValue('z');
planeWidgetZ->SetPicker(picker);
planeWidgetZ->GetPlaneProperty()->SetColor(0,0,1);
planeWidgetZ->SetTexturePlaneProperty(ipwProp);
planeWidgetZ->TextureInterpolateOn();
planeWidgetZ->SetResliceInterpolateToCubic();
planeWidgetZ->SetInput(v16->GetOutput());
planeWidgetZ->SetPlaneOrientationToZAxes();
//planeWidgetZ->SetSliceIndex(25);
planeWidgetZ->SetLookupTable(planeWidgetX->GetLookupTable());
planeWidgetZ->DisplayTextOn();
planeWidgetZ->On();

vtkImageOrthoPlanes *orthoPlanes = vtkImageOrthoPlanes::New();
orthoPlanes->SetPlane(0, planeWidgetX);
orthoPlanes->SetPlane(1, planeWidgetY);
orthoPlanes->SetPlane(2, planeWidgetZ);
orthoPlanes->ResetPlanes();

vtkOrthoPlanesCallback* cbk = vtkOrthoPlanesCallback::New();
cbk->WidgetX = planeWidgetX;
cbk->WidgetY = planeWidgetY;
cbk->WidgetZ = planeWidgetZ;
planeWidgetX->AddObserver(vtkCommand::EndWindowLevelEvent, cbk);
planeWidgetY->AddObserver(vtkCommand::EndWindowLevelEvent, cbk);
planeWidgetZ->AddObserver(vtkCommand::EndWindowLevelEvent, cbk);
cbk->Delete();

double w1[2];

```

```

planeWidgetZ->GetWindowLevel(wl);

// Add a 2D image to test the GetReslice method
//
vtkImageMapToColors* colorMap = vtkImageMapToColors::New();
colorMap->PassAlphaToOutputOff();
colorMap->SetActiveComponent(0);
colorMap->SetOutputFormatToLuminance();
colorMap->SetInput(planeWidgetZ->GetResliceOutput());
colorMap->SetLookupTable(planeWidgetX->GetLookupTable());

vtkImageActor* imageActor = vtkImageActor::New();
imageActor->PickableOff();
imageActor->SetInput(colorMap->GetOutput());

// Add the actors
//
ren1->AddActor(outlineActor);
ren2->AddActor(imageActor);

ren1->SetBackground(0.1, 0.1, 0.2);
ren2->SetBackground(0.2, 0.1, 0.2);

renWin->SetSize(600, 350);

ren1->SetViewport(0, 0, 0.58333, 1);
ren2->SetViewport(0.58333, 0, 1, 1);

// Set the actors' positions
//
renWin->Render();
//iren->SetEventPosition(175, 175);
//iren->SetKeyCode('r');
//iren->InvokeEvent(vtkCommand::CharEvent, NULL);
//iren->SetEventPosition(475, 175);
//iren->SetKeyCode('r');
//iren->InvokeEvent(vtkCommand::CharEvent, NULL);
//renWin->Render();

//ren1->GetActiveCamera()->Elevation(110);
//ren1->GetActiveCamera()->SetViewUp(0, 0, -1);
//ren1->GetActiveCamera()->Azimuth(45);
//ren1->GetActiveCamera()->Dolly(1.15);
ren1->ResetCameraClippingRange();

vtkAnnotatedCubeActor* cube = vtkAnnotatedCubeActor::New();
cube->SetXPlusFaceText("R");
cube->SetXMinusFaceText("L");
cube->SetYPlusFaceText("A");
cube->SetYMinusFaceText("P");
cube->SetZPlusFaceText("H");
cube->SetZMinusFaceText("F");
cube->SetFaceTextScale(0.666667);

vtkAxesActor* axes2 = vtkAxesActor::New();

vtkMatrix4x4 *invert = vtkMatrix4x4::New();
invert->DeepCopy(reader->GetDirectionCosines());
invert->Invert();

// simulate a left-handed coordinate system
//
vtkTransform *transform = vtkTransform::New();
transform->Identity();
//transform->RotateY(90);
transform->Concatenate(invert);
axes2->SetShaftTypeToCylinder();
axes2->SetUserTransform(transform);
cube->GetAssembly()->SetUserTransform(transform);

axes2->SetTotalLength(1.5, 1.5, 1.5);
axes2->SetCylinderRadius(0.500 * axes2->GetCylinderRadius());
axes2->SetConeRadius(1.025 * axes2->GetConeRadius());
axes2->SetSphereRadius(1.500 * axes2->GetSphereRadius());

vtkTextProperty* tprop = axes2->GetXAxisCaptionActor2D()->
    GetCaptionTextProperty();
tprop->ItalicOn();
tprop->ShadowOn();
tprop->SetFontFamilyToTimes();

```

```

axes2->GetYAxisCaptionActor2D()->GetCaptionTextProperty()->ShallowCopy( tprop );
axes2->GetZAxisCaptionActor2D()->GetCaptionTextProperty()->ShallowCopy( tprop );

vtkPropAssembly* assembly = vtkPropAssembly::New();
assembly->AddPart( axes2 );
assembly->AddPart( cube );

vtkOrientationMarkerWidget* widget = vtkOrientationMarkerWidget::New();
widget->SetOutlineColor( 0.9300, 0.5700, 0.1300 );
widget->SetOrientationMarker( assembly );
widget->SetInteractor( iren );
widget->SetViewport( 0.0, 0.0, 0.4, 0.4 );
widget->SetEnabled( 1 );
widget->InteractiveOff();
widget->InteractiveOn();

// Playback recorded events
//
//vtkInteractorEventRecorder *recorder = vtkInteractorEventRecorder::New();
//recorder->SetInteractor(iren);
//recorder->ReadFromInputStringOn();
//recorder->SetInputString(IOpEventLog);

// Interact with data
// Render the image
//
iren->Initialize();
renWin->Render();

// Test SetKeyPressActivationValue for one of the widgets
//
//iren->SetKeyCode('z');
//iren->InvokeEvent(vtkCommand::CharEvent,NULL);
//iren->SetKeyCode('z');
//iren->InvokeEvent(vtkCommand::CharEvent,NULL);

//int retVal = vtkRegressionTestImage( renWin );
//
//if ( retVal == vtkRegressionTester::DO_INTERACTOR)
//{
//    iren->Start();
//}

// Clean up
//
//recorder->Off();
//recorder->Delete();

ipwProp->Delete();
orthoPlanes->Delete();
planeWidgetX->Delete();
planeWidgetY->Delete();
planeWidgetZ->Delete();
colorMap->Delete();
imageActor->Delete();
picker->Delete();
outlineActor->Delete();
outlineMapper->Delete();
outline->Delete();
iren->Delete();
renWin->Delete();
ren1->Delete();
ren2->Delete();
vl6->Delete();
reader->Delete();

return 0;
}

```

27.55 gdcmmreslice.cxx

```

/*=====

Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.

```

See Copyright.txt or <http://gdcm.sourceforge.net/Copyright.html> for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

```

=====*/
#include "vtkGDCMImageReader.h"

#include "vtkRenderer.h"
#include "vtkAssembly.h"
#include "vtkImageFlip.h"
#include "vtkImageReslice.h"
#include "vtkRenderWindow.h"
#include "vtkAnnotatedCubeActor.h"
#include "vtkTransform.h"
#include "vtkAxesActor.h"
#include "vtkTextProperty.h"
#include "vtkCaptionActor2D.h"
#include "vtkPropAssembly.h"
#include "vtkOrientationMarkerWidget.h"
#include "vtkRenderWindowInteractor.h"
#include "vtkPolyDataMapper.h"
#include "vtkActor.h"
#include "vtkImageData.h"
#include "vtkLookupTable.h"
#include "vtkTexture.h"
#include "vtkPlaneSource.h"

int main( int argc, char *argv[] )
{
    if( argc < 2 ) return 1;
    vtkGDCMImageReader *reader = vtkGDCMImageReader::New();
    reader->SetFileName( argv[1] );
    //reader->FileLowerLeftOn();
    reader->Update();

    vtkImageFlip *flip = vtkImageFlip::New();
    flip->SetInput( reader->GetOutput() );
    flip->SetFilteredAxis(0);
    flip->Update();

    vtkImageReslice *reslice = vtkImageReslice::New();
    //reslice->SetInput( reader->GetOutput() );
    reslice->SetInput( flip->GetOutput() );
    //reslice->SetResliceAxesDirectionCosines()
    reader->GetDirectionCosines()->Print(std::cout);
    vtkMatrix4x4 *invert = vtkMatrix4x4::New();
    invert->DeepCopy( reader->GetDirectionCosines() );
    invert->Invert();

    //reslice->SetResliceAxes( reader->GetDirectionCosines() );
    reslice->SetResliceAxes( invert );
    reslice->Update();
    vtkImageData* ima = reslice->GetOutput();

    vtkLookupTable* table = vtkLookupTable::New();
    table->SetNumberOfColors(1000);
    table->SetTableRange(0,1000);
    table->SetSaturationRange(0,0);
    table->SetHueRange(0,1);
    table->SetValueRange(0,1);
    table->SetAlphaRange(1,1);
    table->Build();

    // Texture
    vtkTexture* texture = vtkTexture::New();
    texture->SetInput(ima);
    texture->InterpolateOn();
    texture->SetLookupTable(table);

    // PlaneSource
    vtkPlaneSource* plane = vtkPlaneSource::New();

    // PolyDataMapper
    vtkPolyDataMapper *planeMapper = vtkPolyDataMapper::New();
    planeMapper->SetInput( plane->GetOutput() );

    // Actor
    vtkActor* planeActor = vtkActor::New();
    planeActor->SetTexture(texture);

```

```

planeActor->SetMapper(planeMapper);
planeActor->PickableOn();

// Final rendering with simple interactor:
vtkRenderer *ren = vtkRenderer::New();
vtkRenderWindow *renwin = vtkRenderWindow::New();
renwin->AddRenderer(ren);
vtkRenderWindowInteractor *iren = vtkRenderWindowInteractor::New();
iren->SetRenderWindow(renwin);
ren->AddActor(planeActor);
ren->SetBackground(0,0,0.5);

// DICOM is RAH:
vtkAnnotatedCubeActor* cube = vtkAnnotatedCubeActor::New();
cube->SetXPlusFaceText ( "R" );
cube->SetXMinusFaceText ( "L" );
cube->SetYPlusFaceText ( "A" );
cube->SetYMinusFaceText ( "P" );
cube->SetZPlusFaceText ( "H" );
cube->SetZMinusFaceText ( "F" );

vtkAxesActor* axes2 = vtkAxesActor::New();

vtkTransform *transform = vtkTransform::New();
transform->Identity();
//reader->GetDirectionCosines()->Print(std::cout);
transform->Concatenate(invert);
//axes2->SetShaftTypeToCylinder();
axes2->SetUserTransform( transform );
cube->GetAssembly()->SetUserTransform( transform ); // cant get it to work

vtkPropAssembly* assembly = vtkPropAssembly::New();
assembly->AddPart( axes2 );
assembly->AddPart( cube );

vtkOrientationMarkerWidget* widget = vtkOrientationMarkerWidget::New();
widget->SetOrientationMarker( assembly );
widget->SetInteractor( iren );
widget->SetEnabled( 1 );
widget->InteractiveOff();
widget->InteractiveOn();

renwin->Render();
iren->Start();

// Clean up:
reader->Delete();
table->Delete();
texture->Delete();
plane->Delete();
planeMapper->Delete();
planeActor->Delete();
ren->Delete();
renwin->Delete();
iren->Delete();

return 0;
}

```

27.56 gdcmrntionplan.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcms.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "vtkImageData.h"
#include "vtkPointData.h"
#include "vtkPolyData.h"

```

```

#include "vtkProperty.h"
#include "vtkPolyDataMapper.h"
#include "vtkActor.h"
#include "vtkRenderer.h"
#include "vtkCellArray.h"
#include "vtkPoints.h"
#include "vtkDoubleArray.h"
#include <vtkXMLImageDataWriter.h>
#include <vtkXMLPolyDataWriter.h>
#include <vtkRenderWindowInteractor.h>
#include <vtkImageColorViewer.h>

#include "gdcmmReader.h"
#include "gdcmmAttribute.h"

/*
  This example is just for fun. We found a RT Ion Plan Storage and simply extracted the viz stuff for VTK

  RTIonPlanStorage, // 1.2.840.10008.5.1.4.1.1.481.8
*/
int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        std::cerr << argv[0] << " filename.dcm outfile.vti\n";
        return 1;
    }
    const char * filename = argv[1];
    const char * outfilename = argv[2];
    const char * outfilename2 = argv[3];

    gdcmm::Reader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        return 1;
    }

    gdcmm::MediaStorage ms;
    ms.SetFromFile( reader.GetFile() );
    if( ms != gdcmm::MediaStorage::RTIonPlanStorage )
    {
        return 1;
    }
}

/*
(300a,03a2) SQ                                     # u/1,1 Ion Beam Sequence
  (fffe,e000) na (Item with undefined length)
    (0008,1040) LO [Test]                           # 4,1 Institutional Department Name
    (300a,00b2) SH (no value)                         # 0,1 Treatment Machine Name
    (300a,00b3) CS [MU]                               # 2,1 Primary Dosimeter Unit
    (300a,00c0) IS [1 ]                             # 2,1 Beam Number
    (300a,00c2) LO [1 ]                             # 2,1 Beam Name
    (300a,00c4) CS [STATIC]                           # 6,1 Beam Type
    (300a,00c6) CS [PROTON]                           # 6,1 Radiation Type
    (300a,00ce) CS [TREATMENT ]                       # 10,1 Treatment Delivery Type
    (300a,00d0) IS [0 ]                               # 2,1 Number of Wedges
    (300a,00e0) IS [1 ]                             # 2,1 Number of Compensators
    (300a,00ed) IS [0 ]                             # 2,1 Number of Boli
    (300a,00f0) IS [1 ]                             # 2,1 Number of Blocks
    (300a,0110) IS [2 ]                             # 2,1 Number of Control Points
    (300a,02ea) SQ                                     # u/1,1 Ion Range Compensator Sequence
      (fffe,e000) na (Item with undefined length)
        (300a,00e1) SH [lucite]                       # 6,1 Material ID
        (300a,00e4) IS [1 ]                           # 2,1 Compensator Number
        (300a,00e5) SH [75hdhe5 ]                     # 8,1 Compensator ID
        (300a,00e7) IS [35]                           # 2,1 Compensator Rows
        (300a,00e8) IS [37]                           # 2,1 Compensator Columns
        (300a,00e9) DS [3.679991\4.249288 ]           # 18,2 Compensator Pixel Spacing
        (300a,00ea) DS [-76.00\62.50]                 # 12,2 Compensator Position
        (300a,00ec) DS
          [52.13\52.13\52.13\53.18\54.04\54.04\47.11\40.06\40.06\38.79\34.87\33.28\33.28\33.28\
          33.28\35.43\35.43\34.54\34.54\34.71\36.10\38.62\44.88\44.88\44.88\45.00\45.00\45.00\45.66\45.66\46.42\39.77\39.77\39.77\39.77\3
          Data
            (300a,02e0) CS [ABSENT]                     # 6,1 Compensator Divergence
            (300a,02e1) CS [SOURCE_SIDE ]               # 12,1 Compensator Mounting Position
            (300a,02e4) FL 39.2                         # 4,1 Isocenter to Compensator Tray
          Distance
            (300a,02e5) FL 2.12                         # 4,1 Compensator Column Offset
            (300a,02e8) FL 4.76                         # 4,1 Compensator Milling Tool Diameter
          (fffe,e00d)

```

```

*/
const gdcm::DataSet& ds = reader.GetFile().GetDataSet();
gdcm::Tag tbeamsq(0x300a,0x03a2);
if( !ds.FindDataElement( tbeamsq ) )
{
    return 1;
}
const gdcm::DataElement &beamsq = ds.GetDataElement( tbeamsq );
//std::cout << beamsq << std::endl;
gdcm::SmartPointer<gdcm::SequenceOfItems> sqi = beamsq.
    GetValueAsSQ();
if( !sqi || !sqi->GetNumberOfItems() )
{
    return 1;
}

//for(unsigned int pd = 0; pd < sqi->GetNumberOfItems(); ++pd)
// {
//     //const gdcm::Item & item = sqi->GetItem(1); // Item start at #1
//     const gdcm::Item & item = sqi->GetItem(1); // Item start at #1
//     const gdcm::DataSet& nestedds = item.GetNestedDataSet();
//     //std::cout << nestedds << std::endl;
//     gdcm::Tag tcompensatorsq(0x300a,0x02ea);
//     if( !nestedds.FindDataElement( tcompensatorsq ) )
//     {
//         return 1;
//     }
//     const gdcm::DataElement &compensatorsq = nestedds.
//         GetDataElement( tcompensatorsq );
//     //std::cout << compensatorsq << std::endl;
//     gdcm::SmartPointer<gdcm::SequenceOfItems> ssqi = compensatorsq
//         .GetValueAsSQ();
//     const gdcm::Item & item2 = ssqi->GetItem(1); // Item start at #1
//     const gdcm::DataSet& nestedds2 = item2.GetNestedDataSet();
//     //std::cout << nestedds2 << std::endl;
//     gdcm::Tag tcompensatorthicknessdata(0x300a,0x00ec);
//     if( !nestedds2.FindDataElement( tcompensatorthicknessdata ) )
//     {
//         return 1;
//     }
//     const gdcm::DataElement &compensatorthicknessdata = nestedds2.
//         GetDataElement( tcompensatorthicknessdata );
//     // std::cout << compensatorthicknessdata << std::endl;
//     gdcm::Attribute<0x300a,0x00ec> at;
//     at.SetFromDataElement( compensatorthicknessdata );
//     const double* pts = at.GetValues();
//     // (300a,00e7) IS [35] # 2,1 Compensator Rows
//     gdcm::Attribute<0x300a,0x00e7> at1;
//     const gdcm::DataElement &compensatorrows = nestedds2.
//         GetDataElement( at1.GetTag() );
//     at1.SetFromDataElement( compensatorrows );
//     std::cout << at1.GetValue() << std::endl;
//     // (300a,00e8) IS [37] # 2,1 Compensator Columns
//     gdcm::Attribute<0x300a,0x00e8> at2;
//     const gdcm::DataElement &compensatorcols = nestedds2.
//         GetDataElement( at2.GetTag() );
//     at2.SetFromDataElement( compensatorcols );
//     std::cout << at2.GetValue() << std::endl;

//     // (300a,00e9) DS [3.679991\4.249288 ] # 18,2 Compensator Pixel Spacing
//     gdcm::Attribute<0x300a,0x00e9> at3;
//     const gdcm::DataElement &compensatorpixelspacing = nestedds2.
//         GetDataElement( at3.GetTag() );
//     at3.SetFromDataElement( compensatorpixelspacing );
//     std::cout << at3.GetValue(0) << std::endl;
//     // (300a,00ea) DS [-76.00\62.50] # 12,2 Compensator Position
//     gdcm::Attribute<0x300a,0x00ea> at4;
//     const gdcm::DataElement &compensatorposition = nestedds2.
//         GetDataElement( at4.GetTag() );
//     at4.SetFromDataElement( compensatorposition );
//     std::cout << at4.GetValue(0) << std::endl;

    vtkDoubleArray *d = vtkDoubleArray::New();
    d->SetArray( (double*)pts , at1.GetValue() * at2.GetValue() , 0 );

    vtkImageData *img = vtkImageData::New();
    img->Initialize();
    img->SetDimensions( at2.GetValue(), at1.GetValue(), 1 );
    //imgb->SetExtent(1, xdim, 1, ydim, 1, zdim);
    img->SetScalarTypeToDouble();
    img->SetSpacing( at3.GetValue(1), at3.GetValue(0), 1); // FIXME image is upside down

```



```

img->SetOrigin( at4.GetValue(0), at4.GetValue(1), 1);
img->SetNumberOfScalarComponents(1);
img->GetPointData()->SetScalars(d);

img->Update();
img->Print(std::cout);

vtkXMLImageDataWriter *writeb= vtkXMLImageDataWriter::New();
writeb->SetInput( img );
writeb->SetFileName( outfilename );
writeb->Write( );

/*
(300a,03a6) SQ # u/1,1 Ion Block Sequence
(fffe,e000) na (Item with undefined length)
(300a,00e1) SH [brass ] # 6,1 Material ID
(300a,00f7) FL 95.03 # 4,1 Isocenter to Block Tray Distance
(300a,00f8) CS [APERTURE] # 8,1 Block Type
(300a,00fa) CS [ABSENT] # 6,1 Block Divergence
(300a,00fb) CS [SOURCE_SIDE ] # 12,1 Block Mounting Position
(300a,00fc) IS [1 ] # 2,1 Block Number
(300a,0100) DS [50.00 ] # 6,1 Block Thickness
(300a,0104) IS [179 ] # 4,1 Block Number of Points
(300a,0106) DS
[1.7\50.0\14.3\50.0\16.7\49.4\18.7\48.2\19.4\47.7\20.1\47.1\21.0\47.0\22.3\47.0\23.7\
46.8\25.7\46.2\27.0\45.6\27.2\45.4\28.2\44.6\28.9\44.2\29.7\43.9\31.5\43.5\33.0\42.8\33.7\42.4\35.2\41.3\38.2\40.4\39.6\39.7\40.
2\37.4\43.0\37.1\44.7\36] # 1934,2-2n Block Data
(fffe,e00d)
(fffe,e0dd)

*/
gdcmm::Tag tblocksq(0x300a,0x03a6);
if( !nestedds.FindDataElement( tblocksq ) )
{
    return 1;
}
const gdcmm::DataElement &blocksq = nestedds.GetDataElement( tblocksq );
//std::cout << blocksq << std::endl;
gdcmm::SmartPointer<gdcmm::SequenceOfItems> sssqi = blocksq.
    GetValueAsSQ();
const gdcmm::Item & item3 = sssqi->GetItem(1); // Item start at #1
const gdcmm::DataSet& nestedds3 = item3.GetNestedDataSet();

gdcmm::Tag tblockdata(0x300a,0x0106);
if( !nestedds3.FindDataElement( tblockdata ) )
{
    return 1;
}
const gdcmm::DataElement &tblockdata = nestedds3.
    GetDataElement( tblockdata );
// std::cout << tblockdata << std::endl;
gdcmm::Attribute<0x300a,0x0106> at_;
at_.SetFromDataElement( tblockdata );

vtkDoubleArray *scalars = vtkDoubleArray::New();
scalars->SetNumberOfComponents(3);

gdcmm::Attribute<0x300a,0x0104> bnpts; // IS [179 ]
# 4,1 Block Number of Points
if( !nestedds3.FindDataElement( bnpts.GetTag() ) )
{
    return 1;
}
const gdcmm::DataElement &tblocknpts = nestedds3.
    GetDataElement( bnpts.GetTag() );
bnpts.SetFromDataElement( tblocknpts );
//std::cout << bnpts.GetValue() << std::endl;

vtkPolyData *output = vtkPolyData::New();
vtkPoints *newPts = vtkPoints::New();
vtkCellArray *polys = vtkCellArray::New();
const double *ptr = at_.GetValues();
//unsigned int npts = bnpts.GetNumberOfValues() / 2;
unsigned int npts = bnpts.GetValue();
vtkIdType *ptIds = new vtkIdType[npts];
for(unsigned int i = 0; i < npts; ++i)
{
    float x[3] = {};
    x[0] = (float)ptr[2*i+0];
    x[1] = (float)ptr[2*i+1];
    //x[2] = ptr[i+2];
    vtkIdType ptId = newPts->InsertNextPoint( x );

```

```

        //std::cout << x[0] << "," << x[1] << "," << x[2] << std::endl;
        ptIds[i] = ptId;
    }
    vtkIdType cellId = polys->InsertNextCell(npts , ptIds);
    (void)cellId;
    delete[] ptIds;

    output->SetPoints(newPts);
    newPts->Delete();
    output->SetPolys(polys);
    polys->Delete();
    //output->GetCellData()->SetScalars(scalars);
    //scalars->Delete();
    output->Update();
    output->Print( std::cout );

// }

    vtkRenderWindowInteractor *iren = vtkRenderWindowInteractor::New();

    vtkImageColorViewer *viewer = vtkImageColorViewer::New();
    viewer->SetInput(img);
    viewer->SetupInteractor(iren);
    viewer->SetSize(600, 600);
    viewer->GetRenderer()->ResetCameraClippingRange();
    viewer->Render();
    viewer->GetRenderer()->ResetCameraClippingRange();

    vtkPolyDataMapper *cubeMapper = vtkPolyDataMapper::New();
    //vtkPolyDataMapper2D* cubeMapper = vtkPolyDataMapper2D::New();
    cubeMapper->SetInput( output );
    cubeMapper->SetScalarRange(0,7);
    vtkActor *cubeActor = vtkActor::New();
    //vtkActor2D* cubeActor = vtkActor2D::New();
    cubeActor->SetMapper(cubeMapper);
    vtkProperty *property = cubeActor->GetProperty();
    property->SetRepresentationToWireframe();

viewer->GetRenderer()->AddActor( cubeActor );

    vtkXMLPolyDataWriter *writec= vtkXMLPolyDataWriter::New();
    writec->SetInput( output );
    writec->SetFileName( outfilename2 );
    writec->Write();

    iren->Initialize();
    iren->Start();

    return 0;
}

```

27.57 gdcmrtpplan.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcms.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "vtkImageData.h"
#include "vtkPointData.h"
#include "vtkPolyData.h"
#include "vtkProperty.h"
#include "vtkPolyDataMapper.h"
#include "vtkActor.h"
#include "vtkRenderer.h"

```

```

#include "vtkCellArray.h"
#include "vtkPoints.h"
#include "vtkDoubleArray.h"
#include <vtkXMLImageDataWriter.h>
#include <vtkRenderWindowInteractor.h>
#include <vtkImageColorViewer.h>

#include "gdcmmReader.h"
#include "gdcmmAttribute.h"

/*
  This example is just for fun. We found a fake RT Ion Plan Storage and simply extracted the viz stuff for
  VTK
  but this is rather a RT Plan storage
*/
int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        std::cerr << argv[0] << " filename.dcm outfile.vti\n";
        return 1;
    }
    const char * filename = argv[1];
    const char * outfilename = argv[2];

    gdcmm::Reader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        return 1;
    }

    gdcmm::MediaStorage ms;
    ms.SetFromFile( reader.GetFile() );
    if( ms != gdcmm::MediaStorage::RTIonPlanStorage )
    {
        return 1;
    }

    /*
(300a,00b0) SQ                                     # u/1,1 Beam Sequence
  (fffe,e000) na (Item with undefined length)
    (300a,00b2) SH (no value)                       # 0,1 Treatment Machine Name
    (300a,00c0) IS [1 ]                             # 2,1 Beam Number
    (300a,00c2) LO [1 ]                             # 2,1 Beam Name
    (300a,00c4) CS [STATIC]                         # 6,1 Beam Type
    (300a,00c6) CS [PROTON]                         # 6,1 Radiation Type
    (300a,00ce) CS [TREATMENT ]                     # 10,1 Treatment Delivery Type
    (300a,00e0) IS [1 ]                             # 2,1 Number of Compensators
    (300a,00e3) SQ                                   # u/1,1 Compensator Sequence
      (fffe,e000) na (Item with undefined length)
        (300a,00e1) SH [lucite]                     # 6,1 Material ID
        (300a,00e4) IS [1 ]                         # 2,1 Compensator Number
        (300a,00e5) SH [75hdhe5 ]                   # 8,1 Compensator ID
        (300a,00e7) IS [35]                         # 2,1 Compensator Rows
        (300a,00e8) IS [37]                         # 2,1 Compensator Columns
        (300a,00e9) DS [3.679991\4.249288 ]         # 18,2 Compensator Pixel Spacing
        (300a,00ea) DS [-76.00\62.50]               # 12,2 Compensator Position
        (300a,00ec) DS
          [52.13\52.13\52.13\53.18\54.04\54.04\47.11\40.06\40.06\38.79\34.87\33.28\33.28\33.28\
          33.28\35.43\35.43\34.54\34.54\34.71\36.10\38.62\44.88\44.88\44.88\45.00\45.00\45.00\45.66\45.66\46.42\39.77\39.77\39.77\39.77\3
          Data
            (300a,02e0) CS [ABSENT]                   # 6,1 Compensator Divergence
            (300a,02e1) CS [SOURCE_SIDE ]             # 12,1 Compensator Mounting Position
          (fffe,e00d)
            (fffe,e000) na (Item with undefined length)
            (fffe,e00d)
          (fffe,e0dd)
    */
    const gdcmm::DataSet& ds = reader.GetFile().GetDataSet();
    gdcmm::Tag tbeamsq(0x300a,0x00b0);
    if( !ds.FindDataElement( tbeamsq ) )
    {
        return 1;
    }
    const gdcmm::DataElement &tbeamsq = ds.GetDataElement( tbeamsq );
    //std::cout << tbeamsq << std::endl;
    gdcmm::SmartPointer<gdcmm::SequenceOfItems> sqi = tbeamsq.
        GetValueAsSQ();
    if( !sqi || !sqi->GetNumberOfItems() )
    {

```

```

    return 1;
}

//for(unsigned int pd = 0; pd < sqi->GetNumberOfItems(); ++pd)
// {
//const gdcm::Item & item = sqi->GetItem(1); // Item start at #1
const gdcm::Item & item = sqi->GetItem(2); // Item start at #1
const gdcm::DataSet& nestedds = item.GetNestedDataSet();
//std::cout << nestedds << std::endl;
gdcm::Tag tcompensatorsq(0x300a,0x00e3);
if( !nestedds.FindDataElement( tcompensatorsq ) )
{
    return 1;
}
const gdcm::DataElement &compensatorsq = nestedds.
    GetDataElement( tcompensatorsq );
//std::cout << compensatorsq << std::endl;
gdcm::SmartPointer<gdcm::SequenceOfItems> ssqi = compensatorsq
    .GetValueAsSQ();
const gdcm::Item & item2 = ssqi->GetItem(1); // Item start at #1
const gdcm::DataSet& nestedds2 = item2.GetNestedDataSet();
//std::cout << nestedds2 << std::endl;
gdcm::Tag tcompensatorthicknessdata(0x300a,0x00ec);
if( !nestedds2.FindDataElement( tcompensatorthicknessdata ) )
{
    return 1;
}
const gdcm::DataElement &compensatorthicknessdata = nestedds2.
    GetDataElement( tcompensatorthicknessdata );
// std::cout << compensatorthicknessdata << std::endl;
gdcm::Attribute<0x300a,0x00ec> at;
at.SetFromDataElement( compensatorthicknessdata );
const double* pts = at.GetValues();
// (300a,00e7) IS [35] # 2,1 Compensator Rows
gdcm::Attribute<0x300a,0x00e7> at1;
const gdcm::DataElement &compensatorrows = nestedds2.
    GetDataElement( at1.GetTag() );
at1.SetFromDataElement( compensatorrows );
std::cout << at1.GetValue() << std::endl;
// (300a,00e8) IS [37] # 2,1 Compensator Columns
gdcm::Attribute<0x300a,0x00e8> at2;
const gdcm::DataElement &compensatorcols = nestedds2.
    GetDataElement( at2.GetTag() );
at2.SetFromDataElement( compensatorcols );
std::cout << at2.GetValue() << std::endl;

// (300a,00e9) DS [3.679991\4.249288 ] # 18,2 Compensator Pixel Spacing
gdcm::Attribute<0x300a,0x00e9> at3;
const gdcm::DataElement &compensatorpixelspacing = nestedds2.
    GetDataElement( at3.GetTag() );
at3.SetFromDataElement( compensatorpixelspacing );
std::cout << at3.GetValue(0) << std::endl;
// (300a,00ea) DS [-76.00\62.50] # 12,2 Compensator Position
gdcm::Attribute<0x300a,0x00ea> at4;
const gdcm::DataElement &compensatorposition = nestedds2.
    GetDataElement( at4.GetTag() );
at4.SetFromDataElement( compensatorposition );
std::cout << at4.GetValue(0) << std::endl;

vtkDoubleArray *d = vtkDoubleArray::New();
d->SetArray( (double*)pts , at1.GetValue() * at2.GetValue() , 0 );

vtkImageData *img = vtkImageData::New();
img->Initialize();
img->SetDimensions( at2.GetValue(), at1.GetValue(), 1 );
//imgb->SetExtent(1, xdim, 1, ydim, 1, zdim);
img->SetScalarTypeToDouble();
img->SetSpacing( at3.GetValue(1), at3.GetValue(0), 1); // FIXME image is upside down
img->SetOrigin( at4.GetValue(0), at4.GetValue(1), 1);
img->SetNumberOfScalarComponents(1);
img->GetPointData()->SetScalars(d);

vtkXMLImageDataWriter *writeb= vtkXMLImageDataWriter::New();
writeb->SetInput( img );
writeb->SetFileName( outfile );
writeb->Write();
}
(300a,00f4) SQ # u/1,1 Block Sequence
    (ffe,e000) na (Item with undefined length)
    (300a,00e1) SH [brass ] # 6,1 Material ID
    (300a,00f8) CS [APERTURE] # 8,1 Block Type

```

```

        (300a,00fa) CS [ABSENT] # 6,1 Block Divergence
        (300a,00fb) CS [SOURCE_SIDE ] # 12,1 Block Mounting Position
        (300a,00fc) IS [1 ] # 2,1 Block Number
        (300a,0100) DS [50.00 ] # 6,1 Block Thickness
        (300a,0104) IS [179 ] # 4,1 Block Number of Points
        (300a,0106) DS
        [1.7\50.0\14.3\50.0\16.7\49.4\18.7\48.2\19.4\47.7\20.1\47.1\21.0\47.0\22.3\47.0\23.7\
        46.8\25.7\46.2\27.0\45.6\27.2\45.4\28.2\44.6\28.9\44.2\29.7\43.9\31.5\43.5\33.0\42.8\33.7\42.4\35.2\41.3\38.2\40.4\39.6\39.7\40.
        (fffe,e00d)
        (fffe,e000) na (Item with undefined length)
        (fffe,e00d)
        (fffe,e0dd)
    */
    gdcmm::Tag tblocksq(0x300a,0x00f4);
    if( !nestedds.FindDataElement( tblocksq ) )
    {
        return 1;
    }
    const gdcmm::DataElement &blocksq = nestedds.GetDataElement( tblocksq );
    //std::cout << blocksq << std::endl;
    gdcmm::SmartPointer<gdcmm::SequenceOfItems> sssqi = blocksq.
        GetValueAssQ();
    const gdcmm::Item & item3 = sssqi->GetItem(1); // Item start at #1
    const gdcmm::DataSet& nestedds3 = item3.GetNestedDataSet();

    gdcmm::Tag tblockdata(0x300a,0x0106);
    if( !nestedds3.FindDataElement( tblockdata ) )
    {
        return 1;
    }
    const gdcmm::DataElement &blockdata = nestedds3.
        GetDataElement( tblockdata );
    // std::cout << blockdata << std::endl;
    gdcmm::Attribute<0x300a,0x0106> at_;
    at_.SetFromDataElement( blockdata );

    vtkDoubleArray *scalars = vtkDoubleArray::New();
    scalars->SetNumberOfComponents(3);

    gdcmm::Attribute<0x300a,0x0104> bnpts; // IS [179 ] # 4,1 Block Number of
        Points
    if( !nestedds3.FindDataElement( bnpts.GetTag() ) )
    {
        return 1;
    }
    const gdcmm::DataElement &blocknpts = nestedds3.
        GetDataElement( bnpts.GetTag() );
    bnpts.SetFromDataElement( blocknpts );
    std::cout << bnpts.GetValue() << std::endl;

    vtkPolyData *output = vtkPolyData::New();
    vtkPoints *newPts = vtkPoints::New();
    vtkCellArray *polys = vtkCellArray::New();
    const double *ptr = at_.GetValues();
    //unsigned int npts = bnpts.GetNumberOfValues() / 2;
    unsigned int npts = bnpts.GetValue();
    vtkIdType *ptIds = new vtkIdType[npts];
    for(unsigned int i = 0; i < npts; ++i)
    {
        float x[3] = {};
        x[0] = (float)ptr[2*i+0];
        x[1] = (float)ptr[2*i+1];
        //x[2] = ptr[i+2];
        vtkIdType ptId = newPts->InsertNextPoint( x );
        //std::cout << x[0] << ", " << x[1] << ", " << x[2] << std::endl;
        ptIds[i] = ptId;
    }
    vtkIdType cellId = polys->InsertNextCell(npts , ptIds);
    (void)cellId;
    delete[] ptIds;

    output->SetPoints(newPts);
    newPts->Delete();
    output->SetPolys(polys);
    polys->Delete();
    //output->GetCellData()->SetScalars(scalars);
    //scalars->Delete();
    output->Update();
    output->Print( std::cout );

```

```

// }

vtkRenderWindowInteractor *iren = vtkRenderWindowInteractor::New();

vtkImageColorViewer *viewer = vtkImageColorViewer::New();
viewer->SetInput(img);
viewer->SetupInteractor(iren);
viewer->SetSize(600, 600);
viewer->Render();

vtkPolyDataMapper *cubeMapper = vtkPolyDataMapper::New();
//vtkPolyDataMapper2D* cubeMapper = vtkPolyDataMapper2D::New();
cubeMapper->SetInput( output );
cubeMapper->SetScalarRange(0,7);
vtkActor *cubeActor = vtkActor::New();
//vtkActor2D* cubeActor = vtkActor2D::New();
cubeActor->SetMapper(cubeMapper);
vtkProperty * property = cubeActor->GetProperty();
property->SetRepresentationToWireframe();

viewer->GetRenderer()->AddActor( cubeActor );

iren->Initialize();
iren->Start();

return 0;
}

```

27.58 gdcmscene.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "vtkGDCMPolyDataReader.h"
// #include "vtkGDCMPolyDataWriter.h"

#include "vtkAppendPolyData.h"
#include "vtkPolyDataWriter.h"
#include "vtkPolyDataMapper.h"
#include "vtkPolyDataMapper2D.h"
#include "vtkActor2D.h"
#include "vtkRenderWindowInteractor.h"
#include "vtkRenderWindow.h"
#include "vtkRenderer.h"
#include "vtkCamera.h"
#include "vtkProperty.h"
#include "vtkProperty2D.h"

// gdcmDataExtra/gdcmNonImageData/exRT_Structure_Set_Storage.dcm
// gdcmDataExtra/gdcmNonImageData/RTSTRUCT_1.3.6.1.4.1.22213.1.1396.2.dcm
// gdcmDataExtra/gdcmNonImageData/RT/RTStruct.dcm

int main(int argc, char *argv[])
{
    if( argc < 2 )
    {
        std::cerr << argv[0] << " filename1.dcm\n";
        return 1;
    }
    const char * filename = argv[1];

    vtkGDCMPolyDataReader * reader =
        vtkGDCMPolyDataReader::New();

```

```

reader->SetFileName( filename );
reader->Update();

// vtkGDCMPolyDataWriter * writer2 = vtkGDCMPolyDataWriter::New();
// for(int num = 0; num < reader->GetNumberOfOutputPorts(); ++num )
//     writer2->SetInput( num, reader->GetOutput(num) );
// writer2->SetFileName( "rtstruct.dcm" );
// writer2->Write();

// print reader output:
reader->Print( std::cout );
// print first output:
reader->GetOutput()->Print( std::cout );

vtkAppendPolyData *append = vtkAppendPolyData::New();
int n = reader->GetNumberOfOutputPorts();
for(int i = 0; i < n; ++i)
{
    append->AddInput( reader->GetOutput(i) );
}

vtkPolyDataWriter * writer = vtkPolyDataWriter::New();
writer->SetInput( reader->GetOutput() );
writer->SetFileName( "rtstruct.vtk" );
//writer->Write();

// Now we'll look at it.
vtkPolyDataMapper *cubeMapper = vtkPolyDataMapper::New();
//vtkPolyDataMapper2D* cubeMapper = vtkPolyDataMapper2D::New();
//cubeMapper->SetInput( reader->GetOutput() );
cubeMapper->SetInput( append->GetOutput() );
cubeMapper->SetScalarRange(0,7);
vtkActor *cubeActor = vtkActor::New();
//vtkActor2D* cubeActor = vtkActor2D::New();
cubeActor->SetMapper(cubeMapper);
vtkProperty * property = cubeActor->GetProperty();
property->SetRepresentationToWireframe();
//cubeActor->GetProperty()->SetColor(1, 0, 0);

// The usual rendering stuff.
// vtkCamera *camera = vtkCamera::New();
//     camera->SetPosition(1,1,1);
//     camera->SetFocalPoint(0,0,0);

vtkRenderer *renderer = vtkRenderer::New();
vtkRenderWindow *renWin = vtkRenderWindow::New();
renWin->AddRenderer(renderer);

vtkRenderWindowInteractor *iren = vtkRenderWindowInteractor::New();
iren->SetRenderWindow(renWin);

renderer->AddActor(cubeActor);
//renderer->AddActor2D(cubeActor);
//renderer->SetActiveCamera(camera);
renderer->ResetCamera();
renderer->SetBackground(1,1,1);

renWin->SetSize(300,300);

// interact with data
renWin->Render();
iren->Start();

reader->Delete();
append->Delete();
cubeMapper->Delete();
cubeActor->Delete();
// camera->Delete();
renderer->Delete();
renWin->Delete();
iren->Delete();

writer->Delete();

return 0;
}

```

27.59 gdcmttexture.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/
#include "vtkGDCMImageReader.h"

#include "vtkRenderer.h"
#include "vtkAssembly.h"
#include "vtkRenderWindow.h"
#include "vtkAnnotatedCubeActor.h"
#include "vtkTransform.h"
#include "vtkAxesActor.h"
#include "vtkTextProperty.h"
#include "vtkCaptionActor2D.h"
#include "vtkPropAssembly.h"
#include "vtkOrientationMarkerWidget.h"
#include "vtkRenderWindowInteractor.h"
#include "vtkPolyDataMapper.h"
#include "vtkActor.h"
#include "vtkImageData.h"
#include "vtkLookupTable.h"
#include "vtkTexture.h"
#include "vtkPlaneSource.h"

int main( int argc, char *argv[] )
{
    if( argc < 2 ) return 1;
    vtkGDCMImageReader *reader = vtkGDCMImageReader::New();
    reader->SetFileName( argv[1] );

    reader->Update();
    vtkImageData* ima = reader->GetOutput();

    vtkLookupTable* table = vtkLookupTable::New();
    table->SetNumberOfColors(1000);
    table->SetTableRange(0,1000);
    table->SetSaturationRange(0,0);
    table->SetHueRange(0,1);
    table->SetValueRange(0,1);
    table->SetAlphaRange(1,1);
    table->Build();

    // Texture
    vtkTexture* texture = vtkTexture::New();
    texture->SetInput(ima);
    texture->InterpolateOn();
    texture->SetLookupTable(table);

    // PlaneSource
    vtkPlaneSource* plane = vtkPlaneSource::New();
    plane->SetOrigin( -0.5, -0.5, 0.0);
    plane->SetPoint1( 0.5, -0.5, 0.0);
    plane->SetPoint2( -0.5, 0.5, 0.0);

    // PolyDataMapper
    vtkPolyDataMapper *planeMapper = vtkPolyDataMapper::New();
    planeMapper->SetInput(plane->GetOutput());

    // Actor
    vtkActor* planeActor = vtkActor::New();
    planeActor->SetTexture(texture);
    planeActor->SetMapper(planeMapper);
    planeActor->PickableOn();

    // Final rendering with simple interactor:
    vtkRenderer *ren = vtkRenderer::New();
    vtkRenderWindow *renwin = vtkRenderWindow::New();
    renwin->AddRenderer(ren);
    vtkRenderWindowInteractor *iren = vtkRenderWindowInteractor::New();

```



```

    iren->SetRenderWindow(renwin);
    ren->AddActor(planeActor);
    ren->SetBackground(0,0,0.5);

    vtkAnnotatedCubeActor* cube = vtkAnnotatedCubeActor::New();
    cube->SetXPlusFaceText ( "L" );
    cube->SetXMinusFaceText ( "R" );
    cube->SetYPlusFaceText ( "A" );
    cube->SetYMinusFaceText ( "P" );
    cube->SetZPlusFaceText ( "H" );
    cube->SetZMinusFaceText ( "F" );

    vtkAxesActor* axes2 = vtkAxesActor::New();
    // simulate a left-handed coordinate system
    //
    vtkTransform *transform = vtkTransform::New();
    transform->Identity();
    //transform->RotateY(180);
    reader->GetDirectionCosines()->Print(std::cout);
    transform->Concatenate(reader->GetDirectionCosines());
    //axes2->SetShaftTypeToCylinder();
    axes2->SetUserTransform( transform );
    //cube->SetUserTransform( transform ); // cant get it to work
    cube->GetAssembly()->SetUserTransform( transform ); // cant get it to work

    vtkPropAssembly* assembly = vtkPropAssembly::New();
    assembly->AddPart( axes2 );
    assembly->AddPart( cube );

    vtkOrientationMarkerWidget* widget = vtkOrientationMarkerWidget::New();
    //widget->SetOutlineColor( 0.9300, 0.5700, 0.1300 );
    widget->SetOrientationMarker( assembly );
    widget->SetInteractor( iren );
    //widget->SetViewport( 0.0, 0.0, 0.4, 0.4 );
    widget->SetEnabled( 1 );
    widget->InteractiveOff();
    widget->InteractiveOn();

    renwin->Render();
    iren->Start();

    // Clean up:
    reader->Delete();
    table->Delete();
    texture->Delete();
    plane->Delete();
    planeMapper->Delete();
    planeActor->Delete();
    ren->Delete();
    renwin->Delete();
    iren->Delete();

    return 0;
}

```

27.60 gdcmvolume.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcml.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "vtkGDCMImageReader.h"
#include "vtkPiecewiseFunction.h"
#include "vtkColorTransferFunction.h"
#include "vtkVolume.h"
#include "vtkVolumeProperty.h"
#include "vtkVolumeTextureMapper3D.h"
#include "vtkFixedPointVolumeRayCastMapper.h"

```

```

#include "vtkInteractorStyleTrackballCamera.h"
#include "vtkRenderer.h"
#include "vtkRenderWindow.h"
#include "vtkImageClip.h"
#include "vtkRenderWindowInteractor.h"

// gdcmvolume gdcmData/GE_DLX-8-MONO2-Multiframe-Jpeg_Lossless.dcm
int main(int argc, char *argv[])
{
    if( argc < 2 ) return 1;
    vtkGDCMImageReader *reader = vtkGDCMImageReader::New();
    reader->SetFileName( argv[1] );
    reader->Update();

    // Create the renderers, render window, and interactor
    vtkRenderWindow *renWin = vtkRenderWindow::New();
    vtkRenderWindowInteractor *iren = vtkRenderWindowInteractor::New();
    iren->SetRenderWindow(renWin);
    vtkRenderer *ren = vtkRenderer::New();
    renWin->AddRenderer(ren);

    // Create a transfer function mapping scalar value to opacity
    vtkPiecewiseFunction *oTFun = vtkPiecewiseFunction::New();
    //oTFun->AddSegment(0, 1.0, 256, 0.1);
    oTFun->AddSegment(0, 1.0, 240, 0.1);

    vtkColorTransferFunction *cTFun = vtkColorTransferFunction::New();
    cTFun->AddRGBPoint( 0, 1.0, 1.0, 1.0 );
    //cTFun->AddRGBPoint( 255, 1.0, 1.0, 1.0 );
    cTFun->AddRGBPoint( 240, 1.0, 1.0, 1.0 );

    // Need to crop to actually see minimum intensity
    vtkImageClip *clip = vtkImageClip::New();
    clip->SetInputConnection( reader->GetOutputPort() );
    clip->SetOutputWholeExtent(0,66,0,66,30,37);
    clip->ClipDataOn();

    vtkVolumeProperty *property = vtkVolumeProperty::New();
    property->SetScalarOpacity(oTFun);
    property->SetColor(cTFun);
    property->SetInterpolationTypeToLinear();

    vtkFixedPointVolumeRayCastMapper *mapper = vtkFixedPointVolumeRayCastMapper::New();
    mapper->SetBlendModeToMinimumIntensity();
    mapper->SetInputConnection( reader->GetOutputPort() );

    vtkVolume *volume = vtkVolume::New();
    volume->SetMapper(mapper);
    volume->SetProperty(property);

    ren->AddViewProp(volume);

    renWin->Render();
    {
        iren->Start();
    }

    volume->Delete();
    mapper->Delete();
    property->Delete();
    clip->Delete();
    cTFun->Delete();
    oTFun->Delete();
    reader->Delete();
    renWin->Delete();
    iren->Delete();
    ren->Delete();

    return 0;
}

```

27.61 GenAIIVR.cxx

```

/*=====

```

```

Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "gdcmReader.h"
#include "gdcmGlobal.h"
#include "gdcmDummyValueGenerator.h"
#include "gdcmMediaStorage.h"
#include "gdcmWriter.h"
#include "gdcmItem.h"
#include "gdcmImageReader.h"
#include "gdcmSequenceOfItems.h"
#include "gdcmFile.h"
#include "gdcmTag.h"
#include "gdcmDict.h"
#include "gdcmDictEntry.h"
#include "gdcmDicts.h"
#include "gdcmTransferSyntax.h"
#include "gdcmUIDGenerator.h"
#include "gdcmFileExplicitFilter.h"

#include <cstdlib>
#include <cstring>

gdcm::Tag FindTagFromVR(gdcm::Dict const &dict, gdcm::VR const &vr)
{
    using gdcm::Dict;
    Dict::ConstIterator beg = dict.Begin();
    Dict::ConstIterator end = dict.End();
    Dict::ConstIterator it;
    for( it = beg; it != end; ++it)
    {
        const gdcm::Tag &t = it->first;
        const gdcm::DictEntry &de = it->second;
        const gdcm::VR &vr_de = de.GetVR();
        if( vr == vr_de && !de.GetRetired() && t.GetGroup() >= 0x8 )
        {
            return t;
        }
    }
    return gdcm::Tag(0xffff,0xffff);
}

struct rnd_gen {
    rnd_gen(char const* r = "abcdefghijklmnopqrstuvwxyz0123456789")
        : range(r), len(std::strlen(r)) { }

    char operator ()() const {
        return range[static_cast<std::size_t>(std::rand() * (1.0 / ((double)RAND_MAX + 1.0 )) * (double)len)];
    }
private:
    char const* range;
    std::size_t len;
};

/*
*/
int main(int argc, char *argv[])
{
    if( argc < 2 )
    {
        std::cerr << argv[0] << " output.dcm" << std::endl;
        return 1;
    }
    const char *outfilename = argv[1];
    static const gdcm::Global &g = gdcm::Global::GetInstance();
    static const gdcm::Dicts &dicts = g.GetDicts();
    static const gdcm::Dict &pubdict = dicts.GetPublicDict();
    using gdcm::VR;
    using gdcm::Tag;

    gdcm::Writer w;

```

```

gdcmm::File &f = w.GetFile();
gdcmm::DataSet &ds = f.GetDataSet();

gdcmm::FileExplicitFilter fef;
//fef.SetChangePrivateTags( true );
fef.SetFile( w.GetFile() );
if( !fef.Change() )
{
    std::cerr << "Failed to change" << std::endl;
    return 1;
}

gdcmm::SmartPointer<gdcmm::SequenceOfItems> sq = new
    gdcmm::SequenceOfItems();
sq->SetLengthToUndefined();

// gdcmm::DummyValueGenerator dvg;

const std::size_t len = 10;
char ss[len+1];
ss[len] = '\0';

const char owner_str[] = "GDCM CONFORMANCE TESTS";
gdcmm::DataElement owner( gdcmm::Tag(0x4d4d, 0x10) );
owner.SetByteValue(owner_str, (uint32_t)strlen(owner_str));
owner.SetVR( gdcmm::VR::LO );

// Create an item
gdcmm::Item it;
it.SetVLToUndefined();
gdcmm::DataSet &nds = it.GetNestedDataSet();
// nds.Insert(owner);
// nds.Insert(de);

// Insert sequence into data set
gdcmm::DataElement des( gdcmm::Tag(0x4d4d, 0x1001) );
des.SetVR(gdcmm::VR::SQ);
des.SetValue(*sq);
des.SetVLToUndefined();

ds.Insert(owner);
ds.Insert(des);

// avoid INVALID = 0
for(int i = 1; i < 27; ++i)
{
    VR vr = (VR::VRType)(1 << i);
    Tag t = FindTagFromVR( pubdict, vr );
    if( vr != VR::UN && vr != VR::SQ )
    {
        assert( t != Tag(0xffff, 0xffff) );
        gdcmm::DataElement de( t );
        std::generate_n(ss, len, rnd_gen());
        de.SetVR( vr );
        de.SetByteValue( ss, (uint32_t)std::strlen( ss ) );
        nds.Insert( de );
    }
}
sq->AddItem(it);

// Make sure to override any UID stuff
gdcmm::UIDGenerator uid;
gdcmm::DataElement de( Tag(0x8, 0x18) ); // SOP Instance UID
de.SetVR( VR::UI );
const char *u = uid.Generate();
de.SetByteValue( u, (uint32_t)strlen(u) );
ds.Insert( de );

de.SetTag( Tag(0x8, 0x16) ); // SOP Class UID
de.SetVR( VR::UI );
gdcmm::MediaStorage ms( gdcmm::MediaStorage::RawDataStorage
    );
de.SetByteValue( ms.GetString(), (uint32_t)strlen(ms.GetString()) );
ds.Insert( de );

gdcmm::FileMetaInformation &fmi = f.GetHeader();
//fmi.SetDataSetTransferSyntax( gdcmm::TransferSyntax::ImplicitVRLittleEndian );
fmi.SetDataSetTransferSyntax(
    gdcmm::TransferSyntax::ExplicitVRLittleEndian );

```

```

w.SetCheckFileMetaInformation( true );
w.SetFileName( outfilename );
if ( !w.Write() )
{
    return 1;
}

return 0;
}

```

27.62 GenerateDICOMDIR.cs

This is a C# example on how to use [gdcm::DICOMDIRGenerator](#)

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/

/*
 * Simple C# example to show how to use DICOMDIRGenerator
 *
 * Usage:
 * $ export LD_LIBRARY_PATH=$HOME/Projects/gdcm/debug-gcc/bin
 * $ mono bin/GenerateDICOMDIR.exe path output_filename
 */
using System;
using gdcm;

public class GenerateDICOMDIR
{
    public static int Main(string[] args)
    {
        string directory = args[0];
        string outfilename = args[1];

        Directory d = new Directory();
        uint nfiles = d.Load( directory, true );
        if(nfiles == 0) return 1;
        //System.Console.WriteLine( "Files:\n" + d.toString() );

        // Implement fast path ?
        // Scanner s = new Scanner();

        string descriptor = "My_Descriptor";
        FilenamesType filenames = d.GetFilenames();

        gdcm.DICOMDIRGenerator gen = new DICOMDIRGenerator();
        gen.SetFilenames( filenames );
        gen.SetDescriptor( descriptor );
        if( !gen.Generate() )
        {
            return 1;
        }

        gdcm.FileMetaInformation.SetSourceApplicationEntityTitle( "GenerateDICOMDIR" );
        gdcm.Writer writer = new Writer();
        writer.SetFile( gen.GetFile() );
        writer.SetFileName( outfilename );
        if( !writer.Write() )
        {
            return 1;
        }

        return 0;
    }
}

```

27.63 GenerateRTSTRUCT.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "vtkGDCMPolyDataWriter.h"
#include "vtkGDCMPolyDataReader.h"
#include "vtkPolyData.h"
#include "vtkPolyDataReader.h"
#include "vtkMedicalImageProperties.h"
#include "vtkRTStructSetProperties.h"
#include "vtkStringArray.h"
#include "vtkAppendPolyData.h"
#include "vtkPolyDataWriter.h"
#include "vtkPolyDataMapper.h"
#include "vtkPolyDataMapper2D.h"
#include "vtkActor2D.h"
#include "vtkRenderWindowInteractor.h"
#include "vtkMedicalImageProperties.h"
#include "vtkRenderWindow.h"
#include "vtkRenderer.h"
#include "vtkCamera.h"
#include "vtkProperty.h"
#include "vtkProperty2D.h"
#include "vtkImageData.h"

#include <algorithm> //for std::find

#include "gdcmDirectoryHelper.h"

using namespace gdcm;

//view each organ independently of the others, to make sure that
//organ names correspond to actual segmentations.
void ShowOrgan(vtkPolyData* inData)
{
    // Now we'll look at it.
    vtkPolyDataMapper *cubeMapper = vtkPolyDataMapper::New();
    cubeMapper->SetInput( inData );
    cubeMapper->SetScalarRange(0,7);
    vtkActor *cubeActor = vtkActor::New();
    cubeActor->SetMapper(cubeMapper);
    vtkProperty *property = cubeActor->GetProperty();
    property->SetRepresentationToWireframe();

    vtkRenderer *renderer = vtkRenderer::New();
    vtkRenderWindow *renWin = vtkRenderWindow::New();
    renWin->AddRenderer(renderer);

    vtkRenderWindowInteractor *iren = vtkRenderWindowInteractor::New();
    iren->SetRenderWindow(renWin);

    renderer->AddActor(cubeActor);
    renderer->ResetCamera();
    renderer->SetBackground(1,1,1);

    renWin->SetSize(300,300);

    renWin->Render();
    iren->Start();

    cubeMapper->Delete();
    cubeActor->Delete();
    renderer->Delete();
    renWin->Delete();
    iren->Delete();
}

/*
 * Full application which ... RTSTUCT

```

```

*/
int main(int argc, char *argv[])
{
    if( argc < 2 )
    {
        std::cerr << argv[0] << " directory-with-rtstruct-and-ct-images\n";
        return 1;
    }
    std::string theDirName(argv[1]);
    Directory::FileNamesType theRTSeries =
        DirectoryHelper::GetRTStructSeriesUIDs(theDirName);

    gdcm::Directory theDir;
    theDir.Load(argv[1]);

    if (theRTSeries.empty())
    {
        std::cerr << "No RTStructs found for the test, ending." << std::endl;
        return 1;
    }

    for (size_t q = 0; q < theRTSeries.size(); q++)
    {
        Directory::FileNamesType theRTNames =
            DirectoryHelper::GetFileNamesFromSeriesUIDs(theDirName,
                theRTSeries[q]);

        if (theRTNames.empty()) {
            std::cerr << "Unable to load RT Series " << theRTSeries[q] << ", continuing. " << std::endl;
            continue;
        }

        vtkGDCMPolyDataReader * reader =
            vtkGDCMPolyDataReader::New();
        reader->SetFileName( theRTNames[0].c_str() );
        reader->Update();

        //std::cout << reader->GetMedicalImageProperties()->GetStudyDate() << std::endl;

        vtkGDCMPolyDataWriter * writer =
            vtkGDCMPolyDataWriter::New();
        int numMasks = reader->GetNumberOfOutputPorts() + 1; //add a blank one in
        writer->SetNumberOfInputPorts( numMasks );
        std::string thePotentialName = theDirName + "/" + "GDCMTestRTStruct." + theRTSeries[q] + ".dcm";
        gdcm::Directory::FileNamesType theFileNames = theDir.
            GetFileNames();
        //keep renaming the output until we get something that doesn't overwrite what was there already
        int count = 0;
        while (std::find(theFileNames.begin(), theFileNames.end(), thePotentialName) != theFileNames.end())
        {
            char buff[255];
            sprintf(buff, "%d", count);
            thePotentialName = theDirName + "/" + "GDCMTestRTStruct." + buff + "." + theRTSeries[q] + ".dcm";
        }
        writer->SetFileName( thePotentialName.c_str());
        writer->SetMedicalImageProperties( reader->GetMedicalImageProperties() );
        //this line is cheating, we won't have the same stuff, and may not have a struct
        //to start with.
        //have to go back to the original data to reconstruct the RTStructureSetProperties
        //writer->SetRTStructSetProperties( reader->GetRTStructSetProperties() );
        //writer->Write();

        //loop through the outputs in order to write them out as if they had been created and appended
        vtkStringArray* roiNames = vtkStringArray::New();
        vtkStringArray* roiAlgorithms = vtkStringArray::New();
        vtkStringArray* roiTypes = vtkStringArray::New();
        roiNames->SetNumberOfValues(numMasks);
        roiAlgorithms->SetNumberOfValues(numMasks);
        roiTypes->SetNumberOfValues(numMasks);
        vtkAppendPolyData* append = vtkAppendPolyData::New();

        //ok, now we'll add a blank organ
        //the blank organ is to test to ensure that blank organs work; there have been crash reports
        //this code is added at the beginning to ensure that the blank organs are read
        //and preserved as individual organs.
        vtkPolyData* blank = vtkPolyData::New();
        writer->SetInput(0, blank);
        roiNames->InsertValue(0, "blank");
        roiAlgorithms->InsertValue(0, "blank");
        roiTypes->InsertValue(0, "ORGAN");
    }
}

```

```

//note the offsets used to place the blank rtstruct at the beginning of the newly generated RT.
//the idea is to run the program twice; first to generate an rtstruct with a blank mask (making
//sure that that functionality works), and then a second time to make sure that everything is
//being read properly. Multiple organs with the same name could cause some strangenesses.
for (int i = 1; i < numMasks; ++i)
{
    writer->SetInput(i, reader->GetOutput(i-1));
    append->AddInput(reader->GetOutput(i-1));
    std::string theString = reader->GetRTStructSetProperties()->GetStructureSetROIName(i-1);
    roiNames->InsertValue(i, theString);
    theString = reader->GetRTStructSetProperties()->GetStructureSetROIGenerationAlgorithm(i-1);
    roiAlgorithms->InsertValue(i, theString);
    theString = reader->GetRTStructSetProperties()->GetStructureSetRTROIInterpretedType(i-1);
    roiTypes->InsertValue(i, theString);

    ShowOrgan(reader->GetOutput(i-1));
}

vtkRTStructSetProperties* theProperties =
    vtkRTStructSetProperties::New();
writer->SetRTStructSetProperties(theProperties);
writer->InitializeRTStructSet(theDirName,
    reader->GetRTStructSetProperties()->GetStructureSetLabel(),
    reader->GetRTStructSetProperties()->GetStructureSetName(),
    roiNames, roiAlgorithms, roiTypes);

writer->SetRTStructSetProperties(theProperties);
writer->Write();

// print reader output:
reader->Print( std::cout );
// print first output:
reader->GetOutput()->Print( std::cout );

reader->Delete();
append->Delete();
roiNames->Delete();
roiTypes->Delete();
theProperties->Delete();
roiAlgorithms->Delete();
blank->Delete();

writer->Delete();
}
return 0;
}

```

27.64 GenerateStandardSOPClasses.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
/*
*/

#include "gdcmDefs.h"
#include "gdcmUIDs.h"
#include "gdcmGlobal.h"
#include "gdcmMediaStorage.h"
#include "gdcmSOPClassUIDToIOD.h"

int main(int , char *[])
{
    using gdcm::MediaStorage;
    gdcm::Global& g = gdcm::Global::GetInstance();
    if( !g.LoadResourcesFiles() )
    {

```



```

    std::cerr << "Could not LoadResourcesFiles" << std::endl;
    return 1;
}

const gdcm::Defs &defs = g.GetDefs();

int ret = 0;

//std::cout << "Table B.5-1 STANDARD SOP CLASSES" << std::endl;
std::cout << "SOP Class Name,SOP Class UID,IOD Specification (defined in PS 3.3)" << std::endl;

gdcm::MediaStorage::MSType mst;
for ( mst = gdcm::MediaStorage::MediaStorageDirectoryStorage
      ; mst < gdcm::MediaStorage::MS_END;
      mst = (gdcm::MediaStorage::MSType)(mst + 1) )
{
    const char *iod = defs.GetIODNameFromMediaStorage(mst);
    gdcm::UIDs uid;
    uid.SetFromUID( gdcm::MediaStorage::GetMSString(mst) /*
        mst.GetString()*/* );
    if( iod )
    {
        const char *iod_ref = gdcm::SOPClassUIDToIOD::GetIOD(uid);
        if( iod_ref )
        {
            std::string iod_ref_str = iod_ref;
            //iod_ref_str += " IOD Modules";
            //if( iod_ref_str != iod )
            {
                //std::cout << "UID: " << uid << " ";
                std::cout << '/' << uid.GetName() << '/' << " << " << '/' << uid.
GetString() << '/' << " << " << '/' << iod << '/' << std::endl;
                //std::cout << "Incompatible IODs: [" << iod << "]" versus ref= [" << iod_ref_str << "]" <<
                std::endl;
                ++ret;
            }
        }
    }
}

return 0;
}

```

27.65 GenFakelIdentifyFile.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "gdcmReader.h"
#include "gdcmGlobal.h"
#include "gdcmDummyValueGenerator.h"
#include "gdcmMediaStorage.h"
#include "gdcmWriter.h"
#include "gdcmItem.h"
#include "gdcmImageReader.h"
#include "gdcmSequenceOfItems.h"
#include "gdcmAttribute.h"
#include "gdcmFile.h"
#include "gdcmTag.h"
#include "gdcmDict.h"
#include "gdcmDictEntry.h"
#include "gdcmDicts.h"
#include "gdcmTransferSyntax.h"
#include "gdcmUIDGenerator.h"
#include "gdcmAnonymizer.h"

```

```

#include <cstdlib>
#include <cstring>

gdcmm::DataElement CreateFakeElement(gdcmm::Tag const &tag, bool toremove)
{
    static const gdcmm::Global &g = gdcmm::Global::GetInstance();
    static const gdcmm::Dicts &dicts = g.GetDicts();
    static const gdcmm::Dict &pubdict = dicts.GetPublicDict();
    static size_t countglobal = 0;
    static std::vector<gdcmm::Tag> balcptags =
        gdcmm::Anonymizer::GetBasicApplicationLevelConfidentialityProfileAttributes
        ();
    size_t count = countglobal % balcptags.size();

    const gdcmm::DictEntry &dictentry = pubdict.GetDictEntry(tag);

    gdcmm::DataElement de;
    de.SetTag( tag );
    using gdcmm::VR;
    const VR &vr = dictentry.GetVR();
    //if( vr != VR::INVALID )
    if( vr.IsDual() )
    {
        if( vr == VR::US_SS )
        {
            de.SetVR( VR::US );
        }
        else if( vr == VR::US_SS_OW )
        {
            de.SetVR( VR::OW );
        }
        else if( vr == VR::OB_OW )
        {
            de.SetVR( VR::OB );
        }
    }
    else
    {
        de.SetVR( vr );
    }
    const char str[] = "BasicApplicationLevelConfidentialityProfileAttributes";
    const char safe[] = "This is safe to keep";
    if( de.GetVR() != VR::SQ )
    {
        if( toremove )
            de.SetByteValue( str, (uint32_t)strlen(str) );
        else
            de.SetByteValue( safe, (uint32_t)strlen(safe) );
    }
    else
    {
        // Create an item
        gdcmm::Item it;
        it.SetVLToUndefined();
        gdcmm::DataSet &nds = it.GetNestedDataSet();
        // Insert sequence into data set
        assert(de.GetVR() == gdcmm::VR::SQ );
        gdcmm::SmartPointer<gdcmm::SequenceOfItems> sq = new
            gdcmm::SequenceOfItems();
        sq->SetLengthToUndefined();
        de.SetValue(*sq);
        de.SetVLToUndefined();
        //ds.Insert( de);

        if( !toremove )
        {
            nds.Insert( CreateFakeElement( balcptags[count], true ) );
            countglobal++;
        }
        else
        {
            gdcmm::Attribute<0x0008,0x0000> at1 = { 0 }; // This element has no
                reason to be 'anonymized'...
            nds.Insert( at1.GetAsDataElement() );
            gdcmm::Attribute<0x000a,0x0000> at2 = { 0 };
            nds.Insert( at2.GetAsDataElement() );
        }
        sq->AddItem(it);
    }
    return de;
}

```

```

}

/*
*/
int main(int argc, char *argv[])
{
    if( argc < 2 )
    {
        std::cerr << argv[0] << " output.dcm" << std::endl;
        return 1;
    }
    using gdcm::Tag;
    using gdcm::VR;
    const char *outfilename = argv[1];

    std::vector<gdcm::Tag> balcptags =
        gdcm::Anonymizer::GetBasicApplicationLevelConfidentialityProfileAttributes
            ();

    gdcm::Writer w;
    gdcm::File &f = w.GetFile();
    gdcm::DataSet &ds = f.GetDataSet();

    // Add attribute that need to be anonymized:
    std::vector<gdcm::Tag>::const_iterator it = balcptags.begin();
    for( ; it != balcptags.end(); ++it )
    {
        ds.Insert( CreateFakeElement( *it, true ) );
    }

    // Add attribute that do NOT need to be anonymized:
    static const gdcm::Global &g = gdcm::Global::GetInstance();
    static const gdcm::Dicts &dicts = g.GetDicts();
    static const gdcm::Dict &pubdict = dicts.GetPublicDict();

    using gdcm::Dict;
    Dict::ConstIterator dictit = pubdict.Begin();
    for( ; dictit != pubdict.End(); ++dictit )
    {
        const gdcm::Tag &dicttag = dictit->first;
        if( dicttag == Tag(0x6e65,0x6146) ) break;
        //const gdcm::DictEntry &dictentry = dictit->second;
        ds.Insert( CreateFakeElement( dicttag, false ) );
    }
    ds.Remove( gdcm::Tag(0x400,0x500) );
    ds.Remove( gdcm::Tag(0x12,0x62) );
    ds.Remove( gdcm::Tag(0x12,0x63) );

    // Make sure to override any UID stuff
    gdcm::UIDGenerator uid;
    gdcm::DataElement de( Tag(0x8,0x18) ); // SOP Instance UID
    de.SetVR( VR::UI );
    const char *u = uid.Generate();
    de.SetByteValue( u, (uint32_t)strlen(u) );
    //ds.Insert( de );
    ds.Replace( de );

    de.SetTag( Tag(0x8,0x16) ); // SOP Class UID
    de.SetVR( VR::UI );
    gdcm::MediaStorage ms( gdcm::MediaStorage::RawDataStorage
        );
    de.SetByteValue( ms.GetString(), (uint32_t)strlen(ms.GetString()) );
    ds.Replace( de ); // replace !

    gdcm::FileMetaInformation &fmi = f.GetHeader();
    //fmi.SetDataSetTransferSyntax( gdcm::TransferSyntax::ImplicitVRLittleEndian );
    fmi.SetDataSetTransferSyntax(
        gdcm::TransferSyntax::ExplicitVRLittleEndian );

    w.SetCheckFileMetaInformation( true );
    w.SetFileName( outfile );
    if (!w.Write() )
    {
        return 1;
    }

    return 0;
}

```

27.66 GenFakelImage.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "gdcmImage.h"
#include "gdcmImageWriter.h"
#include "gdcmFileDerivation.h"
#include "gdcmUIDGenerator.h"
// #include "gdcmImageChangePhotometricInterpretation.h"

/*
 * This example shows two things:
 * 1. How to create an image ex-nihilo
 * 2. How to use the gdcm.FileDerivation filter. This filter is meant to create "DERIVED" image
 * object. FileDerivation has a simple API where you can reference *all* the input image that have been
 * used to generate the image. The API also allows user to specify the purpose of reference (see CID 7202,
 * PS 3.16 - 2008), and the image derivation type (CID 7203, PS 3.16 - 2008).
 */
int main(int, char *[])
{
    // Step 1: Fake Image
    gdcm::SmartPointer<gdcm::Image> im = new
        gdcm::Image;

    char * buffer = new char[ 256 * 256 * 3];
    char * p = buffer;
    int b = 128;
    int ybr[3];
    int ybr2[3];
    int rgb[3];

    for(int r = 0; r < 256; ++r)
        for(int g = 0; g < 256; ++g)
            //for(int b = 0; b < 256; ++b)
            {
                rgb[0] = r;
                rgb[1] = g;
                rgb[1] = 128;
                rgb[2] = b;
                ybr[0] = r;
                ybr[1] = g;
                ybr[1] = 128;
                ybr[2] = b;

                ybr2[0] = r;
                ybr2[1] = g;
                ybr2[1] = 128;
                ybr2[2] = b;
                //gdcm::ImageChangePhotometricInterpretation::YBR2RGB(rgb, ybr);
                //gdcm::ImageChangePhotometricInterpretation::RGB2YBR(ybr2, rgb);
                *p++ = (char)ybr2[0];
                *p++ = (char)ybr2[1];
                *p++ = (char)ybr2[2];
            }

    im->SetNumberOfDimensions( 2 );
    im->SetDimension(0, 256 );
    im->SetDimension(1, 256 );

    im->GetPixelFormat().SetSamplesPerPixel(3);
    //im->SetPhotometricInterpretation( gdcm::PhotometricInterpretation::RGB );
    im->SetPhotometricInterpretation(
        gdcm::PhotometricInterpretation::YBR_FULL );

    unsigned long l = im->GetBufferLength();
    if( l != 256 * 256 * 3 )
    {
        return 1;
    }
}

```

```

gdcmm::DataElement pixeldata( gdcmm::Tag(0x7fe0,0x0010) );
pixeldata.SetByteValue( buffer, (uint32_t)1 );
delete[] buffer;
im->SetDataElement( pixeldata );

gdcmm::UIDGenerator uid; // helper for uid generation

gdcmm::SmartPointer<gdcmm::File> file = new
    gdcmm::File; // empty file

// Step 2: DERIVED object
gdcmm::FileDerivation fd;
// For the purpose of this exercise we will pretend that this image is referencing
// two source image (we need to generate fake UID for that).
const char ReferencedSOPClassUID[] = "1.2.840.10008.5.1.4.1.1.7"; // Secondary Capture
fd.AddReference( ReferencedSOPClassUID, uid.Generate() );
fd.AddReference( ReferencedSOPClassUID, uid.Generate() );

// Again for the purpose of the exercise we will pretend that the image is a
// multiplanar reformat (MPR):
// CID 7202 Source Image Purposes of Reference
// {"DCM",121322,"Source image for image processing operation"},
fd.SetPurposeOfReferenceCodeSequenceCodeValue( 121322 );
// CID 7203 Image Derivation
// { "DCM",113072,"Multiplanar reformatting" },
fd.SetDerivationCodeSequenceCodeValue( 113072 );
fd.SetFile( *file );
// If all Code Value are ok the filter will execute properly
if( !fd.Derive() )
{
    std::cerr << "Sorry could not derive using input info" << std::endl;
    return 1;
}

// We pass both :
// 1. the fake generated image
// 2. the 'DERIVED' dataset object
// to the writer.
gdcmm::ImageWriter w;
w.SetImage( *im );
w.SetFile( fd.GetFile() );

// Set the filename:
w.SetFileName( "ybr2.dcm" );
if( !w.Write() )
{
    return 1;
}

return 0;
}

```

27.67 GenLongSeqs.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcmm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "gdcmmReader.h"
#include "gdcmmWriter.h"
#include "gdcmmItem.h"
#include "gdcmmImageReader.h"
#include "gdcmmSequenceOfItems.h"
#include "gdcmmFile.h"
#include "gdcmmTag.h"

/*
 * This example is used to generate the file:

```

```

*
*
* There is a flaw in the DICOM design were it is assumed that Sequence can be
* either represented as undefined length or defined length. This should work
* in most case, but the undefined length is a little more general and can
* store sequence of items that a defined length cannot.
* We need to make sure that we can store numerous Item in a SQ
*
* Warning: do not try to compute the group length elements !
* Warning: You may need a 64bits machine for this example to work.
*/
int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        std::cerr << argv[0] << " input.dcm output.dcm" << std::endl;
        return 1;
    }
    const char *filename = argv[1];
    const char *outfilename = argv[2];
    gdcm::Reader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        return 1;
    }

    gdcm::File &file = reader.GetFile();
    gdcm::DataSet &ds = file.GetDataSet();

    // Create a Sequence
    gdcm::SmartPointer<gdcm::SequenceOfItems> sq = new
        gdcm::SequenceOfItems();
    sq->SetLengthToUndefined();

    const char owner_str[] = "GDCM CONFORMANCE TESTS";
    gdcm::DataElement owner( gdcm::Tag(0x4d4d, 0x10) );
    owner.SetByteValue( owner_str, (uint32_t)strlen(owner_str));
    owner.SetVR( gdcm::VR::LO );

    size_t nitems = 1000;
    nitems += std::numeric_limits<uint32_t>::max();
    for(unsigned int idx = 0; idx < nitems; ++idx)
    {
        // Create a dataelement
        //gdcm::DataElement de( gdcm::Tag(0x4d4d, 0x1002) );
        //de.SetByteValue(ptr, ptr_len);
        //de.SetVR( gdcm::VR::OB );

        // Create an item
        gdcm::Item it;
        it.SetVLToUndefined();
        //gdcm::DataSet &nds = it.GetNestedDataSet();
        //nds.Insert(owner);
        //nds.Insert(de);

        sq->AddItem(it);
    }

    // Insert sequence into data set
    gdcm::DataElement des( gdcm::Tag(0x4d4d, 0x1001) );
    des.SetVR(gdcm::VR::SQ);
    des.SetValue(*sq);
    des.SetVLToUndefined();

    ds.Insert(owner);
    ds.Insert(des);

    gdcm::Writer w;
    w.SetFile( file );
    //w.SetCheckFileMetaInformation( true );
    w.SetFileName( outfile );
    if( !w.Write() )
    {
        return 1;
    }

    return 0;
}

```

27.68 GenSeqs.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "gdcmReader.h"
#include "gdcmWriter.h"
#include "gdcmItem.h"
#include "gdcmImageReader.h"
#include "gdcmSequenceOfItems.h"
#include "gdcmFile.h"
#include "gdcmTag.h"

/*
 * This example is used to generate the file:
 *
 * gdcmConformanceTests/SequenceWithUndefinedLengthNotConvertibleToDefinedLength.dcm
 *
 * There is a flaw in the DICOM design where it is assumed that Sequence can be
 * either represented as undefined length or defined length. This should work
 * in most case, but the undefined length is a little more general and can
 * store sequence of items that a defined length cannot.
 * Deflated syntax was used in this case since this synthetic example can be
 * nicely compressed using this transfer syntax.
 *
 * Warning: do not try to compute the group length elements !
 * Warning: You may need a 64bits machine for this example to work.
 */
int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        std::cerr << argv[0] << " input.dcm output.dcm" << std::endl;
        return 1;
    }
    const char *filename = argv[1];
    const char *outfilename = argv[2];
    gdcm::Reader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        return 1;
    }

    gdcm::File &file = reader.GetFile();
    gdcm::DataSet &ds = file.GetDataSet();

    //const unsigned int nitems = 1000;
    const unsigned int ptr_len = 42; /*94967296 / nitems; */
    //assert( ptr_len == 42949672 );
    char *ptr = new char[ptr_len];
    memset(ptr,0,ptr_len);

    // Create a Sequence
    gdcm::SmartPointer<gdcm::SequenceOfItems> sq = new
        gdcm::SequenceOfItems();
    sq->SetLengthToUndefined();

    const char owner_str[] = "GDCM CONFORMANCE TESTS";
    gdcm::DataElement owner( gdcm::Tag(0x4d4d, 0x10) );
    owner.SetByteValue(owner_str, (uint32_t)strlen(owner_str));
    owner.SetVR( gdcm::VR::LO );

    for(unsigned int idx = 0; idx < 10/* nitems*/; ++idx)
    {
        // Create a dataelement
        gdcm::DataElement de( gdcm::Tag(0x4d4d, 0x1002) );
        de.SetByteValue(ptr, ptr_len);
        de.SetVR( gdcm::VR::OB );
    }
}

```

```

    // Create an item
    gdcm::Item it;
    it.SetVLToUndefined();
    gdcm::DataSet &nds = it.GetNestedDataSet();
    nds.Insert(owner);
    nds.Insert(de);

    sq->AddItem(it);
}

// Insert sequence into data set
gdcm::DataElement des( gdcm::Tag(0x4d4d,0x1001) );
des.SetVR(gdcm::VR::SQ);
des.SetValue(*sq);
des.SetVLToUndefined();

ds.Insert(owner);
ds.Insert(des);

gdcm::Writer w;
w.SetFile( file );
//w.SetCheckFileMetaInformation( true );
w.SetFileName( outfilename );
if (!w.Write() )
{
    return 1;
}

return 0;
}

```

27.69 GetArray.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/

/*
 * Usage:
 * $ export LD_LIBRARY_PATH=$HOME/Projects/gdcm/debug-gcc/bin
 * $ mono bin/GetArray.exe gdcmData/012345.002.050.dcm
 */
using System;
using gdcm;

public class GetArray
{
    public static int Main(string[] args)
    {
        string file1 = args[0];
        ImageReader reader = new ImageReader();
        reader.SetFileName( file1 );
        bool ret = reader.Read();
        if( !ret )
        {
            return 1;
        }

        Image image = reader.GetImage();

        PixelFormat pixeltype = image.GetPixelFormat();

        if( image.GetNumberOfDimensions() != 2 )
        {
            // For the purpose of the test, exit early on
            return 1;
        }
    }
}

```



```

uint dimx = image.GetDimension(0);
uint dimy = image.GetDimension(1);
uint npixels = dimx * dimy;
//LookupTable lut = image.GetLUT();
//uint r1 = lut.GetLUTLength( LookupTable.LookupTableType.RED );
//byte[] rbuf = new byte[ r1 ];
//uint r12 = lut.GetLUT( LookupTable.LookupTableType.RED, rbuf );
//assert r1 == r12;

//byte[] str1 = new byte[ image.GetBufferLength()];
//image.GetBuffer( str1 );
if( pixeltype.GetScalarType() == PixelFormat.ScalarType.UINT8 )
{
    System.Console.WriteLine( "Processing UINT8 image type" );
    byte[] str1 = new byte[ npixels ];
    image.GetArray( str1 );
}
else if( pixeltype.GetScalarType() == PixelFormat.ScalarType.INT16 )
{
    System.Console.WriteLine( "Processing INT16 image type" );
    short[] str1 = new short[ npixels ];
    image.GetArray( str1 );
}
else if( pixeltype.GetScalarType() == PixelFormat.ScalarType.UINT16 )
{
    System.Console.WriteLine( "Processing UINT16 image type" );
    ushort[] str1 = new ushort[ npixels ];
    image.GetArray( str1 );
}
else
{
    //System.Console.WriteLine( "Default (unhandled pixel format): " + pixeltype.toString() );
    System.Console.WriteLine( "Default (unhandled pixel format): " + pixeltype.GetScalarTypeAsString() );
    // Get bytes
    byte[] str1 = new byte[ image.GetBufferLength()];
    image.GetBuffer( str1 );
}

return 0;
}
}

```

27.70 GetJPEGSamplePrecision.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
/*
* This example is a little helper to detect the famous SIEMENS JPEG lossless compressed image
* where DICOM is declared as:
*
* (0028,0100) US 16 # 2,1 Bits Allocated
* (0028,0101) US 12 # 2,1 Bits Stored
* (0028,0102) US 11 # 2,1 High Bit
* (0028,0103) US 0 # 2,1 Pixel Representation
*
* But where JPEG is:
*
* JPEG_SOF_Parameters:
* SamplePrecision = 16
* nLines = 192
* nSamplesPerLine = 192
* nComponentsInFrame = 1
* component 0
* ComponentIdentifier = 1
* HorizontalSamplingFactor = 1
* VerticalSamplingFactor = 1
*/

```

```

*                               QuantizationTableDestinationSelector = 0
*
*
* This case is valid. One simply has to use the 16bits jpeg decoder to decode the 12bits stored image.
* This used to be an issue in GDCM 1.2.x (fixed in GDCM 1.2.5)
*
* The main return 0 (no error) when the file read is actually a potential problem. At the end of the main
* function, the jpeg stream is stored in the filename specified as second argument
*/

#include "gdcmImageReader.h"
#include "gdcmSequenceOfFragments.h"
#include "gdcmJPEGCodec.h"

#include <iostream>
#include <fstream>

int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        std::cerr << argv[0] << " input.dcm output.jpg" << std::endl;
        return 1;
    }
    const char *filename = argv[1];
    const char *outfilename = argv[2];

    gdcm::ImageReader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        std::cerr << "Could not read: " << filename << std::endl;
        return 1;
    }

    // The output of gdcm::Reader is a gdcm::File
    const gdcm::File &file = reader.GetFile();
    const gdcm::Image &image = reader.GetImage();

    const gdcm::TransferSyntax &ts = file.GetHeader().
        GetDataSetTransferSyntax();

    if( ts != gdcm::TransferSyntax::JPEGLosslessProcess14 && ts !=
        gdcm::TransferSyntax::JPEGLosslessProcess14_1 )
    {
        std::cerr << "Input is not a lossless JPEG" << std::endl;
        return 1;
    }

    // the dataset is the the set of element we are interested in:
    const gdcm::DataSet &ds = file.GetDataSet();

    const gdcm::Tag rawTag(0x7fe0, 0x0010); // Default to Pixel Data
    const gdcm::DataElement& pdde = ds.GetDataElement( rawTag );
    const gdcm::SequenceOfFragments *sf = pdde.
        GetSequenceOfFragments();
    if( sf )
    {
        std::ofstream output(outfilename, std::ios::binary);
        sf->WriteBuffer(output);
    }
    else
    {
        std::cerr << "Error" << std::endl;
        return 1;
    }

    gdcm::JPEGCodec jpeg;
    std::ifstream is(outfilename);
    gdcm::PixelFormat pf ( gdcm::PixelFormat::UINT8 ); // let's
        pretend it's a 8bits jpeg
    jpeg.SetPixelFormat( pf );
    gdcm::TransferSyntax ts_jpg;
    bool b = jpeg.GetHeaderInfo( is, ts_jpg );
    if( !b )
    {
        return 1;
    }

    //jpeg.Print( std::cout );
    if( jpeg.GetPixelFormat().GetBitsAllocated() != image.

```

```

        GetPixelFormat().GetBitsAllocated()
    || jpeg.GetPixelFormat().GetBitsStored() != image.
        GetPixelFormat().GetBitsStored() )
    {
        std::cerr << "There is a mismatch in between DICOM declared Pixel Format and Sample Precision used in
            the JPEG stream" << std::endl;
        return 0;
    }

    std::cout << jpeg.GetPixelFormat() << std::endl;
    std::cout << image.GetPixelFormat() << std::endl;

    return 1;
}

```

27.71 GetPortionCSAHeader.py

```

1 #####
2 #
3 # Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 # Copyright (c) 2006-2011 Mathieu Malaterre
6 # All rights reserved.
7 # See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.
8 #
9 # This software is distributed WITHOUT ANY WARRANTY; without even
10 # the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 # PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 """
16 Usage:
17
18 python GetPortionCSAHeader.py input.dcm
19
20 Footnote:
21 SIEMENS is not publishing any information on the CSA header. So any info extracted
22 is at your own risk.
23 """
24
25 import sys
26 import gdcm
27
28 if __name__ == "__main__":
29
30     file = sys.argv[1]
31
32     r = gdcm.Reader()
33     r.SetFileName( file )
34     if not r.Read():
35         sys.exit(1)
36
37     ds = r.GetFile().GetDataSet()
38     csa_t1 = gdcm.CSAHeader()
39     csa_t2 = gdcm.CSAHeader()
40     #print csa
41     t1 = csa_t1.GetCSAImageHeaderInfoTag();
42     print t1
43     t2 = csa_t2.GetCSASeriesHeaderInfoTag();
44     print t2
45     # Let's do it for t1:
46     if ds.FindDataElement( t1 ):
47         csa_t1.LoadFromDataElement( ds.GetDataElement( t1 ) )
48         print csa_t1
49
50     # Now let's pretend we are only interested in B_value and DiffusionGradientDirection entries:
51     bvalues = csa_t1.GetCSAElementByName( "B_value" ) # WARNING: it is case sensitive !
52     print bvalues
53
54     diffgraddir = csa_t1.GetCSAElementByName( "DiffusionGradientDirection" ) # WARNING: it is case sensitive
55     !
56     print diffgraddir
57
58     # repeat for t2 if you like it:
59     if ds.FindDataElement( t2 ):
60         csa_t2.LoadFromDataElement( ds.GetDataElement( t2 ) )

```

```

60     # print csa_t2
61
62     gdt = csa_t2.GetCSAElementByName( "GradientDelayTime" )
63     print gdt
64
65     bv = gdt.GetByteValue();
66     #print bv
67     str = bv.GetPointer()
68     print str.split("\\")

```

27.72 GetSequenceUltrasound.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "gdcmReader.h"
#include "gdcmAttribute.h"

bool Region ( char* nomefile, unsigned int* X_min, unsigned int* Y_min, unsigned int* X_max, unsigned int*
Y_max );

int main(int argc, char* argv[] )
{
    // Controllo del numero di argomenti introdotti da riga di comando
    if( argc < 2 )
    {
        std::cerr << "Usage: " << std::endl;
        std::cerr << argv[0] << " inputImageFile " << std::endl;
        return EXIT_FAILURE;
    }

    unsigned int x_min = 1;
    unsigned int y_min = 1;
    unsigned int x_max = 1;
    unsigned int y_max = 1;

    if( Region ( argv[1], &x_min, &y_min, &x_max, &y_max ) )
    {
        std::cout << "x_min = " << x_min << std::endl;
        std::cout << "y_min = " << y_min << std::endl;
        std::cout << "x_max = " << x_max << std::endl;
        std::cout << "y_max = " << y_max << std::endl;
    }

    else
    {
        std::cout << "no\n";
    }
}

bool Region ( char* nomefile, unsigned int* X_min, unsigned int* Y_min, unsigned int* X_max, unsigned int*
Y_max )
{
    gdcm::Reader reader;
    reader.SetFileName( nomefile );
    if( !reader.Read() )
    {
        std::cerr << "Could not read: " << nomefile << std::endl;
        return false;
    }

    gdcm::File &file = reader.GetFile();
    gdcm::DataSet &ds = file.GetDataSet();

    gdcm::Tag tsqr(0x0018,0x6011);

```

```

if( !ds.FindDataElement( tsqr ) )
{
    return false;
}

const gdcmm::DataElement &sqr= ds.GetDataElement( tsqr );
//std::cout << sqr << std::endl;
const gdcmm::SequenceOfItems *sqi = sqr.GetValueAsSQ();
if( !sqi || !sqi->GetNumberOfItems() )
{
    return false;
}
//std::cout << sqi << std::endl;

const gdcmm::Item &item = sqi->GetItem(1);
//std::cout << item << std::endl;
const gdcmm::DataSet& nestedds = item.GetNestedDataSet();
//std::cout << nestedds << std::endl;

gdcmm::Tag tX0(0x0018,0x6018);
gdcmm::Tag tY0(0x0018,0x601a);
gdcmm::Tag tX1(0x0018,0x601c);
gdcmm::Tag tY1(0x0018,0x601e);

if( (!nestedds.FindDataElement( tX0 ))||(!nestedds.
    FindDataElement( tY0 ))||(!nestedds.FindDataElement( tX1 ))||(!nestedds.
    FindDataElement( tY1 )) )
{
    return false;
}

const gdcmm::DataElement& deX0 = nestedds.GetDataElement( tX0 );
const gdcmm::DataElement& deY0 = nestedds.GetDataElement( tY0 );
const gdcmm::DataElement& deX1 = nestedds.GetDataElement( tX1 );
const gdcmm::DataElement& deY1 = nestedds.GetDataElement( tY1 );
//std::cout << deX0 << std::endl << deY0 << std::endl << deX1 << std::endl << deY1 << std::endl;

//const gdcmm::ByteValue *bvX0 = deX0.GetByteValue();
//const gdcmm::ByteValue *bvY0 = deY0.GetByteValue();
//const gdcmm::ByteValue *bvX1 = deX1.GetByteValue();
//const gdcmm::ByteValue *bvY1 = deY1.GetByteValue();
//std::cout << bvX0 << std::endl << bvY0 << std::endl << bvX1 << std::endl << bvY1 << std::endl;

gdcmm::Attribute<0x0018,0x6018> atX0;
gdcmm::Attribute<0x0018,0x601a> atY0;
gdcmm::Attribute<0x0018,0x601c> atX1;
gdcmm::Attribute<0x0018,0x601e> atY1;
atX0.SetFromDataElement( deX0 );
atY0.SetFromDataElement( deY0 );
atX1.SetFromDataElement( deX1 );
atY1.SetFromDataElement( deY1 );
uint32_t X0 = atX0.GetValue();
uint32_t Y0 = atY0.GetValue();
uint32_t X1 = atX1.GetValue();
uint32_t Y1 = atY1.GetValue();
std::cout << X0 << std::endl << Y0 << std::endl << X1 << std::endl << Y1 << std::endl;

*X_min = static_cast<unsigned int>(X0);
*Y_min = static_cast<unsigned int>(Y0);
*X_max = static_cast<unsigned int>(X1);
*Y_max = static_cast<unsigned int>(Y1);

//std::cout << "X_min = " << *X_min << std::endl;
//std::cout << "Y_min = " << *Y_min << std::endl;
//std::cout << "X_max = " << *X_max << std::endl;
//std::cout << "Y_max = " << *Y_max << std::endl;

return true;
}

```

27.73 GetSubSequenceData.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre

```

All rights reserved.
See Copyright.txt or <http://gdcm.sourceforge.net/Copyright.html> for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

```

=====*/
#include "gdcmReader.h"
#include "gdcmImage.h"
#include "gdcmImageWriter.h"
#include "gdcmDataElement.h"
#include "gdcmPrivateTag.h"
#include "gdcmUIDGenerator.h"

#include <iostream>
#include <string>

#include <map>

/*
 * This example will extract the Movie from the private group of
 * GEMS_Ultrasound_MovieGroup_001 See Attribute
 * (7fe1,60,GEMS_Ultrasound_MovieGroup_001)
 *
 * The output file will be stored in 'outvid.dcm' as
 * MultiframeGrayscaleByteSecondaryCaptureImageStorage
 */
int main(int argc, char *argv[])
{
    if( argc < 2 ) return 1;
    using namespace gdcm;
    const char *filename = argv[1];
    gdcm::Reader reader;
    reader.SetFileName( filename );
    reader.Read();

    gdcm::File &file = reader.GetFile();
    gdcm::DataSet &ds = file.GetDataSet();
    const PrivateTag tseq(0x7fe1,0x1,"GEMS_Ultrasound_MovieGroup_001");

    if( !ds.FindDataElement( tseq ) ) return 1;
    const DataElement& seq = ds.GetDataElement( tseq );

    SmartPointer<SequenceOfItems> sqi = seq.GetValueAsSQ();
    assert( sqi->GetNumberOfItems() == 1 );
    Item &item = sqi->GetItem(1);
    DataSet &subds = item.GetNestedDataSet();

    const PrivateTag tseq1(0x7fe1,0x10,"GEMS_Ultrasound_MovieGroup_001");

    if( !subds.FindDataElement( tseq1 ) ) return 1;
    const DataElement& seq1 = subds.GetDataElement( tseq1 );

    SmartPointer<SequenceOfItems> sqi2 = seq1.GetValueAsSQ();
    //int n = sqi2->GetNumberOfItems();
    int index = 1;
    Item &item2 = sqi2->GetItem(index);
    DataSet &subds2 = item2.GetNestedDataSet();

    const PrivateTag tseq2(0x7fe1,0x20,"GEMS_Ultrasound_MovieGroup_001");

    if( !subds2.FindDataElement( tseq2 ) ) return 1;
    const DataElement& seq2 = subds2.GetDataElement( tseq2 );

    //    std::cout << seq2 << std::endl;

    SmartPointer<SequenceOfItems> sqi3 = seq2.GetValueAsSQ();
    size_t ni3 = sqi3->GetNumberOfItems(); (void)ni3;
    assert( sqi3->GetNumberOfItems() >= 1 );
    Item &item3 = sqi3->GetItem(1);
    DataSet &subds3 = item3.GetNestedDataSet();

    const PrivateTag tseq6(0x7fe1,0x26,"GEMS_Ultrasound_MovieGroup_001");
    if( !subds3.FindDataElement( tseq6 ) ) return 1;
    const DataElement& seq6 = subds3.GetDataElement( tseq6 );
    SmartPointer<SequenceOfItems> sqi6 = seq6.GetValueAsSQ();
    size_t ni6= sqi6->GetNumberOfItems();
    assert( sqi6->GetNumberOfItems() >= 1 );
    const PrivateTag tseq7(0x7fe1,0x86,"GEMS_Ultrasound_MovieGroup_001");
    int dimx = 0, dimy = 0;

```

```

for( size_t i6 = 1; i6 <= ni6; ++i6 )
{
    Item &item6 = sqi6->GetItem(i6);
    DataSet &subds6 = item6.GetNestedDataSet();

    if( subds6.FindDataElement( tseq7 ) )
    {
        Element<VR::SL, VM::VM4> el;
        el.SetFromDataElement( subds6.GetDataElement( tseq7 ) );
        std::cout << "El= " << el.GetValue() << std::endl;
        dimx = el.GetValue(0);
        dimy = el.GetValue(1);
    }
}

const PrivateTag tseq3(0x7fe1,0x36,"GEMS_Ultrasound_MovieGroup_001");
if( !subds3.FindDataElement( tseq3 ) ) return 1;
const DataElement& seq3 = subds3.GetDataElement( tseq3 );

//      std::cout << seq3 << std::endl;

SmartPointer<SequenceOfItems> sqi4 = seq3.GetValueAsSQ();
size_t ni4= sqi4->GetNumberOfItems();
assert( sqi4->GetNumberOfItems() >= 1 );
const PrivateTag tseq8(0x7fe1,0x37,"GEMS_Ultrasound_MovieGroup_001");
const PrivateTag tseq4(0x7fe1,0x43,"GEMS_Ultrasound_MovieGroup_001");
const PrivateTag tseq5(0x7fe1,0x60,"GEMS_Ultrasound_MovieGroup_001");

std::vector<char> imbuffer;
int dimz = 0;
for( size_t i4 = 1; i4 <= ni4; ++i4 )
{
    Item &item4 = sqi4->GetItem(i4);
    DataSet &subds4 = item4.GetNestedDataSet();

    if( !subds4.FindDataElement( tseq8 ) ) return 1;
    const DataElement& de8 = subds4.GetDataElement( tseq8 );
    Element<VR::UL,VM::VM1> ldimz;
    ldimz.SetFromDataElement( de8 );
    dimz += ldimz.GetValue();
    if( !subds4.FindDataElement( tseq4 ) ) return 1;
    const DataElement& seq4 = subds4.GetDataElement( tseq4 );
    if( !subds4.FindDataElement( tseq5 ) ) return 1;
    const DataElement& seq5 = subds4.GetDataElement( tseq5 );

    //      std::cout << seq4 << std::endl;
    //      std::cout << seq5 << std::endl;

    const ByteValue *bv4 = seq4.GetByteValue();
    (void)bv4;
#ifdef 0
    {
        std::ofstream out( "/tmp/mo4" );
        out.write( bv4->GetPointer(), bv4->GetLength());
        out.close();
    }
#endif
    const ByteValue *bv5 = seq5.GetByteValue();
#ifdef 0
    {
        std::ofstream out( "/tmp/mo5" );
        out.write( bv5->GetPointer(), bv5->GetLength());
        out.close();
    }
#endif

    std::cout << bv5->GetLength() << std::endl;
    imbuffer.insert( imbuffer.begin(), bv5->GetPointer(), bv5->
        GetPointer() + bv5->GetLength() );
}
DataElement fakedata;
fakedata.SetByteValue( &imbuffer[0], (uint32_t)imbuffer.size() );

gdcm::SmartPointer<gdcm::Image> im = new
    gdcm::Image;
im->SetNumberOfDimensions( 3 );

im->SetDimension(0, dimx );
im->SetDimension(1, dimy );
im->SetDimension(2, dimz );

```

```

size_t l1 = imbuffer.size();
(void)l1;
size_t l2 = im->GetBufferLength();
(void)l2;
assert( im->GetBufferLength() == imbuffer.size() );
im->SetPhotometricInterpretation( gdcm::PhotometricInterpretation::MONOCHROME2
    );

im->SetDataElement( fakedata );

gdcm::ImageWriter w;
w.SetImage( *im );
DataSet &dataset = w.GetFile().GetDataSet();

gdcm::UIDGenerator uid;
gdcm::DataElement de( Tag(0x8,0x18) ); // SOP Instance UID
de.SetVR( VR:UI );
const char *u = uid.Generate();
de.SetByteValue( u, (uint32_t)strlen(u) );
//ds.Insert( de );
dataset.Replace( de );

de.SetTag( Tag(0x8,0x16) ); // SOP Class UID
de.SetVR( VR:UI );
gdcm::MediaStorage ms(
    gdcm::MediaStorage::MultiframeGrayscaleByteSecondaryCaptureImageStorage
);
de.SetByteValue( ms.GetString(), (uint32_t)strlen(ms.
    GetString()) );
dataset.Replace( de ); // replace !

w.SetFileName( "outvid.dcm" );
if( !w.Write() )
{
    return 1;
}

return 0;
}

```

27.74 headsq2dcm.py

```

1 #####
2 #
3 #   Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 #   Copyright (c) 2006-2011 Mathieu Malaterre
6 #   All rights reserved.
7 #   See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.
8 #
9 #   This software is distributed WITHOUT ANY WARRANTY; without even
10 #   the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 #   PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 """
16 Usage:
17 python headsq2dcm.py -D /path/to/VTKData
18 """
19
20 import vtk
21 import vtkgdcm
22 from vtk.util.misc import vtkGetDataRoot
23 VTK_DATA_ROOT = vtkGetDataRoot()
24
25 reader = vtk.vtkVolume16Reader()
26 reader.SetDataDimensions(64, 64)
27 reader.SetDataByteOrderToLittleEndian()
28 reader.SetFilePrefix(VTK_DATA_ROOT + "/Data/headsq/quarter")
29 reader.SetImageRange(1, 93)
30 reader.SetDataSpacing(3.2, 3.2, 1.5)
31
32 cast = vtk.vtkImageCast()
33 cast.SetInput( reader.GetOutput() )
34 cast.SetOutputScalarTypeToUnsignedChar()
35

```



```

36 # By default this is creating a Multiframe Grayscale Word Secondary Capture Image Storage
37 writer = vtkgdcmm.vtkGDCMImageWriter()
38 writer.SetFileName( "headsqa.dcm" )
39 writer.SetInput( reader.GetOutput() )
40 # cast -> Multiframe Grayscale Byte Secondary Capture Image Storage
41 #writer.SetInput( cast.GetOutput() )
42 writer.SetFileDimensionality( 3 )
43 writer.Write()

```

27.75 HelloActiviz.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
using vtkgdcmm;
using Kitware.VTK;
using System;
using System.Runtime.InteropServices;

/*
 * This example shows how vtkgdcmm can be connected to Kitware.VTK Activiz product.
 * Three (3) arguments are required:
 * 1. Input DICOM file (SWIG)
 * 2. Temporary PNG (intermediate) file (Activiz)
 * 3. Final DICOM file (SWIG)
 *
 * $ export MONO_PATH=/usr/lib/cli/Activiz.NET:/usr/lib/cli/Kitware.mummy.Runtime-1.0
 * $ mono ./bin/HelloActiviz.exe ~/Creatis/gdcmData/test.acr out.png toto.dcm
 *
 * Footnote:
 * this test originally used vtkBMPWriter / vtkBMPReader combination to store intermediate
 * image file, but BMP file are 24bits by default. Instead use PNG format which supports seems
 * to be closer to what was expected in this simple test.
 */
public class HelloActiviz
{
    // Does not work with Activiz.NET-5.4.0.455-Linux-x86_64-Personal
    /*
    static void ConnectSWIGToActiviz(Kitware.VTK.vtkImageExport imgin, Kitware.VTK.vtkImageImport imgout)
    {
        imgout.SetUpdateInformationCallback(imgin.GetUpdateInformationCallback());
        imgout.SetPipelineModifiedCallback(imgin.GetPipelineModifiedCallback());
        imgout.SetWholeExtentCallback(imgin.GetWholeExtentCallback());
        imgout.SetSpacingCallback(imgin.GetSpacingCallback());
        imgout.SetOriginCallback(imgin.GetOriginCallback());
        imgout.SetScalarTypeCallback(imgin.GetScalarTypeCallback());
        imgout.SetNumberOfComponentsCallback(imgin.GetNumberOfComponentsCallback());
        imgout.SetPropagateUpdateExtentCallback(imgin.GetPropagateUpdateExtentCallback());
        imgout.SetUpdateDataCallback(imgin.GetUpdateDataCallback());
        imgout.SetDataExtentCallback(imgin.GetDataExtentCallback());
        imgout.SetBufferPointerCallback(imgin.GetBufferPointerCallback());
        imgout.SetCallbackUserData(imgin.GetCallbackUserData());
    }
    */

    static Kitware.VTK.vtkImageData ConnectSWIGToActiviz(vtkgdcmm.vtkImageData imgin)
    {
        IntPtr rawCppThis = imgin.GetCppThis();
        Kitware.VTK.vtkImageData imgout = new Kitware.VTK.vtkImageData( rawCppThis.Handle, false, false);
        return imgout;
    }

    static vtkgdcmm.vtkImageData ConnectActivizToSWIG(Kitware.VTK.vtkImageData imgin)
    {
        IntPtr rawCppThis = imgin.GetCppThis();
        vtkgdcmm.vtkImageData imgout = new vtkgdcmm.vtkImageData( rawCppThis );
        return imgout;
    }
}

```

```

    }

    public static int Main(string[] args)
    {
        string filename = args[0];
        string outfilename = args[1];

        // Step 1. Test SWIG -> Activiz
        vtkGDCMImageReader reader = vtkGDCMImageReader.
            New();
        reader.SetFileName( filename );
        //reader.Update(); // DO NOT call Update to check pipeline execution

        Kitware.VTK.vtkImageData imgout = ConnectSWIGToActiviz( reader.GetOutput() );

        System.Console.WriteLine( imgout.ToString() ); // not initialized as expected

        vtkPNGWriter writer = new vtkPNGWriter();
        writer.SetInput( imgout );
        writer.SetFileName( outfilename );
        writer.Write();

        // Step 2. Test Activiz -> SWIG
        vtkPNGReader bmpreader = new vtkPNGReader();
        bmpreader.SetFileName( outfilename );
        //bmpreader.Update(); // DO NOT update to check pipeline execution

        System.Console.WriteLine( bmpreader.GetOutput().ToString() ); // not initialized as expected

        vtkgdcml.vtkImageData imgout2 = ConnectActivizToSWIG(bmpreader.GetOutput());

        System.Console.WriteLine( imgout2.ToString() ); // not initialized as expected

        Kitware.VTK.vtkMedicalImageProperties prop = new Kitware.VTK.vtkMedicalImageProperties();
        prop.SetModality( "MR" );

        string outfilename2 = args[2];
        vtkGDCMImageWriter writer2 = vtkGDCMImageWriter.
            New();
        writer2.SetMedicalImageProperties( prop.CastToActiviz() );
        writer2.SetFileName( outfilename2 );
        writer2.SetInput( imgout2 );
        writer2.Write();

        return 0;
    }
}

```

27.76 HelloActiviz2.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcml.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
using Kitware.VTK;
using Kitware.VTK.GDCM;

/*
 * Usage:
 * $ export MONO_PATH=/usr/lib/cli/Activiz.NET:/usr/lib/cli/Kitware.mummy.Runtime-1.0
 * $ mono ./bin/HelloActiviz2.exe gdcml/test.acr bla.png bla2.dcm
 */

/*
 * From the outside view, no-one can detect that object pass to/from
 * vtkGDCMImageWriter/vtkGDCMImageReader are not Activiz object.
 */

```

```

*
* TODO: Test Command/Observer
*/
public class HelloActiviz2
{
    public static int Main(string[] args)
    {
        string filename = args[0];
        string outfilename = args[1];
        string outfilename2 = args[2];

        vtkGDCMImageReader reader = new Kitware.VTK.GDCM.
            vtkGDCMImageReader();
        reader.SetFileName( filename );

        // When calling multiple times creation of C# object from the same C++ object it triggers a:
        //error: potential refcounting error: Duplicate rawCppThis - weak reference that is still alive. Attempting
        //to add '0x00b2dc10' again.
        //    Allowing new wrapped object to take over table key...
        //    Original object should *not* have been destroyed while we still had it in our table without
        //    notifying us...
        //reader.GetOutput();
        //reader.GetOutput();

        System.Console.WriteLine( reader.ToString() ); // Test the ToString compat with Activiz

        vtkGDCMImageWriter writer = new vtkGDCMImageWriter();
        writer.SetInput( reader.GetOutput() );
        writer.SetFileName( outfilename2 );
        writer.Write();

        System.Console.WriteLine( reader.GetOutput().ToString() ); // Test the ToString compat with Activiz

        System.Console.WriteLine( writer.ToString() ); // Test the ToString compat with Activiz

        vtkPNGWriter pngwriter = new vtkPNGWriter();
        pngwriter.SetInput( reader.GetOutput() );
        pngwriter.SetFileName( outfilename );
        pngwriter.Write();

        // at that point the .Write() should have triggered an Update() on the reader:
        if( reader.GetImageFormat() == vtkgdc.VTK_LUMINANCE ) // MONOCHROME2
        {
            System.Console.WriteLine( "Image is MONOCHROME2" ); //
        }

        vtkPNGReader bmpreader = new vtkPNGReader();
        bmpreader.SetFileName( outfilename );

        vtkMedicalImageProperties prop = new vtkMedicalImageProperties();
        prop.SetModality( "MR" );

        vtkMatrix4x4 dircos = reader.GetDirectionCosines();
        dircos.Invert();

        vtkGDCMImageWriter writer2 = new vtkGDCMImageWriter();
        writer2.SetFileName( outfilename2 );
        writer2.SetDirectionCosines( dircos );
        writer2.SetMedicalImageProperties( prop );
        writer2.SetInput( bmpreader.GetOutput() );
        writer2.Write();

        return 0;
    }
}

```

27.77 HelloActiviz3.cs

```

/*=====

Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdc.sourceforge.net/Copyright.html for details.

    This software is distributed WITHOUT ANY WARRANTY; without even

```

```

        the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
        PURPOSE. See the above copyright notice for more information.

=====*/
using Kitware.VTK;
using Kitware.VTK.GDCM;

/*
 * $ export MONO_PATH=/usr/lib/cli/Activiz.NET:/usr/lib/cli/Kitware.mummy.Runtime-1.0
 * $ mono ./bin/HelloActiviz3.exe ~/Creatis/gdcmData/test.acr
 */
public class HelloActiviz3
{
    public static int Main(string[] args)
    {
        string filename = args[0];

        vtkGDCMImageReader reader = vtkGDCMImageReader.
            New();
        vtkStringArray array = vtkStringArray.New();
        array.InsertNextValue(filename);

        reader.SetFileNames(array);
        reader.Update();

        //System.Console.WriteLine(reader.GetOutput());

        vtkRenderWindowInteractor iren = vtkRenderWindowInteractor.New();

        vtkImageViewer2 viewer = vtkImageViewer2.New();
        viewer.SetInput(reader.GetOutput());
        viewer.SetupInteractor(iren);
        viewer.SetSize(600, 600);
        viewer.Render();

        iren.Initialize();
        iren.Start();

        return 0;
    }
}

```

27.78 HelloActiviz4.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
using Kitware.VTK;
using Kitware.VTK.GDCM;

/*
 * $ export MONO_PATH=/usr/lib/cli/Activiz.NET:/usr/lib/cli/Kitware.mummy.Runtime-1.0
 * $ mono ./bin/HelloActiviz4.exe ~/Creatis/gdcmData/test.acr
 */
public class HelloActiviz4
{
    public static int Main(string[] args)
    {
        string filename = args[0];

        vtkGDCMImageReader reader = new vtkGDCMImageReader();
        vtkStringArray array = vtkStringArray.New();
        array.InsertNextValue(filename);

        reader.SetFileNames(array);
        reader.Update();
    }
}

```

```

        //System.Console.Write(reader.GetOutput());

        vtkRenderWindowInteractor iren = vtkRenderWindowInteractor.New();

        vtkImageViewer viewer = vtkImageViewer.New();
        viewer.SetInput(reader.GetOutput());
        viewer.SetupInteractor(iren);
        viewer.SetSize(600, 600);
        viewer.Render();

        iren.Initialize();
        iren.Start();

        return 0;
    }
}

```

27.79 HelloActiviz5.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcml.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
using Kitware.VTK;
using Kitware.VTK.GDCM;

// The command line arguments are:
// -I      => run in interactive mode; unless this is used, the program will
//          not allow interaction and exit
// -D <path> => path to the data; the data should be in <path>/Data/

/*
 * $ export MONO_PATH=/usr/lib/cli/Activiz.NET:/usr/lib/cli/Kitware.mummy.Runtime-1.0
 * $ mono ./bin/HelloActiviz5.exe -I
 */
public class HelloActiviz5
{
    public static int Main(string[] args)
    {
        vtkTesting testHelper = vtkTesting.New();
        for (int cc = 0; cc < args.Length; cc++)
        {
            //testHelper.AddArguments(argc, const_cast<const char **>(argv));
            //System.Console.Write( "args: " + args[cc] + "\n" );
            testHelper.AddArgument( args[cc] );
        }
        if ( testHelper.IsFlagSpecified("-D") != 0 )
        {
            string VTK_DATA_ROOT = vtkGDCMTesting.GetVTKDataRoot();
            if ( VTK_DATA_ROOT != null )
            {
                //System.Console.Write( "VTK_DATA_ROOT: " + VTK_DATA_ROOT + "\n" );
                testHelper.SetDataRoot( VTK_DATA_ROOT );
                testHelper.AddArgument( "-D" );
                testHelper.AddArgument( VTK_DATA_ROOT );
            }
        }

        string dataRoot = testHelper.GetDataRoot();
        string filename = dataRoot;
        filename += "/Data/mr.001";

        vtkDirectory dir = vtkDirectory.New();
        if ( dir.FileIsDirectory( dataRoot ) == 0 )
        {
            filename = vtkGDCMTesting.GetGDCMDataRoot() + "/test.acr";
        }
        //System.Console.Write( "dataRoot: " + dataRoot + "\n" );
    }
}

```

```

System.Console.WriteLine( "filename being used is: " + filename + "\n" );

vtkGDCMImageReader reader = vtkGDCMImageReader.
    New();
vtkStringArray array = vtkStringArray.New();
array.InsertNextValue(filename);
reader.SetFileNames(array);
reader.Update();

System.Console.WriteLine(reader.GetOutput());

vtkRenderWindowInteractor iren = vtkRenderWindowInteractor.New();

vtkRenderer ren1 = vtkRenderer.New();
vtkRenderWindow renWin = vtkRenderWindow.New();
renWin.AddRenderer(ren1);

vtkImageActor actor = vtkImageActor.New();

vtkImageMapToWindowLevelColors coronalColors = vtkImageMapToWindowLevelColors.
    New();
coronalColors.SetInput(reader.GetOutput());

actor.SetInput(coronalColors.GetOutput());

ren1.AddActor(actor);
iren.SetRenderWindow(renWin);

iren.Initialize();

renWin.Render();

int retVal = testHelper.IsInteractiveModeSpecified();

if( retVal != 0 )
{
    iren.Start();
}

return 0;
}

```

27.80 HelloSimple.java

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/
/*
 * Compilation:
 * $ CLASSPATH=gdcm.jar javac ../../gdcm/Examples/Java/HelloSimple.java -d .
 *
 * Usage:
 * $ LD_LIBRARY_PATH=. CLASSPATH=gdcm.jar:. java HelloSimple gdcmData/012345.002.050.dcm
 */
import gdcm.*;

public class HelloSimple
{
    public static void main(String[] args) throws Exception
    {
        String filename = args[0];
        Reader reader = new Reader();
        reader.SetFileName( filename );
        boolean ret = reader.Read();
        if( !ret )
        {

```

```

        throw new Exception("Could not read: " + filename );
    }
    File f = reader.GetFile();
    DataSet ds = f.GetDataSet();

    System.out.println( ds.toString() );

    System.out.println("Success reading: " + filename );
}
}

```

27.81 HelloVizWorld.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcml.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/
/*
 * Basic example for dealing with a DICOM file that contains an Image
 * (read: Pixel Data element)
 */

#include "gdcmlImageReader.h"
#include "gdcmlImageWriter.h"
#include "gdcmlImage.h"
#include "gdcmlPhotometricInterpretation.h"

#include <iostream>

int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        std::cerr << argv[0] << " input.dcm output.dcm" << std::endl;
        return 1;
    }
    const char *filename = argv[1];
    const char *outfilename = argv[2];

    // Instantiate the image reader:
    gdcml::ImageReader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        std::cerr << "Could not read: " << filename << std::endl;
        return 1;
    }
    // If we reach here, we know for sure 2 things:
    // 1. It is a valid DICOM
    // 2. And it contains an Image !

    // The output of superclass gdcml::Reader is a gdcml::File
    //gdcml::File &file = reader.GetFile();

    // The other output of gdcml::ImageReader is a gdcml::Image
    const gdcml::Image &image = reader.GetImage();

    // Let's get some property from the image:
    unsigned int ndim = image.GetNumberOfDimensions();
    // Dimensions of the image:
    const unsigned int *dims = image.GetDimensions();
    // Origin
    const double *origin = image.GetOrigin();
    const gdcml::PhotometricInterpretation &pi = image.
        GetPhotometricInterpretation();
    for(unsigned int i = 0; i < ndim; ++i)
    {
        std::cout << "Dim(" << i << "): " << dims[i] << std::endl;
    }
}

```

```

    }
    for(unsigned int i = 0; i < ndim; ++i)
    {
        std::cout << "Origin(" << i << "): " << origin[i] << std::endl;
    }
    std::cout << "PhotometricInterpretation: " << pi << std::endl;

    // Write the modified DataSet back to disk
    gdc::ImageWriter writer;
    writer.SetImage( image );
    writer.SetFileName( outfilename );
    //writer.SetFile( file ); // We purposely NOT copy the meta information from the input
                                // file, and instead only pass the image
    if( !writer.Write() )
    {
        std::cerr << "Could not write: " << outfilename << std::endl;
        return 1;
    }

    return 0;
}

```

27.82 HelloVTKWorld.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/
using vtkgdcm;

/*
 * This test only test the SWIG/VTK part, you do not need Activiz
 */
public class HelloVTKWorld
{
    public static int Main(string[] args)
    {
        {
            string filename = args[0];
            vtkGDCMImageReader reader = vtkGDCMImageReader.
                New();
            reader.SetFileName( filename );
            reader.Update();

            vtkMedicalImageProperties prop = reader.GetMedicalImageProperties();
            System.Console.WriteLine( prop.GetPatientName() ); //

            if( reader.GetImageFormat() == vtkgdcm.vtkgdcm.VTK_LUMINANCE ) // MONOCHROME2
            {
                System.Console.WriteLine( "Image is MONOCHROME2" ); //
            }

            // Just for fun, invert the direction cosines, output should reflect that:
            vtkMatrix4x4 dircos = reader.GetDirectionCosines();
            dircos.Invert();

            string outfilename = args[1];
            vtkGDCMImageWriter writer = vtkGDCMImageWriter.
                New();
            writer.SetMedicalImageProperties( reader.GetMedicalImageProperties() );
            writer.SetDirectionCosines( dircos );
            writer.SetShift( reader.GetShift() );
            writer.SetScale( reader.GetScale() );
            writer.SetImageFormat( reader.GetImageFormat() );
            writer.SetFileName( outfilename );
            //writer.SetInputConnection( reader.GetOutputPort() ); // new
            writer.SetInput( reader.GetOutput() ); // old
            writer.Write();
        }
    }
}

```



```

    return 0;
}

```

27.83 HelloVTKWorld.java

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/
// We are required to call the package 'vtk' eventhough I (MM) would have preferred
// an import statement along the line of:
// import vtkgdc.*;
import vtk.*;

/*
 * Compilation:
 * CLASSPATH=vtkgdc.jar:/usr/share/java/vtk.jar javac HelloVTKWorld.java
 *
 * Usage:
 * LD_LIBRARY_PATH=/usr/lib/jvm/java-6-openjdk/jre/lib/amd64/xawt:/usr/lib/jni:. CLASSPATH=/usr/share/java/
   vtk.jar:vtkgdc.jar:gdcm.jar:. java HelloVTKWorld gdcmData/012345.002.050.dcm bla.dcm
 */
public class HelloVTKWorld
{
    static {
        System.loadLibrary("vtkCommonJava");
        System.loadLibrary("vtkFilteringJava");
        System.loadLibrary("vtkIOJava");
        System.loadLibrary("vtkImagingJava");
        System.loadLibrary("vtkGraphicsJava");
        System.loadLibrary("vtkgdcJava");
        try {
            System.loadLibrary("vtkRenderingJava");
        } catch (Throwable e) {
            System.out.println("cannot load vtkHybrid, skipping...");
        }
        try {
            System.loadLibrary("vtkHybridJava");
        } catch (Throwable e) {
            System.out.println("cannot load vtkHybrid, skipping...");
        }
        try {
            System.loadLibrary("vtkVolumeRenderingJava");
        } catch (Throwable e) {
            System.out.println("cannot load vtkVolumeRendering, skipping...");
        }
    }

    public static void main(String[] args)
    {
        String filename = args[0];
        vtkGDCMImageReader reader = new vtkGDCMImageReader();
        reader.SetFileName( filename );
        reader.Update();

        vtkMedicalImageProperties prop = reader.GetMedicalImageProperties();
        System.out.println( prop.GetPatientName() ); //

        // if( reader.GetImageFormat() == vtkgdc.vtkgdc.VTK_LUMINANCE ) // MONOCHROME2
        // {
        //     System.out.println( "Image is MONOCHROME2" ); //
        // }

        // Just for fun, invert the direction cosines, output should reflect that:
        vtkMatrix4x4 dircos = reader.GetDirectionCosines();
        dircos.Invert();
    }
}

```

```

// We need to maintain in sync information stored in vtkMedicalImageProperties:
double[] cosines = new double[6];
cosines[0] = dircos.GetElement(0,0);
cosines[1] = dircos.GetElement(1,0);
cosines[2] = dircos.GetElement(2,0);
cosines[3] = dircos.GetElement(0,1);
cosines[4] = dircos.GetElement(1,1);
cosines[5] = dircos.GetElement(2,1);
reader.GetMedicalImageProperties().SetDirectionCosine( cosines );

String outfilename = args[1];
vtkGDCMImageWriter writer = new vtkGDCMImageWriter();
writer.SetMedicalImageProperties( reader.GetMedicalImageProperties() );
writer.SetDirectionCosines( dircos );
writer.SetShift( reader.GetShift() );
writer.SetScale( reader.GetScale() );
writer.SetImageFormat( reader.GetImageFormat() );
writer.SetFileName( outfilename );
//writer.SetInputConnection( reader.GetOutputPort() ); // new
writer.SetInput( reader.GetOutput() ); // old
writer.Write();

System.out.println("Success reading: " + filename );
}
}

```

27.84 HelloVTKWorld2.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/
using vtkgdcml;

/*
 * This test only test the SWIG/VTK part, you do not need Activiz
 */
public class HelloVTKWorld2
{
    public static int Main(string[] args)
    {
        string VTK_DATA_ROOT = vtkGDCMTesting.GetVTKDataRoot();

        vtkVolumel6Reader reader = vtkVolumel6Reader.New();
        reader.SetDataDimensions(64, 64);
        reader.SetDataByteOrderToLittleEndian();
        reader.SetFilePrefix(VTK_DATA_ROOT + "/Data/headsq/quarter");
        reader.SetImageRange(1, 93);
        reader.SetDataSpacing(3.2, 3.2, 1.5);

        vtkImageCast cast = vtkImageCast.New();
        cast.SetInput( reader.GetOutput() );
        cast.SetOutputScalarTypeToUnsignedChar();

        // By default this is creating a Multiframe Grayscale Word Secondary Capture Image Storage
        vtkGDCMImageWriter writer = vtkGDCMImageWriter.
            New();
        writer.SetFileName( "headsq.dcm" );
        writer.SetInput( reader.GetOutput() );
        // cast -> Multiframe Grayscale Byte Secondary Capture Image Storage
        // writer.SetInput( cast.GetOutput() );
        writer.SetFileDimensionality( 3 );
        writer.Write();

        return 0;
    }
}

```

27.85 HelloWorld.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
/*
 * This example is ... guess what this is for :)
 */

#include "gdcmReader.h"
#include "gdcmWriter.h"
#include "gdcmAttribute.h"

#include <iostream>

int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        std::cerr << argv[0] << " input.dcm output.dcm" << std::endl;
        return 1;
    }
    const char *filename = argv[1];
    const char *outfilename = argv[2];

    // Instantiate the reader:
    gdcm::Reader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        std::cerr << "Could not read: " << filename << std::endl;
        return 1;
    }

    // If we reach here, we know for sure only 1 thing:
    // It is a valid DICOM file (potentially an old ACR-NEMA 1.0/2.0 file)
    // (Maybe, it's NOT a Dicom image -could be a DICOMDIR, a RTSTRUCT, etc-)

    // The output of gdcm::Reader is a gdcm::File
    gdcm::File &file = reader.GetFile();

    // the dataset is the the set of element we are interested in:
    gdcm::DataSet &ds = file.GetDataSet();

    // Construct a static(*) type for Image Comments :
    gdcm::Attribute<0x0020,0x4000> imagecomments;
    imagecomments.SetValue( "Hello, World !" );

    // Now replace the Image Comments from the dataset with our:
    ds.Replace( imagecomments.GetAsDataElement() );

    // Write the modified DataSet back to disk
    gdcm::Writer writer;
    writer.CheckFileMetaInformationOff(); // Do not attempt to reconstruct the
        file meta to preserve the file // as close to the original as possible.

    writer.SetFileName( outfile );
    writer.SetFile( file );
    if( !writer.Write() )
    {
        std::cerr << "Could not write: " << outfile << std::endl;
        return 1;
    }

    return 0;
}

/*
 * (*) static type, means that extra DICOM information VR & VM are computed at compilation time.
 * The compiler is deducing those values from the template arguments of the class.

```

*/

27.86 HelloWorld.py

```

1 #####
2 #
3 # Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 # Copyright (c) 2006-2011 Mathieu Malaterre
6 # All rights reserved.
7 # See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.
8 #
9 # This software is distributed WITHOUT ANY WARRANTY; without even
10 # the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 # PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 """
16 Hello World !
17 """
18
19 import gdcm
20 import sys
21
22 if __name__ == "__main__":
23
24     # verbosity:
25     #gdcm.Trace.DebugOn()
26     #gdcm.Trace.WarningOn()
27     #gdcm.Trace.ErrorOn()
28
29     # Get the filename from the command line
30     filename = sys.argv[1]
31
32     # Instantiate a gdcm.Reader
33     # This is the main class to handle any type of DICOM object
34     # You should check for gdcm.ImageReader for reading specifically DICOM Image file
35     r = gdcm.Reader()
36     r.SetFileName( filename )
37     # If the reader fails to read the file, we should stop !
38     if not r.Read():
39         print "Not a valid DICOM file"
40         sys.exit(1)
41
42     # Get the DICOM File structure
43     file = r.GetFile()
44
45     # Get the DataSet part of the file
46     dataset = file.GetDataSet()
47
48     # Ok let's print it !
49     print dataset
50
51     # Use StringFilter to print a particular Tag:
52     sf = gdcm.StringFilter()
53     sf.SetFile(r.GetFile())
54
55     # Check if Attribute exist
56     print dataset.FindElement( gdcm.Tag(0x0028,0x0010) )
57
58     # Let's print it as string pair:
59     print sf.ToStringPair(gdcm.Tag(0x0028,0x0010))

```

27.87 iU22tomultisc.cxx

```

/*=====

Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

```

```

    This software is distributed WITHOUT ANY WARRANTY; without even
    the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
    PURPOSE. See the above copyright notice for more information.

=====*/
/*
 * iU22 Raw Data extractor
 */
#include "gdcmReader.h"
#include "gdcmImageWriter.h"
#include "gdcmAttribute.h"
#include "gdcmPrivateTag.h"

#include <math.h>

int main(int argc, char *argv [])
{
    if( argc < 2 ) return 1;
    // IM_001
    const char *filename = argv[1];

    gdcm::Reader reader; // Do not use ImageReader
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        std::cerr << "Failed to read: " << filename << std::endl;
        return 1;
    }

    // * The data is simply 8-bit unsigned in the obvious x/y/z order
    // * 200D,300B contains the data
    // * 200D,3001 contains the no. of voxels (416,412,256 in this case)
    // * 200D,3003 contains the voxel sizes (0.156184527398215 /
    // 0.1223749613981957 / 0.328479990704639 in this case)

    const gdcm::File &file = reader.GetFile();
    const gdcm::DataSet &ds = file.GetDataSet();
    const gdcm::PrivateTag trawdataus( 0x200d, 0x0b, "Philips US Imaging DD 033" );
    const gdcm::DataElement &rawdataus = ds.GetDataElement( trawdataus );

    const gdcm::PrivateTag tcolsrowsframes( 0x200d, 0x01, "Philips US Imaging DD 036" );
    const gdcm::DataElement &colsrowsframes = ds.GetDataElement(
        tcolsrowsframes );
    // const gdcm::PrivateTag tcolsrowsframes( 0x200d, 0x02, "Philips US Imaging DD 036" );
    // this is just a duplicate previous tag.
    const gdcm::PrivateTag tvoxelspacing( 0x200d, 0x03, "Philips US Imaging DD 036" );
    const gdcm::DataElement &voxelspacing = ds.GetDataElement( tvoxelspacing );
    ;

    gdcm::Element<gdcm::VR::DS, gdcm::VM::VM3> dims; // Use DS to
        interpret value stored in LO
    dims.SetFromDataElement( colsrowsframes );

    gdcm::Element<gdcm::VR::DS, gdcm::VM::VM3> spacing;
    spacing.SetFromDataElement( voxelspacing );

    gdcm::ImageWriter writer;

    gdcm::Image &image = writer.GetImage();
    image.SetNumberOfDimensions( 3 ); // good default
    image.SetDimension(0, (unsigned int)dims[0] );
    image.SetDimension(1, (unsigned int)dims[1] );
    image.SetDimension(2, (unsigned int)dims[2] );
    image.SetSpacing(0, spacing[0] );
    image.SetSpacing(1, spacing[1] );
    image.SetSpacing(2, spacing[2] );
    gdcm::PixelFormat pixeltype = gdcm::PixelFormat::UINT8;

    gdcm::PhotometricInterpretation pi;
    pi = gdcm::PhotometricInterpretation::MONOCHROME2;
    image.SetPhotometricInterpretation( pi );
    image.SetPixelFormat( pixeltype );

    image.SetDataElement( rawdataus );

    std::string outfilename = "outiu22.dcm";

    gdcm::DataElement de( gdcm::Tag(0x8,0x16) ); // SOP Class UID
    de.SetVR( gdcm::VR::UI );
    gdcm::MediaStorage ms(

```

```

        gdcmm::MediaStorage::UltrasoundMultiFrameImageStorage
    );
//    gdcmm::MediaStorage::MultiframeGrayscaleByteSecondaryCaptureImageStorage );
de.SetByteValue( ms.GetString(), (uint32_t)strlen(ms.
    GetString()));
writer.GetFile().GetDataSet().Replace( de );

writer.SetFileName( outfilename.c_str() );
if( !writer.Write() )
{
    std::cerr << "could not write: " << outfilename << std::endl;
    return 1;
}

return 0;
}

```

27.88 LargeVRDSExplicit.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "gdcmReader.h"
#include "gdcmWriter.h"
#include "gdcmAttribute.h"
#include "gdcmFileExplicitFilter.h"
#include "gdcmSequenceOfItems.h"

bool interpolate(const double * pts, size_t npts, std::vector<double> &out )
{
    out.clear();
    for(size_t i = 0; i < 2*npts; ++i )
    {
        const size_t j = i / 2;
        if( i % 2 )
        {
            if( j != npts - 1 )
            {
                assert( 3*j+5 < 3*npts );
                const double midpointx = (pts[3*j+0] + pts[3*j+3]) / 2;
                const double midpointy = (pts[3*j+1] + pts[3*j+4]) / 2;
                const double midpointz = (pts[3*j+2] + pts[3*j+5]) / 2;
                out.push_back( midpointx );
                out.push_back( midpointy );
                out.push_back( midpointz );
            }
        }
        else
        {
            assert( j < npts );
            out.push_back( pts[3*j+0] );
            out.push_back( pts[3*j+1] );
            out.push_back( pts[3*j+2] );
        }
    }
    assert( out.size() == 2 * npts * 3 - 3 );
    return true;
}

int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        std::cerr << argv[0] << " input.dcm output.dcm" << std::endl;
        return 1;
    }
}

```

```

const char *filename = argv[1];
const char *outfilename = argv[2];
gdcm::Reader reader;
reader.SetFileName( filename );
if( !reader.Read() )
{
    return 1;
}

gdcm::File &file = reader.GetFile();
gdcm::DataSet &ds = file.GetDataSet();

gdcm::FileExplicitFilter fef;
//fef.SetChangePrivateTags( changeprivatetags );
fef.SetFile( reader.GetFile() );
if( !fef.Change() )
{
    std::cerr << "Failed to change: " << filename << std::endl;
    return 1;
}

// (3006,0039) SQ (Sequence with undefined length #=4)      # u/1, 1 ROIContourSequence
gdcm::Tag tag(0x3006,0x0039);

const gdcm::DataElement &roicsq = ds.GetDataElement( tag );
gdcm::SmartPointer<gdcm::SequenceOfItems> sqi = roicsq.
    GetValueAsSQ();
//sqi->SetNumberOfItems( 1 );
const gdcm::Item & item = sqi->GetItem(1); // Item start at #1
const gdcm::DataSet& nesteddds = item.GetNestedDataSet();

gdcm::Tag tcsq(0x3006,0x0040);
if( !nesteddds.FindDataElement( tcsq ) )
{
    return 0;
}
const gdcm::DataElement& csq = nesteddds.GetDataElement( tcsq );
gdcm::SmartPointer<gdcm::SequenceOfItems> sqi2 = csq.
    GetValueAsSQ();
if( !sqi2 || !sqi2->GetNumberOfItems() )
{
    return 0;
}
//unsigned int nitems = sqi2->GetNumberOfItems();
gdcm::Item & item2 = sqi2->GetItem(1); // Item start at #1

gdcm::DataSet& nesteddds2 = item2.GetNestedDataSet();
//item2.SetVLToUndefined();
//std::cout << nesteddds2 << std::endl;
// (3006,0050) DS [43.57636\65.52504\ -10.0\46.043102\62.564945\ -10.0\49.126537\60.714... # 398,48
    ContourData
gdcm::Tag tcontourdata(0x3006,0x0050);
const gdcm::DataElement & contourdata = nesteddds2.
    GetDataElement( tcontourdata );
//std::cout << contourdata << std::endl;

//const gdcm::ByteValue *bv = contourdata.GetByteValue();
gdcm::Attribute<0x3006,0x0046> ncontourpoints;
ncontourpoints.Set( nesteddds2 );

gdcm::Attribute<0x3006,0x0050> at;
at.SetFromDataElement( contourdata );
const double* pts = at.GetValues();
unsigned int npts = at.GetNumberOfValues() / 3;

std::vector<double> out( pts, pts + npts * 3 );
std::vector<double> out2;

//const unsigned int niter = 7;
const unsigned int niter = 8;
for( unsigned int i = 0; i < niter; ++i)
{
    //bool b =
    interpolate(&out[0], out.size() / 3, out2);
    //const double *pout = &out[0];
    out = out2;
    out2.clear();
}
assert( out.size() % 3 == 0 );

gdcm::Attribute<0x3006,0x0050> at_interpolate;

```

```

at_interpolate.SetNumberOfValues( (unsigned int)(out.size() / 3) );
at_interpolate.SetValues( &out[0], (uint32_t)out.size() );

ncontourpoints.SetValue( at_interpolate.GetNumberOfValues() / 3 );
nesteddds2.Replace( at_interpolate.GetAsDataElement() );
nesteddds2.Replace( ncontourpoints.GetAsDataElement() );

//assert(0);

// Let's take item one and subdivide it

gdcmm::TransferSyntax ts =
    gdcmm::TransferSyntax::ImplicitVRLittleEndian;
ts = gdcmm::TransferSyntax::ExplicitVRLittleEndian;

gdcmm::FileMetaInformation &fmi = file.GetHeader();
const char *tsuid = gdcmm::TransferSyntax::GetTSString( ts );
// const char * is ok since padding is \0 anyway...
gdcmm::DataElement de( gdcmm::Tag(0x0002,0x0010) );
de.SetByteValue( tsuid, (uint32_t)strlen(tsuid) );
de.SetVR( gdcmm::Attribute<0x0002, 0x0010>::GetVR() );
fmi.Replace( de );
fmi.Remove( gdcmm::Tag(0x0002,0x0012) ); // will be regenerated
fmi.Remove( gdcmm::Tag(0x0002,0x0013) ); // ' ' ' '
fmi.SetDataSetTransferSyntax(ts);

gdcmm::Writer w;
w.SetFile( file );
w.SetFileName( outfilename );
if ( !w.Write() )
{
    return 1;
}

return 0;
}

```

27.89 MagnifyFile.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcmm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "vtkGDCMImageReader.h"
#include "vtkGDCMImageWriter.h"
#include "vtkImageData.h"
#include "vtkImageMagnify.h"
#include "vtkImageCast.h"

#include "gdcmmTesting.h"
#include "gdcmmSystem.h"

// This is a simple test to magnify an image that is known to give excellent
// compression ratio. This will be our test for those large image
int main(int, char *[])
{
    const char *directory = gdcmm::Testing::GetDataRoot();
    if(!directory) return 1;
    std::string file = std::string(directory) + "/test.acr";
    std::cout << file << std::endl;
    if( !gdcmm::System::FileExists( file.c_str() ) ) return 1;

    vtkGDCMImageReader *reader = vtkGDCMImageReader::New();
    reader->SetFileName( file.c_str() );
    reader->Update();
    //reader->GetOutput()->Print( std::cout );
}

```



```

vtkImageCast *cast = vtkImageCast::New();
cast->SetInput( reader->GetOutput() );
cast->SetOutputScalarTypeToUnsignedShort();

vtkImageMagnify *magnify = vtkImageMagnify::New();
magnify->SetInput( cast->GetOutput() );
magnify->SetInterpolate( 1 );
magnify->SetInterpolate( 0 );
int factor = 100;
magnify->SetMagnificationFactors (factor, factor, 1);

vtkGDCMImageWriter *writer = vtkGDCMImageWriter::New();
writer->SetFileName( "/tmp/bla.dcm" );
writer->SetInput( magnify->GetOutput() );
writer->SetImageFormat( reader->GetImageFormat() );
writer->SetMedicalImageProperties( reader->GetMedicalImageProperties() );
writer->SetDirectionCosines( reader->GetDirectionCosines() );
writer->SetShift( reader->GetShift() );
writer->SetScale( reader->GetScale() );
writer->Write();

// TODO:
//vtkImageAppendComponents.h

reader->Delete();
magnify->Delete();
writer->Delete();

return 0;
}

```

27.90 ManipulateFile.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/

/*
 * Usage:
 * $ export LD_LIBRARY_PATH=$HOME/Projects/gdcm/debug-gcc/bin
 * $ mono bin/ManipulateFile.exe gdcmData/012345.002.050.dcm out.dcm
 */
using System;
using gdcm;

public class ManipulateFile
{
    public static int Main(string[] args)
    {
        string file1 = args[0];
        string file2 = args[1];
        Reader reader = new Reader();
        reader.SetFileName( file1 );
        bool ret = reader.Read();
        if( !ret )
        {
            return 1;
        }

        Anonymizer ano = new Anonymizer();
        ano.SetFile( reader.GetFile() );
        ano.RemovePrivateTags();
        ano.RemoveGroupLength();
        Tag t = new Tag(0x10,0x10);
        ano.Replace( t, "GDCM^Csharp^Test^Hello^World" );

        UIDGenerator g = new UIDGenerator();
    }
}

```

```

    ano.Replace( new Tag(0x0008,0x0018), g.Generate() );
    ano.Replace( new Tag(0x0020,0x000d), g.Generate() );
    ano.Replace( new Tag(0x0020,0x000e), g.Generate() );
    ano.Replace( new Tag(0x0020,0x0052), g.Generate() );

    Writer writer = new Writer();
    writer.SetFileName( file2 );
    writer.SetFile( ano.GetFile() );
    ret = writer.Write();
    if( !ret )
    {
        return 1;
    }

    return 0;
}

```

27.91 ManipulateFile.py

```

1 #####
2 #
3 # Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 # Copyright (c) 2006-2011 Mathieu Malaterre
6 # All rights reserved.
7 # See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.
8 #
9 # This software is distributed WITHOUT ANY WARRANTY; without even
10 # the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 # PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 """
16 Usage:
17
18 python ManipulateFile.py input.dcm output.dcm
19
20 Footnote:
21 GDCM 1.2.x would create incorrect Multiframe MR Image Storage file. Try to recover from
22 the issues to recreate a MultiframeGrayscaleByteSecondaryCaptureImageStorage file.
23 e.g:
24
25 python ManipulateFile.py Insight/Testing/Temporary/itkGDCMImageIOtest5-j2k.dcm manipulated.dcm
26 """
27
28 import sys
29 import gdcm
30
31 if __name__ == "__main__":
32
33     file1 = sys.argv[1]
34     file2 = sys.argv[2]
35
36     r = gdcm.Reader()
37     r.SetFileName( file1 )
38     if not r.Read():
39         sys.exit(1)
40
41     ano = gdcm.Anonymizer()
42     ano.SetFile( r.GetFile() )
43     ano.RemovePrivateTags()
44     ano.Remove( gdcm.Tag(0x0032,0x1030) )
45     ano.Remove( gdcm.Tag(0x008,0x14) )
46     ano.Remove( gdcm.Tag(0x008,0x1111) )
47     ano.Remove( gdcm.Tag(0x008,0x1120) )
48     ano.Remove( gdcm.Tag(0x008,0x1140) )
49     ano.Remove( gdcm.Tag(0x10,0x21b0) )
50     ano.Empty( gdcm.Tag(0x10,0x10) )
51     ano.Empty( gdcm.Tag(0x10,0x20) )
52     ano.Empty( gdcm.Tag(0x10,0x30) )
53     ano.Empty( gdcm.Tag(0x20,0x10) )
54     ano.Empty( gdcm.Tag(0x32,0x1032) )
55     ano.Empty( gdcm.Tag(0x32,0x1033) )
56     ano.Empty( gdcm.Tag(0x40,0x241) )
57     ano.Empty( gdcm.Tag(0x40,0x254) )

```

```

58 ano.Empty( gdcm.Tag(0x40,0x253) )
59 ano.Empty( gdcm.Tag(0x40,0x1001) )
60 ano.Empty( gdcm.Tag(0x8,0x80) )
61 ano.Empty( gdcm.Tag(0x8,0x50) )
62 ano.Empty( gdcm.Tag(0x8,0x1030) )
63 ano.Empty( gdcm.Tag(0x8,0x103e) )
64 ano.Empty( gdcm.Tag(0x18,0x1030) )
65 ano.Empty( gdcm.Tag(0x38,0x300) )
66 g = gdcm.UIDGenerator()
67 ano.Replace( gdcm.Tag(0x0008,0x0018), g.Generate() )
68 ano.Replace( gdcm.Tag(0x0020,0x000d), g.Generate() )
69 ano.Replace( gdcm.Tag(0x0020,0x000e), g.Generate() )
70 ano.Replace( gdcm.Tag(0x0020,0x0052), g.Generate() )
71 #ano.Replace( gdcm.Tag(0x0008,0x0016), "1.2.840.10008.5.1.4.1.1.7.2" )
72 """
73 ano.Remove( gdcm.Tag(0x0018,0x0020) ) # ScanningSequence
74 ano.Remove( gdcm.Tag(0x0018,0x0021) ) # SequenceVariant
75 ano.Remove( gdcm.Tag(0x0018,0x0022) ) # ScanOptions
76 ano.Remove( gdcm.Tag(0x0018,0x0023) ) # MRAcquisitionType
77 ano.Remove( gdcm.Tag(0x0018,0x0050) ) # SliceThickness
78 ano.Remove( gdcm.Tag(0x0018,0x0080) ) # RepetitionTime
79 ano.Remove( gdcm.Tag(0x0018,0x0081) ) # EchoTime
80 ano.Remove( gdcm.Tag(0x0018,0x0088) ) # SpacingBetweenSlices
81 ano.Remove( gdcm.Tag(0x0018,0x0091) ) # EchoTrainLength
82 ano.Remove( gdcm.Tag(0x0018,0x1164) ) # ImagerPixelSpacing
83
84 ano.Remove( gdcm.Tag(0x0020,0x0032) ) # Image Position (Patient)
85 ano.Remove( gdcm.Tag(0x0020,0x0037) ) # Image Orientation (Patient)
86 ano.Remove( gdcm.Tag(0x0020,0x0052) ) # Frame of Reference UID
87 ano.Remove( gdcm.Tag(0x0020,0x1040) ) # Position Reference Indicator
88
89 ano.Replace( gdcm.Tag(0x0028,0x0301), "NO" ) # Burned In Annotation
90
91 ano.Empty( gdcm.Tag(0x0020,0x0020) )
92
93 ano.Remove( gdcm.Tag(0x7fe0,0x0000) )
94
95 #ano.Empty( gdcm.Tag(0x0028,0x0009) ) # Frame Increment Pointer
96
97 #ano.Empty( gdcm.Tag(0x0028,0x1052) ) #<entry group="0028" element="1052" vr="DS" vm="1" name="Rescale
Intercept"/>
98 #ano.Empty( gdcm.Tag(0x0028,0x1053) ) #<entry group="0028" element="1053" vr="DS" vm="1" name="Rescale
Slope"/>
99 #ano.Replace( gdcm.Tag(0x0028,0x1054), "US" ) #<entry group="0028" element="1054" vr="LO" vm="1" name="
Rescale Type"/>
100
101 ano.Replace( gdcm.Tag(0x2050, 0x0020), "IDENTITY")
102 """
103
104 w = gdcm.Writer()
105 w.SetFile( ano.GetFile() )
106 w.SetFileName( file2 )
107 if not w.Write():
108     sys.exit(1)

```

27.92 ManipulateSequence.py

```

1 #####
2 #
3 # Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 # Copyright (c) 2006-2011 Mathieu Malaterre
6 # All rights reserved.
7 # See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.
8 #
9 # This software is distributed WITHOUT ANY WARRANTY; without even
10 # the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 # PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 """
16 Usage:
17
18 python ManipulateSequence.py input.dcm output.dcm
19
20 This was tested using:

```

```

21
22 python ManipulateSequence.py gdcmlData/D_CLUNIE_CT1_J2KI.dcm myoutput.dcm
23
24 This is a dummy example on how to modify a value set in a nested-nested dataset
25
26 WARNING:
27 Do not use as-is in production, this is just an example
28 This example works in an undefined length Item only (you need to explicitly recompute the length
   otherwise)
29 """
30
31 import sys
32 import gdcml
33
34 if __name__ == "__main__":
35
36     file1 = sys.argv[1]
37     file2 = sys.argv[2]
38
39     r = gdcml.Reader()
40     r.SetFileName( file1 )
41     if not r.Read():
42         sys.exit(1)
43
44     f = r.GetFile()
45     ds = f.GetDataElement()
46     tsis = gdcml.Tag(0x0008,0x2112) # SourceImageSequence
47     if ds.FindDataElement( tsis ):
48         sis = ds.GetDataElement( tsis )
49         #sqsis = sis.GetSequenceOfItems()
50         # GetValueAsSQ handle more cases
51         sqsis = sis.GetValueAsSQ()
52         if sqsis.GetNumberOfItems():
53             item1 = sqsis.GetItem(1)
54             nestedds = item1.GetNestedDataSet()
55             tprcs = gdcml.Tag(0x0040,0x170) # PurposeOfReferenceCodeSequence
56             if nestedds.FindDataElement( tprcs ):
57                 prcs = nestedds.GetDataElement( tprcs )
58                 sqprcs = prcs.GetSequenceOfItems()
59                 if sqprcs.GetNumberOfItems():
60                     item2 = sqprcs.GetItem(1)
61                     nestedds2 = item2.GetNestedDataSet()
62                     # (0008,0104) LO [Uncompressed predecessor] # 24, 1 CodeMeaning
63                     tcm = gdcml.Tag(0x0008,0x0104)
64                     if nestedds2.FindDataElement( tcm ):
65                         cm = nestedds2.GetDataElement( tcm )
66                         mystr = "GDCM was here"
67                         cm.SetByteValue( mystr, gdcml.VL( len(mystr) ) )
68
69     w = gdcml.Writer()
70     w.SetFile( f )
71     w.SetFileName( file2 )
72     if not w.Write():
73         sys.exit(1)

```

27.93 MergeFile.py

```

1 #####
2 #
3 #   Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 #   Copyright (c) 2006-2011 Mathieu Malaterre
6 #   All rights reserved.
7 #   See Copyright.txt or http://gdcml.sourceforge.net/Copyright.html for details.
8 #
9 #   This software is distributed WITHOUT ANY WARRANTY; without even
10 #   the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 #   PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 """
16 Usage:
17
18 python MergeFile.py input1.dcm input2.dcm
19
20 It will produce a 'merge.dcm' output file, which contains all meta information from input1.dcm

```

```

21  and copy the Stored Pixel values from input2.dcm
22  This script even works when input2.dcm is a Secondary Capture and does not contains information
23  such as IOP and IPP...
24  """
25
26  import sys
27  import gdcm
28
29  if __name__ == "__main__":
30
31      file1 = sys.argv[1]
32      file2 = sys.argv[2]
33
34      r1 = gdcm.ImageReader()
35      r1.SetFileName( file1 )
36      if not r1.Read():
37          sys.exit(1)
38
39      r2 = gdcm.ImageReader()
40      r2.SetFileName( file2 )
41      if not r2.Read():
42          sys.exit(1)
43
44      # Image from r2 could be Secondary Capture and thus would not contains neither IPP nor IOP
45      # Instead always prefer to only copy the Raw Data Element.
46      # Warning ! Image need to be identical ! Only the value of Stored Pixel can be different.
47      r1.GetImage().SetDataElement( r2.GetImage().GetDataElement() )
48
49      w = gdcm.ImageWriter()
50      w.SetFile( r1.GetFile() )
51      #w.SetImage( r2.GetImage() ) # See comment above
52      w.SetImage( r1.GetImage() )
53
54      w.SetFileName( "merge.dcm" )
55      if not w.Write():
56          sys.exit(1)
57
58      sys.exit(0)

```

27.94 MergeTwoFiles.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
/*
 * This example will show how one can read in two DICOM files, use the dataset
 * from file1 and use image from file2 to save it in a 3rd file.
 *
 * Eg:
 * MergeTwoFiles gdcmData/012345.002.050.dcm gdcmData/test.acr merge.dcm
 */

#include "gdcmReader.h"
#include "gdcmImageReader.h"
#include "gdcmImageWriter.h"
#include "gdcmWriter.h"
#include "gdcmDataSet.h"
#include "gdcmAttribute.h"

int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        return 1;
    }
    const char *file1 = argv[1];
    const char *file2 = argv[2];

```

```

const char *file3 = argv[3];

// Read file1
gdcm::ImageReader reader1;
reader1.SetFileName( file1 );
if( !reader1.Read() )
{
    return 1;
}

// Read file2
gdcm::ImageReader reader2;
reader2.SetFileName( file2 );
if( !reader2.Read() )
{
    return 1;
}

// Ok now let's take the DataSet from file1 and the Image from file2
// Warning: if file2 is -for example- a Secondary Capture Storage, then it has no
// Image Orientation (Patient) thus any Image Orientation (Patient) from file1
// will be discarded...

// let's be fancy. In case reader2 contains explicit, but reader1 is implicit
// we would rather see an implicit output
if( reader1.GetFile().GetHeader().GetDataSetTransferSyntax() ==
    gdcm::TransferSyntax::ImplicitVRLittleEndian )
{
    reader2.GetImage().SetTransferSyntax(
        gdcm::TransferSyntax::ImplicitVRLittleEndian );
}

gdcm::ImageWriter writer;
writer.SetFileName( file3 );
writer.SetFile( reader1.GetFile() );
// ImageWriter will always use all of gdcm::Image information an override anything wrong from
// reader1.GetFile(), including the Transfer Syntax
writer.SetImage( reader2.GetImage() );

gdcm::DataSet &ds = reader1.GetFile().GetDataSet();

// Make sure that SOPInstanceUID are different
// Simply removing it is sufficient as gdcm::ImageWriter will generate one by default
// if not found.
ds.Remove( gdcm::Tag(0x0008,0x0018) );
if( !writer.Write() )
{
    return 1;
}

return 0;
}

```

27.95 MetaImageMD5Activiz.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/
using Kitware.VTK;
using Kitware.VTK.GDCM;
using gdcm;

/*
 * $ export MONO_PATH=/usr/lib/cli/Activiz.NET:/usr/lib/cli/Kitware.mummy.Runtime-1.0
 * $ mono ./bin/MetaImageMD5Activiz.exe gdcmData/012345.002.050.dcm
 */
public class MetaImageMD5Activiz

```

```

{
    public static int ProcessOneMHDMD5(string filename)
    {
        vtkGDCMImageReader reader = vtkGDCMImageReader.
            New();
        reader.FileLowerLeftOn();
        reader.DebugOff();
        int canread = reader.CanReadFile( filename );
        if( canread == 0 )
        {
            string refms = gdcm.Testing.GetMediaStorageFromFile(filename);
            if( gdcm.MediaStorage.IsImage( gdcm.MediaStorage.GetMSType(refms) ) )
            {
                System.Console.Write( "Problem with file: " + filename + "\n" );
                return 1;
            }
            // not an image
            return 0;
        }

        reader.SetFileName( filename );
        reader.Update();

        // System.Console.Write(reader.GetOutput());

        vtkMetaImageWriter writer = vtkMetaImageWriter.New();
        writer.SetCompression( false );
        writer.SetInput( reader.GetOutput() );
        string subdir = "MetaImageMD5Activiz";
        string tmpdir = gdcm.Testing.GetTempDirectory( subdir );
        if( !gdcm.PosixEmulation.FileIsDirectory( tmpdir ) )
        {
            gdcm.PosixEmulation.MakeDirectory( tmpdir );
        }
        string mhdfile = gdcm.Testing.GetTempFilename( filename, subdir );

        string rawfile = mhdfile;
        mhdfile += ".mhd";
        rawfile += ".raw";
        writer.SetFileName( mhdfile );
        writer.Write();

        string digestmhd = gdcm.Testing.ComputeFileMD5( mhdfile );
        string digestraw = gdcm.Testing.ComputeFileMD5( rawfile );

        string mhdref = vtkGDCMTesting.GetMHDMD5FromFile(filename);
        string rawref = vtkGDCMTesting.GetRAWMD5FromFile(filename);

        if( mhdref != digestmhd )
        {
            System.Console.Write( "Problem with mhd file: " + filename + "\n" );
            System.Console.Write( digestmhd );
            System.Console.Write( "\n" );
            System.Console.Write( mhdref );
            System.Console.Write( "\n" );
            return 1;
        }
        if( rawref != digestraw )
        {
            System.Console.Write( "Problem with raw file: " + filename + "\n" );
            System.Console.Write( digestraw );
            System.Console.Write( "\n" );
            System.Console.Write( rawref );
            System.Console.Write( "\n" );
            return 1;
        }

        return 0;
    }
}

public static int Main(string[] args)
{
    if ( args.Length == 1 )
    {
        string filename = args[0];
        return ProcessOneMHDMD5( filename );
    }
    // Loop over all gdcmData
    gdcm.Trace.DebugOff();
    gdcm.Trace.WarningOff();
    gdcm.Trace.ErrorOff();
}

```

```

uint n = gdcM.Testing.GetNumberOfFileNames();
int ret = 0;
for( uint i = 0; i < n; ++i )
{
    string filename = gdcM.Testing.GetFileName( i );
    ret += ProcessOneMHDMD5( filename );
}
return ret;
}

```

27.96 MIPViewer.java

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcM.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
import vtk.*;
import gdcM.*;
import java.io.File;
import java.awt.Canvas;

/*
 * Compilation:
 * CLASSPATH=vtkgdcM.jar:/usr/share/java/vtk.jar javac MIPViewer.java
 *
 * Usage:
 * LD_LIBRARY_PATH=/usr/lib/jvm/java-6-openjdk/jre/lib/amd64/xawt:/usr/lib/jni:. CLASSPATH=/usr/share/java/
   vtk.jar:vtkgdcM.jar:gdcM.jar:. java MIPViewer BRAINX
 *
 */
public class MIPViewer extends Canvas
{
    static {
        // VTK
        System.loadLibrary("vtkCommonJava");
        System.loadLibrary("vtkFilteringJava");
        System.loadLibrary("vtkIOJava");
        System.loadLibrary("vtkImagingJava");
        System.loadLibrary("vtkGraphicsJava");
        System.loadLibrary("vtkRenderingJava");
        System.loadLibrary("vtkVolumeRenderingJava"); // vtkSmartVolumeMapper
        System.loadLibrary("vtkWidgetsJava"); // vtkBoxWidget
        // VTK-GDCM
        System.loadLibrary("vtkgdcMJava");
    }

    static FilenamesType fns = new FilenamesType();

    protected native int Lock();

    protected native int UnLock();

    public static void process(String path)
    {
        fns.add( path );
    }

    // Process only files under dir
    public static void visitAllFiles(File dir)
    {
        if (dir.isDirectory())
        {
            String[] children = dir.list();
            for (int i=0; i<children.length; i++)
            {
                visitAllFiles(new File(dir, children[i]));
            }
        }
    }
}

```



```

    }
    else
    {
        process(dir.getPath());
    }
}

public static void main(String[] args) throws Exception
{
    String dirname = args[0];
    if( !PosixEmulation.FileIsDirectory( dirname ) )
    {
        return;
    }

    File dir = new File(dirname);
    visitAllFiles(dir);

    IPPSorter ipp = new IPPSorter();
    ipp.SetComputeZSpacing( true );
    ipp.SetZSpacingTolerance( 1e-3 );
    boolean b = ipp.Sort( fns );
    if(!b)
    {
        throw new Exception("Could not scan");
    }
    double ippzspacing = ipp.GetZSpacing();

    FilenamesType sorted = ipp.GetFilenames();
    vtkStringArray files = new vtkStringArray();
    long nfiles = sorted.size();
    //for( String f : sorted )
    for (int i = 0; i < nfiles; i++) {
        String f = sorted.get(i);
        files.InsertNextValue( f );
    }
    vtkGDCMImageReader reader = new vtkGDCMImageReader();
    reader.SetFileNames( files );
    reader.Update(); // get spacing value

    double[] spacing = reader.GetOutput().GetSpacing();

    vtkImageChangeInformation change = new vtkImageChangeInformation();
    change.SetInputConnection( reader.GetOutputPort() );
    change.SetOutputSpacing( spacing[0], spacing[1], ippzspacing );

    // Create our volume and mapper
    vtkVolume volume = new vtkVolume();
    vtkSmartVolumeMapper mapper = new vtkSmartVolumeMapper();

    vtkRenderWindowInteractor iren = new vtkRenderWindowInteractor();

    // Add a box widget if the clip option was selected
    vtkBoxWidget box = new vtkBoxWidget();
    box.SetInteractor(iren);
    box.SetPlaceFactor(1.01);
    box.SetInput(change.GetOutput());

    //box.SetDefaultRenderer(renderer);
    box.InsideOutOn();
    box.PlaceWidget();
    //vtkBoxWidgetCallback callback = vtkBoxWidgetCallback::New();
    //callback.SetMapper(mapper);
    //box.AddObserver(vtkCommand::InteractionEvent, callback);
    //callback.Delete();
    // Lock();
    // box.EnabledOn();
    // Unlock();
    box.GetSelectedFaceProperty().SetOpacity(0.0);

    mapper.SetInputConnection( change.GetOutputPort() );

    // Create our transfer function
    vtkColorTransferFunction colorFun = new vtkColorTransferFunction();
    vtkPiecewiseFunction opacityFun = new vtkPiecewiseFunction();

    // Create the property and attach the transfer functions
    vtkVolumeProperty property = new vtkVolumeProperty();
    property.IndependentComponentsOn();
    property.SetColor( colorFun );
    property.SetScalarOpacity( opacityFun );

```

```

property.SetInterpolationTypeToLinear();

// connect up the volume to the property and the mapper
volume.SetProperty( property );
volume.SetMapper( mapper );

vtkMedicalImageProperties medprop = reader.GetMedicalImageProperties();
int n = medprop.GetNumberOfWindowLevelPresets();
double opacityWindow = 4096;
double opacityLevel = 2048;

// Override default with value from DICOM files:
for( int i = 0; i < n; ++i )
{
    double wl[] = medprop.GetNthWindowLevelPreset(i);
    //System.out.println( "W/L: " + wl[0] + " " + wl[1] );
    opacityWindow = wl[0];
    opacityLevel = wl[1];
}

colorFun.AddRGBSegment(0.0, 1.0, 1.0, 1.0, 255.0, 1.0, 1.0, 1.0 );
opacityFun.AddSegment( opacityLevel - 0.5*opacityWindow, 0.0,
    opacityLevel + 0.5*opacityWindow, 1.0 );
mapper.SetBlendModeToMaximumIntensity();

// Create the RenderWindow, Renderer
vtkRenderer ren1 = new vtkRenderer();
vtkRenderWindow renWin = new vtkRenderWindow();
renWin.AddRenderer(ren1);

// Set the default window size
renWin.SetSize(600,600);

// Add the volume to the scene
ren1.AddVolume( volume );
ren1.ResetCamera();

iren.SetRenderWindow( renWin );

// interact with data
renWin.Render();

iren.Start();
}
}

```

27.97 MPRViewer.java

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
import vtk.*;
import gdcm.*;
import java.io.File;

/*
 * Compilation:
 * CLASSPATH=vtkgdcm.jar:/usr/share/java/vtk.jar javac MPRViewer.java
 *
 * Usage:
 * LD_LIBRARY_PATH=/usr/lib/jvm/java-6-openjdk/jre/lib/amd64/xawt:/usr/lib/jni:. CLASSPATH=/usr/share/java/
 *   vtk.jar:vtkgdcm.jar:gdcm.jar:. java MPRViewer BRAINX
 *
 */
public class MPRViewer
{
    static {

```

```

// VTK
System.loadLibrary("vtkCommonJava");
System.loadLibrary("vtkFilteringJava");
System.loadLibrary("vtkIOJava");
System.loadLibrary("vtkImagingJava");
System.loadLibrary("vtkGraphicsJava");
System.loadLibrary("vtkRenderingJava");
// VTK-GDCM
System.loadLibrary("vtkgdcmJava");
}

static FilenamesType fns = new FilenamesType();

public static void process(String path)
{
    fns.add( path );
}

// Process only files under dir
public static void visitAllFiles(File dir)
{
    if (dir.isDirectory())
    {
        String[] children = dir.list();
        for (int i=0; i<children.length; i++)
        {
            visitAllFiles(new File(dir, children[i]));
        }
    }
    else
    {
        process(dir.getPath());
    }
}

public static void main(String[] args) throws Exception
{
    String dirname = args[0];
    if( !PosixEmulation.FileIsDirectory( dirname ) )
    {
        return;
    }

    File dir = new File(dirname);
    visitAllFiles(dir);

    IPPSorter ipp = new IPPSorter();
    ipp.SetComputeZSpacing( true );
    ipp.SetZSpacingTolerance( 1e-3 );
    boolean b = ipp.Sort( fns );
    if(!b)
    {
        throw new Exception("Could not scan");
    }
    double ippzspacing = ipp.GetZSpacing();

    FilenamesType sorted = ipp.GetFilenames();
    vtkStringArray files = new vtkStringArray();
    long nfiles = sorted.size();
    //for( String f : sorted )
    for (int i = 0; i < nfiles; i++) {
        String f = sorted.get(i);
        files.InsertNextValue( f );
    }
    vtkGDCMImageReader reader = new vtkGDCMImageReader();
    reader.SetFileNames( files );
    reader.Update(); // get spacing value

    double[] spacing = reader.GetOutput().GetSpacing();

    vtkImageChangeInformation change = new vtkImageChangeInformation();
    change.SetInputConnection( reader.GetOutputPort() );
    change.SetOutputSpacing( spacing[0], spacing[1], ippzspacing );

    // A simple vtkInteractorStyleImage example for
    // 3D image viewing with the vtkImageResliceMapper.
    //
    // Drag Left mouse button to window/level
    // Shift-Left drag to rotate (oblique slice)
    // Shift-Middle drag to slice through image
    // OR Ctrl-Right drag to slice through image

```

```

// Create the RenderWindow, Renderer
vtkRenderer ren1 = new vtkRenderer();
vtkRenderWindow renWin = new vtkRenderWindow();
renWin.AddRenderer(ren1);

vtkImageResliceMapper im = new vtkImageResliceMapper();
im.SetInputConnection(change.GetOutputPort());
im.SliceFacesCameraOn();
im.SliceAtFocalPointOn();
im.BorderOff();

vtkImageProperty ip = new vtkImageProperty();
ip.SetColorWindow(2000);
ip.SetColorLevel(1000);
ip.SetAmbient(0.0);
ip.SetDiffuse(1.0);
ip.SetOpacity(1.0);
ip.SetInterpolationTypeToLinear();

vtkImageSlice ia = new vtkImageSlice();
ia.SetMapper(im);
ia.SetProperty(ip);

ren1.AddViewProp(ia);
ren1.SetBackground(0.1,0.2,0.4);
renWin.SetSize(300,300);

vtkRenderWindowInteractor iren = new vtkRenderWindowInteractor();
vtkInteractorStyleImage style = new vtkInteractorStyleImage();
style.SetInteractionModeToImage3D();
iren.SetInteractorStyle(style);
renWin.SetInteractor(iren);

// render the image
renWin.Render();
vtkCamera cam1 = ren1.GetActiveCamera();
cam1.ParallelProjectionOn();
ren1.ResetCameraClippingRange();
renWin.Render();

iren.Start();
}
}

```

27.98 MPRViewer2.java

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
import vtk.*;
import gdcm.*;
import java.io.File;

/*
 * Compilation:
 * CLASSPATH=vtkgdc.jar:/usr/share/java/vtk.jar javac MPRViewer2.java
 *
 * Usage:
 * LD_LIBRARY_PATH=/usr/lib/jvm/java-6-openjdk/jre/lib/amd64/xawt:/usr/lib/jni:. CLASSPATH=/usr/share/java/
 *   vtk.jar:vtkgdc.jar:gdcm.jar:. java MPRViewer2 BRAINX
 *
 */
public class MPRViewer2
{
    static {
        // VTK

```

```

    System.loadLibrary("vtkCommonJava");
    System.loadLibrary("vtkFilteringJava");
    System.loadLibrary("vtkIOJava");
    System.loadLibrary("vtkImagingJava");
    System.loadLibrary("vtkGraphicsJava");
    System.loadLibrary("vtkRenderingJava");
    System.loadLibrary("vtkHybridJava");
    System.loadLibrary("vtkWidgetsJava");
    // VTK-GDCM
    System.loadLibrary("vtkgdcmJava");
}

static FileNamesType fns = new FileNamesType();

public static void process(String path)
{
    fns.add( path );
}

// Process only files under dir
public static void visitAllFiles(File dir)
{
    if (dir.isDirectory())
    {
        String[] children = dir.list();
        for (int i=0; i<children.length; i++)
        {
            visitAllFiles(new File(dir, children[i]));
        }
    }
    else
    {
        process(dir.getPath());
    }
}

public void dointer(vtkImagePlaneWidget current_widget)
{
    int cstat = current_widget.GetCursorDataStatus();
    double[] v = current_widget.GetCurrentCursorPosition();
    //System.out.println( cstat );
    //System.out.println( v[0] );
    //System.out.println( v[1] );
    //System.out.println( v[2] );
    planeWidgetX.SetSliceIndex( (int)v[0] );
    planeWidgetY.SetSliceIndex( (int)v[1] );
    planeWidgetZ.SetSliceIndex( (int)v[2] );
    planeWidgetX.GetCurrentRenderer().ResetCameraClippingRange();
    planeWidgetY.GetCurrentRenderer().ResetCameraClippingRange();
    planeWidgetZ.GetCurrentRenderer().ResetCameraClippingRange();
}

public void startinterX()
{
    dointer( planeWidgetX );
}

public void interX()
{
    dointer( planeWidgetX );
}

public void endinterX()
{
}

public void startinterY()
{
    dointer( planeWidgetY );
}

public void interY()
{
    dointer( planeWidgetY );
}

public void endinterY()
{
}

public void startinterZ()
{
    dointer( planeWidgetZ );
}

public void interZ()
{
    dointer( planeWidgetZ );
}

```

```

public void endinterZ()
{
    //System.out.println( "endinter" );
}

public static void AlignCamera(int slice_number, vtkImagePlaneWidget current_widget)
{
    vtkImageData image = (vtkImageData)current_widget.GetInput();
    vtkRenderer ren = current_widget.GetCurrentRenderer();
    double[] origin = image.GetOrigin();
    double ox = origin[0];
    double oy = origin[1];
    double oz = origin[2];

    int wextent[] = image.GetWholeExtent();
    int xmin = wextent[0];
    int xmax = wextent[1];
    int ymin = wextent[2];
    int ymax = wextent[3];
    int zmin = wextent[4];
    int zmax = wextent[5];

    double[] spacing = image.GetSpacing();
    double sx = spacing[0];
    double sy = spacing[1];
    double sz = spacing[2];

    double cx = ox + (0.5 * (xmax - xmin)) * sx;
    double cy = oy + (0.5 * (ymax - ymin)) * sy;
    double cz = oz + (0.5 * (zmax - zmin)) * sz;
    double vx = 0, vy = 0, vz = 0;
    double nx = 0, ny = 0, nz = 0;
    int iaxis = current_widget.GetPlaneOrientation();
    if ( iaxis == 0 ) {
        vz = -1;
        nx = ox + xmax * sx;
        cx = ox + slice_number * sx;
    }
    else if ( iaxis == 1 ) {
        vz = -1;
        ny = oy + ymax * sy;
        cy = oy + slice_number * sy;
    }
    else {
        vy = 1;
        nz = oz + zmax * sz;
        cz = oz + slice_number * sz;
    }
    double px = cx + nx * 2;
    double py = cy + ny * 2;
    double pz = cz + nz * 3;

    vtkCamera camera = ren.GetActiveCamera();
    camera.SetViewUp(vx, vy, vz);
    camera.SetFocalPoint(cx, cy, cz);
    camera.SetPosition(px, py, pz);
    camera.OrthogonalizeViewUp();
    ren.ResetCameraClippingRange();
}

private vtkImagePlaneWidget planeWidgetX = new vtkImagePlaneWidget();
private vtkImagePlaneWidget planeWidgetY = new vtkImagePlaneWidget();
private vtkImagePlaneWidget planeWidgetZ = new vtkImagePlaneWidget();

public void config()
{
    //System.out.println( "config" );
    planeWidgetX.GetCurrentRenderer().ResetCamera();
    planeWidgetY.GetCurrentRenderer().ResetCamera();
    planeWidgetZ.GetCurrentRenderer().ResetCamera();
}

public void Run(String dirname)
{
    File dir = new File(dirname);
    visitAllFiles(dir);

    IPPSorter ipp = new IPPSorter();
    ipp.SetComputeZSpacing( true );
    ipp.SetZSpacingTolerance( 1e-3 );
    boolean b = ipp.Sort( fns );
}

```

```

if(!b)
{
    //throw new Exception("Could not scan");
}
double ippzspacing = ipp.GetZSpacing();

FileNamesType sorted = ipp.GetFileNames();
vtkStringArray files = new vtkStringArray();
long nfiles = sorted.size();
//for( String f : sorted )
for (int i = 0; i < nfiles; i++) {
    String f = sorted.get(i);
    files.InsertNextValue( f );
}
vtkGDCMImageReader reader = new vtkGDCMImageReader();
reader.SetFileNames( files );
reader.Update(); // get spacing value

double[] spacing = reader.GetOutput().GetSpacing();

vtkImageChangeInformation change = new vtkImageChangeInformation();
change.SetInputConnection( reader.GetOutputPort() );
change.SetOutputSpacing( spacing[0], spacing[1], ippzspacing );
change.Update();

System.out.println( change.GetOutput().toString() );

vtkRenderer ren1 = new vtkRenderer();
ren1.SetViewport(0., 0., 0.333, 1);
ren1.SetBackground(0.1,0.2,0.4);
vtkRenderer ren2 = new vtkRenderer();
ren2.SetViewport(0.333, 0., 0.667, 1);
ren2.SetBackground(0.1,0.2,0.4);
vtkRenderer ren3 = new vtkRenderer();
ren3.SetViewport(0.667, 0., 1., 1.);
ren3.SetBackground(0.1,0.2,0.4);

vtkRenderWindow renWin = new vtkRenderWindow();
renWin.AddRenderer(ren1);
renWin.AddRenderer(ren2);
renWin.AddRenderer(ren3);

vtkRenderWindowInteractor iren = new vtkRenderWindowInteractor();
iren.SetRenderWindow(renWin);

vtkInteractorStyleImage style = new vtkInteractorStyleImage();
iren.SetInteractorStyle( style );

vtkCellPicker picker = new vtkCellPicker();
picker.SetTolerance(0.005);

vtkProperty ipwProp = new vtkProperty();

//vtkImagePlaneWidget planeWidgetX = new vtkImagePlaneWidget();
planeWidgetX.SetInteractor(iren);
planeWidgetX.SetCurrentRenderer(ren1);
planeWidgetX.SetDefaultRenderer(ren1);
planeWidgetX.RestrictPlaneToVolumeOn();
planeWidgetX.SetTexturePlaneProperty(ipwProp);
//planeWidgetX.GetPlaneProperty().SetColor(1,0,0);
//planeWidgetX.TextureInterpolateOff();
//planeWidgetX.SetResliceInterpolateToNearestNeighbour();
planeWidgetX.SetInput(change.GetOutput());
planeWidgetX.SetPlaneOrientationToXAxes();
planeWidgetX.SetSliceIndex(62);
planeWidgetX.SetPicker(picker);
planeWidgetX.SetKeyPressActivationValue('x');
planeWidgetX.On();
planeWidgetX.InteractionOn();

//vtkImagePlaneWidget planeWidgetY = new vtkImagePlaneWidget();
planeWidgetY.SetInteractor(iren);
planeWidgetY.SetCurrentRenderer(ren2);
planeWidgetY.SetDefaultRenderer(ren2);
planeWidgetY.RestrictPlaneToVolumeOn();
planeWidgetY.SetTexturePlaneProperty(ipwProp);
//planeWidgetY.GetPlaneProperty().SetColor(1,0,0);
//planeWidgetY.TextureInterpolateOff();
//planeWidgetY.SetResliceInterpolateToNearestNeighbour();
planeWidgetY.SetInput(change.GetOutput());
planeWidgetY.SetLookupTable( planeWidgetX.GetLookupTable() );

```

```

planeWidgetY.SetPlaneOrientationToYAxes();
planeWidgetY.SetSliceIndex(32);
planeWidgetY.SetPicker(picker);
planeWidgetY.SetKeyPressActivationValue('y');
planeWidgetY.On();

//vtkImagePlaneWidget planeWidgetZ = new vtkImagePlaneWidget();
planeWidgetZ.SetInteractor(iren);
planeWidgetZ.SetCurrentRenderer(ren3);
planeWidgetZ.SetDefaultRenderer(ren3);
planeWidgetZ.RestrictPlaneToVolumeOn();
planeWidgetZ.SetTexturePlaneProperty(ipwProp);
//planeWidgetZ.GetPlaneProperty().SetColor(1,0,0);
//planeWidgetZ.TextureInterpolateOff();
//planeWidgetZ.SetResliceInterpolateToNearestNeighbour();
planeWidgetZ.SetInput(change.GetOutput());
planeWidgetZ.SetLookupTable( planeWidgetX.GetLookupTable() );
planeWidgetZ.SetPlaneOrientationToZAxes();
planeWidgetZ.SetSliceIndex(32);
planeWidgetZ.SetPicker(picker);
planeWidgetZ.SetKeyPressActivationValue('z');
planeWidgetZ.On();

iren.Initialize();

renWin.Render();
AlignCamera(52, planeWidgetX);
AlignCamera(32, planeWidgetY);
AlignCamera(32, planeWidgetZ);

planeWidgetX.GetCurrentRenderer().ResetCamera();
planeWidgetY.GetCurrentRenderer().ResetCamera();
planeWidgetZ.GetCurrentRenderer().ResetCamera();

renWin.Render();

planeWidgetX.AddObserver("StartInteractionEvent", this,"startinterX");
planeWidgetX.AddObserver("InteractionEvent", this,"interX");
planeWidgetX.AddObserver("EndInteractionEvent", this,"endinterX");
planeWidgetY.AddObserver("StartInteractionEvent", this,"startinterY");
planeWidgetY.AddObserver("InteractionEvent", this,"interY");
planeWidgetY.AddObserver("EndInteractionEvent", this,"endinterY");
planeWidgetZ.AddObserver("StartInteractionEvent", this,"startinterZ");
planeWidgetZ.AddObserver("InteractionEvent", this,"interZ");
planeWidgetZ.AddObserver("EndInteractionEvent", this,"endinterZ");

iren.AddObserver("ConfigureEvent", this,"config");

iren.Start();
}

public static void main(String[] args) throws Exception
{
    String dirname = args[0];
    if( !PosixEmulation.FileIsDirectory( dirname ) )
    {
        return;
    }

    MPRViewer2 me = new MPRViewer2();
    me.Run( dirname );
}
}

```

27.99 MrProtocol.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR

```


PURPOSE. See the above copyright notice for more information.

```
=====*/
/*
 *
 */
/*
28 - 'MrProtocol' VM 1, VR UN, SyngoDT 0, NoOfItems 6, Data '### ASCCONV BEGIN ###'
ulVersion = 0xbee332
tSequenceFileName = "%SiemensSeq%\flfq_shphs"
tProtocolName = "flash+AF8-100+AF8-through-plane+AF8-V"
tReferenceImage0 = "1.3.12.2.1107.5.2.9.16041.30000007062106100181200004658"
tReferenceImage1 = "1.3.12.2.1107.5.2.9.16041.30000007062106100181200004635"
tReferenceImage2 = "1.3.12.2.1107.5.2.9.16041.30000007062106100181200004683"
ucScanRegionPosValid = 0x1
sProtConsistencyInfo.tBaselineString = "N4_VB11A_LATEST_20031004"
sProtConsistencyInfo.flNominalB0 = 1.494
sProtConsistencyInfo.flGMax = 22
sProtConsistencyInfo.flRiseTime = 10
sGRADSPEC.sEddyCompensationX.aflAmplitude[0] = 0.0141111
sGRADSPEC.sEddyCompensationX.aflAmplitude[1] = 0.057038
sGRADSPEC.sEddyCompensationX.aflAmplitude[2] = -0.00986504
sGRADSPEC.sEddyCompensationX.aflAmplitude[3] = 0.00247627
sGRADSPEC.sEddyCompensationX.aflAmplitude[4] = 0.0026377
sGRADSPEC.sEddyCompensationX.aflTimeConstant[0] = 1.53826
sGRADSPEC.sEddyCompensationX.aflTimeConstant[1] = 0.746617
sGRADSPEC.sEddyCompensationX.aflTimeConstant[2] = 0.339236
sGRADSPEC.sEddyCompensationX.aflTimeConstant[3] = 0.0309809
sGRADSPEC.sEddyCompensationX.aflTimeConstant[4] = 0.00067694
sGRADSPEC.sEddyCompensationY.aflAmplitude[0] = 0.0156411
sGRADSPEC.sEddyCompensationY.aflAmplitude[1] = 0.0440623
sGRADSPEC.sEddyCompensationY.aflAmplitude[2] = -0.00782663
sGRADSPEC.sEddyCompensationY.aflAmplitude[3] = 0.00186828
sGRADSPEC.sEddyCompensationY.aflAmplitude[4] = 0.00154504
sGRADSPEC.sEddyCompensationY.aflTimeConstant[0] = 1.47145
sGRADSPEC.sEddyCompensationY.aflTimeConstant[1] = 0.750538
sGRADSPEC.sEddyCompensationY.aflTimeConstant[2] = 0.339397
sGRADSPEC.sEddyCompensationY.aflTimeConstant[3] = 0.0312962
sGRADSPEC.sEddyCompensationY.aflTimeConstant[4] = 0.000895133
sGRADSPEC.sEddyCompensationZ.aflAmplitude[0] = 0.00618504
sGRADSPEC.sEddyCompensationZ.aflAmplitude[1] = 0.00313121
sGRADSPEC.sEddyCompensationZ.aflAmplitude[2] = 0.000289346
sGRADSPEC.sEddyCompensationZ.aflAmplitude[3] = -0.00019677
sGRADSPEC.sEddyCompensationZ.aflAmplitude[4] = 7.66445e-005
sGRADSPEC.sEddyCompensationZ.aflTimeConstant[0] = 3.37462
sGRADSPEC.sEddyCompensationZ.aflTimeConstant[1] = 0.999351
sGRADSPEC.sEddyCompensationZ.aflTimeConstant[2] = 0.0174646
sGRADSPEC.sEddyCompensationZ.aflTimeConstant[3] = 0.0110094
sGRADSPEC.sEddyCompensationZ.aflTimeConstant[4] = 0.00199922
sGRADSPEC.bEddyCompensationValid = 1
sGRADSPEC.sB0CompensationX.aflAmplitude[0] = 0.307474
sGRADSPEC.sB0CompensationX.aflAmplitude[1] = 0.029337
sGRADSPEC.sB0CompensationX.aflAmplitude[2] = -0.187118
sGRADSPEC.sB0CompensationX.aflTimeConstant[0] = 0.98583
sGRADSPEC.sB0CompensationX.aflTimeConstant[1] = 0.0308443
sGRADSPEC.sB0CompensationX.aflTimeConstant[2] = 0.000466792
sGRADSPEC.sB0CompensationY.aflAmplitude[0] = 0.365257
sGRADSPEC.sB0CompensationY.aflAmplitude[1] = -0.318647
sGRADSPEC.sB0CompensationY.aflAmplitude[2] = -0.0118978
sGRADSPEC.sB0CompensationY.aflTimeConstant[0] = 0.61535
sGRADSPEC.sB0CompensationY.aflTimeConstant[1] = 0.488831
sGRADSPEC.sB0CompensationY.aflTimeConstant[2] = 0.00199991
sGRADSPEC.sB0CompensationZ.aflAmplitude[0] = -0.44647
sGRADSPEC.sB0CompensationZ.aflAmplitude[1] = -0.0455154
sGRADSPEC.sB0CompensationZ.aflAmplitude[2] = -0.0304901
sGRADSPEC.sB0CompensationZ.aflTimeConstant[0] = 0.959231
sGRADSPEC.sB0CompensationZ.aflTimeConstant[1] = 0.0720189
sGRADSPEC.sB0CompensationZ.aflTimeConstant[2] = 0.00190141
sGRADSPEC.bB0CompensationValid = 1
sGRADSPEC.sCrossTermCompensationXY.aflAmplitude[0] = 0.00105046
sGRADSPEC.sCrossTermCompensationXY.aflTimeConstant[0] = 0.842014
sGRADSPEC.sCrossTermCompensationXZ.aflAmplitude[0] = -0.00150189
sGRADSPEC.sCrossTermCompensationXZ.aflTimeConstant[0] = 0.736169
sGRADSPEC.sCrossTermCompensationYX.aflAmplitude[0] = -5.5278e-005
sGRADSPEC.sCrossTermCompensationYX.aflTimeConstant[0] = 0.228697
sGRADSPEC.sCrossTermCompensationYZ.aflAmplitude[0] = 0.000307999
sGRADSPEC.sCrossTermCompensationYZ.aflTimeConstant[0] = 1.19431
sGRADSPEC.sCrossTermCompensationZX.aflAmplitude[0] = -0.000286868
sGRADSPEC.sCrossTermCompensationZX.aflTimeConstant[0] = 0.665979
sGRADSPEC.sCrossTermCompensationZY.aflAmplitude[0] = 0.000355175
```

```

sGRADSPEC.sCrossTermCompensationZY.aflTimeConstant[0] = 0.844189
sGRADSPEC.bCrossTermCompensationValid = 1
sGRADSPEC.lOffsetX = 25
sGRADSPEC.lOffsetY = 84
sGRADSPEC.lOffsetZ = 47
sGRADSPEC.bOffsetValid = 1
sGRADSPEC.lDelayX = 12
sGRADSPEC.lDelayY = 11
sGRADSPEC.lDelayZ = 9
sGRADSPEC.bDelayValid = 1
sGRADSPEC.flSensitivityX = 0.000264087
sGRADSPEC.flSensitivityY = 0.000272009
sGRADSPEC.flSensitivityZ = 0.000272677
sGRADSPEC.bSensitivityValid = 1
sGRADSPEC.alShimCurrent[0] = 183
sGRADSPEC.alShimCurrent[1] = -25
sGRADSPEC.alShimCurrent[2] = -85
sGRADSPEC.alShimCurrent[3] = 378
sGRADSPEC.alShimCurrent[4] = 82
sGRADSPEC.bShimCurrentValid = 1
sGRADSPEC.ucMode = 0x2
sTXSPEC.asNucleusInfo[0].tNucleus = "1H"
sTXSPEC.asNucleusInfo[0].lFrequency = 63684693
sTXSPEC.asNucleusInfo[0].bFrequencyValid = 1
sTXSPEC.asNucleusInfo[0].flReferenceAmplitude = 359.734
sTXSPEC.asNucleusInfo[0].bReferenceAmplitudeValid = 1
sTXSPEC.asNucleusInfo[0].flAmplitudeCorrection = 1
sTXSPEC.asNucleusInfo[0].bAmplitudeCorrectionValid = 1
sTXSPEC.asNucleusInfo[1].bFrequencyValid = 1
sTXSPEC.asNucleusInfo[1].bReferenceAmplitudeValid = 1
sTXSPEC.asNucleusInfo[1].bAmplitudeCorrectionValid = 1
sTXSPEC.arFPULSE[0].tName = "03GreFCE"
sTXSPEC.arFPULSE[0].bAmplitudeValid = 0x1
sTXSPEC.arFPULSE[0].flAmplitude = 147.095
sTXSPEC.arFPULSE[1].tName = "02GreFCE"
sTXSPEC.arFPULSE[1].bAmplitudeValid = 0x1
sTXSPEC.arFPULSE[1].flAmplitude = 147.095
sTXSPEC.arFPULSE[2].tName = "01GreFCE"
sTXSPEC.arFPULSE[2].bAmplitudeValid = 0x1
sTXSPEC.arFPULSE[2].flAmplitude = 147.095
sTXSPEC.lNoOfTraPulses = 3
sTXSPEC.lBTB1ParallelCapacity = 2
sTXSPEC.lBTB1SerialCapacity = 24
sTXSPEC.lBTB2ParallelCapacity = 2
sTXSPEC.lBTB2SerialCapacity = 26
sTXSPEC.bBTBValid = 1
sTXSPEC.flKDynMagnitudeMin = 0.5
sTXSPEC.flKDynMagnitudeMax = 1.5
sTXSPEC.flKDynMagnitudeClipLow = 0.96
sTXSPEC.flKDynMagnitudeClipHigh = 1.04
sTXSPEC.flKDynPhaseMax = 0.698132
sTXSPEC.flKDynPhaseClip = 0.174533
sTXSPEC.bKDynValid = 1
sTXSPEC.ucRFPulseType = 0x1
sTXSPEC.ucExcitMode = 0x1
sTXSPEC.ucSimultaneousExcitation = 0x1
sRXSPEC.lGain = 1
sRXSPEC.bGainValid = 1
sRXSPEC.aFFT_SCALE[0].lRxChannel = 1
sRXSPEC.aFFT_SCALE[0].flFactor = 1.06857
sRXSPEC.aFFT_SCALE[0].bValid = 1
sRXSPEC.aFFT_SCALE[1].lRxChannel = 2
sRXSPEC.aFFT_SCALE[1].flFactor = 1.07454
sRXSPEC.aFFT_SCALE[1].bValid = 1
sRXSPEC.aFFT_SCALE[2].lRxChannel = 3
sRXSPEC.aFFT_SCALE[2].flFactor = 1.06622
sRXSPEC.aFFT_SCALE[2].bValid = 1
sRXSPEC.aFFT_SCALE[3].lRxChannel = 4
sRXSPEC.aFFT_SCALE[3].flFactor = 1.06524
sRXSPEC.aFFT_SCALE[3].bValid = 1
sRXSPEC.aFFT_SCALE[4].lRxChannel = 5
sRXSPEC.aFFT_SCALE[4].flFactor = 0.982692
sRXSPEC.aFFT_SCALE[4].bValid = 1
sRXSPEC.aFFT_SCALE[5].lRxChannel = 6
sRXSPEC.aFFT_SCALE[5].flFactor = 0.988603
sRXSPEC.aFFT_SCALE[5].bValid = 1
sRXSPEC.aFFT_SCALE[6].lRxChannel = 7
sRXSPEC.aFFT_SCALE[6].flFactor = 0.981538
sRXSPEC.aFFT_SCALE[6].bValid = 1
sRXSPEC.aFFT_SCALE[7].lRxChannel = 8
sRXSPEC.aFFT_SCALE[7].flFactor = 1.00856

```

```

sRXSPEC.aFFT_SCALE[7].bValid          = 1
sRXSPEC.bVariCapVoltagesValid        = 1
sRXSPEC.alDwellTime[0]                = 8500
sAdjFreSpec.ulMode                    = 0x1
sAdjFreSpec.ucAdjWithBC               = 0x1
sAdjTraSpec.ucAdjWithBC              = 0x1
sAdjShimSpec.ulMode                   = 0x1
sAdjShimSpec.ucAdjWithBC              = 0x1
sAdjWatSupSpec.ulMode                 = 0x1
sAdjWatSupSpec.ucAdjWithBC            = 0x1
alTR[0]                               = 37000
lContrasts                            = 1
alTE[0]                               = 4000
acFlowComp[0]                        = 1
lCombinedEchoes                       = 1
sSliceArray.asSlice[0].sPosition.dSag = 35.31199581
sSliceArray.asSlice[0].sPosition.dCor = -8.387765754
sSliceArray.asSlice[0].sPosition.dTra = -23.13178296
sSliceArray.asSlice[0].sNormal.dSag    = 0.771051253
sSliceArray.asSlice[0].sNormal.dCor    = 0.5863890019
sSliceArray.asSlice[0].sNormal.dTra    = -0.2482496801
sSliceArray.asSlice[0].dThickness      = 6
sSliceArray.asSlice[0].dPhaseFOV       = 187.5
sSliceArray.asSlice[0].dReadoutFOV     = 250
sSliceArray.lSize                      = 1
sSliceArray.lSag                      = 1
sSliceArray.lConc                      = 1
sSliceArray.ucMode                     = 0x1
sSliceArray.sTSat.dThickness           = 40
sSliceArray.sTSat.dGap                 = 10
sGroupArray.asGroup[0].nSize           = 1
sGroupArray.asGroup[0].dDistFact       = 0.2
sGroupArray.anMember[1]                = -1
sGroupArray.lSize                      = 1
sGroupArray.sPSat.dThickness           = 50
sGroupArray.sPSat.dGap                 = 10
sAutoAlign.dAAMatrix[0]                = 1
sAutoAlign.dAAMatrix[5]                = 1
sAutoAlign.dAAMatrix[10]               = 1
sAutoAlign.dAAMatrix[15]               = 1
sNavigatorPara.ucRespComp              = 0x4
sPrepPulses.ucFatSat                   = 0x4
sPrepPulses.ucWaterSat                 = 0x4
sPrepPulses.ucInversion                 = 0x4
sPrepPulses.ucSatRecovery              = 0x1
sPrepPulses.ucFatSatMode               = 0x2
sKSpace.lBaseResolution                 = 256
sKSpace.lPhaseEncodingLines            = 192
sKSpace.dPhaseResolution                = 1
sKSpace.lPartitions                     = 32
sKSpace.lImagesPerSlab                  = 32
sKSpace.dSliceResolution                = 1
sKSpace.ucPhasePartialFourier           = 0x10
sKSpace.ucSlicePartialFourier           = 0x10
sKSpace.ucAveragingMode                 = 0x2
sKSpace.ucMultiSliceMode                = 0x1
sKSpace.ucDimension                     = 0x2
sKSpace.ucAsymmetricEchoAllowed         = 0x1
sKSpace.unReordering                    = 0x1
sFastImaging.lEPIFactor                 = 1
sFastImaging.lTurboFactor               = 1
sFastImaging.lSegments                  = 3
sFastImaging.ulEnableRFSpooling         = 0x1
sPhysioImaging.lSignal1                 = 2
sPhysioImaging.lMethod1                 = 2
sPhysioImaging.lSignal2                 = 1
sPhysioImaging.lMethod2                 = 1
sPhysioImaging.lPhases                   = 21
sPhysioImaging.lRetroGatedImages        = 16
sPhysioImaging.sPhysioECG.lScanWindow  = 805
sPhysioImaging.sPhysioECG.lTriggerPulses = 1
sPhysioImaging.sPhysioECG.lTriggerWindow = 5
sPhysioImaging.sPhysioECG.lArrhythmiaDetection = 1
sPhysioImaging.sPhysioECG.lCardiacGateOnThreshold = 100000
sPhysioImaging.sPhysioECG.lCardiacGateOffThreshold = 700000
sPhysioImaging.sPhysioPulse.lTriggerPulses = 1
sPhysioImaging.sPhysioPulse.lTriggerWindow = 5
sPhysioImaging.sPhysioPulse.lCardiacGateOnThreshold = 100000
sPhysioImaging.sPhysioPulse.lCardiacGateOffThreshold = 700000
sPhysioImaging.sPhysioExt.lTriggerPulses = 1
sPhysioImaging.sPhysioExt.lTriggerWindow = 5

```

```

sPhysioImaging.sPhysioExt.lCardiacGateOnThreshold = 100000
sPhysioImaging.sPhysioExt.lCardiacGateOffThreshold = 700000
sPhysioImaging.sPhysioResp.lRespGateThreshold = 20
sPhysioImaging.sPhysioResp.lRespGatePhase = 2
sPhysioImaging.sPhysioResp.dGatingRatio = 0.3
sSpecPara.lPhaseCyclingType = 1
sSpecPara.lPhaseEncodingType = 1
sSpecPara.lRFExcitationBandwidth = 1
sSpecPara.ucRemoveOversampling = 0x1
sSpecPara.lDecouplingType = 1
sSpecPara.lNOEType = 1
sSpecPara.lExcitationType = 1
sSpecPara.lSpectralSuppression = 1
sDiffusion.ulMode = 0x1
sAngio.sFlowArray.asElm[0].nVelocity = 100
sAngio.sFlowArray.asElm[0].nDir = 0x4
sAngio.sFlowArray.lSize = 1
sAngio.ucPCFlowMode = 0x2
sAngio.ucTOFInflow = 0x4
sAngio.ucRephasedImage = 0x1
sAngio.ucPhaseImage = 0x1
sEllipticalFilter.ucMode = 0x1
sPat.lAccelFactPE = 1
sPat.lAccelFact3D = 1
sPat.ucPATMode = 0x1
sPat.ucRefScanMode = 0x1
ucAutoMovie = 0x1
ucDisableChangeStoreImages = 0x1
ucReconstructionMode = 0x1
ucPHAPSMODE = 0x1
ucDixon = 0x1
lAverages = 2
adFlipAngleDegree[0] = 30
lScanTimeSec = 103
lTotalScanTimeSec = 112
dRefSNR = 165404.1473
dRefSNR_VOI = 165404.1473
tdefaultEVAProt = "%SiemensEvaDefProt%\Inline\Inline.evp"
tcurrentEVAProt = "%CURRENTEVAPROT%\EVA2A5.tmp"
sCOIL_SELECT_MEAS.asList[0].sCoilElementID.tCoilID = "6_Ch_Body_P"
sCOIL_SELECT_MEAS.asList[0].sCoilElementID.lCoilCopy = 1
sCOIL_SELECT_MEAS.asList[0].sCoilElementID.tElement = "PP6"
sCOIL_SELECT_MEAS.asList[0].lElementSelected = 1
sCOIL_SELECT_MEAS.asList[0].lRxChannelConnected = 1
sCOIL_SELECT_MEAS.asList[1].sCoilElementID.tCoilID = "6_Ch_Body_P"
sCOIL_SELECT_MEAS.asList[1].sCoilElementID.lCoilCopy = 1
sCOIL_SELECT_MEAS.asList[1].sCoilElementID.tElement = "PP5"
sCOIL_SELECT_MEAS.asList[1].lElementSelected = 1
sCOIL_SELECT_MEAS.asList[1].lRxChannelConnected = 1
sCOIL_SELECT_MEAS.asList[2].sCoilElementID.tCoilID = "6_Ch_Body_P"
sCOIL_SELECT_MEAS.asList[2].sCoilElementID.lCoilCopy = 1
sCOIL_SELECT_MEAS.asList[2].sCoilElementID.tElement = "PP3"
sCOIL_SELECT_MEAS.asList[2].lElementSelected = 1
sCOIL_SELECT_MEAS.asList[2].lRxChannelConnected = 2
sCOIL_SELECT_MEAS.asList[3].sCoilElementID.tCoilID = "6_Ch_Body_P"
sCOIL_SELECT_MEAS.asList[3].sCoilElementID.lCoilCopy = 1
sCOIL_SELECT_MEAS.asList[3].sCoilElementID.tElement = "PP4"
sCOIL_SELECT_MEAS.asList[3].lElementSelected = 1
sCOIL_SELECT_MEAS.asList[3].lRxChannelConnected = 3
sCOIL_SELECT_MEAS.asList[4].sCoilElementID.tCoilID = "6_Ch_Body_P"
sCOIL_SELECT_MEAS.asList[4].sCoilElementID.lCoilCopy = 1
sCOIL_SELECT_MEAS.asList[4].sCoilElementID.tElement = "PP2"
sCOIL_SELECT_MEAS.asList[4].lElementSelected = 1
sCOIL_SELECT_MEAS.asList[4].lRxChannelConnected = 4
sCOIL_SELECT_MEAS.asList[5].sCoilElementID.tCoilID = "6_Ch_Body_P"
sCOIL_SELECT_MEAS.asList[5].sCoilElementID.lCoilCopy = 1
sCOIL_SELECT_MEAS.asList[5].sCoilElementID.tElement = "PP1"
sCOIL_SELECT_MEAS.asList[5].lElementSelected = 1
sCOIL_SELECT_MEAS.asList[5].lRxChannelConnected = 4
sCOIL_SELECT_MEAS.asList[6].sCoilElementID.tCoilID = "6_Ch_Body_A"
sCOIL_SELECT_MEAS.asList[6].sCoilElementID.lCoilCopy = 1
sCOIL_SELECT_MEAS.asList[6].sCoilElementID.tElement = "PA6"
sCOIL_SELECT_MEAS.asList[6].lElementSelected = 1
sCOIL_SELECT_MEAS.asList[6].lRxChannelConnected = 5
sCOIL_SELECT_MEAS.asList[7].sCoilElementID.tCoilID = "6_Ch_Body_A"
sCOIL_SELECT_MEAS.asList[7].sCoilElementID.lCoilCopy = 1
sCOIL_SELECT_MEAS.asList[7].sCoilElementID.tElement = "PA5"
sCOIL_SELECT_MEAS.asList[7].lElementSelected = 1
sCOIL_SELECT_MEAS.asList[7].lRxChannelConnected = 5
sCOIL_SELECT_MEAS.asList[8].sCoilElementID.tCoilID = "6_Ch_Body_A"
sCOIL_SELECT_MEAS.asList[8].sCoilElementID.lCoilCopy = 1

```

```

sCOIL_SELECT_MEAS.asList[8].sCoilElementID.tElement = "PA3"
sCOIL_SELECT_MEAS.asList[8].lElementSelected = 1
sCOIL_SELECT_MEAS.asList[8].lRxChannelConnected = 6
sCOIL_SELECT_MEAS.asList[9].sCoilElementID.tCoilID = "6_Ch_Body_A"
sCOIL_SELECT_MEAS.asList[9].sCoilElementID.lCoilCopy = 1
sCOIL_SELECT_MEAS.asList[9].sCoilElementID.tElement = "PA4"
sCOIL_SELECT_MEAS.asList[9].lElementSelected = 1
sCOIL_SELECT_MEAS.asList[9].lRxChannelConnected = 7
sCOIL_SELECT_MEAS.asList[10].sCoilElementID.tCoilID = "6_Ch_Body_A"
sCOIL_SELECT_MEAS.asList[10].sCoilElementID.lCoilCopy = 1
sCOIL_SELECT_MEAS.asList[10].sCoilElementID.tElement = "PA2"
sCOIL_SELECT_MEAS.asList[10].lElementSelected = 1
sCOIL_SELECT_MEAS.asList[10].lRxChannelConnected = 8
sCOIL_SELECT_MEAS.asList[11].sCoilElementID.tCoilID = "6_Ch_Body_A"
sCOIL_SELECT_MEAS.asList[11].sCoilElementID.lCoilCopy = 1
sCOIL_SELECT_MEAS.asList[11].sCoilElementID.tElement = "PA1"
sCOIL_SELECT_MEAS.asList[11].lElementSelected = 1
sCOIL_SELECT_MEAS.asList[11].lRxChannelConnected = 8
sCOIL_SELECT_MEAS.sCOILPLUGS.aulPlugId[0] = 0xff
sCOIL_SELECT_MEAS.sCOILPLUGS.aulPlugId[1] = 0x76
sCOIL_SELECT_MEAS.sCOILPLUGS.aulPlugId[2] = 0x78
sCOIL_SELECT_MEAS.sCOILPLUGS.aulPlugId[3] = 0x87
sCOIL_SELECT_MEAS.sCOILPLUGS.aulPlugId[4] = 0x67
sCOIL_SELECT_MEAS.sCOILPLUGS.auiNmbrofNibbles[0] = 0x2
sCOIL_SELECT_MEAS.sCOILPLUGS.auiNmbrofNibbles[1] = 0x2
sCOIL_SELECT_MEAS.sCOILPLUGS.auiNmbrofNibbles[2] = 0x2
sCOIL_SELECT_MEAS.sCOILPLUGS.auiNmbrofNibbles[3] = 0x2
sCOIL_SELECT_MEAS.sCOILPLUGS.auiNmbrofNibbles[4] = 0x2
sEFISPEC.bEFIDataValid = 1
### ASCCONV END ###
,
*/

/*
 * Table of equivalence:
 *
ulVersion = 0xbee332
<=>
27 - 'MrProtocolVersion' VM 1, VR IS, SyngoDT 6, NoOfItems 6, Data '12510002'
*/

#include "gdcmReader.h"
#include "gdcmImageReader.h"
#include "gdcmImageWriter.h"
#include "gdcmCSAHeader.h"
#include "gdcmAttribute.h"
#include "gdcmGlobal.h"
#include "gdcmDicts.h"

#include <map>

#include <math.h>

int main(int argc, char *argv [])
{
    if( argc < 2 ) return 1;
    const char *filename = argv[1];
    gdcm::ImageReader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        std::cerr << "Failed to read: " << filename << std::endl;
        return 1;
    }

    gdcm::CSAHeader csa;
    const gdcm::DataSet& ds = reader.GetFile().GetDataSet();

    //const gdcm::PrivateTag &t1 = csa.GetCSAImageHeaderInfoTag();
    const gdcm::PrivateTag &t2 = csa.GetCSASeriesHeaderInfoTag();

    if( ds.FindDataElement( t2 ) )
    {
        csa.LoadFromDataElement( ds.GetDataElement( t2 ) );
        //csa.Print( std::cout );
    }

    if( !csa.FindCSAElementByName( "MrProtocol" ) )
    {
        return 1;
    }
}

```

```

const gdcm::CSAElement &csael = csa.GetCSAElementByName( "MrProtocol"
);
//std::cout << csael << std::endl;

const gdcm::ByteValue *bv = csael.GetByteValue();
if( !bv )
{
    return 1;
}
std::string str(bv->GetPointer(), bv->GetLength());
std::istringstream is(str);
std::string s;
typedef std::map< std::string, std::string > MyMapType;
MyMapType mymap;
while( std::getline(is, s ) )
{
    std::string::size_type pos = s.find( '=' );
    if( pos != std::string::npos )
    {
        std::string sub1 = s.substr(0, pos);
        sub1.erase( sub1.find_last_not_of(' ') + 1);
        std::string sub2 = s.substr(pos+1); // skip the '=' char
        sub2.erase( 0, sub2.find_first_not_of(' '));
        //std::cout << sub1 << std::endl;
        mymap.insert( MyMapType::value_type(sub1, sub2) );
    }
    else
    {
        // ### ASCCONV BEGIN ###
        // ### ASCCONV END ###
    }
}
const char fourierstr[] = "sKSpace.ucSlicePartialFourier";
const gdcm::CSAHeaderDict &csadict =
    gdcm::Global::GetInstance().GetDicts().
        GetCSAHeaderDict();
const gdcm::CSAHeaderDictEntry &fourier = csadict.
    GetCSAHeaderDictEntry( fourierstr );
std::cout << fourier << std::endl;
MyMapType::const_iterator it = mymap.find ( fourierstr );
if( it == mymap.end() ) return 1;
//std::cout << it->second << std::endl;
const std::string &partial_fourier = it->second;
if( partial_fourier == "0x1" )
{
    std::cout << "partial fourier is 4/8" << std::endl;
}
else if( partial_fourier == "0x2" )
{
    std::cout << "partial fourier is 5/8" << std::endl;
}
else if( partial_fourier == "0x4" )
{
    std::cout << "partial fourier is 6/8" << std::endl;
}
else if( partial_fourier == "0x8" )
{
    std::cout << "partial fourier is 7/8" << std::endl;
}
else if( partial_fourier == "0x10" )
{
    std::cout << "partial fourier is 8/8" << std::endl;
}
else
{
    std::cerr << "Impossible: " << partial_fourier << std::endl;
    return 1;
}
/*
This is the Flip Angle:
adFlipAngleDegree[0] = 30

```

One can find it also in the protocol:

```

...
<ParamFunctor."<TlmapFunctor">
{
    <Class> "<TlmapFunctor@IceImagePostProcFunctors">

    <ParamBool."<EXECUTE"> { }
    <ParamDouble."<Flip1_deg"> { <Precision> 16 14.7378520000000000 }

```

```

...

*/
// Below is an attempt to play with the CSAHeader dict:
#if 0
const char gspec[] = "sGRADSPEC.flSensitivityX";
it = mymap.find( gspec );
if( it == mymap.end() ) return 1;
const std::string &dummy = it->second;
std::cout << dummy << std::endl;

const gdcm::CSAHeaderDictEntry &csaentry = csadict.
    GetCSAHeaderDictEntry( gspec );
std::cout << csaentry << std::endl;
#endif

/*
sSliceArray.ucMode -- should be in (1, 2, 4)
enum SeriesMode
{
    ASCENDING    = 0x01,
    DESCENDING   = 0x02,
    INTERLEAVED  = 0x04
};
*/
const char sliceorderstr[] = "sSliceArray.ucMode";
const gdcm::CSAHeaderDictEntry &sliceorder = csadict.
    GetCSAHeaderDictEntry( sliceorderstr );
std::cout << sliceorder << std::endl;

it = mymap.find ( sliceorderstr );
if( it == mymap.end() ) return 1;
const std::string &slice_order = it->second;
if( slice_order == "0x1" )
{
    std::cout << "slice_order: ASCENDING" << std::endl;
}
else if( slice_order == "0x2" )
{
    std::cout << "slice_order: DESCENDING" << std::endl;
}
else if( slice_order == "0x4" )
{
    std::cout << "slice_order: INTERLEAVED" << std::endl;
}
else
{
    std::cerr << "Impossible: " << slice_order << std::endl;
    return 1;
}

return 0;
}

```

27.100 NewSequence.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/

/*
* Usage:
* $ export LD_LIBRARY_PATH=$HOME/Projects/gdcm/debug-gcc/bin
* $ mono bin/NewSequence.exe gdcmData/012345.002.050.dcm out.dcm
*/
using System;

```

```
//using gdcm;

public class NewSequence
{
    public static byte[] StrToByteArray(string str)
    {
        System.Text.ASCIIEncoding encoding=new System.Text.ASCIIEncoding();
        return encoding.GetBytes(str);
    }

    public static int Main(string[] argv)
    {
        string file1 = argv[0];
        string file2 = argv[1];

        gdcm.Reader r = new gdcm.Reader();
        r.SetFileName( file1 );
        if ( ! r.Read() )
        {
            return 1;
        }

        gdcm.File f = r.GetFile();
        gdcm.DataSet ds = f.GetDataSet();
        // tsis = gdcm.Tag(0x0008,0x2112) # SourceImageSequence

        // Create a dataelement
        gdcm.DataElement de = new gdcm.DataElement(new gdcm.Tag(0x0010, 0x2180));
        string occ = "Occupation";
        de.SetByteValue( StrToByteArray(occ), new gdcm.VL((uint)occ.Length));
        de.SetVR(new gdcm.VR(gdcm.VR.VRType.SH));

        // Create an item
        gdcm.Item it = new gdcm.Item();
        it.SetVLToUndefined(); // Needed to not popup error message
        //it.InsertDataElement(de)
        gdcm.DataSet nds = it.GetNestedDataSet();
        nds.Insert(de);

        // Create a Sequence
        gdcm.SmartPtrSQ sq = gdcm.SequenceOfItems.New();
        sq.SetLengthToUndefined();
        sq.AddItem(it);

        // Insert sequence into data set
        gdcm.DataElement des = new gdcm.DataElement(new gdcm.Tag(0x0400,0x0550));
        des.SetVR(new gdcm.VR(gdcm.VR.VRType.SQ));
        des.SetValue(sq.__ref__());
        des.SetVLToUndefined();

        ds.Insert(des);

        gdcm.Writer w = new gdcm.Writer();
        w.SetFile( f );
        w.SetFileName( file2 );
        if ( !w.Write() )
            return 1;

        return 0;
    }
}
```

27.101 NewSequence.py

```
1 #####
2 #
3 #   Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 #   Copyright (c) 2006-2011 Mathieu Malaterre
6 #   All rights reserved.
7 #   See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.
8 #
9 #   This software is distributed WITHOUT ANY WARRANTY; without even
10 #   the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 #   PURPOSE. See the above copyright notice for more information.
12 #
13 #####
```



```

14
15 """
16 Usage:
17
18 python NewSequence.py input.dcm output.dcm
19
20
21 Thanks to Robert Irie for code
22 """
23
24 import sys
25 import gdcm
26
27 if __name__ == "__main__":
28
29     file1 = sys.argv[1]
30     file2 = sys.argv[2]
31
32     r = gdcm.Reader()
33     r.SetFileName( file1 )
34     if not r.Read():
35         sys.exit(1)
36
37     f = r.GetFile()
38     ds = f.GetDataSet()
39     #tsis = gdcm.Tag(0x0008,0x2112) # SourceImageSequence
40
41     # Create a dataelement
42     de = gdcm.DataElement(gdcm.Tag(0x0010, 0x2180))
43     de.SetByteValue("Occupation", gdcm.VL(len("Occupation")))
44     de.SetVR(gdcm.VR(gdcm.VR.SH))
45
46     # Create an item
47     it=gdcm.Item()
48     it.SetVLToUndefined() # Needed to not popup error message
49     #it.InsertDataElement(de)
50     nds=it.GetNestedDataSet()
51     nds.Insert(de)
52
53     # Create a Sequence
54     sq=gdcm.SequenceOfItems().New()
55     sq.SetLengthToUndefined()
56     sq.AddItem(it)
57
58     # Insert sequence into data set
59     des=gdcm.DataElement(gdcm.Tag(0x0400,0x0550))
60     des.SetVR(gdcm.VR(gdcm.VR.SQ))
61     des.SetValue(sq.__ref__())
62     des.SetVLToUndefined()
63
64     ds.Insert(des)
65
66     w = gdcm.Writer()
67     w.SetFile( f )
68     w.SetFileName( file2 )
69     if not w.Write():
70         sys.exit(1)

```

27.102 offscreenimage.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "vtkGDCMImageReader.h"
#include "vtkRenderWindow.h"
#include "vtkRenderer.h"
#include "vtkImageMapToWindowLevelColors.h"

```

```

#include "vtkImageActor.h"
#include "vtkPNGWriter.h"
#include "vtkWindowToImageFilter.h"
#include "vtkMedicalImageProperties.h"

int main(int argc, char *argv[])
{
    if( argc < 2 )
    {
        return 1;
    }
    const char *filename = argv[1];

    vtkGDCMImageReader *reader = vtkGDCMImageReader::New();
    reader->SetFileName( filename );
    reader->Update(); // important to read the window/level info

    vtkMedicalImageProperties *prop = reader->GetMedicalImageProperties();

    vtkRenderWindow *renWin = vtkRenderWindow::New();
    renWin->OffScreenRenderingOn();

    vtkRenderer *renderer = vtkRenderer::New();
    renWin->AddRenderer(renderer);

    vtkImageMapToWindowLevelColors *windowlevel = vtkImageMapToWindowLevelColors::New();
    windowlevel->SetInput( reader->GetOutput() );
    unsigned int n = prop->GetNumberOfWindowLevelPresets();
    if( n )
    {
        // Take the first one by default:
        const double *wl = prop->GetNthWindowLevelPreset(0);
        windowlevel->SetWindow( wl[0] );
        windowlevel->SetLevel( wl[1] );
    }

    vtkImageActor *actor = vtkImageActor::New();
    actor->SetInput( windowlevel->GetOutput() );

    renderer->AddActor( actor );

    renWin->Render();

    vtkWindowToImageFilter *w2if = vtkWindowToImageFilter::New();
    w2if->SetInput( renWin );

    vtkPNGWriter *wr = vtkPNGWriter::New();
    wr->SetInput( w2if->GetOutput() );
    wr->SetFileName( "offscreenimage.png" );
    wr->Write();

    reader->Delete();
    renWin->Delete();
    renderer->Delete();
    windowlevel->Delete();
    actor->Delete();
    w2if->Delete();
    wr->Delete();

    return 0;
}

```

27.103 PatchFile.cxx

This is a C++ example on how to use [gdcm::Attribute](#)

```

/*=====

Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR

```

```

    PURPOSE.  See the above copyright notice for more information.

=====*/
/*
 * The image was a broken file where the Pixel Data element was 8 times too big
 * Apparently multiplying the BitsAllocated to 4 and multiplying the number of
 * frames by 2 would solve the problem
 *
 * This C++ code can be used to patch the header.
 */

#include "gdcmReader.h"
#include "gdcmImageReader.h"
#include "gdcmWriter.h"
#include "gdcmDataSet.h"
#include "gdcmAttribute.h"

int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        return 1;
    }
    const char *f = argv[1];
    const char *out = argv[2];
    gdcm::Reader r;
    r.SetFileName( f );
    if( !r.Read() )
    {
        return 1;
    }

    gdcm::File &file = r.GetFile();
    gdcm::DataSet& ds = file.GetDataSet();
    // (0028,0100) US 16 # 2, 1 BitsAllocated
    // (0028,0101) US 16 # 2, 1 BitsStored
    // (0028,0102) US 15 # 2, 1 HighBit
    //
    {
        gdcm::Attribute<0x28,0x100> at;
        at.SetFromDataElement( ds.GetDataElement( at.
            GetTag() ) );
        if( at.GetValue() != 8 )
        {
            return 1;
        }
        at.SetValue( 32 );
        ds.Replace( at.GetAsDataElement() );
    }
    {
        gdcm::Attribute<0x28,0x101> at;
        at.SetFromDataElement( ds.GetDataElement( at.
            GetTag() ) );
        if( at.GetValue() != 8 )
        {
            return 1;
        }
        at.SetValue( 32 );
        ds.Replace( at.GetAsDataElement() );
    }
    {
        gdcm::Attribute<0x28,0x102> at;
        at.SetFromDataElement( ds.GetDataElement( at.
            GetTag() ) );
        if( at.GetValue() != 7 )
        {
            return 1;
        }
        at.SetValue( 31 );
        ds.Replace( at.GetAsDataElement() );
    }
    // (0028,0008) IS [56] # 2, 1 NumberOfFrames
    {
        gdcm::Attribute<0x28,0x8> at;
        at.SetFromDataElement( ds.GetDataElement( at.
            GetTag() ) );
        at.SetValue( at.GetValue() * 2 );
        ds.Replace( at.GetAsDataElement() );
    }
}

```

```

gdcmm::Writer w;
w.SetFile( file );
w.SetCheckFileMetaInformation( false );
w.SetFileName( out );
if( !w.Write() )
{
    return 1;
}

// Now let's see if we can read it as an image:
gdcmm::ImageReader ir;
ir.SetFileName( out );
if(!ir.Read())
{
    return 1;
}
gdcmm::Image &image = ir.GetImage();
unsigned long len = image.GetBufferLength();
const gdcmm::ByteValue *bv = ir.GetFile().GetDataSet().
    GetDataElement( gdcmm::Tag(0x7fe0,0x0010) ).GetByteValue();
if( !bv || len != bv->GetLength() )
{
    return 1;
}
std::cout << bv->GetLength() << " " << len << std::endl;

std::cout << "Success to rewrite image !" << std::endl;
image.Print( std::cout );
return 0;
}

```

27.104 PhilipsPrivateRescaleInterceptSlope.py

```

1 #####
2 #
3 #   Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 #   Copyright (c) 2006-2011 Mathieu Malaterre
6 #   All rights reserved.
7 #   See Copyright.txt or http://gdcmm.sourceforge.net/Copyright.html for details.
8 #
9 #   This software is distributed WITHOUT ANY WARRANTY; without even
10 #   the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 #   PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 """
16 Usage:
17
18 python
19 """
20
21 import gdcmm
22 import sys
23
24 filename = sys.argv[1]
25 tmpfile = "/tmp/philips_rescaled.dcm"
26
27
28 # Need to access some private tags, read the file :
29 reader = gdcmm.Reader()
30 reader.SetFileName( filename )
31 if not reader.Read():
32     sys.exit(1)
33
34 ds = reader.GetFile().GetDataSet()
35
36 #print ds
37 # (2005,1409)      DS      4      0.0
38 # (2005,140a)      DS      16     1.52283272283272
39
40 # (2005,0014)      LO      26     Philips MR Imaging DD 005
41 tag1 = gdcmm.PrivateTag(0x2005,0x09,"Philips MR Imaging DD 005")
42 tag2 = gdcmm.PrivateTag(0x2005,0x0a,"Philips MR Imaging DD 005")
43 print tag1
44 print tag2

```

```

45
46 # make sure to do a copy, we want the private tag to remain
47 # otherwise gdcm gives us a reference
48 el1 = gdcm.DataElement( ds.GetDataElement( tag1 ) )
49 print el1
50 el2 = gdcm.DataElement( ds.GetDataElement( tag2 ) )
51 print el2
52
53 # (0028,1052) DS [-1000]           # 6, 1 RescaleIntercept
54 # (0028,1053) DS [1]             # 2, 1 RescaleSlope
55
56 el1.SetTag( gdcm.Tag(0x0028,0x1052) )
57 el2.SetTag( gdcm.Tag(0x0028,0x1053) )
58
59 ds.Insert( el1 )
60 ds.Insert( el2 )
61
62 w = gdcm.Writer()
63 w.SetCheckFileMetaInformation( False )
64 w.SetFileName( tmpfile )
65 w.SetFile( reader.GetFile() )
66 if not w.Write():
67     sys.exit(1)
68
69 print "success"

```

27.105 PlaySound.py

```

1 #####
2 #
3 #   Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 #   Copyright (c) 2006-2011 Mathieu Malaterre
6 #   All rights reserved.
7 #   See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.
8 #
9 #   This software is distributed WITHOUT ANY WARRANTY; without even
10 #   the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 #   PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 """
16 Usage:
17
18 python PlaySound.py input.dcm
19 """
20
21 import gdcm
22 import sys
23
24 filename = "/home/mmalaterre/Creatis/gdcmDataExtra/gdcmNonImageData/audio_from_rafael_sanguinetti.dcm"
25 filename = sys.argv[1]
26 print filename
27
28 r = gdcm.Reader()
29 r.SetFileName( filename )
30 if not r.Read():
31     sys.exit(1)
32
33 ds = r.GetFile().GetDataSet()
34
35 waveformtag = gdcm.Tag(0x5400,0x0100)
36 waveformsq = ds.GetDataElement( waveformtag )
37 #print waveformsq
38
39 #print dir(waveformsq)
40
41 items = waveformsq.GetSequenceOfItems()
42
43 if not items.GetNumberOfItems():
44     sys.exit(1)
45
46 item = items.GetItem(1)
47 #print item
48
49 waveformds = item.GetNestedDataSet()

```

```

50 #print waveformds
51
52 waveformdatatag = gdcM.Tag(0x5400,0x1010)
53 waveformdata = waveformds.GetDataElement( waveformdatatag )
54
55 #print waveformdata.GetPointer()
56 bv = waveformdata.GetByteValue()
57 print dir(bv)
58
59 #print bv.GetPointer()
60 print bv.GetLength()
61 l = 116838
62
63 file='test.wav'
64 myfile = open(file, "wb")
65 s = bv.GetPointer()
66 for i in range(0, l):
67     myfile.write(s[i])
68 myfile.close()
69
70 # http://mail.python.org/pipermail/python-list/2004-October/288905.html
71 if sys.platform.startswith('win'):
72     from winsound import PlaySound, SND_FILENAME, SND_ASYNC
73     PlaySound(file, SND_FILENAME|SND_ASYNC)
74 elif sys.platform.find('linux')>-1:
75     from wave import open as waveOpen
76     from ossaudiodev import open as ossOpen
77     s = waveOpen(file,'rb')
78     (nc,sw,fr,nf,comptype, compname) = s.getparams( )
79     dsp = ossOpen('/dev/dsp','w')
80     try:
81         from ossaudiodev import AFMT_S16_NE
82     except ImportError:
83         if byteorder == "little":
84             AFMT_S16_NE = ossaudiodev.AFMT_S16_LE
85         else:
86             AFMT_S16_NE = ossaudiodev.AFMT_S16_BE
87     dsp.setparameters(AFMT_S16_NE, nc, fr)
88     data = s.readframes(nf)
89     s.close()
90     dsp.write(data)
91     dsp.close()

```

27.106 pmsct_rgb1.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
/*
 * This example shows how to rewrite a ELSCINT1/PMSCT_RGB1 compressed
 * image so that it is readable by most 3rd party software (DICOM does
 * not specify this particular encoding).
 * This is required for the sake of interoperability with any standard
 * conforming DICOM system.
 *
 * Everything done in this code is for the sole purpose of writing interoperable
 * software under Sect. 1201 (f) Reverse Engineering exception of the DMCA.
 * If you believe anything in this code violates any law or any of your rights,
 * please contact us (gdcm-developers@lists.sourceforge.net) so that we can
 * find a solution.
 *
 * Everything you do with this code is at your own risk, since decompression
 * algorithm was not written from specification documents.
 *
 * Special thanks to:
 * Jean-Pierre Roux for providing the sample datasets
 */

```

```

#include "gdcmsReader.h"
#include "gdcmsPrivateTag.h"
#include "gdcmsAttribute.h"
#include "gdcmsImageWriter.h"

void delta_decode(const unsigned char *data_in, size_t data_size,
                 std::vector<unsigned char> &new_stream, unsigned short pc, size_t w, size_t h)
{
    const size_t plane_size = h * w;
    const size_t outputlen = 3 * plane_size;
    new_stream.resize( outputlen );

    assert( data_size != outputlen );
    if( data_size == outputlen )
    {
        return;
    }
    typedef unsigned char byte;
    enum {
        COLORMODE = 0x81,
        ESCMODE = 0x82,
        REPEATMODE = 0x83
    };

    byte* src = (byte*)data_in;
    byte* dest = (byte*)&new_stream[0];
    union { byte gray; byte rgb[3]; } pixel;
    pixel.rgb[0] = pixel.rgb[1] = pixel.rgb[2] = 0;
    // always start in grayscale mode
    bool graymode = true;
    size_t dx = 1;
    size_t dy = 3;
    // algorithm works with both planar configuration
    // It does produce surprising greenish background color for planar
    // configuration is 0, while the nested Icon SQ display a nice black
    // background
    if (pc)
    {
        dx = plane_size;
        dy = 1;
    }
    size_t ps = plane_size;

    // The following is highly unoptimized as we have nested if statement in a while loop
    // we need to switch from one algorithm to ther other (RGB <-> GRAY)
    while (ps)
    {
        // next byte:
        byte b = *src++;
        assert( src < data_in + data_size );
        // mode selection:
        switch ( b )
        {
            case ESCMODE:
                // Used to treat a byte 81/82/83 as a normal byte
                if (graymode)
                {
                    pixel.gray += *src++;
                    dest[0*dx] = pixel.gray;
                    dest[1*dx] = pixel.gray;
                    dest[2*dx] = pixel.gray;
                }
                else
                {
                    pixel.rgb[0] += *src++;
                    pixel.rgb[1] += *src++;
                    pixel.rgb[2] += *src++;
                    dest[0*dx] = pixel.rgb[0];
                    dest[1*dx] = pixel.rgb[1];
                    dest[2*dx] = pixel.rgb[2];
                }
                dest += dy;
                ps--;
                break;
            case REPEATMODE:
                // repeat mode (RLE)
                b = *src++;
                ps -= b;
                if (graymode)
                {
                    while (b-- > 0)

```

```

        {
            dest[0*dx] = pixel.gray;
            dest[1*dx] = pixel.gray;
            dest[2*dx] = pixel.gray;
            dest += dy;
        }
    }
    else
    {
        while (b-- > 0)
        {
            dest[0*dx] = pixel.rgb[0];
            dest[1*dx] = pixel.rgb[1];
            dest[2*dx] = pixel.rgb[2];
            dest += dy;
        }
    }
    break;
case COLORMODE:
    // We are swithing from one mode to the other. The stream contains an intermixed
    // compression of RGB codec and GRAY codec. Each one not knowing of the other
    // reset old value to 0.
    if (graymode)
    {
        graymode = false;
        pixel.rgb[0] = pixel.rgb[1] = pixel.rgb[2] = 0;
    }
    else
    {
        graymode = true;
        pixel.gray = 0;
    }
    break;
default:
    // This is identical to ESCMODE, it would be nicer to use fall-through
    if (graymode)
    {
        pixel.gray += b;
        dest[0*dx] = pixel.gray;
        dest[1*dx] = pixel.gray;
        dest[2*dx] = pixel.gray;
    }
    else
    {
        pixel.rgb[0] += b;
        pixel.rgb[1] += *src++;
        pixel.rgb[2] += *src++;
        dest[0*dx] = pixel.rgb[0];
        dest[1*dx] = pixel.rgb[1];
        dest[2*dx] = pixel.rgb[2];
    }
    dest += dy;
    ps--;
    break;
} // end switch
} // end while
}

int main(int argc, char *argv [])
{
    if( argc < 2 ) return 1;
    const char *filename = argv[1];
    gdcm::Reader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        std::cerr << "Failed to read: " << filename << std::endl;
        return 1;
    }
    const gdcm::DataSet& ds = reader.GetFile().GetDataSet();

    // (07a1,1011) CS [PMSCT_RGB1] # 10,1 Tamar Compression Type
    const gdcm::PrivateTag tcompressiontype(0x07a1,0x0011,"ELSCINT1");
    if( !ds.FindDataElement( tcompressiontype ) ) return 1;
    const gdcm::DataElement& compressiontype = ds.GetDataElement(
        tcompressiontype );
    if ( compressiontype.IsEmpty() ) return 1;
    const gdcm::ByteValue * bv = compressiontype.GetByteValue();
    std::string comprle = "PMSCT_RLE1";
    std::string comprgb = "PMSCT_RGB1";
    bool isrle = false;

```



```

bool isrgb = false;
if( strcmp( bv->GetPointer(), comprle.c_str(), comprle.size() ) == 0 )
{
    isrle = true;
    return 1;
}
if( strcmp( bv->GetPointer(), comprgb.c_str(), comprgb.size() ) == 0 )
{
    isrgb = true;
}
if( !isrgb && !isrle ) return 1;

const gdcm::PrivateTag tcompressedpixeldata(0x07a1,0x000a,"ELSCINT1");
if( !ds.FindDataElement( tcompressedpixeldata ) ) return 1;
const gdcm::DataElement& compressionpixeldata = ds.
    GetDataElement( tcompressedpixeldata);
if ( compressionpixeldata.IsEmpty() ) return 1;
const gdcm::ByteValue * bv2 = compressionpixeldata.GetByteValue();

gdcm::Attribute<0x0028,0x0006> at0;
at0.SetFromDataSet( ds );
gdcm::Attribute<0x0028,0x0010> at1;
at1.SetFromDataSet( ds );
gdcm::Attribute<0x0028,0x0011> at2;
at2.SetFromDataSet( ds );

std::vector<unsigned char> buffer;
delta_decode((const unsigned char*)bv2->GetPointer(), bv2->GetLength(), buffer,
    at0.GetValue(), at1.GetValue(), at2.GetValue() );

gdcm::DataElement pixeldata( gdcm::Tag(0x7fe0,0x0010) );
pixeldata.SetVR( gdcm::VR::OW );
pixeldata.SetByteValue( (char*)&buffer[0], (uint32_t)buffer.size() );
// TODO we should check that decompress byte buffer match the expected size (row*col*...)

// Add the pixel data element
reader.GetFile().GetDataSet().Replace( pixeldata );

reader.GetFile().GetHeader().SetDataSetTransferSyntax(
    gdcm::TransferSyntax::ExplicitVRLittleEndian);
gdcm::Writer writer;
writer.SetFile( reader.GetFile() );

// Cleanup stuff:
// remove the compressed pixel data:
// FIXME: should I remove more private tags ? all of them ?
// oh well this is just an example
// use gdcm::Anonymizer::RemovePrivateTags if needed...
writer.GetFile().GetDataSet().Remove( compressionpixeldata.
    GetTag() );
std::string outfilename;
if (argc > 2)
    outfilename = argv[2];
else
    outfilename = "outrgb.dcm";
writer.SetFileName( outfilename.c_str() );
if( !writer.Write() )
{
    std::cerr << "Failed to write" << std::endl;
    return 1;
}

std::cout << "success !" << std::endl;

return 0;
}

```

27.107 PrivateDict.py

```

1 #####
2 #
3 #   Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 #   Copyright (c) 2006-2011 Mathieu Malaterre
6 #   All rights reserved.
7 #   See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.
8 #

```

```

9 #      This software is distributed WITHOUT ANY WARRANTY; without even
10 #      the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 #      PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 """
16 """
17
18 import gdcM
19 import sys,os
20
21 if __name__ == "__main__":
22     #gdcM.Trace.DebugOn()
23     globInst = gdcM.Global.GetInstance()
24     # Try to load Part3.xml file
25     # This file is too big for being accessible directly at runtime.
26     globInst.LoadResourcesFiles()
27
28
29 # Get a private tag from the runtime dicts. LoadResourcesFiles could
30 # have failed but this has no impact on the private dict
31
32 d = globInst.GetDicts()
33 print d.GetDictEntry( gdcM.Tag(0x0029,0x0010) ,"SIEMENS CSA HEADER" )
34 pd = d.GetPrivateDict()
35 print pd.GetDictEntry( gdcM.PrivateTag(0x0029,0x0010,"SIEMENS CSA HEADER") )

```

27.108 PublicDict.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcM.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/

/*
 * Dummy example to show GDCM Dict(s) API (Part 6) + Collected Private Attributes:
 */

#include "gdcMGlobal.h"
#include "gdcMDicts.h"
#include "gdcMDict.h"
#include "gdcMCSAHeader.h"
#include "gdcMPrivateTag.h"

int main(int , char *[])
{
    const gdcM::Global& g = gdcM::Global::GetInstance(); // sum of all
        knowledge !
    const gdcM::Dicts &dicts = g.GetDicts();
    const gdcM::Dict &pub = dicts.GetPublicDict(); // Part 6

    //std::cout << pub << std::endl;

    // 3 different ways to access the same information

    // 1. From the public dict only:
    gdcM::Tag patient_name(0x10,0x10);
    const gdcM::DictEntry &entry1 = pub.GetDictEntry(patient_name);
    std::cout << entry1 << std::endl;

    // 2. From all dicts:
    const gdcM::DictEntry &entry2 = dicts.GetDictEntry(patient_name);
    std::cout << entry2 << std::endl;

    // 3. This solution is the most flexible solution as you can request using the same
    // API either a public tag or a private tag
    const char *strowner = 0;
    const gdcM::DictEntry &entry3 = dicts.GetDictEntry(patient_name,strowner);

```

```

std::cout << entry3 << std::endl;

// Private attributes:

// try with a private tag now:
const gdcm::PrivateTag &private_tag =
    gdcm::CSAHeader::GetCSAImageHeaderInfoTag();
//std::cout << private_tag << std::endl;
const gdcm::DictEntry &entry4 = dicts.GetDictEntry(private_tag,private_tag.
    GetOwner());
std::cout << entry4 << std::endl;

// Let's pretend that private lookup is on 0x10xx elements:
gdcm::PrivateTag dummy = private_tag;
dummy.SetElement( (uint16_t)(0x1000 + dummy.GetElement()) );
const gdcm::DictEntry &entry5 = dicts.GetDictEntry(dummy,dummy.
    GetOwner());
std::cout << entry5 << std::endl;

return 0;
}

```

27.109 ReadAndDumpDICOMDIR.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
/*
 * This example shows how to read and dump a DICOMDIR File
 *
 * Thanks:
 * Tom Marynowski (lordglub gmail) for contributing this example
 */
#include "gdcmReader.h"
#include "gdcmMediaStorage.h"

typedef std::set<gdcm::DataElement> DataElementSet;
typedef DataElementSet::const_iterator ConstIterator;

int main(int argc, char *argv [])
{
    if( argc < 2 ) return 1;
    const char *filename = argv[1];

    gdcm::Reader reader;
    reader.SetFileName( filename);
    if( !reader.Read() )
    {
        std::cerr << "Could not read: " << filename << std::endl;
        return 1;
    }
    std::stringstream strm;

    gdcm::File &file = reader.GetFile();
    gdcm::DataSet &ds = file.GetDataSet();
    gdcm::FileMetaInformation &fmi = file.GetHeader();

    gdcm::MediaStorage ms;
    ms.SetFromFile(file);
    if( ms != gdcm::MediaStorage::MediaStorageDirectoryStorage
        )
    {
        std::cout << "This file is not a DICOMDIR" << std::endl;
        return 1;
    }
}

```

```

if (fmi.FindDataElement( gdcm::Tag (0x0002, 0x0002)))
{
    strm.str("");
    fmi.GetDataElement( gdcm::Tag (0x0002, 0x0002) ).
    GetValue().Print(strm);
}
else
{
    std::cerr << " Media Storage Sop Class UID not present" << std::cout;
}

//TODO il faut trimer strm.str() avant la comparaison au cas ou...
if ("1.2.840.10008.1.3.10"!=strm.str())
{
    std::cout << "This file is not a DICOMDIR" << std::endl;
    return 1;
}

ConstIterator it = ds.GetDES().begin();

for( ; it != ds.GetDES().end(); ++it)
{
    if (it->GetTag()==gdcm::Tag (0x0004, 0x1220))
    {
        const gdcm::DataElement &de = (*it);
        // ne pas utiliser GetSequenceOfItems pour extraire les items
        gdcm::SmartPointer<gdcm::SequenceOfItems> sqi =de.
        GetValueAsSQ();
        unsigned int itemused = 1;
        while (itemused<=sqi->GetNumberOfItems())

        {
            strm.str("");

            if (sqi->GetItem(itemused).FindDataElement(
            gdcm::Tag (0x0004, 0x1430)))
                sqi->GetItem(itemused).GetDataElement(gdcm::Tag (0x0004, 0x1430)).
                GetValue().Print(strm);

            //TODO il faut trimer strm.str() avant la comparaison
            while((strm.str()=="PATIENT")||((strm.str()=="PATIENT ")))
            {
                std::cout << strm.str() << std::endl;
                strm.str("");
                if (sqi->GetItem(itemused).FindDataElement(
                gdcm::Tag (0x0010, 0x0010)))
                    sqi->GetItem(itemused).GetDataElement(gdcm::Tag (0x0010, 0x0010))
                    .GetValue().Print(strm);
                std::cout << "PATIENT NAME : " << strm.str() << std::endl;

                //PATIENT ID
                strm.str("");
                if (sqi->GetItem(itemused).FindDataElement(
                gdcm::Tag (0x0010, 0x0020)))
                    sqi->GetItem(itemused).GetDataElement(gdcm::Tag (0x0010, 0x0020))
                    .GetValue().Print(strm);
                std::cout << "PATIENT ID : " << strm.str() << std::endl;

                /*ADD TAG TO READ HERE*/
                std::cout << "===== " << std::endl;
                itemused++;
                strm.str("");
                if (sqi->GetItem(itemused).FindDataElement(
                gdcm::Tag (0x0004, 0x1430)))
                    sqi->GetItem(itemused).GetDataElement(gdcm::Tag (0x0004, 0x1430))
                    .GetValue().Print(strm);

                //TODO il faut trimer strm.str() avant la comparaison
                while((strm.str()=="STUDY")||((strm.str()=="STUDY ")))
                {
                    std::cout << " " << strm.str() << std::endl;
                    //UID
                    strm.str("");
                    if (sqi->GetItem(itemused).FindDataElement(
                    gdcm::Tag (0x0020, 0x000d)))
                        sqi->GetItem(itemused).GetDataElement(
                        gdcm::Tag (0x0020, 0x000d)).GetValue().Print(strm);
                    std::cout << " " << strm.str() << std::endl;
                }
            }
        }
    }
}

```

```

        //STUDY DATE
        strm.str("");
        if (sqi->GetItem(itemused).FindDataElement(
gdcmm::Tag (0x0008, 0x0020)))
            sqi->GetItem(itemused).GetDataElement(
gdcmm::Tag (0x0008, 0x0020)).GetValue().Print(strm);
        std::cout << "          STUDY DATE : " << strm.str() << std::endl;

        //STUDY DESCRIPTION
        strm.str("");
        if (sqi->GetItem(itemused).FindDataElement(
gdcmm::Tag (0x0008, 0x1030)))
            sqi->GetItem(itemused).GetDataElement(
gdcmm::Tag (0x0008, 0x1030)).GetValue().Print(strm);
        std::cout << "          STUDY DESCRIPTION : " << strm.str() << std::endl;

        /*ADD TAG TO READ HERE*/
        std::cout << "          " << "===== " << std::endl;

        itemused++;
        strm.str("");
        if (sqi->GetItem(itemused).FindDataElement(
gdcmm::Tag (0x0004, 0x1430)))
            sqi->GetItem(itemused).GetDataElement(
gdcmm::Tag (0x0004, 0x1430)).GetValue().Print(strm);

        //TODO il faut trimer strm.str() avant la comparaison
        while((strm.str()=="SERIES")||((strm.str()=="SERIES ")))
        {
            std::cout << "          " << strm.str() << std::endl;
            strm.str("");
            if (sqi->GetItem(itemused).FindDataElement(
gdcmm::Tag (0x0020, 0x000e)))
                sqi->GetItem(itemused).GetDataElement(
gdcmm::Tag (0x0020, 0x000e)).GetValue().Print(strm);
            std::cout << "          SERIE UID" << strm.str() << std::endl;

            //SERIE MODALITY
            strm.str("");
            if (sqi->GetItem(itemused).FindDataElement(
gdcmm::Tag (0x0008, 0x0060)))
                sqi->GetItem(itemused).GetDataElement(
gdcmm::Tag (0x0008, 0x0060)).GetValue().Print(strm);
            std::cout << "          SERIE MODALITY" << strm.str() << std::endl;

            //SERIE DESCRIPTION
            strm.str("");
            if (sqi->GetItem(itemused).FindDataElement(
gdcmm::Tag (0x0008, 0x103e)))
                sqi->GetItem(itemused).GetDataElement(
gdcmm::Tag (0x0008, 0x103e)).GetValue().Print(strm);
            std::cout << "          SERIE DESCRIPTION" << strm.str() << std::endl;

            /*ADD TAG TO READ HERE*/

            std::cout << "          " << "===== " << std::endl;
            itemused++;
            strm.str("");
            if (sqi->GetItem(itemused).FindDataElement(
gdcmm::Tag (0x0004, 0x1430)))
                sqi->GetItem(itemused).GetDataElement(
gdcmm::Tag (0x0004, 0x1430)).GetValue().Print(strm);

            //TODO il faut trimer strm.str() avant la comparaison
            while ((strm.str()=="IMAGE")||((strm.str()=="IMAGE ")))
                // if(tmp=="IMAGE")
                {
                    std::cout << "          " << strm.str() << std::endl;

                    //UID
                    strm.str("");
                    if (sqi->GetItem(itemused).FindDataElement(
gdcmm::Tag (0x0004, 0x1511)))
                        sqi->GetItem(itemused).GetDataElement(
gdcmm::Tag (0x0004, 0x1511)).GetValue().Print(strm);
                    std::cout << "          IMAGE UID : " << strm.str() << std::endl;

                    //PATH de l'image

```

```

        strm.str("");
        if (sqi->GetItem(itemused).FindDataElement(
gdcmm::Tag (0x0004, 0x1500)))
            sqi->GetItem(itemused).GetDataElement(
gdcmm::Tag (0x0004, 0x1500)).GetValue().Print(strm);
        std::cout << "            IMAGE PATH : " << strm.str() << std::endl;
        /*ADD TAG TO READ HERE*/

        if(itemused < sqi->GetNumberOfItems())
        {itemused++;
        }else{break;}

        strm.str("");

        if (sqi->GetItem(itemused).FindDataElement(
gdcmm::Tag (0x0004, 0x1430)))
            sqi->GetItem(itemused).GetDataElement(
gdcmm::Tag (0x0004, 0x1430)).GetValue().Print(strm);

    }
    }
    }
    itemused++;
    }
    }
}
return 0;
}

```

27.110 ReadAndDumpDICOMDIR.py

```

1 #####
2 #
3 # Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 # Copyright (c) 2006-2011 Mathieu Malaterre
6 # All rights reserved.
7 # See Copyright.txt or http://gdcmm.sourceforge.net/Copyright.html for details.
8 #
9 # This software is distributed WITHOUT ANY WARRANTY; without even
10 # the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 # PURPOSE. See the above copyright notice for more information.
12 #
13 # File: ReadAndDumpDICOMDIR.py
14 #
15 # Author: Lukas Batteau (lbatteau gmail)
16 #
17 # This example shows how to read and dump a DICOMDIR File.
18 # Based on Tom Marynowski's (lordglub gmail) example.
19 #
20 # Usage:
21 # python ReadAndDumpDICOMDIR.py [DICOMDIR file]
22 #####
23
24
25
26 import sys
27 import gdcmm
28
29 if __name__ == "__main__":
30     # Check arguments
31     if (len(sys.argv) < 2):
32         # No filename passed
33         print "No input filename found"
34         quit()
35
36     filename = sys.argv[1]
37
38
39     # Read file
40     reader = gdcmm.Reader()
41     reader.SetFileName(filename)
42     if (not reader.Read()):
43         print "Unable to read %s" % (filename)

```

```

44         quit()
45
46     file = reader.GetFile()
47
48     # Retrieve header information
49     fileMetaInformation = file.GetHeader()
50     print fileMetaInformation
51
52     # Retrieve data set
53     dataSet = file.GetDataSet()
54     #print dataSet
55
56     # Check media storage
57     mediaStorage = gdcm.MediaStorage()
58     mediaStorage.SetFromFile(file)
59     if (gdcm.MediaStorage.GetMSType(str(mediaStorage)) !=
gdcm.MediaStorage.MediaStorageDirectoryStorage):
60         # File is not a DICOMDIR
61         print "This file is not a DICOMDIR (Media storage type: %s)" % (str(mediaStorage))
62         quit()
63
64     # Check Media Storage SOP Class
65     if (fileMetaInformation.FindDataElement(gdcm.Tag(0x0002, 0x0002))):
66         sopClassUid = str(fileMetaInformation.GetDataElement(gdcm.Tag(0x0002, 0x0002)).GetValue())
67         # Check SOP UID
68         if (sopClassUid != "1.2.840.10008.1.3.10"):
69             # File is not a DICOMDIR
70             print "This file is not a DICOMDIR"
71     else:
72         # Not present
73         print "Media Storage SOP Class not present"
74         quit()
75
76     # Iterate through the DICOMDIR data set
77     iterator = dataSet.GetDES().begin()
78     while (not iterator.equal(dataSet.GetDES().end())):
79         dataElement = iterator.next()
80
81         # Check the element tag
82         if (dataElement.GetTag() == gdcm.Tag(0x0004, 0x1220)):
83             # The 'Directory Record Sequence' element
84             sequence = dataElement.GetValueAsSQ()
85
86             # Loop through the sequence items
87             itemNr = 1
88             while (itemNr < sequence.GetNumberOfItems()):
89                 item = sequence.GetItem(itemNr)
90
91                 # Check the element tag
92                 if (item.FindDataElement(gdcm.Tag(0x0004, 0x1430))):
93                     # The 'Directory Record Type' element
94                     value = str(item.GetDataElement(gdcm.Tag(0x0004, 0x1430)).GetValue())
95
96                     # PATIENT
97                     while (value.strip() == "PATIENT"):
98                         print value.strip()
99                         # Print patient name
100                        if (item.FindDataElement(gdcm.Tag(0x0010, 0x0010))):
101                            value = str(item.GetDataElement(gdcm.Tag(0x0010, 0x0010)).GetValue())
102                            print value
103
104                        # Print patient ID
105                        if (item.FindDataElement(gdcm.Tag(0x0010, 0x0020))):
106                            value = str(item.GetDataElement(gdcm.Tag(0x0010, 0x0020)).GetValue())
107                            print value
108
109                        # Next
110                        itemNr = itemNr + 1
111                        item = sequence.GetItem(itemNr)
112                        if (item.FindDataElement(gdcm.Tag(0x0004, 0x1430))):
113                            value = str(item.GetDataElement(gdcm.Tag(0x0004, 0x1430)).GetValue())
114
115                        # STUDY
116                        while (value.strip() == "STUDY"):
117                            print value.strip()
118
119                            # Print study UID
120                            if (item.FindDataElement(gdcm.Tag(0x0020, 0x000d))):
121                                value = str(item.GetDataElement(gdcm.Tag(0x0020, 0x000d)).GetValue())
122                                print value

```

```

123
124
125         # Print study date
126         if (item.FindDataElement(gdcm.Tag(0x0008, 0x0020))):
127             value = str(item.GetDataElement(gdcm.Tag(0x0008, 0x0020)).GetValue()
128         ))
129             print value
130
131         # Print study description
132         if (item.FindDataElement(gdcm.Tag(0x0008, 0x1030))):
133             value = str(item.GetDataElement(gdcm.Tag(0x0008, 0x1030)).GetValue()
134         ))
135             print value
136
137         # Next
138         itemNr = itemNr + 1
139         item = sequence.GetItem(itemNr)
140         if (item.FindDataElement(gdcm.Tag(0x0004, 0x1430))):
141             value = str(item.GetDataElement(gdcm.Tag(0x0004, 0x1430)).
142         GetValue())
143
144         # SERIES
145         while (value.strip() == "SERIES"):
146             print value.strip()
147
148             # Print series UID
149             if (item.FindDataElement(gdcm.Tag(0x0020, 0x000e))):
150                 value = str(item.GetDataElement(gdcm.Tag(0x0020, 0x000e)).
151         GetValue())
152                 print value
153
154             # Print series modality
155             if (item.FindDataElement(gdcm.Tag(0x0008, 0x0060))):
156                 value = str(item.GetDataElement(gdcm.Tag(0x0008, 0x0060)).
157         GetValue())
158                 print "Modality"
159                 print value
160
161             # Print series description
162             if (item.FindDataElement(gdcm.Tag(0x0008, 0x103e))):
163                 value = str(item.GetDataElement(gdcm.Tag(0x0008, 0x103e)).
164         GetValue())
165                 print "Description"
166                 print value
167
168             # Next
169             itemNr = itemNr + 1
170             item = sequence.GetItem(itemNr)
171             if (item.FindDataElement(gdcm.Tag(0x0004, 0x1430))):
172                 value = str(item.GetDataElement(gdcm.Tag(0x0004, 0x1430)).
173         GetValue())
174                 print value
175
176             # Next
177             if (itemNr < sequence.GetNumberOfItems()):
178                 itemNr = itemNr + 1
179             else:
180                 break
181
182             item = sequence.GetItem(itemNr)
183             if (item.FindDataElement(gdcm.Tag(0x0004, 0x1430))):
184                 value = str(item.GetDataElement(
185         gdcm.Tag(0x0004, 0x1430)).GetValue())
186
187         # Next
188         itemNr = itemNr + 1

```


27.111 ReadAndPrintAttributes.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
/*
 * This small example will show how one can read and print
 * a DICOM Attribute using different technique (by tag or by name)
 */

#include "gdcmReader.h"
#include "gdcmGlobal.h"
#include "gdcmDicts.h"
#include "gdcmDict.h"
#include "gdcmAttribute.h"
#include "gdcmStringFilter.h"

#include <iostream>

int main(int argc, char *argv[])
{
    if( argc < 2 )
    {
        std::cerr << argv[0] << " input.dcm" << std::endl;
        return 1;
    }
    const char *filename = argv[1];

    // Instantiate the reader:
    gdcm::Reader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        std::cerr << "Could not read: " << filename << std::endl;
        return 1;
    }

    // The output of gdcm::Reader is a gdcm::File
    gdcm::File &file = reader.GetFile();

    // the dataset is the the set of element we are interested in:
    gdcm::DataSet &ds = file.GetDataSet();

    const gdcm::Global& g = gdcm::Global::GetInstance();
    const gdcm::Dicts &dicts = g.GetDicts();
    const gdcm::Dict &pubdict = dicts.GetPublicDict();

    using namespace gdcm;

    // In this example we will show why using name to lookup attribute can be
    // dangerous.
    Tag tPatientName(0x00,0x00);
    //const DictEntry &del =
    pubdict.GetDictEntryByName("Patient Name", tPatientName);

    std::cout << "Found: " << tPatientName << std::endl;

    // Indeed the attribute could not be found. Since DICOM 2003, Patient Name
    // has become Patient's Name.

    Tag tPatientsName;
    //const DictEntry &de2 =
    pubdict.GetDictEntryByName("Patient's Name", tPatientsName);

    std::cout << "Found: " << tPatientsName << std::endl;

    // Let's try to read an arbitrary DICOM Attribute:
    Tag tDoseGridScaling;
    //const DictEntry &de3 =
    pubdict.GetDictEntryByName("Dose Grid Scaling", tDoseGridScaling);

```

```

std::cout << "Found: " << tDoseGridScaling << std::endl;

if( ds.FindDataElement( tDoseGridScaling ) )
{
    gdcm::StringFilter sf;
    sf.SetFile(file);
    std::cout << "Attribute Value as String: " << sf.ToString( tDoseGridScaling ) << std::endl;

    // Let's check the name again:
    std::pair<std::string, std::string> pss
        = sf.ToStringPair( tDoseGridScaling );
    std::cout << "Attribute Name Checked: " << pss.first << std::endl;
    std::cout << "Attribute Value (string): " << pss.second << std::endl;

    //const DataElement &dgs = ds.GetDataElement( tDoseGridScaling );

    // Let's assume for a moment we knew the tag number:
    Attribute<0x3004,0x000e> at;
    assert( at.GetTag() == tDoseGridScaling );
    at.SetFromDataSet( ds );
    // For the sake of long term maintenance, we will not write
    // that this particular attribute is stored as a double. What if
    // a user made a mistake. It is much safer to rely on GDCM internal
    // mechanism to deduce the VR::DS type (represented as a ieee double)
    Attribute<0x3004,0x000e>::ArrayType v = at.
        GetValue();
    std::cout << "DoseGridScaling=" << v << std::endl;
}

return 0;
}

```

27.112 ReadExplicitLengthSQIVR.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "gdcmReader.h"
#include "gdcmImplicitDataElement.h"
#include "gdcmDataSet.h"
#include "gdcmPrivateTag.h"
#include "gdcmPrivateTag.h"
#include "gdcmByteValue.h"
#include "gdcmSequenceOfItems.h"

using namespace gdcm;

int main(int argc, char *argv[])
{
    if ( argc < 2 ) return 1;
    const char *filename = argv[1];
    gdcm::Reader r;
    r.SetFileName( filename );
    r.Read();

    //gdcm::PrivateTag pt(0x01,0x42,"ELSCINT1");
    //gdcm::Tag pt(0x88,0x200);
    gdcm::Tag pt(0x8,0x1140);
    DataSet &ds = r.GetDataSet();
    const DataElement &de = ds.GetDataElement( pt );

    std::cout << de << std::endl;
    const ByteValue *bv = de.GetByteValue();
    SmartPointer<SequenceOfItems> sqi = new
        SequenceOfItems;

```

```

    sqi->SetLength( bv->GetLength() );
    std::stringstream ss;
    ss.str( std::string( bv->GetPointer(), bv->GetLength() ) );
    sqi->Read<ImplicitDataElement, SwapperNoOp>( ss );

    std::cout << *sqi << std::endl;

    return 0;
}

```

27.113 ReadFiles.java

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
import gdcm.*;
import java.io.File;

public class ReadFiles
{
    static int i = 0;
    public static void process(String path)
    {
        //String path = file.getPath();
        assert PosixEmulation.FileExists(path) : "Problem converting to 8bits";

        System.out.println("Reading: " + path );
        System.out.println("File: " + i++);
        Reader r = new Reader();
        try
        {
            r.SetFileName( path );
            TagSetType skip = new TagSetType();
            skip.insert( new Tag(0x7fe0,0x10) );
            boolean b = r.ReadUpToTag( new Tag(0x88,0x200), skip );
            //System.out.println("DS:\n" + r.GetFile().GetDataSet().toString() );
        }
        finally
        {
            r.delete(); // will properly call C++ destructor and close file descriptor
        }
    }

    // Process only files under dir
    public static void visitAllFiles(File dir)
    {
        if (dir.isDirectory())
        {
            String[] children = dir.list();
            for (int i=0; i<children.length; i++)
            {
                visitAllFiles(new File(dir, children[i]));
            }
        }
        else
        {
            process(dir.getPath());
        }
    }

    public static void waiting (int n)
    {
        long t0, t1;
        t0 = System.currentTimeMillis();
        do
        {
            t1 = System.currentTimeMillis();

```

```

    }
    while ((t1 - t0) < (n * 1000));
}

public static void main(String[] args) throws Exception
{
    String directory = args[0];

    Directory gdir = new Directory();
    long n = gdir.Load( directory, true );
    System.out.println( gdir.toString() );
    FilenamesType files = gdir.GetFilenames();
    for( long i = 0; i < n; ++i )
    {
        String path = files.get( (int)i );
        process( path );
    }

    System.out.println( "Java API" );

    //waiting( 10 );
    for( int i = 0; i < 2; ++i )
    {
        File dir = new File(directory);
        visitAllFiles(dir);
    }
}
}

```

27.114 ReadGEMSSDO.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "gdcmReader.h"
#include "gdcmDataElement.h"
#include "gdcmPrivateTag.h"

#include <iostream>
#include <string>

using namespace gdcm;

struct SDOElement
{
    typedef std::vector<std::string>::size_type SizeType;
    const char *GetData(SizeType index) const {
        return Data[index].c_str();
    }
    SizeType GetNumberOfData() const {
        return Data.size();
    }
    void SetData(SizeType index, const char *data) {
        Data[index] = data;
    }
    const char *GetDataFormat() const {
        return DataFormat.c_str();
    }
    void SetDataFormat(const char *dataformat, SizeType num) {
        DataFormat = dataformat;
        Data.resize( num );
    }
    void Print( std::ostream &os ) const {
        os << DataFormat << ":" << std::endl;
        std::vector<std::string>::const_iterator it = Data.begin();
        size_t s = 0;
        for( ; it != Data.end(); ++it )

```

```

        {
            os << " (" << s++ << " ) " << *it << std::endl;
        }
    }
private:
    std::string DataFormat;
    std::vector<std::string> Data;
};

class SDOHeader
{
public:
    typedef std::vector<SDOElement> SDOElements;
    typedef SDOElements::size_type SizeType;
    SizeType GetNumberOfSDOElements() const {
        return InternalSDODataset.size();
    }
    void AddSDOElement(SDOElement const &sdoelement) {
        InternalSDODataset.push_back( sdoelement );
    }
    const SDOElement &GetSDOElement(SizeType index) const {
        return InternalSDODataset[index];
    }
    const SDOElement &GetSDOElementByName(const char *) const {
        return InternalSDODataset[0];
    }
    void LoadFromAttributes(std::string const &s1, std::string const &s2)
    {
        std::string tok;
        std::string tok2;
        std::stringstream strstr(s1);
        std::stringstream strstr2(s2);

        SDOElement element;
        // Do format
        size_t count = 0;
        while ( std::getline ( strstr2, tok, '\\') )
        {
            //std::cout << tok << " ";
            std::getline ( strstr2, tok2, '\\');
            //std::cout << tok2 << std::endl;
            count += atoi( tok2.c_str() );
            element.SetDataFormat( tok.c_str(), atoi( tok2.c_str() ) );
            for( size_t t = 0; t < element.GetNumberOfData(); ++t )
            {
                std::getline ( strstr, tok, '\\');
                element.SetData(t, tok.c_str() );
            }
            AddSDOElement( element );
        }
        //while ( std::getline ( strstr, tok, '^') )
        // while ( std::getline ( strstr, tok, '\\') )
        // {
        //     std::cout << tok << std::endl;
        //     count++;
        // }
        // std::cout << "Count: " << count << std::endl;
        // count = 0;

        // std::cout << "Count: " << count << std::endl;
    }

    void Print( std::ostream &os ) const {
        SDOElements::const_iterator it = InternalSDODataset.begin();
        for( ; it != InternalSDODataset.end(); ++it )
        {
            it->Print ( os );
        }
    }
private:
    SDOElements InternalSDODataset;
};

bool sdo_decode( DataElement const &stringdata, DataElement const &stringdataformat )
{
    const char *sd = stringdata.GetByteValue()->GetPointer();
    const size_t len_sd = stringdata.GetByteValue()->GetLength();

    std::string s1 = std::string( sd, len_sd );

    const char *sdf = stringdataformat.GetByteValue()->GetPointer();

```

```

    const size_t len_sdf = stringdataformat.GetByteValue()->GetLength();

    std::string s2 = std::string( sdf, len_sdf );

    // std::cout << s1 << std::endl;
    // std::cout << s2 << std::endl;

    SDOHeader header;
    header.LoadFromAttributes( s1, s2 );

    header.Print( std::cout );

    return true;
}

int main(int argc, char *argv[])
{
    if( argc < 2 )
    {
        std::cerr << argv[0] << " input.dcm" << std::endl;
        return 1;
    }
    const char *filename = argv[1];
    Reader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        return 1;
    }

    File &file = reader.GetFile();
    DataSet &ds = file.GetDataSet();

    // StringData (0033,xx1F) 3 "GEMS_GENIE_1" List of SDO parameters stored as
    // list of strings
    const PrivateTag tstringdata(0x33,0x1f,"GEMS_GENIE_1");
    // StringDataFormat (0033,xx23) 3 "GEMS_GENIE_1" Format of string parameters;
    // contains information about name and number of strings in list
    const PrivateTag tstringdataformat(0x33,0x23,"GEMS_GENIE_1");

    if( !ds.FindDataElement( tstringdata ) ) return 1;
    const DataElement& stringdata = ds.GetDataElement( tstringdata );
    if( !ds.FindDataElement( tstringdataformat ) ) return 1;
    const DataElement& stringdataformat = ds.GetDataElement( tstringdataformat );

    sdo_decode( stringdata, stringdataformat );

    return 0;
}

```

27.115 ReadMultiTimesException.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcml.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
// The intention of this sample program is to provoke bad_alloc exceptions in gdcml code

#include "gdcmlImageReader.h"

int main(int argc, char* argv[])
{
    // We pre-allocate some memory (about 1Gb) to help the issue to show up earlier
    char *dummyBuffer = new char[1024*1024*1100]; (void)dummyBuffer;
    // Check the number of parameters given
    if (argc < 3)
    {
        std::cerr << "Usage: " << argv[0] << " Filename numberOfTries" << std::endl;
    }
}

```

```

    return 1;
}

std::cout << "We are going to read the file: " << argv[1] << " " << argv[2] << " times" << std::endl;
// We hold the pointers in an array to avoid the memory to be released
// We read the input file n-times
for (int i = 0; i < atoi(argv[2]); ++i)
{
    gdcm::ImageReader reader;
    std::cout << "Reading try: " << i << std::endl;
    // Read files
    reader.SetFileName(argv[1]);
    try
    {
        reader.Read();
        gdcm::Image & img = reader.GetImage();
        unsigned long len = img.GetBufferLength();
        char *buffer = new char[ len ];
        img.GetBuffer( buffer ); // do NOT de-allocate buffer !
    }
    catch (std::bad_alloc)
    {
        std::cerr << "BAD ALLOC Exception caught!" << std::endl;
    }
    catch (...)
    {
        std::cerr << "Exception caught!" << std::endl;
    }
}

return 0;
}

```

27.116 ReadSeriesIntoVTK.java

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
// We are required to call the package 'vtk' eventhough I (MM) would have preferred
// an import statement along the line of:
// import vtkgdcm.*;
import vtk.*;

/*
 * Usage:
 * export LD_LIBRARY_PATH=/usr/lib/jvm/java-6-openjdk/jre/lib/amd64/xawt:.
 * java -classpath `pwd`/vtkgdcm.jar:/usr/share/java/vtk.jar:. ReadSeriesIntoVTK
 */
public class ReadSeriesIntoVTK
{
    static {
        System.loadLibrary("vtkCommonJava");
        System.loadLibrary("vtkFilteringJava");
        System.loadLibrary("vtkIOJava");
        System.loadLibrary("vtkImagingJava");
        System.loadLibrary("vtkGraphicsJava");
        System.loadLibrary("vtkgdcmJava");
        try {
            System.loadLibrary("vtkRenderingJava");
        } catch (Throwable e) {
            System.out.println("cannot load vtkHybrid, skipping...");
        }
        try {
            System.loadLibrary("vtkHybridJava");
        } catch (Throwable e) {
            System.out.println("cannot load vtkHybrid, skipping...");
        }
    }
}

```

```

    try {
        System.loadLibrary("vtkVolumeRenderingJava");
    } catch (Throwable e) {
        System.out.println("cannot load vtkVolumeRendering, skipping...");
    }
}

public static void main(String[] args)
{
    vtkFileOutputWindow outWin = new vtkFileOutputWindow();
    outWin.SetInstance(outWin);
    outWin.SetFileName("MVSvtkViewer.log");

    // See: http://review.source.kitware.com/#change,888
    // vtkWrapJava does not handle static keyword
    // String directory = vtkGDCMTesting.GetGDCMDataRoot();
    vtkGDCMTesting t = new vtkGDCMTesting();
    String directory = t.GetGDCMDataRoot();
    String file0 = directory + "/SIEMENS_MAGNETOM-12-MONO2-FileSeq0.dcm";
    String file1 = directory + "/SIEMENS_MAGNETOM-12-MONO2-FileSeq1.dcm";
    String file2 = directory + "/SIEMENS_MAGNETOM-12-MONO2-FileSeq2.dcm";
    String file3 = directory + "/SIEMENS_MAGNETOM-12-MONO2-FileSeq3.dcm";

    vtkStringArray s = new vtkStringArray();
    System.out.println("adding : " + file0 );
    s.InsertNextValue( file0 );
    s.InsertNextValue( file1 );
    s.InsertNextValue( file2 );
    s.InsertNextValue( file3 );

    vtkGDCMImageReader reader = new vtkGDCMImageReader();
    reader.SetFileNames( s );
    reader.Update();

    System.out.println("Success reading: " + file0 );

    vtkMetaImageWriter writer = new vtkMetaImageWriter();
    writer.DebugOn();
    writer.SetCompression( false );
    writer.SetInput( reader.GetOutput() );
    writer.SetFileName( "ReadSeriesIntoVTK.mhd" );
    writer.Write();

    System.out.println("Success writing: " + writer.GetFileName() );
}
}

```

27.117 ReadUTF8QtDir.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/

/*
 * GDCM API expect a const char * as input for SetFileName
 * In order to use this API from Qt, here is a simple test that
 * shows how to do it in a portable manner:
 *
 * http://doc.qt.nokia.com/latest/qdir.html#navigation-and-directory-operations
 */

#include "gdcmReader.h"
#include "gdcmDirectory.h"

#include <QDir>
#include <QString>
#include <QCoreApplication>

```



```

#include <string>
#include <fstream>

#include <stdio.h> // fopen

static int TestBothFuncs(const char *info , const char *ba_str)
{
    int res = 0;
    FILE *f = fopen( ba_str, "r" );
    if( f )
    {
        std::cout << info << " fopen: " << ba_str << std::endl;
        fclose(f);
        ++res;
    }
    gdcm::Reader reader;
    std::ifstream is( ba_str );
    if( is.is_open() )
    {
        std::cout << info << " is_open: " << ba_str << std::endl;
        ++res;
    }
    reader.SetStream( is );
    if( reader.CanRead() == true )
    {
        std::cout << info << " SetStream/CanRead:" << ba_str << std::endl;
        ++res;
    }
    is.close();
    reader.SetFileName( ba_str );
    if( reader.CanRead() == true )
    {
        std::cout << info << " SetFileName/CanRead:" << ba_str << std::endl;
        ++res;
    }
    return 4 - res;
}

static int scanFolder(const char dirname[])
{
    int res = 0;
    gdcm::Directory dir;
    unsigned int nfiles = dir.Load( dirname, true );
    const gdcm::Directory::FileNamesType &filenames = dir.
        GetFileNames();

    for( unsigned int i = 0; i < nfiles; ++i )
    {
        const char *ba_str = filenames[i].c_str();
        res += TestBothFuncs("GDCM",ba_str);
    }
    return res;
}

static int scanFolderQt(QDir const &dir, QStringList& files)
{
    int res = 0;
    QFileInfoList children = dir.entryInfoList(QDir::AllEntries|QDir::NoDotAndDotDot);
    for ( int i=0; i<children.count(); i++ ) {
        QFileInfo file = children.at(i);
        if ( file.isDir() == true ) {
            res += scanFolderQt(QDir(file.absoluteFilePath()), files);
            continue;
        }
        // Convert back from the internal representation to 8bits
        // toLocal8Bit() returns by copy. Need to store explicitly the QByteArray
        QByteArray str = file.absoluteFilePath().toLocal8Bit();
        const char *ba_str1 = str.constData();
        res += TestBothFuncs("QString", ba_str1);
    }
    return res;
}

int main(int argc, char *argv[])
{
    // very important:
    QApplication qCoreApp( argc , argv );
    if( argc < 2 )
    {
        std::cerr << argv[0] << " dir " << std::endl;
        return 1;
    }
}

```

```

    }

    int res = 0;
    const char *dirname = argv[1];
    res += scanFolder( dirname );

    QDir dir( QString::fromLocal8Bit(dirname) );
    QStringList files;
    res += scanFolderQt( dir, files);

    if( res )
        std::cerr << "Problem with UTF-8" << std::endl;
    else
        std::cerr << "Success with UTF-8" << std::endl;

    return res;
}

```

27.118 RefCounting.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
using Kitware.VTK;
using Kitware.VTK.GDCM;

/*
 * this is not so much an example but simply a test to make sure ctor / dtor work as expected
 * and call the ::New and ->Delete() of VTK style.
 */
public class RefCounting
{
    public static int Main(string[] args)
    {
        {
            vtkGDCMTesting testing1 = vtkGDCMTesting.New();
            vtkGDCMTesting testing2 = new vtkGDCMTesting(); // just in case people do
                not read STYLE documentation

            vtkGDCMImageReader reader1 = vtkGDCMImageReader.
                New();
            vtkGDCMImageReader reader2 = new vtkGDCMImageReader();

            vtkGDCMImageWriter writer1 = vtkGDCMImageWriter.
                New();
            vtkGDCMImageWriter writer2 = new vtkGDCMImageWriter();

            using (vtkGDCMTesting testing3 = new vtkGDCMTesting())
            {
                System.Console.Write( "GetReferenceCount: " + testing1.GetReferenceCount() + "\n");
                System.Console.Write( "GetReferenceCount: " + testing2.GetReferenceCount() + "\n");
                System.Console.Write( "GetReferenceCount: " + testing3.GetReferenceCount() + "\n");
            }

            using (vtkGDCMImageReader reader3 = new vtkGDCMImageReader())
            {
                System.Console.Write( "GetReferenceCount: " + reader3.GetReferenceCount() + "\n");
            }

            using (vtkGDCMImageWriter writer3 = vtkGDCMImageWriter.
                New())
            {
                System.Console.Write( "GetReferenceCount: " + writer3.GetReferenceCount() + "\n");
            }

            // C# destructor will call ->Delete on all C++ object as expected.
            return 0;
        }
    }
}

```

```
}
```

27.119 ReformatFile.cs

This is a C++ example on how to use [gdcm::FileDerivation](#)

```
/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/

/*
 * Simple C# example
 *
 * Usage:
 * $ export LD_LIBRARY_PATH=$HOME/Projects/gdcm/debug-gcc/bin
 * $ mono bin/ReformatFile.exe input.dcm output.dcm
 */
using System;
using gdcm;

public class ReformatFile
{
    public static int Main(string[] args)
    {
        gdcm.FileMetaInformation.SetSourceApplicationEntityTitle( "My Reformat App" );

        // http://www.oid-info.com/get/1.3.6.1.4.17434
        string THERALYS_ORG_ROOT = "1.3.6.1.4.17434";
        gdcm.UIDGenerator.SetRoot( THERALYS_ORG_ROOT );
        System.Console.WriteLine( "Root dir is now: " + gdcm.UIDGenerator.GetRoot() );

        string filename = args[0];
        string outfilename = args[1];

        Reader reader = new Reader();
        reader.SetFileName( filename );
        if( !reader.Read() )
        {
            System.Console.WriteLine( "Could not read: " + filename );
            return 1;
        }

        UIDGenerator uid = new UIDGenerator(); // helper for uid generation
        FileDerivation fd = new FileDerivation();
        // For the pupose of this exercise we will pretend that this image is referencing
        // two source image (we need to generate fake UID for that).
        string ReferencedSOPClassUID = "1.2.840.10008.5.1.4.1.1.7"; // Secondary Capture
        fd.AddReference( ReferencedSOPClassUID, uid.Generate() );
        fd.AddReference( ReferencedSOPClassUID, uid.Generate() );

        // Again for the purpose of the exercise we will pretend that the image is a
        // multiplanar reformat (MPR):
        // CID 7202 Source Image Purposes of Reference
        // { "DCM",121322,"Source image for image processing operation"},
        fd.SetPurposeOfReferenceCodeSequenceCodeValue( 121322 );
        // CID 7203 Image Derivation
        // { "DCM",113072,"Multiplanar reformatting" },
        fd.SetDerivationCodeSequenceCodeValue( 113072 );
        fd.SetFile( reader.GetFile() );
        // If all Code Value are ok the filter will execute properly
        if( !fd.Derive() )
        {
            return 1;
        }

        gdcm.FileMetaInformation fmi = reader.GetFile().GetHeader();
    }
}
```

```

// The following three lines make sure to regenerate any value:
fmi.Remove( new gdcm.Tag(0x0002,0x0012) );
fmi.Remove( new gdcm.Tag(0x0002,0x0013) );
fmi.Remove( new gdcm.Tag(0x0002,0x0016) );

Writer writer = new Writer();
writer.SetFileName( outfilename );
writer.SetFile( fd.GetFile() );
if( !writer.Write() )
{
    System.Console.WriteLine( "Could not write: " + outfilename );
    return 1;
}

return 0;
}
}

```

27.120 RemovePrivateTags.py

```

1 #####
2 #
3 #   Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 #   Copyright (c) 2006-2011 Mathieu Malaterre
6 #   All rights reserved.
7 #   See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.
8 #
9 #       This software is distributed WITHOUT ANY WARRANTY; without even
10 #       the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 #       PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 """
16 Usage:
17
18 python RemovePrivateTags.py input.dcm output.dcm
19 """
20
21 import sys
22 import gdcm
23
24
25 if __name__ == "__main__":
26
27     file1 = sys.argv[1]
28     file2 = sys.argv[2]
29
30     # Instantiate the reader.
31     r = gdcm.Reader()
32     r.SetFileName( file1 )
33     if not r.Read():
34         sys.exit(1)
35
36     # Remove private tags
37     ano = gdcm.Anonymizer()
38     ano.SetFile( r.GetFile() )
39     if not ano.RemovePrivateTags():
40         sys.exit(1)
41
42     # Write DICOM file
43     w = gdcm.Writer()
44     w.SetFile( ano.GetFile() )
45     #w.CheckFileMetaInformationOff() # Do not attempt to check meta header
46     w.SetFileName( file2 )
47     if not w.Write():
48         sys.exit(1)
49
50     # It is usually a good idea to exit the script with an error, as gdcm does not remove partial (incorrect)
51     # DICOM file
52     # (application level)

```

27.121 RescaleImage.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/

/*
 * Usage:
 * $ export LD_LIBRARY_PATH=$HOME/Projects/gdcm/debug-gcc/bin
 * $ mono bin/DecompressImage.exe gdcmData/012345.002.050.dcm rescaled.dcm
 */
using System;
using gdcm;

public class DecompressImage
{
    public static int Main(string[] args)
    {
        string file1 = args[0];
        ImageReader reader = new ImageReader();
        reader.SetFileName( file1 );
        bool ret = reader.Read();
        if( !ret )
        {
            return 1;
        }

        Image image = reader.GetImage();
        PixelFormat pixeltype = image.GetPixelFormat();

        Rescaler r = new Rescaler();
        r.SetIntercept( 0 );
        r.SetSlope( 1.2 );
        r.SetPixelFormat( pixeltype );
        PixelFormat outputpt = new PixelFormat( r.ComputeInterceptSlopePixelFormat() );

        System.Console.WriteLine( "pixeltype" );
        System.Console.WriteLine( pixeltype.ToString() );
        System.Console.WriteLine( "outputpt" );
        System.Console.WriteLine( outputpt.ToString() );

        uint len = image.GetBufferLength();
        short[] input = new short[ len / 2 ]; // sizeof(short) == 2
        image.GetArray( input );

        double[] output = new double[ len / 2 ];
        r.Rescale( output, input, len );

        // First Pixel is:
        System.Console.WriteLine( "Input:" );
        System.Console.WriteLine( input[0] );

        System.Console.WriteLine( "Output:" );
        System.Console.WriteLine( output[0] );

        return 0;
    }
}

```

27.122 reslicesphere.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre

```

All rights reserved.
See Copyright.txt or <http://gdcm.sourceforge.net/Copyright.html> for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

```
=====*/
//
// Load a DICOM series.
// Position a sphere within the volume.
// Allow the user to change between Axial, Sagittal, Coronal, and
// Oblique view of the images and move through the slices.
// The display should show the resliced image and the cross section
// of the sphere intersecting that plane.
//

/*
from Scott Johnson /Scott Johnson neuwave com/
to VTK /vtkusers vtk.org/
date Tue, May 11, 2010 at 7:01 PM
*/
#include <sstream>
#include <string>

#include <vtkDICOMImageReader.h>
#include <vtkStringArray.h>
#include <vtkDirectory.h>
#include <vtkImageThreshold.h>
#include <vtkImageShiftScale.h>
#include <vtkImageReslice.h>
#include <vtkRenderWindowInteractor.h>
#include <vtkImageViewer2.h>
#include <vtkSphereSource.h>
#include <vtkPolyDataMapper.h>
#include <vtkPlane.h>
#include <vtkCutter.h>
#include <vtkActor.h>
#include <vtkCommand.h>
#include <vtkSmartPointer.h>
#include <vtkMatrix4x4.h>
#include <vtkInteractorObserver.h>
#include <vtkProperty.h>
#include <vtkRenderer.h>
#include <vtkImageData.h>
#include <vtkImageActor.h>
#include <vtkTransformPolyDataFilter.h>
#include <vtkCamera.h>
#include <vtkMath.h>
#include <vtkTransform.h>
#include <vtkTextActor.h>
#include <vtkActor2D.h>
#include <vtkPolyDataMapper2D.h>
#include <vtkProperty2D.h>
#include <vtkGDCMImageReader.h>
#include <vtkImageChangeInformation.h>

#include "gdcmDirectory.h"
#include "gdcmTesting.h"
#include "gdcmIPPSorter.h"

// Change to match the path to find Raw_0.vti or provide
// the parameter when starting ResliceSphere.

const double sphereCenter[3]={74, 219, 70};

// Angles (0, 0, 0)
const double AxialMatrix[] = { 1.0, 0.0, 0.0, 0.0,
                               0.0, 1.0, 0.0, 0.0,
                               0.0, 0.0, 1.0, 0.0,
                               0.0, 0.0, 0.0, 1.0 };

// Angles (0, 90, 0)
const double SagittalMatrix[] = { 0.0, 0.0, 1.0, 0.0,
                                   0.0, 1.0, 0.0, 0.0,
                                   -1.0, 0.0, 0.0, 0.0,
                                   0.0, 0.0, 0.0, 1.0 };

// Angles (-90, 0, 0)
const double CoronalMatrix[] = { 1.0, 0.0, 0.0, 0.0,
                                  0.0, 0.0, 1.0, 0.0,
                                  0.0, -1.0, 0.0, 0.0,
```

```

                                0.0, 0.0, 0.0, 1.0 };
// Angles (0, 90, 31)
const double ObliqueMatrix[] = { 0.0, -0.515038, 0.857167, 0.0,
                                0.0, 0.857167, 0.515038, 0.0,
                                -1.0, 0.0, 0.0, 0.0,
                                0.0, 0.0, 0.0, 1.0 };

class ResliceRender;

// Class to handle key press events.
class KeyCallback : public vtkCommand
{
public:
    static KeyCallback* New()
    {
        return new KeyCallback();
    }

    void Execute(vtkObject* caller, unsigned long eventId, void *calldata);
    void SetCallbackData(ResliceRender* reslice);

protected:
    ResliceRender* _reslice;
};

class ResliceRender
{
public:
    typedef enum _ORIENTATION
    {
        AXIAL = 0,
        SAGITTAL = 1,
        CORONAL = 2,
        OBLIQUE = 3
    } ORIENTATION;

    ResliceRender()
    {
        _orientation=AXIAL;
    }

    ~ResliceRender()
    {
        _transform->Delete();
        _reader->Delete();
        _reslice->Delete();
        _interactor->Delete();
        _imageView->Delete();

        _sphere->Delete();
        _sphereMapper->Delete();
        _sphereActor->Delete();

        _plane->Delete();
        _cutter->Delete();
        _polyTransform->Delete();
        _ROIMapper->Delete();
        _ROIActor->Delete();

        _annotation->Delete();
    }

    void CreatePipeline(const char* fileName)
    {
        vtkProperty2D* props;

        //_reader=vtkXMLImageDataReader::New();
        //_reader->SetFileName(fileName);
        //_reader->Update();

        //_reader=qzDICOMImageReader::New();
        _reader=vtkGDCMImageReader::New();

        //vtkDirectory *d = vtkDirectory::New();
        //d->Open(fileName);
        //d->Print( std::cout );
        gdcmm::Directory d;
        d.Load(fileName);
        gdcmm::Directory::FileNamesType const &files = d.
        GetFileNames();
    }
};

```

```

gdcmm::IPPSorter s;
s.SetComputeZSpacing( true );
s.SetZSpacingTolerance( 1e-3 );
bool b = s.Sort( files );
if( !b )
{
    std::cerr << "Failed to sort:" << fileName << std::endl;
    //return ;
}
//std::cout << "Sorting succeeded:" << std::endl;
//s.Print( std::cout );

//std::cout << "Found z-spacing:" << std::endl;
//std::cout << s.GetZSpacing() << std::endl;
double ippzspacing = s.GetZSpacing();

const std::vector<std::string> & sorted = s.GetFilesNames();
vtkStringArray *vtkfiles = vtkStringArray::New();
std::vector< std::string >::const_iterator it = sorted.begin();
for( ; it != sorted.end(); ++it)
{
    const std::string &f = *it;
    vtkfiles->InsertNextValue( f.c_str() );
}

//_reader->SetDirectoryName(fileName);
//_reader->SetFileNames( d->GetFiles() );
_reader->SetFileNames( vtkfiles );
_reader->Update();

const vtkFloatingPointType *spacing = _reader->GetOutput()->GetSpacing();

vtkImageChangeInformation *v16 = vtkImageChangeInformation::New();
v16->SetInput( _reader->GetOutput() );
v16->SetOutputSpacing( spacing[0], spacing[1], ippzspacing );
v16->Update();

_threshold=vtkImageThreshold::New();
_threshold->ThresholdByUpper(-3024.0);
_threshold->ReplaceOutOn();
_threshold->SetOutValue(0.0);
_threshold->SetInputConnection(v16->GetOutputPort());

_shift=vtkImageShiftScale::New();
_shift->SetShift(0);
_shift->SetScale(1);
_shift->SetInputConnection(_threshold->GetOutputPort());

// Initialize the reslice with an axial orientation.
vtkSmartPointer<vtkMatrix4x4> matrix =
    vtkSmartPointer<vtkMatrix4x4>::New();
matrix->Identity();

_transform = vtkTransform::New();
_transform->SetMatrix(matrix);

_reslice = vtkImageReslice::New();
_reslice->SetOutputDimensionality(3);

// PROBLEM:
// The original intent was to connect the same transform
// to the vtkImageReslice and vtkTransformPolyDataFilter,
// but the resulting reslices appear different using the
// vtkTransform as opposed to explicitly setting the
// reslice axes via SetResliceAxes. Also, if the vtkTransform
// is connected and orientated other than axial, the extents
// don't seem to update resulting in VTK believing the slice
// is out of range.

//_reslice->SetResliceTransform(_transform);
_reslice->SetResliceAxes(matrix);
//_reslice->SetInputConnection(_reader->GetOutputPort());
_reslice->SetInputConnection(_shift->GetOutputPort());

// Create the sphere target shape.
_sphere=vtkSphereSource::New();
_sphere->SetRadius(7.0);
_sphere->SetThetaResolution(16);
_sphere->SetPhiResolution(16);
_sphere->SetCenter(sphereCenter[0], sphereCenter[1], sphereCenter[2]);

```



```

_sphereMapper=vtkPolyDataMapper::New();
_sphereMapper->SetInputConnection(_sphere->GetOutputPort());

_sphereActor=vtkActor::New();
_sphereActor->SetMapper(_sphereMapper);
_sphereActor->PickableOff();
_sphereActor->GetProperty()->SetColor(1.0, 0.0, 0.0);
_sphereActor->GetProperty()->SetEdgeColor(1.0, 0.0, 0.0);
_sphereActor->GetProperty()->SetDiffuseColor(1.0, 0.0, 0.0);
_sphereActor->SetVisibility(true);

// Create the cutting pipeline.
// This plane will be positioned in the original image coordinate system.
_plane = vtkPlane::New();
_plane->SetNormal(0.0, 0.0, 1.0);

_cutter = vtkCutter::New();
_cutter->SetInputConnection(_sphere->GetOutputPort());
_cutter->SetCutFunction(_plane);
_cutter->GenerateCutScalarsOn();
_cutter->SetValue(0, 0.5);

// The transform attached to _polyTransform should move the cut
// ROI into the resliced coordinate system, which should be the
// same as the coordinate system of the resliced images.
// PROBLEM: It doesn't.
_polyTransform = vtkTransformPolyDataFilter::New();
_polyTransform->SetTransform(_transform);
_polyTransform->SetInputConnection(_cutter->GetOutputPort());

_ROIMapper = vtkPolyDataMapper2D::New();
_ROIMapper->SetInputConnection(_polyTransform->GetOutputPort());

vtkCoordinate* coordinate = vtkCoordinate::New();
coordinate->SetCoordinateSystemToWorld();
_ROIMapper->SetTransformCoordinate(coordinate);

_ROIActor = vtkActor2D::New();
_ROIActor->SetMapper(_ROIMapper);

// Make sure the cut can be seen, especially the edges.
props=_ROIActor->GetProperty();
props->SetLineWidth(2);
props->SetOpacity(1.0);
// props->EdgeVisibilityOn();
// props->SetDiffuse(0.8);
// props->SetSpecular(0.3);
// props->SetSpecularPower(20);
// props->SetRepresentationToSurface();
// props->SetDiffuseColor(1.0, 0.0, 0.0);
// props->SetEdgeColor(1.0, 0.0, 0.0);
props->SetColor(1.0, 0.0, 0.0);

_interactor = vtkRenderWindowInteractor::New();

// Create the image viewer and add the actor with the cut ROI.
_imageViewer = vtkImageViewer2::New();
_imageViewer->SetupInteractor(_interactor);
_imageViewer->SetSize(400, 400);
_imageViewer->SetColorWindow(1024);
_imageViewer->SetColorLevel(800);
_imageViewer->SetInputConnection(_reslice->GetOutputPort());
_imageViewer->GetImageActor()->SetOpacity(0.5);

_annotation = vtkTextActor::New();
_annotation->SetTextScaleModeToViewport();
_imageViewer->GetRenderer()->AddActor(_annotation);

// Add the cut shape actor to the renderer.
_imageViewer->GetRenderer()->AddActor(_ROIActor);

// Set up the key handler.
vtkSmartPointer<KeyCallback> callback = vtkSmartPointer<KeyCallback>::New();
callback->SetCallbackData(this);
_interactor->AddObserver(vtkCommand::KeyPressEvent, callback);

_interactor->Initialize();
}

void Start()

```

```

{
    _interactor->Start();
}

void ResetOrientation()
{
    vtkSmartPointer<vtkMatrix4x4> matrix =
        vtkSmartPointer<vtkMatrix4x4>::New();
    matrix->Identity();

    SetOrientation(matrix);
}

// Make sure the orientation of the vtkImageReslice and
// vtkTransform are in sync.
void SetOrientation(vtkMatrix4x4* matrix)
{
    _reslice->SetResliceAxes(matrix);
    _reslice->Update();

    vtkMatrix4x4* inverse = vtkMatrix4x4::New();
    vtkMatrix4x4::Invert(matrix, inverse);

    _transform->SetMatrix(inverse);
    _transform->Update();
}

// Set the current slice of the current view.
void SetSlice(int slice)
{
    std::stringstream posString;

    double    center[3];
    double    spacing[3];
    double    origin[3];
    double    point[4];
    double    newPoint[4];

    vtkImageData* imageData;
    int newSlice;

    // Try to make sure the extents of the reslice are updated.
    // PROBLEM: It doesn't seem to work when changing the orientation.
    imageData=vtkImageData::SafeDownCast(_reslice->GetOutput());
    imageData->UpdateInformation();

    // Let vtkImageViewer2 handle the slice limits.
    _imageView->SetSlice(slice);
    newSlice=GetSlice();

    imageData->GetCenter(center);
    imageData->GetSpacing(spacing);
    imageData->GetOrigin(origin);

    // Compute the position of the center of the slice based on the
    // spacing of the slices. The resliced axis will always
    // be the "Z" axis.
    point[0]=center[0];
    point[1]=center[1];
    point[2]=(newSlice * spacing[2]) + origin[2];
    point[3]=1.0;

    // Convert the coordinate from the reslice coordinate system to the
    // original image coordinate system.
    // PROBLEM: Logically this seems like it should have been multiplied
    // by the inverse to translate from the resliced coordinate system to
    // the original coordinate system. However, multiplying by the inverse
    // sticks the plane in the wrong place completely. Using the original
    // matrix at least gets the Z coordinate right.
    vtkMatrix4x4* matrix=_reslice->GetResliceAxes();
    vtkSmartPointer<vtkMatrix4x4> inverse =
        vtkSmartPointer<vtkMatrix4x4>::New();
    vtkMatrix4x4::Invert(matrix, inverse);

    matrix->MultiplyPoint(point, newPoint);
    _plane->SetOrigin(newPoint[0], newPoint[1], newPoint[2]);

    // Annotate the image.
    posString << "Position: (" << newPoint[0] << ", " << newPoint[1]
        << ", " << newPoint[2] << ") Slice: " << newSlice;
    _annotation->SetInput(posString.str());
}

```

```

    _imageView->Render();
}

int GetSlice()
{
    return _imageView->GetSlice();
}

// Set the orientation of the view.
void SetOrientation(ResliceRender::ORIENTATION orientation)
{
    vtkCamera* camera=_imageView->GetRenderer()->GetActiveCamera();

    double spacing[3];
    double origin[3];
    double point[4];
    double newPoint[4];
    double initialPosition;
    double xDirCosine[3];
    double yDirCosine[3];
    double zDirCosine[3];
    double normal[3];

    vtkImageData* imageData;

    vtkSmartPointer<vtkMatrix4x4> matrix =
        vtkSmartPointer<vtkMatrix4x4>::New();

    _orientation=orientation;

    // Reset ViewUp
    camera->SetViewUp(0.0, 1.0, 0.0);

    // Compute the cut plane position to the input coordinate system.
    imageData=vtkImageData::SafeDownCast(_reslice->GetInput());
    imageData->UpdateInformation();
    imageData->GetSpacing(spacing);
    imageData->GetOrigin(origin);

    point[0]=origin[0];
    point[1]=origin[1];
    point[2]=origin[2];
    point[3]=1.0;

    switch (_orientation)
    {
    case AXIAL:
        matrix->DeepCopy(AxialMatrix);
        initialPosition=sphereCenter[2];
        break;

    case CORONAL:
        matrix->DeepCopy(CoronalMatrix);
        initialPosition=sphereCenter[1];
        break;

    case SAGITTAL:
        matrix->DeepCopy(SagittalMatrix);
        initialPosition=sphereCenter[0];
        break;

    case OBLIQUE:
        matrix->DeepCopy(ObliqueMatrix);
        initialPosition=sphereCenter[2];
        break;
    }

    // Move the origin from the original image coordinate system to the
    // resliced image coordinate system.
    matrix->MultiplyPoint(point, newPoint);
    matrix->SetElement(0, 3, newPoint[0]);
    matrix->SetElement(1, 3, newPoint[1]);
    matrix->SetElement(2, 3, newPoint[2]);

    ResetOrientation();
    SetOrientation(matrix);

    // Compute the cutting plane normal and set it.
    // PROBLEM: If the transformation is connected rather than
    // using SetResliceAxes, the Direction Cosines do not reflect

```

```

    // the orientation of the vtkImageReslice.
    _reslice->GetResliceAxesDirectionCosines(xDirCosine, yDirCosine,
                                             zDirCosine);
    vtkMath::Cross(xDirCosine, yDirCosine, normal);
    _plane->SetNormal(normal);

    // Set the extents and spacing of the reslice to account for
    // all of the data.
    _reslice->SetOutputExtentToDefault();
    _reslice->SetOutputSpacing(spacing[0], spacing[0], spacing[0]);

    // Force the vtkImageViewer2 to update.
    // PROBLEM: The whole extent does not seem to be set in time
    // for the first render. This results in an error because the
    // slice is positioned outside the old bounds.
    _imageView->SetInput(NULL);
    _imageView->SetInputConnection(_reslice->GetOutputPort());

    _imageView->GetRenderer()->ResetCameraClippingRange();
    _imageView->GetRenderer()->ResetCamera();

    // Set the initial slice to be at the center of the sphere.
    // Divide by the spacing because this will be undone in SetSlice.
    SetSlice( (int)(initialPosition / spacing[0]));
}

vtkRenderWindowInteractor* GetInteractor()
{
    return _interactor;
}

protected:
    ORIENTATION          _orientation;

    //qzDICOMImageReader*    _reader;
    vtkGDCMImageReader*    _reader;
    vtkImageThreshold*      _threshold;
    vtkImageShiftScale*     _shift;
    vtkImageReslice*        _reslice;
    vtkRenderWindowInteractor* _interactor;
    vtkImageViewer2*        _imageView;

    vtkSphereSource*        _sphere;
    vtkPolyDataMapper*      _sphereMapper;
    vtkActor*               _sphereActor;

    vtkPlane*               _plane;
    vtkCutter*              _cutter;
    vtkTransform*           _transform;
    vtkTransformPolyDataFilter* _polyTransform;
    vtkPolyDataMapper2D*    _ROIMapper;
    vtkActor2D*             _ROIActor;

    vtkTextActor*           _annotation;
};

// Catch KeyPress events.
// Up Arrow - increases the slice
// Down Arrow - decreases the slice
// 'A' - sets the view to Axial
// 'S' - sets the view to Sagittal
// 'C' - sets the view to Coronal
// 'O' - set the view to Oblique

void KeyCallback::Execute(vtkObject* caller, unsigned long eventId, void *calldata)
{
    (void)caller;
    (void)eventId;
    (void)calldata;
    std::string sym=_reslice->GetInteractor()->GetKeySym();

    if (!sym.compare("Up"))
    {
        _reslice->SetSlice(_reslice->GetSlice() + 1);
    }
    else if (!sym.compare("Down"))
    {
        _reslice->SetSlice(_reslice->GetSlice() - 1);
    }
    else if ((!sym.compare("A")) || (!sym.compare("a")))

```

```

    {
        _reslice->SetOrientation(ResliceRender::AXIAL);
    }
    else if ((!sym.compare("C")) || (!sym.compare("c")))
    {
        _reslice->SetOrientation(ResliceRender::CORONAL);
    }
    else if ((!sym.compare("S")) || (!sym.compare("s")))
    {
        _reslice->SetOrientation(ResliceRender::SAGITTAL);
    }
    else if ((!sym.compare("O")) || (!sym.compare("o")))
    {
        _reslice->SetOrientation(ResliceRender::OBLIQUE);
    }
}

void KeyCallback::SetCallbackData(ResliceRender* reslice)
{
    _reslice=reslice;
}

// Usage: ResliceSphere [fileName]
int main(int argc, char *argv[])
{
    ResliceRender render;

    if (argc == 1)
    {
        const char *root = gdcm::Testing::GetDataExtraRoot();
        std::string dir3 = root;
        dir3 += "/gdcmSampleData/ForSeriesTesting/Dentist/images/";
        render.CreatePipeline(dir3.c_str());
    }
    else
    {
        render.CreatePipeline(argv[1]);
    }

    render.SetOrientation(ResliceRender::AXIAL);
    render.Start();

    return EXIT_SUCCESS;
}

```

27.123 ReWriteSCAsMR.py

```

1 #####
2 #
3 #   Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 #   Copyright (c) 2006-2011 Mathieu Malaterre
6 #   All rights reserved.
7 #   See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.
8 #
9 #       This software is distributed WITHOUT ANY WARRANTY; without even
10 #       the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 #       PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 """
16 GDCM 1.x would write out MR Image Storage as Secondary Capture Object while still setting Rescale
17   Slope/Intercept
18 and saving the Pixel Spacing in (0028,0030)
19 """
20 import gdcm
21 import sys,os
22
23 def CheckSecondaryCaptureObjectIsMRImageStorage(r):
24     ds = r.GetFile().GetDataSet()
25     # Check Source Image Sequence
26     if ds.FindDataElement( gdcm.Tag(0x0008,0x2112) ):
27         sis = ds.GetDataElement( gdcm.Tag(0x0008,0x2112) )
28         sqsis = sis.GetSequenceOfItems()
29         if sqsis.GetNumberOfItems():

```

```

30     item1 = sqsis.GetItem(1)
31     nestedds = item1.GetNestedDataSet()
32     if nestedds.FindDataElement( gdcm.Tag(0x0008,0x1150) ):
33         ReferencedSOPClassUID = nestedds.GetDataElement( gdcm.Tag(0x0008,0x1150) ).
34         raw = ReferencedSOPClassUID.GetByteValue().GetPointer()
35         uids = gdcm.UIDs()
36         # what is the actual object we are looking at ?
37         ms = gdcm.MediaStorage()
38         ms.SetFromDataSet(ds)
39         msuid = ms.GetString()
40         uids.SetFromUID( msuid )
41         msuidname = uids.GetName() # real Media Storage Name
42         uids.SetFromUID( raw )
43         sqmsuidname = uids.GetName() # Source Image Sequence Media Storage Name
44         # If object is SC and Source derivation is MRImageStorage then we can assume 'Pixel Spacing' is
         correct
45         if( sqmsuidname == 'MR Image Storage' and msuidname == 'Secondary Capture Image Storage' ):
46             return True
47     # in all other case simply return the currentspacing:
48     return False
49
50 if __name__ == "__main__":
51     r = gdcm.ImageReader()
52     filename = sys.argv[1]
53     r.SetFileName( filename )
54     if not r.Read():
55         sys.exit(1)
56     f = r.GetFile()
57
58     if( CheckSecondaryCaptureObjectIsMRImageStorage(r) ):
59         # Special handling of the spacing:
60         # GDCM 1.2.0 would not rewrite correctly DICOM Object and would always set them as 'Secondary Capture
         Image Storage'
61         # while we would rather have 'MR Image Storage'
62         gdcm.ImageHelper.SetForcePixelSpacing( True )
63         mrspacing = gdcm.ImageHelper.GetSpacingValue( r.GetFile() )
64         # TODO: I cannot do simply the following:
65         #image.SetSpacing( mrspacing )
66         image.SetSpacing(0, mrspacing[0] )
67         image.SetSpacing(1, mrspacing[1] )
68         image.SetSpacing(2, mrspacing[2] )
69         gdcm.ImageHelper.SetForceRescaleInterceptSlope( True )
70         ris = gdcm.ImageHelper.GetRescaleInterceptSlopeValue(
         r.GetFile() )
71         image.SetIntercept( ris[0] )
72         image.SetSlope( ris[1] )
73
74     outfilename = sys.argv[2]
75     w = gdcm.ImageWriter()
76     w.SetFileName( outfilename )
77     w.SetFile( r.GetFile() )
78     w.SetImage( image )
79     if not w.Write():
80         sys.exit(1)
81
82     sys.exit(0)

```

27.124 rle2img.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
/*
 * This example shows how to rewrite a ELSCINT1/PMSCT_RLE1 compressed
 * image so that it is readable by most 3rd party software (DICOM does
 * not specify this particular encoding).
 * This is required for the sake of interoperability with any standard

```

```

* conforming DICOM system.
*
* Everything done in this code is for the sole purpose of writing interoperable
* software under Sect. 1201 (f) Reverse Engineering exception of the DMCA.
* If you believe anything in this code violates any law or any of your rights,
* please contact us (gdcm-developers@lists.sourceforge.net) so that we can
* find a solution.
*
* Everything you do with this code is at your own risk, since decompression
* algorithm was not written from specification documents.
*
* Special thanks to:
* Mauro Maiorca for bringing to our attention on this new ELSCINT1
* compression algorithm : PMSCT_RLE1 (different from the 'LOSSLESS RICE')
* See post at:
* http://groups.google.com/group/comp.protocols.dicom/msg/f2b99bf706a7f8ca
*
* Thanks to Jesus Spinola, for more datasets,
* http://www.itk.org/pipermail/insight-users/2008-April/025571.html
*
* And last but not least, a very big thank to Ivo van Poorten, without
* whom we would still be looking at this compressed byte stream as if
* it was RLE compressed.
*/
#include "gdcmReader.h"
#include "gdcmPrivateTag.h"
#include "gdcmAttribute.h"
#include "gdcmImageWriter.h"

/* FIXME: Why is PhilipsLosslessRice.dcm a 512x512 image ... */
void delta_decode(const char *inbuffer, size_t length, std::vector<unsigned short> &output)
{
    // RLE pass
    std::vector<char> temp;
    for(size_t i = 0; i < length; ++i)
    {
        if( inbuffer[i] == (char)0xa5 )
        {
            //unsigned char repeat = (unsigned char)inbuffer[i+1] + 1;
            //assert( (unsigned char)inbuffer[i+1] != 255 );
            int repeat = (unsigned char)inbuffer[i+1] + 1;
            char value = inbuffer[i+2];
            while(repeat)
            {
                temp.push_back( value );
                --repeat;
            }
            i+=2;
        }
        else
        {
            temp.push_back( inbuffer[i] );
        }
    }

    // Delta encoding pass
    unsigned short delta = 0;
    for(size_t i = 0; i < temp.size(); ++i)
    {
        if( temp[i] == 0x5a )
        {
            unsigned char v1 = (unsigned char)temp[i+1];
            unsigned char v2 = (unsigned char)temp[i+2];
            unsigned short value = (unsigned short)(v2 * 256 + v1);
            output.push_back( value );
            delta = value;
            i+=2;
        }
        else
        {
            unsigned short value = (unsigned short)(temp[i] + delta);
            output.push_back( value );
            delta = value;
        }
        //assert( output[output.size()-1] == ref[output.size()-1] );
    }

    if ( output.size() % 2 )
    {
        output.resize( output.size() - 1 );
    }
}

```

```

    std::cout << length << " -> " << output.size() * 2 << std::endl;
}

int main(int argc, char *argv [])
{
    if( argc < 2 )
    {
        std::cerr << argv[0] << "input.dcm [output.dcm]" << std::endl;
        std::cerr << "will default to 'out.rle.dcm' unless output.dcm is specified."
            << std::endl;
        return 1;
    }
    const char *filename = argv[1];
    gdcm::Reader reader;
    reader.SetFileName( filename );
    if( !reader.Read() )
    {
        std::cerr << "Failed to read: " << filename << std::endl;
        return 1;
    }
    const gdcm::DataSet& ds = reader.GetFile().GetDataSet();

    // (07a1,1011) CS [PMSCT_RLE1] # 10,1 Tamar Compression Type
    const gdcm::PrivateTag tcompressiontype(0x07a1,0x0011,"ELSCINT1");
    if( !ds.FindDataElement( tcompressiontype ) ) return 1;
    const gdcm::DataElement& compressiontype = ds.GetDataElement(
        tcompressiontype );
    if ( compressiontype.IsEmpty() ) return 1;
    const gdcm::ByteValue * bv = compressiontype.GetByteValue();
    std::string comprle = "PMSCT_RLE1";
    std::string comprgb = "PMSCT_RGB1";
    bool isrle = false;
    bool isrgb = false;
    if( strcmp( bv->GetPointer(), comprle.c_str(), comprle.size() ) == 0 )
    {
        isrle = true;
    }
    if( strcmp( bv->GetPointer(), comprgb.c_str(), comprgb.size() ) == 0 )
    {
        isrgb = true;
        std::cerr << "See: pmsct_rgb1.cxx instead" << std::endl;
        return 1;
    }
    if( !isrgb && !isrle ) return 1;

    const gdcm::PrivateTag tcompressedpixeldata(0x07a1,0x000a,"ELSCINT1");
    if( !ds.FindDataElement( tcompressedpixeldata ) ) return 1;
    const gdcm::DataElement& compressionpixeldata = ds.
        GetDataElement( tcompressedpixeldata );
    if ( compressionpixeldata.IsEmpty() ) return 1;
    const gdcm::ByteValue * bv2 = compressionpixeldata.GetByteValue();

    gdcm::Attribute<0x0028,0x0010> at1;
    at1.SetFromDataSet( ds );
    gdcm::Attribute<0x0028,0x0011> at2;
    at2.SetFromDataSet( ds );

    gdcm::DataElement pixeldata( gdcm::Tag(0x7fe0,0x0010) );
    pixeldata.SetVR( gdcm::VR::OW );
    gdcm::VL bv2l = bv2->GetLength();
    gdcm::VL at1l = at1.GetValue() * at2.GetValue() * 2; /* sizeof(unsigned short) ==
        2 */
    // Handle special case that is not compressed:
    if( bv2l == at1l )
    {
        pixeldata.SetByteValue( bv2->GetPointer(), bv2->GetLength() );
    }
    else
    {
        std::vector<unsigned short> buffer;
        delta_decode(bv2->GetPointer(), bv2->GetLength(), buffer);
        pixeldata.SetByteValue( (char*)&buffer[0], (uint32_t)(buffer.size() * sizeof( unsigned short )) );
    }
    // TODO we should check that decompress byte buffer match the expected size (row*col*...)

    // Add the pixel data element
    reader.GetFile().GetDataSet().Replace( pixeldata );

    reader.GetFile().GetHeader().SetDataSetTransferSyntax(
        gdcm::TransferSyntax::ExplicitVRLittleEndian);
    gdcm::Writer writer;

```



```

writer.SetFile( reader.GetFile() );

// Cleanup stuff:
// remove the compressed pixel data:
// FIXME: should I remove more private tags ? all of them ?
// oh well this is just an example
// use gdcm::Anonymizer::RemovePrivateTags if needed...
writer.GetFile().GetDataSet().Remove( compressionpixeldata.
    GetTag() );
std::string outfilename;
if (argc > 2)
    outfilename = argv[2];
else
    outfilename = "out.rle.dcm";
writer.SetFileName( outfilename.c_str() );
if( !writer.Write() )
{
    std::cerr << "Failed to write" << std::endl;
    return 1;
}

std::cout << "success !" << std::endl;

return 0;
}

```

27.125 rtstructapp.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "vtkGDCMPolyDataReader.h"
#include "vtkGDCMPolyDataWriter.h"

#include "vtkPolyDataWriter.h"
#include "vtkPolyDataMapper.h"
#include "vtkPolyDataMapper2D.h"
#include "vtkActor2D.h"
#include "vtkRenderWindowInteractor.h"
#include "vtkMedicalImageProperties.h"
#include "vtkRenderWindow.h"
#include "vtkRenderer.h"
#include "vtkCamera.h"
#include "vtkProperty.h"
#include "vtkProperty2D.h"
#include "vtkAppendPolyData.h"
#include "vtkImageData.h"

/*
 * Small example to read in a RTSTRUCT and write it out (displays it too).
 */

// gdcmDataExtra/gdcmNonImageData/exRT_Structure_Set_Storage.dcm
// gdcmDataExtra/gdcmNonImageData/RTSTRUCT_1.3.6.1.4.1.22213.1.1396.2.dcm
// gdcmDataExtra/gdcmNonImageData/RT/RTStruct.dcm

int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        std::cerr << argv[0] << " input.dcm output.dcm\n";
        return 1;
    }
    const char * filename = argv[1];
    const char * outfilename = argv[2];
    vtkGDCMPolyDataReader * reader =
        vtkGDCMPolyDataReader::New();

```

```

reader->SetFileName( filename );
reader->Update();

//std::cout << reader->GetMedicalImageProperties()->GetStudyDate() << std::endl;

vtkGDCMPolyDataWriter * writer =
    vtkGDCMPolyDataWriter::New();
writer->SetNumberOfInputPorts( reader->GetNumberOfOutputPorts() );
writer->SetFileName( outfilename );
for(int num = 0; num < reader->GetNumberOfOutputPorts(); ++num )
    writer->SetInput( num, reader->GetOutput(num) );
//doesn't look like the medical properties are actually written out
writer->SetMedicalImageProperties( reader->GetMedicalImageProperties() );
writer->SetRTStructSetProperties( reader->GetRTStructSetProperties() );
writer->Write();

// print reader output:
reader->Print( std::cout );
// print first output:
reader->GetOutput()->Print( std::cout );

vtkAppendPolyData *append = vtkAppendPolyData::New();

int n = reader->GetNumberOfOutputPorts();
for(int i = 0; i < n; ++i)
{
    append->AddInput( reader->GetOutput(i) );
}

// Now we'll look at it.
vtkPolyDataMapper *cubeMapper = vtkPolyDataMapper::New();
cubeMapper->SetInput( append->GetOutput() );
cubeMapper->SetScalarRange(0,7);
vtkActor *cubeActor = vtkActor::New();
cubeActor->SetMapper(cubeMapper);
vtkProperty *property = cubeActor->GetProperty();
property->SetRepresentationToWireframe();

vtkRenderer *renderer = vtkRenderer::New();
vtkRenderWindow *renWin = vtkRenderWindow::New();
renWin->AddRenderer(renderer);

vtkRenderWindowInteractor *iren = vtkRenderWindowInteractor::New();
iren->SetRenderWindow(renWin);

renderer->AddActor(cubeActor);
renderer->ResetCamera();
renderer->SetBackground(1,1,1);

renWin->SetSize(300,300);

renWin->Render();
iren->Start();

reader->Delete();
append->Delete();
cubeMapper->Delete();
cubeActor->Delete();
renderer->Delete();
renWin->Delete();
iren->Delete();
writer->Delete();

return 0;
}

```

27.126 ScanDirectory.cs

This is a C# example on how to use [gdcm::Scanner](#)

```

/*=====

Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.

```

```

See Copyright.txt or http://gdcms.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/

/*
 * Usage:
 * $ export LD_LIBRARY_PATH=$HOME/Projects/gdcm/debug-gcc/bin
 * $ mono bin/ScanDirectory.exe /path/to/gdcmData/
 */
using System;
using gdcm;

public class ScanDirectory
{
    public static int Main(string[] args)
    {
        string directory = args[0];
        Tag t = new Tag(0x8,0x8);

        Directory d = new Directory();
        uint nfiles = d.Load( directory );
        if(nfiles == 0) return 1;
        //System.Console.WriteLine( "Files:\n" + d.toString() );

        //Scanner s = new Scanner();
        SmartPtrScan sscan = Scanner.New();
        Scanner s = sscan.__ref__();
        SimpleSubjectWatcher watcher = new SimpleSubjectWatcher(s, "MySimple");
        s.AddTag( t );
        bool b = s.Scan( d.GetFileNames() );
        if(!b) return 1;

        System.Console.WriteLine( "Scan:\n" + s.toString() );

        System.Console.WriteLine( "success " );
        return 0;
    }
}

```

27.127 ScanDirectory.java

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcms.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/

import gdcm.*;
import gdcm.Reader;
import gdcm.LookupTable;
import java.io.File;
import java.io.*;
import java.awt.image.*;
import javax.imageio.ImageIO;

public class ScanDirectory
{
    public static class MyWatcher extends SimpleSubjectWatcher
    {
        public MyWatcher(Subject s) { super(s,"Override String"); }
        protected void ShowProgress(Subject caller, Event evt)
        {
            ProgressEvent pe = ProgressEvent.Cast(evt);
            System.out.println( "This is my progress: " + pe.GetProgress() );
        }
    }
}

```

```

    }

    public static byte[] GetAsByte(Bitmap input)
    {
        long len = input.GetBufferLength();
        byte[] buffer = new byte[ (int)len ];
        PhotometricInterpretation pi = input.GetPhotometricInterpretation();
        if( pi.GetType() == PhotometricInterpretation.PIType.MONOCHROME1 )
        {
            ImageChangePhotometricInterpretation icpi = new ImageChangePhotometricInterpretation();
            icpi.SetInput( input );
            icpi.SetPhotometricInterpretation(
                new PhotometricInterpretation(
                    PhotometricInterpretation.PIType.MONOCHROME2 ) );
            if( icpi.Change() )
            {
                Bitmap output = icpi.GetOutput();
                output.GetArray( buffer );
            }
            return buffer;
        }
        else
        {
            input.GetArray( buffer );
            return buffer;
        }
    }

    public static short[] GetAsShort(Bitmap input)
    {
        long len = input.GetBufferLength(); // length in bytes
        short[] buffer = new short[ (int)len / 2 ];
        PhotometricInterpretation pi = input.GetPhotometricInterpretation();
        if( pi.GetType() == PhotometricInterpretation.PIType.MONOCHROME1 )
        {
            ImageChangePhotometricInterpretation icpi = new ImageChangePhotometricInterpretation();
            icpi.SetInput( input );
            icpi.SetPhotometricInterpretation(
                new PhotometricInterpretation(
                    PhotometricInterpretation.PIType.MONOCHROME2 ) );
            if( icpi.Change() )
            {
                Bitmap output = icpi.GetOutput();
                output.GetArray( buffer );
            }
            return buffer;
        }
        else
        {
            input.GetArray( buffer );
            return buffer;
        }
    }

    public static boolean WritePNG(Bitmap input, String outfilename )
    {
        int imageType = BufferedImage.TYPE_CUSTOM;
        PixelFormat pf = input.GetPixelFormat();
        PhotometricInterpretation pi = input.GetPhotometricInterpretation();
        // We need to handle both public and private icon
        // It could well be that we are getting an RGB Icon or 16 bits Icon:
        ColorModel colorModel = null;
        if( pf.GetSamplesPerPixel() == 1 )
        {
            if( pi.GetType() == PhotometricInterpretation.PIType.MONOCHROME1
                || pi.GetType() == PhotometricInterpretation.PIType.MONOCHROME2 )
            {
                if( pf.GetScalarType() == PixelFormat.ScalarType.UINT8 )
                {
                    imageType = BufferedImage.TYPE_BYTE_GRAY;
                }
                else if( pf.GetScalarType() == PixelFormat.ScalarType.UINT12 )
                {
                    imageType = BufferedImage.TYPE_USHORT_GRAY;
                }
                else if( pf.GetScalarType() == PixelFormat.ScalarType.UINT16 )
                {
                    imageType = BufferedImage.TYPE_USHORT_GRAY;
                }
            }
            else if( pi.GetType() == PhotometricInterpretation.PIType.PALETTE_COLOR )
            {
                LookupTable lut = input.GetLUT();
            }
        }
    }

```

```

        long r1 = lut.GetLUTLength( LookupTable.LookupTableType.RED );
        byte[] rbuf = new byte[ (int)r1 ];
        long r12 = lut.GetLUT( LookupTable.LookupTableType.RED, rbuf );
        assert r1 == r12;
        long g1 = lut.GetLUTLength( LookupTable.LookupTableType.GREEN );
        byte[] gbuf = new byte[ (int)g1 ];
        long g12 = lut.GetLUT( LookupTable.LookupTableType.GREEN, gbuf );
        assert g1 == g12;
        long b1 = lut.GetLUTLength( LookupTable.LookupTableType.BLUE );
        byte[] bbuf = new byte[ (int)b1 ];
        long b12 = lut.GetLUT( LookupTable.LookupTableType.BLUE, bbuf );
        assert b1 == b12;
        colorModel = new IndexColorModel(8, (int)r1, rbuf, gbuf, bbuf);
        // For code below
        imageType = BufferedImage.TYPE_BYTE_GRAY;
    }
}
else if( pf.GetSamplesPerPixel() == 3 )
{
    if( pf.GetScalarType() == PixelFormat.ScalarType.UINT8 )
    {
        // FIXME should be TYPE_3BYTE_RGB
        imageType = BufferedImage.TYPE_3BYTE_BGR;
    }
}
//System.out.println( "pf: " + pf.toString() );
//System.out.println( "pi: " + pi.toString() );
long width = input.GetDimension(0);
long height = input.GetDimension(0);
BufferedImage bi;
if( pi.GetType() == PhotometricInterpretation.PIType.PALETTE_COLOR )
{
    bi = new BufferedImage(colorModel,
        colorModel.createCompatibleWritableRaster((int)width, (int)height),
        false, null);
}
else
{
    bi = new BufferedImage((int)width, (int)height, imageType);
}
WritableRaster wr = bi.getRaster();
//System.out.println( "imagetype: " + imageType );
if( imageType == BufferedImage.TYPE_BYTE_GRAY
    || imageType == BufferedImage.TYPE_3BYTE_BGR )
{
    byte[] buffer = GetAsByte( input );
    wr.setDataElements (0, 0, (int)width, (int)height, buffer);
}
else if( imageType == BufferedImage.TYPE_USHORT_GRAY )
{
    short[] buffer = GetAsShort( input );
    wr.setDataElements (0, 0, (int)width, (int)height, buffer);
}

File outputfile = new File( outfilename );
try {
    ImageIO.write(bi, "png", outputfile);
} catch (IOException e) {
    return false;
}
return true;
}

public static void main(String[] args) throws Exception
{
    String directory = args[0];

    Directory d = new Directory();
    long nfiles = d.Load( directory, true );
    if(nfiles == 0)
    {
        throw new Exception("No files found");
    }
    // System.out.println( "Files:\n" + d.toString() );
    FilenamesType fns = d.GetFilenames();

    //Scanner s = new Scanner();
    SmartPtrScan sscan = Scanner.New();
    Scanner s = sscan.__ref__();
    //SimpleSubjectWatcher watcher = new SimpleSubjectWatcher(s, "MySimple");
    MyWatcher watcher = new MyWatcher(s);

```

```

Tag[] tagarray = {
    new Tag(0x0010, 0x0010), // PatientName
    new Tag(0x0010, 0x0020), // PatientID
    new Tag(0x0010, 0x0030), // PatientBirthDate
    new Tag(0x0010, 0x0040), // PatientSex
    new Tag(0x0010, 0x1010), // PatientAge
    new Tag(0x0020, 0x000d), // StudyInstanceUID
    new Tag(0x0020, 0x0010), // StudyID
    new Tag(0x0008, 0x0020), // StudyDate
    new Tag(0x0008, 0x1030), // StudyDescription
    new Tag(0x0020, 0x000e), // SeriesInstanceUID
    new Tag(0x0020, 0x0011), // SeriesNumber
    new Tag(0x0008, 0x0021), // SeriesDate
    new Tag(0x0008, 0x103e), // SeriesDescription
    new Tag(0x0008, 0x0090), // ReferringPhysicianName
    new Tag(0x0008, 0x0060), // Modality
    new Tag(0x0054, 0x0400), // ImageID ?? Should be Instance number ??
    new Tag(0x0008, 0x0018), // SOPInstanceUID
    new Tag(0x0008, 0x0032), // AcquisitionTime
    new Tag(0x0008, 0x0033), // ContentTime
    new Tag(0x0020, 0x0013), // InstanceNumber
    new Tag(0x0020, 0x1041), // SliceLocation
    new Tag(0x0018, 0x0050), // SliceThickness ?? Eg. Enhanced MR Image Storage
    new Tag(0x0008, 0x0080), // InstitutionName
    new Tag(0x0028, 0x1050), // WindowCenter
    new Tag(0x0028, 0x1051), // WindowWidth
};
for( Tag t : tagarray ) {
    //System.out.println( "Tag: " + t.toString() );
    s.AddTag( t );
}
boolean b = s.Scan( fns );
if(!b)
{
    throw new Exception("Could not scan");
}

for( long idx = 0; idx < fns.size(); ++idx )
{
    Reader r = new Reader();
    String fn = fns.get( (int)idx );
    String outfn = fn + ".png";
    r.SetFileName( fn );
    TagSetType tst = new TagSetType();
    tst.insert( new Tag(0x7fe0,0x10) );
    b = r.ReadUpToTag( new Tag(0x88,0x200), tst );
    UIntArrayType dims = ImageHelper.GetDimensionsValue( r.GetFile() );
    if( b )
    {
        IconImageFilter iif = new IconImageFilter();
        System.out.println( "Processing: " + fn );

        iif.SetFile( r.GetFile() );
        b = iif.Extract();
        if( b )
        {
            Bitmap icon = iif.GetIconImage(0);
            WritePNG(icon, outfn);
        }
        else
        {
            ImageReader ir = new ImageReader();
            ir.SetFileName( fn );
            if( ir.Read() )
            {
                Image img = ir.GetImage();
                StringFilter sf = new StringFilter();
                sf.SetFile( r.GetFile() );
                String strval = sf.ToString( new Tag(0x0028,0x0120) );
                IconImageGenerator iig = new IconImageGenerator();
                iig.SetPixmap( img );
                iig.AutoPixelMinMax( true );
                try {
                    double val = Double.parseDouble( strval );
                    iig.SetOutsideValuePixel( val );
                }
                catch ( NumberFormatException e ) {
                }
                iig.ConvertRGBToPaletteColor( false );
                long idims[] = { 128, 128 };
                iig.SetOutputDimensions( idims );
            }
        }
    }
}

```

```

        iig.Generate();
        Bitmap icon = iig.GetIconImage();
        WritePNG(icon, outfn);
    }
}
}

System.out.println( "Scan:\n" + s.toString() );

System.out.println( "success" );
}
}

```

27.128 ScanDirectory.py

```

1 #####
2 #
3 # Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 # Copyright (c) 2006-2011 Mathieu Malaterre
6 # All rights reserved.
7 # See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.
8 #
9 # This software is distributed WITHOUT ANY WARRANTY; without even
10 # the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 # PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 import gdcm
16 import sys,os
17
18 class ProgressWatcher(gdcm.SimpleSubjectWatcher):
19     def ShowProgress(self, sender, event):
20         pe = gdcm.ProgressEvent.Cast(event)
21         print pe.GetProgress()
22     def EndFilter(self):
23         print "Yay ! I am done"
24
25 if __name__ == "__main__":
26     directory = sys.argv[1]
27
28     # Define the set of tags we are interested in
29     t1 = gdcm.Tag(0x8,0x8);
30     t2 = gdcm.Tag(0x10,0x10);
31
32     # Iterate over directory
33     d = gdcm.Directory();
34     nfiles = d.Load( directory );
35     if(nfiles == 0): sys.exit(1);
36     # System.Console.WriteLine( "Files:\n" + d.toString() );
37
38     filenames = d.GetFilenames()
39
40     # Get rid of any Warning while parsing the DICOM files
41     gdcm.Trace.WarningOff()
42
43     # instanciate Scanner:
44     sp = gdcm.Scanner.New();
45     s = sp.__ref__()
46     w = ProgressWatcher(s, 'Watcher')
47
48     s.AddTag( t1 );
49     s.AddTag( t2 );
50     b = s.Scan( filenames );
51     if(not b): sys.exit(1);
52
53     print "success" ;
54     #print s
55
56     pttv = gdcm.PythonTagToValue( s.GetMapping( filenames[1] ) )
57     pttv.Start()
58     # iterate until the end:
59     while( not pttv.IsAtEnd() ):
60         # get current value for tag and associated value:
61         # if tag was not found, then it was simply not added to the internal std::map

```

```

62     # Warning value can be None
63     tag = pttv.GetCurrentTag()
64     value = pttv.GetCurrentValue()
65     print tag,"->",value
66     # increment iterator
67     pttv.Next()
68
69     sys.exit(0)

```

27.129 SendFileSCU.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/

/*
 * Usage:
 * $ export LD_LIBRARY_PATH=$HOME/Perse/gdcm-gcc/bin
 * $ mono bin/SendFileSCU.exe server port input.dcm
 */
using System;
using gdcm;

public class SendFileSCU
{
    public static int Main(string[] args)
    {
        {
            string server = args[0];
            ushort port = ushort.Parse(args[1]);
            string filename = args[2];

            bool b = CompositeNetworkFunctions.CEcho( server, port );
            if( !b ) return 1;

            FilenamesType files = new FilenamesType();
            files.Add( filename );
            b = CompositeNetworkFunctions.CStore( server, port, files );
            if( !b ) return 1;

            return 0;
        }
    }
}

```

27.130 SimplePrint.cs

This is a C# example on how to use `gdcm::SWIGDataSet`

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/

/*
    Convertor convertor = new Convertor();

```



```

    int a = convertor.Convert<int>( some_int_blob );
    double b = convertor.Convert<double>( some_double_blob );
*/

/*
 * Usage:
 * $ export LD_LIBRARY_PATH=$HOME/Projects/gdcm/debug-gcc/bin
 * $ mono bin/SimplePrint.exe gdcmData/012345.002.050.dcm
 */
using System;
using gdcm;

public class SimplePrint
{
    public static void RecurseDataSet(File f, DataSet ds, string indent)
    {
        {
            CSharpDataSet cds = new CSharpDataSet(ds);
            while(!cds.IsAtEnd())
            {
                DataElement de = cds.GetCurrent();
                // Compute VR from the toplevel file, and the currently processed dataset:
                VR vr = DataSetHelper.ComputeVR(f, ds, de.GetTag() );

                if( vr.Compatible( new VR(VR.VRType.SQ) ) )
                {
                    uint uvl = (uint)de.GetVL(); // Test cast is ok
                    System.Console.WriteLine( indent + de.GetTag().toString() + ":" + uvl ); // why not ?
                    //SequenceOfItems sq = de.GetSequenceOfItems();
                    // GetValueAsSQ handle more cases than GetSequenceOfItems
                    SmartPtrSQ sq = de.GetValueAsSQ();
                    uint n = sq.GetNumberOfItems();
                    for( uint i = 1; i <= n; i++) // item starts at 1, not 0
                    {
                        Item item = sq.GetItem( i );
                        DataSet nested = item.GetNestedDataSet();
                        RecurseDataSet( f, nested, indent + " " );
                    }
                }
                else
                {
                    System.Console.WriteLine( indent + de.toString() );
                }
                cds.Next();
            }
        }

        public static int Main(string[] args)
        {
            string filename = args[0];
            Reader reader = new Reader();
            reader.SetFileName( filename );
            bool ret = reader.Read();
            if( !ret )
            {
                return 1;
            }
            File f = reader.GetFile();
            DataSet ds = f.GetDataSet();

            RecurseDataSet( f, ds, "" );

            return 0;
        }
    }
}

```

27.131 SimplePrintPatientName.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR

```

```

    PURPOSE.  See the above copyright notice for more information.

=====*/
/*
 * Usage:
 * $ export LD_LIBRARY_PATH=$HOME/Perso/gdcm/debug-gcc/bin
 * $ mono bin/SimplePrintPatientName.exe gdcmData/012345.002.050.dcm
 */
/*
This example was provided by Jonathan Morra /jonmorra gmail com/
on the gdcm mailing list (Fri, 28 May 2010)
*/
using System;
using gdcm;

namespace GDCMTest
{
    class SimplePrintPatientName
    {
        static int Main(string[] args)
        {
            if (args.Length != 1)
            {
                Console.WriteLine("This program prints the patient name of a dicom file with gdcm");
                Console.WriteLine("Usage: [input.dcm]");
                return 1;
            }

            gdcm.Reader reader = new gdcm.Reader();
            reader.SetFileName(args[0]);
            bool ret = reader.Read();
            //TagSetType tst = new TagSetType();
            //tst.Add( new Tag(0x7fe0,0x10) );
            //bool ret = reader.ReadUpToTag( new Tag(0x88,0x200), tst );
            if( !ret )
            {
                return 1;
            }

            gdcm.File file = reader.GetFile();

            gdcm.StringFilter filter = new gdcm.StringFilter();
            filter.SetFile(file);
            string value = filter.ToString(new gdcm.Tag(0x0010, 0x0010));

            Console.WriteLine("Patient Name: " + value);
            return 0;
        }
    }
}

```

27.132 SimpleScanner.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE.  See the above copyright notice for more information.

=====*/
/*
 * Simple example to show how to use Scanner API.
 * It exposes the three different cases:
 * - DICOM Attribute is present and has a value
 * - DICOM Attribute is present and has no value
 * - DICOM Attribute is not present at all
 * It also shows the purpose of the function 'IsKey' to detect whether or
 * not the file has been read by the gdcm::Scanner. Technically most of the time
 * if a file is not a 'Key' this is because it is not a DICOM file. You need to use
 * gdcm::System::FileExists to decide whether or not the file actually exist on the disk.
 */

```

```

* It was tested on this particular image:
* ./SimpleScanner gdcmlData/012345.002.050.dcm
*/

#include "gdcmScanner.h"

int main(int argc, char *argv[])
{
    if( argc < 2 )
    {
        return 1;
    }
    const char *filename = argv[1];
    const char filename_invalid[] = "this is a file that may not exist on this disk.dcm";

    gdcm::Scanner s;

    const gdcm::Tag tag_array[] = {
        gdcm::Tag(0x8,0x50),
        gdcm::Tag(0x8,0x51),
        gdcm::Tag(0x8,0x60),
    };
    s.AddTag( tag_array[0] );
    s.AddTag( tag_array[1] );
    s.AddTag( tag_array[2] );

    gdcm::Directory::FileNamesType filenames;
    filenames.push_back( filename );
    filenames.push_back( filename_invalid );

    if( !s.Scan( filenames ) )
    {
        return 1;
    }

    //s.Print( std::cout );

    if( s.IsKey( filename ) )
    {
        std::cout << "INFO:" << filename << " is a proper Key for the Scanner (this is a DICOM file)" <<
            std::endl;
    }

    if( !s.IsKey( filename_invalid ) )
    {
        std::cout << "INFO:" << filename_invalid << " is not a proper Key for the Scanner (this is either not a
            DICOM file or file does not exist)" << std::endl;
    }

    gdcm::Scanner::TagToValue const &ttv = s.GetMapping(filename);

    const gdcm::Tag *ptag = tag_array;
    for( ; ptag != tag_array + 3; ++ptag )
    {
        gdcm::Scanner::TagToValue::const_iterator it = ttv.find( *ptag );
        if( it != ttv.end() )
        {
            std::cout << *ptag << " was properly found in this file" << std::endl;
            // it contains a pair of value. the first one is the actual tag, so the following is always true:
            // *ptag == it->first
            // The second part is the actual value (stored as RAW strings). You will have to reinterpret this
            string
            // if VR for *ptag is not VR::VRASCII !
            const char *value = it->second;
            if( *value )
            {
                std::cout << " It has the value: " << value << std::endl;
            }
            else
            {
                std::cout << " It has no value (empty)" << std::endl;
            }
        }
        else
        {
            std::cout << "Sorry " << *ptag << " could not be found in this file" << std::endl;
        }
    }

    return 0;
}

```

```
}
```

27.133 SortImage.cxx

```
/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/
/*
*/
#include "gdcmSorter.h"
#include "gdcmScanner.h"
#include "gdcmDataSet.h"
#include "gdcmAttribute.h"

bool mysort(gdcm::DataSet const & ds1, gdcm::DataSet const & ds2 )
{
    //gdcm::Attribute<0x0020,0x0013> at1; // Instance Number
    gdcm::Attribute<0x0018,0x1060> at1; // Trigger Time
    gdcm::Attribute<0x0020,0x0032> at11; // Image Position (Patient)
    at1.Set( ds1 );
    at11.Set( ds1 );
    //gdcm::Attribute<0x0020,0x0013> at2;
    gdcm::Attribute<0x0018,0x1060> at2;
    gdcm::Attribute<0x0020,0x0032> at22;
    at2.Set( ds2 );
    at22.Set( ds2 );
    if( at11 == at22 )
    {
        return at1 < at2;
    }
    return at11 < at22;
}

bool mysort_part1(gdcm::DataSet const & ds1, gdcm::DataSet const & ds2 )
{
    gdcm::Attribute<0x0018,0x1060> at1;
    at1.Set( ds1 );
    gdcm::Attribute<0x0018,0x1060> at2;
    at2.Set( ds2 );
    return at1 < at2;
}

bool mysort_part2(gdcm::DataSet const & ds1, gdcm::DataSet const & ds2 )
{
    gdcm::Attribute<0x0020,0x0032> at1;
    at1.Set( ds1 );
    gdcm::Attribute<0x0020,0x0032> at2;
    at2.Set( ds2 );
    return at1 < at2;
}

// technically all files are in the same Frame of Reference, so this function
// should be a no-op
bool mysort_dummy(gdcm::DataSet const & ds1, gdcm::DataSet const & ds2 )
{
    gdcm::Attribute<0x0020,0x0052> at1; // FrameOfReferenceUID
    at1.Set( ds1 );
    gdcm::Attribute<0x0020,0x0052> at2;
    at2.Set( ds2 );
    return at1 < at2;
}

int main(int argc, char *argv[])
{
    if (argc < 2 ) return 1;
    const char *dirname = argv[1];
```

```

gdcmm::Directory dir;
unsigned int nfiles = dir.Load( dirname );

dir.Print( std::cout );

gdcmm::Sorter sorter;
sorter.SetSortFunction( mysort );
sorter.Sort( dir.GetFilesNames() );

std::cout << "Sorter:" << std::endl;
sorter.Print( std::cout );

gdcmm::Sorter sorter2;
sorter2.SetSortFunction( mysort_part1 );
sorter2.StableSort( dir.GetFilesNames() );
sorter2.SetSortFunction( mysort_part2 );
sorter2.StableSort( sorter2.GetFilesNames() ); // IMPORTANT
sorter2.SetSortFunction( mysort_dummy );
sorter2.StableSort( sorter2.GetFilesNames() ); // IMPORTANT

std::cout << "Sorter2:" << std::endl;
sorter2.Print( std::cout );

gdcmm::Scanner s;
s.AddTag( gdcmm::Tag(0x20,0x32) ); // Image Position (Patient)
//s.AddTag( gdcmm::Tag(0x20,0x37) ); // Image Orientation (Patient)
s.Scan( dir.GetFilesNames() );

//s.Print( std::cout );

// Count how many different IPP there are:
const gdcmm::Scanner::ValueType &values = s.GetValues();
size_t nvalues = values.size();
std::cout << "There are " << nvalues << " different type of values" << std::endl;

//std::cout << "nfiles=" << nfiles << std::endl;
if( nfiles % nvalues != 0 )
{
    std::cerr << "Impossible: this is a not a proper series" << std::endl;
    return 1;
}
std::cout << "Series is composed of " << (nfiles/nvalues) << " different 3D volumes" << std::endl;

return 0;
}

```

27.134 SortImage.py

```

1 #####
2 #
3 #   Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 #   Copyright (c) 2006-2011 Mathieu Malaterre
6 #   All rights reserved.
7 #   See Copyright.txt or http://gdcmm.sourceforge.net/Copyright.html for details.
8 #
9 #   This software is distributed WITHOUT ANY WARRANTY; without even
10 #   the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 #   PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 """
16 Usage:
17
18 python SortImage.py dirname
19 """
20
21 import gdcmm
22 import sys
23
24 def PrintProgress(object, event):
25     assert event == "ProgressEvent"
26     print "Progress:", object.GetProgress()
27
28 def MySort(ds1, ds2):
29     # compare ds1

```

```

30     return False
31
32 if __name__ == "__main__":
33
34     dirname = sys.argv[1]
35     d = gdcm.Directory()
36     d.Load( dirname )
37
38     print d
39
40     sorter = gdcm.Sorter()
41     sorter.SetSortFunction( MySort )
42     #sorter.AddObserver( "ProgressEvent", PrintProgress )
43     sorter.Sort( d.GetFileNames() )
44
45     print "Sorter:"
46     print sorter

```

27.135 SortImage2.cs

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/

/*
 * Usage:
 * $ export LD_LIBRARY_PATH=$HOME/Projects/gdcm/debug-gcc/bin
 * $ mono bin/SortImage.exe gdcmData/012345.002.050.dcm out.dcm
 */
using System;
using gdcm;

public class SortImage2
{
    bool mysort(DataSet ds1, DataSet ds2)
    {
        return false;
    }

    public static int Main(string[] args)
    {
        Sorter sorter = new Sorter();
        sorter.SetSortFunction( mysort );

        return 0;
    }
}

```

27.136 StandardizeFiles.cs

This is a C++ example on how to use [gdcm::ImageChangeTransferSyntax](#)

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR

```

```

    PURPOSE. See the above copyright notice for more information.

=====*/

/*
 * Simple C# example to show how one would 'Standardize' a DICOM File-Set
 *
 * Usage:
 * $ export LD_LIBRARY_PATH=$HOME/Projects/gdcm/debug-gcc/bin
 * $ mono bin/StandardizeFiles.exe input_path output_path
 */
using System;
using gdcm;

public class StandardizeFiles
{
    public static bool ProcessOneFile( string filename, string outfilename )
    {
        PixmapReader reader = new PixmapReader();
        reader.SetFileName( filename );
        if( !reader.Read() )
        {
            System.Console.WriteLine( "Could not read: " + filename );
            return false;
        }

        ImageChangeTransferSyntax change = new ImageChangeTransferSyntax();
        change.SetForce( false ); // do we really want to recompress when input is already compressed in same
        // alg ?
        change.SetCompressIconImage( false ); // Keep it simple
        change.SetTransferSyntax( new TransferSyntax( TransferSyntax.TSType.JPEG2000Lossless ) );
        change.SetInput( reader.GetPixmap() );
        if( !change.Change() )
        {
            System.Console.WriteLine( "Could not change: " + filename );
            return false;
        }

        gdcm.FileMetaInformation fmi = reader.GetFile().GetHeader();
        // The following three lines make sure to regenerate any value:
        fmi.Remove( new gdcm.Tag(0x0002,0x0012) );
        fmi.Remove( new gdcm.Tag(0x0002,0x0013) );
        fmi.Remove( new gdcm.Tag(0x0002,0x0016) );

        PixmapWriter writer = new PixmapWriter();
        writer.SetFileName( outfilename );
        writer.SetFile( reader.GetFile() );
        gdcm.Pixmap pixout = ((PixmapToPixmapFilter)change).GetOutput();

        writer.SetPixmap( pixout );
        if( !writer.Write() )
        {
            System.Console.WriteLine( "Could not write: " + outfilename );
            return false;
        }

        return true;
    }

    public static int Main(string[] args)
    {
        gdcm.FileMetaInformation.SetSourceApplicationEntityTitle( "My Standardize App" );

        // http://www.oid-info.com/get/1.3.6.1.4.17434
        string THERALYS_ORG_ROOT = "1.3.6.1.4.17434";
        gdcm.UIDGenerator.SetRoot( THERALYS_ORG_ROOT );
        System.Console.WriteLine( "Root dir is now: " + gdcm.UIDGenerator.GetRoot() );

        string dir1 = args[0];
        string dir2 = args[1];

        // Check input is valid:
        if( !gdcm.PosixEmulation.FileIsDirectory(dir1) )
        {
            System.Console.WriteLine( "Input directory: " + dir1 + " does not exist. Sorry" );
            return 1;
        }
        if( !gdcm.PosixEmulation.FileIsDirectory(dir2) )
        {
            System.Console.WriteLine( "Output directory: " + dir2 + " does not exist. Sorry" );
            return 1;
        }
    }
}

```

```

    }

    Directory d = new Directory();
    uint nfiles = d.Load( dir1, true );
    if(nfiles == 0) return 1;

    // Process all filenames:
    FilenamesType filenames = d.GetFilenames();
    for( uint i = 0; i < nfiles; ++i )
    {
        string filename = filenames[ (int)i ];
        string outfilename = filename.Replace( dir1, dir2 );
        System.Console.WriteLine( "Filename: " + filename );
        System.Console.WriteLine( "Out Filename: " + outfilename );
        if( !ProcessOneFile( filename, outfilename ) )
        {
            System.Console.WriteLine( "Could not process filename: " + filename );
            //return 1;
        }
    }

    return 0;
}

```

27.137 StreamImageReaderTest.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcml.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
// This work was realised during the GSOC 2011 by Manoj Alwani

#include "gdcmlStreamImageReader.h"
#include "gdcmlFileMetaInformation.h"
#include "gdcmlSystem.h"
#include "gdcmlFilename.h"
#include "gdcmlByteSwap.h"
#include "gdcmlTrace.h"
#include "gdcmlTesting.h"
#include "gdcmlImageHelper.h"
#include "gdcmlImageReader.h"
#include "gdcmlImage.h"
#include "gdcmlMediaStorage.h"
#include "gdcmlRAWCodec.h"
#include "gdcmlJPEGGLSCodec.h"
#include "gdcmlUIDGenerator.h"
#include "gdcmlStreamImageWriter.h"
#include "gdcmlAttribute.h"
#include "gdcmlFile.h"
#include "gdcmlTag.h"

bool StreamImageRead(gdcml::StreamImageWriter & theStreamWriter,
    const char* filename, const char* outfilename, int resolution)
{
    gdcml::StreamImageReader reader;

    reader.SetFileName( filename );

    if (!reader.ReadImageInformation())
    {
        std::cerr << "unable to read image information" << std::endl;
        return 1; //unable to read tags as expected.
    }

    //let's be tricky; each image will be read in portions, first the top half, then the bottom
    //that way, we can test how the stream handles fragmentation of the data
    //we could also loop this to get various different size combinations, but I'm not sure

```



```

//that's useful, yet.
std::vector<unsigned int> extent =
    gdcm::ImageHelper::GetDimensionsValue(reader.
        GetFile());
// std::cout << extent[0];
//at this point, these values aren't used, but may be in the future
//unsigned short xmin = 0;
//unsigned short xmax = extent[0];
//unsigned short ymin = 0;
//unsigned short ymax = extent[1];
//unsigned short zmin = 0;
//unsigned short zmax = extent[2];

std::cout<< "\n Row: "<<extent[0] <<"\n Col :"<< extent[1]<< "\n Resolution :"<< extent[2] << std::endl;

int a =1;
for (int i=1; i<=(extent[2]-resolution);++i)
    a = a*2;

reader.DefinePixelExtent(0, extent[0]/a, 0, extent[1]/a, resolution-1, resolution);

unsigned long len = reader.DefineProperBufferLength();
char* finalBuffer = new char[len];
memset(finalBuffer, 0, sizeof(char)*len);

if (reader.CanReadImage())
{
    bool result = reader.Read(finalBuffer, len);
    if( !result )
    {
        std::cout << "res2 failure:" << filename << std::endl;
        delete [] finalBuffer;
        return 1;
    }
    else
    {
        std::cout<< "Able to read";
    }
}
else
{
    std::cerr<< "Not able to put in buffer"<< std::endl;
}

/*
//now, read in smaller buffer extents
reader.DefinePixelExtent(xmin, xmax, ymin, ymax);
len = reader.DefineProperBufferLength();

char* buffer = new char[len];
bool res2 = reader.Read(buffer, len);
if( !res2 ){
    std::cerr << "res2 failure:" << filename << std::endl;
    return 1;
}
//copy the result into finalBuffer
memcpy(finalBuffer, buffer, len);

//now read the next half of the image
ymin = ymax;
ymax = extent[1];

reader.DefinePixelExtent(xmin, xmax, ymin, ymax);

//std::cerr << "Success to read image from file: " << filename << std::endl;
unsigned long len2 = reader.DefineProperBufferLength();

char* buffer2 = new char[len2];
bool res3 = reader.Read(buffer2, len2);
if( !res3 ){
    std::cerr << "res3 failure:" << filename << std::endl;
    return 1;
}
//copy the result into finalBuffer
memcpy(&(finalBuffer[len]), buffer2, len2);

delete [] buffer;
delete [] buffer2;
*/

gdcm::Writer w;
gdcm::File &file = w.GetFile();

```

```

gdcmm::DataSet &ds = file.GetDataSet();

file.GetHeader().SetDataSetTransferSyntax(
    gdcmm::TransferSyntax::ExplicitVRLittleEndian );

gdcmm::UIDGenerator uid;
gdcmm::DataElement de( gdcmm::Tag(0x8,0x18) ); // SOP Instance UID
de.SetVR( gdcmm::VR::UI );
const char *u = uid.Generate();
de.SetByteValue( u, strlen(u) );
ds.Insert( de );

gdcmm::DataElement del( gdcmm::Tag(0x8,0x16) );
del.SetVR( gdcmm::VR::UI );
gdcmm::MediaStorage ms(
    gdcmm::MediaStorage::VLWholeSlideMicroscopyImageStorage
);
del.SetByteValue( ms.GetString(), strlen(ms.GetString()) );
ds.Insert( del );

const char mystr[] = "MONOCHROME2 ";
gdcmm::DataElement de2( gdcmm::Tag(0x28,0x04) );
//de.SetTag(gdcmm::Tag(0x28,0x04));
de2.SetVR( gdcmm::VR::CS );
de2.SetByteValue(mystr, strlen(mystr));
ds.Insert( de2 );

gdcmm::Attribute<0x0028,0x0008> Number_Of_Frames = {1};
ds.Insert( Number_Of_Frames.GetAsDataElement() );

gdcmm::Attribute<0x0028,0x0010> row = {extent[0]/a};
ds.Insert( row.GetAsDataElement() );

gdcmm::Attribute<0x0028,0x0011> col = {extent[1]/a};
ds.Insert( col.GetAsDataElement() );

gdcmm::Attribute<0x0028,0x0100> at = {8};
ds.Insert( at.GetAsDataElement() );

gdcmm::Attribute<0x0028,0x0002> at1 = {1};
ds.Insert( at1.GetAsDataElement() );

gdcmm::Attribute<0x0028,0x0101> at2 = {8};
ds.Insert( at2.GetAsDataElement() );

gdcmm::Attribute<0x0028,0x0102> at3 = {7};
ds.Insert( at3.GetAsDataElement() );
/*
ds1.Remove( gdcmm::Tag(0x0028,0x0008) );

gdcmm::Attribute<0x0028,0x0008> Number_Of_Frames = {1};
ds1.Insert( Number_Of_Frames.GetAsDataElement() );
*/
theStreamWriter.SetFile(file);

if (!theStreamWriter.WriteImageInformation())
{
    std::cerr << "unable to write image information" << std::endl;
    return 1; //the CanWrite function should prevent getting here, else,
    //that's a test failure
}
std::vector<unsigned int> extent1 = gdcmm::ImageHelper::GetDimensionsValue
(file);

unsigned short xmax = extent1[0];
unsigned short ymax = extent1[1];
unsigned short theChunkSize = 1;
unsigned short ychunk = extent1[1]/theChunkSize; //go in chunk sizes of theChunkSize
unsigned short zmax = 1;

std::cout<< "\n Row: "<<extent1[0] <<"\n Col :"<< extent1[1]<< "\n Resolution :"<< extent1[2] <<
std::endl;

if (xmax == 0 || ymax == 0)
{
    std::cerr << "Image has no size, unable to write zero-sized image." << std::endl;
    return 0;
}

int z, y, nexty;
unsigned long prevLen = 0; //when going through the char buffer, make sure to grab

```

```

//the bytes sequentially. So, store how far you got in the buffer with each iteration.

for (z = 0; z < zmax; ++z){
    for (y = 0; y < ymax; y += ychunk){
        nexty = y + ychunk;
        if (nexty > ymax) nexty = ymax;
        theStreamWriter.DefinePixelExtent(0, xmax, y, nexty, z, z+1);
        unsigned long len = theStreamWriter.DefineProperBufferLength();
        std::cout << "\n" << len;
        char* finalBuffer1 = new char[len];
        memcpy(finalBuffer1, &(finalBuffer[prevLen]), len);
        std::cout << "\nable to write";

        if (!theStreamWriter.Write(finalBuffer1, len)){
            std::cerr << "writing failure:" << "output.dcm" << " at y = " << y << " and z = " << z <<
std::endl;
            delete [] finalBuffer1;
            delete [] finalBuffer;
            return 1;
        }
        delete [] finalBuffer1;
        prevLen += len;
    }
}
delete [] finalBuffer;
std::cout << "all is set";

return true;
}

int main(int argc, char *argv[])
{
    if( argc < 3 )
    {
        std::cerr << argv[0] << " input.dcm output.dcm Resolution" << std::endl;
        return 1;
    }

    const char *filename = argv[1];
    const char *outfilename = argv[2];
    char *res = argv[3];

    int resolution = atoi(res);

    gdcm::StreamImageWriter theStreamWriter;

    std::ofstream of;
    of.open( outfile, std::ios::out | std::ios::binary );
    theStreamWriter.SetStream(of);

    // else
    // First of get rid of warning/debug message
    gdcm::Trace::DebugOn();
    gdcm::Trace::WarningOn();

    if(!StreamImageRead( theStreamWriter, filename, outfile, resolution))
        return 1;

    uint16_t firstTag1 = 0xfffe;
    uint16_t secondTag1 = 0xe0dd;
    uint32_t thirdTag1 = 0x00000000;
    //uint16_t fourthTag1 = 0xffff;
    const int theBufferSize1 = 2*sizeof(uint16_t)+sizeof(uint32_t);
    char* tmpBuffer2 = new char[theBufferSize1];
    memcpy(&(tmpBuffer2[0]), &firstTag1, sizeof(uint16_t));
    memcpy(&(tmpBuffer2[sizeof(uint16_t)]), &secondTag1, sizeof(uint16_t));
    memcpy(&(tmpBuffer2[2*sizeof(uint16_t)]), &thirdTag1, sizeof(uint32_t));
    //memcpy(&(tmpBuffer2[3*sizeof(uint16_t)]), &fourthTag1, sizeof(uint16_t));
    assert( of && !of.eof() && of.good() );
    of.write(tmpBuffer2, theBufferSize1);
    of.flush();
    assert( of );

    return 0;
}

```

27.138 TestByteSwap.cxx

This is a C++ example on how to use `gdcm::ByteSwap`

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "gdcmTypes.h"
#include "gdcmSwapCode.h"
#include "gdcmByteSwap.h"

#include <string.h> // memcpy

int myfunc()
{
    char vl_str[4];
    const char raw[] = "\000\000\000\004";
    memcpy(vl_str, raw, 4);
    uint32_t vl;
    gdcm::ByteSwap<uint32_t>::SwapRangeFromSwapCodeIntoSystem(
        ((uint32_t*)&vl_str), gdcm::SwapCode::BigEndian, 1);
    memcpy(&vl, vl_str, 4);
    if( vl != 0x00000004 )
    {
        std::cerr << std::hex << "vl: " << vl << std::endl;
        return 1;
    }

    gdcm::ByteSwap<uint32_t>::SwapFromSwapCodeIntoSystem(
        vl, gdcm::SwapCode::LittleEndian);
    if( vl != 0x00000004 )
    {
        std::cerr << std::hex << "vl: " << vl << std::endl;
        return 1;
    }

    gdcm::ByteSwap<uint32_t>::SwapFromSwapCodeIntoSystem(
        vl, gdcm::SwapCode::BigEndian);
    std::cout << std::hex << "vl: " << vl << std::endl;
    if( vl != 0x4000000 )
    {
        return 1;
    }

    return 0;
}

int TestByteSwap(int , char *[])
{
    gdcm::SwapCode sc = gdcm::SwapCode::Unknown;
    if ( gdcm::ByteSwap<uint16_t>::SystemIsBigEndian() )
    {
        sc = gdcm::SwapCode::BigEndian;
    }
    else if ( gdcm::ByteSwap<uint16_t>::SystemIsLittleEndian() )
    {
        sc = gdcm::SwapCode::LittleEndian;
    }
    if( sc == gdcm::SwapCode::Unknown )
    {
        return 1;
    }

    std::cout << "sc: " << sc << std::endl;

    uint16_t t = 0x1234;
    gdcm::ByteSwap<uint16_t>::SwapFromSwapCodeIntoSystem(
        t, sc);

```

```

if( sc == gdcm::SwapCode::BigEndian )
{
    if( t != 0x3412 )
    {
        std::cerr << std::hex << "t: " << t << std::endl;
        return 1;
    }
    // ok test pass rest value to old one
    t = 0x1234;
}
else if ( sc == gdcm::SwapCode::LittleEndian )
{
    if( t != 0x1234 )
    {
        std::cerr << std::hex << "t: " << t << std::endl;
        return 1;
    }
}

union { char n[2]; uint16_t tn; } ul6;
memcpy(ul6.n, &t, 2 );
gdcm::ByteSwap<uint16_t>::SwapRangeFromSwapCodeIntoSystem
    (&ul6.tn, sc, 1);
uint16_t tn = ul6.tn;
if( sc == gdcm::SwapCode::BigEndian )
{
    if( tn != 0x3412 )
    {
        std::cerr << std::hex << "tn: " << tn << std::endl;
        return 1;
    }
    // ok test pass rest value to old one
    t = 0x1234;
}
else if ( sc == gdcm::SwapCode::LittleEndian )
{
    if( tn != 0x1234 )
    {
        std::cerr << std::hex << "tn: " << tn << std::endl;
        return 1;
    }
}
gdcm::ByteSwap<uint16_t>::SwapRangeFromSwapCodeIntoSystem
    (&ul6.tn, gdcm::SwapCode::BigEndian, 1);
tn = ul6.tn;
if( sc == gdcm::SwapCode::LittleEndian )
{
    if( tn != 0x3412 )
    {
        std::cerr << std::hex << "tn: " << tn << std::endl;
        return 1;
    }
}
else if ( sc == gdcm::SwapCode::BigEndian )
{
    if( tn != 0x1234 )
    {
        std::cerr << std::hex << "tn: " << tn << std::endl;
        return 1;
    }
}

if( myfunc() )
{
    return 1;
}

uint16_t array[] = { 0x1234 };
gdcm::ByteSwap<uint16_t>::SwapRangeFromSwapCodeIntoSystem
    (array,
    gdcm::SwapCode::BigEndian, 2);
if ( array[0] != 0x3412 )
{
    return 1;
}

return 0;
}

```

27.139 TestReader.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
#include "gdcmReader.h"
#include "gdcmFileMetaInformation.h"
#include "gdcmFile.h"
#include "gdcmTesting.h"
#include "gdcmMediaStorage.h"

int TestRead(const char* filename, bool verbose = false)
{
    if( verbose )
        std::cout << "TestRead: " << filename << std::endl;

    gdcm::Reader reader;
    reader.SetFileName( filename );
    if ( !reader.Read() )
    {
        std::cerr << "TestReadError: Failed to read: " << filename << std::endl;
        return 1;
    }

    //commenting out the fmi and ds to avoid warnings
    //const gdcm::FileMetaInformation &h = reader.GetFile().GetHeader();
    //std::cout << h << std::endl;

    //const gdcm::DataSet &ds = reader.GetFile().GetDataSet();
    //std::cout << ds << std::endl;

    const char *ref = gdcm::Testing::GetMediaStorageFromFile(filename);
    gdcm::MediaStorage ms;
    ms.SetFromFile( reader.GetFile() );
    if( !ref )
    {
        std::cerr << "TestReadError: Missing MediaStorage: " << filename << std::endl;
        std::cerr << "It should be: " << ms << std::endl;
        return 1;
    }

    if( ms.IsUndefined() && ref && *ref != 0 )
    {
        std::cerr << "TestReadError: MediaStorage: " << filename << std::endl;
        std::cerr << "It should be instead: " << ref << std::endl;
        return 1;
    }

    // Make sure it is the right one:
    if( ref && *ref != 0 && ms != gdcm::MediaStorage::GetMSType(ref) )
    {
        std::cerr << "Error: Found MediaStorage: " << ms << " for " << filename << std::endl;
        std::cerr << "It should be instead: " << ref << std::endl;
        return 1;
    }

    return 0;
}

int TestReader(int argc, char *argv[])
{
    if( argc == 2 )
    {
        const char *filename = argv[1];
        return TestRead(filename, true);
    }

    // else
    gdcm::Trace::DebugOff();
}

```

```

gdcmm::Trace::WarningOff();
int r = 0, i = 0;
const char *filename;
const char * const *filenames = gdcmm::Testing::GetFileNames();
while( (filename = filenames[i]) )
{
    r += TestRead( filename );
    ++i;
}

return r;
}

```

27.140 TestReader.py

This is a C++ example on how to use `gdcmm::Reader`

```

1 #####
2 #
3 #   Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 #   Copyright (c) 2006-2011 Mathieu Malaterre
6 #   All rights reserved.
7 #   See Copyright.txt or http://gdcmm.sourceforge.net/Copyright.html for details.
8 #
9 #   This software is distributed WITHOUT ANY WARRANTY; without even
10 #   the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 #   PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 import gdcmm
16 import os,sys
17
18 def TestRead(filename, verbose = False):
19     r = gdcmm.Reader()
20     r.SetFileName( filename )
21     success = r.Read()
22     #if verbose: print r.GetFile()
23     if verbose: print(r.GetFile().GetDataSet())
24     return success
25
26 if __name__ == "__main__":
27     success = 0
28     try:
29         filename = os.sys.argv[1]
30         success += TestRead( filename, True )
31     except:
32         # loop over all files:
33         gdcmm.Trace.DebugOff()
34         gdcmm.Trace.WarningOff()
35         t = gdcmm.Testing()
36         nfiles = t.GetNumberOfFileNames()
37         for i in range(0,nfiles):
38             filename = t.GetFileName(i)
39             success += TestRead( filename )
40
41
42 # Test succeed ?
43 sys.exit(success == 0)

```

27.141 threadgdcmm.cxx

```

/*=====

Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcmm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even

```

the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the above copyright notice for more information.

```

=====*/
#include "gdcmReader.h"
#include "gdcmImageReader.h"
#include "gdcmDirectory.h"
#include "gdcmSystem.h"

#include "vtkImageData.h"
#include "vtkStructuredPointsWriter.h"

#include <pthread.h>

struct threadparams
{
    const char **filenames;
    size_t nfiles;
    char *scalarpointer;
// TODO I should also pass in the dim of the reference image just in case
};

void *ReadFilesThread(void *voidparams)
{
    const threadparams *params = static_cast<const threadparams *> (voidparams);

    const size_t nfiles = params->nfiles;
    for(unsigned int file = 0; file < nfiles; ++file)
    {
        /*
        // TODO: update progress
        pthread_mutex_lock(&params->lock);
        //section critique
        ReadingProgress+=params->stepProgress;
        pthread_mutex_unlock(&params->lock);
        */
        const char *filename = params->filenames[file];
        //std::cerr << filename << std::endl;

        gdcm::ImageReader reader;
        reader.SetFileName( filename );
        try
        {
            if( !reader.Read() )
            {
                std::cerr << "Failed to read: " << filename << std::endl;
                break;
            }
        }
        catch( ... )
        {
            std::cerr << "Failed to read: " << filename << std::endl;
            break;
        }

        const gdcm::Image &image = reader.GetImage();
        unsigned long len = image.GetBufferLength();
        char * pointer = params->scalarpointer;
        #if 0
        char *tempimage = new char[len];
        image.GetBuffer(tempimage);

        memcpy(pointer + file*len, tempimage, len);
        delete[] tempimage;
        #else
        char *tempimage = pointer + file * len;
        image.GetBuffer(tempimage);
        #endif
    }

    return voidparams;
}

void ShowFileNames(const threadparams &params)
{
    std::cout << "start" << std::endl;
    for(unsigned int i = 0; i < params.nfiles; ++i)
    {
        const char *filename = params.filenames[i];
        std::cout << filename << std::endl;
    }
}

```



```

    std::cout << "end" << std::endl;
}

void ReadFiles(size_t nfiles, const char *filenames[])
{
    // \precondition: nfiles > 0
    assert( nfiles > 0 );
    const char *reference= filenames[0]; // take the first image as reference

    gdcm::ImageReader reader;
    reader.SetFileName( reference );
    if( !reader.Read() )
    {
        // That would be very bad...
        assert(0);
    }

    const gdcm::Image &image = reader.GetImage();
    gdcm::PixelFormat pixeltype = image.GetPixelFormat();
    unsigned long len = image.GetBufferLength();
    const unsigned int *dims = image.GetDimensions();
    unsigned short pixelsize = pixeltype.GetPixelSize();
    (void)pixelsize;
    assert( image.GetNumberOfDimensions() == 2 );

    vtkImageData *output = vtkImageData::New();
    output->SetDimensions(dims[0], dims[1], (int)nfiles);

    switch( pixeltype )
    {
        case gdcm::PixelFormat::INT8:
            #if (VTK_MAJOR_VERSION >= 5) || ( VTK_MAJOR_VERSION == 4 && VTK_MINOR_VERSION > 5 )
                output->SetScalarType ( VTK_SIGNED_CHAR );
            #else
                output->SetScalarType ( VTK_CHAR );
            #endif
            break;
        case gdcm::PixelFormat::UINT8:
            output->SetScalarType ( VTK_UNSIGNED_CHAR );
            break;
        case gdcm::PixelFormat::INT16:
            output->SetScalarType ( VTK_SHORT );
            break;
        case gdcm::PixelFormat::UINT16:
            output->SetScalarType ( VTK_UNSIGNED_SHORT );
            break;
        case gdcm::PixelFormat::INT32:
            output->SetScalarType ( VTK_INT );
            break;
        case gdcm::PixelFormat::UINT32:
            output->SetScalarType ( VTK_UNSIGNED_INT );
            break;
        default:
            assert(0);
    }

    output->SetNumberOfScalarComponents ( pixeltype.GetSamplesPerPixel() );

    output->AllocateScalars();
    char * scalarpointer = static_cast<char*>(output->GetScalarPointer());

    const unsigned int nthreads = 4;
    threadparams params[nthreads];

    //pthread_mutex_t lock;
    //pthread_mutex_init(&lock, NULL);

    pthread_t *pthread = new pthread_t[nthreads];

    // There is nfiles, and nthreads
    assert( nfiles > nthreads );
    const size_t partition = nfiles / nthreads;
    for (unsigned int thread=0; thread < nthreads; ++thread)
    {
        params[thread].filenames = filenames + thread * partition;
        params[thread].nfiles = partition;
        if( thread == nthreads - 1 )
        {
            // There is slightly more files to process in this thread:
            params[thread].nfiles += nfiles % nthreads;
        }
    }
}

```

```

    assert( thread * partition < nfiles );
    params[thread].scalarpointer = scalarpointer + thread * partition * len;
    //assert( params[thread].scalarpointer < scalarpointer + 2 * dims[0] * dims[1] * dims[2] );
    // start thread:
    int res = pthread_create( &pthread[thread], NULL, ReadFilesThread, &params[thread]);
    if( res )
    {
        std::cerr << "Unable to start a new thread, pthread returned: " << res << std::endl;
        assert(0);
    }
    //ShowFileNames(params[thread]);
}
// DEBUG
size_t total = 0;
for( unsigned int thread=0; thread < nthreads; ++thread)
{
    total += params[thread].nfiles;
}
assert( total == nfiles );
// END DEBUG

for( unsigned int thread=0; thread<nthreads; thread++)
{
    pthread_join( pthread[thread], NULL);
}
delete[] pthread;

//pthread_mutex_destroy(&lock);

// For some reason writing down the file is painfully slow...
vtkStructuredPointsWriter *writer = vtkStructuredPointsWriter::New();
writer->SetInput( output );
writer->SetFileName( "/tmp/threadgdcmm.vtk" );
writer->SetFileTypeToBinary();
//writer->Write();
writer->Delete();

//output->Print( std::cout );
output->Delete();
}

int main(int argc, char *argv[])
{
    if( argc < 2 )
    {
        std::cerr << argv[0] << " [directory|list of filenames]\n";
        return 1;
    }

    // Check if user pass in a single directory
    if( argc == 2 && gdcmm::System::FileIsDirectory( argv[1] ) )
    {
        gdcmm::Directory d;
        d.Load( argv[1] );
        gdcmm::Directory::FileNamesType l = d.
            GetFileNames();
        const size_t nfiles = l.size();
        const char **filenames = new const char* [ nfiles ];
        for(unsigned int i = 0; i < nfiles; ++i)
        {
            filenames[i] = l[i].c_str();
        }
        ReadFiles(nfiles, filenames);
        delete[] filenames;
    }
    else
    {
        // Simply copy all filenames into the vector:
        const char **filenames = const_cast<const char**>(argv+1);
        const size_t nfiles = argc - 1;
        ReadFiles(nfiles, filenames);
    }

    return 0;
}

```

27.142 TraverseModules.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcm.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.

=====*/
/*
*/

#include "gdcmDefs.h"
#include "gdcmGlobal.h"
#include "gdcmIODs.h"
#include "gdcmIOD.h"
#include "gdcmMacros.h"
#include "gdcmIODEntry.h"
#include "gdcmModules.h"
#include "gdcmModule.h"
#include "gdcmAnonymizer.h"
#include "gdcmDicts.h"

int main(int , char *[])
{
    using namespace gdcm;
    static Global &g = Global::GetInstance();

    if( !g.LoadResourcesFiles() )
    {
        return 1;
    }

    static const Defs &defs = g.GetDefs();
    static const Modules &modules = defs.GetModules();
    static const IODs &iods = defs.GetIODs();
    static const Macros &macros = defs.GetMacros();
    static const Dicts &dicts = g.GetDicts();

    std::vector<Tag> tags =
        gdcm::Anonymizer::GetBasicApplicationLevelConfidentialityProfileAttributes
        ();
    for( std::vector<Tag>::const_iterator tit = tags.begin(); tit != tags.end(); ++tit )
    {
        const Tag &tag = *tit;
        const DictEntry &dictentry = dicts.GetDictEntry(tag);
        std::cout << "Processing Attribute: " << tag << " " << dictentry << std::endl;

        IODs::IODMapTypeConstIterator it = iods.Begin();
        for( ; it != iods.End(); ++it )
        {
            const IODs::IODName &name = it->first;
            const IOD &iod = it->second;

            const size_t niods = iod.GetNumberOfIODs();
            // Iterate over each iod entry in order:
            for(unsigned int idx = 0; idx < niods; ++idx)
            {
                const IODEntry &iodentry = iod.GetIODEntry(idx);
                const char *ref = iodentry.GetRef();
                //Usage::UsageType ut = iodentry.GetUsageType();

                const Module &module = modules.GetModule( ref );
                if( module.FindModuleEntryInMacros(macros, tag) )
                {
                    const ModuleEntry &module_entry = module.
                    GetModuleEntryInMacros(macros,tag);
                    Type type = module_entry.GetType();
                    std::cout << "IOD Name: " << name << std::endl;
                    std::cout << "Type: " << type << std::endl;
                }
            }
        }
    }
}

```

```

    }
    return 0;
}

```

27.143 uid_unique.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcml.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====*/
#include "gdcmlUIDGenerator.h"

#include <iostream>
#include <string>
#include <set>

int main()
{
    gdcml::UIDGenerator uid;
    //const char myroot[] = "9876543210.9876543210.9876543210.9876543210.9876543210"; // fails in ~40000
    tries
    const char myroot[] = "9876543210.9876543210.9876543210";
    uid.SetRoot( myroot );
    std::set<std::string> uids;
    uint64_t wrap = 0;
    uint64_t c = 0;
    while(1)
    {
        const char *unique = uid.Generate();
        //std::cout << unique << std::endl;
        if( c % 10000 == 0 )
        {
            std::cout << "wrap=" << wrap << ",c=" << c << std::endl;
        }
        ++c;
        if( c == 0 )
        {
            wrap++;
        }
        if ( uids.count(unique) == 1 )
        {
            std::cerr << "Failed with: " << unique << std::endl;
            return 1;
        }
        uids.insert( unique );
    }
    return 0;
}

```

27.144 VolumeSorter.cxx

```

/*=====
Program: GDCM (Grassroots DICOM). A DICOM library

Copyright (c) 2006-2011 Mathieu Malaterre
All rights reserved.
See Copyright.txt or http://gdcml.sourceforge.net/Copyright.html for details.

This software is distributed WITHOUT ANY WARRANTY; without even
the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
PURPOSE. See the above copyright notice for more information.
=====

```

```

===== */
/*
#include "gdcmsorter.h"
#include "gdcmsorter.h"
#include "gdcmsorter.h"
#include "gdcmsorter.h"
#include "gdcmsorter.h"
#include "gdcmsorter.h"

bool mysort1(gdcm::DataSet const & ds1, gdcm::DataSet const & ds2 )
{
    gdcm::Attribute<0x0020,0x000d> at1;
    at1.Set( ds1 );
    gdcm::Attribute<0x0020,0x000d> at2;
    at2.Set( ds2 );
    return at1 < at2;
}

bool mysort2(gdcm::DataSet const & ds1, gdcm::DataSet const & ds2 )
{
    gdcm::Attribute<0x0020,0x000e> at1;
    at1.Set( ds1 );
    gdcm::Attribute<0x0020,0x000e> at2;
    at2.Set( ds2 );
    return at1 < at2;
}

bool mysort3(gdcm::DataSet const & ds1, gdcm::DataSet const & ds2 )
{
    // This is a floating point number is the comparison ok ?
    gdcm::Attribute<0x0020,0x0037> at1;
    at1.Set( ds1 );
    gdcm::Attribute<0x0020,0x0037> at2;
    at2.Set( ds2 );
    return at1 < at2;
}

bool mysort4(gdcm::DataSet const & ds1, gdcm::DataSet const & ds2 )
{
    // Do the IPP sorting here
    gdcm::Attribute<0x0020,0x0032> iop1;
    gdcm::Attribute<0x0020,0x0037> iop1;
    iop1.Set( ds1 );
    iop1.Set( ds1 );
    gdcm::Attribute<0x0020,0x0032> iop2;
    gdcm::Attribute<0x0020,0x0037> iop2;
    iop2.Set( ds2 );
    iop2.Set( ds2 );
    if( iop1 != iop2 )
    {
        return false;
    }

    // else
    double normal[3];
    normal[0] = iop1[1]*iop1[5] - iop1[2]*iop1[4];
    normal[1] = iop1[2]*iop1[3] - iop1[0]*iop1[5];
    normal[2] = iop1[0]*iop1[4] - iop1[1]*iop1[3];
    double dist1 = 0;
    for( int i = 0; i < 3; ++i) dist1 += normal[i]*iop1[i];
    double dist2 = 0;
    for( int i = 0; i < 3; ++i) dist2 += normal[i]*iop2[i];

    std::cout << dist1 << ", " << dist2 << std::endl;
    return dist1 < dist2;
}

int main(int argc, char *argv[])
{
    const char *extradataroot = gdcm::Testing::GetDataExtraRoot();
    std::string dirl;
    if( argc < 2 )
    {
        if( !extradataroot )
        {
            return 1;
        }
    }
}

```

```

    dir1 = extradataroot;
    dir1 += "/gdcmsampleData/ForSeriesTesting/VariousIncidences/ST1";
}
else
{
    dir1 = argv[1];
}

gdcms::Directory d;
d.Load( dir1.c_str(), true ); // recursive !
const gdcms::Directory::FileNamesType &l1 = d.
    GetFileNames();
const size_t nfiles = l1.size();
std::cout << nfiles << std::endl;

//if( nfiles != 280 )
// {
//     return 1;
// }

//d.Print( std::cout );

gdcms::Scanner s0;
const gdcms::Tag t1(0x0020,0x000d); // Study Instance UID
const gdcms::Tag t2(0x0020,0x000e); // Series Instance UID
//const gdcms::Tag t3(0x0010,0x0010); // Patient's Name
s0.AddTag( t1 );
s0.AddTag( t2 );
//s0.AddTag( t3 );
//s0.AddTag( t4 );
//s0.AddTag( t5 );
//s0.AddTag( t6 );
bool b = s0.Scan( d.GetFileNames() );
if( !b )
{
    std::cerr << "Scanner failed" << std::endl;
    return 1;
}

//s0.Print( std::cout );

// Only get the DICOM files:
gdcms::Directory::FileNamesType l2 = s0.GetKeys();
const size_t nfiles2 = l2.size();
std::cout << nfiles2 << std::endl;

if ( nfiles2 > nfiles )
{
    return 1;
}

gdcms::Sorter sorter;
sorter.SetSortFunction( mysort1 );
sorter.StableSort( l2 );

sorter.SetSortFunction( mysort2 );
sorter.StableSort( sorter.GetFileNames() );

sorter.SetSortFunction( mysort3 );
sorter.StableSort( sorter.GetFileNames() );

sorter.SetSortFunction( mysort4 );
sorter.StableSort( sorter.GetFileNames() );

//sorter.Print( std::cout );

// Let's try to check our result:
// assume that IPP is precise enough so that we can test floating point equality:
size_t nvalues = 0;
{
    gdcms::Scanner s;
    s.AddTag( gdcms::Tag(0x20,0x32) ); // Image Position (Patient)
    //s.AddTag( gdcms::Tag(0x20,0x37) ); // Image Orientation (Patient)
    s.Scan( d.GetFileNames() );

    //s.Print( std::cout );

    const gdcms::Scanner::ValuesType &values = s.GetValues();
    nvalues = values.size();
    std::cout << "There are " << nvalues << " different type of values" << std::endl;
}

```

```

assert( nfiles2 % nvalues == 0 );
std::cout << "Series is composed of " << (nfiles/nvalues) << " different 3D volumes" << std::endl;
}

gdcmm::Directory::FileNamesType sorted_files = sorter.
    GetFileNames();

// Which means we can take nvalues files at a time and execute gdcmm::IPPSorter on it:
gdcmm::IPPSorter ippsorter;
gdcmm::Directory::FileNamesType sub( sorted_files.begin(), sorted_files.
    begin() + nvalues);
std::cout << sub.size() << std::endl;
std::cout << sub[0] << std::endl;
std::cout << sub[nvalues-1] << std::endl;
ippsorter.SetComputeZSpacing( false );
if( !ippsorter.Sort( sub ) )
{
    std::cerr << "Could not sort" << std::endl;
    return 1;
}

std::cout << "IPPSorter:" << std::endl;
ippsorter.Print( std::cout );

return 0;
}

```

27.145 WriteBuffer.py

```

1 #####
2 #
3 #   Program: GDCM (Grassroots DICOM). A DICOM library
4 #
5 #   Copyright (c) 2006-2011 Mathieu Malaterre
6 #   All rights reserved.
7 #   See Copyright.txt or http://gdcmm.sourceforge.net/Copyright.html for details.
8 #
9 #   This software is distributed WITHOUT ANY WARRANTY; without even
10 #   the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR
11 #   PURPOSE. See the above copyright notice for more information.
12 #
13 #####
14
15 ""
16 Usage:
17
18 http://chuckahm.com/Ischem/Zurich/XX_0134
19
20 (2005,1132) SQ (Sequence with undefined length #=8)      # u/1, 1 Unknown Tag & Data
21 (fffe,e000) na (Item with undefined length #=9)         # u/1, 1 Item
22 (2005,0011) LO [Philips MR Imaging DD 002]              # 26, 1 PrivateCreator
23 (2005,1137) PN [PDF_CONTROL_GEN_PARS]                   # 20, 1 Unknown Tag & Data
24 (2005,1138) PN (no value available)                     # 0, 0 Unknown Tag & Data
25 (2005,1139) PN [IEEE_PDF]                               # 8, 1 Unknown Tag & Data
26 (2005,1140) PN (no value available)                     # 0, 0 Unknown Tag & Data
27 (2005,1141) PN (no value available)                     # 0, 0 Unknown Tag & Data
28 (2005,1143) SL 3103                                     # 4, 1 Unknown Tag & Data
29 (2005,1144) OW 0566\0000\013b\0000\0a4a\0000\000e\0000\0a7a\0000\0195\0000\0008... # 3104, 1 Unknown
    Tag & Data
30 (2005,1147) CS [Y]                                       # 2, 1 Unknown Tag & Data
31 (fffe,e00d) na (ItemDelimitationItem)                   # 0, 0 ItemDelimitationItem
32 (fffe,e000) na (Item with undefined length #=9)         # u/1, 1 Item
33 (2005,0011) LO [Philips MR Imaging DD 002]              # 26, 1 PrivateCreator
34 (2005,1137) PN [PDF_CONTROL_PREP_PARS]                  # 22, 1 Unknown Tag & Data
35 (2005,1138) PN (no value available)                     # 0, 0 Unknown Tag & Data
36 (2005,1139) PN [IEEE_PDF]                               # 8, 1 Unknown Tag & Data
37 (2005,1140) PN (no value available)                     # 0, 0 Unknown Tag & Data
38 (2005,1141) PN (no value available)                     # 0, 0 Unknown Tag & Data
39 (2005,1143) SL 7934                                     # 4, 1 Unknown Tag & Data
40 (2005,1144) OW 19b6\0000\005f\0000\1b2a\0000\00f3\0000\1eee\0000\0000\0000\0008... # 7934, 1 Unknown
    Tag & Data
41 (2005,1147) CS [Y]                                       # 2, 1 Unknown Tag & Data
42 (fffe,e00d) na (ItemDelimitationItem)                   # 0, 0 ItemDelimitationItem
43 ...
44 ""
45

```

```
46 import sys
47 import gdcm
48
49 if __name__ == "__main__":
50
51     file1 = sys.argv[1]
52     file2 = sys.argv[2]
53
54     r = gdcm.Reader()
55     r.SetFileName( file1 )
56     if not r.Read():
57         sys.exit(1)
58
59     fg = gdcm.FileNameGenerator()
60     f = r.GetFile()
61     ds = f.GetDataSet()
62     tsis = gdcm.Tag(0x2005,0x1132) #
63     if ds.FindDataElement( tsis ):
64         sis = ds.GetDataElement( tsis )
65         #sqsis = sis.GetSequenceOfItems()
66         # GetValueAsSQ handle more cases
67         sqsis = sis.GetValueAsSQ()
68         if sqsis.GetNumberOfItems():
69             nitems = sqsis.GetNumberOfItems();
70             fg.SetNumberOfFileNames( nitems )
71             fg.SetPrefix( file2 )
72             if not fg.Generate():
73                 print "problem"
74                 sys.exit(1)
75             for i in range(0,nitems):
76                 item1 = sqsis.GetItem(i+1) # Item start at 1
77                 nestedds = item1.GetNestedDataSet()
78                 tprcs = gdcm.Tag(0x2005,0x1144) #
79                 if nestedds.FindDataElement( tprcs ):
80                     prcs = nestedds.GetDataElement( tprcs )
81                     bv = prcs.GetByteValue()
82                     print bv
83                     f = open( fg.GetFilename(i) , "w" )
84                     f.write( bv.WriteBuffer() )
```


Index

- ~ASN1
 - gdcmm::ASN1, [162](#)
- ~AnonymizeEvent
 - gdcmm::AnonymizeEvent, [147](#)
- ~Anonymizer
 - gdcmm::Anonymizer, [150](#)
- ~Attribute
 - gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >, [179](#)
- ~AudioCodec
 - gdcmm::AudioCodec, [189](#)
- ~Base64
 - gdcmm::Base64, [190](#)
- ~BasePDU
 - gdcmm::network::BasePDU, [195](#)
- ~BaseRootQuery
 - gdcmm::BaseRootQuery, [198](#)
- ~Bitmap
 - gdcmm::Bitmap, [208](#)
- ~BitmapToBitmapFilter
 - gdcmm::BitmapToBitmapFilter, [215](#)
- ~BoxRegion
 - gdcmm::BoxRegion, [217](#)
- ~ByteSwapFilter
 - gdcmm::ByteSwapFilter, [221](#)
- ~ByteValue
 - gdcmm::ByteValue, [224](#)
- ~CSAHeader
 - gdcmm::CSAHeader, [261](#)
- ~Coder
 - gdcmm::Coder, [239](#)
- ~Command
 - gdcmm::Command, [244](#)
- ~CommandDataSet
 - gdcmm::CommandDataSet, [246](#)
- ~CryptographicMessageSyntax
 - gdcmm::CryptographicMessageSyntax, [254](#)
- ~Curve
 - gdcmm::Curve, [272](#)
- ~DICOMDIRGenerator
 - gdcmm::DICOMDIRGenerator, [303](#)
- ~DataEvent
 - gdcmm::DataEvent, [285](#)
- ~DataSetEvent
 - gdcmm::DataSetEvent, [294](#)
- ~Decoder
 - gdcmm::Decoder, [295](#)
- ~Defs
 - gdcmm::Defs, [298](#)
- ~DeltaEncodingCodec
 - gdcmm::DeltaEncodingCodec, [300](#)
- ~DictConverter
 - gdcmm::DictConverter, [307](#)
- ~DictPrinter
 - gdcmm::DictPrinter, [312](#)
- ~Dicts
 - gdcmm::Dicts, [314](#)
- ~DirectionCosines
 - gdcmm::DirectionCosines, [318](#)
- ~Directory
 - gdcmm::Directory, [320](#)
- ~Dumper
 - gdcmm::Dumper, [325](#)
- ~Element
 - gdcmm::Element< TVR, VM::VM1_n >, [332](#)
- ~Event
 - gdcmm::Event, [351](#)
- ~Exception
 - gdcmm::Exception, [353](#)
- ~File
 - gdcmm::File, [361](#)
- ~FileAnonymizer
 - gdcmm::FileAnonymizer, [364](#)
- ~FileDerivation
 - gdcmm::FileDerivation, [366](#)
- ~FileExplicitFilter
 - gdcmm::FileExplicitFilter, [368](#)
- ~FileMetaInformation
 - gdcmm::FileMetaInformation, [372](#)
- ~FilenameGenerator
 - gdcmm::FilenameGenerator, [378](#)
- ~Global
 - gdcmm::Global, [390](#)
- ~GroupDict
 - gdcmm::GroupDict, [392](#)
- ~IPPSorter
 - gdcmm::IPPSorter, [449](#)
- ~IconImageFilter
 - gdcmm::IconImageFilter, [394](#)
- ~IconImageGenerator

- gdcm::IconImageGenerator, 396
- ~Image
 - gdcm::Image, 400
- ~ImageApplyLookupTable
 - gdcm::ImageApplyLookupTable, 404
- ~ImageChangePhotometricInterpretation
 - gdcm::ImageChangePhotometricInterpretation, 407
- ~ImageChangePlanarConfiguration
 - gdcm::ImageChangePlanarConfiguration, 410
- ~ImageChangeTransferSyntax
 - gdcm::ImageChangeTransferSyntax, 413
- ~ImageCodec
 - gdcm::ImageCodec, 417
- ~ImageConverter
 - gdcm::ImageConverter, 421
- ~ImageFragmentSplitter
 - gdcm::ImageFragmentSplitter, 423
- ~ImageReader
 - gdcm::ImageReader, 429
- ~ImageRegionReader
 - gdcm::ImageRegionReader, 432
- ~ImageToImageFilter
 - gdcm::ImageToImageFilter, 435
- ~ImageWriter
 - gdcm::ImageWriter, 437
- ~JPEG12Codec
 - gdcm::JPEG12Codec, 457
- ~JPEG16Codec
 - gdcm::JPEG16Codec, 459
- ~JPEG2000Codec
 - gdcm::JPEG2000Codec, 461
- ~JPEG8Codec
 - gdcm::JPEG8Codec, 464
- ~JPEGCodec
 - gdcm::JPEGCodec, 467
- ~JPEGLSCodec
 - gdcm::JPEGLSCodec, 471
- ~KAKADUCodec
 - gdcm::KAKADUCodec, 473
- ~LookupTable
 - gdcm::LookupTable, 479
- ~MD5
 - gdcm::MD5, 486
- ~MemberCommand
 - gdcm::MemberCommand, 496
- ~MeshPrimitive
 - gdcm::MeshPrimitive, 500
- ~ModuleEntry
 - gdcm::ModuleEntry, 505
- ~Object
 - gdcm::Object, 517
- ~Orientation
 - gdcm::Orientation, 519
- ~Overlay
 - gdcm::Overlay, 523
- ~PDBHeader
 - gdcm::PDBHeader, 536
- ~PDFCodec
 - gdcm::PDFCodec, 538
- ~PGXCodec
 - gdcm::PGXCodec, 542
- ~PNMCodec
 - gdcm::PNMCodec, 564
- ~PVRGCodec
 - gdcm::PVRGCodec, 585
- ~ParseException
 - gdcm::ParseException, 527
- ~Parser
 - gdcm::Parser, 529
- ~PixelFormat
 - gdcm::PixelFormat, 547
- ~Pixmap
 - gdcm::Pixmap, 552
- ~PixmapReader
 - gdcm::PixmapReader, 556
- ~PixmapToPixmapFilter
 - gdcm::PixmapToPixmapFilter, 559
- ~PixmapWriter
 - gdcm::PixmapWriter, 561
- ~Preamble
 - gdcm::Preamble, 565
- ~Printer
 - gdcm::Printer, 577
- ~PrivateDict
 - gdcm::PrivateDict, 579
- ~ProgressEvent
 - gdcm::ProgressEvent, 583
- ~PythonFilter
 - gdcm::PythonFilter, 586
- ~QueryBase
 - gdcm::QueryBase, 588
- ~RAWCodec
 - gdcm::RAWCodec, 599
- ~RLECodec
 - gdcm::RLECodec, 612
- ~Reader
 - gdcm::Reader, 603
- ~Region
 - gdcm::Region, 606
- ~Rescaler
 - gdcm::Rescaler, 609
- ~SHA1
 - gdcm::SHA1, 652
- ~Scanner
 - gdcm::Scanner, 619
- ~Segment
 - gdcm::Segment, 624
- ~SegmentReader

- gdcmm::SegmentReader, 629
- ~SegmentWriter
 - gdcmm::SegmentWriter, 632
- ~SegmentedPaletteColorLookupTable
 - gdcmm::SegmentedPaletteColorLookupTable, 627
- ~SerieHelper
 - gdcmm::SerieHelper, 644
- ~ServiceClassUser
 - gdcmm::ServiceClassUser, 649
- ~SimpleMemberCommand
 - gdcmm::SimpleMemberCommand, 655
- ~SimpleSubjectWatcher
 - gdcmm::SimpleSubjectWatcher, 657
- ~SmartPointer
 - gdcmm::SmartPointer, 659
- ~Sorter
 - gdcmm::Sorter, 665
- ~Spacing
 - gdcmm::Spacing, 667
- ~SplitMosaicFilter
 - gdcmm::SplitMosaicFilter, 669
- ~StreamImageReader
 - gdcmm::StreamImageReader, 672
- ~StreamImageWriter
 - gdcmm::StreamImageWriter, 676
- ~StringFilter
 - gdcmm::StringFilter, 683
- ~Subject
 - gdcmm::Subject, 687
- ~Surface
 - gdcmm::Surface, 691
- ~SurfaceReader
 - gdcmm::SurfaceReader, 699
- ~SurfaceWriter
 - gdcmm::SurfaceWriter, 701
- ~Table
 - gdcmm::Table, 709
- ~TableEntry
 - gdcmm::TableEntry, 710
- ~TableReader
 - gdcmm::TableReader, 711
- ~TableRow
 - gdcmm::network::TableRow, 713
- ~TagPath
 - gdcmm::TagPath, 720
- ~Testing
 - gdcmm::Testing, 722
- ~Trace
 - gdcmm::Trace, 726
- ~Transition
 - gdcmm::network::Transition, 733
- ~ULAction
 - gdcmm::network::ULAction, 759
- ~ULBasicCallback
 - gdcmm::network::ULBasicCallback, 793
- ~ULConnection
 - gdcmm::network::ULConnection, 795
- ~ULConnectionCallback
 - gdcmm::network::ULConnectionCallback, 797
- ~ULConnectionManager
 - gdcmm::network::ULConnectionManager, 801
- ~ULEvent
 - gdcmm::network::ULEvent, 802
- ~ULWritingCallback
 - gdcmm::network::ULWritingCallback, 805
- ~UserInformation
 - gdcmm::network::UserInformation, 813
- ~Validate
 - gdcmm::Validate, 814
- ~Value
 - gdcmm::Value, 816
- ~Version
 - gdcmm::Version, 818
- ~Writer
 - gdcmm::Writer, 889
- ~XMLDictReader
 - gdcmm::XMLDictReader, 892
- ~XMLPrivateDictReader
 - gdcmm::XMLPrivateDictReader, 894
- ~vtkGDCMImageReader
 - vtkGDCMImageReader, 836
- ~vtkGDCMImageWriter
 - vtkGDCMImageWriter, 842
- ~vtkGDCMMedicalImageProperties
 - vtkGDCMMedicalImageProperties, 846
- ~vtkGDCMPolyDataReader
 - vtkGDCMPolyDataReader, 848
- ~vtkGDCMPolyDataWriter
 - vtkGDCMPolyDataWriter, 851
- ~vtkGDCMTesting
 - vtkGDCMTesting, 854
- ~vtkGDCMThreadedImageReader
 - vtkGDCMThreadedImageReader, 857
- ~vtkGDCMThreadedImageReader2
 - vtkGDCMThreadedImageReader2, 859
- ~vtkImageColorViewer
 - vtkImageColorViewer, 864
- ~vtkImageMapToColors16
 - vtkImageMapToColors16, 869
- ~vtkImageMapToWindowLevelColors2
 - vtkImageMapToWindowLevelColors2, 872
- ~vtkImagePlanarComponentsToComponents
 - vtkImagePlanarComponentsToComponents, 874
- ~vtkImageRGBToYBR
 - vtkImageRGBToYBR, 876
- ~vtkImageYBRToRGB
 - vtkImageYBRToRGB, 878
- ~vtkLookupTable16

- vtkLookupTable16, [879](#)
 - ~vtkRTStructSetProperties
 - vtkRTStructSetProperties, [882](#)
- AE
 - gdcm::VR, [827](#)
- AES128_CIPHER
 - gdcm::CryptographicMessageSyntax, [254](#)
- AES192_CIPHER
 - gdcm::CryptographicMessageSyntax, [254](#)
- AES256_CIPHER
 - gdcm::CryptographicMessageSyntax, [254](#)
- ALGOType_END
 - gdcm::Segment, [624](#)
- ARGB
 - gdcm::PhotometricInterpretation, [544](#)
- AS
 - gdcm::VR, [827](#)
- AT
 - gdcm::VR, [827](#)
- AUTOMATIC
 - gdcm::Segment, [624](#)
- AXIAL
 - gdcm::Orientation, [519](#)
- AAAbortPDU
 - gdcm::network::AAAbortPDU, [134](#)
- AAAssociateACPDU
 - gdcm::network::AAAssociateACPDU, [137](#)
 - gdcm::network::AAAssociateRQPDU, [143](#)
- AAAssociateRJPDU
 - gdcm::network::AAAssociateRJPDU, [139](#)
- AAAssociateRQPDU
 - gdcm::network::AAAssociateACPDU, [137](#)
 - gdcm::network::AAAssociateRQPDU, [141](#)
- AECComp
 - gdcm, [117](#)
- ALGOType
 - gdcm::Segment, [624](#)
- ARTIMTimer
 - gdcm::network::ARTIMTimer, [161](#)
- AReleaseRPPDU
 - gdcm::network::AReleaseRPPDU, [158](#)
- AReleaseRQPDU
 - gdcm::network::AReleaseRQPDU, [159](#)
- ASComp
 - gdcm, [117](#)
- ASN1
 - gdcm::ASN1, [162](#)
- AbstractSyntax
 - gdcm::network::AbstractSyntax, [145](#)
- ActiveComponent
 - vtkImageMapToColors16, [870](#)
- Add
 - gdcm::GroupDict, [392](#)
- AddAcceptedPresentationContext
 - gdcm::network::ULConnection, [795](#)
- AddCSAHeaderDictEntry
 - gdcm::CSAHeaderDict, [264](#)
- AddContourReferencedFrameOfReference
 - vtkRTStructSetProperties, [882](#)
- AddDerivationDescription
 - gdcm::FileDerivation, [366](#)
- AddDictEntry
 - gdcm::Dict, [305](#)
 - gdcm::PrivateDict, [579](#)
- AddFile
 - gdcm::FileSet, [380](#)
 - gdcm::SerieHelper, [644](#)
- AddFileName
 - gdcm::SerieHelper, [645](#)
- AddFragment
 - gdcm::SequenceOfFragments, [635](#)
- AddGroupLength
 - gdcm::DictConverter, [307](#)
- AddIOD
 - gdcm::IODs, [447](#)
- AddIODEntry
 - gdcm::IOD, [444](#)
- AddImageDirectoryRecord
 - gdcm::DICOMDIRGenerator, [303](#)
- AddInput
 - vtkImageColorViewer, [864](#)
- AddInputConnection
 - vtkImageColorViewer, [864](#)
- AddItem
 - gdcm::SequenceOfItems, [640](#)
- AddMacro
 - gdcm::Macros, [484](#)
 - gdcm::Module, [503](#)
- AddMacroEntry
 - gdcm::Macro, [482](#)
- AddModule
 - gdcm::Modules, [507](#)
- AddModuleEntry
 - gdcm::Module, [503](#)
 - gdcm::NestedModuleEntries, [514](#)
- AddObserver
 - gdcm::Subject, [687](#)
- AddPatientDirectoryRecord
 - gdcm::DICOMDIRGenerator, [303](#)
- AddPresentationContext
 - gdcm::network::AAAssociateRQPDU, [141](#)
 - gdcm::PresentationContextGenerator, [570](#)
- AddPresentationContextAC
 - gdcm::network::AAAssociateACPDU, [137](#)
- AddPresentationDataValue
 - gdcm::network::PDataTFPDU, [532](#)
- AddPrimitiveData

- gdcmmesh::MeshPrimitive, [500](#)
- AddPrivateTag
 - gdcmmesh::Scanner, [619](#)
- AddPurposeOfReferenceCodeSequence
 - gdcmmesh::FileDerivation, [366](#)
- AddQueryDataSet
 - gdcmmesh::BaseRootQuery, [198](#)
- AddReference
 - gdcmmesh::FileDerivation, [366](#)
- AddReferencedFrameOfReference
 - vtkRTStructSetProperties, [882](#)
- AddRestriction
 - gdcmmesh::SerieHelper, [645](#)
- AddSegment
 - gdcmmesh::SegmentWriter, [632](#)
- AddSelect
 - gdcmmesh::Sorter, [665](#)
- AddSeriesDirectoryRecord
 - gdcmmesh::DICOMDIRGenerator, [303](#)
- AddSkipTag
 - gdcmmesh::Scanner, [619](#)
- AddSourceImageSequence
 - gdcmmesh::FileDerivation, [366](#)
- AddStructureSetROI
 - vtkRTStructSetProperties, [883](#)
- AddStructureSetROIObservation
 - vtkRTStructSetProperties, [883](#)
- AddStudyDirectoryRecord
 - gdcmmesh::DICOMDIRGenerator, [303](#)
- AddSurface
 - gdcmmesh::Segment, [624](#)
- AddTag
 - gdcmmesh::Scanner, [619](#)
- AddTransferSyntax
 - gdcmmesh::network::PresentationContextRQ, [572](#)
 - gdcmmesh::PresentationContext, [567](#)
- AffectedSOPClassUID
 - gdcmmesh::network::CEchoRQ, [227](#)
- Allocate
 - gdcmmesh::LookupTable, [479](#)
- AmbulatoryECGWaveformStorage
 - gdcmmesh::MediaStorage, [490](#)
 - gdcmmesh::UIDs, [746](#)
- AnatomicRegion
 - gdcmmesh::Segment, [625](#)
- AnonymizeEvent
 - gdcmmesh::AnonymizeEvent, [147](#)
- Anonymizer
 - gdcmmesh::Anonymizer, [150](#)
- Append
 - gdcmmesh::Global, [390](#)
- AppendImplementationClassUID
 - gdcmmesh::FileMetaInformation, [372](#)
- ApplicationContext
 - gdcmmesh::network::ApplicationContext, [154](#)
- Apply
 - gdcmmesh::ImageApplyLookupTable, [404](#)
- ApplyInverseVideo
 - vtkGDCMImageReader, [839](#)
- ApplyLookupTable
 - vtkGDCMImageReader, [839](#)
- ApplyPlanarConfiguration
 - vtkGDCMImageReader, [839](#)
- ApplyShiftScale
 - vtkGDCMImageReader, [839](#)
- ApplyYBRToRGB
 - vtkGDCMImageReader, [839](#)
- AreOverlaysInPixelData
 - gdcmmesh::Bitmap, [208](#)
 - gdcmmesh::Pixmap, [552](#)
- Area
 - gdcmmesh::BoxRegion, [217](#)
 - gdcmmesh::Region, [606](#)
- ArrayIncludeMacrosType
 - gdcmmesh::Macro, [482](#)
 - gdcmmesh::Module, [503](#)
- ArrayType
 - gdcmmesh::Attribute, [165](#)
 - gdcmmesh::Attribute< Group, Element, TVR, VM::VM1 >, [172](#)
 - gdcmmesh::Attribute< Group, Element, TVR, VM::VM1_n >, [179](#)
- AsynchronousOperationsWindowSub
 - gdcmmesh::network::AsynchronousOperationsWindowSub, [163](#)
- Attribute
 - gdcmmesh::Attribute< Group, Element, TVR, VM::VM1_n >, [179](#)
 - gdcmmesh::terminal, [131](#)
- Audio
 - gdcmmesh::MediaStorage, [491](#)
- AudioSRStorageTrialRetired
 - gdcmmesh::UIDs, [747](#)
- AudioCodec
 - gdcmmesh::AudioCodec, [189](#)
- AutoPixelMinMax
 - gdcmmesh::IconImageGenerator, [396](#)
- BLUE
 - gdcmmesh::LookupTable, [479](#)
- BALCPPProtect
 - gdcmmesh::Anonymizer, [150](#)
- backslash
 - gdcmmesh, [119](#)
- BadBigEndian
 - gdcmmesh::SwapCode, [702](#)
- BadLittleEndian
 - gdcmmesh::SwapCode, [702](#)

- Base64
 - gdcm::Base64, [190](#)
- BaseRootQuery
 - gdcm::BaseRootQuery, [198](#)
- BasicAnnotationBoxSOPClass
 - gdcm::UIDs, [745](#)
- BasicColorImageBoxSOPClass
 - gdcm::UIDs, [745](#)
- BasicColorPrintManagementMetaSOPClass
 - gdcm::UIDs, [745](#)
- BasicFilmBoxSOPClass
 - gdcm::UIDs, [745](#)
- BasicFilmSessionSOPClass
 - gdcm::UIDs, [745](#)
- BasicGrayscaleImageBoxSOPClass
 - gdcm::UIDs, [745](#)
- BasicGrayscalePrintManagementMetaSOPClass
 - gdcm::UIDs, [745](#)
- BasicPrintImageOverlayBoxSOPClassRetired
 - gdcm::UIDs, [746](#)
- BasicStudyContentNotificationSOPClassRetired
 - gdcm::UIDs, [745](#)
- BasicTextSR
 - gdcm::MediaStorage, [490](#)
- BasicTextSRStorage
 - gdcm::UIDs, [747](#)
- BasicVoiceAudioWaveformStorage
 - gdcm::MediaStorage, [490](#)
 - gdcm::UIDs, [746](#)
- BasicApplicationLevelConfidentialityProfile
 - gdcm::Anonymizer, [150](#)
- BasicCodedEntry
 - gdcm::SegmentHelper::BasicCodedEntry, [202](#)
- BasicOffsetTable
 - gdcm::BasicOffsetTable, [204](#)
- Begin
 - gdcm::CSAHeaderDict, [264](#)
 - gdcm::DataSet, [288](#)
 - gdcm::Dict, [305](#)
 - gdcm::IODs, [447](#)
 - gdcm::Scanner, [619](#)
 - gdcm::SequenceOfFragments, [635](#)
 - gdcm::SequenceOfItems, [640](#)
- BigEndian
 - gdcm::SwapCode, [702](#)
- BitSample
 - gdcm::JPEGCodec, [468](#)
 - gdcm::LookupTable, [480](#)
- Bitmap
 - gdcm::Bitmap, [208](#)
 - gdcm::JPEG2000Codec, [462](#)
 - gdcm::PixelFormat, [550](#)
- BitmapToBitmapFilter
 - gdcm::BitmapToBitmapFilter, [214](#)
- black
 - gdcm::terminal, [131](#)
- BlendingSoftcopyPresentationStateStorageSOPClass
 - gdcm::UIDs, [747](#)
- blink
 - gdcm::terminal, [131](#)
- blue
 - gdcm::terminal, [131](#)
- BoundingBox
 - gdcm::BoxRegion, [217](#)
- BoxRegion
 - gdcm::BoxRegion, [217](#)
- BreakConnection
 - gdcm::network::ULConnectionManager, [801](#)
- BreakConnectionNow
 - gdcm::network::ULConnectionManager, [801](#)
- BreastImagingRelevantPatientInformationQuery
 - gdcm::UIDs, [748](#)
- BreastTomosynthesisImageStorage
 - gdcm::MediaStorage, [491](#)
 - gdcm::UIDs, [750](#)
- bright
 - gdcm::terminal, [131](#)
- Build
 - vtkLookupTable16, [879](#)
- ByteBuffer
 - gdcm::ByteBuffer, [219](#)
- ByteSwap
 - gdcm::ByteSwapFilter, [221](#)
- ByteSwapFilter
 - gdcm::ByteSwapFilter, [221](#)
- ByteValue
 - gdcm::ByteValue, [223](#)
- bytes
 - gdcm::Tag, [719](#)
- C_CANCEL_RQ
 - gdcm::network::DIMSE, [317](#)
- C_ECHO_RQ
 - gdcm::network::DIMSE, [316](#)
- C_ECHO_RSP
 - gdcm::network::DIMSE, [316](#)
- C_FIND_RQ
 - gdcm::network::DIMSE, [316](#)
- C_FIND_RSP
 - gdcm::network::DIMSE, [316](#)
- C_GET_RQ
 - gdcm::network::DIMSE, [316](#)
- C_GET_RSP
 - gdcm::network::DIMSE, [316](#)
- C_MOVE_RQ
 - gdcm::network::DIMSE, [316](#)
- C_MOVE_RSP
 - gdcm::network::DIMSE, [316](#)

- C_STORE_RQ
 - gdcm::network::DIMSE, [316](#)
- C_STORE_RSP
 - gdcm::network::DIMSE, [316](#)
- CALIBRATED
 - gdcm::Spacing, [667](#)
- CMYK
 - gdcm::PhotometricInterpretation, [544](#)
- CONDENSED_STYLE
 - gdcm::Printer, [577](#)
- CONSOLE
 - gdcm::terminal, [131](#)
- CORONAL
 - gdcm::Orientation, [519](#)
- CS
 - gdcm::VR, [827](#)
- CSANonImageStorage
 - gdcm::MediaStorage, [490](#)
- CT_private_ELE
 - gdcm::TransferSyntax, [730](#)
- CTImageStorage
 - gdcm::MediaStorage, [489](#)
 - gdcm::UIDs, [746](#)
- CEcho
 - gdcm::CompositeNetworkFunctions, [249](#)
- CFind
 - gdcm::CompositeNetworkFunctions, [249](#)
- CM
 - gdcm::SegmentHelper::BasicCodedEntry, [202](#)
- cMaxEventID
 - gdcm::network, [129](#)
- cMaxStateID
 - gdcm::network, [129](#)
- CMove
 - gdcm::CompositeNetworkFunctions, [249](#)
- CSAElement
 - gdcm::CSAElement, [256](#)
- CSAHeader
 - gdcm::CSAHeader, [261](#)
 - gdcm::DataSet, [292](#)
- CSAHeaderDict
 - gdcm::CSAHeaderDict, [264](#)
- CSAHeaderDictEntry
 - gdcm::CSAHeaderDictEntry, [266](#)
- CSAHeaderType
 - gdcm::CSAHeader, [261](#)
- CSComp
 - gdcm, [117](#)
- CSD
 - gdcm::SegmentHelper::BasicCodedEntry, [202](#)
- CSV
 - gdcm::SegmentHelper::BasicCodedEntry, [202](#)
- CStore
 - gdcm::CompositeNetworkFunctions, [250](#)
- CV
 - gdcm::SegmentHelper::BasicCodedEntry, [202](#)
- CanCode
 - gdcm::AudioCodec, [189](#)
 - gdcm::Coder, [239](#)
 - gdcm::ImageCodec, [417](#)
 - gdcm::JPEG2000Codec, [461](#)
 - gdcm::JPEGCodec, [467](#)
 - gdcm::JPEGLSCodec, [471](#)
 - gdcm::KAKADUCodec, [473](#)
 - gdcm::PDFCodec, [538](#)
 - gdcm::PGXCodec, [542](#)
 - gdcm::PNMCodec, [564](#)
 - gdcm::PVRGCodec, [585](#)
 - gdcm::RAWCodec, [599](#)
 - gdcm::RLECodec, [612](#)
- CanDecode
 - gdcm::AudioCodec, [190](#)
 - gdcm::Decoder, [296](#)
 - gdcm::DeltaEncodingCodec, [300](#)
 - gdcm::ImageCodec, [417](#)
 - gdcm::JPEG2000Codec, [461](#)
 - gdcm::JPEGCodec, [467](#)
 - gdcm::JPEGLSCodec, [471](#)
 - gdcm::KAKADUCodec, [473](#)
 - gdcm::PDFCodec, [538](#)
 - gdcm::PGXCodec, [542](#)
 - gdcm::PNMCodec, [564](#)
 - gdcm::PVRGCodec, [585](#)
 - gdcm::RAWCodec, [600](#)
 - gdcm::RLECodec, [612](#)
- CanDisplay
 - gdcm::VR, [828](#)
- CanEmptyTag
 - gdcm::Anonymizer, [151](#)
- CanRead
 - gdcm::Reader, [603](#)
- CanReadFile
 - vtkGDCMImageReader, [837](#)
- CanReadImage
 - gdcm::StreamImageReader, [672](#)
- CanStoreLossy
 - gdcm::TransferSyntax, [730](#)
- CanWriteFile
 - gdcm::StreamImageWriter, [677](#)
- CardiacElectrophysiologyWaveformStorage
 - gdcm::MediaStorage, [490](#)
 - gdcm::UIDs, [746](#)
- CardiacRelevantPatientInformationQuery
 - gdcm::UIDs, [749](#)
- Change
 - gdcm::FileExplicitFilter, [368](#)
 - gdcm::ImageChangePhotometricInterpretation, [407](#)
 - gdcm::ImageChangePlanarConfiguration, [410](#)

- gdcmm::ImageChangeTransferSyntax, 413
- ChangeFMI
 - gdcmm::FileExplicitFilter, 369
- ChangeMonochrome
 - gdcmm::ImageChangePhotometricInterpretation, 407
- CharacterDataHandler
 - gdcmm::TableReader, 711
 - gdcmm::XMLDictReader, 892
 - gdcmm::XMLPrivateDictReader, 894
- CheckEvent
 - gdcmm::AnonymizeEvent, 147
 - gdcmm::DataEvent, 285
 - gdcmm::DataSetEvent, 294
 - gdcmm::Event, 351
 - gdcmm::ProgressEvent, 583
- CheckFileMetaInformationOff
 - gdcmm::Writer, 889
- CheckFileMetaInformationOn
 - gdcmm::Writer, 889
- ChestCADSRStorage
 - gdcmm::UIDs, 748
- CipherTypes
 - gdcmm::CryptographicMessageSyntax, 254
- Clear
 - gdcmm::Bitmap, 208
 - gdcmm::ByteValue, 224
 - gdcmm::DataElement, 277
 - gdcmm::DataSet, 288
 - gdcmm::IOD, 444
 - gdcmm::IODs, 447
 - gdcmm::Item, 453
 - gdcmm::LookupTable, 479
 - gdcmm::Macro, 482
 - gdcmm::Macros, 484
 - gdcmm::Module, 503
 - gdcmm::Modules, 507
 - gdcmm::Preamble, 566
 - gdcmm::SequenceOfFragments, 635
 - gdcmm::SequenceOfItems, 640
 - gdcmm::SerieHelper, 645
 - gdcmm::Value, 816
 - vtkGDCMMedicalImageProperties, 846
 - vtkRTStructSetProperties, 883
- ClearSkipTags
 - gdcmm::Scanner, 619
- ClearTags
 - gdcmm::Scanner, 619
- Clone
 - gdcmm::BoxRegion, 217
 - gdcmm::Region, 606
- Code
 - gdcmm::Coder, 239
 - gdcmm::JPEG2000Codec, 462
 - gdcmm::JPEGCodec, 467
 - gdcmm::JPEGLSCodec, 471
 - gdcmm::KAKADUCodec, 473
 - gdcmm::PVRGCodec, 585
 - gdcmm::RAWCodec, 600
 - gdcmm::RLECodec, 612
- CodeString
 - gdcmm::CodeString, 242
- Color
 - gdcmm::terminal, 131
- ColorSoftcopyPresentationStateStorageSOPClass
 - gdcmm::UIDs, 747
- ColorArray
 - gdcmm::SurfaceHelper, 695
- Command
 - gdcmm::Command, 244
- CommandDataSet
 - gdcmm::CommandDataSet, 246
- CommandTypes
 - gdcmm::network::DIMSE, 316
- CompOperators
 - gdcmm, 118
- Compatible
 - gdcmm::VM, 824
 - gdcmm::VR, 828
- Component
 - gdcmm::PersonName, 540
- ComprehensiveSR
 - gdcmm::MediaStorage, 490
- ComprehensiveSRStorage
 - gdcmm::UIDs, 747
- ComprehensiveSRStorageTrialRetired
 - gdcmm::UIDs, 747
- CompressionTypes
 - vtkGDCMImageWriter, 842
- Compute
 - gdcmm::MD5, 486
 - gdcmm::SHA1, 652
- ComputeBoundingBox
 - gdcmm::BoxRegion, 217
 - gdcmm::Region, 607
- ComputeBufferLength
 - gdcmm::ImageRegionReader, 432
- ComputeByteLength
 - gdcmm::SequenceOfFragments, 635
- ComputeDataElement
 - gdcmm::DataSet, 288
- ComputeDataSetMediaStorageSOPClass
 - gdcmm::FileMetaInformation, 372
- ComputeDataSetTransferSyntax
 - gdcmm::FileMetaInformation, 372
- ComputeDistAlongNormal
 - gdcmm::DirectionCosines, 318
- ComputeFile
 - gdcmm::MD5, 486

- gdcm::SHA1, [652](#)
- ComputeFileMD5
 - gdcm::Testing, [722](#)
- ComputeGroupLength
 - gdcm::DataSet, [288](#)
- ComputeInterceptSlopePixelType
 - gdcm::Rescaler, [609](#)
- ComputeLength
 - gdcm::SequenceOfFragments, [635](#)
 - gdcm::SequenceOfItems, [640](#)
- ComputeLossyFlag
 - gdcm::Bitmap, [208](#)
- ComputeMD5
 - gdcm::Testing, [722](#)
- ComputeMOSAICDimensions
 - gdcm::SplitMosaicFilter, [669](#)
- ComputeNumberOfSurfaces
 - gdcm::SurfaceWriter, [701](#)
- ComputeOffsetTable
 - gdcm::JPEGCodec, [467](#)
- ComputePixelAspectRatioFromPixelSpacing
 - gdcm::Spacing, [667](#)
- ComputePixelTypeFromMinMax
 - gdcm::Rescaler, [609](#)
- ComputeSpacingFromImagePositionPatient
 - gdcm::ImageHelper, [424](#)
- ComputeVR
 - gdcm::DataSetHelper, [294](#)
- ComputeZSpacing
 - gdcm::IPPSorter, [451](#)
- ComputedRadiographyImageStorage
 - gdcm::MediaStorage, [489](#)
 - gdcm::UIDs, [746](#)
- ConcatenatePDVBlobs
 - gdcm::network::PresentationDataValue, [574](#)
- Conditional
 - gdcm::Usage, [811](#)
- const
 - gdcm::SOPClassUIDToIOD, [662](#)
- const_iterator
 - gdcm::CodeString, [241](#)
 - gdcm::LO, [476](#)
 - gdcm::String, [681](#)
- const_reference
 - gdcm::CodeString, [241](#)
 - gdcm::LO, [476](#)
 - gdcm::String, [681](#)
- const_reverse_iterator
 - gdcm::CodeString, [241](#)
 - gdcm::LO, [476](#)
 - gdcm::String, [681](#)
- ConstCharWrapper
 - gdcm::ConstCharWrapper, [251](#)
- ConstIterator
 - gdcm::CSAHeaderDict, [264](#)
 - gdcm::DataSet, [288](#)
 - gdcm::Dict, [305](#)
 - gdcm::Scanner, [618](#)
 - gdcm::SequenceOfFragments, [635](#)
 - gdcm::SequenceOfItems, [640](#)
- Construct
 - gdcm::BaseRootQuery, [198](#)
- ConstructAbortPDU
 - gdcm::network::PDUFactory, [539](#)
- ConstructCEchoRQ
 - gdcm::network::CompositeMessageFactory, [247](#)
- ConstructCFindRQ
 - gdcm::network::CompositeMessageFactory, [247](#)
- ConstructCMoveRQ
 - gdcm::network::CompositeMessageFactory, [247](#)
- ConstructCStoreRQ
 - gdcm::network::CompositeMessageFactory, [247](#)
- ConstructCStoreRSP
 - gdcm::network::CompositeMessageFactory, [247](#)
- ConstructFromString
 - gdcm::TagPath, [720](#)
- ConstructFromTagList
 - gdcm::TagPath, [720](#)
- ConstructPDU
 - gdcm::network::PDUFactory, [539](#)
- ConstructPDV
 - gdcm::network::BaseCompositeMessage, [194](#)
 - gdcm::network::CEchoRQ, [227](#)
 - gdcm::network::CFindRQ, [231](#)
 - gdcm::network::CMoveRQ, [235](#)
 - gdcm::network::CStoreRQ, [268](#)
 - gdcm::network::CStoreRSP, [270](#)
- ConstructPDVByDataSet
 - gdcm::network::CEchoRSP, [228](#)
 - gdcm::network::CFindCancelRQ, [230](#)
 - gdcm::network::CFindRSP, [233](#)
 - gdcm::network::CMoveCancelRq, [234](#)
 - gdcm::network::CMoveRSP, [237](#)
- ConstructQuery
 - gdcm::CompositeNetworkFunctions, [250](#)
- ConstructReleasePDU
 - gdcm::network::PDUFactory, [539](#)
- ConstructorType
 - gdcm::Dicts, [314](#)
- Convert
 - gdcm::DictConverter, [307](#)
 - gdcm::ImageConverter, [421](#)
- ConvertRGBToPaletteColor
 - gdcm::IconImageGenerator, [396](#)
- ConvertToCXX
 - gdcm::DictConverter, [307](#)
- ConvertToXML
 - gdcm::DictConverter, [307](#)

- Create
 - gdcm::Preamble, [566](#)
- CreateCEchoPDU
 - gdcm::network::PDUFactory, [539](#)
- CreateCFindPDU
 - gdcm::network::PDUFactory, [539](#)
- CreateCMovePDU
 - gdcm::network::PDUFactory, [539](#)
- CreateCStoreRQPDU
 - gdcm::network::PDUFactory, [539](#)
- CreateCStoreRSPPDU
 - gdcm::network::PDUFactory, [539](#)
- CreateDefaultUniqueSeriesIdentifier
 - gdcm::SerieHelper, [645](#)
- CreateUniqueSeriesIdentifier
 - gdcm::SerieHelper, [645](#)
- Cross
 - gdcm::DirectionCosines, [318](#)
- CrossDot
 - gdcm::DirectionCosines, [318](#)
- CryptographicMessageSyntax
 - gdcm::CryptographicMessageSyntax, [254](#)
- Curve
 - gdcm::Curve, [272](#)
 - vtkGDCMImageReader, [839](#)
- Curves
 - gdcm::Pixmap, [553](#)
- cyan
 - gdcm::terminal, [131](#)
- DA
 - gdcm::VR, [827](#)
- DATASET_FORMAT
 - gdcm::CSAHeader, [261](#)
- DES3_CIPHER
 - gdcm::CryptographicMessageSyntax, [254](#)
- DES_CIPHER
 - gdcm::CryptographicMessageSyntax, [254](#)
- DETECTOR
 - gdcm::Spacing, [667](#)
- DICOMApplicationContextName
 - gdcm::UIDs, [745](#)
- DICOMControlledTerminology
 - gdcm::UIDs, [745](#)
- DICOMUIDRegistry
 - gdcm::UIDs, [745](#)
- DICT_DEBUG
 - gdcm::DictConverter, [307](#)
- DICT_DEFAULT
 - gdcm::DictConverter, [307](#)
- DICT_XML
 - gdcm::DictConverter, [307](#)
- DS
 - gdcm::VR, [827](#)
- DT
 - gdcm::VR, [828](#)
- DAComp
 - gdcm, [117](#)
- DICOMDIR
 - gdcm::DICOMDIR, [301](#)
- DICOMDIRGenerator
 - gdcm::DICOMDIRGenerator, [303](#)
- DTComp
 - gdcm, [117](#)
- DataElement
 - gdcm::DataElement, [276](#)
- DataElementSet
 - gdcm::DataSet, [288](#)
- DataElementType
 - gdcm::ModuleEntry, [506](#)
- DataEvent
 - gdcm::DataEvent, [285](#)
- DataField
 - gdcm::CSAElement, [258](#)
- DataPtr
 - gdcm::CSAElement, [256](#)
- DataSetEvent
 - gdcm::DataSetEvent, [294](#)
- DataSetHandled
 - gdcm::network::ULConnectionCallback, [797](#)
- DataSetHandles
 - gdcm::network::ULConnectionCallback, [797](#)
- DataSetMS
 - gdcm::FileMetaInformation, [374](#)
- DataSetTS
 - gdcm::FileMetaInformation, [374](#)
- DataWasPassed
 - vtkImageMapToColors16, [870](#)
- DebugOff
 - gdcm::Trace, [726](#)
- DebugOn
 - gdcm::Trace, [726](#)
- Decode
 - gdcm::AudioCodec, [190](#)
 - gdcm::Base64, [191](#)
 - gdcm::Curve, [272](#)
 - gdcm::Decoder, [296](#)
 - gdcm::DeltaEncodingCodec, [300](#)
 - gdcm::ImageCodec, [417](#)
 - gdcm::JPEG2000Codec, [462](#)
 - gdcm::JPEGCodec, [467](#)
 - gdcm::JPEGLSCCodec, [471](#)
 - gdcm::KAKADUCoDec, [474](#)
 - gdcm::LookupTable, [479](#)
 - gdcm::Overlay, [523](#)
 - gdcm::PDFCodec, [538](#)
 - gdcm::PVRGCodec, [585](#)
 - gdcm::RAWCodec, [600](#)

- gdcmm::RLECodec, [613](#)
- DecodeByStreams
 - gdcmm::Decoder, [296](#)
 - gdcmm::ImageCodec, [417](#)
 - gdcmm::JPEG12Codec, [457](#)
 - gdcmm::JPEG16Codec, [459](#)
 - gdcmm::JPEG2000Codec, [462](#)
 - gdcmm::JPEG8Codec, [464](#)
 - gdcmm::JPEGCodec, [467](#)
 - gdcmm::RAWCodec, [600](#)
 - gdcmm::RLECodec, [613](#)
- DecodeBytes
 - gdcmm::RAWCodec, [600](#)
- DecodeExtent
 - gdcmm::JPEG2000Codec, [462](#)
 - gdcmm::JPEGCodec, [467](#)
 - gdcmm::JPEGLSCodec, [471](#)
 - gdcmm::RLECodec, [613](#)
- Decompress
 - gdcmm::Overlay, [523](#)
- Decrypt
 - gdcmm::CryptographicMessageSyntax, [254](#)
- DeepCopy
 - vtkRTStructSetProperties, [883](#)
- Default
 - gdcmm::FileMetaInformation, [372](#)
- DefinePixelExtent
 - gdcmm::StreamImageReader, [672](#)
 - gdcmm::StreamImageWriter, [677](#)
- DefineProperBufferLength
 - gdcmm::StreamImageReader, [673](#)
 - gdcmm::StreamImageWriter, [677](#)
- DefinedTerms
 - gdcmm::DefinedTerms, [297](#)
- DeflatedExplicitVRLittleEndian
 - gdcmm::TransferSyntax, [729](#)
 - gdcmm::UIDs, [743](#)
- DeformableSpatialRegistrationStorage
 - gdcmm::UIDs, [747](#)
- Defs
 - gdcmm::Defs, [298](#)
- DeleteDirectory
 - gdcmm::System, [705](#)
- DeltaEncodingCodec
 - gdcmm::DeltaEncodingCodec, [300](#)
- Derive
 - gdcmm::FileDerivation, [366](#)
- Description
 - gdcmm::ModuleEntry, [505](#)
- DescriptionField
 - gdcmm::ModuleEntry, [506](#)
- DetachedInterpretationManagementSOPClassRetired
 - gdcmm::UIDs, [745](#)
- DetachedPatientManagementMetaSOPClassRetired
 - gdcmm::UIDs, [745](#)
- DetachedPatientManagementSOPClass
 - gdcmm::MediaStorage, [490](#)
- DetachedPatientManagementSOPClassRetired
 - gdcmm::UIDs, [745](#)
- DetachedResultsManagementMetaSOPClassRetired
 - gdcmm::UIDs, [745](#)
- DetachedResultsManagementSOPClassRetired
 - gdcmm::UIDs, [745](#)
- DetachedStudyManagementMetaSOPClassRetired
 - gdcmm::UIDs, [745](#)
- DetachedStudyManagementSOPClass
 - gdcmm::MediaStorage, [490](#)
- DetachedStudyManagementSOPClassRetired
 - gdcmm::UIDs, [745](#)
- DetachedVisitManagementSOPClass
 - gdcmm::MediaStorage, [490](#)
- DetachedVisitManagementSOPClassRetired
 - gdcmm::UIDs, [745](#)
- DetailSRStorageTrialRetired
 - gdcmm::UIDs, [747](#)
- DetermineEventByPDU
 - gdcmm::network::PDUFactory, [539](#)
- dicomAETitle
 - gdcmm::UIDs, [749](#)
- dicomApplicationCluster
 - gdcmm::UIDs, [749](#)
- dicomAssociationAcceptor
 - gdcmm::UIDs, [749](#)
- dicomAssociationInitiator
 - gdcmm::UIDs, [749](#)
- dicomAuthorizedNodeCertificateReference
 - gdcmm::UIDs, [749](#)
- dicomConfigurationRoot
 - gdcmm::UIDs, [749](#)
- dicomDescription
 - gdcmm::UIDs, [749](#)
- dicomDevice
 - gdcmm::UIDs, [749](#)
- dicomDeviceName
 - gdcmm::UIDs, [749](#)
- dicomDeviceSerialNumber
 - gdcmm::UIDs, [749](#)
- dicomDevicesRoot
 - gdcmm::UIDs, [749](#)
- dicomHostname
 - gdcmm::UIDs, [749](#)
- dicomInstalled
 - gdcmm::UIDs, [749](#)
- dicomInstitutionAddress
 - gdcmm::UIDs, [749](#)
- dicomInstitutionDepartmentName
 - gdcmm::UIDs, [749](#)
- dicomInstitutionName

- gdcm::UIDs, [749](#)
- dicomIssuerOfPatientID
 - gdcm::UIDs, [749](#)
- dicomManufacturer
 - gdcm::UIDs, [749](#)
- dicomManufacturerModelName
 - gdcm::UIDs, [749](#)
- dicomNetworkAE
 - gdcm::UIDs, [749](#)
- dicomNetworkConnection
 - gdcm::UIDs, [750](#)
- dicomNetworkConnectionReference
 - gdcm::UIDs, [749](#)
- dicomPort
 - gdcm::UIDs, [749](#)
- dicomPreferredCalledAETitle
 - gdcm::UIDs, [749](#)
- dicomPreferredCallingAETitle
 - gdcm::UIDs, [749](#)
- dicomPrimaryDeviceType
 - gdcm::UIDs, [749](#)
- dicomRelatedDeviceReference
 - gdcm::UIDs, [749](#)
- dicomSOPClass
 - gdcm::UIDs, [749](#)
- dicomSoftwareVersion
 - gdcm::UIDs, [749](#)
- dicomStationName
 - gdcm::UIDs, [749](#)
- dicomSupportedCharacterSet
 - gdcm::UIDs, [749](#)
- dicomTLSCyphersuite
 - gdcm::UIDs, [749](#)
- dicomThisNodeCertificateReference
 - gdcm::UIDs, [749](#)
- dicomTransferCapability
 - gdcm::UIDs, [750](#)
- dicomTransferRole
 - gdcm::UIDs, [749](#)
- dicomTransferSyntax
 - gdcm::UIDs, [749](#)
- dicomUniqueAETitle
 - gdcm::UIDs, [750](#)
- dicomUniqueAETitlesRegistryRoot
 - gdcm::UIDs, [749](#)
- dicomVendorData
 - gdcm::UIDs, [749](#)
- Dict
 - gdcm::Dict, [305](#)
- DictConverter
 - gdcm::DictConverter, [307](#)
- DictEntry
 - gdcm::DictEntry, [309](#)
- DictPrinter
 - gdcm::DictPrinter, [312](#)
- Dicts
 - gdcm::CSAHeaderDict, [264](#)
 - gdcm::Dict, [306](#)
 - gdcm::Dicts, [314](#)
 - gdcm::PrivateDict, [579](#)
- difference_type
 - gdcm::CodeString, [241](#)
 - gdcm::LO, [476](#)
 - gdcm::String, [681](#)
- DigitalIntraoralXRayImageStorageForPresentation
 - gdcm::UIDs, [746](#)
- DigitalIntraoralXRayImageStorageForProcessing
 - gdcm::MediaStorage, [489](#)
 - gdcm::UIDs, [746](#)
- DigitalIntraoralXrayImageStorageForPresentation
 - gdcm::MediaStorage, [489](#)
- DigitalMammographyImageStorageForPresentation
 - gdcm::MediaStorage, [489](#)
- DigitalMammographyImageStorageForProcessing
 - gdcm::MediaStorage, [489](#)
- DigitalMammographyXRayImageStorageForPresentation
 - gdcm::UIDs, [746](#)
- DigitalMammographyXRayImageStorageForProcessing
 - gdcm::UIDs, [746](#)
- DigitalXRayImageStorageForPresentation
 - gdcm::MediaStorage, [489](#)
 - gdcm::UIDs, [746](#)
- DigitalXRayImageStorageForProcessing
 - gdcm::MediaStorage, [489](#)
 - gdcm::UIDs, [746](#)
- dim
 - gdcm::terminal, [131](#)
- Dimensions
 - gdcm::Bitmap, [212](#)
 - gdcm::ImageCodec, [419](#)
- DirCosTolerance
 - gdcm::IPPSorter, [451](#)
- DirectionCosines
 - gdcm::DirectionCosines, [318](#)
 - vtkGDCMImageReader, [839](#)
- Directory
 - gdcm::Directory, [320](#)
- DoByteSwap
 - gdcm::ImageCodec, [418](#)
- DolconImage
 - gdcm::PixmapWriter, [561](#)
- DoInvertMonochrome
 - gdcm::ImageCodec, [418](#)
- DoOverlayCleanup
 - gdcm::ImageCodec, [418](#)
- DoPaddedCompositePixelCode
 - gdcm::ImageCodec, [418](#)
- DoPlanarConfiguration

- gdcmm::ImageCodec, 418
- DoSimpleCopy
 - gdcmm::ImageCodec, 418
- DoYBR
 - gdcmm::ImageCodec, 418
- Dot
 - gdcmm::DirectionCosines, 318
- Dumper
 - gdcmm::Dumper, 325
- DuplicateAttributeError
 - gdcmm::Parser, 529
- eAABORTPDUReturnedOpen
 - gdcmm::network, 128
- eAABORTRequest
 - gdcmm::network, 128
- eAASSOCIATE_RQPDUReturned
 - gdcmm::network, 128
- eAASSOCIATERequestLocalUser
 - gdcmm::network, 128
- eAASSOCIATEResponseAccept
 - gdcmm::network, 128
- eAASSOCIATEResponseReject
 - gdcmm::network, 128
- eARELEASE_RPPDUReturned
 - gdcmm::network, 128
- eARELEASE_RQPDUReturnedOpen
 - gdcmm::network, 128
- eARELEASERequest
 - gdcmm::network, 128
- eARELEASEResponse
 - gdcmm::network, 128
- eARTIMTimerExpired
 - gdcmm::network, 129
- eASSOCIATE_ACPDUReturned
 - gdcmm::network, 128
- eASSOCIATE_RJPDUReturned
 - gdcmm::network, 128
- eArabic
 - gdcmm, 118
- eCyrillic
 - gdcmm, 118
- EDGE
 - gdcmm::MeshPrimitive, 499
- eEventDoesNotExist
 - gdcmm::network, 129
- eFind
 - gdcmm, 119
- eGB18030
 - gdcmm, 119
- eGreek
 - gdcmm, 118
- eHebrew
 - gdcmm, 118
- eImage
 - gdcmm, 119
- eJapanese
 - gdcmm, 119
- eJapaneseKanjiMultibyte
 - gdcmm, 119
- eJapaneseSupplementaryKanjiMultibyte
 - gdcmm, 119
- eKoreanHangulHanjaMultibyte
 - gdcmm, 119
- eLatin1
 - gdcmm, 118
- eLatin2
 - gdcmm, 118
- eLatin3
 - gdcmm, 118
- eLatin4
 - gdcmm, 118
- eLatin5
 - gdcmm, 119
- eMove
 - gdcmm, 119
- ePDATATFPDU
 - gdcmm::network, 128
- ePDATArequest
 - gdcmm::network, 128
- ePatient
 - gdcmm, 119
- ePatientRootType
 - gdcmm, 119
- eSeries
 - gdcmm, 119
- eSta10ReleaseCollisionAc
 - gdcmm::network, 129
- eSta11ReleaseCollisionRq
 - gdcmm::network, 129
- eSta12ReleaseCollisionAcLocal
 - gdcmm::network, 129
- eSta13AwaitingClose
 - gdcmm::network, 129
- eSta1Idle
 - gdcmm::network, 129
- eSta2Open
 - gdcmm::network, 129
- eSta3WaitLocalAssoc
 - gdcmm::network, 129
- eSta4LocalAssocDone
 - gdcmm::network, 129
- eSta5WaitRemoteAssoc
 - gdcmm::network, 129
- eSta6TransferReady
 - gdcmm::network, 129
- eSta7WaitRelease
 - gdcmm::network, 129

- eSta8WaitLocalRelease
 - gdcm::network, [129](#)
- eSta9ReleaseCollisionRqLocal
 - gdcm::network, [129](#)
- eStaDoesNotExist
 - gdcm::network, [129](#)
- eStudy
 - gdcm, [119](#)
- eStudyRootType
 - gdcm, [119](#)
- eThai
 - gdcm, [119](#)
- eTransportConnConfirmLocal
 - gdcm::network, [128](#)
- eTransportConnIndicLocal
 - gdcm::network, [128](#)
- eTransportConnectionClosed
 - gdcm::network, [128](#)
- eUTF8
 - gdcm, [119](#)
- eUnrecognizedPDURceived
 - gdcm::network, [129](#)
- ECharSet
 - gdcm, [118](#)
- EEventID
 - gdcm::network, [128](#)
- EQueryLevel
 - gdcm, [119](#)
- EQueryType
 - gdcm, [119](#)
- ERootType
 - gdcm, [119](#)
- EStateID
 - gdcm::network, [129](#)
- elem
 - gdcm::SerieHelper::Rule, [615](#)
- Element
 - gdcm::Element< TVR, VM::VM1_n >, [332](#)
- Empty
 - gdcm::Anonymizer, [151](#)
 - gdcm::BoxRegion, [218](#)
 - gdcm::DataElement, [277](#)
 - gdcm::FileAnonymizer, [364](#)
 - gdcm::Region, [607](#)
- EncapsulatedCDASStorage
 - gdcm::MediaStorage, [490](#)
 - gdcm::UIDs, [748](#)
- EncapsulatedPDFStorage
 - gdcm::MediaStorage, [490](#)
 - gdcm::UIDs, [748](#)
- EncapsulatedDocument
 - gdcm::EncapsulatedDocument, [345](#)
- Encode
 - gdcm::Base64, [192](#)
- EncodeBytes
 - gdcm::System, [705](#)
- Encrypt
 - gdcm::CryptographicMessageSyntax, [254](#)
- End
 - gdcm::CSAHeaderDict, [264](#)
 - gdcm::DataSet, [289](#)
 - gdcm::Dict, [305](#)
 - gdcm::IODs, [447](#)
 - gdcm::Scanner, [619](#)
 - gdcm::SequenceOfFragments, [635](#)
 - gdcm::SequenceOfItems, [640](#)
- EndElement
 - gdcm::TableReader, [711](#)
 - gdcm::XMLDictReader, [892](#)
 - gdcm::XMLPrivateDictReader, [894](#)
- EndElementHandler
 - gdcm::Parser, [529](#)
- EndFilter
 - gdcm::SimpleSubjectWatcher, [657](#)
- EndWith
 - gdcm::Filename, [376](#)
- EnhancedCTImageStorage
 - gdcm::MediaStorage, [489](#)
 - gdcm::UIDs, [746](#)
- EnhancedMRImageStorage
 - gdcm::MediaStorage, [489](#)
 - gdcm::UIDs, [746](#)
- EnhancedSR
 - gdcm::MediaStorage, [490](#)
- EnhancedSRStorage
 - gdcm::UIDs, [747](#)
- EnhancedUSVolumeStorage
 - gdcm::MediaStorage, [491](#)
 - gdcm::UIDs, [750](#)
- EnhancedXAImageStorage
 - gdcm::MediaStorage, [491](#)
 - gdcm::UIDs, [747](#)
- EnhancedXRImageStorage
 - gdcm::UIDs, [747](#)
- EnumeratedValues
 - gdcm::EnumeratedValues, [349](#)
- ErrorOff
 - gdcm::Trace, [726](#)
- ErrorOn
 - gdcm::Trace, [726](#)
- ErrorType
 - gdcm::Parser, [529](#)
- EstablishConnection
 - gdcm::network::ULConnectionManager, [801](#)
- EstablishConnectionMove
 - gdcm::network::ULConnectionManager, [801](#)
- Event
 - gdcm::Event, [351](#)

- Exception
 - gdcm::Exception, [353](#)
- Execute
 - gdcm::Command, [244](#)
 - gdcm::MemberCommand, [496](#)
 - gdcm::SimpleMemberCommand, [655](#)
- ExecuteData
 - vtkGDCMImageReader, [837](#)
 - vtkGDCMThreadedImageReader, [857](#)
- ExecuteInformation
 - vtkGDCMImageReader, [837](#)
 - vtkGDCMThreadedImageReader, [857](#)
- ExecuteQuery
 - gdcm::StringFilter, [683](#), [684](#)
- Explicit
 - gdcm::TransferSyntax, [729](#)
- ExplicitVRBigEndian
 - gdcm::TransferSyntax, [729](#)
 - gdcm::UIDs, [743](#)
- ExplicitVRLittleEndian
 - gdcm::TransferSyntax, [729](#)
 - gdcm::UIDs, [743](#)
- Explore
 - gdcm::Directory, [320](#)
- Extract
 - gdcm::IconImageFilter, [394](#)
- ExtractIconImages
 - gdcm::IconImageFilter, [394](#)
- ExtractVeprolIconImages
 - gdcm::IconImageFilter, [394](#)
- F
 - gdcm::Printer, [578](#)
 - gdcm::Reader, [605](#)
 - gdcm::Validate, [815](#)
- FACET
 - gdcm::MeshPrimitive, [499](#)
- FD
 - gdcm::VR, [828](#)
- FL
 - gdcm::VR, [828](#)
- FLOAT16
 - gdcm::PixelFormat, [547](#)
- FLOAT32
 - gdcm::PixelFormat, [547](#)
- FLOAT64
 - gdcm::PixelFormat, [547](#)
- Fiducials
 - gdcm::Fiducials, [359](#)
- File
 - gdcm::File, [361](#)
- FileAnonymizer
 - gdcm::FileAnonymizer, [364](#)
- FileDerivation
 - gdcm::FileDerivation, [366](#)
- FileExists
 - gdcm::System, [705](#)
- FileExplicitFilter
 - gdcm::FileExplicitFilter, [368](#)
- FilesDirectory
 - gdcm::System, [706](#)
- FilesSymlink
 - gdcm::System, [706](#)
- FileList
 - gdcm, [117](#)
- FileMetaInformation
 - gdcm::FileMetaInformation, [372](#)
- FileName
 - vtkGDCMPolyDataReader, [849](#)
- FileNameOrdering
 - gdcm::SerieHelper, [645](#)
- FileNames
 - vtkGDCMImageReader, [839](#)
- FileSet
 - gdcm::FileSet, [380](#)
- FileSize
 - gdcm::System, [706](#)
- FileTime
 - gdcm::System, [706](#)
- FileType
 - gdcm::FileSet, [380](#)
- FileWithName
 - gdcm::FileWithName, [382](#)
- Filename
 - gdcm::Filename, [376](#)
- filename
 - gdcm::FileWithName, [382](#)
- FilenameGenerator
 - gdcm::FilenameGenerator, [378](#)
- FilenameType
 - gdcm::DICOMDIRGenerator, [303](#)
 - gdcm::Directory, [320](#)
 - gdcm::FilenameGenerator, [378](#)
- Filenames
 - gdcm::Sorter, [666](#)
- FilenamesType
 - gdcm::DICOMDIRGenerator, [303](#)
 - gdcm::Directory, [320](#)
 - gdcm::FilenameGenerator, [378](#)
- FilesType
 - gdcm::FileSet, [380](#)
- Fill
 - gdcm::ByteValue, [224](#)
- FillFromDataSet
 - gdcm::FileMetaInformation, [372](#)
- FillMedicalImageInformation
 - vtkGDCMImageReader, [837](#)
 - vtkGDCMPolyDataReader, [848](#)

- FindCSAElementByName
 - gdcm::CSAHeader, [261](#)
- FindContext
 - gdcm::network::ULConnection, [795](#)
- FindDataElement
 - gdcm::DataSet, [289](#)
 - gdcm::Item, [453](#)
 - gdcm::SequenceOfItems, [641](#)
- FindDictEntry
 - gdcm::PrivateDict, [579](#)
- FindMacroEntry
 - gdcm::Macro, [482](#)
- FindModuleEntryInMacros
 - gdcm::Module, [503](#)
- FindNextDataElement
 - gdcm::DataSet, [289](#)
- FindPDBelementByName
 - gdcm::PDBHeader, [536](#)
- FindPatientRootQuery
 - gdcm::FindPatientRootQuery, [383](#)
- FindStudyRootQuery
 - gdcm::FindStudyRootQuery, [386](#)
- FirstRender
 - vtkImageColorViewer, [867](#)
- ForceRescale
 - vtkGDCMImageReader, [839](#)
- FormatDateTime
 - gdcm::System, [706](#)
- Fragment
 - gdcm::Fragment, [388](#)
- FragmentVector
 - gdcm::SequenceOfFragments, [635](#)
- FromString
 - gdcm::StringFilter, [684](#)
- FujiPrivateCRImageStorage
 - gdcm::MediaStorage, [491](#)
- GDCM_DIFFERENT
 - gdcm, [118](#)
- GDCM_EQUAL
 - gdcm, [118](#)
- GDCM_GREATER
 - gdcm, [118](#)
- GDCM_GREATEROREQUAL
 - gdcm, [118](#)
- GDCM_LESS
 - gdcm, [118](#)
- GDCM_LESOREQUAL
 - gdcm, [118](#)
- GEMS
 - gdcm::Dicts, [314](#)
- GEPrivate3DModelStorage
 - gdcm::MediaStorage, [490](#)
- GRAY
 - gdcm::LookupTable, [479](#)
- GREEN
 - gdcm::LookupTable, [479](#)
- GDCM_DO_JOIN
 - gdcmStaticAssert.h, [1112](#)
- GDCM_DO_JOIN2
 - gdcmStaticAssert.h, [1112](#)
- GDCM_EXPORT
 - gdcmWin32.h, [1172](#)
- GDCM_FUNCTION
 - gdcmTrace.h, [1135](#)
- GDCM_JOIN
 - gdcmStaticAssert.h, [1112](#)
- GDCM_LEGACY
 - gdcmLegacyMacro.h, [1021](#)
- GDCM_LEGACY_BODY
 - gdcmLegacyMacro.h, [1021](#)
- GDCM_STATIC_ASSERT
 - gdcm::Attribute, [165](#)
 - gdcmStaticAssert.h, [1112](#)
- GDCMMACROENTRY_H
 - gdcmMacroEntry.h, [1027](#)
- gdcm, [103](#)
 - AEComp, [117](#)
 - ASComp, [117](#)
 - backslash, [119](#)
 - CSComp, [117](#)
 - CompOperators, [118](#)
 - DAComp, [117](#)
 - DTComp, [117](#)
 - eArabic, [118](#)
 - eCyrillic, [118](#)
 - eFind, [119](#)
 - eGB18030, [119](#)
 - eGreek, [118](#)
 - eHebrew, [118](#)
 - eImage, [119](#)
 - eJapanese, [119](#)
 - eJapaneseKanjiMultibyte, [119](#)
 - eJapaneseSupplementaryKanjiMultibyte, [119](#)
 - eKoreanHangulHanjaMultibyte, [119](#)
 - eLatin1, [118](#)
 - eLatin2, [118](#)
 - eLatin3, [118](#)
 - eLatin4, [118](#)
 - eLatin5, [119](#)
 - eMove, [119](#)
 - ePatient, [119](#)
 - ePatientRootType, [119](#)
 - eSeries, [119](#)
 - eStudy, [119](#)
 - eStudyRootType, [119](#)
 - eThai, [119](#)
 - eUTF8, [119](#)

- ECharSet, [118](#)
- EQueryLevel, [119](#)
- EQueryType, [119](#)
- ERootType, [119](#)
- FileList, [117](#)
- GDCM_DIFFERENT, [118](#)
- GDCM_EQUAL, [118](#)
- GDCM_GREATER, [118](#)
- GDCM_GREATEROREQUAL, [118](#)
- GDCM_LESS, [118](#)
- GDCM_LESOREQUAL, [118](#)
- GetVRFromTag, [119](#)
- GlobalInstance, [124](#)
- IconImage, [117](#)
- LD_ALL, [119](#)
- LD_NOSEQ, [119](#)
- LD_NOSHADOW, [119](#)
- LD_NOSHADOWSEQ, [119](#)
- LOComp, [118](#)
- LTComp, [118](#)
- LodModeType, [119](#)
- MacroEntry, [118](#)
- NestedMacroEntries, [118](#)
- operator<<, [120–123](#)
- operator>>, [124](#)
- operator==, [123](#)
- PNComp, [118](#)
- SHComp, [118](#)
- STComp, [118](#)
- TMComp, [118](#)
- TYPETOENCODING, [124](#)
- to_string, [124](#)
- UIComp, [118](#)
- UTComp, [118](#)
- VRBINARY, [124](#)
- gdcm2pnm.man, [895](#)
- gdcm2vtk.man, [895](#)
- gdcm::Attribute
 - VMType, [165](#)
- gdcm::Attribute< Group, Element, TVR, VM::VM1 >
 - VMType, [172](#)
- gdcm::CSAHeader
 - DATASET_FORMAT, [261](#)
 - INTERFILE, [261](#)
 - NOMAGIC, [261](#)
 - SV10, [261](#)
 - UNKNOWN, [261](#)
 - ZEROED_OUT, [261](#)
- gdcm::CryptographicMessageSyntax
 - AES128_CIPHER, [254](#)
 - AES192_CIPHER, [254](#)
 - AES256_CIPHER, [254](#)
 - DES3_CIPHER, [254](#)
 - DES_CIPHER, [254](#)
- gdcm::DictConverter
 - DICT_DEBUG, [307](#)
 - DICT_DEFAULT, [307](#)
 - DICT_XML, [307](#)
- gdcm::Dicts
 - GEMS, [314](#)
 - PHILIPS, [314](#)
 - SIEMENS, [314](#)
- gdcm::LookupTable
 - BLUE, [479](#)
 - GRAY, [479](#)
 - GREEN, [479](#)
 - RED, [479](#)
 - UNKNOWN, [479](#)
- gdcm::MediaStorage
 - AmbulatoryECGWaveformStorage, [490](#)
 - Audio, [491](#)
 - BasicTextSR, [490](#)
 - BasicVoiceAudioWaveformStorage, [490](#)
 - BreastTomosynthesisImageStorage, [491](#)
 - CSANonImageStorage, [490](#)
 - CTImageStorage, [489](#)
 - CardiacElectrophysiologyWaveformStorage, [490](#)
 - ComprehensiveSR, [490](#)
 - ComputedRadiographyImageStorage, [489](#)
 - DetachedPatientManagementSOPClass, [490](#)
 - DetachedStudyManagementSOPClass, [490](#)
 - DetachedVisitManagementSOPClass, [490](#)
 - DigitalIntraoralXRayImageStorageForProcessing, [489](#)
 - DigitalIntraoralXrayImageStorageForPresentation, [489](#)
 - DigitalMammographyImageStorageForPresentation, [489](#)
 - DigitalMammographyImageStorageForProcessing, [489](#)
 - DigitalXRayImageStorageForPresentation, [489](#)
 - DigitalXRayImageStorageForProcessing, [489](#)
 - EncapsulatedCDASStorage, [490](#)
 - EncapsulatedPDFStorage, [490](#)
 - EnhancedCTImageStorage, [489](#)
 - EnhancedMRIImageStorage, [489](#)
 - EnhancedSR, [490](#)
 - EnhancedUSVolumeStorage, [491](#)
 - EnhancedXAImageStorage, [491](#)
 - FujiPrivateCRIImageStorage, [491](#)
 - GEPrivate3DModelStorage, [490](#)
 - GeneralECGWaveformStorage, [490](#)
 - GeneralElectricMagneticResonanceImageStorage, [490](#)
 - GrayscaleSoftcopyPresentationStateStorageSOP-Class, [490](#)
 - HangingProtocolStorage, [491](#)
 - HardcopyGrayscaleImageStorage, [490](#)

- HemodynamicWaveformStorage, 490
- KeyObjectSelectionDocument, 490
- LeadECGWaveformStorage, 490
- MRImageStorage, 489
- MRSpectroscopyStorage, 489
- MS_END, 491
- MammographyCADSR, 490
- MediaStorageDirectoryStorage, 489
- ModalityPerformedProcedureStepSOPClass, 491
- MultiframeGrayscaleByteSecondaryCaptureImageStorage, 489
- MultiframeGrayscaleWordSecondaryCaptureImageStorage, 489
- MultiframeSingleBitSecondaryCaptureImageStorage, 489
- MultiframeTrueColorSecondaryCaptureImageStorage, 490
- NoObject, 491
- NuclearMedicineImageStorage, 490
- NuclearMedicineImageStorageRetired, 489
- ObjectEnd, 491
- PDF, 491
- PETImageStorage, 490
- Philips3D, 490
- PhilipsPrivateMRSyntheticImageStorage, 491
- RTDoseStorage, 490
- RTImageStorage, 490
- RTIonBeamsTreatmentRecordStorage, 491
- RTIonPlanStorage, 491
- RTPlanStorage, 490
- RTStructureSetStorage, 490
- RTTreatmentSummaryRecordStorage, 491
- RawDataStorage, 490
- SecondaryCaptureImageStorage, 489
- Segmentation, 491
- SegmentationStorage, 491
- SpacialFiducialsStorage, 490
- SpacialRegistrationStorage, 490
- StandaloneCurveStorage, 490
- StandaloneModalityLUTStorage, 490
- StandaloneOverlayStorage, 490
- StandaloneVOILUTStorage, 490
- StudyComponentManagementSOPClass, 490
- SurfaceSegmentationStorage, 491
- ToshibaPrivateDataStorage, 490
- URI, 491
- UltrasoundImageStorage, 489
- UltrasoundImageStorageRetired, 489
- UltrasoundMultiFrameImageStorage, 489
- UltrasoundMultiFrameImageStorageRetired, 489
- VLEndoscopicImageStorage, 491
- VLPhotographicImageStorage, 491
- VLWholeSlideMicroscopyImageStorage, 491
- Video, 491
- VideoEndoscopicImageStorage, 490
- Waveform, 491
- XRay3DAngiographicImageStorage, 491
- XRayAngiographicBiPlaneImageStorageRetired, 490
- XRayAngiographicImageStorage, 490
- XRayRadiationDoseSR, 491
- XRayRadiofluoroscopicImageStorage, 490
- gdcmmesh::MeshPrimitive
 - EDGE, 499
 - FACET, 499
 - LINE, 499
 - MPTYPE_END, 499
 - TRIANGLE, 499
 - TRIANGLE_FAN, 499
 - TRIANGLE_STRIP, 499
 - VERTEX, 499
- gdcmmath::Orientation
 - AXIAL, 519
 - CORONAL, 519
 - OBLIQUE, 519
 - SAGITTAL, 519
 - UNKNOWN, 519
- gdcmmath::Overlay
 - Graphics, 522
 - Invalid, 522
 - ROI, 522
- gdcmmath::Parser
 - DuplicateAttributeError, 529
 - JunkAfterDocElementError, 529
 - NoElementsError, 529
 - NoError, 529
 - NoMemoryError, 529
 - SyntaxError, 529
 - TagMismatchError, 529
 - UndefinedEntityError, 529
 - UnexpectedStateError, 529
- gdcmmath::PhotometricInterpretation
 - ARGB, 544
 - CMYK, 544
 - HSV, 544
 - MONOCHROME1, 544
 - MONOCHROME2, 544
 - PALETTE_COLOR, 544
 - PI_END, 544
 - RGB, 544
 - UNKNOWN, 544
 - YBR_FULL, 544
 - YBR_FULL_422, 544
 - YBR_ICT, 544
 - YBR_PARTIAL_420, 544
 - YBR_PARTIAL_422, 544
 - YBR_RCT, 544
- gdcmmath::PixelFormat
 - FLOAT16, 547

- FLOAT32, [547](#)
- FLOAT64, [547](#)
- INT12, [547](#)
- INT16, [547](#)
- INT32, [547](#)
- INT8, [547](#)
- SINGLEBIT, [547](#)
- UINT12, [547](#)
- UINT16, [547](#)
- UINT32, [547](#)
- UINT8, [547](#)
- UNKNOWN, [547](#)
- gdcmm::Printer
 - CONDENSED_STYLE, [577](#)
 - VERBOSE_STYLE, [577](#)
 - XML, [577](#)
- gdcmm::STATIC_ASSERTION_FAILURE< true >
 - value, [671](#)
- gdcmm::Segment
 - ALGOType_END, [624](#)
 - AUTOMATIC, [624](#)
 - MANUAL, [624](#)
- gdcmm::Spacing
 - CALIBRATED, [667](#)
 - DETECTOR, [667](#)
 - MAGNIFIED, [667](#)
 - UNKNOWN, [667](#)
- gdcmm::Surface
 - NO, [691](#)
 - POINTS, [691](#)
 - STATES_END, [691](#)
 - SURFACE, [691](#)
 - UNKNOWN, [691](#)
 - VIEWType_END, [691](#)
 - WIREFRAME, [691](#)
 - YES, [691](#)
- gdcmm::SwapCode
 - BadBigEndian, [702](#)
 - BadLittleEndian, [702](#)
 - BigEndian, [702](#)
 - LittleEndian, [702](#)
 - Unknown, [702](#)
- gdcmm::TransferSyntax
 - CT_private_ELE, [730](#)
 - DeflatedExplicitVRLittleEndian, [729](#)
 - Explicit, [729](#)
 - ExplicitVRBigEndian, [729](#)
 - ExplicitVRLittleEndian, [729](#)
 - Implicit, [729](#)
 - ImplicitVRBigEndianACRNEMA, [730](#)
 - ImplicitVRBigEndianPrivateGE, [729](#)
 - ImplicitVRLittleEndian, [729](#)
 - JPEG2000, [730](#)
 - JPEG2000Lossless, [730](#)
 - JPEG2000Part2, [730](#)
 - JPEG2000Part2Lossless, [730](#)
 - JPEGBaselineProcess1, [730](#)
 - JPEGExtendedProcess2_4, [730](#)
 - JPEGExtendedProcess3_5, [730](#)
 - JPEGFullProgressionProcess10_12, [730](#)
 - JPEGLSLossless, [730](#)
 - JPEGLSNearLossless, [730](#)
 - JPEGLosslessProcess14, [730](#)
 - JPEGLosslessProcess14_1, [730](#)
 - JPEGSpectralSelectionProcess6_8, [730](#)
 - JPIPRendered, [730](#)
 - MPEG2MainProfile, [730](#)
 - RLELossless, [730](#)
 - TS_END, [730](#)
 - Unknown, [729](#)
- gdcmm::Type
 - T1, [735](#)
 - T1C, [735](#)
 - T2, [735](#)
 - T2C, [735](#)
 - T3, [735](#)
 - UNKNOWN, [735](#)
- gdcmm::UIDs
 - AmbulatoryECGWaveformStorage, [746](#)
 - AudioSRStorageTrialRetired, [747](#)
 - BasicAnnotationBoxSOPClass, [745](#)
 - BasicColorImageBoxSOPClass, [745](#)
 - BasicColorPrintManagementMetaSOPClass, [745](#)
 - BasicFilmBoxSOPClass, [745](#)
 - BasicFilmSessionSOPClass, [745](#)
 - BasicGrayscaleImageBoxSOPClass, [745](#)
 - BasicGrayscalePrintManagementMetaSOPClass, [745](#)
 - BasicPrintImageOverlayBoxSOPClassRetired, [746](#)
 - BasicStudyContentNotificationSOPClassRetired, [745](#)
 - BasicTextSRStorage, [747](#)
 - BasicVoiceAudioWaveformStorage, [746](#)
 - BlendingSoftcopyPresentationStateStorageSOPClass, [747](#)
 - BreastImagingRelevantPatientInformationQuery, [748](#)
 - BreastTomosynthesisImageStorage, [750](#)
 - CTImageStorage, [746](#)
 - CardiacElectrophysiologyWaveformStorage, [746](#)
 - CardiacRelevantPatientInformationQuery, [749](#)
 - ChestCADSRStorage, [748](#)
 - ColorSoftcopyPresentationStateStorageSOPClass, [747](#)
 - ComprehensiveSRStorage, [747](#)
 - ComprehensiveSRStorageTrialRetired, [747](#)
 - ComputedRadiographyImageStorage, [746](#)
 - DICOMApplicationContextName, [745](#)
 - DICOMControlledTerminology, [745](#)

- DICOMUIDRegistry, 745
- DeflatedExplicitVRLittleEndian, 743
- DeformableSpatialRegistrationStorage, 747
- DetachedInterpretationManagementSOPClass-Retired, 745
- DetachedPatientManagementMetaSOPClass-Retired, 745
- DetachedPatientManagementSOPClassRetired, 745
- DetachedResultsManagementMetaSOPClass-Retired, 745
- DetachedResultsManagementSOPClassRetired, 745
- DetachedStudyManagementMetaSOPClassRetired, 745
- DetachedStudyManagementSOPClassRetired, 745
- DetachedVisitManagementSOPClassRetired, 745
- DetailSRStorageTrialRetired, 747
- dicomAETitle, 749
- dicomApplicationCluster, 749
- dicomAssociationAcceptor, 749
- dicomAssociationInitiator, 749
- dicomAuthorizedNodeCertificateReference, 749
- dicomConfigurationRoot, 749
- dicomDescription, 749
- dicomDevice, 749
- dicomDeviceName, 749
- dicomDeviceSerialNumber, 749
- dicomDevicesRoot, 749
- dicomHostname, 749
- dicomInstalled, 749
- dicomInstitutionAddress, 749
- dicomInstitutionDepartmentName, 749
- dicomInstitutionName, 749
- dicomIssuerOfPatientID, 749
- dicomManufacturer, 749
- dicomManufacturerModelName, 749
- dicomNetworkAE, 749
- dicomNetworkConnection, 750
- dicomNetworkConnectionReference, 749
- dicomPort, 749
- dicomPreferredCalledAETitle, 749
- dicomPreferredCallingAETitle, 749
- dicomPrimaryDeviceType, 749
- dicomRelatedDeviceReference, 749
- dicomSOPClass, 749
- dicomSoftwareVersion, 749
- dicomStationName, 749
- dicomSupportedCharacterSet, 749
- dicomTLSCyphersuite, 749
- dicomThisNodeCertificateReference, 749
- dicomTransferCapability, 750
- dicomTransferRole, 749
- dicomTransferSyntax, 749
- dicomUniqueAETitle, 750
- dicomUniqueAETitlesRegistryRoot, 749
- dicomVendorData, 749
- DigitalIntraoralXRayImageStorageForPresentation, 746
- DigitalIntraoralXRayImageStorageForProcessing, 746
- DigitalMammographyXRayImageStorageForPresentation, 746
- DigitalMammographyXRayImageStorageForProcessing, 746
- DigitalXRayImageStorageForPresentation, 746
- DigitalXRayImageStorageForProcessing, 746
- EncapsulatedCDASStorage, 748
- EncapsulatedPDFStorage, 748
- EnhancedCTImageStorage, 746
- EnhancedMRIImageStorage, 746
- EnhancedSRStorage, 747
- EnhancedUSVolumeStorage, 750
- EnhancedXAImageStorage, 747
- EnhancedXRFImageStorage, 747
- ExplicitVRBigEndian, 743
- ExplicitVRLittleEndian, 743
- GeneralECGWaveformStorage, 746
- GeneralPurposePerformedProcedureStepSOP-Class, 748
- GeneralPurposeScheduledProcedureStepSOP-Class, 748
- GeneralPurposeWorklistInformationModelFIND, 748
- GeneralPurposeWorklistManagementMetaSOP-Class, 748
- GeneralRelevantPatientInformationQuery, 748
- GrayscaleSoftcopyPresentationStateStorageSOP-Class, 747
- HangingProtocolInformationModelFIND, 749
- HangingProtocolInformationModelMOVE, 749
- HangingProtocolStorage, 749
- HardcopyColorImageStorageSOPClassRetired, 746
- HardcopyGrayscaleImageStorageSOPClassRetired, 746
- HemodynamicWaveformStorage, 746
- ICBM452T1FrameofReference, 745
- ICBMSingleSubjectMRIFrameofReference, 745
- ImageOverlayBoxSOPClassRetired, 746
- ImplicitVRLittleEndianDefaultTransferSyntaxforDICOM, 743
- InstanceAvailabilityNotificationSOPClass, 748
- JPEG2000ImageCompression, 744
- JPEG2000ImageCompressionLosslessOnly, 744
- JPEG2000Part2MulticomponentImageCompression, 744
- JPEG2000Part2MulticomponentImageCompression-LosslessOnly, 744
- JPEGBaselineProcess1DefaultTransferSyntaxfor-LossyJPEG8BitImageCompression, 743

- JPEGExtendedHierarchicalProcess1618Retired, [744](#)
JPEGExtendedHierarchicalProcess1719Retired, [744](#)
JPEGExtendedProcess24DefaultTransferSyntaxfor-LossyJPEG12BitImageCompressionProcess4only, [743](#)
JPEGExtendedProcess35Retired, [743](#)
JPEGFullProgressionHierarchicalProcess2426-Retired, [744](#)
JPEGFullProgressionHierarchicalProcess2527-Retired, [744](#)
JPEGFullProgressionNonHierarchicalProcess1012-Retired, [743](#)
JPEGFullProgressionNonHierarchicalProcess1113-Retired, [743](#)
JPEGLSLosslessImageCompression, [744](#)
JPEGLSLossyNearLosslessImageCompression, [744](#)
JPEGLosslessHierarchicalProcess28Retired, [744](#)
JPEGLosslessHierarchicalProcess29Retired, [744](#)
JPEGLosslessNonHierarchicalFirstOrderPrediction-Process14SelectionValue1DefaultTransfer-SyntaxforLosslessJPEGImageCompression, [744](#)
JPEGLosslessNonHierarchicalProcess14, [743](#)
JPEGLosslessNonHierarchicalProcess15Retired, [744](#)
JPEGSpectralSelectionHierarchicalProcess2022-Retired, [744](#)
JPEGSpectralSelectionHierarchicalProcess2123-Retired, [744](#)
JPEGSpectralSelectionNonHierarchicalProcess68-Retired, [743](#)
JPEGSpectralSelectionNonHierarchicalProcess79-Retired, [743](#)
JPIPRreferenced, [744](#)
JPIPRreferencedDeflate, [744](#)
KeyObjectSelectionDocumentStorage, [748](#)
MPEG2MainProfileMainLevel, [744](#)
MRImageStorage, [746](#)
MRSpectroscopyStorage, [746](#)
MammographyCADSRStorage, [747](#)
MediaCreationManagementSOPClassUID, [746](#)
MediaStorageDirectoryStorage, [744](#)
ModalityPerformedProcedureStepNotificationSOP-Class, [745](#)
ModalityPerformedProcedureStepRetrieveSOP-Class, [745](#)
ModalityPerformedProcedureStepSOPClass, [745](#)
ModalityWorklistInformationModelFIND, [748](#)
MultiframeGrayscaleByteSecondaryCaptureImage-Storage, [746](#)
MultiframeGrayscaleWordSecondaryCaptureImage-Storage, [746](#)
MultiframeSingleBitSecondaryCaptureImageStorage, [746](#)
MultiframeTrueColorSecondaryCaptureImage-Storage, [746](#)
NuclearMedicineImageStorage, [747](#)
NuclearMedicineImageStorageRetired, [746](#)
OphthalmicPhotography16BitImageStorage, [747](#)
OphthalmicPhotography8BitImageStorage, [747](#)
OphthalmicTomographyImageStorage, [747](#)
PatientRootQueryRetrieveInformationModelFIND, [748](#)
PatientRootQueryRetrieveInformationModelGET, [748](#)
PatientRootQueryRetrieveInformationModelMOVE, [748](#)
PatientStudyOnlyQueryRetrieveInformationModelFI-NDRetired, [748](#)
PatientStudyOnlyQueryRetrieveInformationModelG-ETRetired, [748](#)
PatientStudyOnlyQueryRetrieveInformationModelM-OVERetired, [748](#)
PositronEmissionTomographyImageStorage, [748](#)
PresentationLUTSOPClass, [746](#)
PrintJobSOPClass, [745](#)
PrintQueueManagementSOPClassRetired, [746](#)
PrintQueueSOPInstanceRetired, [746](#)
PrinterConfigurationRetrieveSOPClass, [745](#)
PrinterConfigurationRetrieveSOPInstance, [745](#)
PrinterSOPClass, [745](#)
PrinterSOPInstance, [745](#)
ProceduralEventLoggingSOPClass, [745](#)
ProceduralEventLoggingSOPInstance, [745](#)
ProcedureLogStorage, [747](#)
ProductCharacteristicsQuerySOPClass, [749](#)
PseudoColorSoftcopyPresentationStateStorageSO-PClass, [747](#)
PullPrintRequestSOPClassRetired, [746](#)
PullStoredPrintManagementMetaSOPClassRetired, [746](#)
RFC2557MIMEencapsulation, [744](#)
RLELossless, [744](#)
RTBeamsDeliveryInstructionStorageSupplement74-FrozenDraft, [748](#)
RTBeamsTreatmentRecordStorage, [748](#)
RTBrachyTreatmentRecordStorage, [748](#)
RTConventionalMachineVerificationSupplement74-FrozenDraft, [748](#)
RTDoseStorage, [748](#)
RTImageStorage, [748](#)
RTIonBeamsTreatmentRecordStorage, [748](#)
RTIonMachineVerificationSupplement74FrozenDraft, [748](#)
RTIonPlanStorage, [748](#)
RTPlanStorage, [748](#)
RTStructureSetStorage, [748](#)
RTTreatmentSummaryRecordStorage, [748](#)

- RawDataStorage, [747](#)
- RealWorldValueMappingStorage, [747](#)
- ReferencedColorPrintManagementMetaSOPClass-Retired, [745](#)
- ReferencedGrayscalePrintManagementMetaSOP-ClassRetired, [745](#)
- ReferencedImageBoxSOPClassRetired, [745](#)
- SPM2AVG152PDFFrameofReference, [744](#)
- SPM2AVG152T1FrameofReference, [744](#)
- SPM2AVG152T2FrameofReference, [744](#)
- SPM2AVG305T1FrameofReference, [744](#)
- SPM2BRAINMASKFrameofReference, [744](#)
- SPM2CSFFFrameofReference, [744](#)
- SPM2EPIFrameofReference, [744](#)
- SPM2FILT1FrameofReference, [744](#)
- SPM2GRAYFrameofReference, [744](#)
- SPM2PDFFrameofReference, [744](#)
- SPM2PETFrameofReference, [744](#)
- SPM2SINGLESUBJT1FrameofReference, [744](#)
- SPM2SPECTFrameofReference, [744](#)
- SPM2T1FrameofReference, [744](#)
- SPM2T2FrameofReference, [744](#)
- SPM2TRANSMFrameofReference, [744](#)
- SPM2WHITEFrameofReference, [744](#)
- SecondaryCaptureImageStorage, [746](#)
- SegmentationStorage, [747](#)
- SpatialFiducialsStorage, [747](#)
- SpatialRegistrationStorage, [747](#)
- StandaloneCurveStorageRetired, [746](#)
- StandaloneModalityLUTStorageRetired, [747](#)
- StandaloneOverlayStorageRetired, [746](#)
- StandalonePETCurveStorageRetired, [748](#)
- StandaloneVOILUTStorageRetired, [747](#)
- StereometricRelationshipStorage, [747](#)
- StorageCommitmentPullModelSOPClassRetired, [745](#)
- StorageCommitmentPullModelSOPInstanceRetired, [745](#)
- StorageCommitmentPushModelSOPClass, [745](#)
- StorageCommitmentPushModelSOPInstance, [745](#)
- StorageServiceClass, [745](#)
- StoredPrintStorageSOPClassRetired, [746](#)
- StudyComponentManagementSOPClassRetired, [745](#)
- StudyRootQueryRetrieveInformationModelIFIND, [748](#)
- StudyRootQueryRetrieveInformationModelIGET, [748](#)
- StudyRootQueryRetrieveInformationModelIMOVE, [748](#)
- SubstanceAdministrationLoggingSOPClass, [745](#)
- SubstanceAdministrationLoggingSOPInstance, [745](#)
- SubstanceApprovalQuerySOPClass, [749](#)
- SurfaceSegmentationStorage, [750](#)
- TalairachBrainAtlasFrameofReference, [744](#)
- TextSRStorageTrialRetired, [747](#)
- uid_1_2_840_10008_15_0_3_1, [755](#)
- uid_1_2_840_10008_15_0_3_10, [755](#)
- uid_1_2_840_10008_15_0_3_11, [755](#)
- uid_1_2_840_10008_15_0_3_12, [756](#)
- uid_1_2_840_10008_15_0_3_13, [756](#)
- uid_1_2_840_10008_15_0_3_14, [756](#)
- uid_1_2_840_10008_15_0_3_15, [756](#)
- uid_1_2_840_10008_15_0_3_16, [756](#)
- uid_1_2_840_10008_15_0_3_17, [756](#)
- uid_1_2_840_10008_15_0_3_18, [756](#)
- uid_1_2_840_10008_15_0_3_19, [756](#)
- uid_1_2_840_10008_15_0_3_2, [755](#)
- uid_1_2_840_10008_15_0_3_20, [756](#)
- uid_1_2_840_10008_15_0_3_21, [756](#)
- uid_1_2_840_10008_15_0_3_22, [756](#)
- uid_1_2_840_10008_15_0_3_23, [756](#)
- uid_1_2_840_10008_15_0_3_24, [756](#)
- uid_1_2_840_10008_15_0_3_25, [756](#)
- uid_1_2_840_10008_15_0_3_26, [756](#)
- uid_1_2_840_10008_15_0_3_27, [756](#)
- uid_1_2_840_10008_15_0_3_28, [756](#)
- uid_1_2_840_10008_15_0_3_29, [756](#)
- uid_1_2_840_10008_15_0_3_3, [755](#)
- uid_1_2_840_10008_15_0_3_30, [756](#)
- uid_1_2_840_10008_15_0_3_31, [756](#)
- uid_1_2_840_10008_15_0_3_4, [755](#)
- uid_1_2_840_10008_15_0_3_5, [755](#)
- uid_1_2_840_10008_15_0_3_6, [755](#)
- uid_1_2_840_10008_15_0_3_7, [755](#)
- uid_1_2_840_10008_15_0_3_8, [755](#)
- uid_1_2_840_10008_15_0_3_9, [755](#)
- uid_1_2_840_10008_15_0_4_1, [756](#)
- uid_1_2_840_10008_15_0_4_2, [756](#)
- uid_1_2_840_10008_15_0_4_3, [756](#)
- uid_1_2_840_10008_15_0_4_4, [756](#)
- uid_1_2_840_10008_15_0_4_5, [756](#)
- uid_1_2_840_10008_15_0_4_6, [756](#)
- uid_1_2_840_10008_15_0_4_7, [756](#)
- uid_1_2_840_10008_15_0_4_8, [756](#)
- uid_1_2_840_10008_1_1, [750](#)
- uid_1_2_840_10008_1_2, [750](#)
- uid_1_2_840_10008_1_20_1, [751](#)
- uid_1_2_840_10008_1_20_1_1, [751](#)
- uid_1_2_840_10008_1_20_2, [751](#)
- uid_1_2_840_10008_1_20_2_1, [751](#)
- uid_1_2_840_10008_1_2_1, [750](#)
- uid_1_2_840_10008_1_2_1_99, [750](#)
- uid_1_2_840_10008_1_2_2, [750](#)
- uid_1_2_840_10008_1_2_4_100, [751](#)
- uid_1_2_840_10008_1_2_4_50, [750](#)
- uid_1_2_840_10008_1_2_4_51, [750](#)
- uid_1_2_840_10008_1_2_4_52, [750](#)
- uid_1_2_840_10008_1_2_4_53, [750](#)
- uid_1_2_840_10008_1_2_4_54, [750](#)

uid_1_2_840_10008_1_2_4_55, [750](#)
uid_1_2_840_10008_1_2_4_56, [750](#)
uid_1_2_840_10008_1_2_4_57, [750](#)
uid_1_2_840_10008_1_2_4_58, [750](#)
uid_1_2_840_10008_1_2_4_59, [750](#)
uid_1_2_840_10008_1_2_4_60, [750](#)
uid_1_2_840_10008_1_2_4_61, [750](#)
uid_1_2_840_10008_1_2_4_62, [750](#)
uid_1_2_840_10008_1_2_4_63, [750](#)
uid_1_2_840_10008_1_2_4_64, [750](#)
uid_1_2_840_10008_1_2_4_65, [750](#)
uid_1_2_840_10008_1_2_4_66, [750](#)
uid_1_2_840_10008_1_2_4_70, [750](#)
uid_1_2_840_10008_1_2_4_80, [750](#)
uid_1_2_840_10008_1_2_4_81, [750](#)
uid_1_2_840_10008_1_2_4_90, [750](#)
uid_1_2_840_10008_1_2_4_91, [750](#)
uid_1_2_840_10008_1_2_4_92, [750](#)
uid_1_2_840_10008_1_2_4_93, [750](#)
uid_1_2_840_10008_1_2_4_94, [750](#)
uid_1_2_840_10008_1_2_4_95, [751](#)
uid_1_2_840_10008_1_2_5, [751](#)
uid_1_2_840_10008_1_2_6_1, [751](#)
uid_1_2_840_10008_1_2_6_2, [751](#)
uid_1_2_840_10008_1_3_10, [751](#)
uid_1_2_840_10008_1_40, [751](#)
uid_1_2_840_10008_1_40_1, [751](#)
uid_1_2_840_10008_1_42, [751](#)
uid_1_2_840_10008_1_42_1, [751](#)
uid_1_2_840_10008_1_4_1_1, [751](#)
uid_1_2_840_10008_1_4_1_10, [751](#)
uid_1_2_840_10008_1_4_1_11, [751](#)
uid_1_2_840_10008_1_4_1_12, [751](#)
uid_1_2_840_10008_1_4_1_13, [751](#)
uid_1_2_840_10008_1_4_1_14, [751](#)
uid_1_2_840_10008_1_4_1_15, [751](#)
uid_1_2_840_10008_1_4_1_16, [751](#)
uid_1_2_840_10008_1_4_1_17, [751](#)
uid_1_2_840_10008_1_4_1_18, [751](#)
uid_1_2_840_10008_1_4_1_2, [751](#)
uid_1_2_840_10008_1_4_1_3, [751](#)
uid_1_2_840_10008_1_4_1_4, [751](#)
uid_1_2_840_10008_1_4_1_5, [751](#)
uid_1_2_840_10008_1_4_1_6, [751](#)
uid_1_2_840_10008_1_4_1_7, [751](#)
uid_1_2_840_10008_1_4_1_8, [751](#)
uid_1_2_840_10008_1_4_1_9, [751](#)
uid_1_2_840_10008_1_4_2_1, [751](#)
uid_1_2_840_10008_1_4_2_2, [751](#)
uid_1_2_840_10008_1_9, [751](#)
uid_1_2_840_10008_2_16_4, [751](#)
uid_1_2_840_10008_2_6_1, [751](#)
uid_1_2_840_10008_3_1_1_1, [751](#)
uid_1_2_840_10008_3_1_2_1_1, [751](#)
uid_1_2_840_10008_3_1_2_1_4, [751](#)
uid_1_2_840_10008_3_1_2_2_1, [751](#)
uid_1_2_840_10008_3_1_2_3_1, [751](#)
uid_1_2_840_10008_3_1_2_3_2, [752](#)
uid_1_2_840_10008_3_1_2_3_3, [752](#)
uid_1_2_840_10008_3_1_2_3_4, [752](#)
uid_1_2_840_10008_3_1_2_3_5, [752](#)
uid_1_2_840_10008_3_1_2_5_1, [752](#)
uid_1_2_840_10008_3_1_2_5_4, [752](#)
uid_1_2_840_10008_3_1_2_5_5, [752](#)
uid_1_2_840_10008_3_1_2_6_1, [752](#)
uid_1_2_840_10008_4_2, [752](#)
uid_1_2_840_10008_5_1_1_1, [752](#)
uid_1_2_840_10008_5_1_1_14, [752](#)
uid_1_2_840_10008_5_1_1_15, [752](#)
uid_1_2_840_10008_5_1_1_16, [752](#)
uid_1_2_840_10008_5_1_1_16_376, [752](#)
uid_1_2_840_10008_5_1_1_17, [752](#)
uid_1_2_840_10008_5_1_1_17_376, [752](#)
uid_1_2_840_10008_5_1_1_18, [752](#)
uid_1_2_840_10008_5_1_1_18_1, [752](#)
uid_1_2_840_10008_5_1_1_2, [752](#)
uid_1_2_840_10008_5_1_1_22, [752](#)
uid_1_2_840_10008_5_1_1_23, [752](#)
uid_1_2_840_10008_5_1_1_24, [752](#)
uid_1_2_840_10008_5_1_1_24_1, [752](#)
uid_1_2_840_10008_5_1_1_25, [752](#)
uid_1_2_840_10008_5_1_1_26, [752](#)
uid_1_2_840_10008_5_1_1_27, [752](#)
uid_1_2_840_10008_5_1_1_29, [752](#)
uid_1_2_840_10008_5_1_1_30, [752](#)
uid_1_2_840_10008_5_1_1_31, [752](#)
uid_1_2_840_10008_5_1_1_32, [752](#)
uid_1_2_840_10008_5_1_1_33, [752](#)
uid_1_2_840_10008_5_1_1_4, [752](#)
uid_1_2_840_10008_5_1_1_4_1, [752](#)
uid_1_2_840_10008_5_1_1_4_2, [752](#)
uid_1_2_840_10008_5_1_1_9, [752](#)
uid_1_2_840_10008_5_1_1_9_1, [752](#)
uid_1_2_840_10008_5_1_4_1_1_1, [752](#)
uid_1_2_840_10008_5_1_4_1_1_10, [753](#)
uid_1_2_840_10008_5_1_4_1_1_104_1, [754](#)
uid_1_2_840_10008_5_1_4_1_1_104_2, [754](#)
uid_1_2_840_10008_5_1_4_1_1_11, [753](#)
uid_1_2_840_10008_5_1_4_1_1_11_1, [753](#)
uid_1_2_840_10008_5_1_4_1_1_11_2, [753](#)
uid_1_2_840_10008_5_1_4_1_1_11_3, [753](#)
uid_1_2_840_10008_5_1_4_1_1_11_4, [753](#)
uid_1_2_840_10008_5_1_4_1_1_128, [754](#)
uid_1_2_840_10008_5_1_4_1_1_129, [754](#)
uid_1_2_840_10008_5_1_4_1_1_12_1, [753](#)
uid_1_2_840_10008_5_1_4_1_1_12_1_1, [753](#)
uid_1_2_840_10008_5_1_4_1_1_12_2, [753](#)
uid_1_2_840_10008_5_1_4_1_1_12_2_1, [753](#)

uid_1_2_840_10008_5_1_4_1_1_12_3, 753
uid_1_2_840_10008_5_1_4_1_1_13_1_1, 753
uid_1_2_840_10008_5_1_4_1_1_13_1_2, 753
uid_1_2_840_10008_5_1_4_1_1_13_1_3, 756
uid_1_2_840_10008_5_1_4_1_1_1_1, 752
uid_1_2_840_10008_5_1_4_1_1_1_1_1, 752
uid_1_2_840_10008_5_1_4_1_1_1_1_2, 752
uid_1_2_840_10008_5_1_4_1_1_1_2_1, 752
uid_1_2_840_10008_5_1_4_1_1_1_3, 752
uid_1_2_840_10008_5_1_4_1_1_1_3_1, 753
uid_1_2_840_10008_5_1_4_1_1_2, 753
uid_1_2_840_10008_5_1_4_1_1_20, 753
uid_1_2_840_10008_5_1_4_1_1_2_1, 753
uid_1_2_840_10008_5_1_4_1_1_3, 753
uid_1_2_840_10008_5_1_4_1_1_3_1, 753
uid_1_2_840_10008_5_1_4_1_1_4, 753
uid_1_2_840_10008_5_1_4_1_1_481_1, 754
uid_1_2_840_10008_5_1_4_1_1_481_2, 754
uid_1_2_840_10008_5_1_4_1_1_481_3, 754
uid_1_2_840_10008_5_1_4_1_1_481_4, 754
uid_1_2_840_10008_5_1_4_1_1_481_5, 754
uid_1_2_840_10008_5_1_4_1_1_481_6, 754
uid_1_2_840_10008_5_1_4_1_1_481_7, 754
uid_1_2_840_10008_5_1_4_1_1_481_8, 754
uid_1_2_840_10008_5_1_4_1_1_481_9, 754
uid_1_2_840_10008_5_1_4_1_1_4_1, 753
uid_1_2_840_10008_5_1_4_1_1_4_2, 753
uid_1_2_840_10008_5_1_4_1_1_5, 753
uid_1_2_840_10008_5_1_4_1_1_6, 753
uid_1_2_840_10008_5_1_4_1_1_66, 753
uid_1_2_840_10008_5_1_4_1_1_66_1, 753
uid_1_2_840_10008_5_1_4_1_1_66_2, 753
uid_1_2_840_10008_5_1_4_1_1_66_3, 754
uid_1_2_840_10008_5_1_4_1_1_66_4, 754
uid_1_2_840_10008_5_1_4_1_1_66_5, 756
uid_1_2_840_10008_5_1_4_1_1_67, 754
uid_1_2_840_10008_5_1_4_1_1_6_1, 753
uid_1_2_840_10008_5_1_4_1_1_6_2, 756
uid_1_2_840_10008_5_1_4_1_1_7, 753
uid_1_2_840_10008_5_1_4_1_1_77_1, 754
uid_1_2_840_10008_5_1_4_1_1_77_1_1, 754
uid_1_2_840_10008_5_1_4_1_1_77_1_1_1, 754
uid_1_2_840_10008_5_1_4_1_1_77_1_2, 754
uid_1_2_840_10008_5_1_4_1_1_77_1_2_1, 754
uid_1_2_840_10008_5_1_4_1_1_77_1_3, 754
uid_1_2_840_10008_5_1_4_1_1_77_1_4, 754
uid_1_2_840_10008_5_1_4_1_1_77_1_4_1, 754
uid_1_2_840_10008_5_1_4_1_1_77_1_5_1, 754
uid_1_2_840_10008_5_1_4_1_1_77_1_5_2, 754
uid_1_2_840_10008_5_1_4_1_1_77_1_5_3, 754
uid_1_2_840_10008_5_1_4_1_1_77_1_5_4, 754
uid_1_2_840_10008_5_1_4_1_1_77_1_6, 756
uid_1_2_840_10008_5_1_4_1_1_77_2, 754
uid_1_2_840_10008_5_1_4_1_1_7_1, 753
uid_1_2_840_10008_5_1_4_1_1_7_2, 753
uid_1_2_840_10008_5_1_4_1_1_7_3, 753
uid_1_2_840_10008_5_1_4_1_1_7_4, 753
uid_1_2_840_10008_5_1_4_1_1_8, 753
uid_1_2_840_10008_5_1_4_1_1_88_1, 754
uid_1_2_840_10008_5_1_4_1_1_88_11, 754
uid_1_2_840_10008_5_1_4_1_1_88_2, 754
uid_1_2_840_10008_5_1_4_1_1_88_22, 754
uid_1_2_840_10008_5_1_4_1_1_88_3, 754
uid_1_2_840_10008_5_1_4_1_1_88_33, 754
uid_1_2_840_10008_5_1_4_1_1_88_4, 754
uid_1_2_840_10008_5_1_4_1_1_88_40, 754
uid_1_2_840_10008_5_1_4_1_1_88_50, 754
uid_1_2_840_10008_5_1_4_1_1_88_59, 754
uid_1_2_840_10008_5_1_4_1_1_88_65, 754
uid_1_2_840_10008_5_1_4_1_1_88_67, 754
uid_1_2_840_10008_5_1_4_1_1_9, 753
uid_1_2_840_10008_5_1_4_1_1_9_1, 753
uid_1_2_840_10008_5_1_4_1_1_9_1_1, 753
uid_1_2_840_10008_5_1_4_1_1_9_1_2, 753
uid_1_2_840_10008_5_1_4_1_1_9_1_3, 753
uid_1_2_840_10008_5_1_4_1_1_9_2_1, 753
uid_1_2_840_10008_5_1_4_1_1_9_3_1, 753
uid_1_2_840_10008_5_1_4_1_1_9_4_1, 753
uid_1_2_840_10008_5_1_4_1_2_1_1, 754
uid_1_2_840_10008_5_1_4_1_2_1_2, 755
uid_1_2_840_10008_5_1_4_1_2_1_3, 755
uid_1_2_840_10008_5_1_4_1_2_2_1, 755
uid_1_2_840_10008_5_1_4_1_2_2_2, 755
uid_1_2_840_10008_5_1_4_1_2_2_3, 755
uid_1_2_840_10008_5_1_4_1_2_3_1, 755
uid_1_2_840_10008_5_1_4_1_2_3_2, 755
uid_1_2_840_10008_5_1_4_1_2_3_3, 755
uid_1_2_840_10008_5_1_4_31, 755
uid_1_2_840_10008_5_1_4_32, 755
uid_1_2_840_10008_5_1_4_32_1, 755
uid_1_2_840_10008_5_1_4_32_2, 755
uid_1_2_840_10008_5_1_4_32_3, 755
uid_1_2_840_10008_5_1_4_33, 755
uid_1_2_840_10008_5_1_4_34_1, 755
uid_1_2_840_10008_5_1_4_34_2, 755
uid_1_2_840_10008_5_1_4_34_3, 755
uid_1_2_840_10008_5_1_4_34_4, 755
uid_1_2_840_10008_5_1_4_34_4_1, 755
uid_1_2_840_10008_5_1_4_34_4_2, 755
uid_1_2_840_10008_5_1_4_34_4_3, 755
uid_1_2_840_10008_5_1_4_34_4_4, 755
uid_1_2_840_10008_5_1_4_34_5, 755
uid_1_2_840_10008_5_1_4_37_1, 755
uid_1_2_840_10008_5_1_4_37_2, 755
uid_1_2_840_10008_5_1_4_37_3, 755
uid_1_2_840_10008_5_1_4_38_1, 755
uid_1_2_840_10008_5_1_4_38_2, 755
uid_1_2_840_10008_5_1_4_38_3, 755

- uid_1_2_840_10008_5_1_4_41, [755](#)
- uid_1_2_840_10008_5_1_4_42, [755](#)
- UltrasoundImageStorage, [746](#)
- UltrasoundImageStorageRetired, [746](#)
- UltrasoundMultiframeImageStorage, [746](#)
- UltrasoundMultiframeImageStorageRetired, [746](#)
- UnifiedProcedureStepEventSOPClass, [748](#)
- UnifiedProcedureStepPullSOPClass, [748](#)
- UnifiedProcedureStepPushSOPClass, [748](#)
- UnifiedProcedureStepWatchSOPClass, [748](#)
- UnifiedWorklistandProcedureStepSOPInstance, [748](#)
- UnifiedWorklistandProcedureStepServiceClass, [748](#)
- VLEndoscopicImageStorage, [747](#)
- VImageStorageTrialRetired, [747](#)
- VLMicroscopicImageStorage, [747](#)
- VLMultiframeImageStorageTrialRetired, [747](#)
- VLPhotographicImageStorage, [747](#)
- VLSlideCoordinatesMicroscopicImageStorage, [747](#)
- VLWholeSlideMicroscopyImageStorage, [750](#)
- VOILUTBoxSOPClass, [746](#)
- VerificationSOPClass, [743](#)
- VideoEndoscopicImageStorage, [747](#)
- VideoMicroscopicImageStorage, [747](#)
- VideoPhotographicImageStorage, [747](#)
- WaveformStorageTrialRetired, [746](#)
- XMLEncoding, [744](#)
- XRay3DAngiographicImageStorage, [747](#)
- XRay3DCraniofacialImageStorage, [747](#)
- XRayAngiographicBiPlaneImageStorageRetired, [747](#)
- XRayAngiographicImageStorage, [747](#)
- XRayRadiationDoseSRStorage, [748](#)
- XRayRadiofluoroscopicImageStorage, [747](#)
- gdcM::Usage
 - Conditional, [811](#)
 - Invalid, [811](#)
 - Mandatory, [811](#)
 - UserOption, [811](#)
- gdcM::VM
 - VM0, [823](#)
 - VM1, [823](#)
 - VM10, [823](#)
 - VM12, [823](#)
 - VM16, [823](#)
 - VM18, [823](#)
 - VM1_2, [824](#)
 - VM1_3, [824](#)
 - VM1_32, [824](#)
 - VM1_4, [824](#)
 - VM1_5, [824](#)
 - VM1_8, [824](#)
 - VM1_99, [824](#)
 - VM1_n, [824](#)
 - VM2, [823](#)
 - VM24, [823](#)
 - VM256, [824](#)
 - VM28, [823](#)
 - VM2_2n, [824](#)
 - VM2_n, [824](#)
 - VM3, [823](#)
 - VM30_30n, [824](#)
 - VM32, [823](#)
 - VM35, [823](#)
 - VM3_3n, [824](#)
 - VM3_4, [824](#)
 - VM3_n, [824](#)
 - VM4, [823](#)
 - VM47_47n, [824](#)
 - VM4_4n, [824](#)
 - VM5, [823](#)
 - VM6, [823](#)
 - VM6_6n, [824](#)
 - VM7_7n, [824](#)
 - VM8, [823](#)
 - VM9, [823](#)
 - VM99, [824](#)
 - VM_END, [824](#)
- gdcM::VR
 - AE, [827](#)
 - AS, [827](#)
 - AT, [827](#)
 - CS, [827](#)
 - DA, [827](#)
 - DS, [827](#)
 - DT, [828](#)
 - FD, [828](#)
 - FL, [828](#)
 - INVALID, [827](#)
 - IS, [828](#)
 - LO, [828](#)
 - LT, [828](#)
 - OB, [828](#)
 - OB_OW, [828](#)
 - OF, [828](#)
 - OW, [828](#)
 - PN, [828](#)
 - SH, [828](#)
 - SL, [828](#)
 - SQ, [828](#)
 - SS, [828](#)
 - ST, [828](#)
 - TM, [828](#)
 - UI, [828](#)
 - UL, [828](#)
 - UN, [828](#)
 - US, [828](#)
 - US_SS, [828](#)
 - US_SS_OW, [828](#)
 - UT, [828](#)

- VL16, [828](#)
- VL32, [828](#)
- VR_END, [828](#)
- VR_VM1, [828](#)
- VRALL, [828](#)
- VRASCII, [828](#)
- VRBINARY, [828](#)
- gdcmm::network
 - eAABORTPDUReceivedOpen, [128](#)
 - eAABORTRequest, [128](#)
 - eAASSOCIATE_RQPDURreceived, [128](#)
 - eAASSOCIATERequestLocalUser, [128](#)
 - eAASSOCIATEResponseAccept, [128](#)
 - eAASSOCIATEResponseReject, [128](#)
 - eARELEASE_RPPDURreceived, [128](#)
 - eARELEASE_RQPDURreceivedOpen, [128](#)
 - eARELEASERequest, [128](#)
 - eARELEASEResponse, [128](#)
 - eARTIMTimerExpired, [129](#)
 - eASSOCIATE_ACPDURreceived, [128](#)
 - eASSOCIATE_RJPDURreceived, [128](#)
 - eEventDoesNotExist, [129](#)
 - ePDATATFPDU, [128](#)
 - ePDATArequest, [128](#)
 - eSta10ReleaseCollisionAc, [129](#)
 - eSta11ReleaseCollisionRq, [129](#)
 - eSta12ReleaseCollisionAcLocal, [129](#)
 - eSta13AwaitingClose, [129](#)
 - eSta1Idle, [129](#)
 - eSta2Open, [129](#)
 - eSta3WaitLocalAssoc, [129](#)
 - eSta4LocalAssocDone, [129](#)
 - eSta5WaitRemoteAssoc, [129](#)
 - eSta6TransferReady, [129](#)
 - eSta7WaitRelease, [129](#)
 - eSta8WaitLocalRelease, [129](#)
 - eSta9ReleaseCollisionRqLocal, [129](#)
 - eStaDoesNotExist, [129](#)
 - eTransportConnConfirmLocal, [128](#)
 - eTransportConnIndicLocal, [128](#)
 - eTransportConnectionClosed, [128](#)
 - eUnrecognizedPDUReceived, [129](#)
- gdcmm::network::DIMSE
 - C_CANCEL_RQ, [317](#)
 - C_ECHO_RQ, [316](#)
 - C_ECHO_RSP, [316](#)
 - C_FIND_RQ, [316](#)
 - C_FIND_RSP, [316](#)
 - C_GET_RQ, [316](#)
 - C_GET_RSP, [316](#)
 - C_MOVE_RQ, [316](#)
 - C_MOVE_RSP, [316](#)
 - C_STORE_RQ, [316](#)
 - C_STORE_RSP, [316](#)
- N_ACTION_RQ, [317](#)
- N_ACTION_RSP, [317](#)
- N_CREATE_RQ, [317](#)
- N_CREATE_RSP, [317](#)
- N_DELETE_RQ, [317](#)
- N_DELETE_RSP, [317](#)
- N_EVENT_REPORT_RQ, [316](#)
- N_EVENT_REPORT_RSP, [316](#)
- N_GET_RQ, [316](#)
- N_GET_RSP, [317](#)
- N_SET_RQ, [317](#)
- N_SET_RSP, [317](#)
- gdcmm::terminal
 - black, [131](#)
 - blink, [131](#)
 - blue, [131](#)
 - bright, [131](#)
 - CONSOLE, [131](#)
 - cyan, [131](#)
 - dim, [131](#)
 - green, [131](#)
 - hidden, [131](#)
 - magenta, [131](#)
 - red, [131](#)
 - reset, [131](#)
 - reverse, [131](#)
 - underline, [131](#)
 - VT100, [131](#)
 - white, [131](#)
 - yellow, [131](#)
- gdcmm::ASN1, [161](#)
 - ~ASN1, [162](#)
 - ASN1, [162](#)
 - ParseDump, [162](#)
 - ParseDumpFile, [162](#)
 - TestPBKDF2, [162](#)
- gdcmm::AbortEvent, [143](#)
- gdcmm::AnonymizeEvent, [145](#)
 - ~AnonymizeEvent, [147](#)
 - AnonymizeEvent, [147](#)
 - CheckEvent, [147](#)
 - GetEventName, [147](#)
 - GetTag, [147](#)
 - MakeObject, [147](#)
 - Self, [147](#)
 - SetTag, [147](#)
 - Superclass, [147](#)
- gdcmm::Anonymizer, [148](#)
 - ~Anonymizer, [150](#)
 - Anonymizer, [150](#)
 - BALCPPProtect, [150](#)
 - BasicApplicationLevelConfidentialityProfile, [150](#)
 - CanEmptyTag, [151](#)
 - Empty, [151](#)

- GetBasicApplicationLevelConfidentialityProfile-Attributes, 151
- GetCryptographicMessageSyntax, 151
- GetFile, 151
- New, 151
- RecurseDataSet, 151
- Remove, 151
- RemoveGroupLength, 151
- RemovePrivateTags, 151
- RemoveRetired, 152
- Replace, 152
- SetCryptographicMessageSyntax, 152
- SetFile, 152
- gdcmm::AnyEvent, 152
- gdcmm::ApplicationEntity, 155
 - Internal, 156
 - IsValid, 156
 - MaxLength, 156
 - MaxNumberOfComponents, 156
 - Padding, 156
 - Print, 156
 - Separator, 156
 - SetBlob, 156
 - Squeeze, 156
- gdcmm::Attribute
 - ArrayType, 165
 - GDCM_STATIC_ASSERT, 165
 - GetAsDataElement, 165
 - GetDictVM, 166
 - GetDictVR, 166
 - GetNumberOfValues, 166
 - GetTag, 166
 - GetVM, 167
 - GetVR, 167
 - GetValue, 166, 167
 - GetValues, 167
 - Internal, 170
 - operator<, 167
 - operator==, 168
 - Print, 168
 - Set, 168
 - SetByteValue, 168
 - SetByteValueNoSwap, 168
 - SetFromDataElement, 169
 - SetFromDataSet, 169
 - SetValue, 169
 - SetValues, 169
- gdcmm::Attribute< Group, Element, TVR, TVM >, 163
- gdcmm::Attribute< Group, Element, TVR, VM::VM1 >, 170
 - ArrayType, 172
 - GetAsDataElement, 172
 - GetDictVM, 173
 - GetDictVR, 173
 - GetNumberOfValues, 173
 - GetTag, 173
 - GetVM, 173
 - GetVR, 173
 - GetValue, 173
 - GetValues, 173
 - Internal, 175
 - operator<, 173
 - operator==, 173
 - Print, 174
 - Set, 174
 - SetByteValue, 174
 - SetByteValueNoSwap, 174
 - SetFromDataElement, 174
 - SetFromDataSet, 174
 - SetValue, 174
- gdcmm::Attribute< Group, Element, TVR, VM::VM1_3 >, 175
 - GetVM, 176
- gdcmm::Attribute< Group, Element, TVR, VM::VM1_8 >, 176
 - GetVM, 177
- gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >, 177
 - ~Attribute, 179
 - ArrayType, 179
 - Attribute, 179
 - GetAsDataElement, 179
 - GetDictVM, 179
 - GetDictVR, 179
 - GetNumberOfValues, 179
 - GetTag, 180
 - GetVM, 180
 - GetVR, 180
 - GetValue, 180
 - GetValues, 180
 - Print, 180
 - Set, 180
 - SetByteValue, 181
 - SetFromDataElement, 181
 - SetFromDataSet, 181
 - SetNumberOfValues, 181
 - SetValue, 181
 - SetValues, 181
- gdcmm::Attribute< Group, Element, TVR, VM::VM2_2n >, 182
 - GetVM, 183
- gdcmm::Attribute< Group, Element, TVR, VM::VM2_n >, 183
 - GetVM, 185
- gdcmm::Attribute< Group, Element, TVR, VM::VM3_3n >, 185
 - GetVM, 186
- gdcmm::Attribute< Group, Element, TVR, VM::VM3_n >, 186

- GetVM, [188](#)
- gdcmm::AudioCodec, [188](#)
 - ~AudioCodec, [189](#)
 - AudioCodec, [189](#)
 - CanCode, [189](#)
 - CanDecode, [190](#)
 - Decode, [190](#)
- gdcmm::Base64, [190](#)
 - ~Base64, [190](#)
 - Base64, [190](#)
 - Decode, [191](#)
 - Encode, [192](#)
 - GetDecodeLength, [192](#)
 - GetEncodeLength, [192](#)
- gdcmm::BaseRootQuery, [196](#)
 - ~BaseRootQuery, [198](#)
 - AddQueryDataSet, [198](#)
 - BaseRootQuery, [198](#)
 - Construct, [198](#)
 - GetAbstractSyntaxUID, [198](#)
 - GetQueryDataSet, [198](#)
 - GetQueryLevelFromQueryRoot, [199](#)
 - GetQueryLevelFromString, [199](#)
 - GetQueryLevelString, [199](#)
 - GetTagListByLevel, [199](#)
 - InitializeDataSet, [199](#)
 - mDataSet, [200](#)
 - mHelpDescription, [200](#)
 - mImage, [200](#)
 - mPatient, [200](#)
 - mRootType, [200](#)
 - mSeries, [200](#)
 - mStudy, [200](#)
 - Print, [199](#)
 - QueryFactory, [200](#)
 - SetSearchParameter, [199](#)
 - ValidateQuery, [199](#)
 - WriteHelpFile, [199](#)
 - WriteQuery, [199](#)
- gdcmm::BasicOffsetTable, [203](#)
 - BasicOffsetTable, [204](#)
 - operator<<, [205](#)
 - Read, [204](#)
- gdcmm::Bitmap, [205](#)
 - ~Bitmap, [208](#)
 - AreOverlaysInPixelData, [208](#)
 - Bitmap, [208](#)
 - Clear, [208](#)
 - ComputeLossyFlag, [208](#)
 - Dimensions, [212](#)
 - GetBuffer, [208](#)
 - GetBuffer2, [208](#)
 - GetBufferLength, [208](#)
 - GetColumns, [209](#)
 - GetDataElement, [209](#)
 - GetDimension, [209](#)
 - GetDimensions, [209](#)
 - GetLUT, [209](#)
 - GetNeedByteSwap, [209](#)
 - GetNumberOfDimensions, [209](#)
 - GetPhotometricInterpretation, [209](#)
 - GetPixelFormat, [209, 210](#)
 - GetPlanarConfiguration, [210](#)
 - GetRows, [210](#)
 - GetTransferSyntax, [210](#)
 - ImageChangeTransferSyntax, [212](#)
 - IsEmpty, [210](#)
 - IsLossy, [210](#)
 - IsTransferSyntaxCompatible, [210](#)
 - LUT, [212](#)
 - LUTPtr, [208](#)
 - LossyFlag, [212](#)
 - NeedByteSwap, [212](#)
 - NumberOfDimensions, [212](#)
 - PF, [212](#)
 - PI, [212](#)
 - PixelData, [212](#)
 - PixmapReader, [212](#)
 - PlanarConfiguration, [212](#)
 - Print, [210](#)
 - SetColumns, [210](#)
 - SetDataElement, [210](#)
 - SetDimension, [210](#)
 - SetDimensions, [211](#)
 - SetLUT, [211](#)
 - SetLossyFlag, [211](#)
 - SetNeedByteSwap, [211](#)
 - SetNumberOfDimensions, [211](#)
 - SetPhotometricInterpretation, [211](#)
 - SetPixelFormat, [211](#)
 - SetPlanarConfiguration, [211](#)
 - SetRows, [211](#)
 - SetTransferSyntax, [212](#)
 - TS, [213](#)
 - TryJPEG2000Codec, [212](#)
 - TryJPEG2000Codec2, [212](#)
 - TryJPEGCodec, [212](#)
 - TryJPEGCodec2, [212](#)
 - TryJPEGGLSCodec, [212](#)
 - TryKAKADUCodec, [212](#)
 - TryPVRGCodec, [212](#)
 - TryRAWCodec, [212](#)
 - TryRLECodec, [212](#)
- gdcmm::BitmapToBitmapFilter, [213](#)
 - ~BitmapToBitmapFilter, [215](#)
 - BitmapToBitmapFilter, [214](#)
 - GetOutput, [215](#)
 - GetOutputAsBitmap, [215](#)

- Input, [215](#)
- Output, [215](#)
- SetInput, [215](#)
- gdcmm::BoxRegion, [215](#)
 - ~BoxRegion, [217](#)
 - Area, [217](#)
 - BoundingBox, [217](#)
 - BoxRegion, [217](#)
 - Clone, [217](#)
 - ComputeBoundingBox, [217](#)
 - Empty, [218](#)
 - GetXMax, [218](#)
 - GetXMin, [218](#)
 - GetYMax, [218](#)
 - GetYMin, [218](#)
 - GetZMax, [218](#)
 - GetZMin, [218](#)
 - IsValid, [218](#)
 - operator=, [218](#)
 - Print, [218](#)
 - SetDomain, [218](#)
- gdcmm::ByteBuffer, [219](#)
 - ByteBuffer, [219](#)
 - Get, [219](#)
 - GetStart, [219](#)
 - ShiftEnd, [219](#)
 - UpdatePosition, [219](#)
- gdcmm::ByteSwap
 - Swap, [220](#)
 - SwapFromSwapCodeIntoSystem, [220](#)
 - SwapRange, [220](#)
 - SwapRangeFromSwapCodeIntoSystem, [220](#)
 - SystemIsBigEndian, [220](#)
 - SystemIsLittleEndian, [220](#)
- gdcmm::ByteSwap< T >, [219](#)
- gdcmm::ByteSwapFilter, [221](#)
 - ~ByteSwapFilter, [221](#)
 - ByteSwap, [221](#)
 - ByteSwapFilter, [221](#)
 - SetByteSwapTag, [221](#)
- gdcmm::ByteValue, [221](#)
 - ~ByteValue, [224](#)
 - ByteValue, [223](#)
 - Clear, [224](#)
 - Fill, [224](#)
 - GetBuffer, [224](#)
 - GetLength, [224](#)
 - GetPointer, [224](#)
 - IsEmpty, [225](#)
 - IsPrintable, [225](#)
 - operator const std::vector< char > &, [225](#)
 - operator=, [225](#)
 - operator==, [225](#)
 - Print, [225](#)
 - PrintASCII, [225](#)
 - PrintGroupLength, [225](#)
 - PrintHex, [225](#)
 - Read, [225](#)
 - SetLength, [225](#)
 - Write, [225](#)
 - WriteBuffer, [226](#)
- gdcmm::CP246ExplicitDataElement, [251](#)
 - GetLength, [252](#)
 - Read, [252](#)
 - ReadPreValue, [253](#)
 - ReadValue, [253](#)
 - ReadWithLength, [253](#)
- gdcmm::CSAElement, [254](#)
 - CSAElement, [256](#)
 - DataField, [258](#)
 - DataPtr, [256](#)
 - GetByteValue, [256](#)
 - GetKey, [257](#)
 - GetName, [257](#)
 - GetNoOfItems, [257](#)
 - GetSyngoDT, [257](#)
 - GetVM, [257](#)
 - GetVR, [257](#)
 - GetValue, [257](#)
 - IsEmpty, [257](#)
 - KeyField, [258](#)
 - NameField, [258](#)
 - NoOfItemsField, [259](#)
 - operator<, [258](#)
 - operator<<, [258](#)
 - operator=, [258](#)
 - operator==, [258](#)
 - SetByteValue, [258](#)
 - SetKey, [258](#)
 - SetName, [258](#)
 - SetNoOfItems, [258](#)
 - SetSyngoDT, [258](#)
 - SetVM, [258](#)
 - SetVR, [258](#)
 - SetValue, [258](#)
 - SyngoDTField, [259](#)
 - VRField, [259](#)
 - ValueMultiplicityField, [259](#)
- gdcmm::CSAHeader, [259](#)
 - ~CSAHeader, [261](#)
 - CSAHeader, [261](#)
 - CSAHeaderType, [261](#)
 - FindCSAElementByName, [261](#)
 - GetCSADataInfo, [261](#)
 - GetCSAEEnd, [261](#)
 - GetCSAElementByName, [262](#)
 - GetCSAImageHeaderInfoTag, [262](#)
 - GetCSASeriesHeaderInfoTag, [262](#)

- GetDataSet, [262](#)
- GetFormat, [262](#)
- GetInterfile, [262](#)
- LoadFromDataElement, [262](#)
- operator<<, [263](#)
- Print, [262](#)
- Read, [263](#)
- Write, [263](#)
- gdcmm::CSAHeaderDict, [263](#)
 - AddCSAHeaderDictEntry, [264](#)
 - Begin, [264](#)
 - CSAHeaderDict, [264](#)
 - ConstIterator, [264](#)
 - Dicts, [264](#)
 - End, [264](#)
 - GetCSAHeaderDictEntry, [264](#)
 - IsEmpty, [264](#)
 - Iterator, [264](#)
 - LoadDefault, [264](#)
 - MapCSAHeaderDictEntry, [264](#)
 - operator<<, [264](#)
- gdcmm::CSAHeaderDictEntry, [265](#)
 - CSAHeaderDictEntry, [266](#)
 - GetDescription, [266](#)
 - GetName, [266](#)
 - GetVM, [266](#)
 - GetVR, [266](#)
 - operator<, [266](#)
 - operator<<, [266](#)
 - SetDescription, [266](#)
 - SetName, [266](#)
 - SetVM, [266](#)
 - SetVR, [266](#)
- gdcmm::CSAHeaderDictException, [266](#)
- gdcmm::CodeString, [240](#)
 - CodeString, [242](#)
 - const_iterator, [241](#)
 - const_reference, [241](#)
 - const_reverse_iterator, [241](#)
 - difference_type, [241](#)
 - GetAsString, [242](#)
 - IsValid, [242](#)
 - iterator, [241](#)
 - operator<<, [242](#)
 - operator==, [242](#)
 - pointer, [241](#)
 - reference, [241](#)
 - reverse_iterator, [241](#)
 - Size, [242](#)
 - size_type, [241](#)
 - TrimInternal, [242](#)
 - value_type, [242](#)
- gdcmm::Codec, [237](#)
- gdcmm::Coder, [238](#)
 - ~Coder, [239](#)
 - CanCode, [239](#)
 - Code, [239](#)
 - InternalCode, [240](#)
- gdcmm::Command, [242](#)
 - ~Command, [244](#)
 - Command, [244](#)
 - Execute, [244](#)
- gdcmm::CommandDataSet, [244](#)
 - ~CommandDataSet, [246](#)
 - CommandDataSet, [246](#)
 - Insert, [246](#)
 - operator<<, [246](#)
 - Read, [246](#)
 - Replace, [246](#)
 - Write, [246](#)
- gdcmm::CompositeNetworkFunctions, [247](#)
 - CEcho, [249](#)
 - CFind, [249](#)
 - CMove, [249](#)
 - CStore, [250](#)
 - ConstructQuery, [250](#)
 - KeyValuePairArrayType, [248](#)
 - KeyValuePairType, [248](#)
- gdcmm::ConstCharWrapper, [250](#)
 - ConstCharWrapper, [251](#)
 - operator const char *, [251](#)
- gdcmm::CryptographicMessageSyntax, [253](#)
 - ~CryptographicMessageSyntax, [254](#)
 - CipherTypes, [254](#)
 - CryptographicMessageSyntax, [254](#)
 - Decrypt, [254](#)
 - Encrypt, [254](#)
 - GetCipherType, [254](#)
 - ParseCertificateFile, [254](#)
 - ParseKeyFile, [254](#)
 - SetCipherType, [254](#)
- gdcmm::Curve, [270](#)
 - ~Curve, [272](#)
 - Curve, [272](#)
 - Decode, [272](#)
 - GetAsPoints, [272](#)
 - GetCurveDataDescriptor, [272](#)
 - GetDataValueRepresentation, [272](#)
 - GetDimensions, [272](#)
 - GetGroup, [272](#)
 - GetNumberOfCurves, [272](#)
 - GetNumberOfPoints, [272](#)
 - GetTypeOfData, [272](#)
 - GetTypeOfDataDescription, [272](#)
 - IsEmpty, [272](#)
 - Print, [272](#)
 - SetCoordinateStartValue, [272](#)
 - SetCoordinateStepValue, [273](#)

- SetCurve, [273](#)
- SetCurveDataDescriptor, [273](#)
- SetCurveDescription, [273](#)
- SetDataValueRepresentation, [273](#)
- SetDimensions, [273](#)
- SetGroup, [273](#)
- SetNumberOfPoints, [273](#)
- SetTypeOfData, [273](#)
- Update, [273](#)
- gdcm::DICOMDIR, [301](#)
 - DICOMDIR, [301](#)
- gdcm::DICOMDIRGenerator, [303](#)
 - ~DICOMDIRGenerator, [303](#)
 - AddImageDirectoryRecord, [303](#)
 - AddPatientDirectoryRecord, [303](#)
 - AddSeriesDirectoryRecord, [303](#)
 - AddStudyDirectoryRecord, [303](#)
 - DICOMDIRGenerator, [303](#)
 - FilenameType, [303](#)
 - FileNamesType, [303](#)
 - Generate, [303](#)
 - GetFile, [303](#)
 - GetScanner, [303](#)
 - SetDescriptor, [303](#)
 - SetFile, [303](#)
 - SetFileNames, [303](#)
 - SetRootDirectory, [303](#)
- gdcm::DataElement, [273](#)
 - Clear, [277](#)
 - DataElement, [276](#)
 - Empty, [277](#)
 - GetByteValue, [277](#)
 - GetLength, [277](#)
 - GetSequenceOfFragments, [277](#)
 - GetSequenceOfItems, [277](#), [278](#)
 - GetTag, [278](#)
 - GetVL, [279](#)
 - GetVR, [279](#)
 - GetValue, [278](#)
 - GetValueAsSQ, [278](#)
 - IsEmpty, [279](#)
 - IsUndefinedLength, [279](#)
 - operator<, [279](#)
 - operator<<, [282](#)
 - operator=, [279](#)
 - operator==, [280](#)
 - Read, [280](#)
 - ReadOrSkip, [280](#)
 - ReadPreValue, [280](#)
 - ReadValue, [280](#)
 - ReadWithLength, [280](#)
 - SetByteValue, [280](#)
 - SetTag, [280](#)
 - SetVL, [281](#)
 - SetVLToUndefined, [281](#)
 - SetVR, [281](#)
 - SetValue, [280](#)
 - TagField, [282](#)
 - VRField, [282](#)
 - ValueField, [282](#)
 - ValueLengthField, [282](#)
 - ValuePtr, [276](#)
 - Write, [281](#)
- gdcm::DataElementException, [282](#)
- gdcm::DataEvent, [283](#)
 - ~DataEvent, [285](#)
 - CheckEvent, [285](#)
 - DataEvent, [285](#)
 - GetData, [285](#)
 - GetDataLength, [285](#)
 - GetEventName, [285](#)
 - MakeObject, [285](#)
 - Self, [284](#)
 - SetData, [285](#)
 - Superclass, [284](#)
- gdcm::DataSet, [285](#)
 - Begin, [288](#)
 - CSAHeader, [292](#)
 - Clear, [288](#)
 - ComputeDataElement, [288](#)
 - ComputeGroupLength, [288](#)
 - ConstIterator, [288](#)
 - DataElementSet, [288](#)
 - End, [289](#)
 - FindDataElement, [289](#)
 - FindNextDataElement, [289](#)
 - GetDEEnd, [290](#)
 - GetDES, [290](#)
 - GetDataElement, [289](#), [290](#)
 - GetLength, [290](#)
 - GetMediaStorage, [290](#)
 - GetPrivateCreator, [290](#)
 - Insert, [290](#)
 - InsertDataElement, [290](#)
 - IsEmpty, [290](#)
 - Iterator, [288](#)
 - operator<<, [292](#)
 - operator(), [291](#)
 - operator=, [291](#)
 - Print, [291](#)
 - Read, [291](#)
 - ReadNested, [291](#)
 - ReadSelectedTags, [291](#)
 - ReadSelectedTagsWithLength, [291](#)
 - ReadUpToTag, [291](#)
 - ReadUpToTagWithLength, [291](#)
 - ReadWithLength, [291](#)
 - Remove, [291](#)

- Replace, [291](#)
- ReplaceEmpty, [291](#)
- Size, [292](#)
- SizeType, [288](#)
- Write, [292](#)
- gdcmm::DataSetEvent, [292](#)
 - ~DataSetEvent, [294](#)
 - CheckEvent, [294](#)
 - DataSetEvent, [294](#)
 - GetDataSet, [294](#)
 - GetEventName, [294](#)
 - MakeObject, [294](#)
 - Self, [293](#)
 - Superclass, [293](#)
- gdcmm::DataSetHelper, [294](#)
 - ComputeVR, [294](#)
- gdcmm::Decoder, [295](#)
 - ~Decoder, [295](#)
 - CanDecode, [296](#)
 - Decode, [296](#)
 - DecodeByStreams, [296](#)
- gdcmm::DefinedTerms, [296](#)
 - DefinedTerms, [297](#)
- gdcmm::Defs, [297](#)
 - ~Defs, [298](#)
 - Defs, [298](#)
 - GetIODFromFile, [298](#)
 - GetIODNameFromMediaStorage, [298](#)
 - GetIODs, [298](#)
 - GetMacros, [298](#)
 - GetModules, [298](#)
 - GetTypeFromTag, [298](#)
 - Global, [299](#)
 - IsEmpty, [298](#)
 - LoadDefaults, [298](#)
 - LoadFromFile, [298](#)
 - Verify, [298](#), [299](#)
- gdcmm::DeltaEncodingCodec, [299](#)
 - ~DeltaEncodingCodec, [300](#)
 - CanDecode, [300](#)
 - Decode, [300](#)
 - DeltaEncodingCodec, [300](#)
- gdcmm::Dict, [304](#)
 - AddDictEntry, [305](#)
 - Begin, [305](#)
 - ConstIterator, [305](#)
 - Dict, [305](#)
 - Dicts, [306](#)
 - End, [305](#)
 - GetDictEntry, [305](#)
 - GetDictEntryByKeyword, [305](#)
 - GetDictEntryByName, [305](#)
 - GetKeywordFromTag, [305](#)
 - IsEmpty, [306](#)
 - Iterator, [305](#)
 - LoadDefault, [306](#)
 - MapDictEntry, [305](#)
 - operator<<, [306](#)
- gdcmm::DictConverter, [306](#)
 - ~DictConverter, [307](#)
 - AddGroupLength, [307](#)
 - Convert, [307](#)
 - ConvertToCXX, [307](#)
 - ConvertToXML, [307](#)
 - DictConverter, [307](#)
 - GetDictName, [308](#)
 - GetInputFilename, [308](#)
 - GetOutputFilename, [308](#)
 - GetOutputType, [308](#)
 - OutputTypes, [307](#)
 - ReadVM, [308](#)
 - ReadVR, [308](#)
 - Readuint16, [308](#)
 - SetDictName, [308](#)
 - SetInputFileName, [308](#)
 - SetOutputFileName, [308](#)
 - SetOutputType, [308](#)
 - WriteFooter, [308](#)
 - WriteHeader, [308](#)
- gdcmm::DictEntry, [308](#)
 - DictEntry, [309](#)
 - GetKeyword, [309](#)
 - GetName, [309](#)
 - GetRetired, [309](#)
 - GetVM, [310](#)
 - GetVR, [310](#)
 - IsUnique, [310](#)
 - operator<<, [311](#)
 - SetElementXX, [310](#)
 - SetGroupXX, [310](#)
 - SetKeyword, [310](#)
 - SetName, [310](#)
 - SetRetired, [310](#)
 - SetVM, [310](#)
 - SetVR, [310](#)
- gdcmm::DictPrinter, [311](#)
 - ~DictPrinter, [312](#)
 - DictPrinter, [312](#)
 - Print, [313](#)
 - PrintDataElement2, [313](#)
 - PrintDataSet2, [313](#)
- gdcmm::Dicts, [313](#)
 - ~Dicts, [314](#)
 - ConstructorType, [314](#)
 - Dicts, [314](#)
 - GetCSAHeaderDict, [314](#)
 - GetConstructorString, [314](#)
 - GetDictEntry, [314](#), [315](#)

- GetPrivateDict, [315](#)
- GetPublicDict, [315](#)
- Global, [315](#)
- IsEmpty, [315](#)
- LoadDefaults, [315](#)
- operator<<, [315](#)
- gdcmm::DirectionCosines, [317](#)
 - ~DirectionCosines, [318](#)
 - ComputeDistAlongNormal, [318](#)
 - Cross, [318](#)
 - CrossDot, [318](#)
 - DirectionCosines, [318](#)
 - Dot, [318](#)
 - IsValid, [318](#)
 - Normalize, [318](#)
 - operator const double *, [318](#)
 - Print, [318](#)
 - SetFromString, [319](#)
- gdcmm::Directory, [319](#)
 - ~Directory, [320](#)
 - Directory, [320](#)
 - Explore, [320](#)
 - FilenameType, [320](#)
 - FileNamesType, [320](#)
 - GetDirectories, [320](#)
 - GetFileNames, [320](#)
 - GetToplevel, [321](#)
 - Load, [321](#)
 - operator<<, [321](#)
 - Print, [321](#)
- gdcmm::DirectoryHelper, [321](#)
 - GetCTImageSeriesUIDs, [322](#)
 - GetFileNamesFromSeriesUIDs, [322](#)
 - GetFrameOfReference, [322](#)
 - GetMRIImageSeriesUIDs, [322](#)
 - GetRTStructSeriesUIDs, [322](#)
 - GetSOPClassUID, [323](#)
 - GetSeriesUIDsBySOPClassUID, [323](#)
 - GetStringValueFromTag, [323](#)
 - LoadImageFromFiles, [323](#)
 - RetrieveSOPInstanceUIDFromIndex, [323](#)
 - RetrieveSOPInstanceUIDFromZPosition, [323](#)
- gdcmm::DummyValueGenerator, [323](#)
 - Generate, [323](#)
- gdcmm::Dumper, [324](#)
 - ~Dumper, [325](#)
 - Dumper, [325](#)
- gdcmm::Element
 - GetAsDataElement, [328](#)
 - GetLength, [328](#)
 - GetVM, [329](#)
 - GetVR, [329](#)
 - GetValue, [328](#)
 - GetValues, [328](#)
 - Internal, [329](#)
 - Print, [329](#)
 - Read, [329](#)
 - Set, [329](#)
 - SetFromDataElement, [329](#)
 - SetNoSwap, [329](#)
 - SetValue, [329](#)
 - Type, [328](#)
 - Write, [329](#)
- gdcmm::Element< TVR, TVM >, [326](#)
- gdcmm::Element< TVR, VM::VM1_2 >, [330](#)
 - Parent, [331](#)
 - SetLength, [331](#)
- gdcmm::Element< TVR, VM::VM1_n >, [331](#)
 - ~Element, [332](#)
 - Element, [332](#)
 - GetAsDataElement, [332](#)
 - GetLength, [332](#)
 - GetVM, [333](#)
 - GetVR, [333](#)
 - GetValue, [333](#)
 - operator=, [333](#)
 - Print, [333](#)
 - Read, [333](#)
 - Set, [333](#)
 - SetArray, [333](#)
 - SetFromDataElement, [333](#)
 - SetLength, [333](#)
 - SetNoSwap, [333](#)
 - SetValue, [334](#)
 - Type, [332](#)
 - Write, [334](#)
 - WriteASCII, [334](#)
- gdcmm::Element< TVR, VM::VM2_2n >, [334](#)
 - Parent, [335](#)
 - SetLength, [335](#)
- gdcmm::Element< TVR, VM::VM2_n >, [336](#)
 - Parent, [337](#)
 - SetLength, [337](#)
- gdcmm::Element< TVR, VM::VM3_3n >, [337](#)
 - Parent, [338](#)
 - SetLength, [338](#)
- gdcmm::Element< TVR, VM::VM3_n >, [339](#)
 - Parent, [340](#)
 - SetLength, [340](#)
- gdcmm::Element< VR::AS, VM::VM5 >, [340](#)
 - GetLength, [340](#)
 - Internal, [340](#)
 - Print, [340](#)
- gdcmm::Element< VR::OB, VM::VM1 >, [341](#)
- gdcmm::Element< VR::OW, VM::VM1 >, [342](#)
- gdcmm::EncapsulatedDocument, [344](#)
 - EncapsulatedDocument, [345](#)
- gdcmm::EncodingImplementation< T >, [345](#)

- gdcmm::EncodingImplementation< VR::VRASCII >, 345
 - Read, 346
 - ReadComputeLength, 346
 - ReadNoSwap, 346
 - Write, 346
- gdcmm::EncodingImplementation< VR::VRBINARY >, 346
 - Read, 347
 - ReadComputeLength, 347
 - ReadNoSwap, 347
 - Write, 347
- gdcmm::EndEvent, 347
- gdcmm::EnumeratedValues, 349
 - EnumeratedValues, 349
- gdcmm::Event, 349
 - ~Event, 351
 - CheckEvent, 351
 - Event, 351
 - GetEventName, 351
 - MakeObject, 351
 - Print, 351
- gdcmm::Exception, 351
 - ~Exception, 353
 - Exception, 353
 - GetDescription, 353
 - what, 353
- gdcmm::ExitEvent, 353
- gdcmm::ExplicitDataElement, 355
 - GetLength, 356
 - Read, 356
 - ReadPreValue, 356
 - ReadValue, 356
 - ReadWithLength, 356
 - Write, 356
- gdcmm::ExplicitImplicitDataElement, 356
 - GetLength, 358
 - Read, 358
 - ReadPreValue, 358
 - ReadValue, 358
 - ReadWithLength, 358
- gdcmm::Fiducials, 358
 - Fiducials, 359
- gdcmm::File, 359
 - ~File, 361
 - File, 361
 - GetDataSet, 361
 - GetHeader, 361
 - operator<<, 362
 - Read, 362
 - SetDataSet, 362
 - SetHeader, 362
 - Write, 362
- gdcmm::FileAnonymizer, 362
 - ~FileAnonymizer, 364
 - Empty, 364
 - FileAnonymizer, 364
 - Remove, 364
 - Replace, 364
 - SetInputFileName, 364
 - SetOutputFileName, 365
 - Write, 365
- gdcmm::FileDerivation, 365
 - ~FileDerivation, 366
 - AddDerivationDescription, 366
 - AddPurposeOfReferenceCodeSequence, 366
 - AddReference, 366
 - AddSourceImageSequence, 366
 - Derive, 366
 - FileDerivation, 366
 - GetFile, 366, 367
 - SetDerivationCodeSequenceCodeValue, 367
 - SetDerivationDescription, 367
 - SetFile, 367
 - SetPurposeOfReferenceCodeSequenceCodeValue, 367
- gdcmm::FileExplicitFilter, 367
 - ~FileExplicitFilter, 368
 - Change, 368
 - ChangeFMI, 369
 - FileExplicitFilter, 368
 - GetFile, 369
 - ProcessDataSet, 369
 - SetChangePrivateTags, 369
 - SetFile, 369
 - SetRecomputeItemLength, 369
 - SetRecomputeSequenceLength, 369
 - SetUseVRUN, 369
- gdcmm::FileMetaInformation, 369
 - ~FileMetaInformation, 372
 - AppendImplementationClassUID, 372
 - ComputeDataSetMediaStorageSOPClass, 372
 - ComputeDataSetTransferSyntax, 372
 - DataSetMS, 374
 - DataSetTS, 374
 - Default, 372
 - FileMetaInformation, 372
 - FillFromDataSet, 372
 - GetDataSetTransferSyntax, 372
 - GetFileMetaInformationVersion, 372
 - GetFullLength, 373
 - GetGDCMImplementationClassUID, 373
 - GetGDCMImplementationVersionName, 373
 - GetGDCMSourceApplicationEntityTitle, 373
 - GetImplementationClassUID, 373
 - GetImplementationVersionName, 373
 - GetMediaStorage, 373
 - GetMetaInformationTS, 373
 - GetPreamble, 373
 - GetSourceApplicationEntityTitle, 373

- Insert, [373](#)
- IsValid, [373](#)
- MetaInformationTS, [374](#)
- operator<=, [374](#)
- Read, [373](#)
- ReadCompat, [373](#)
- ReadCompatInternal, [373](#)
- Replace, [373](#)
- SetDataSetTransferSyntax, [374](#)
- SetImplementationClassUID, [374](#)
- SetImplementationVersionName, [374](#)
- SetPreamble, [374](#)
- SetSourceApplicationEntityTitle, [374](#)
- Write, [374](#)
- gdcmm::FileSet, [379](#)
 - AddFile, [380](#)
 - FileSet, [380](#)
 - FileType, [380](#)
 - FilesType, [380](#)
 - GetFiles, [380](#)
 - operator<=, [380](#)
 - SetFiles, [380](#)
- gdcmm::FileWithName, [380](#)
 - FileWithName, [382](#)
 - filename, [382](#)
- gdcmm::Filename, [375](#)
 - EndWith, [376](#)
 - Filename, [376](#)
 - GetExtension, [376](#)
 - GetFileName, [376](#)
 - GetName, [376](#)
 - GetPath, [376](#)
 - IsEmpty, [376](#)
 - IsIdentical, [376](#)
 - Join, [376](#)
 - operator const char *, [376](#)
 - ToUnixSlashes, [376](#)
 - ToWindowsSlashes, [376](#)
- gdcmm::FilenameGenerator, [377](#)
 - ~FilenameGenerator, [378](#)
 - FilenameGenerator, [378](#)
 - FilenameType, [378](#)
 - FilenamesType, [378](#)
 - Generate, [378](#)
 - GetFilename, [378](#)
 - GetFilenames, [378](#)
 - GetNumberOfFilenames, [378](#)
 - GetPattern, [378](#)
 - GetPrefix, [379](#)
 - SetNumberOfFilenames, [379](#)
 - SetPattern, [379](#)
 - SetPrefix, [379](#)
 - SizeType, [378](#)
- gdcmm::FindPatientRootQuery, [382](#)
- FindPatientRootQuery, [383](#)
- GetAbstractSyntaxUID, [383](#)
- GetTagListByLevel, [383](#)
- InitializeDataSet, [384](#)
- QueryFactory, [384](#)
- ValidateQuery, [384](#)
- gdcmm::FindStudyRootQuery, [384](#)
 - FindStudyRootQuery, [386](#)
 - GetAbstractSyntaxUID, [386](#)
 - GetTagListByLevel, [386](#)
 - InitializeDataSet, [386](#)
 - QueryFactory, [386](#)
 - ValidateQuery, [386](#)
- gdcmm::Fragment, [386](#)
 - Fragment, [388](#)
 - GetLength, [388](#)
 - operator<=, [389](#)
 - Read, [388](#)
 - ReadBacktrack, [388](#)
 - ReadPreValue, [388](#)
 - ReadValue, [388](#)
 - Write, [388](#)
- gdcmm::Global, [389](#)
 - ~Global, [390](#)
 - Append, [390](#)
 - GetDefs, [390](#)
 - GetDicts, [390](#)
 - GetInstance, [390](#)
 - Global, [390](#)
 - LoadResourcesFiles, [391](#)
 - Locate, [391](#)
 - operator<=, [391](#)
 - Prepend, [391](#)
- gdcmm::GroupDict, [391](#)
 - ~GroupDict, [392](#)
 - Add, [392](#)
 - GetAbbreviation, [392](#)
 - GetName, [392](#)
 - GroupDict, [392](#)
 - GroupStringVector, [392](#)
 - Insert, [392](#)
 - operator<=, [393](#)
 - Size, [393](#)
- gdcmm::IOD, [443](#)
 - AddIODEntry, [444](#)
 - Clear, [444](#)
 - GetIODEntry, [444](#)
 - GetNumberOfIODs, [444](#)
 - GetTypeFromTag, [444](#)
 - IOD, [443](#)
 - MapIODEntry, [443](#)
 - operator<=, [444](#)
 - SizeType, [443](#)
- gdcmm::IODEntry, [444](#)

- GetIE, 445
- GetName, 445
- GetRef, 445
- GetUsage, 445
- GetUsageType, 446
- IODEntry, 445
- operator<<, 446
- SetIE, 446
- SetName, 446
- SetRef, 446
- SetUsage, 446
- gdcmm::IODs, 446
 - AddIOD, 447
 - Begin, 447
 - Clear, 447
 - End, 447
 - GetIOD, 447
 - IODMapType, 447
 - IODMapTypeConstIterator, 447
 - IODName, 447
 - IODs, 447
 - operator<<, 447
- gdcmm::IPPSorter, 447
 - ~IPPSorter, 449
 - ComputeZSpacing, 451
 - DirCosTolerance, 451
 - GetDirectionCosinesTolerance, 449
 - GetZSpacing, 449
 - GetZSpacingTolerance, 450
 - IPPSorter, 449
 - SetComputeZSpacing, 450
 - SetDirectionCosinesTolerance, 450
 - SetZSpacingTolerance, 450
 - Sort, 450
 - ZSpacing, 451
 - ZTolerance, 451
- gdcmm::IconImageFilter, 393
 - ~IconImageFilter, 394
 - Extract, 394
 - ExtractIconImages, 394
 - ExtractVeprolIconImages, 394
 - GetFile, 394
 - GetIconImage, 394
 - GetNumberOfIconImages, 395
 - IconImageFilter, 394
 - SetFile, 395
- gdcmm::IconImageGenerator, 395
 - ~IconImageGenerator, 396
 - AutoPixelMinMax, 396
 - ConvertRGBToPaletteColor, 396
 - Generate, 396
 - GetIconImage, 396
 - GetPixmap, 397
 - IconImageGenerator, 396
 - SetOutputDimensions, 397
 - SetOutsideValuePixel, 397
 - SetPixelMinMax, 397
 - SetPixmap, 397
- gdcmm::Image, 398
 - ~Image, 400
 - GetDirectionCosines, 400
 - GetIntercept, 400
 - GetOrigin, 400
 - GetSlope, 401
 - GetSpacing, 401
 - Image, 400
 - Print, 401
 - SetDirectionCosines, 401
 - SetIntercept, 401
 - SetOrigin, 401
 - SetSlope, 401
 - SetSpacing, 401
- gdcmm::ImageApplyLookupTable, 402
 - ~ImageApplyLookupTable, 404
 - Apply, 404
 - ImageApplyLookupTable, 404
- gdcmm::ImageChangePhotometricInterpretation, 404
 - ~ImageChangePhotometricInterpretation, 407
 - Change, 407
 - ChangeMonochrome, 407
 - GetPhotometricInterpretation, 407
 - ImageChangePhotometricInterpretation, 407
 - RGB2YBR, 407
 - SetPhotometricInterpretation, 408
 - YBR2RGB, 408
- gdcmm::ImageChangePlanarConfiguration, 408
 - ~ImageChangePlanarConfiguration, 410
 - Change, 410
 - GetPlanarConfiguration, 410
 - ImageChangePlanarConfiguration, 410
 - RGBPixelsToRGBPlanes, 410
 - RGBPlanesToRGBPixels, 410, 411
 - SetPlanarConfiguration, 411
- gdcmm::ImageChangeTransferSyntax, 411
 - ~ImageChangeTransferSyntax, 413
 - Change, 413
 - GetTransferSyntax, 413
 - ImageChangeTransferSyntax, 413
 - SetCompressIconImage, 413
 - SetForce, 414
 - SetTransferSyntax, 414
 - SetUserCodec, 414
 - TryJPEG2000Codec, 414
 - TryJPEGCodec, 414
 - TryJPEGLSCodec, 414
 - TryRAWCodec, 414
 - TryRLECodec, 414
- gdcmm::ImageCodec, 415

- ~ImageCodec, [417](#)
- CanCode, [417](#)
- CanDecode, [417](#)
- Decode, [417](#)
- DecodeByStreams, [417](#)
- Dimensions, [419](#)
- DoByteSwap, [418](#)
- DoInvertMonochrome, [418](#)
- DoOverlayCleanup, [418](#)
- DoPaddedCompositePixelCode, [418](#)
- DoPlanarConfiguration, [418](#)
- DoSimpleCopy, [418](#)
- DoYBR, [418](#)
- GetDimensions, [418](#)
- GetHeaderInfo, [418](#)
- GetLUT, [418](#)
- GetLossyFlag, [418](#)
- GetNeedByteSwap, [418](#)
- GetNumberOfDimensions, [418](#)
- GetPhotometricInterpretation, [418](#)
- GetPixelFormat, [418](#)
- GetPlanarConfiguration, [418](#)
- ImageChangePhotometricInterpretation, [419](#)
- ImageCodec, [417](#)
- IsLossy, [418](#)
- IsValid, [418](#)
- LUT, [420](#)
- LUTPtr, [417](#)
- LossyFlag, [420](#)
- NeedByteSwap, [420](#)
- NeedOverlayCleanup, [420](#)
- NumberOfDimensions, [420](#)
- PF, [420](#)
- PI, [420](#)
- PlanarConfiguration, [420](#)
- RequestPaddedCompositePixelCode, [420](#)
- RequestPlanarConfiguration, [420](#)
- SetDimensions, [419](#)
- SetLUT, [419](#)
- SetLossyFlag, [419](#)
- SetNeedByteSwap, [419](#)
- SetNeedOverlayCleanup, [419](#)
- SetNumberOfDimensions, [419](#)
- SetPhotometricInterpretation, [419](#)
- SetPixelFormat, [419](#)
- SetPlanarConfiguration, [419](#)
- gdcm::ImageConverter, [420](#)
 - ~ImageConverter, [421](#)
 - Convert, [421](#)
 - GetOutput, [421](#)
 - ImageConverter, [421](#)
 - SetInput, [421](#)
- gdcm::ImageFragmentSplitter, [421](#)
 - ~ImageFragmentSplitter, [423](#)
- GetFragmentSizeMax, [423](#)
- ImageFragmentSplitter, [423](#)
- SetForce, [423](#)
- SetFragmentSizeMax, [423](#)
- Split, [423](#)
- gdcm::ImageHelper, [423](#)
 - ComputeSpacingFromImagePositionPatient, [424](#)
 - GetDimensionsValue, [424](#)
 - GetDirectionCosinesFromDataSet, [425](#)
 - GetDirectionCosinesValue, [425](#)
 - GetForcePixelSpacing, [425](#)
 - GetForceRescaleInterceptSlope, [425](#)
 - GetLUT, [425](#)
 - GetOriginValue, [425](#)
 - GetPhotometricInterpretationValue, [425](#)
 - GetPixelFormatValue, [425](#)
 - GetPlanarConfigurationValue, [425](#)
 - GetPointerFromElement, [425](#)
 - GetRescaleInterceptSlopeValue, [425](#)
 - GetSpacingTagFromMediaStorage, [425](#)
 - GetSpacingValue, [426](#)
 - GetZSpacingTagFromMediaStorage, [426](#)
 - SetDimensionsValue, [426](#)
 - SetDirectionCosinesValue, [426](#)
 - SetForcePixelSpacing, [426](#)
 - SetForceRescaleInterceptSlope, [426](#)
 - SetOriginValue, [426](#)
 - SetRescaleInterceptSlopeValue, [426](#)
 - SetSpacingValue, [426](#)
- gdcm::ImageReader, [426](#)
 - ~ImageReader, [429](#)
 - GetImage, [429](#)
 - ImageReader, [429](#)
 - Read, [429](#)
 - ReadACRNEMAImage, [430](#)
 - ReadImage, [430](#)
- gdcm::ImageRegionReader, [430](#)
 - ~ImageRegionReader, [432](#)
 - ComputeBufferLength, [432](#)
 - GetRegion, [432](#)
 - ImageRegionReader, [432](#)
 - Read, [432](#)
 - ReadInformation, [432](#)
 - ReadIntoBuffer, [432](#)
 - SetRegion, [433](#)
- gdcm::ImageToImageFilter, [433](#)
 - ~ImageToImageFilter, [435](#)
 - GetInput, [435](#)
 - GetOutput, [435](#)
 - ImageToImageFilter, [435](#)
- gdcm::ImageWriter, [435](#)
 - ~ImageWriter, [437](#)
 - GetImage, [437](#)
 - ImageWriter, [437](#)

- Write, [437](#)
- gdcmm::ImplicitDataElement, [440](#)
 - GetLength, [441](#)
 - Read, [441](#)
 - ReadPreValue, [441](#)
 - ReadValue, [441](#)
 - ReadWithLength, [441](#)
 - Write, [441](#)
- gdcmm::InitializeEvent, [441](#)
- gdcmm::Item, [451](#)
 - Clear, [453](#)
 - FindDataElement, [453](#)
 - GetDataElement, [453](#)
 - GetLength, [453](#)
 - GetNestedDataSet, [453](#), [454](#)
 - InsertDataElement, [454](#)
 - Item, [453](#)
 - operator<, [454](#)
 - Read, [454](#)
 - SetNestedDataSet, [454](#)
 - Write, [454](#)
- gdcmm::IterationEvent, [454](#)
- gdcmm::JPEG12Codec, [456](#)
 - ~JPEG12Codec, [457](#)
 - DecodeByStreams, [457](#)
 - GetHeaderInfo, [457](#)
 - InternalCode, [457](#)
 - IsStateSuspension, [457](#)
 - JPEG12Codec, [457](#)
- gdcmm::JPEG16Codec, [458](#)
 - ~JPEG16Codec, [459](#)
 - DecodeByStreams, [459](#)
 - GetHeaderInfo, [459](#)
 - InternalCode, [459](#)
 - IsStateSuspension, [459](#)
 - JPEG16Codec, [459](#)
- gdcmm::JPEG2000Codec, [460](#)
 - ~JPEG2000Codec, [461](#)
 - Bitmap, [462](#)
 - CanCode, [461](#)
 - CanDecode, [461](#)
 - Code, [462](#)
 - Decode, [462](#)
 - DecodeByStreams, [462](#)
 - DecodeExtent, [462](#)
 - GetHeaderInfo, [462](#)
 - GetQuality, [462](#)
 - GetRate, [462](#)
 - ImageRegionReader, [462](#)
 - JPEG2000Codec, [461](#)
 - SetNumberOfResolutions, [462](#)
 - SetQuality, [462](#)
 - SetRate, [462](#)
 - SetReversible, [462](#)
 - SetTitleSize, [462](#)
- gdcmm::JPEG8Codec, [463](#)
 - ~JPEG8Codec, [464](#)
 - DecodeByStreams, [464](#)
 - GetHeaderInfo, [464](#)
 - InternalCode, [464](#)
 - IsStateSuspension, [464](#)
 - JPEG8Codec, [464](#)
- gdcmm::JPEGCodec, [465](#)
 - ~JPEGCodec, [467](#)
 - BitSample, [468](#)
 - CanCode, [467](#)
 - CanDecode, [467](#)
 - Code, [467](#)
 - ComputeOffsetTable, [467](#)
 - Decode, [467](#)
 - DecodeByStreams, [467](#)
 - DecodeExtent, [467](#)
 - GetHeaderInfo, [468](#)
 - GetLossless, [468](#)
 - GetQuality, [468](#)
 - ImageRegionReader, [468](#)
 - IsStateSuspension, [468](#)
 - IsValid, [468](#)
 - JPEGCodec, [467](#)
 - Lossless, [468](#)
 - Quality, [468](#)
 - SetBitSample, [468](#)
 - SetLossless, [468](#)
 - SetPixelFormat, [468](#)
 - SetQuality, [468](#)
- gdcmm::JPEGLSCodec, [469](#)
 - ~JPEGLSCodec, [471](#)
 - CanCode, [471](#)
 - CanDecode, [471](#)
 - Code, [471](#)
 - Decode, [471](#)
 - DecodeExtent, [471](#)
 - GetBufferLength, [471](#)
 - GetHeaderInfo, [471](#)
 - GetLossless, [471](#)
 - ImageRegionReader, [472](#)
 - JPEGLSCodec, [471](#)
 - SetBufferLength, [471](#)
 - SetLossless, [471](#)
 - SetLossyError, [471](#)
- gdcmm::KAKADUCodec, [472](#)
 - ~KAKADUCodec, [473](#)
 - CanCode, [473](#)
 - CanDecode, [473](#)
 - Code, [473](#)
 - Decode, [474](#)
 - KAKADUCodec, [473](#)
- gdcmm::LO, [474](#)

- const_iterator, [476](#)
- const_reference, [476](#)
- const_reverse_iterator, [476](#)
- difference_type, [476](#)
- IsValid, [476](#)
- iterator, [476](#)
- LO, [476](#)
- pointer, [476](#)
- reference, [476](#)
- reverse_iterator, [476](#)
- size_type, [476](#)
- Superclass, [476](#)
- value_type, [476](#)
- gdcmm::LookupTable, [476](#)
 - ~LookupTable, [479](#)
 - Allocate, [479](#)
 - BitSample, [480](#)
 - Clear, [479](#)
 - Decode, [479](#)
 - GetBitSample, [479](#)
 - GetBufferAsRGBA, [479](#)
 - GetLUT, [479](#)
 - GetLUTDescriptor, [479](#)
 - GetLUTLength, [479](#)
 - GetPointer, [480](#)
 - IncompleteLUT, [480](#)
 - InitializeBlueLUT, [480](#)
 - InitializeGreenLUT, [480](#)
 - InitializeLUT, [480](#)
 - InitializeRedLUT, [480](#)
 - Initialized, [480](#)
 - Internal, [481](#)
 - LookupTable, [479](#)
 - LookupTableType, [479](#)
 - Print, [480](#)
 - SetBlueLUT, [480](#)
 - SetGreenLUT, [480](#)
 - SetLUT, [480](#)
 - SetRedLUT, [480](#)
 - WriteBufferAsRGBA, [480](#)
- gdcmm::MD5, [485](#)
 - ~MD5, [486](#)
 - Compute, [486](#)
 - ComputeFile, [486](#)
 - MD5, [486](#)
- gdcmm::Macro, [481](#)
 - AddMacroEntry, [482](#)
 - ArrayIncludeMacrosType, [482](#)
 - Clear, [482](#)
 - FindMacroEntry, [482](#)
 - GetMacroEntry, [482](#)
 - GetName, [482](#)
 - Macro, [482](#)
 - MapModuleEntry, [482](#)
 - operator<<, [482](#)
 - SetName, [482](#)
 - Verify, [482](#)
- gdcmm::Macros, [483](#)
 - AddMacro, [484](#)
 - Clear, [484](#)
 - GetMacro, [484](#)
 - IsEmpty, [484](#)
 - Macros, [484](#)
 - ModuleMapType, [484](#)
 - operator<<, [484](#)
- gdcmm::MediaStorage, [486](#)
 - GetMSString, [492](#)
 - GetMSType, [492](#)
 - GetModality, [491](#)
 - GetModalityDimension, [491](#)
 - GetNumberOfMSString, [492](#)
 - GetNumberOfMSType, [492](#)
 - GetNumberOfModality, [492](#)
 - GetString, [492](#)
 - GuessFromModality, [492](#)
 - IsImage, [492](#)
 - IsUndefined, [492](#)
 - MSType, [489](#)
 - MediaStorage, [491](#)
 - ObjectType, [491](#)
 - operator MSType, [492](#)
 - operator<<, [493](#)
 - SetFromDataSet, [493](#)
 - SetFromFile, [493](#)
 - SetFromHeader, [493](#)
 - SetFromModality, [493](#)
 - SetFromSourceImageSequence, [493](#)
- gdcmm::MemberCommand
 - ~MemberCommand, [496](#)
 - Execute, [496](#)
 - m_ConstMemberFunction, [497](#)
 - m_MemberFunction, [497](#)
 - m_This, [497](#)
 - MemberCommand, [496](#)
 - New, [496](#)
 - Self, [495](#)
 - SetCallbackFunction, [496](#)
 - TConstMemberFunctionPointer, [495](#)
 - TMemberFunctionPointer, [496](#)
- gdcmm::MemberCommand< T >, [493](#)
- gdcmm::MeshPrimitive, [497](#)
 - ~MeshPrimitive, [500](#)
 - AddPrimitiveData, [500](#)
 - GetMPType, [500](#)
 - GetMPTypeString, [500](#)
 - GetNumberOfPrimitivesData, [500](#)
 - GetPrimitiveData, [500](#)
 - GetPrimitiveType, [500](#)

- GetPrimitivesData, 500
- MPTType, 499
- MeshPrimitive, 500
- PrimitiveData, 500
- PrimitiveType, 500
- PrimitivesData, 499
- SetPrimitiveData, 500
- SetPrimitiveType, 500
- SetPrimitivesData, 500
- gdcmm::ModifiedEvent, 500
- gdcmm::Module, 502
 - AddMacro, 503
 - AddModuleEntry, 503
 - ArrayIncludeMacrosType, 503
 - Clear, 503
 - FindModuleEntryInMacros, 503
 - GetModuleEntryInMacros, 503
 - GetName, 503
 - MapModuleEntry, 503
 - Module, 503
 - operator<<, 503
 - SetName, 503
 - Verify, 503
- gdcmm::ModuleEntry, 504
 - ~ModuleEntry, 505
 - DataElementType, 506
 - Description, 505
 - DescriptionField, 506
 - GetDescription, 506
 - GetName, 506
 - GetType, 506
 - ModuleEntry, 505
 - Name, 506
 - operator<<, 506
 - SetDescription, 506
 - SetName, 506
 - SetType, 506
- gdcmm::Modules, 506
 - AddModule, 507
 - Clear, 507
 - GetModule, 507
 - IsEmpty, 507
 - ModuleMapType, 507
 - Modules, 507
 - operator<<, 508
- gdcmm::MovePatientRootQuery, 508
 - GetAbstractSyntaxUID, 509
 - GetTagListByLevel, 509
 - InitializeDataSet, 509
 - MovePatientRootQuery, 509
 - QueryFactory, 510
 - ValidateQuery, 509
- gdcmm::MoveStudyRootQuery, 510
 - GetAbstractSyntaxUID, 511
 - GetTagListByLevel, 511
 - InitializeDataSet, 512
 - MoveStudyRootQuery, 511
 - QueryFactory, 512
 - ValidateQuery, 512
- gdcmm::NestedModuleEntries, 512
 - AddModuleEntry, 514
 - GetModuleEntry, 514
 - GetNumberOfModuleEntries, 514
 - NestedModuleEntries, 514
 - operator<<, 514
 - SizeType, 514
- gdcmm::NoEvent, 514
- gdcmm::Object, 515
 - ~Object, 517
 - Object, 517
 - operator<<, 517
 - operator=, 517
 - Print, 517
 - Register, 517
 - SmartPointer, 517
 - UnRegister, 517
- gdcmm::Orientation, 518
 - ~Orientation, 519
 - GetLabel, 519
 - GetMajorAxisFromPatientRelativeDirectionCosine, 519
 - GetObliquityThresholdCosineValue, 519
 - GetType, 519
 - operator<<, 519
 - Orientation, 519
 - OrientationType, 519
 - Print, 519
 - SetObliquityThresholdCosineValue, 519
- gdcmm::Overlay, 520
 - ~Overlay, 523
 - Decode, 523
 - Decompress, 523
 - GetBitPosition, 523
 - GetBitsAllocated, 523
 - GetBuffer, 523
 - GetColumns, 523
 - GetDescription, 523
 - GetGroup, 523
 - GetOrigin, 523
 - GetOverlayData, 523
 - GetOverlayTypeAsString, 524
 - GetOverlayTypeFromString, 524
 - GetRows, 524
 - GetType, 524
 - GetTypeAsEnum, 524
 - GetUnpackBuffer, 524
 - GetUnpackBufferLength, 524
 - GrabOverlayFromPixelData, 524

- IsEmpty, [524](#)
- IsInPixelData, [524](#)
- IsZero, [524](#)
- Overlay, [523](#)
- OverlayType, [522](#)
- Print, [524](#)
- SetBitPosition, [525](#)
- SetBitsAllocated, [525](#)
- SetColumns, [525](#)
- SetDescription, [525](#)
- SetFrameOrigin, [525](#)
- SetGroup, [525](#)
- SetNumberOfFrames, [525](#)
- SetOrigin, [525](#)
- SetOverlay, [525](#)
- SetRows, [525](#)
- SetType, [525](#)
- Update, [526](#)
- gdcmm::PDBElement, [533](#)
 - GetName, [534](#)
 - GetValue, [534](#)
 - NameField, [534](#)
 - operator<<, [534](#)
 - operator==, [534](#)
 - PDBElement, [534](#)
 - SetName, [534](#)
 - SetValue, [534](#)
 - ValueField, [534](#)
- gdcmm::PDBHeader, [535](#)
 - ~PDBHeader, [536](#)
 - FindPDBElementByName, [536](#)
 - GetPDBEEnd, [536](#)
 - GetPDBElementByName, [536](#)
 - GetPDBInfoTag, [536](#)
 - LoadFromDataElement, [536](#)
 - operator<<, [536](#)
 - PDBHeader, [536](#)
 - Print, [536](#)
- gdcmm::PDFCodec, [537](#)
 - ~PDFCodec, [538](#)
 - CanCode, [538](#)
 - CanDecode, [538](#)
 - Decode, [538](#)
 - PDFCodec, [538](#)
- gdcmm::PGXCodec, [541](#)
 - ~PGXCodec, [542](#)
 - CanCode, [542](#)
 - CanDecode, [542](#)
 - GetHeaderInfo, [542](#)
 - PGXCodec, [542](#)
 - Read, [543](#)
 - Write, [543](#)
- gdcmm::PNMCodec, [562](#)
 - ~PNMCodec, [564](#)
 - CanCode, [564](#)
 - CanDecode, [564](#)
 - GetBufferLength, [564](#)
 - GetHeaderInfo, [564](#)
 - PNMCodec, [564](#)
 - Read, [564](#)
 - SetBufferLength, [564](#)
 - Write, [564](#)
- gdcmm::PVRGCodec, [584](#)
 - ~PVRGCodec, [585](#)
 - CanCode, [585](#)
 - CanDecode, [585](#)
 - Code, [585](#)
 - Decode, [585](#)
 - PVRGCodec, [585](#)
- gdcmm::ParseException, [526](#)
 - ~ParseException, [527](#)
 - GetLastElement, [527](#)
 - operator=, [527](#)
 - ParseException, [527](#)
 - SetLastElement, [527](#)
- gdcmm::Parser, [528](#)
 - ~Parser, [529](#)
 - EndElementHandler, [529](#)
 - ErrorType, [529](#)
 - GetBuffer, [529](#)
 - GetCurrentByteIndex, [529](#)
 - GetErrorCode, [529](#)
 - GetErrorString, [529](#)
 - GetUserData, [529](#)
 - Parse, [529](#)
 - ParseBuffer, [530](#)
 - Parser, [529](#)
 - Process, [530](#)
 - SetElementHandler, [530](#)
 - SetUserData, [530](#)
 - StartElementHandler, [529](#)
- gdcmm::Patient, [530](#)
 - Patient, [530](#)
- gdcmm::PersonName, [540](#)
 - Component, [540](#)
 - GetMaxLength, [540](#)
 - GetNumberOfComponents, [540](#)
 - MaxLength, [541](#)
 - MaxNumberOfComponents, [541](#)
 - Padding, [541](#)
 - Print, [540](#)
 - Separator, [541](#)
 - SetBlob, [540](#)
 - SetComponents, [540](#)
- gdcmm::PhotometricInterpretation, [543](#)
 - GetPIString, [544](#)
 - GetPIType, [544](#)
 - GetSamplesPerPixel, [545](#)

- GetString, [545](#)
- GetType, [545](#)
- IsLossless, [545](#)
- IsLossy, [545](#)
- IsRetired, [545](#)
- IsSameColorSpace, [545](#)
- operator PType, [545](#)
- operator<<, [545](#)
- PType, [544](#)
- PhotometricInterpretation, [544](#)
- gdcm::PixelFormat, [545](#)
 - ~PixelFormat, [547](#)
 - Bitmap, [550](#)
 - GetBitsAllocated, [547](#)
 - GetBitsStored, [548](#)
 - GetHighBit, [548](#)
 - GetMax, [548](#)
 - GetMin, [548](#)
 - GetPixelRepresentation, [548](#)
 - GetPixelSize, [548](#)
 - GetSamplesPerPixel, [548](#)
 - GetScalarType, [549](#)
 - GetScalarTypeAsString, [549](#)
 - IsValid, [549](#)
 - operator ScalarType, [549](#)
 - operator<<, [550](#)
 - operator==, [549](#)
 - PixelFormat, [547](#)
 - Print, [549](#)
 - ScalarType, [547](#)
 - SetBitsAllocated, [549](#)
 - SetBitsStored, [549](#)
 - SetHighBit, [549](#)
 - SetPixelRepresentation, [549](#)
 - SetSamplesPerPixel, [549](#)
 - SetScalarType, [549](#)
 - Validate, [550](#)
- gdcm::Pixmap, [550](#)
 - ~Pixmap, [552](#)
 - AreOverlaysInPixelData, [552](#)
 - Curves, [553](#)
 - GetCurve, [552](#)
 - GetIconImage, [553](#)
 - GetNumberOfCurves, [553](#)
 - GetNumberOfOverlays, [553](#)
 - GetOverlay, [553](#)
 - Icon, [553](#)
 - Overlays, [553](#)
 - Pixmap, [552](#)
 - Print, [553](#)
 - RemoveOverlay, [553](#)
 - SetIconImage, [553](#)
 - SetNumberOfCurves, [553](#)
 - SetNumberOfOverlays, [553](#)
- gdcm::PixmapReader, [553](#)
 - ~PixmapReader, [556](#)
 - GetPixmap, [556](#)
 - PixelData, [557](#)
 - PixmapReader, [556](#)
 - Read, [556](#)
 - ReadACRNEMAIImage, [556](#)
 - ReadImage, [556](#)
- gdcm::PixmapToPixmapFilter, [557](#)
 - ~PixmapToPixmapFilter, [559](#)
 - GetInput, [559](#)
 - GetOutput, [559](#)
 - GetOutputAsPixmap, [559](#)
 - PixmapToPixmapFilter, [558](#)
- gdcm::PixmapWriter, [559](#)
 - ~PixmapWriter, [561](#)
 - DolconImage, [561](#)
 - GetImage, [561](#)
 - GetPixmap, [561](#)
 - PixelData, [562](#)
 - PixmapWriter, [561](#)
 - PrepareWrite, [561](#)
 - SetImage, [561](#)
 - SetPixmap, [562](#)
 - Write, [562](#)
- gdcm::Preamble, [565](#)
 - ~Preamble, [565](#)
 - Clear, [566](#)
 - Create, [566](#)
 - GetInternal, [566](#)
 - GetLength, [566](#)
 - IsEmpty, [566](#)
 - IsValid, [566](#)
 - operator<<, [566](#)
 - operator=, [566](#)
 - Preamble, [565](#)
 - Print, [566](#)
 - Read, [566](#)
 - Remove, [566](#)
 - Valid, [566](#)
 - Write, [566](#)
- gdcm::PresentationContext, [566](#)
 - AddTransferSyntax, [567](#)
 - GetAbstractSyntax, [567](#)
 - GetNumberOfTransferSyntaxes, [567](#)
 - GetPresentationContextID, [567](#)
 - GetTransferSyntax, [567](#)
 - operator==, [567](#)
 - PresentationContext, [567](#)
 - Print, [567](#)
 - SetAbstractSyntax, [568](#)
 - SetPresentationContextID, [568](#)
 - SizeType, [567](#)
 - TransferSyntaxArrayType, [567](#)

- gdcM::PresentationContextGenerator, 569
 - AddPresentationContext, 570
 - GenerateFromFilenames, 570
 - GenerateFromUID, 570
 - GetDefaultTransferSyntax, 570
 - GetPresentationContexts, 571
 - PresentationContextArrayType, 570
 - PresentationContextGenerator, 570
 - SetDefaultTransferSyntax, 571
 - SetMergeModeToAbstractSyntax, 571
 - SetMergeModeToTransferSyntax, 571
 - SizeType, 570
- gdcM::Printer, 575
 - ~Printer, 577
 - F, 578
 - GetPrintStyle, 577
 - MaxPrintLength, 578
 - Print, 577
 - PrintDataElement, 577
 - PrintDataSet, 577
 - PrintSQ, 577
 - PrintStyle, 578
 - PrintStyles, 577
 - Printer, 577
 - SetColor, 578
 - SetFile, 578
 - SetStyle, 578
- gdcM::PrivateDict, 578
 - ~PrivateDict, 579
 - AddDictEntry, 579
 - Dicts, 579
 - FindDictEntry, 579
 - GetDictEntry, 579
 - IsEmpty, 579
 - LoadDefault, 579
 - operator<<, 579
 - PrintXML, 579
 - PrivateDict, 579
 - RemoveDictEntry, 579
- gdcM::PrivateTag, 580
 - GetOwner, 581
 - operator<, 581
 - operator<<, 581
 - PrivateTag, 581
 - ReadFromCommaSeparatedString, 581
 - SetOwner, 581
- gdcM::ProgressEvent, 581
 - ~ProgressEvent, 583
 - CheckEvent, 583
 - GetEventName, 583
 - GetProgress, 583
 - MakeObject, 583
 - ProgressEvent, 583
 - Self, 583
 - SetProgress, 583
 - Superclass, 583
- gdcM::PythonFilter, 586
 - ~PythonFilter, 586
 - GetFile, 586
 - PythonFilter, 586
 - SetDicts, 586
 - SetFile, 586
 - ToPyObject, 586
 - UseDictAlways, 586
- gdcM::QueryBase, 587
 - ~QueryBase, 588
 - GetAllRequiredTags, 588
 - GetAllTags, 588
 - GetHierarchicalSearchTags, 588
 - GetName, 588
 - GetOptionalTags, 588
 - GetQueryLevel, 588
 - GetRequiredTags, 588
 - GetUniqueTags, 588
- gdcM::QueryFactory, 589
 - GetCharacterFromCurrentLocale, 589
 - ListCharSets, 589
 - ProduceCharacterSetDataElement, 589
 - ProduceQuery, 590
- gdcM::QueryImage, 590
 - GetHierarchicalSearchTags, 591
 - GetName, 591
 - GetOptionalTags, 591
 - GetQueryLevel, 591
 - GetRequiredTags, 592
 - GetUniqueTags, 592
- gdcM::QueryPatient, 592
 - GetHierarchicalSearchTags, 593
 - GetName, 593
 - GetOptionalTags, 593
 - GetQueryLevel, 593
 - GetRequiredTags, 594
 - GetUniqueTags, 594
- gdcM::QuerySeries, 594
 - GetHierarchicalSearchTags, 595
 - GetName, 595
 - GetOptionalTags, 595
 - GetQueryLevel, 595
 - GetRequiredTags, 596
 - GetUniqueTags, 596
- gdcM::QueryStudy, 596
 - GetHierarchicalSearchTags, 597
 - GetName, 597
 - GetOptionalTags, 597
 - GetQueryLevel, 597
 - GetRequiredTags, 598
 - GetUniqueTags, 598
- gdcM::RAWCodec, 598

- ~RAWCodec, 599
- CanCode, 599
- CanDecode, 600
- Code, 600
- Decode, 600
- DecodeByStreams, 600
- DecodeBytes, 600
- GetHeaderInfo, 600
- RAWCodec, 599
- gdcmm::RLECodec, 610
 - ~RLECodec, 612
 - CanCode, 612
 - CanDecode, 612
 - Code, 612
 - Decode, 613
 - DecodeByStreams, 613
 - DecodeExtent, 613
 - GetBufferLength, 613
 - GetHeaderInfo, 613
 - ImageRegionReader, 613
 - RLECodec, 612
 - SetBufferLength, 613
 - SetLength, 613
- gdcmm::Reader, 600
 - ~Reader, 603
 - CanRead, 603
 - F, 605
 - GetFile, 603
 - GetStreamPtr, 604
 - Read, 604
 - ReadDataSet, 604
 - ReadMetaInformation, 604
 - ReadPreamble, 604
 - ReadSelectedTags, 604
 - ReadUpToTag, 604
 - Reader, 603
 - SetFile, 604
 - SetFileName, 604
 - SetStream, 605
 - StreamImageReader, 605
- gdcmm::Region, 605
 - ~Region, 606
 - Area, 606
 - Clone, 606
 - ComputeBoundingBox, 607
 - Empty, 607
 - IsValid, 607
 - Print, 607
 - Region, 606
- gdcmm::Rescaler, 607
 - ~Rescaler, 609
 - ComputeInterceptSlopePixelType, 609
 - ComputePixelTypeFromMinMax, 609
 - GetIntercept, 609
 - GetSlope, 609
 - InverseRescale, 609
 - InverseRescaleFunctionIntoBestFit, 609
 - Rescale, 609
 - RescaleFunctionIntoBestFit, 609
 - Rescaler, 609
 - SetIntercept, 609
 - SetMinMaxForPixelType, 609
 - SetPixelFormat, 609
 - SetSlope, 610
 - SetTargetPixelType, 610
 - SetUseTargetPixelType, 610
- gdcmm::SHA1, 652
 - ~SHA1, 652
 - Compute, 652
 - ComputeFile, 652
 - SHA1, 652
- gdcmm::SOPClassUIDToIOD, 661
 - const, 662
 - GetIOD, 662
- gdcmm::Scanner, 615
 - ~Scanner, 619
 - AddPrivateTag, 619
 - AddSkipTag, 619
 - AddTag, 619
 - Begin, 619
 - ClearSkipTags, 619
 - ClearTags, 619
 - ConstIterator, 618
 - End, 619
 - GetAllFilenamesFromTagToValue, 619
 - GetFilenameFromTagToValue, 619
 - GetFilenames, 619
 - GetKeys, 619
 - GetMapping, 620
 - GetMappingFromTagToValue, 620
 - GetMappings, 620
 - GetOrderedValues, 620
 - GetValue, 620
 - GetValues, 620
 - IsKey, 620
 - MappingType, 618
 - New, 621
 - operator<<, 621
 - Print, 621
 - ProcessPublicTag, 621
 - Scan, 621
 - Scanner, 619
 - TagToValue, 618
 - TagToValueValueType, 618
 - ValueType, 619
- gdcmm::Scanner::Itstr, 481
 - operator(), 481
- gdcmm::Segment, 621

- ~Segment, [624](#)
- ALGOType, [624](#)
- AddSurface, [624](#)
- AnatomicRegion, [625](#)
- GetALGOType, [624](#)
- GetALGOTypeString, [624](#)
- GetAnatomicRegion, [624](#)
- GetPropertyCategory, [624](#)
- GetPropertyType, [624](#)
- GetSegmentAlgorithmName, [624](#)
- GetSegmentAlgorithmType, [624](#)
- GetSegmentDescription, [624](#)
- GetSegmentLabel, [624](#)
- GetSegmentNumber, [624](#)
- GetSurface, [624](#)
- GetSurfaceCount, [624](#)
- GetSurfaces, [625](#)
- PropertyCategory, [625](#)
- PropertyType, [625](#)
- Segment, [624](#)
- SegmentAlgorithmName, [625](#)
- SegmentAlgorithmType, [625](#)
- SegmentDescription, [625](#)
- SegmentLabel, [625](#)
- SegmentNumber, [625](#)
- SetAnatomicRegion, [625](#)
- SetPropertyCategory, [625](#)
- SetPropertyType, [625](#)
- SetSegmentAlgorithmName, [625](#)
- SetSegmentAlgorithmType, [625](#)
- SetSegmentDescription, [625](#)
- SetSegmentLabel, [625](#)
- SetSegmentNumber, [625](#)
- SetSurfaceCount, [625](#)
- SurfaceCount, [625](#)
- SurfaceVector, [624](#)
- Surfaces, [625](#)
- gdcmm::SegmentHelper, [130](#)
- gdcmm::SegmentHelper::BasicCodedEntry, [200](#)
 - BasicCodedEntry, [202](#)
 - CM, [202](#)
 - CSD, [202](#)
 - CSV, [202](#)
 - CV, [202](#)
 - IsEmpty, [202](#)
- gdcmm::SegmentReader, [627](#)
 - ~SegmentReader, [629](#)
 - GetSegments, [629](#)
 - Read, [630](#)
 - ReadSegment, [630](#)
 - ReadSegments, [630](#)
 - SegmentMap, [629](#)
 - SegmentReader, [629](#)
 - SegmentVector, [629](#)
 - Segments, [630](#)
 - gdcmm::SegmentWriter, [630](#)
 - ~SegmentWriter, [632](#)
 - AddSegment, [632](#)
 - GetNumberOfSegments, [632](#)
 - GetSegment, [632](#)
 - GetSegments, [632](#)
 - PrepareWrite, [632](#)
 - SegmentVector, [632](#)
 - SegmentWriter, [632](#)
 - Segments, [632](#)
 - SetNumberOfSegments, [632](#)
 - SetSegments, [632](#)
 - Write, [632](#)
 - gdcmm::SegmentedPaletteColorLookupTable, [626](#)
 - ~SegmentedPaletteColorLookupTable, [627](#)
 - Print, [627](#)
 - SegmentedPaletteColorLookupTable, [627](#)
 - SetLUT, [627](#)
 - gdcmm::SequenceOfFragments, [632](#)
 - AddFragment, [635](#)
 - Begin, [635](#)
 - Clear, [635](#)
 - ComputeByteLength, [635](#)
 - ComputeLength, [635](#)
 - ConstIterator, [635](#)
 - End, [635](#)
 - FragmentVector, [635](#)
 - GetBuffer, [635](#)
 - GetFragBuffer, [635](#)
 - GetFragment, [635](#)
 - GetLength, [636](#)
 - GetNumberOfFragments, [636](#)
 - GetTable, [636](#)
 - Iterator, [635](#)
 - New, [636](#)
 - operator==, [636](#)
 - Print, [636](#)
 - Read, [636](#)
 - ReadPreValue, [636](#)
 - ReadValue, [636](#)
 - SequenceOfFragments, [635](#)
 - SetLength, [636](#)
 - SizeType, [635](#)
 - Write, [637](#)
 - WriteBuffer, [637](#)
 - gdcmm::SequenceOfItems, [637](#)
 - AddItem, [640](#)
 - Begin, [640](#)
 - Clear, [640](#)
 - ComputeLength, [640](#)
 - ConstIterator, [640](#)
 - End, [640](#)
 - FindDataElement, [641](#)

- GetItem, [641](#)
- GetLength, [641](#)
- GetNumberOfItems, [641](#)
- IsUndefinedLength, [641](#)
- ItemVector, [640](#)
- Items, [642](#)
- Iterator, [640](#)
- New, [641](#)
- operator=, [641](#)
- operator==, [641](#)
- Print, [641](#)
- Read, [641](#)
- SequenceLengthField, [642](#)
- SequenceOfItems, [640](#)
- SetLength, [642](#)
- SetLengthToUndefined, [642](#)
- SetNumberOfItems, [642](#)
- SizeType, [640](#)
- Write, [642](#)
- gdcmm::SerieHelper, [643](#)
 - ~SerieHelper, [644](#)
 - AddFile, [644](#)
 - AddFileName, [645](#)
 - AddRestriction, [645](#)
 - Clear, [645](#)
 - CreateDefaultUniqueSeriesIdentifier, [645](#)
 - CreateUniqueSeriesIdentifier, [645](#)
 - FileNameOrdering, [645](#)
 - GetFirstSingleSerieUIDFileSet, [645](#)
 - GetNextSingleSerieUIDFileSet, [645](#)
 - ImagePositionPatientOrdering, [645](#)
 - ItFileSetHt, [645](#)
 - OrderFileList, [645](#)
 - SerieHelper, [644](#)
 - SerieRestrictions, [644](#)
 - SetDirectory, [645](#)
 - SetLoadMode, [645](#)
 - SetUseSeriesDetails, [645](#)
 - SingleSerieUIDFileSetHT, [645](#)
 - SingleSerieUIDFileSetmap, [644](#)
 - UserOrdering, [645](#)
- gdcmm::SerieHelper::Rule, [614](#)
 - elem, [615](#)
 - group, [615](#)
 - op, [615](#)
 - value, [615](#)
- gdcmm::Series, [645](#)
 - Series, [646](#)
- gdcmm::ServiceClassUser, [647](#)
 - ~ServiceClassUser, [649](#)
 - GetAETitle, [649](#)
 - GetCalledAETitle, [649](#)
 - GetTimeout, [649](#)
 - InitializeConnection, [649](#)
 - IsPresentationContextAccepted, [650](#)
 - SendEcho, [650](#)
 - SendFind, [650](#)
 - SendMove, [650](#)
 - SendStore, [650](#)
 - ServiceClassUser, [649](#)
 - SetAETitle, [650](#)
 - SetCalledAETitle, [650](#)
 - SetHostname, [651](#)
 - SetPort, [651](#)
 - SetPortSCP, [651](#)
 - SetPresentationContexts, [651](#)
 - SetTimeout, [651](#)
 - StartAssociation, [651](#)
 - StopAssociation, [651](#)
- gdcmm::SimpleMemberCommand
 - ~SimpleMemberCommand, [655](#)
 - Execute, [655](#)
 - m_MemberFunction, [656](#)
 - m_This, [656](#)
 - New, [656](#)
 - Self, [655](#)
 - SetCallbackFunction, [656](#)
 - SimpleMemberCommand, [655](#)
 - TMemberFunctionPointer, [655](#)
- gdcmm::SimpleMemberCommand< T >, [653](#)
- gdcmm::SimpleSubjectWatcher, [656](#)
 - ~SimpleSubjectWatcher, [657](#)
 - EndFilter, [657](#)
 - ShowAbort, [657](#)
 - ShowAnonymization, [657](#)
 - ShowData, [657](#)
 - ShowDataSet, [657](#)
 - ShowIteration, [657](#)
 - ShowProgress, [657](#)
 - SimpleSubjectWatcher, [657](#)
 - StartFilter, [657](#)
 - TestAbortOff, [657](#)
 - TestAbortOn, [657](#)
- gdcmm::SmartPointer
 - ~SmartPointer, [659](#)
 - GetPointer, [660](#)
 - operator ObjectType *, [660](#)
 - operator*, [660](#)
 - operator->, [660](#)
 - operator=, [660](#)
 - SmartPointer, [659](#)
- gdcmm::SmartPointer< ObjectType >, [658](#)
- gdcmm::Sorter, [662](#)
 - ~Sorter, [665](#)
 - AddSelect, [665](#)
 - FileNames, [666](#)
 - GetFileNames, [665](#)
 - operator<<, [666](#)

- Print, [665](#)
- Selection, [666](#)
- SelectionMap, [664](#)
- SetSortFunction, [665](#)
- Sort, [665](#)
- SortFunc, [666](#)
- SortFunction, [664](#)
- Sorter, [665](#)
- StableSort, [665](#)
- gdcmm::Spacing, [666](#)
 - ~Spacing, [667](#)
 - ComputePixelAspectRatioFromPixelSpacing, [667](#)
 - Spacing, [667](#)
 - SpacingType, [667](#)
- gdcmm::Spectroscopy, [668](#)
 - Spectroscopy, [668](#)
- gdcmm::SplitMosaicFilter, [668](#)
 - ~SplitMosaicFilter, [669](#)
 - ComputeMOSAICDimensions, [669](#)
 - GetFile, [669](#)
 - GetImage, [669](#)
 - SetFile, [669](#)
 - SetImage, [669](#)
 - Split, [669](#)
 - SplitMosaicFilter, [669](#)
- gdcmm::StartEvent, [669](#)
- gdcmm::StreamImageReader, [671](#)
 - ~StreamImageReader, [672](#)
 - CanReadImage, [672](#)
 - DefinePixelExtent, [672](#)
 - DefineProperBufferLength, [673](#)
 - GetDimensionsValueForResolution, [673](#)
 - GetFile, [673](#)
 - Read, [673](#)
 - ReadImageInformation, [673](#)
 - SetFileName, [673](#)
 - SetStream, [674](#)
 - StreamImageReader, [672](#)
- gdcmm::StreamImageWriter, [674](#)
 - ~StreamImageWriter, [676](#)
 - CanWriteFile, [677](#)
 - DefinePixelExtent, [677](#)
 - DefineProperBufferLength, [677](#)
 - mElementOffsets, [678](#)
 - mElementOffsets1, [678](#)
 - mWriter, [679](#)
 - mXMax, [679](#)
 - mXMin, [679](#)
 - mYMax, [679](#)
 - mYMin, [679](#)
 - mZMax, [679](#)
 - mZMin, [679](#)
 - mSPFile, [679](#)
 - SetFile, [677](#)
 - SetFileName, [677](#)
 - SetStream, [677](#)
 - StreamImageWriter, [676](#)
 - Write, [677](#)
 - WriteImageInformation, [678](#)
 - WriteImageSubregionRAW, [678](#)
 - WriteRawHeader, [678](#)
- gdcmm::String
 - const_iterator, [681](#)
 - const_reference, [681](#)
 - const_reverse_iterator, [681](#)
 - difference_type, [681](#)
 - IsValid, [682](#)
 - iterator, [681](#)
 - operator const char *, [682](#)
 - pointer, [681](#)
 - reference, [681](#)
 - reverse_iterator, [681](#)
 - size_type, [681](#)
 - String, [682](#)
 - Trim, [682](#)
 - Truncate, [682](#)
 - value_type, [681](#)
- gdcmm::String< TDelimiter, TMaxLength, TPadChar >, [679](#)
- gdcmm::StringFilter, [683](#)
 - ~StringFilter, [683](#)
 - ExecuteQuery, [683](#), [684](#)
 - FromString, [684](#)
 - GetFile, [684](#)
 - SetDicts, [684](#)
 - SetFile, [684](#)
 - StringFilter, [683](#)
 - ToString, [684](#)
 - ToStringPair, [684](#)
 - UseDictAlways, [685](#)
- gdcmm::Study, [685](#)
 - Study, [685](#)
- gdcmm::Subject, [685](#)
 - ~Subject, [687](#)
 - AddObserver, [687](#)
 - GetCommand, [687](#)
 - HasObserver, [687](#)
 - InvokeEvent, [687](#)
 - RemoveAllObservers, [687](#)
 - RemoveObserver, [687](#)
 - Subject, [687](#)
- gdcmm::Surface, [688](#)
 - ~Surface, [691](#)
 - GetAlgorithmFamily, [691](#)
 - GetAlgorithmName, [691](#)
 - GetAlgorithmVersion, [691](#)
 - GetAxisOfRotation, [691](#)
 - GetCenterOfRotation, [691](#)
 - GetFiniteVolume, [692](#)

- GetManifold, 692
- GetMaximumPointDistance, 692
- GetMeanPointDistance, 692
- GetMeshPrimitive, 692
- GetNumberOfSurfacePoints, 692
- GetNumberOfVectors, 692
- GetPointCoordinatesData, 692
- GetPointPositionAccuracy, 692
- GetPointsBoundingBoxCoordinates, 692
- GetProcessingAlgorithm, 692
- GetRecommendedDisplayCIELabValue, 692
- GetRecommendedDisplayGrayscaleValue, 692
- GetRecommendedPresentationOpacity, 692
- GetRecommendedPresentationType, 692
- GetSTATES, 693
- GetSTATESString, 693
- GetSurfaceComments, 693
- GetSurfaceNumber, 693
- GetSurfaceProcessing, 693
- GetSurfaceProcessingDescription, 693
- GetSurfaceProcessingRatio, 693
- GetVIEWType, 693
- GetVIEWTypeString, 693
- GetVectorAccuracy, 693
- GetVectorCoordinateData, 693
- GetVectorDimensionality, 693
- STATES, 691
- SetAlgorithmFamily, 693
- SetAlgorithmName, 693
- SetAlgorithmVersion, 693
- SetAxisOfRotation, 693
- SetCenterOfRotation, 693
- SetFiniteVolume, 693
- SetManifold, 693
- SetMaximumPointDistance, 693
- SetMeanPointDistance, 693
- SetMeshPrimitive, 693
- SetNumberOfSurfacePoints, 693
- SetNumberOfVectors, 693
- SetPointCoordinatesData, 693
- SetPointPositionAccuracy, 694
- SetPointsBoundingBoxCoordinates, 694
- SetProcessingAlgorithm, 694
- SetRecommendedDisplayCIELabValue, 694
- SetRecommendedDisplayGrayscaleValue, 694
- SetRecommendedPresentationOpacity, 694
- SetRecommendedPresentationType, 694
- SetSurfaceComments, 694
- SetSurfaceNumber, 694
- SetSurfaceProcessing, 694
- SetSurfaceProcessingDescription, 694
- SetSurfaceProcessingRatio, 694
- SetVectorAccuracy, 694
- SetVectorCoordinateData, 694
- SetVectorDimensionality, 694
- Surface, 691
- VIEWType, 691
- gdcmm::SurfaceHelper, 694
 - ColorArray, 695
 - RGBToRecommendedDisplayCIELab, 696, 697
 - RGBToRecommendedDisplayGrayscale, 697
 - RecommendedDisplayCIELabToRGB, 695, 696
- gdcmm::SurfaceReader, 697
 - ~SurfaceReader, 699
 - GetNumberOfSurfaces, 699
 - Read, 699
 - ReadPointMacro, 699
 - ReadSurface, 699
 - ReadSurfaces, 699
 - SurfaceReader, 699
- gdcmm::SurfaceWriter, 700
 - ~SurfaceWriter, 701
 - ComputeNumberOfSurfaces, 701
 - GetNumberOfSurfaces, 701
 - NumberOfSurfaces, 701
 - PrepareWrite, 701
 - PrepareWritePointMacro, 701
 - SetNumberOfSurfaces, 701
 - SurfaceWriter, 701
 - Write, 701
- gdcmm::SwapCode, 701
 - GetIndex, 703
 - GetSwapCodeString, 703
 - operator SwapCode::SwapCodeType, 703
 - operator<<, 703
 - SwapCode, 703
 - SwapCodeType, 702
- gdcmm::SwapperDoOp, 703
 - Swap, 703
 - SwapArray, 703
- gdcmm::SwapperNoOp, 704
 - Swap, 704
 - SwapArray, 704
- gdcmm::System, 704
 - DeleteDirectory, 705
 - EncodeBytes, 705
 - FileExists, 705
 - FilesDirectory, 706
 - FilesSymlink, 706
 - FileSize, 706
 - FileTime, 706
 - FormatDateTime, 706
 - GetCurrentDirectory, 707
 - GetCurrentDateTime, 706
 - GetCurrentModuleFileName, 706
 - GetCurrentProcessFileName, 707
 - GetCurrentResourcesDirectory, 707
 - GetHostName, 707

- GetLastError, [707](#)
- GetLocaleCharset, [707](#)
- GetPermissions, [707](#)
- GetTimezoneOffsetFromUTC, [707](#)
- MakeDirectory, [707](#)
- ParseDateTime, [707](#), [708](#)
- RemoveFile, [708](#)
- SetPermissions, [708](#)
- StrCaseCmp, [708](#)
- StrNCaseCmp, [708](#)
- StrTokR, [708](#)
- gdcmm::Table, [708](#)
 - ~Table, [709](#)
 - GetTableEntry, [709](#)
 - InsertEntry, [709](#)
 - MapTableEntry, [709](#)
 - operator<<, [709](#)
 - Table, [709](#)
- gdcmm::TableEntry, [709](#)
 - ~TableEntry, [710](#)
 - TableEntry, [710](#)
- gdcmm::TableReader, [710](#)
 - ~TableReader, [711](#)
 - CharacterDataHandler, [711](#)
 - EndElement, [711](#)
 - GetDefs, [711](#)
 - GetFilename, [711](#)
 - HandleIOD, [711](#)
 - HandleIODEntry, [711](#)
 - HandleMacro, [711](#)
 - HandleMacroEntry, [711](#)
 - HandleMacroEntryDescription, [711](#)
 - HandleModule, [711](#)
 - HandleModuleEntry, [711](#)
 - HandleModuleEntryDescription, [711](#)
 - HandleModuleInclude, [712](#)
 - Read, [712](#)
 - SetFilename, [712](#)
 - StartElement, [712](#)
 - TableReader, [711](#)
- gdcmm::Tag, [713](#)
 - bytes, [719](#)
 - GetElement, [715](#)
 - GetElementTag, [716](#)
 - GetGroup, [716](#)
 - GetLength, [716](#)
 - GetPrivateCreator, [716](#)
 - IsGroupLength, [716](#)
 - IsGroupXX, [716](#)
 - IsIllegal, [716](#)
 - IsPrivate, [716](#)
 - IsPrivateCreator, [717](#)
 - IsPublic, [717](#)
 - operator<, [717](#)
 - operator<<, [719](#)
 - operator<=, [717](#)
 - operator>>, [719](#)
 - operator=, [717](#)
 - operator==, [717](#)
 - PrintAsPipeSeparatedString, [717](#)
 - Read, [718](#)
 - ReadFromCommaSeparatedString, [718](#)
 - ReadFromPipeSeparatedString, [718](#)
 - SetElement, [718](#)
 - SetElementTag, [718](#)
 - SetGroup, [718](#)
 - SetPrivateCreator, [718](#)
 - Tag, [715](#)
 - tag, [719](#)
 - tags, [719](#)
 - Write, [719](#)
- gdcmm::TagPath, [719](#)
 - ~TagPath, [720](#)
 - ConstructFromString, [720](#)
 - ConstructFromTagList, [720](#)
 - IsValid, [720](#)
 - Print, [720](#)
 - Push, [720](#)
 - TagPath, [720](#)
- gdcmm::Testing, [721](#)
 - ~Testing, [722](#)
 - ComputeFileMD5, [722](#)
 - ComputeMD5, [722](#)
 - GetDataExtraRoot, [722](#)
 - GetDataRoot, [722](#)
 - GetFileName, [723](#)
 - GetFileNames, [723](#)
 - GetLossyFlagFromFile, [723](#)
 - GetMD5DataImage, [723](#)
 - GetMD5DataImages, [723](#)
 - GetMD5FromBrokenFile, [723](#)
 - GetMD5FromFile, [723](#)
 - GetMediaStorageDataFile, [723](#)
 - GetMediaStorageDataFiles, [723](#)
 - GetMediaStorageFromFile, [723](#)
 - GetNumberOfFileNames, [723](#)
 - GetNumberOfMD5DataImages, [723](#)
 - GetNumberOfMediaStorageDataFiles, [723](#)
 - GetPixelSpacingDataRoot, [724](#)
 - GetSelectedTagsOffsetFromFile, [724](#)
 - GetSourceDirectory, [724](#)
 - GetStreamOffsetFromFile, [724](#)
 - GetTempDirectory, [724](#)
 - GetTempDirectoryW, [724](#)
 - GetTempFilename, [724](#)
 - GetTempFilenameW, [724](#)
 - MD5DataImagesType, [722](#)
 - MediaStorageDataFilesType, [722](#)

- Print, [724](#)
- Testing, [722](#)
- gdcmm::Trace, [724](#)
 - ~Trace, [726](#)
 - DebugOff, [726](#)
 - DebugOn, [726](#)
 - ErrorOff, [726](#)
 - ErrorOn, [726](#)
 - GetDebugFlag, [726](#)
 - GetDebugStream, [726](#)
 - GetErrorFlag, [726](#)
 - GetErrorStream, [726](#)
 - GetStream, [726](#)
 - GetWarningFlag, [726](#)
 - GetWarningStream, [726](#)
 - SetDebug, [726](#)
 - SetDebugStream, [726](#)
 - SetError, [726](#)
 - SetErrorStream, [727](#)
 - SetStream, [727](#)
 - SetStreamToFile, [727](#)
 - SetWarning, [727](#)
 - SetWarningStream, [727](#)
 - Trace, [726](#)
 - WarningOff, [727](#)
 - WarningOn, [727](#)
- gdcmm::TransferSyntax, [728](#)
 - CanStoreLossy, [730](#)
 - GetNegociatedType, [730](#)
 - GetString, [730](#)
 - GetSwapCode, [730](#)
 - GetTSString, [730](#)
 - GetTSType, [731](#)
 - IsEncapsulated, [731](#)
 - IsEncoded, [731](#)
 - IsExplicit, [731](#)
 - IsImplicit, [731](#)
 - IsLossless, [731](#)
 - IsLossy, [731](#)
 - IsValid, [731](#)
 - NegociatedType, [729](#)
 - operator TSType, [731](#)
 - operator<<, [731](#)
 - TSType, [729](#)
 - TransferSyntax, [730](#)
- gdcmm::Type, [734](#)
 - GetTypeString, [735](#)
 - GetTypeType, [735](#)
 - operator TypeType, [735](#)
 - operator<<, [736](#)
 - Type, [735](#)
 - TypeType, [735](#)
- gdcmm::UI, [736](#)
 - Internal, [736](#)
 - operator<<, [736](#)
- gdcmm::UIDGenerator, [736](#)
 - Generate, [737](#)
 - GenerateUUID, [737](#)
 - GetGDCMUID, [737](#)
 - GetRoot, [737](#)
 - IsValid, [738](#)
 - SetRoot, [738](#)
 - UIDGenerator, [737](#)
- gdcmm::UIDs, [738](#)
 - GetName, [756](#)
 - GetNumberOfTransferSyntaxStrings, [756](#)
 - GetString, [757](#)
 - GetTransferSyntaxString, [757](#)
 - GetTransferSyntaxStrings, [757](#)
 - GetUIDName, [757](#)
 - GetUIDString, [757](#)
 - operator TSType, [757](#)
 - SetFromUID, [757](#)
 - TSName, [743](#)
 - TSType, [750](#)
 - TransferSyntaxStringsType, [743](#)
- gdcmm::UNExplicitDataElement, [805](#)
 - GetLength, [806](#)
 - Read, [806](#)
 - ReadPreValue, [807](#)
 - ReadValue, [807](#)
 - ReadWithLength, [807](#)
- gdcmm::UNExplicitImplicitDataElement, [807](#)
 - GetLength, [808](#)
 - Read, [808](#)
 - ReadPreValue, [809](#)
 - ReadValue, [809](#)
- gdcmm::Unpacker12Bits, [809](#)
 - Pack, [809](#)
 - Unpack, [809](#)
- gdcmm::Usage, [810](#)
 - GetUsageString, [811](#)
 - GetUsageType, [811](#)
 - operator UsageType, [811](#)
 - operator<<, [811](#)
 - Usage, [811](#)
 - UsageType, [811](#)
- gdcmm::UserEvent, [811](#)
- gdcmm::VL, [819](#)
 - GetLength, [820](#)
 - GetVL16Max, [820](#)
 - GetVL32Max, [820](#)
 - IsOdd, [820](#)
 - IsUndefined, [820](#)
 - operator uint32_t, [820](#)
 - operator<<, [821](#)
 - operator++, [820](#)
 - operator+=, [820](#)

- Read, [820](#)
- Read16, [821](#)
- SetToUndefined, [821](#)
- Type, [820](#)
- VL, [820](#)
- Write, [821](#)
- Write16, [821](#)
- gdcmm::VM, [821](#)
 - Compatible, [824](#)
 - GetIndex, [824](#)
 - GetLength, [824](#)
 - GetNumberOfElementsFromArray, [824](#)
 - GetVMString, [824](#)
 - GetVMType, [824](#)
 - GetVMTypeFromLength, [825](#)
 - IsValid, [825](#)
 - operator VMType, [825](#)
 - operator<<, [825](#)
 - VM, [824](#)
 - VMType, [823](#)
- gdcmm::VMToLength< T >, [825](#)
- gdcmm::VR, [825](#)
 - CanDisplay, [828](#)
 - Compatible, [828](#)
 - GetLength, [828](#), [829](#)
 - GetSize, [829](#)
 - GetSizeof, [829](#)
 - GetVRString, [829](#)
 - GetVRStringFromFile, [829](#)
 - GetVRType, [829](#)
 - GetVRTypeFromFile, [829](#)
 - IsASCII, [829](#)
 - IsASCII2, [829](#)
 - IsBinary, [829](#)
 - IsBinary2, [829](#)
 - IsDual, [829](#)
 - IsSwap, [829](#)
 - IsVRFile, [829](#)
 - IsValid, [829](#)
 - operator VRTYPE, [829](#)
 - operator<<, [830](#)
 - Read, [829](#)
 - VR, [828](#)
 - VRTYPE, [827](#)
 - Write, [829](#)
- gdcmm::VR16ExplicitDataElement, [830](#)
 - GetLength, [831](#)
 - Read, [831](#)
 - ReadPreValue, [832](#)
 - ReadValue, [832](#)
 - ReadWithLength, [832](#)
- gdcmm::VRToEncoding< T >, [832](#)
- gdcmm::VRToType< T >, [832](#)
- gdcmm::VRVLSIZE< 0 >, [833](#)
 - Read, [833](#)
 - Write, [833](#)
- gdcmm::VRVLSIZE< 1 >, [833](#)
 - Read, [833](#)
 - Write, [833](#)
- gdcmm::VRVLSIZE< T >, [833](#)
- gdcmm::Validate, [814](#)
 - ~Validate, [814](#)
 - F, [815](#)
 - GetValidatedFile, [815](#)
 - SetFile, [815](#)
 - V, [815](#)
 - Validate, [814](#)
 - Validation, [815](#)
- gdcmm::Value, [815](#)
 - ~Value, [816](#)
 - Clear, [816](#)
 - GetLength, [816](#)
 - operator==, [817](#)
 - SetLength, [817](#)
 - Value, [816](#)
- gdcmm::ValueIO
 - Read, [817](#)
 - Write, [817](#)
- gdcmm::ValueIO< TDE, TSwap, TType >, [817](#)
- gdcmm::Version, [818](#)
 - ~Version, [818](#)
 - GetBuildVersion, [818](#)
 - GetMajorVersion, [818](#)
 - GetMinorVersion, [818](#)
 - GetVersion, [818](#)
 - operator<<, [819](#)
 - Print, [818](#)
 - Version, [818](#)
- gdcmm::Waveform, [885](#)
 - Waveform, [885](#)
- gdcmm::Writer, [885](#)
 - ~Writer, [889](#)
 - CheckFileMetaInformationOff, [889](#)
 - CheckFileMetaInformationOn, [889](#)
 - GetFile, [889](#)
 - GetStreamPtr, [889](#)
 - Ofstream, [890](#)
 - SetCheckFileMetaInformation, [889](#)
 - SetFile, [889](#)
 - SetFileName, [890](#)
 - SetStream, [890](#)
 - SetWriteDataSetOnly, [890](#)
 - Stream, [890](#)
 - StreamImageWriter, [890](#)
 - Write, [890](#)
 - Writer, [889](#)
- gdcmm::XMLDictReader, [891](#)
 - ~XMLDictReader, [892](#)

- CharacterDataHandler, 892
- EndElement, 892
- GetDict, 892
- HandleDescription, 892
- HandleEntry, 892
- StartElement, 892
- XMLDictReader, 892
- gdcmm::XMLPrivateDictReader, 892
 - ~XMLPrivateDictReader, 894
 - CharacterDataHandler, 894
 - EndElement, 894
 - GetPrivateDict, 894
 - HandleDescription, 894
 - HandleEntry, 894
 - StartElement, 894
 - XMLPrivateDictReader, 894
- gdcmm::ignore_char, 397
 - ignore_char, 398
 - m_char, 398
- gdcmm::network, 124
 - cMaxEventID, 129
 - cMaxStateID, 129
 - EEventID, 128
 - EStateID, 129
 - GetStateIndex, 129
- gdcmm::network::AAAbortPDU, 133
 - AAAbortPDU, 134
 - IsLastFragment, 134
 - Print, 134
 - Read, 134
 - Size, 134
 - Write, 135
- gdcmm::network::AAssociateACPDU, 135
 - AAssociateACPDU, 137
 - AAssociateRQPDU, 137
 - AddPresentationContextAC, 137
 - GetNumberOfPresentationContextAC, 137
 - GetPresentationContextAC, 137
 - GetUserInfo, 137
 - InitFromRQ, 137
 - IsLastFragment, 137
 - Print, 137
 - Read, 137
 - SetCalledAETitle, 137
 - SetCallingAETitle, 137
 - Size, 137
 - SizeType, 137
 - Write, 137
- gdcmm::network::AAssociateRJPDU, 138
 - AAssociateRJPDU, 139
 - IsLastFragment, 139
 - Print, 139
 - Read, 139
 - Size, 139
- Write, 139
- gdcmm::network::AAssociateRQPDU, 139
 - AAssociateACPDU, 143
 - AAssociateRQPDU, 141
 - AddPresentationContext, 141
 - GetCalledAETitle, 142
 - GetCallingAETitle, 142
 - GetNumberOfPresentationContext, 142
 - GetPresentationContext, 142
 - GetPresentationContextByAbstractSyntax, 142
 - GetPresentationContextByID, 142
 - GetPresentationContexts, 142
 - GetReserved43_74, 142
 - IsAETitleValid, 142
 - IsLastFragment, 142
 - PresentationContextArrayType, 141
 - Print, 142
 - Read, 142
 - SetCalledAETitle, 142
 - SetCallingAETitle, 142
 - Size, 142
 - SizeType, 141
 - Write, 142
- gdcmm::network::ARTIMTimer, 160
 - ARTIMTimer, 161
 - GetElapsedTime, 161
 - GetHasExpired, 161
 - GetTimeout, 161
 - SetTimeout, 161
 - Start, 161
 - Stop, 161
- gdcmm::network::AReleaseRPPDU, 157
 - AReleaseRPPDU, 158
 - IsLastFragment, 158
 - Print, 158
 - Read, 158
 - Size, 158
 - Write, 158
- gdcmm::network::AReleaseRQPDU, 158
 - AReleaseRQPDU, 159
 - IsLastFragment, 160
 - Print, 160
 - Read, 160
 - Size, 160
 - Write, 160
- gdcmm::network::AbstractSyntax, 144
 - AbstractSyntax, 145
 - GetAsDataElement, 145
 - GetName, 145
 - operator==, 145
 - Print, 145
 - Read, 145
 - SetName, 145
 - SetNameFromUID, 145

- Size, [145](#)
- Write, [145](#)
- gdcmm::network::ApplicationContext, [154](#)
 - ApplicationContext, [154](#)
 - GetName, [155](#)
 - Print, [155](#)
 - Read, [155](#)
 - SetName, [155](#)
 - Size, [155](#)
 - Write, [155](#)
- gdcmm::network::AsynchronousOperationsWindowSub, [162](#)
 - AsynchronousOperationsWindowSub, [163](#)
 - Print, [163](#)
 - Read, [163](#)
 - Size, [163](#)
 - Write, [163](#)
- gdcmm::network::BaseCompositeMessage, [192](#)
 - ConstructPDV, [194](#)
- gdcmm::network::BasePDU, [194](#)
 - ~BasePDU, [195](#)
 - IsLastFragment, [195](#)
 - Print, [195](#)
 - Read, [195](#)
 - Size, [195](#)
 - Write, [196](#)
- gdcmm::network::CEchoRQ, [226](#)
 - AffectedSOPClassUID, [227](#)
 - ConstructPDV, [227](#)
 - MessageID, [227](#)
- gdcmm::network::CEchoRSP, [227](#)
 - ConstructPDVByDataSet, [228](#)
- gdcmm::network::CFind, [229](#)
- gdcmm::network::CFindCancelRQ, [229](#)
 - ConstructPDVByDataSet, [230](#)
- gdcmm::network::CFindRQ, [230](#)
 - ConstructPDV, [231](#)
- gdcmm::network::CFindRSP, [232](#)
 - ConstructPDVByDataSet, [233](#)
- gdcmm::network::CMoveCancelRq, [233](#)
 - ConstructPDVByDataSet, [234](#)
- gdcmm::network::CMoveRQ, [234](#)
 - ConstructPDV, [235](#)
- gdcmm::network::CMoveRSP, [236](#)
 - ConstructPDVByDataSet, [237](#)
- gdcmm::network::CStoreRQ, [267](#)
 - ConstructPDV, [268](#)
- gdcmm::network::CStoreRSP, [269](#)
 - ConstructPDV, [270](#)
- gdcmm::network::CompositeMessageFactory, [246](#)
 - ConstructCEchoRQ, [247](#)
 - ConstructCFindRQ, [247](#)
 - ConstructCMoveRQ, [247](#)
 - ConstructCStoreRQ, [247](#)
 - ConstructCStoreRSP, [247](#)
 - gdcmm::network::DIMSE, [315](#)
 - CommandTypes, [316](#)
 - gdcmm::network::ImplementationClassUIDSub, [438](#)
 - ImplementationClassUIDSub, [438](#)
 - Print, [438](#)
 - Read, [438](#)
 - Size, [438](#)
 - Write, [438](#)
 - gdcmm::network::ImplementationUIDSub, [438](#)
 - ImplementationUIDSub, [439](#)
 - Write, [439](#)
 - gdcmm::network::ImplementationVersionNameSub, [439](#)
 - ImplementationVersionNameSub, [439](#)
 - Print, [439](#)
 - Read, [439](#)
 - Size, [439](#)
 - Write, [439](#)
 - gdcmm::network::MaximumLengthSub, [484](#)
 - GetMaximumLength, [485](#)
 - MaximumLengthSub, [485](#)
 - Print, [485](#)
 - Read, [485](#)
 - SetMaximumLength, [485](#)
 - Size, [485](#)
 - Write, [485](#)
 - gdcmm::network::PDUFactory, [538](#)
 - ConstructAbortPDU, [539](#)
 - ConstructPDU, [539](#)
 - ConstructReleasePDU, [539](#)
 - CreateCEchoPDU, [539](#)
 - CreateCFindPDU, [539](#)
 - CreateCMovePDU, [539](#)
 - CreateCStoreRQPDU, [539](#)
 - CreateCStoreRSPPDU, [539](#)
 - DetermineEventByPDU, [539](#)
 - GetPDVs, [539](#)
 - gdcmm::network::PDataTFPDU, [530](#)
 - AddPresentationDataValue, [532](#)
 - GetNumberOfPresentationDataValues, [532](#)
 - GetPresentationDataValue, [532](#)
 - IsLastFragment, [532](#)
 - PDataTFPDU, [532](#)
 - Print, [532](#)
 - Read, [532](#)
 - ReadInto, [532](#)
 - Size, [532](#)
 - SizeType, [532](#)
 - Write, [532](#)
 - gdcmm::network::PresentationContextAC, [568](#)
 - GetPresentationContextID, [568](#)
 - GetReason, [568](#)
 - GetTransferSyntax, [568](#)
 - PresentationContextAC, [568](#)

- Print, [568](#)
- Read, [569](#)
- SetPresentationContextID, [569](#)
- SetReason, [569](#)
- SetTransferSyntax, [569](#)
- Size, [569](#)
- Write, [569](#)
- gdcmm::network::PresentationContextRQ, [571](#)
 - AddTransferSyntax, [572](#)
 - GetAbstractSyntax, [572](#)
 - GetNumberOfTransferSyntaxes, [572](#)
 - GetPresentationContextID, [572](#)
 - GetTransferSyntax, [572](#)
 - GetTransferSyntaxes, [572](#)
 - operator==, [572](#)
 - PresentationContextRQ, [572](#)
 - Print, [573](#)
 - Read, [573](#)
 - SetAbstractSyntax, [573](#)
 - SetPresentationContextID, [573](#)
 - Size, [573](#)
 - SizeType, [572](#)
 - Write, [573](#)
- gdcmm::network::PresentationDataValue, [573](#)
 - ConcatenatePDVBlobs, [574](#)
 - GetBlob, [574](#)
 - GetIsCommand, [574](#)
 - GetIsLastFragment, [574](#)
 - GetMessageHeader, [574](#)
 - GetPresentationContextID, [574](#)
 - PresentationDataValue, [574](#)
 - Print, [574](#)
 - Read, [574](#)
 - ReadInto, [574](#)
 - SetBlob, [574](#)
 - SetCommand, [574](#)
 - SetDataSet, [574](#)
 - SetLastFragment, [574](#)
 - SetMessageHeader, [574](#)
 - SetPresentationContextID, [574](#)
 - Size, [575](#)
 - Write, [575](#)
- gdcmm::network::RoleSelectionSub, [613](#)
 - Print, [614](#)
 - Read, [614](#)
 - RoleSelectionSub, [614](#)
 - SetTuple, [614](#)
 - Size, [614](#)
 - Write, [614](#)
- gdcmm::network::SOPClassExtendedNegotiationSub, [660](#)
 - Print, [661](#)
 - Read, [661](#)
 - SOPClassExtendedNegotiationSub, [661](#)
 - SetTuple, [661](#)
 - Size, [661](#)
 - Write, [661](#)
- gdcmm::network::ServiceClassApplicationInformation, [646](#)
 - Print, [646](#)
 - Read, [646](#)
 - ServiceClassApplicationInformation, [646](#)
 - SetTuple, [646](#)
 - Size, [646](#)
 - Write, [647](#)
- gdcmm::network::TableRow, [712](#)
 - ~TableRow, [713](#)
 - TableRow, [713](#)
 - transitions, [713](#)
- gdcmm::network::TransferSyntaxSub, [731](#)
 - GetName, [732](#)
 - operator==, [732](#)
 - Print, [732](#)
 - Read, [732](#)
 - SetName, [732](#)
 - SetNameFromUID, [732](#)
 - Size, [732](#)
 - TransferSyntaxSub, [732](#)
 - Write, [732](#)
- gdcmm::network::Transition, [732](#)
 - ~Transition, [733](#)
 - mAction, [734](#)
 - mEnd, [734](#)
 - MakeNew, [734](#)
 - Transition, [733](#)
- gdcmm::network::ULAction, [757](#)
 - ~ULAction, [759](#)
 - PerformAction, [759](#)
 - ULAction, [759](#)
- gdcmm::network::ULActionAA1, [760](#)
 - PerformAction, [760](#)
- gdcmm::network::ULActionAA2, [761](#)
 - PerformAction, [761](#)
- gdcmm::network::ULActionAA3, [762](#)
 - PerformAction, [763](#)
- gdcmm::network::ULActionAA4, [763](#)
 - PerformAction, [764](#)
- gdcmm::network::ULActionAA5, [764](#)
 - PerformAction, [765](#)
- gdcmm::network::ULActionAA6, [765](#)
 - PerformAction, [766](#)
- gdcmm::network::ULActionAA7, [767](#)
 - PerformAction, [767](#)
- gdcmm::network::ULActionAA8, [768](#)
 - PerformAction, [768](#)
- gdcmm::network::ULActionAE1, [769](#)
 - PerformAction, [770](#)
- gdcmm::network::ULActionAE2, [770](#)
 - PerformAction, [771](#)
- gdcmm::network::ULActionAE3, [771](#)

- PerformAction, [772](#)
- gdcmm::network::ULActionAE4, [772](#)
 - PerformAction, [773](#)
- gdcmm::network::ULActionAE5, [774](#)
 - PerformAction, [774](#)
- gdcmm::network::ULActionAE6, [775](#)
 - PerformAction, [775](#)
- gdcmm::network::ULActionAE7, [776](#)
 - PerformAction, [777](#)
- gdcmm::network::ULActionAE8, [777](#)
 - PerformAction, [778](#)
- gdcmm::network::ULActionAR1, [778](#)
 - PerformAction, [779](#)
- gdcmm::network::ULActionAR10, [779](#)
 - PerformAction, [780](#)
- gdcmm::network::ULActionAR2, [781](#)
 - PerformAction, [781](#)
- gdcmm::network::ULActionAR3, [782](#)
 - PerformAction, [782](#)
- gdcmm::network::ULActionAR4, [783](#)
 - PerformAction, [784](#)
- gdcmm::network::ULActionAR5, [784](#)
 - PerformAction, [785](#)
- gdcmm::network::ULActionAR6, [785](#)
 - PerformAction, [786](#)
- gdcmm::network::ULActionAR7, [786](#)
 - PerformAction, [787](#)
- gdcmm::network::ULActionAR8, [788](#)
 - PerformAction, [788](#)
- gdcmm::network::ULActionAR9, [789](#)
 - PerformAction, [789](#)
- gdcmm::network::ULActionDT1, [790](#)
 - PerformAction, [791](#)
- gdcmm::network::ULActionDT2, [791](#)
 - PerformAction, [792](#)
- gdcmm::network::ULBasicCallback, [792](#)
 - ~ULBasicCallback, [793](#)
 - GetDataSets, [793](#)
 - GetResponses, [793](#)
 - HandleDataSet, [793](#)
 - HandleResponse, [794](#)
 - ULBasicCallback, [793](#)
- gdcmm::network::ULConnection, [794](#)
 - ~ULConnection, [795](#)
 - AddAcceptedPresentationContext, [795](#)
 - FindContext, [795](#)
 - GetAcceptedPresentationContexts, [795](#)
 - GetConnectionInfo, [795](#)
 - GetMaxPDUSize, [795](#)
 - GetPresentationContextACByID, [795](#)
 - GetPresentationContextIDFromPresentationContext, [795](#)
 - GetPresentationContextRQByID, [795](#)
 - GetPresentationContexts, [795](#)
 - GetProtocol, [795](#)
 - GetState, [795](#)
 - GetTimer, [795](#)
 - InitializeConnection, [796](#)
 - InitializeIncomingConnection, [796](#)
 - SetMaxPDUSize, [796](#)
 - SetPresentationContexts, [796](#)
 - SetState, [796](#)
 - StopProtocol, [796](#)
 - ULConnection, [795](#)
- gdcmm::network::ULConnectionCallback, [796](#)
 - ~ULConnectionCallback, [797](#)
 - DataSetHandled, [797](#)
 - DataSetHandles, [797](#)
 - HandleDataSet, [797](#)
 - HandleResponse, [797](#)
 - ResetHandledDataSet, [797](#)
 - ULConnectionCallback, [797](#)
- gdcmm::network::ULConnectionInfo, [798](#)
 - GetCalledAETitle, [798](#)
 - GetCalledComputerName, [798](#)
 - GetCalledIPAddress, [798](#)
 - GetCalledIPPort, [798](#)
 - GetCallingAETitle, [798](#)
 - GetMaxPDULength, [798](#)
 - Initialize, [798](#)
 - SetMaxPDULength, [798](#)
 - ULConnectionInfo, [798](#)
- gdcmm::network::ULConnectionManager, [799](#)
 - ~ULConnectionManager, [801](#)
 - BreakConnection, [801](#)
 - BreakConnectionNow, [801](#)
 - EstablishConnection, [801](#)
 - EstablishConnectionMove, [801](#)
 - SendEcho, [801](#)
 - SendFind, [801](#)
 - SendMove, [801](#)
 - SendStore, [801](#)
 - ULConnectionManager, [801](#)
- gdcmm::network::ULEvent, [802](#)
 - ~ULEvent, [802](#)
 - GetEvent, [802](#)
 - GetPDUs, [802](#)
 - SetEvent, [802](#)
 - SetPDU, [802](#)
 - ULEvent, [802](#)
- gdcmm::network::ULTransitionTable, [803](#)
 - HandleEvent, [803](#)
 - PrintTable, [803](#)
 - ULTransitionTable, [803](#)
- gdcmm::network::ULWritingCallback, [803](#)
 - ~ULWritingCallback, [805](#)
 - HandleDataSet, [805](#)
 - HandleResponse, [805](#)

- SetDirectory, 805
- ULWritingCallback, 804
- gdcmm::network::UserInformation, 813
 - ~UserInformation, 813
 - GetMaximumLengthSub, 813
 - operator=, 813
 - Print, 813
 - Read, 813
 - Size, 813
 - UserInformation, 813
 - Write, 813
- gdcmm::static_assert_test< x >, 671
- gdcmm::terminal, 130
 - Attribute, 131
 - Color, 131
 - Mode, 131
 - setattribute, 131
 - setbgcolor, 131
 - setfgcolor, 131
 - setmode, 131
- gdcmmAAbortPDU.h, 895
- gdcmmAAAssociateACPDU.h, 896
- gdcmmAAAssociateRJPDU.h, 897
- gdcmmAAAssociateRQPDU.h, 898
- gdcmmARTIMTimer.h, 906
- gdcmmAReleaseRPPDU.h, 903
- gdcmmAReleaseRQPDU.h, 904
- gdcmmASN1.h, 907
- gdcmmAbstractSyntax.h, 898
- gdcmmAnonymizeEvent.h, 900
- gdcmmAnonymizer.h, 901
- gdcmmApplicationContext.h, 902
- gdcmmApplicationEntity.h, 903
- gdcmmAssertAlwaysMacro
 - gdcmmTrace.h, 1135
- gdcmmAssertMacro
 - gdcmmTrace.h, 1135
- gdcmmAsynchronousOperationsWindowSub.h, 908
- gdcmmAttribute.h, 909
- gdcmmAudioCodec.h, 910
- gdcmmBase64.h, 911
- gdcmmBaseCompositeMessage.h, 911
- gdcmmBasePDU.h, 913
- gdcmmBaseRootQuery.h, 914
- gdcmmBasicOffsetTable.h, 915
- gdcmmBitmap.h, 916
- gdcmmBitmapToBitmapFilter.h, 917
- gdcmmBoxRegion.h, 918
- gdcmmByteBuffer.h, 919
- gdcmmByteSwap.h, 921
- gdcmmByteSwapFilter.h, 921
- gdcmmByteValue.h, 922
- gdcmmCEchoMessages.h, 923
- gdcmmCFindMessages.h, 924
- gdcmmCMoveMessages.h, 925
- gdcmmCP246ExplicitDataElement.h, 934
- gdcmmCSAElement.h, 935
- gdcmmCSAHeader.h, 937
- gdcmmCSAHeaderDict.h, 938
- gdcmmCSAHeaderDictEntry.h, 939
- gdcmmCStoreMessages.h, 940
- gdcmmCodeString.h, 929
- gdcmmCodec.h, 926
- gdcmmCoder.h, 927
- gdcmmCommand.h, 929
- gdcmmCommandDataSet.h, 931
- gdcmmCompositeMessageFactory.h, 932
- gdcmmCompositeNetworkFunctions.h, 932
- gdcmmConstCharWrapper.h, 933
- gdcmmCryptographicMessageSyntax.h, 934
- gdcmmCurve.h, 941
- gdcmmDICODEDIR.h, 952
- gdcmmDICODEDIRGenerator.h, 953
- gdcmmDIMSE.h, 960
- gdcmmDataElement.h, 943
- gdcmmDataEvent.h, 944
- gdcmmDataSet.h, 945
- gdcmmDataSetEvent.h, 946
- gdcmmDataSetHelper.h, 946
- gdcmmDebugMacro
 - gdcmmTrace.h, 1136
- gdcmmDecoder.h, 947
- gdcmmDefinedTerms.h, 949
- gdcmmDeflateStream.h, 949
- gdcmmDefs.h, 950
- gdcmmDeltaEncodingCodec.h, 951
- gdcmmDict.h, 954
- gdcmmDictConverter.h, 956
- gdcmmDictEntry.h, 956
- gdcmmDictPrinter.h, 958
- gdcmmDicts.h, 958
- gdcmmDirectionCosines.h, 961
- gdcmmDirectory.h, 961
- gdcmmDirectoryHelper.h, 962
- gdcmmDummyValueGenerator.h, 963
- gdcmmDumper.h, 964
- gdcmmElement.h, 965
- gdcmmEncapsulatedDocument.h, 967
- gdcmmEnumeratedValues.h, 967
- gdcmmErrorMacro
 - gdcmmTrace.h, 1136
- gdcmmEvent.h, 968
 - gdcmmEventMacro, 970
- gdcmmEventMacro
 - gdcmmEvent.h, 970
- gdcmmException.h, 970
- gdcmmExplicitDataElement.h, 971
- gdcmmExplicitImplicitDataElement.h, 972

gdcmFiducials.h, 973
gdcmFile.h, 974
gdcmFileAnonymizer.h, 975
gdcmFileDerivation.h, 976
gdcmFileExplicitFilter.h, 976
gdcmFileMetaInformation.h, 977
gdcmFileSet.h, 980
gdcmFilename.h, 978
gdcmFilenameGenerator.h, 979
gdcmFindPatientRootQuery.h, 982
gdcmFindStudyRootQuery.h, 983
gdcmFragment.h, 983
gdcmGlobal.h, 985
gdcmGroupDict.h, 986
gdcmIOD.h, 1007
gdcmIODEntry.h, 1009
gdcmIODs.h, 1011
gdcmIPPSorter.h, 1012
gdcmIconImage.h, 987
gdcmIconImageFilter.h, 988
gdcmIconImageGenerator.h, 988
gdcmImage.h, 989
gdcmImageApplyLookupTable.h, 991
gdcmImageChangePhotometricInterpretation.h, 991
gdcmImageChangePlanarConfiguration.h, 992
gdcmImageChangeTransferSyntax.h, 993
gdcmImageCodec.h, 994
gdcmImageConverter.h, 995
gdcmImageFragmentSplitter.h, 996
gdcmImageHelper.h, 997
gdcmImageReader.h, 998
gdcmImageRegionReader.h, 1000
gdcmImageToImageFilter.h, 1000
gdcmImageWriter.h, 1001
gdcmImplementationClassUIDSub.h, 1002
gdcmImplementationUIDSub.h, 1004
gdcmImplementationVersionNameSub.h, 1004
gdcmImplicitDataElement.h, 1006
gdcmItem.h, 1013
gdcmJPEG12Codec.h, 1014
gdcmJPEG16Codec.h, 1015
gdcmJPEG2000Codec.h, 1016
gdcmJPEG8Codec.h, 1016
gdcmJPEGCodec.h, 1017
gdcmJPEGLSCodec.h, 1019
gdcmKAKADUCodec.h, 1019
gdcmLO.h, 1021
gdcmLegacyMacro.h, 1020
 GDCM_LEGACY, 1021
 GDCM_LEGACY_BODY, 1021
gdcmLookupTable.h, 1022
gdcmMD5.h, 1030
gdcmMacro.h, 1023
gdcmMacroEntry.h, 1026
 GDCMMACROENTRY_H, 1027
gdcmMacros.h, 1027
gdcmMaximumLengthSub.h, 1029
gdcmMediaStorage.h, 1031
gdcmMeshPrimitive.h, 1033
gdcmModule.h, 1034
gdcmModuleEntry.h, 1036
gdcmModules.h, 1038
gdcmMovePatientRootQuery.h, 1039
gdcmMoveStudyRootQuery.h, 1040
gdcmNestedModuleEntries.h, 1041
gdcmNetworkEvents.h, 1043
gdcmNetworkStateID.h, 1044
gdcmObject.h, 1045
gdcmOrientation.h, 1046
gdcmOverlay.h, 1047
gdcmPDBelement.h, 1051
gdcmPDBHeader.h, 1053
gdcmPDFCodec.h, 1054
gdcmPDUFactory.h, 1054
gdcmPDataTFPDU.h, 1050
gdcmPGXCodec.h, 1056
gdcmPNMCodec.h, 1064
gdcmPVRGCodec.h, 1074
gdcmParseException.h, 1048
gdcmParser.h, 1049
gdcmPatient.h, 1050
gdcmPersonName.h, 1055
gdcmPhotometricInterpretation.h, 1057
gdcmPixelFormat.h, 1058
gdcmPixmap.h, 1060
gdcmPixmapReader.h, 1061
gdcmPixmapToPixmapFilter.h, 1062
gdcmPixmapWriter.h, 1063
gdcmPreamble.h, 1065
gdcmPresentationContext.h, 1066
gdcmPresentationContextAC.h, 1067
gdcmPresentationContextGenerator.h, 1068
gdcmPresentationContextRQ.h, 1069
gdcmPresentationDataValue.h, 1070
gdcmPrinter.h, 1071
gdcmPrivateTag.h, 1072
gdcmProgressEvent.h, 1073
gdcmPythonFilter.h, 1075
gdcmQueryBase.h, 1076
gdcmQueryFactory.h, 1078
gdcmQueryImage.h, 1079
gdcmQueryPatient.h, 1080
gdcmQuerySeries.h, 1081
gdcmQueryStudy.h, 1082
gdcmRAWCodec.h, 1083
gdcmRLECodec.h, 1087
gdcmReader.h, 1084
gdcmRegion.h, 1085

gdcRescaler.h, 1086
 gdcRoleSelectionSub.h, 1088
 gdcSHA1.h, 1102
 gdcSOPClassExtendedNegotiationSub.h, 1105
 gdcSOPClassUIDToIOD.h, 1106
 gdcScanner.h, 1088
 gdcSegment.h, 1090
 gdcSegmentHelper.h, 1092
 gdcSegmentReader.h, 1093
 gdcSegmentWriter.h, 1094
 gdcSegmentedPaletteColorLookupTable.h, 1091
 gdcSequenceOfFragments.h, 1096
 gdcSequenceOfItems.h, 1096
 gdcSerieHelper.h, 1097
 gdcSeries.h, 1099
 gdcServiceClassApplicationInformation.h, 1100
 gdcServiceClassUser.h, 1102
 gdcSimpleSubjectWatcher.h, 1103
 gdcSmartPointer.h, 1104
 gdcSorter.h, 1107
 gdcSpacing.h, 1109
 gdcSpectroscopy.h, 1109
 gdcSplitMosaicFilter.h, 1110
 gdcStaticAssert.h, 1111
 GDCM_DO_JOIN, 1112
 GDCM_DO_JOIN2, 1112
 GDCM_JOIN, 1112
 gdcStreamImageReader.h, 1113
 gdcStreamImageWriter.h, 1113
 gdcString.h, 1114
 gdcStringFilter.h, 1115
 gdcStudy.h, 1116
 gdcSubject.h, 1118
 gdcSurface.h, 1119
 gdcSurfaceHelper.h, 1120
 gdcSurfaceReader.h, 1121
 gdcSurfaceWriter.h, 1121
 gdcSwapCode.h, 1122
 gdcSwapper.h, 1123
 gdcSystem.h, 1124
 gdcTable.h, 1125
 gdcTableEntry.h, 1126
 gdcTableReader.h, 1128
 gdcTag.h, 1129
 gdcTagPath.h, 1130
 gdcTagToVR.h, 1131
 gdcTerminal.h, 1131
 gdcTestDriver.h, 1132
 gdcTesting.h, 1133
 gdcTrace.h, 1134
 GDCM_FUNCTION, 1135
 gdcAssertAlwaysMacro, 1135
 gdcAssertMacro, 1135
 gdcDebugMacro, 1136
 gdcErrorMacro, 1136
 gdcWarningMacro, 1136
 gdcTransferSyntax.h, 1137
 gdcTransferSyntaxSub.h, 1138
 gdcType.h, 1139
 gdcTypes.h, 1141
 gdcUIDGenerator.h, 1141
 gdcUIDs.h, 1142
 gdcULAction.h, 1144
 gdcULActionAA.h, 1145
 gdcULActionAE.h, 1145
 gdcULActionAR.h, 1146
 gdcULActionDT.h, 1147
 gdcULBasicCallback.h, 1148
 gdcULConnection.h, 1149
 gdcULConnectionCallback.h, 1150
 gdcULConnectionInfo.h, 1151
 gdcULConnectionManager.h, 1153
 gdcULEvent.h, 1154
 gdcULTransitionTable.h, 1155
 gdcULWritingCallback.h, 1156
 gdcUNExplicitDataElement.h, 1157
 gdcUNExplicitImplicitDataElement.h, 1157
 gdcUnpacker12Bits.h, 1158
 gdcUsage.h, 1159
 gdcUserInformation.h, 1161
 gdcVL.h, 1165
 gdcVM.h, 1166
 TYPETOLENGTH, 1168
 gdcVR.h, 1168
 TYPETOENCODING, 1170
 VRTypeTemplateCase, 1170
 gdcVR16ExplicitDataElement.h, 1170
 gdcValidate.h, 1162
 gdcValue.h, 1163
 gdcValueIO.h, 1163
 gdcVersion.h, 1164
 gdcWarningMacro
 gdcTrace.h, 1136
 gdcWaveform.h, 1171
 gdcWin32.h, 1171
 GDCM_EXPORT, 1172
 gdcWriter.h, 1172
 gdcXMLDictReader.h, 1173
 gdcXMLPrivateDictReader.h, 1173
 gdcmanon.man, 900
 gdcconv.man, 934
 gdcdiff.man, 960
 gdcdump.man, 964
 gdcgendir.man, 985
 gdcimg.man, 1002
 gdcinfo.man, 1006
 gdcpdf.man, 1053
 gdcpraw.man, 1083

- gdcmscanner.man, [1089](#)
- gdcm SCU.man, [1090](#)
- gdcm tar.man, [1131](#)
- gdcmviewer.man, [1165](#)
- GeneralECGWaveformStorage
 - gdcm::MediaStorage, [490](#)
 - gdcm::UIDs, [746](#)
- GeneralElectricMagneticResonanceImageStorage
 - gdcm::MediaStorage, [490](#)
- GeneralPurposePerformedProcedureStepSOPClass
 - gdcm::UIDs, [748](#)
- GeneralPurposeScheduledProcedureStepSOPClass
 - gdcm::UIDs, [748](#)
- GeneralPurposeWorklistInformationModelFIND
 - gdcm::UIDs, [748](#)
- GeneralPurposeWorklistManagementMetaSOPClass
 - gdcm::UIDs, [748](#)
- GeneralRelevantPatientInformationQuery
 - gdcm::UIDs, [748](#)
- Generate
 - gdcm::DICOMDIRGenerator, [303](#)
 - gdcm::DummyValueGenerator, [323](#)
 - gdcm::FilenameGenerator, [378](#)
 - gdcm::IconImageGenerator, [396](#)
 - gdcm::UIDGenerator, [737](#)
- GenerateFromFilenames
 - gdcm::PresentationContextGenerator, [570](#)
- GenerateFromUID
 - gdcm::PresentationContextGenerator, [570](#)
- GenerateUUID
 - gdcm::UIDGenerator, [737](#)
- Get
 - gdcm::ByteBuffer, [219](#)
- GetAETitle
 - gdcm::ServiceClassUser, [649](#)
- GetALGOType
 - gdcm::Segment, [624](#)
- GetALGOTypeString
 - gdcm::Segment, [624](#)
- GetAbbreviation
 - gdcm::GroupDict, [392](#)
- GetAbstractSyntax
 - gdcm::network::PresentationContextRQ, [572](#)
 - gdcm::PresentationContext, [567](#)
- GetAbstractSyntaxUID
 - gdcm::BaseRootQuery, [198](#)
 - gdcm::FindPatientRootQuery, [383](#)
 - gdcm::FindStudyRootQuery, [386](#)
 - gdcm::MovePatientRootQuery, [509](#)
 - gdcm::MoveStudyRootQuery, [511](#)
- GetAcceptedPresentationContexts
 - gdcm::network::ULConnection, [795](#)
- GetAlgorithmFamily
 - gdcm::Surface, [691](#)
- GetAlgorithmName
 - gdcm::Surface, [691](#)
- GetAlgorithmVersion
 - gdcm::Surface, [691](#)
- GetAllFilenamesFromTagToValue
 - gdcm::Scanner, [619](#)
- GetAllRequiredTags
 - gdcm::QueryBase, [588](#)
- GetAllTags
 - gdcm::QueryBase, [588](#)
- GetAnatomicRegion
 - gdcm::Segment, [624](#)
- GetAsDataElement
 - gdcm::Attribute, [165](#)
 - gdcm::Attribute< Group, Element, TVR, VM::VM1 >, [172](#)
 - gdcm::Attribute< Group, Element, TVR, VM::VM1_n >, [179](#)
 - gdcm::Element, [328](#)
 - gdcm::Element< TVR, VM::VM1_n >, [332](#)
 - gdcm::network::AbstractSyntax, [145](#)
- GetAsPoints
 - gdcm::Curve, [272](#)
- GetAsString
 - gdcm::CodeString, [242](#)
- GetAxisOfRotation
 - gdcm::Surface, [691](#)
- GetBasicApplicationLevelConfidentialityProfileAttributes
 - gdcm::Anonymizer, [151](#)
- GetBitPosition
 - gdcm::Overlay, [523](#)
- GetBitSample
 - gdcm::LookupTable, [479](#)
- GetBitsAllocated
 - gdcm::Overlay, [523](#)
 - gdcm::PixelFormat, [547](#)
- GetBitsStored
 - gdcm::PixelFormat, [548](#)
- GetBlob
 - gdcm::network::PresentationDataValue, [574](#)
- GetBuffer
 - gdcm::Bitmap, [208](#)
 - gdcm::ByteValue, [224](#)
 - gdcm::Overlay, [523](#)
 - gdcm::Parser, [529](#)
 - gdcm::SequenceOfFragments, [635](#)
- GetBuffer2
 - gdcm::Bitmap, [208](#)
- GetBufferAsRGBA
 - gdcm::LookupTable, [479](#)
- GetBufferLength
 - gdcm::Bitmap, [208](#)
 - gdcm::JPEGLSCodec, [471](#)
 - gdcm::PNMCodec, [564](#)

- gdcmm::RLECodec, 613
- GetBuildVersion
 - gdcmm::Version, 818
- GetByteValue
 - gdcmm::CSAElement, 256
 - gdcmm::DataElement, 277
- GetCSADataInfo
 - gdcmm::CSAHeader, 261
- GetCSAEEnd
 - gdcmm::CSAHeader, 261
- GetCSAElementByName
 - gdcmm::CSAHeader, 262
- GetCSAHeaderDict
 - gdcmm::Dicts, 314
- GetCSAHeaderDictEntry
 - gdcmm::CSAHeaderDict, 264
- GetCSAImageHeaderInfoTag
 - gdcmm::CSAHeader, 262
- GetCSASeriesHeaderInfoTag
 - gdcmm::CSAHeader, 262
- GetCTImageSeriesUIDs
 - gdcmm::DirectoryHelper, 322
- GetCWD
 - gdcmm::System, 707
- GetCalledAETitle
 - gdcmm::network::AAssociateRQPDU, 142
 - gdcmm::network::ULConnectionInfo, 798
 - gdcmm::ServiceClassUser, 649
- GetCalledComputerName
 - gdcmm::network::ULConnectionInfo, 798
- GetCalledIPAddress
 - gdcmm::network::ULConnectionInfo, 798
- GetCalledIPPort
 - gdcmm::network::ULConnectionInfo, 798
- GetCallingAETitle
 - gdcmm::network::AAssociateRQPDU, 142
 - gdcmm::network::ULConnectionInfo, 798
- GetCenterOfRotation
 - gdcmm::Surface, 691
- GetCharacterFromCurrentLocale
 - gdcmm::QueryFactory, 589
- GetCipherType
 - gdcmm::CryptographicMessageSyntax, 254
- GetColorLevel
 - vtkImageColorViewer, 864
- GetColorWindow
 - vtkImageColorViewer, 864
- GetColumns
 - gdcmm::Bitmap, 209
 - gdcmm::Overlay, 523
- GetCommand
 - gdcmm::Subject, 687
- GetConnectionInfo
 - gdcmm::network::ULConnection, 795
- GetConstructorString
 - gdcmm::Dicts, 314
- GetContourReferencedFrameOfReferenceClassUID
 - vtkRTStructSetProperties, 883
- GetContourReferencedFrameOfReferenceInstanceUID
 - vtkRTStructSetProperties, 883
- GetCryptographicMessageSyntax
 - gdcmm::Anonymizer, 151
- GetCurrentByteIndex
 - gdcmm::Parser, 529
- GetCurrentDateTime
 - gdcmm::System, 706
- GetCurrentModuleFileName
 - gdcmm::System, 706
- GetCurrentProcessFileName
 - gdcmm::System, 707
- GetCurrentResourcesDirectory
 - gdcmm::System, 707
- GetCurve
 - gdcmm::Pixmap, 552
- GetCurveDataDescriptor
 - gdcmm::Curve, 272
- GetDEEnd
 - gdcmm::DataSet, 290
- GetDES
 - gdcmm::DataSet, 290
- GetData
 - gdcmm::DataEvent, 285
- GetDataElement
 - gdcmm::Bitmap, 209
 - gdcmm::DataSet, 289, 290
 - gdcmm::Item, 453
- GetDataExtraRoot
 - gdcmm::Testing, 722
- GetDataLength
 - gdcmm::DataEvent, 285
- GetDataRoot
 - gdcmm::Testing, 722
- GetDataSet
 - gdcmm::CSAHeader, 262
 - gdcmm::DataSetEvent, 294
 - gdcmm::File, 361
- GetDataSetTransferSyntax
 - gdcmm::FileMetaInformation, 372
- GetDataSetSets
 - gdcmm::network::ULBasicCallback, 793
- GetDataValueRepresentation
 - gdcmm::Curve, 272
- GetDebugFlag
 - gdcmm::Trace, 726
- GetDebugStream
 - gdcmm::Trace, 726
- GetDecodeLength
 - gdcmm::Base64, 192

- GetDefaultTransferSyntax
 - gdcm::PresentationContextGenerator, [570](#)
- GetDefs
 - gdcm::Global, [390](#)
 - gdcm::TableReader, [711](#)
- GetDescription
 - gdcm::CSAHeaderDictEntry, [266](#)
 - gdcm::Exception, [353](#)
 - gdcm::ModuleEntry, [506](#)
 - gdcm::Overlay, [523](#)
- GetDescriptiveName
 - vtkGDCMImageReader, [837](#)
 - vtkGDCMImageWriter, [842](#)
- GetDict
 - gdcm::XMLDictReader, [892](#)
- GetDictEntry
 - gdcm::Dict, [305](#)
 - gdcm::Dicts, [314](#), [315](#)
 - gdcm::PrivateDict, [579](#)
- GetDictEntryByKeyword
 - gdcm::Dict, [305](#)
- GetDictEntryByName
 - gdcm::Dict, [305](#)
- GetDictName
 - gdcm::DictConverter, [308](#)
- GetDictVM
 - gdcm::Attribute, [166](#)
 - gdcm::Attribute< Group, Element, TVR, VM::VM1 >, [173](#)
 - gdcm::Attribute< Group, Element, TVR, VM::VM1_n >, [179](#)
- GetDictVR
 - gdcm::Attribute, [166](#)
 - gdcm::Attribute< Group, Element, TVR, VM::VM1 >, [173](#)
 - gdcm::Attribute< Group, Element, TVR, VM::VM1_n >, [179](#)
- GetDicts
 - gdcm::Global, [390](#)
- GetDimension
 - gdcm::Bitmap, [209](#)
- GetDimensions
 - gdcm::Bitmap, [209](#)
 - gdcm::Curve, [272](#)
 - gdcm::ImageCodec, [418](#)
- GetDimensionsValue
 - gdcm::ImageHelper, [424](#)
- GetDimensionsValueForResolution
 - gdcm::StreamImageReader, [673](#)
- GetDirectionCosines
 - gdcm::Image, [400](#)
- GetDirectionCosinesFromDataSet
 - gdcm::ImageHelper, [425](#)
- GetDirectionCosinesTolerance
 - gdcm::IPPSorter, [449](#)
- GetDirectionCosinesValue
 - gdcm::ImageHelper, [425](#)
- GetDirectories
 - gdcm::Directory, [320](#)
- GetElapsedTime
 - gdcm::network::ARTIMTimer, [161](#)
- GetElement
 - gdcm::Tag, [715](#)
- GetElementTag
 - gdcm::Tag, [716](#)
- GetEncodeLength
 - gdcm::Base64, [192](#)
- GetErrorCode
 - gdcm::Parser, [529](#)
- GetErrorFlag
 - gdcm::Trace, [726](#)
- GetErrorStream
 - gdcm::Trace, [726](#)
- GetErrorString
 - gdcm::Parser, [529](#)
- GetEvent
 - gdcm::network::ULEvent, [802](#)
- GetEventName
 - gdcm::AnonymizeEvent, [147](#)
 - gdcm::DataEvent, [285](#)
 - gdcm::DataSetEvent, [294](#)
 - gdcm::Event, [351](#)
 - gdcm::ProgressEvent, [583](#)
- GetExtension
 - gdcm::Filename, [376](#)
- GetFile
 - gdcm::Anonymizer, [151](#)
 - gdcm::DICOMDIRGenerator, [303](#)
 - gdcm::FileDerivation, [366](#), [367](#)
 - gdcm::FileExplicitFilter, [369](#)
 - gdcm::IconImageFilter, [394](#)
 - gdcm::PythonFilter, [586](#)
 - gdcm::Reader, [603](#)
 - gdcm::SplitMosaicFilter, [669](#)
 - gdcm::StreamImageReader, [673](#)
 - gdcm::StringFilter, [684](#)
 - gdcm::Writer, [889](#)
 - vtkGDCMMedicalImageProperties, [846](#)
- GetFileExtensions
 - vtkGDCMImageReader, [837](#)
 - vtkGDCMImageWriter, [843](#)
- GetFileMetaInformationVersion
 - gdcm::FileMetaInformation, [372](#)
- GetFileName
 - gdcm::Filename, [376](#)
 - gdcm::Testing, [723](#)
 - vtkGDCMImageWriter, [843](#)
 - vtkGDCMThreadedImageReader2, [859](#)

- GetFileNames
 - gdcm::Testing, [723](#)
- GetFilename
 - gdcm::FilenameGenerator, [378](#)
 - gdcm::TableReader, [711](#)
- GetFilenameFromTagToValue
 - gdcm::Scanner, [619](#)
- GetFilenames
 - gdcm::Directory, [320](#)
 - gdcm::FilenameGenerator, [378](#)
 - gdcm::Scanner, [619](#)
 - gdcm::Sorter, [665](#)
- GetFilenamesFromSeriesUIDs
 - gdcm::DirectoryHelper, [322](#)
- GetFiles
 - gdcm::FileSet, [380](#)
- GetFiniteVolume
 - gdcm::Surface, [692](#)
- GetFirstSingleSerieUIDFileSet
 - gdcm::SerieHelper, [645](#)
- GetForcePixelSpacing
 - gdcm::ImageHelper, [425](#)
- GetForceRescaleInterceptSlope
 - gdcm::ImageHelper, [425](#)
- GetFormat
 - gdcm::CSAHeader, [262](#)
- GetFragBuffer
 - gdcm::SequenceOfFragments, [635](#)
- GetFragment
 - gdcm::SequenceOfFragments, [635](#)
- GetFragmentSizeMax
 - gdcm::ImageFragmentSplitter, [423](#)
- GetFrameOfReference
 - gdcm::DirectoryHelper, [322](#)
- GetFullLength
 - gdcm::FileMetaInformation, [373](#)
- GetGDCMDataRoot
 - vtkGDCMTesting, [854](#)
- GetGDCMImplementationClassUID
 - gdcm::FileMetaInformation, [373](#)
- GetGDCMImplementationVersionName
 - gdcm::FileMetaInformation, [373](#)
- GetGDCMSourceApplicationEntityTitle
 - gdcm::FileMetaInformation, [373](#)
- GetGDCMUID
 - gdcm::UIDGenerator, [737](#)
- GetGroup
 - gdcm::Curve, [272](#)
 - gdcm::Overlay, [523](#)
 - gdcm::Tag, [716](#)
- GetHasExpired
 - gdcm::network::ARTIMTimer, [161](#)
- GetHeader
 - gdcm::File, [361](#)
- GetHeaderInfo
 - gdcm::ImageCodec, [418](#)
 - gdcm::JPEG12Codec, [457](#)
 - gdcm::JPEG16Codec, [459](#)
 - gdcm::JPEG2000Codec, [462](#)
 - gdcm::JPEG8Codec, [464](#)
 - gdcm::JPEGCodec, [468](#)
 - gdcm::JPEGLSCodec, [471](#)
 - gdcm::PGXCodec, [542](#)
 - gdcm::PNMCodec, [564](#)
 - gdcm::RAWCodec, [600](#)
 - gdcm::RLECodec, [613](#)
- GetHierarchicalSearchTags
 - gdcm::QueryBase, [588](#)
 - gdcm::QueryImage, [591](#)
 - gdcm::QueryPatient, [593](#)
 - gdcm::QuerySeries, [595](#)
 - gdcm::QueryStudy, [597](#)
- GetHighBit
 - gdcm::PixelFormat, [548](#)
- GetHostName
 - gdcm::System, [707](#)
- GetIE
 - gdcm::IODEntry, [445](#)
- GetIOD
 - gdcm::IODs, [447](#)
 - gdcm::SOPClassUIDToIOD, [662](#)
- GetIODEntry
 - gdcm::IOD, [444](#)
- GetIODFromFile
 - gdcm::Defs, [298](#)
- GetIODFromSOPClassUID
 - gdcm::SOPClassUIDToIOD, [662](#)
- GetIODNameFromMediaStorage
 - gdcm::Defs, [298](#)
- GetIODs
 - gdcm::Defs, [298](#)
- GetIconImage
 - gdcm::IconImageFilter, [394](#)
 - gdcm::IconImageGenerator, [396](#)
 - gdcm::Pixmap, [553](#)
 - vtkGDCMImageReader, [837](#)
- GetImage
 - gdcm::ImageReader, [429](#)
 - gdcm::ImageWriter, [437](#)
 - gdcm::PixmapWriter, [561](#)
 - gdcm::SplitMosaicFilter, [669](#)
- GetImplementationClassUID
 - gdcm::FileMetaInformation, [373](#)
- GetImplementationVersionName
 - gdcm::FileMetaInformation, [373](#)
- GetIndex
 - gdcm::SwapCode, [703](#)
 - gdcm::VM, [824](#)

- GetInput
 - gdcm::ImageToImageFilter, [435](#)
 - gdcm::PixmapToPixmapFilter, [559](#)
 - vtkImageColorViewer, [864](#)
- GetInputFilename
 - gdcm::DictConverter, [308](#)
- GetInstance
 - gdcm::Global, [390](#)
- GetIntercept
 - gdcm::Image, [400](#)
 - gdcm::Rescaler, [609](#)
- GetInterfile
 - gdcm::CSAHeader, [262](#)
- GetInternal
 - gdcm::Preamble, [566](#)
- GetIsCommand
 - gdcm::network::PresentationDataValue, [574](#)
- GetIsLastFragment
 - gdcm::network::PresentationDataValue, [574](#)
- GetItem
 - gdcm::SequenceOfItems, [641](#)
- GetKey
 - gdcm::CSAElement, [257](#)
- GetKeys
 - gdcm::Scanner, [619](#)
- GetKeyword
 - gdcm::DictEntry, [309](#)
- GetKeywordFromTag
 - gdcm::Dict, [305](#)
- GetLUT
 - gdcm::Bitmap, [209](#)
 - gdcm::ImageCodec, [418](#)
 - gdcm::ImageHelper, [425](#)
 - gdcm::LookupTable, [479](#)
- GetLUTDescriptor
 - gdcm::LookupTable, [479](#)
- GetLUTLength
 - gdcm::LookupTable, [479](#)
- GetLabel
 - gdcm::Orientation, [519](#)
- GetLastElement
 - gdcm::ParseException, [527](#)
- GetLastSystemError
 - gdcm::System, [707](#)
- GetLength
 - gdcm::ByteValue, [224](#)
 - gdcm::CP246ExplicitDataElement, [252](#)
 - gdcm::DataElement, [277](#)
 - gdcm::DataSet, [290](#)
 - gdcm::Element, [328](#)
 - gdcm::Element< TVR, VM::VM1_n >, [332](#)
 - gdcm::Element< VR::AS, VM::VM5 >, [340](#)
 - gdcm::ExplicitDataElement, [356](#)
 - gdcm::ExplicitImplicitDataElement, [358](#)
 - gdcm::Fragment, [388](#)
 - gdcm::ImplicitDataElement, [441](#)
 - gdcm::Item, [453](#)
 - gdcm::Preamble, [566](#)
 - gdcm::SequenceOfFragments, [636](#)
 - gdcm::SequenceOfItems, [641](#)
 - gdcm::Tag, [716](#)
 - gdcm::UNExplicitDataElement, [806](#)
 - gdcm::UNExplicitImplicitDataElement, [808](#)
 - gdcm::Value, [816](#)
 - gdcm::VL, [820](#)
 - gdcm::VM, [824](#)
 - gdcm::VR, [828](#), [829](#)
 - gdcm::VR16ExplicitDataElement, [831](#)
- GetLocaleCharSet
 - gdcm::System, [707](#)
- GetLossless
 - gdcm::JPEGCodec, [468](#)
 - gdcm::JPEGLSCodec, [471](#)
- GetLossyFlag
 - gdcm::ImageCodec, [418](#)
- GetLossyFlagFromFile
 - gdcm::Testing, [723](#)
- GetMD5DataImage
 - gdcm::Testing, [723](#)
- GetMD5DataImages
 - gdcm::Testing, [723](#)
- GetMD5FromBrokenFile
 - gdcm::Testing, [723](#)
- GetMD5FromFile
 - gdcm::Testing, [723](#)
- GetMD5MetaImage
 - vtkGDCMTesting, [854](#)
- GetMHDMD5FromFile
 - vtkGDCMTesting, [854](#)
- GetMPTType
 - gdcm::MeshPrimitive, [500](#)
- GetMPTTypeString
 - gdcm::MeshPrimitive, [500](#)
- GetMRImageSeriesUIDs
 - gdcm::DirectoryHelper, [322](#)
- GetMSString
 - gdcm::MediaStorage, [492](#)
- GetMSType
 - gdcm::MediaStorage, [492](#)
- GetMTime
 - vtkImageMapToColors16, [869](#)
- GetMacro
 - gdcm::Macros, [484](#)
- GetMacroEntry
 - gdcm::Macro, [482](#)
- GetMacros
 - gdcm::Defs, [298](#)
- GetMajorAxisFromPatientRelativeDirectionCosine

- gdcmm::Orientation, [519](#)
- GetMajorVersion
 - gdcmm::Version, [818](#)
- GetManifold
 - gdcmm::Surface, [692](#)
- GetMapping
 - gdcmm::Scanner, [620](#)
- GetMappingFromTagToValue
 - gdcmm::Scanner, [620](#)
- GetMappings
 - gdcmm::Scanner, [620](#)
- GetMax
 - gdcmm::PixelFormat, [548](#)
- GetMaxLength
 - gdcmm::PersonName, [540](#)
- GetMaxPDULength
 - gdcmm::network::ULConnectionInfo, [798](#)
- GetMaxPDUSize
 - gdcmm::network::ULConnection, [795](#)
- GetMaximumLength
 - gdcmm::network::MaximumLengthSub, [485](#)
- GetMaximumLengthSub
 - gdcmm::network::UserInformation, [813](#)
- GetMaximumPointDistance
 - gdcmm::Surface, [692](#)
- GetMeanPointDistance
 - gdcmm::Surface, [692](#)
- GetMediaStorage
 - gdcmm::DataSet, [290](#)
 - gdcmm::FileMetaInformation, [373](#)
- GetMediaStorageDataFile
 - gdcmm::Testing, [723](#)
- GetMediaStorageDataFiles
 - gdcmm::Testing, [723](#)
- GetMediaStorageFromFile
 - gdcmm::Testing, [723](#)
- GetMeshPrimitive
 - gdcmm::Surface, [692](#)
- GetMessageHeader
 - gdcmm::network::PresentationDataValue, [574](#)
- GetMetaInformationTS
 - gdcmm::FileMetaInformation, [373](#)
- GetMin
 - gdcmm::PixelFormat, [548](#)
- GetMinorVersion
 - gdcmm::Version, [818](#)
- GetModality
 - gdcmm::MediaStorage, [491](#)
- GetModalityDimension
 - gdcmm::MediaStorage, [491](#)
- GetModule
 - gdcmm::Modules, [507](#)
- GetModuleEntry
 - gdcmm::NestedModuleEntries, [514](#)
- GetModuleEntryInMacros
 - gdcmm::Module, [503](#)
- GetModules
 - gdcmm::Defs, [298](#)
- GetName
 - gdcmm::CSAElement, [257](#)
 - gdcmm::CSAHeaderDictEntry, [266](#)
 - gdcmm::DictEntry, [309](#)
 - gdcmm::Filename, [376](#)
 - gdcmm::GroupDict, [392](#)
 - gdcmm::IODEntry, [445](#)
 - gdcmm::Macro, [482](#)
 - gdcmm::Module, [503](#)
 - gdcmm::ModuleEntry, [506](#)
 - gdcmm::network::AbstractSyntax, [145](#)
 - gdcmm::network::ApplicationContext, [155](#)
 - gdcmm::network::TransferSyntaxSub, [732](#)
 - gdcmm::PDBElement, [534](#)
 - gdcmm::QueryBase, [588](#)
 - gdcmm::QueryImage, [591](#)
 - gdcmm::QueryPatient, [593](#)
 - gdcmm::QuerySeries, [595](#)
 - gdcmm::QueryStudy, [597](#)
 - gdcmm::UIDs, [756](#)
- GetNeedByteSwap
 - gdcmm::Bitmap, [209](#)
 - gdcmm::ImageCodec, [418](#)
- GetNegotiatedType
 - gdcmm::TransferSyntax, [730](#)
- GetNestedDataSet
 - gdcmm::Item, [453](#), [454](#)
- GetNextSingleSeriesUIDFileSet
 - gdcmm::SerieHelper, [645](#)
- GetNoOfItems
 - gdcmm::CSAElement, [257](#)
- GetNumberOfComponents
 - gdcmm::PersonName, [540](#)
- GetNumberOfContourReferencedFrameOfReferences
 - vtkRTStructSetProperties, [883](#)
- GetNumberOfCurves
 - gdcmm::Curve, [272](#)
 - gdcmm::Pixmap, [553](#)
- GetNumberOfDimensions
 - gdcmm::Bitmap, [209](#)
 - gdcmm::ImageCodec, [418](#)
- GetNumberOfElementsFromArray
 - gdcmm::VM, [824](#)
- GetNumberOfFileNames
 - gdcmm::Testing, [723](#)
- GetNumberOfFileNames
 - gdcmm::FilenameGenerator, [378](#)
- GetNumberOfFragments
 - gdcmm::SequenceOfFragments, [636](#)
- GetNumberOfIODs

- gdcmm::IOD, [444](#)
- GetNumberOfIconImages
 - gdcmm::IconImageFilter, [395](#)
- GetNumberOfItems
 - gdcmm::SequenceOfItems, [641](#)
- GetNumberOfMD5DataImages
 - gdcmm::Testing, [723](#)
- GetNumberOfMD5MetalImages
 - vtkGDCMTesting, [854](#)
- GetNumberOfMSSString
 - gdcmm::MediaStorage, [492](#)
- GetNumberOfMSType
 - gdcmm::MediaStorage, [492](#)
- GetNumberOfMediaStorageDataFiles
 - gdcmm::Testing, [723](#)
- GetNumberOfModality
 - gdcmm::MediaStorage, [492](#)
- GetNumberOfModuleEntries
 - gdcmm::NestedModuleEntries, [514](#)
- GetNumberOfOverlays
 - gdcmm::Pixmap, [553](#)
- GetNumberOfPoints
 - gdcmm::Curve, [272](#)
- GetNumberOfPresentationContext
 - gdcmm::network::AAssociateRQPDU, [142](#)
- GetNumberOfPresentationContextAC
 - gdcmm::network::AAssociateACPDU, [137](#)
- GetNumberOfPresentationDataValues
 - gdcmm::network::PDDataTFPDU, [532](#)
- GetNumberOfPrimitivesData
 - gdcmm::MeshPrimitive, [500](#)
- GetNumberOfReferencedFrameOfReferences
 - vtkRTStructSetProperties, [883](#)
- GetNumberOfSOPClassToIOD
 - gdcmm::SOPClassUIDToIOD, [662](#)
- GetNumberOfSegments
 - gdcmm::SegmentWriter, [632](#)
- GetNumberOfStructureSetROIs
 - vtkRTStructSetProperties, [883](#)
- GetNumberOfSurfacePoints
 - gdcmm::Surface, [692](#)
- GetNumberOfSurfaces
 - gdcmm::SurfaceReader, [699](#)
 - gdcmm::SurfaceWriter, [701](#)
- GetNumberOfTransferSyntaxStrings
 - gdcmm::UIDs, [756](#)
- GetNumberOfTransferSyntaxes
 - gdcmm::network::PresentationContextRQ, [572](#)
 - gdcmm::PresentationContext, [567](#)
- GetNumberOfValues
 - gdcmm::Attribute, [166](#)
 - gdcmm::Attribute< Group, Element, TVR, VM::VM1 >, [173](#)
- gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >, [179](#)
- GetNumberOfVectors
 - gdcmm::Surface, [692](#)
- GetObliquityThresholdCosineValue
 - gdcmm::Orientation, [519](#)
- GetOffScreenRendering
 - vtkImageColorViewer, [864](#)
- GetOptionalTags
 - gdcmm::QueryBase, [588](#)
 - gdcmm::QueryImage, [591](#)
 - gdcmm::QueryPatient, [593](#)
 - gdcmm::QuerySeries, [595](#)
 - gdcmm::QueryStudy, [597](#)
- GetOrderedValues
 - gdcmm::Scanner, [620](#)
- GetOrigin
 - gdcmm::Image, [400](#)
 - gdcmm::Overlay, [523](#)
- GetOriginValue
 - gdcmm::ImageHelper, [425](#)
- GetOutput
 - gdcmm::ImageConverter, [421](#)
- GetOutput
 - gdcmm::BitmapToBitmapFilter, [215](#)
 - gdcmm::ImageToImageFilter, [435](#)
 - gdcmm::PixmapToPixmapFilter, [559](#)
- GetOutputAsBitmap
 - gdcmm::BitmapToBitmapFilter, [215](#)
- GetOutputAsPixmap
 - gdcmm::PixmapToPixmapFilter, [559](#)
- GetOutputFilename
 - gdcmm::DictConverter, [308](#)
- GetOutputType
 - gdcmm::DictConverter, [308](#)
- GetOverlay
 - gdcmm::Pixmap, [553](#)
 - vtkGDCMImageReader, [837](#)
- GetOverlayData
 - gdcmm::Overlay, [523](#)
- GetOverlayTypeAsString
 - gdcmm::Overlay, [524](#)
- GetOverlayTypeFromString
 - gdcmm::Overlay, [524](#)
- GetOverlayVisibility
 - vtkImageColorViewer, [864](#)
- GetOwner
 - gdcmm::PrivateTag, [581](#)
- GetPDBEEnd
 - gdcmm::PDBHeader, [536](#)
- GetPDBElementByName
 - gdcmm::PDBHeader, [536](#)
- GetPDBInfoTag
 - gdcmm::PDBHeader, [536](#)

- GetPDUs
 - gdcm::network::ULEvent, [802](#)
- GetPDVs
 - gdcm::network::PDUFactory, [539](#)
- GetPIString
 - gdcm::PhotometricInterpretation, [544](#)
- GetPIType
 - gdcm::PhotometricInterpretation, [544](#)
- GetPath
 - gdcm::Filename, [376](#)
- GetPattern
 - gdcm::FilenameGenerator, [378](#)
- GetPermissions
 - gdcm::System, [707](#)
- GetPhotometricInterpretation
 - gdcm::Bitmap, [209](#)
 - gdcm::ImageChangePhotometricInterpretation, [407](#)
 - gdcm::ImageCodec, [418](#)
- GetPhotometricInterpretationValue
 - gdcm::ImageHelper, [425](#)
- GetPixelFormat
 - gdcm::Bitmap, [209](#), [210](#)
 - gdcm::ImageCodec, [418](#)
- GetPixelFormatValue
 - gdcm::ImageHelper, [425](#)
- GetPixelRepresentation
 - gdcm::PixelFormat, [548](#)
- GetPixelSize
 - gdcm::PixelFormat, [548](#)
- GetPixelSpacingDataRoot
 - gdcm::Testing, [724](#)
- GetPixmap
 - gdcm::IconImageGenerator, [397](#)
 - gdcm::PixmapReader, [556](#)
 - gdcm::PixmapWriter, [561](#)
- GetPlanarConfiguration
 - gdcm::Bitmap, [210](#)
 - gdcm::ImageChangePlanarConfiguration, [410](#)
 - gdcm::ImageCodec, [418](#)
- GetPlanarConfigurationValue
 - gdcm::ImageHelper, [425](#)
- GetPointCoordinatesData
 - gdcm::Surface, [692](#)
- GetPointPositionAccuracy
 - gdcm::Surface, [692](#)
- GetPointer
 - gdcm::ByteValue, [224](#)
 - gdcm::LookupTable, [480](#)
 - gdcm::SmartPointer, [660](#)
 - vtkLookupTable16, [880](#)
- GetPointerFromElement
 - gdcm::ImageHelper, [425](#)
- GetPointsBoundingBoxCoordinates
 - gdcm::Surface, [692](#)
- GetPosition
 - vtkImageColorViewer, [864](#)
- GetPreamble
 - gdcm::FileMetaInformation, [373](#)
- GetPrefix
 - gdcm::FilenameGenerator, [379](#)
- GetPresentationContext
 - gdcm::network::AAssociateRQPDU, [142](#)
- GetPresentationContextAC
 - gdcm::network::AAssociateACPDU, [137](#)
- GetPresentationContextACByID
 - gdcm::network::ULConnection, [795](#)
- GetPresentationContextByAbstractSyntax
 - gdcm::network::AAssociateRQPDU, [142](#)
- GetPresentationContextByID
 - gdcm::network::AAssociateRQPDU, [142](#)
- GetPresentationContextID
 - gdcm::network::PresentationContextAC, [568](#)
 - gdcm::network::PresentationContextRQ, [572](#)
 - gdcm::network::PresentationDataValue, [574](#)
 - gdcm::PresentationContext, [567](#)
- GetPresentationContextIDFromPresentationContext
 - gdcm::network::ULConnection, [795](#)
- GetPresentationContextRQByID
 - gdcm::network::ULConnection, [795](#)
- GetPresentationContexts
 - gdcm::network::AAssociateRQPDU, [142](#)
 - gdcm::network::ULConnection, [795](#)
 - gdcm::PresentationContextGenerator, [571](#)
- GetPresentationDataValue
 - gdcm::network::PDataTFPDU, [532](#)
- GetPrimitiveData
 - gdcm::MeshPrimitive, [500](#)
- GetPrimitiveType
 - gdcm::MeshPrimitive, [500](#)
- GetPrimitivesData
 - gdcm::MeshPrimitive, [500](#)
- GetPrintStyle
 - gdcm::Printer, [577](#)
- GetPrivateCreator
 - gdcm::DataSet, [290](#)
 - gdcm::Tag, [716](#)
- GetPrivateDict
 - gdcm::Dicts, [315](#)
 - gdcm::XMLPrivateDictReader, [894](#)
- GetProcessingAlgorithm
 - gdcm::Surface, [692](#)
- GetProgress
 - gdcm::ProgressEvent, [583](#)
- GetPropertyCategory
 - gdcm::Segment, [624](#)
- GetPropertyType
 - gdcm::Segment, [624](#)
- GetProtocol

- gdcm::network::ULConnection, 795
- GetPublicDict
 - gdcm::Dicts, 315
- GetQuality
 - gdcm::JPEG2000Codec, 462
 - gdcm::JPEGCodec, 468
- GetQueryDataSet
 - gdcm::BaseRootQuery, 198
- GetQueryLevel
 - gdcm::QueryBase, 588
 - gdcm::QueryImage, 591
 - gdcm::QueryPatient, 593
 - gdcm::QuerySeries, 595
 - gdcm::QueryStudy, 597
- GetQueryLevelFromQueryRoot
 - gdcm::BaseRootQuery, 199
- GetQueryLevelFromString
 - gdcm::BaseRootQuery, 199
- GetQueryLevelString
 - gdcm::BaseRootQuery, 199
- GetRAWMD5FromFile
 - vtkGDCMTesting, 854
- GetRTStructSeriesUIDs
 - gdcm::DirectoryHelper, 322
- GetRate
 - gdcm::JPEG2000Codec, 462
- GetReason
 - gdcm::network::PresentationContextAC, 568
- GetRecommendedDisplayCIELabValue
 - gdcm::Surface, 692
- GetRecommendedDisplayGrayscaleValue
 - gdcm::Surface, 692
- GetRecommendedPresentationOpacity
 - gdcm::Surface, 692
- GetRecommendedPresentationType
 - gdcm::Surface, 692
- GetRef
 - gdcm::IODEntry, 445
- GetReferencedFrameOfReferenceClassUID
 - vtkRTStructSetProperties, 883
- GetReferencedFrameOfReferenceInstanceUID
 - vtkRTStructSetProperties, 883
- GetRegion
 - gdcm::ImageRegionReader, 432
- GetRequiredTags
 - gdcm::QueryBase, 588
 - gdcm::QueryImage, 592
 - gdcm::QueryPatient, 594
 - gdcm::QuerySeries, 596
 - gdcm::QueryStudy, 598
- GetRescaleInterceptSlopeValue
 - gdcm::ImageHelper, 425
- GetReserved43_74
 - gdcm::network::AAssociateRQPDU, 142
- GetResponses
 - gdcm::network::ULBasicCallback, 793
- GetRetired
 - gdcm::DictEntry, 309
- GetRoot
 - gdcm::UIDGenerator, 737
- GetRows
 - gdcm::Bitmap, 210
 - gdcm::Overlay, 524
- GetSOPClassUID
 - gdcm::DirectoryHelper, 323
- GetSOPClassUIDFromIOD
 - gdcm::SOPClassUIDToIOD, 662
- GetSOPClassUIDToIOD
 - gdcm::SOPClassUIDToIOD, 662
- GetSOPClassUIDToIODs
 - gdcm::SOPClassUIDToIOD, 662
- GetSTATES
 - gdcm::Surface, 693
- GetSTATESString
 - gdcm::Surface, 693
- GetSamplesPerPixel
 - gdcm::PhotometricInterpretation, 545
 - gdcm::PixelFormat, 548
- GetScalarType
 - gdcm::PixelFormat, 549
- GetScalarTypeAsString
 - gdcm::PixelFormat, 549
- GetScanner
 - gdcm::DICOMDIRGenerator, 303
- GetSegment
 - gdcm::SegmentWriter, 632
- GetSegmentAlgorithmName
 - gdcm::Segment, 624
- GetSegmentAlgorithmType
 - gdcm::Segment, 624
- GetSegmentDescription
 - gdcm::Segment, 624
- GetSegmentLabel
 - gdcm::Segment, 624
- GetSegmentNumber
 - gdcm::Segment, 624
- GetSegments
 - gdcm::SegmentReader, 629
 - gdcm::SegmentWriter, 632
- GetSelectedTagsOffsetFromFile
 - gdcm::Testing, 724
- GetSequenceOfFragments
 - gdcm::DataElement, 277
- GetSequenceOfItems
 - gdcm::DataElement, 277, 278
- GetSeriesUIDsBySOPClassUID
 - gdcm::DirectoryHelper, 323
- GetSize

- gdcmm::VR, [829](#)
- vtkImageColorViewer, [865](#)
- GetSizeof
 - gdcmm::VR, [829](#)
- GetSliceMax
 - vtkImageColorViewer, [865](#)
- GetSliceMin
 - vtkImageColorViewer, [865](#)
- GetSliceRange
 - vtkImageColorViewer, [865](#)
- GetSlope
 - gdcmm::Image, [401](#)
 - gdcmm::Rescaler, [609](#)
- GetSourceApplicationEntityTitle
 - gdcmm::FileMetaInformation, [373](#)
- GetSourceDirectory
 - gdcmm::Testing, [724](#)
- GetSpacing
 - gdcmm::Image, [401](#)
- GetSpacingTagFromMediaStorage
 - gdcmm::ImageHelper, [425](#)
- GetSpacingValue
 - gdcmm::ImageHelper, [426](#)
- GetStart
 - gdcmm::ByteBuffer, [219](#)
- GetState
 - gdcmm::network::ULConnection, [795](#)
- GetStateIndex
 - gdcmm::network, [129](#)
- GetStream
 - gdcmm::Trace, [726](#)
- GetStreamOffsetFromFile
 - gdcmm::Testing, [724](#)
- GetStreamPtr
 - gdcmm::Reader, [604](#)
 - gdcmm::Writer, [889](#)
- GetString
 - gdcmm::MediaStorage, [492](#)
 - gdcmm::PhotometricInterpretation, [545](#)
 - gdcmm::TransferSyntax, [730](#)
 - gdcmm::UIDs, [757](#)
- GetStringValueFromTag
 - gdcmm::DirectoryHelper, [323](#)
- GetStructureSetObservationNumber
 - vtkRTStructSetProperties, [883](#)
- GetStructureSetROIGenerationAlgorithm
 - vtkRTStructSetProperties, [883](#)
- GetStructureSetROIName
 - vtkRTStructSetProperties, [883](#)
- GetStructureSetROINumber
 - vtkRTStructSetProperties, [883](#)
- GetStructureSetROIRefFrameRefUID
 - vtkRTStructSetProperties, [883](#)
- GetStructureSetRTROIInterpretedType
 - vtkRTStructSetProperties, [883](#)
- GetSurface
 - gdcmm::Segment, [624](#)
- GetSurfaceComments
 - gdcmm::Surface, [693](#)
- GetSurfaceCount
 - gdcmm::Segment, [624](#)
- GetSurfaceNumber
 - gdcmm::Surface, [693](#)
- GetSurfaceProcessing
 - gdcmm::Surface, [693](#)
- GetSurfaceProcessingDescription
 - gdcmm::Surface, [693](#)
- GetSurfaceProcessingRatio
 - gdcmm::Surface, [693](#)
- GetSurfaces
 - gdcmm::Segment, [625](#)
- GetSwapCode
 - gdcmm::TransferSyntax, [730](#)
- GetSwapCodeString
 - gdcmm::SwapCode, [703](#)
- GetSyngoDT
 - gdcmm::CSAElement, [257](#)
- GetTSSString
 - gdcmm::TransferSyntax, [730](#)
- GetTSType
 - gdcmm::TransferSyntax, [731](#)
- GetTable
 - gdcmm::SequenceOfFragments, [636](#)
- GetTableEntry
 - gdcmm::Table, [709](#)
- GetTag
 - gdcmm::AnonymizeEvent, [147](#)
 - gdcmm::Attribute, [166](#)
 - gdcmm::Attribute< Group, Element, TVR, VM::VM1 >, [173](#)
 - gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >, [180](#)
 - gdcmm::DataElement, [278](#)
- GetTagListByLevel
 - gdcmm::BaseRootQuery, [199](#)
 - gdcmm::FindPatientRootQuery, [383](#)
 - gdcmm::FindStudyRootQuery, [386](#)
 - gdcmm::MovePatientRootQuery, [509](#)
 - gdcmm::MoveStudyRootQuery, [511](#)
- GetTempDirectory
 - gdcmm::Testing, [724](#)
- GetTempDirectoryW
 - gdcmm::Testing, [724](#)
- GetTempFilename
 - gdcmm::Testing, [724](#)
- GetTempFilenameW
 - gdcmm::Testing, [724](#)
- GetTimeout

- gdcmm::network::ARTIMTimer, 161
- gdcmm::ServiceClassUser, 649
- GetTimer
 - gdcmm::network::ULConnection, 795
- GetTimezoneOffsetFromUTC
 - gdcmm::System, 707
- GetToplevel
 - gdcmm::Directory, 321
- GetTransferSyntax
 - gdcmm::Bitmap, 210
 - gdcmm::ImageChangeTransferSyntax, 413
 - gdcmm::network::PresentationContextAC, 568
 - gdcmm::network::PresentationContextRQ, 572
 - gdcmm::PresentationContext, 567
- GetTransferSyntaxString
 - gdcmm::UIDs, 757
- GetTransferSyntaxStrings
 - gdcmm::UIDs, 757
- GetTransferSyntaxes
 - gdcmm::network::PresentationContextRQ, 572
- GetType
 - gdcmm::ModuleEntry, 506
 - gdcmm::Orientation, 519
 - gdcmm::Overlay, 524
 - gdcmm::PhotometricInterpretation, 545
- GetTypeAsEnum
 - gdcmm::Overlay, 524
- GetTypeFromTag
 - gdcmm::Defs, 298
 - gdcmm::IOD, 444
- GetTypeOfData
 - gdcmm::Curve, 272
- GetTypeOfDataDescription
 - gdcmm::Curve, 272
- GetTypeString
 - gdcmm::Type, 735
- GetTypeType
 - gdcmm::Type, 735
- GetUIDName
 - gdcmm::UIDs, 757
- GetUIDString
 - gdcmm::UIDs, 757
- GetUniqueTags
 - gdcmm::QueryBase, 588
 - gdcmm::QueryImage, 592
 - gdcmm::QueryPatient, 594
 - gdcmm::QuerySeries, 596
 - gdcmm::QueryStudy, 598
- GetUnpackBuffer
 - gdcmm::Overlay, 524
- GetUnpackBufferLength
 - gdcmm::Overlay, 524
- GetUsage
 - gdcmm::IODEntry, 445
- GetUsageString
 - gdcmm::Usage, 811
- GetUsageType
 - gdcmm::IODEntry, 446
 - gdcmm::Usage, 811
- GetUserData
 - gdcmm::Parser, 529
- GetUserInformation
 - gdcmm::network::AAssociateACPDU, 137
- GetVIEWType
 - gdcmm::Surface, 693
- GetVIEWTypeString
 - gdcmm::Surface, 693
- GetVL
 - gdcmm::DataElement, 279
- GetVL16Max
 - gdcmm::VL, 820
- GetVL32Max
 - gdcmm::VL, 820
- GetVM
 - gdcmm::Attribute, 167
 - gdcmm::Attribute< Group, Element, TVR, VM::VM1 >, 173
 - gdcmm::Attribute< Group, Element, TVR, VM::VM1_3 >, 176
 - gdcmm::Attribute< Group, Element, TVR, VM::VM1_8 >, 177
 - gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >, 180
 - gdcmm::Attribute< Group, Element, TVR, VM::VM2_-2n >, 183
 - gdcmm::Attribute< Group, Element, TVR, VM::VM2_n >, 185
 - gdcmm::Attribute< Group, Element, TVR, VM::VM3_-3n >, 186
 - gdcmm::Attribute< Group, Element, TVR, VM::VM3_n >, 188
 - gdcmm::CSAElement, 257
 - gdcmm::CSAHeaderDictEntry, 266
 - gdcmm::DictEntry, 310
 - gdcmm::Element, 329
 - gdcmm::Element< TVR, VM::VM1_n >, 333
- GetVMString
 - gdcmm::VM, 824
- GetVMType
 - gdcmm::VM, 824
- GetVMTypeFromLength
 - gdcmm::VM, 825
- GetVR
 - gdcmm::Attribute, 167
 - gdcmm::Attribute< Group, Element, TVR, VM::VM1 >, 173
 - gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >, 180

- gdcmm::CSAElement, [257](#)
- gdcmm::CSAHeaderDictEntry, [266](#)
- gdcmm::DataElement, [279](#)
- gdcmm::DictEntry, [310](#)
- gdcmm::Element, [329](#)
- gdcmm::Element< TVR, VM::VM1_n >, [333](#)
- GetVRFromTag
 - gdcmm, [119](#)
- GetVRString
 - gdcmm::VR, [829](#)
- GetVRStringFromFile
 - gdcmm::VR, [829](#)
- GetVRType
 - gdcmm::VR, [829](#)
- GetVRTypeFromFile
 - gdcmm::VR, [829](#)
- GetVTKDataRoot
 - vtkGDCMTesting, [854](#)
- GetValidatedFile
 - gdcmm::Validate, [815](#)
- GetValue
 - gdcmm::Attribute, [166](#), [167](#)
 - gdcmm::Attribute< Group, Element, TVR, VM::VM1 >, [173](#)
 - gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >, [180](#)
 - gdcmm::CSAElement, [257](#)
 - gdcmm::DataElement, [278](#)
 - gdcmm::Element, [328](#)
 - gdcmm::Element< TVR, VM::VM1_n >, [333](#)
 - gdcmm::PDBelement, [534](#)
 - gdcmm::Scanner, [620](#)
- GetValueAsSQ
 - gdcmm::DataElement, [278](#)
- GetValues
 - gdcmm::Attribute, [167](#)
 - gdcmm::Attribute< Group, Element, TVR, VM::VM1 >, [173](#)
 - gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >, [180](#)
 - gdcmm::Element, [328](#)
 - gdcmm::Scanner, [620](#)
- GetVectorAccuracy
 - gdcmm::Surface, [693](#)
- GetVectorCoordinateData
 - gdcmm::Surface, [693](#)
- GetVectorDimensionality
 - gdcmm::Surface, [693](#)
- GetVersion
 - gdcmm::Version, [818](#)
- GetWarningFlag
 - gdcmm::Trace, [726](#)
- GetWarningStream
 - gdcmm::Trace, [726](#)
- GetWindowName
 - vtkImageColorViewer, [865](#)
- GetXMax
 - gdcmm::BoxRegion, [218](#)
- GetXMin
 - gdcmm::BoxRegion, [218](#)
- GetYMax
 - gdcmm::BoxRegion, [218](#)
- GetYMin
 - gdcmm::BoxRegion, [218](#)
- GetZMax
 - gdcmm::BoxRegion, [218](#)
- GetZMin
 - gdcmm::BoxRegion, [218](#)
- GetZSpacing
 - gdcmm::IPPSorter, [449](#)
- GetZSpacingTagFromMediaStorage
 - gdcmm::ImageHelper, [426](#)
- GetZSpacingTolerance
 - gdcmm::IPPSorter, [450](#)
- Global
 - gdcmm::Defs, [299](#)
 - gdcmm::Dicts, [315](#)
 - gdcmm::Global, [390](#)
- GlobalInstance
 - gdcmm, [124](#)
- GrabOverlayFromPixelData
 - gdcmm::Overlay, [524](#)
- Graphics
 - gdcmm::Overlay, [522](#)
- GrayscaleSoftcopyPresentationStateStorageSOPClass
 - gdcmm::MediaStorage, [490](#)
 - gdcmm::UIDs, [747](#)
- green
 - gdcmm::terminal, [131](#)
- group
 - gdcmm::SerieHelper::Rule, [615](#)
- GroupDict
 - gdcmm::GroupDict, [392](#)
- GroupStringVector
 - gdcmm::GroupDict, [392](#)
- GuessFromModality
 - gdcmm::MediaStorage, [492](#)
- HSV
 - gdcmm::PhotometricInterpretation, [544](#)
- HandleDataSet
 - gdcmm::network::ULBasicCallback, [793](#)
 - gdcmm::network::ULConnectionCallback, [797](#)
 - gdcmm::network::ULWritingCallback, [805](#)
- HandleDescription
 - gdcmm::XMLDictReader, [892](#)
 - gdcmm::XMLPrivateDictReader, [894](#)
- HandleEntry

- gdcm::XMLDictReader, [892](#)
- gdcm::XMLPrivateDictReader, [894](#)
- HandleEvent
 - gdcm::network::ULTransitionTable, [803](#)
- HandleIOD
 - gdcm::TableReader, [711](#)
- HandleIODEntry
 - gdcm::TableReader, [711](#)
- HandleMacro
 - gdcm::TableReader, [711](#)
- HandleMacroEntry
 - gdcm::TableReader, [711](#)
- HandleMacroEntryDescription
 - gdcm::TableReader, [711](#)
- HandleModule
 - gdcm::TableReader, [711](#)
- HandleModuleEntry
 - gdcm::TableReader, [711](#)
- HandleModuleEntryDescription
 - gdcm::TableReader, [711](#)
- HandleModuleInclude
 - gdcm::TableReader, [712](#)
- HandleResponse
 - gdcm::network::ULBasicCallback, [794](#)
 - gdcm::network::ULConnectionCallback, [797](#)
 - gdcm::network::ULWritingCallback, [805](#)
- HangingProtocolInformationModelFIND
 - gdcm::UIDs, [749](#)
- HangingProtocolInformationModelMOVE
 - gdcm::UIDs, [749](#)
- HangingProtocolStorage
 - gdcm::MediaStorage, [491](#)
 - gdcm::UIDs, [749](#)
- HardcopyColorImageStorageSOPClassRetired
 - gdcm::UIDs, [746](#)
- HardcopyGrayscaleImageStorage
 - gdcm::MediaStorage, [490](#)
- HardcopyGrayscaleImageStorageSOPClassRetired
 - gdcm::UIDs, [746](#)
- HasObserver
 - gdcm::Subject, [687](#)
- HemodynamicWaveformStorage
 - gdcm::MediaStorage, [490](#)
 - gdcm::UIDs, [746](#)
- hidden
 - gdcm::terminal, [131](#)
- ICBM452T1FrameofReference
 - gdcm::UIDs, [745](#)
- ICBMSingleSubjectMRIFrameofReference
 - gdcm::UIDs, [745](#)
- INT12
 - gdcm::PixelFormat, [547](#)
- INT16
 - gdcm::PixelFormat, [547](#)
- INT32
 - gdcm::PixelFormat, [547](#)
- INT8
 - gdcm::PixelFormat, [547](#)
- INTERFILE
 - gdcm::CSAHeader, [261](#)
- INVALID
 - gdcm::VR, [827](#)
- IS
 - gdcm::VR, [828](#)
- IOD
 - gdcm::IOD, [443](#)
- IODEntry
 - gdcm::IODEntry, [445](#)
- IODMapType
 - gdcm::IODs, [447](#)
- IODMapTypeConstIterator
 - gdcm::IODs, [447](#)
- IODName
 - gdcm::IODs, [447](#)
- IODs
 - gdcm::IODs, [447](#)
- IPPSorter
 - gdcm::IPPSorter, [449](#)
- Icon
 - gdcm::Pixmap, [553](#)
- IconDataScalarType
 - vtkGDCMImageReader, [839](#)
- IconImage
 - gdcm, [117](#)
- IconImageDataExtent
 - vtkGDCMImageReader, [839](#)
- IconImageFilter
 - gdcm::IconImageFilter, [394](#)
- IconImageGenerator
 - gdcm::IconImageGenerator, [396](#)
- IconNumberOfScalarComponents
 - vtkGDCMImageReader, [839](#)
- ignore_char
 - gdcm::ignore_char, [398](#)
- Image
 - gdcm::Image, [400](#)
- ImageOverlayBoxSOPClassRetired
 - gdcm::UIDs, [746](#)
- ImageActor
 - vtkImageColorViewer, [867](#)
- ImageApplyLookupTable
 - gdcm::ImageApplyLookupTable, [404](#)
- ImageChangePhotometricInterpretation
 - gdcm::ImageChangePhotometricInterpretation, [407](#)
 - gdcm::ImageCodec, [419](#)
- ImageChangePlanarConfiguration
 - gdcm::ImageChangePlanarConfiguration, [410](#)

- ImageChangeTransferSyntax
 - gdcm::Bitmap, [212](#)
 - gdcm::ImageChangeTransferSyntax, [413](#)
- ImageCodec
 - gdcm::ImageCodec, [417](#)
- ImageConverter
 - gdcm::ImageConverter, [421](#)
- ImageFormat
 - vtkGDCMImageReader, [839](#)
- ImageFragmentSplitter
 - gdcm::ImageFragmentSplitter, [423](#)
- ImageOrientationPatient
 - vtkGDCMImageReader, [839](#)
- ImagePositionPatient
 - vtkGDCMImageReader, [839](#)
- ImagePositionPatientOrdering
 - gdcm::SerieHelper, [645](#)
- ImageReader
 - gdcm::ImageReader, [429](#)
- ImageRegionReader
 - gdcm::ImageRegionReader, [432](#)
 - gdcm::JPEG2000Codec, [462](#)
 - gdcm::JPEGCodec, [468](#)
 - gdcm::JPEGLSCCodec, [472](#)
 - gdcm::RLECodec, [613](#)
- ImageToImageFilter
 - gdcm::ImageToImageFilter, [435](#)
- ImageWriter
 - gdcm::ImageWriter, [437](#)
- ImplementationClassUIDSub
 - gdcm::network::ImplementationClassUIDSub, [438](#)
- ImplementationUIDSub
 - gdcm::network::ImplementationUIDSub, [439](#)
- ImplementationVersionNameSub
 - gdcm::network::ImplementationVersionNameSub, [439](#)
- Implicit
 - gdcm::TransferSyntax, [729](#)
- ImplicitVRBigEndianACRNEMA
 - gdcm::TransferSyntax, [730](#)
- ImplicitVRBigEndianPrivateGE
 - gdcm::TransferSyntax, [729](#)
- ImplicitVRLittleEndian
 - gdcm::TransferSyntax, [729](#)
- ImplicitVRLittleEndianDefaultTransferSyntaxforDICOM
 - gdcm::UIDs, [743](#)
- IncompleteLUT
 - gdcm::LookupTable, [480](#)
- InitFromRQ
 - gdcm::network::AAssociateACPDU, [137](#)
- Initialize
 - gdcm::network::ULConnectionInfo, [798](#)
- InitializeBlueLUT
 - gdcm::LookupTable, [480](#)
- InitializeConnection
 - gdcm::network::ULConnection, [796](#)
 - gdcm::ServiceClassUser, [649](#)
- InitializeDataSet
 - gdcm::BaseRootQuery, [199](#)
 - gdcm::FindPatientRootQuery, [384](#)
 - gdcm::FindStudyRootQuery, [386](#)
 - gdcm::MovePatientRootQuery, [509](#)
 - gdcm::MoveStudyRootQuery, [512](#)
- InitializeGreenLUT
 - gdcm::LookupTable, [480](#)
- InitializeIncomingConnection
 - gdcm::network::ULConnection, [796](#)
- InitializeLUT
 - gdcm::LookupTable, [480](#)
- InitializeRTStructSet
 - vtkGDCMPolyDataWriter, [851](#)
- InitializeRedLUT
 - gdcm::LookupTable, [480](#)
- Initialized
 - gdcm::LookupTable, [480](#)
- Input
 - gdcm::BitmapToBitmapFilter, [215](#)
- Insert
 - gdcm::CommandDataSet, [246](#)
 - gdcm::DataSet, [290](#)
 - gdcm::FileMetaInformation, [373](#)
 - gdcm::GroupDict, [392](#)
- InsertDataElement
 - gdcm::DataSet, [290](#)
 - gdcm::Item, [454](#)
- InsertEntry
 - gdcm::Table, [709](#)
- InstallPipeline
 - vtkImageColorViewer, [865](#)
- InstanceAvailabilityNotificationSOPClass
 - gdcm::UIDs, [748](#)
- Interactor
 - vtkImageColorViewer, [867](#)
- InteractorStyle
 - vtkImageColorViewer, [867](#)
- Internal
 - gdcm::ApplicationEntity, [156](#)
 - gdcm::Attribute, [170](#)
 - gdcm::Attribute< Group, Element, TVR, VM::VM1 >, [175](#)
 - gdcm::Element, [329](#)
 - gdcm::Element< VR::AS, VM::VM5 >, [340](#)
 - gdcm::LookupTable, [481](#)
 - gdcm::UI, [736](#)
- InternalCode
 - gdcm::Coder, [240](#)
 - gdcm::JPEG12Codec, [457](#)
 - gdcm::JPEG16Codec, [459](#)

- gdcm::JPEG8Codec, [464](#)
- Internals
 - vtkRTStructSetProperties, [884](#)
- Invalid
 - gdcm::Overlay, [522](#)
 - gdcm::Usage, [811](#)
- InverseRescale
 - gdcm::Rescaler, [609](#)
- InverseRescaleFunctionIntoBestFit
 - gdcm::Rescaler, [609](#)
- InvokeEvent
 - gdcm::Subject, [687](#)
- IsAETitleValid
 - gdcm::network::AAAssociateRQPDU, [142](#)
- IsASCII
 - gdcm::VR, [829](#)
- IsASCII2
 - gdcm::VR, [829](#)
- IsBinary
 - gdcm::VR, [829](#)
- IsBinary2
 - gdcm::VR, [829](#)
- IsDual
 - gdcm::VR, [829](#)
- IsEmpty
 - gdcm::Bitmap, [210](#)
 - gdcm::ByteValue, [225](#)
 - gdcm::CSAElement, [257](#)
 - gdcm::CSAHeaderDict, [264](#)
 - gdcm::Curve, [272](#)
 - gdcm::DataElement, [279](#)
 - gdcm::DataSet, [290](#)
 - gdcm::Defs, [298](#)
 - gdcm::Dict, [306](#)
 - gdcm::Dicts, [315](#)
 - gdcm::Filename, [376](#)
 - gdcm::Macros, [484](#)
 - gdcm::Modules, [507](#)
 - gdcm::Overlay, [524](#)
 - gdcm::Preamble, [566](#)
 - gdcm::PrivateDict, [579](#)
 - gdcm::SegmentHelper::BasicCodedEntry, [202](#)
- IsEncapsulated
 - gdcm::TransferSyntax, [731](#)
- IsEncoded
 - gdcm::TransferSyntax, [731](#)
- IsExplicit
 - gdcm::TransferSyntax, [731](#)
- IsGroupLength
 - gdcm::Tag, [716](#)
- IsGroupXX
 - gdcm::Tag, [716](#)
- IsIdentical
 - gdcm::Filename, [376](#)
- IsIllegal
 - gdcm::Tag, [716](#)
- IsImage
 - gdcm::MediaStorage, [492](#)
- IsImplicit
 - gdcm::TransferSyntax, [731](#)
- IsInPixelData
 - gdcm::Overlay, [524](#)
- IsKey
 - gdcm::Scanner, [620](#)
- IsLastFragment
 - gdcm::network::AAAbortPDU, [134](#)
 - gdcm::network::AAAssociateACPDU, [137](#)
 - gdcm::network::AAAssociateRJPDU, [139](#)
 - gdcm::network::AAAssociateRQPDU, [142](#)
 - gdcm::network::AReleaseRPPDU, [158](#)
 - gdcm::network::AReleaseRQPDU, [160](#)
 - gdcm::network::BasePDU, [195](#)
 - gdcm::network::PDataTFPDU, [532](#)
- IsLossless
 - gdcm::PhotometricInterpretation, [545](#)
 - gdcm::TransferSyntax, [731](#)
- IsLossy
 - gdcm::Bitmap, [210](#)
 - gdcm::ImageCodec, [418](#)
 - gdcm::PhotometricInterpretation, [545](#)
 - gdcm::TransferSyntax, [731](#)
- IsOdd
 - gdcm::VL, [820](#)
- IsPresentationContextAccepted
 - gdcm::ServiceClassUser, [650](#)
- IsPrintable
 - gdcm::ByteValue, [225](#)
- IsPrivate
 - gdcm::Tag, [716](#)
- IsPrivateCreator
 - gdcm::Tag, [717](#)
- IsPublic
 - gdcm::Tag, [717](#)
- IsRetired
 - gdcm::PhotometricInterpretation, [545](#)
- IsSameColorSpace
 - gdcm::PhotometricInterpretation, [545](#)
- IsStateSuspension
 - gdcm::JPEG12Codec, [457](#)
 - gdcm::JPEG16Codec, [459](#)
 - gdcm::JPEG8Codec, [464](#)
 - gdcm::JPEGCodec, [468](#)
- IsSwap
 - gdcm::VR, [829](#)
- IsTransferSyntaxCompatible
 - gdcm::Bitmap, [210](#)
- IsUndefined
 - gdcm::MediaStorage, [492](#)

- gdcm::VL, [820](#)
- IsUndefinedLength
 - gdcm::DataElement, [279](#)
 - gdcm::SequenceOfItems, [641](#)
- IsUnique
 - gdcm::DictEntry, [310](#)
- IsVRFile
 - gdcm::VR, [829](#)
- IsValid
 - gdcm::ApplicationEntity, [156](#)
 - gdcm::BoxRegion, [218](#)
 - gdcm::CodeString, [242](#)
 - gdcm::DirectionCosines, [318](#)
 - gdcm::FileMetaInformation, [373](#)
 - gdcm::ImageCodec, [418](#)
 - gdcm::JPEGCodec, [468](#)
 - gdcm::LO, [476](#)
 - gdcm::PixelFormat, [549](#)
 - gdcm::Preamble, [566](#)
 - gdcm::Region, [607](#)
 - gdcm::String, [682](#)
 - gdcm::TagPath, [720](#)
 - gdcm::TransferSyntax, [731](#)
 - gdcm::UIDGenerator, [738](#)
 - gdcm::VM, [825](#)
 - gdcm::VR, [829](#)
- IsZero
 - gdcm::Overlay, [524](#)
- ItFileSetHt
 - gdcm::SerieHelper, [645](#)
- Item
 - gdcm::Item, [453](#)
- ItemVector
 - gdcm::SequenceOfItems, [640](#)
- Items
 - gdcm::SequenceOfItems, [642](#)
- Iterator
 - gdcm::CSAHeaderDict, [264](#)
 - gdcm::DataSet, [288](#)
 - gdcm::Dict, [305](#)
 - gdcm::SequenceOfFragments, [635](#)
 - gdcm::SequenceOfItems, [640](#)
- iterator
 - gdcm::CodeString, [241](#)
 - gdcm::LO, [476](#)
 - gdcm::String, [681](#)
- JPEG2000
 - gdcm::TransferSyntax, [730](#)
- JPEG2000_COMPRESSION
 - vtkGDCMImageWriter, [842](#)
- JPEG2000ImageCompression
 - gdcm::UIDs, [744](#)
- JPEG2000ImageCompressionLosslessOnly
 - gdcm::UIDs, [744](#)
- JPEG2000Lossless
 - gdcm::TransferSyntax, [730](#)
- JPEG2000Part2
 - gdcm::TransferSyntax, [730](#)
- JPEG2000Part2Lossless
 - gdcm::TransferSyntax, [730](#)
- JPEG2000Part2MulticomponentImageCompression
 - gdcm::UIDs, [744](#)
- JPEG2000Part2MulticomponentImageCompression-
LosslessOnly
 - gdcm::UIDs, [744](#)
- JPEG_COMPRESSION
 - vtkGDCMImageWriter, [842](#)
- JPEGBaselineProcess1
 - gdcm::TransferSyntax, [730](#)
- JPEGBaselineProcess1DefaultTransferSyntaxforLossyJP-
EG8BitImageCompression
 - gdcm::UIDs, [743](#)
- JPEGExtendedHierarchicalProcess1618Retired
 - gdcm::UIDs, [744](#)
- JPEGExtendedHierarchicalProcess1719Retired
 - gdcm::UIDs, [744](#)
- JPEGExtendedProcess24DefaultTransferSyntaxforLossy-
JPEG12BitImageCompressionProcess4only
 - gdcm::UIDs, [743](#)
- JPEGExtendedProcess2_4
 - gdcm::TransferSyntax, [730](#)
- JPEGExtendedProcess35Retired
 - gdcm::UIDs, [743](#)
- JPEGExtendedProcess3_5
 - gdcm::TransferSyntax, [730](#)
- JPEGFullProgressionHierarchicalProcess2426Retired
 - gdcm::UIDs, [744](#)
- JPEGFullProgressionHierarchicalProcess2527Retired
 - gdcm::UIDs, [744](#)
- JPEGFullProgressionNonHierarchicalProcess1012-
Retired
 - gdcm::UIDs, [743](#)
- JPEGFullProgressionNonHierarchicalProcess1113-
Retired
 - gdcm::UIDs, [743](#)
- JPEGFullProgressionProcess10_12
 - gdcm::TransferSyntax, [730](#)
- JPEGLS_COMPRESSION
 - vtkGDCMImageWriter, [842](#)
- JPEGLSLossless
 - gdcm::TransferSyntax, [730](#)
- JPEGLSLosslessImageCompression
 - gdcm::UIDs, [744](#)
- JPEGLSLossyNearLosslessImageCompression
 - gdcm::UIDs, [744](#)
- JPEGLSNearLossless
 - gdcm::TransferSyntax, [730](#)

- JPEGLosslessHierarchicalProcess28Retired
 - gdcm::UIDs, [744](#)
- JPEGLosslessHierarchicalProcess29Retired
 - gdcm::UIDs, [744](#)
- JPEGLosslessNonHierarchicalFirstOrderPrediction-Process14SelectionValue1DefaultTransfer-SyntaxforLosslessJPEGImageCompression
 - gdcm::UIDs, [744](#)
- JPEGLosslessNonHierarchicalProcess14
 - gdcm::UIDs, [743](#)
- JPEGLosslessNonHierarchicalProcess15Retired
 - gdcm::UIDs, [744](#)
- JPEGLosslessProcess14
 - gdcm::TransferSyntax, [730](#)
- JPEGLosslessProcess14_1
 - gdcm::TransferSyntax, [730](#)
- JPEGSpectralSelectionHierarchicalProcess2022Retired
 - gdcm::UIDs, [744](#)
- JPEGSpectralSelectionHierarchicalProcess2123Retired
 - gdcm::UIDs, [744](#)
- JPEGSpectralSelectionNonHierarchicalProcess68Retired
 - gdcm::UIDs, [743](#)
- JPEGSpectralSelectionNonHierarchicalProcess79Retired
 - gdcm::UIDs, [743](#)
- JPEGSpectralSelectionProcess6_8
 - gdcm::TransferSyntax, [730](#)
- JPIPIReferenced
 - gdcm::TransferSyntax, [730](#)
 - gdcm::UIDs, [744](#)
- JPIPIReferencedDeflate
 - gdcm::UIDs, [744](#)
- JPEG12Codec
 - gdcm::JPEG12Codec, [457](#)
- JPEG16Codec
 - gdcm::JPEG16Codec, [459](#)
- JPEG2000Codec
 - gdcm::JPEG2000Codec, [461](#)
- JPEG8Codec
 - gdcm::JPEG8Codec, [464](#)
- JPEGCodec
 - gdcm::JPEGCodec, [467](#)
- JPEGLSCodec
 - gdcm::JPEGLSCodec, [471](#)
- Join
 - gdcm::Filename, [376](#)
- JunkAfterDocElementError
 - gdcm::Parser, [529](#)
- KAKADUCodec
 - gdcm::KAKADUCodec, [473](#)
- KeyObjectSelectionDocument
 - gdcm::MediaStorage, [490](#)
- KeyObjectSelectionDocumentStorage
 - gdcm::UIDs, [748](#)
- KeyField
 - gdcm::CSAElement, [258](#)
- KeyValuePairArrayType
 - gdcm::CompositeNetworkFunctions, [248](#)
- KeyValuePairType
 - gdcm::CompositeNetworkFunctions, [248](#)
- LD_ALL
 - gdcm, [119](#)
- LD_NOSEQ
 - gdcm, [119](#)
- LD_NOSHADOW
 - gdcm, [119](#)
- LD_NOSHADOWSEQ
 - gdcm, [119](#)
- LINE
 - gdcm::MeshPrimitive, [499](#)
- LO
 - gdcm::VR, [828](#)
- LT
 - gdcm::VR, [828](#)
- LO
 - gdcm::LO, [476](#)
- LOComp
 - gdcm, [118](#)
- LTCComp
 - gdcm, [118](#)
- LUT
 - gdcm::Bitmap, [212](#)
 - gdcm::ImageCodec, [420](#)
- LUTPtr
 - gdcm::Bitmap, [208](#)
 - gdcm::ImageCodec, [417](#)
- LeadECGWaveformStorage
 - gdcm::MediaStorage, [490](#)
- Level
 - vtkImageMapToWindowLevelColors2, [873](#)
- ListCharSets
 - gdcm::QueryFactory, [589](#)
- LittleEndian
 - gdcm::SwapCode, [702](#)
- Load
 - gdcm::Directory, [321](#)
- LoadDefault
 - gdcm::CSAHeaderDict, [264](#)
 - gdcm::Dict, [306](#)
 - gdcm::PrivateDict, [579](#)
- LoadDefaults
 - gdcm::Defs, [298](#)
 - gdcm::Dicts, [315](#)
- LoadFromDataElement
 - gdcm::CSAHeader, [262](#)
 - gdcm::PDBHeader, [536](#)
- LoadFromFile

- gdcM::Defs, 298
- LoadIconImage
 - vtkGDCMImageReader, 840
- LoadImageFromFiles
 - gdcM::DirectoryHelper, 323
- LoadOverlays
 - vtkGDCMImageReader, 840
- LoadResourcesFiles
 - gdcM::Global, 391
- LoadSingleFile
 - vtkGDCMImageReader, 837
- Locate
 - gdcM::Global, 391
- LodModeType
 - gdcM, 119
- LookupTable
 - gdcM::LookupTable, 479
 - vtkImageMapToColors16, 870
- LookupTableType
 - gdcM::LookupTable, 479
- Lossless
 - gdcM::JPEGCodec, 468
- LossyFlag
 - gdcM::Bitmap, 212
 - gdcM::ImageCodec, 420
 - vtkGDCMImageReader, 840
- MAGNIFIED
 - gdcM::Spacing, 667
- MANUAL
 - gdcM::Segment, 624
- MONOCHROME1
 - gdcM::PhotometricInterpretation, 544
- MONOCHROME2
 - gdcM::PhotometricInterpretation, 544
- MPEG2MainProfile
 - gdcM::TransferSyntax, 730
- MPEG2MainProfileMainLevel
 - gdcM::UIDs, 744
- MPTType_END
 - gdcM::MeshPrimitive, 499
- MRImageStorage
 - gdcM::MediaStorage, 489
 - gdcM::UIDs, 746
- MRSpectroscopyStorage
 - gdcM::MediaStorage, 489
 - gdcM::UIDs, 746
- MS_END
 - gdcM::MediaStorage, 491
- m_ConstMemberFunction
 - gdcM::MemberCommand, 497
- m_MemberFunction
 - gdcM::MemberCommand, 497
 - gdcM::SimpleMemberCommand, 656
- m_This
 - gdcM::MemberCommand, 497
 - gdcM::SimpleMemberCommand, 656
- m_char
 - gdcM::ignore_char, 398
- mAction
 - gdcM::network::Transition, 734
- MD5
 - gdcM::MD5, 486
- MD5DataImagesType
 - gdcM::Testing, 722
- MD5MetaImagesType
 - vtkGDCMTesting, 854
- mDataSet
 - gdcM::BaseRootQuery, 200
- mElementOffsets
 - gdcM::StreamImageWriter, 678
- mElementOffsets1
 - gdcM::StreamImageWriter, 678
- mEnd
 - gdcM::network::Transition, 734
- mHelpDescription
 - gdcM::BaseRootQuery, 200
- mImage
 - gdcM::BaseRootQuery, 200
- MPTType
 - gdcM::MeshPrimitive, 499
- mPatient
 - gdcM::BaseRootQuery, 200
- mRootType
 - gdcM::BaseRootQuery, 200
- MSType
 - gdcM::MediaStorage, 489
- mSeries
 - gdcM::BaseRootQuery, 200
- mStudy
 - gdcM::BaseRootQuery, 200
- mWriter
 - gdcM::StreamImageWriter, 679
- mXMax
 - gdcM::StreamImageWriter, 679
- mXMin
 - gdcM::StreamImageWriter, 679
- mYMax
 - gdcM::StreamImageWriter, 679
- mYMin
 - gdcM::StreamImageWriter, 679
- mZMax
 - gdcM::StreamImageWriter, 679
- mZMin
 - gdcM::StreamImageWriter, 679
- Macro
 - gdcM::Macro, 482
- MacroEntry

- gdcmm, 118
- Macros
 - gdcmm::Macros, 484
- magenta
 - gdcmm::terminal, 131
- MakeDirectory
 - gdcmm::System, 707
- MakeNew
 - gdcmm::network::Transition, 734
- MakeObject
 - gdcmm::AnonymizeEvent, 147
 - gdcmm::DataEvent, 285
 - gdcmm::DataSetEvent, 294
 - gdcmm::Event, 351
 - gdcmm::ProgressEvent, 583
- MammographyCADSR
 - gdcmm::MediaStorage, 490
- MammographyCADSRStorage
 - gdcmm::UIDs, 747
- Mandatory
 - gdcmm::Usage, 811
- MapCSAHeaderDictEntry
 - gdcmm::CSAHeaderDict, 264
- MapDictEntry
 - gdcmm::Dict, 305
- MapIODEntry
 - gdcmm::IOD, 443
- MapModuleEntry
 - gdcmm::Macro, 482
 - gdcmm::Module, 503
- MapScalarsThroughTable2
 - vtkLookupTable16, 880
- MapTableEntry
 - gdcmm::Table, 709
- MappingType
 - gdcmm::Scanner, 618
- MaxLength
 - gdcmm::ApplicationEntity, 156
 - gdcmm::PersonName, 541
- MaxNumberOfComponents
 - gdcmm::ApplicationEntity, 156
 - gdcmm::PersonName, 541
- MaxPrintLength
 - gdcmm::Printer, 578
- MaximumLengthSub
 - gdcmm::network::MaximumLengthSub, 485
- MediaCreationManagementSOPClassUID
 - gdcmm::UIDs, 746
- MediaStorageDirectoryStorage
 - gdcmm::MediaStorage, 489
 - gdcmm::UIDs, 744
- MediaStorage
 - gdcmm::MediaStorage, 491
- MediaStorageDataFilesType
 - gdcmm::Testing, 722
- MedicalImageProperties
 - vtkGDCMImageReader, 840
 - vtkGDCMPolyDataReader, 849
 - vtkGDCMPolyDataWriter, 852
- MemberCommand
 - gdcmm::MemberCommand, 496
- MeshPrimitive
 - gdcmm::MeshPrimitive, 500
- MessageID
 - gdcmm::network::CEchoRQ, 227
- MetaInformationTS
 - gdcmm::FileMetaInformation, 374
- ModalityPerformedProcedureStepNotificationSOPClass
 - gdcmm::UIDs, 745
- ModalityPerformedProcedureStepRetrieveSOPClass
 - gdcmm::UIDs, 745
- ModalityPerformedProcedureStepSOPClass
 - gdcmm::MediaStorage, 491
 - gdcmm::UIDs, 745
- ModalityWorklistInformationModelFIND
 - gdcmm::UIDs, 748
- Mode
 - gdcmm::terminal, 131
- Module
 - gdcmm::Module, 503
- ModuleEntry
 - gdcmm::ModuleEntry, 505
- ModuleMapType
 - gdcmm::Macros, 484
 - gdcmm::Modules, 507
- Modules
 - gdcmm::Modules, 507
- MovePatientRootQuery
 - gdcmm::MovePatientRootQuery, 509
- MoveStudyRootQuery
 - gdcmm::MoveStudyRootQuery, 511
- mSPFile
 - gdcmm::StreamImageWriter, 679
- MultiframeGrayscaleByteSecondaryCaptureImageStorage
 - gdcmm::MediaStorage, 489
 - gdcmm::UIDs, 746
- MultiframeGrayscaleWordSecondaryCaptureImageStorage
 - gdcmm::MediaStorage, 489
 - gdcmm::UIDs, 746
- MultiframeSingleBitSecondaryCaptureImageStorage
 - gdcmm::MediaStorage, 489
 - gdcmm::UIDs, 746
- MultiframeTrueColorSecondaryCaptureImageStorage
 - gdcmm::MediaStorage, 490
 - gdcmm::UIDs, 746

- N_ACTION_RQ
 - gdcm::network::DIMSE, 317
- N_ACTION_RSP
 - gdcm::network::DIMSE, 317
- N_CREATE_RQ
 - gdcm::network::DIMSE, 317
- N_CREATE_RSP
 - gdcm::network::DIMSE, 317
- N_DELETE_RQ
 - gdcm::network::DIMSE, 317
- N_DELETE_RSP
 - gdcm::network::DIMSE, 317
- N_EVENT_REPORT_RQ
 - gdcm::network::DIMSE, 316
- N_EVENT_REPORT_RSP
 - gdcm::network::DIMSE, 316
- N_GET_RQ
 - gdcm::network::DIMSE, 316
- N_GET_RSP
 - gdcm::network::DIMSE, 317
- N_SET_RQ
 - gdcm::network::DIMSE, 317
- N_SET_RSP
 - gdcm::network::DIMSE, 317
- NO
 - gdcm::Surface, 691
- NO_COMPRESSION
 - vtkGDCMImageWriter, 842
- NOMAGIC
 - gdcm::CSAHeader, 261
- Name
 - gdcm::ModuleEntry, 506
- NameField
 - gdcm::CSAElement, 258
 - gdcm::PDBelement, 534
- NeedByteSwap
 - gdcm::Bitmap, 212
 - gdcm::ImageCodec, 420
- NeedOverlayCleanup
 - gdcm::ImageCodec, 420
- NegotiatedType
 - gdcm::TransferSyntax, 729
- NestedMacroEntries
 - gdcm, 118
- NestedModuleEntries
 - gdcm::NestedModuleEntries, 514
- New
 - gdcm::Anonymizer, 151
 - gdcm::MemberCommand, 496
 - gdcm::Scanner, 621
 - gdcm::SequenceOfFragments, 636
 - gdcm::SequenceOfItems, 641
 - gdcm::SimpleMemberCommand, 656
 - vtkGDCMImageReader, 837
 - vtkGDCMImageWriter, 843
 - vtkGDCMMedicalImageProperties, 846
 - vtkGDCMPolyDataReader, 848
 - vtkGDCMPolyDataWriter, 851
 - vtkGDCMTesting, 854
 - vtkGDCMThreadedImageReader, 857
 - vtkGDCMThreadedImageReader2, 859
 - vtkImageColorViewer, 865
 - vtkImageMapToColors16, 869
 - vtkImageMapToWindowLevelColors2, 872
 - vtkImagePlanarComponentsToComponents, 874
 - vtkImageRGBToYBR, 876
 - vtkImageYBRToRGB, 878
 - vtkLookupTable16, 880
 - vtkRTStructSetProperties, 883
- NoElementsError
 - gdcm::Parser, 529
- NoError
 - gdcm::Parser, 529
- NoMemoryError
 - gdcm::Parser, 529
- NoObject
 - gdcm::MediaStorage, 491
- NoOfItemsField
 - gdcm::CSAElement, 259
- Normalize
 - gdcm::DirectionCosines, 318
- NuclearMedicineImageStorage
 - gdcm::MediaStorage, 490
 - gdcm::UIDs, 747
- NuclearMedicineImageStorageRetired
 - gdcm::MediaStorage, 489
 - gdcm::UIDs, 746
- NumberOfDimensions
 - gdcm::Bitmap, 212
 - gdcm::ImageCodec, 420
- NumberOfIconImages
 - vtkGDCMImageReader, 840
- NumberOfOverlays
 - vtkGDCMImageReader, 840
- NumberOfSurfaces
 - gdcm::SurfaceWriter, 701
- OB
 - gdcm::VR, 828
- OB_OW
 - gdcm::VR, 828
- OBLIQUE
 - gdcm::Orientation, 519
- OF
 - gdcm::VR, 828
- OW
 - gdcm::VR, 828
- Object

- gdcmm::Object, [517](#)
- ObjectEnd
 - gdcmm::MediaStorage, [491](#)
- ObjectType
 - gdcmm::MediaStorage, [491](#)
- Ofstream
 - gdcmm::Writer, [890](#)
- op
 - gdcmm::SerieHelper::Rule, [615](#)
- operator const char *
 - gdcmm::ConstCharWrapper, [251](#)
 - gdcmm::Filename, [376](#)
 - gdcmm::String, [682](#)
- operator const double *
 - gdcmm::DirectionCosines, [318](#)
- operator const std::vector< char > &
 - gdcmm::ByteValue, [225](#)
- operator MStype
 - gdcmm::MediaStorage, [492](#)
- operator ObjectType *
 - gdcmm::SmartPointer, [660](#)
- operator PType
 - gdcmm::PhotometricInterpretation, [545](#)
- operator ScalarType
 - gdcmm::PixelFormat, [549](#)
- operator SwapCode::SwapCodeType
 - gdcmm::SwapCode, [703](#)
- operator TStype
 - gdcmm::TransferSyntax, [731](#)
 - gdcmm::UIDs, [757](#)
- operator TypeType
 - gdcmm::Type, [735](#)
- operator uint32_t
 - gdcmm::VL, [820](#)
- operator UsageType
 - gdcmm::Usage, [811](#)
- operator VMType
 - gdcmm::VM, [825](#)
- operator VRType
 - gdcmm::VR, [829](#)
- operator<
 - gdcmm::Attribute, [167](#)
 - gdcmm::Attribute< Group, Element, TVR, VM::VM1 >, [173](#)
 - gdcmm::CSAElement, [258](#)
 - gdcmm::CSAHeaderDictEntry, [266](#)
 - gdcmm::DataElement, [279](#)
 - gdcmm::PrivateTag, [581](#)
 - gdcmm::Tag, [717](#)
- operator<<
 - gdcmm, [120–123](#)
 - gdcmm::BasicOffsetTable, [205](#)
 - gdcmm::CodeString, [242](#)
 - gdcmm::CommandDataSet, [246](#)
 - gdcmm::CSAElement, [258](#)
 - gdcmm::CSAHeader, [263](#)
 - gdcmm::CSAHeaderDict, [264](#)
 - gdcmm::CSAHeaderDictEntry, [266](#)
 - gdcmm::DataElement, [282](#)
 - gdcmm::DataSet, [292](#)
 - gdcmm::Dict, [306](#)
 - gdcmm::DictEntry, [311](#)
 - gdcmm::Dicts, [315](#)
 - gdcmm::Directory, [321](#)
 - gdcmm::File, [362](#)
 - gdcmm::FileMetaInformation, [374](#)
 - gdcmm::FileSet, [380](#)
 - gdcmm::Fragment, [389](#)
 - gdcmm::Global, [391](#)
 - gdcmm::GroupDict, [393](#)
 - gdcmm::IOD, [444](#)
 - gdcmm::IODEntry, [446](#)
 - gdcmm::IODs, [447](#)
 - gdcmm::Item, [454](#)
 - gdcmm::Macro, [482](#)
 - gdcmm::Macros, [484](#)
 - gdcmm::MediaStorage, [493](#)
 - gdcmm::Module, [503](#)
 - gdcmm::ModuleEntry, [506](#)
 - gdcmm::Modules, [508](#)
 - gdcmm::NestedModuleEntries, [514](#)
 - gdcmm::Object, [517](#)
 - gdcmm::Orientation, [519](#)
 - gdcmm::PDBelement, [534](#)
 - gdcmm::PDBHeader, [536](#)
 - gdcmm::PhotometricInterpretation, [545](#)
 - gdcmm::PixelFormat, [550](#)
 - gdcmm::Preamble, [566](#)
 - gdcmm::PrivateDict, [579](#)
 - gdcmm::PrivateTag, [581](#)
 - gdcmm::Scanner, [621](#)
 - gdcmm::Sorter, [666](#)
 - gdcmm::SwapCode, [703](#)
 - gdcmm::Table, [709](#)
 - gdcmm::Tag, [719](#)
 - gdcmm::TransferSyntax, [731](#)
 - gdcmm::Type, [736](#)
 - gdcmm::UI, [736](#)
 - gdcmm::Usage, [811](#)
 - gdcmm::Version, [819](#)
 - gdcmm::VL, [821](#)
 - gdcmm::VM, [825](#)
 - gdcmm::VR, [830](#)
- operator<=
 - gdcmm::Tag, [717](#)
- operator>>
 - gdcmm, [124](#)
 - gdcmm::Tag, [719](#)

- operator*
 - gdcm::SmartPointer, 660
- operator()
 - gdcm::DataSet, 291
 - gdcm::Scanner::Itr, 481
- operator++
 - gdcm::VL, 820
- operator+=
 - gdcm::VL, 820
- operator->
 - gdcm::SmartPointer, 660
- operator=
 - gdcm::BoxRegion, 218
 - gdcm::ByteValue, 225
 - gdcm::CSAElement, 258
 - gdcm::DataElement, 279
 - gdcm::DataSet, 291
 - gdcm::Element< TVR, VM::VM1_n >, 333
 - gdcm::network::UserInformation, 813
 - gdcm::Object, 517
 - gdcm::ParseException, 527
 - gdcm::Preamble, 566
 - gdcm::SequenceOfItems, 641
 - gdcm::SmartPointer, 660
 - gdcm::Tag, 717
- operator==
 - gdcm, 123
 - gdcm::Attribute, 168
 - gdcm::Attribute< Group, Element, TVR, VM::VM1 >, 173
 - gdcm::ByteValue, 225
 - gdcm::CodeString, 242
 - gdcm::CSAElement, 258
 - gdcm::DataElement, 280
 - gdcm::network::AbstractSyntax, 145
 - gdcm::network::PresentationContextRQ, 572
 - gdcm::network::TransferSyntaxSub, 732
 - gdcm::PDBelement, 534
 - gdcm::PixelFormat, 549
 - gdcm::PresentationContext, 567
 - gdcm::SequenceOfFragments, 636
 - gdcm::SequenceOfItems, 641
 - gdcm::Tag, 717
 - gdcm::Value, 817
- OphthalmicPhotography16BitImageStorage
 - gdcm::UIDs, 747
- OphthalmicPhotography8BitImageStorage
 - gdcm::UIDs, 747
- OphthalmicTomographyImageStorage
 - gdcm::UIDs, 747
- OrderFileList
 - gdcm::SerieHelper, 645
- Orientation
 - gdcm::Orientation, 519
- OrientationType
 - gdcm::Orientation, 519
- Output
 - gdcm::BitmapToBitmapFilter, 215
- OutputFormat
 - vtkImageMapToColors16, 870
- OutputTypes
 - gdcm::DictConverter, 307
- Overlay
 - gdcm::Overlay, 523
- OverlayImageActor
 - vtkImageColorViewer, 867
- OverlayType
 - gdcm::Overlay, 522
- Overlays
 - gdcm::Pixmap, 553
- PALETTE_COLOR
 - gdcm::PhotometricInterpretation, 544
- PDF
 - gdcm::MediaStorage, 491
- PETImageStorage
 - gdcm::MediaStorage, 490
- PHILIPS
 - gdcm::Dicts, 314
- PI_END
 - gdcm::PhotometricInterpretation, 544
- PN
 - gdcm::VR, 828
- POINTS
 - gdcm::Surface, 691
- PDBelement
 - gdcm::PDBelement, 534
- PDBHeader
 - gdcm::PDBHeader, 536
- PDFCodec
 - gdcm::PDFCodec, 538
- PDataTFPDU
 - gdcm::network::PDataTFPDU, 532
- PF
 - gdcm::Bitmap, 212
 - gdcm::ImageCodec, 420
- PGXCodec
 - gdcm::PGXCodec, 542
- PI
 - gdcm::Bitmap, 212
 - gdcm::ImageCodec, 420
- PIType
 - gdcm::PhotometricInterpretation, 544
- PNComp
 - gdcm, 118
- PNMCodec
 - gdcm::PNMCodec, 564
- PVRGCodec

- gdcm::PVRGCodec, [585](#)
- Pack
 - gdcm::Unpacker12Bits, [809](#)
- Padding
 - gdcm::ApplicationEntity, [156](#)
 - gdcm::PersonName, [541](#)
- Parent
 - gdcm::Element< TVR, VM::VM1_2 >, [331](#)
 - gdcm::Element< TVR, VM::VM2_2n >, [335](#)
 - gdcm::Element< TVR, VM::VM2_n >, [337](#)
 - gdcm::Element< TVR, VM::VM3_3n >, [338](#)
 - gdcm::Element< TVR, VM::VM3_n >, [340](#)
- Parse
 - gdcm::Parser, [529](#)
- ParseBuffer
 - gdcm::Parser, [530](#)
- ParseCertificateFile
 - gdcm::CryptographicMessageSyntax, [254](#)
- ParseDateTime
 - gdcm::System, [707](#), [708](#)
- ParseDump
 - gdcm::ASN1, [162](#)
- ParseDumpFile
 - gdcm::ASN1, [162](#)
- ParseException
 - gdcm::ParseException, [527](#)
- ParseKeyFile
 - gdcm::CryptographicMessageSyntax, [254](#)
- Parser
 - gdcm::Parser, [529](#)
- PassAlphaToOutput
 - vtkImageMapToColors16, [870](#)
- Patient
 - gdcm::Patient, [530](#)
- PatientRootQueryRetrieveInformationModelFIND
 - gdcm::UIDs, [748](#)
- PatientRootQueryRetrieveInformationModelGET
 - gdcm::UIDs, [748](#)
- PatientRootQueryRetrieveInformationModelMOVE
 - gdcm::UIDs, [748](#)
- PatientStudyOnlyQueryRetrieveInformationModelFIND-Retired
 - gdcm::UIDs, [748](#)
- PatientStudyOnlyQueryRetrieveInformationModelGET-Retired
 - gdcm::UIDs, [748](#)
- PatientStudyOnlyQueryRetrieveInformationModelMOVE-Retired
 - gdcm::UIDs, [748](#)
- PerformAction
 - gdcm::network::ULAction, [759](#)
 - gdcm::network::ULActionAA1, [760](#)
 - gdcm::network::ULActionAA2, [761](#)
 - gdcm::network::ULActionAA3, [763](#)
 - gdcm::network::ULActionAA4, [764](#)
 - gdcm::network::ULActionAA5, [765](#)
 - gdcm::network::ULActionAA6, [766](#)
 - gdcm::network::ULActionAA7, [767](#)
 - gdcm::network::ULActionAA8, [768](#)
 - gdcm::network::ULActionAE1, [770](#)
 - gdcm::network::ULActionAE2, [771](#)
 - gdcm::network::ULActionAE3, [772](#)
 - gdcm::network::ULActionAE4, [773](#)
 - gdcm::network::ULActionAE5, [774](#)
 - gdcm::network::ULActionAE6, [775](#)
 - gdcm::network::ULActionAE7, [777](#)
 - gdcm::network::ULActionAE8, [778](#)
 - gdcm::network::ULActionAR1, [779](#)
 - gdcm::network::ULActionAR10, [780](#)
 - gdcm::network::ULActionAR2, [781](#)
 - gdcm::network::ULActionAR3, [782](#)
 - gdcm::network::ULActionAR4, [784](#)
 - gdcm::network::ULActionAR5, [785](#)
 - gdcm::network::ULActionAR6, [786](#)
 - gdcm::network::ULActionAR7, [787](#)
 - gdcm::network::ULActionAR8, [788](#)
 - gdcm::network::ULActionAR9, [789](#)
 - gdcm::network::ULActionDT1, [791](#)
 - gdcm::network::ULActionDT2, [792](#)
- Philips3D
 - gdcm::MediaStorage, [490](#)
- PhilipsPrivateMRSyntheticImageStorage
 - gdcm::MediaStorage, [491](#)
- PhotometricInterpretation
 - gdcm::PhotometricInterpretation, [544](#)
- PixelData
 - gdcm::Bitmap, [212](#)
 - gdcm::PixmapReader, [557](#)
 - gdcm::PixmapWriter, [562](#)
- PixelFormat
 - gdcm::PixelFormat, [547](#)
- Pixmap
 - gdcm::Pixmap, [552](#)
- PixmapReader
 - gdcm::Bitmap, [212](#)
 - gdcm::PixmapReader, [556](#)
- PixmapToPixmapFilter
 - gdcm::PixmapToPixmapFilter, [558](#)
- PixmapWriter
 - gdcm::PixmapWriter, [561](#)
- PlanarConfiguration
 - gdcm::Bitmap, [212](#)
 - gdcm::ImageCodec, [420](#)
 - vtkGDCMImageReader, [840](#)
- pointer
 - gdcm::CodeString, [241](#)
 - gdcm::LO, [476](#)
 - gdcm::String, [681](#)

- PositronEmissionTomographyImageStorage
 - gdcm::UIDs, [748](#)
- Preamble
 - gdcm::Preamble, [565](#)
- PrepareWrite
 - gdcm::PixmapWriter, [561](#)
 - gdcm::SegmentWriter, [632](#)
 - gdcm::SurfaceWriter, [701](#)
- PrepareWritePointMacro
 - gdcm::SurfaceWriter, [701](#)
- Prepend
 - gdcm::Global, [391](#)
- PresentationLUTSOPClass
 - gdcm::UIDs, [746](#)
- PresentationContext
 - gdcm::PresentationContext, [567](#)
- PresentationContextAC
 - gdcm::network::PresentationContextAC, [568](#)
- PresentationContextArrayType
 - gdcm::network::AAssociateRQPDU, [141](#)
 - gdcm::PresentationContextGenerator, [570](#)
- PresentationContextGenerator
 - gdcm::PresentationContextGenerator, [570](#)
- PresentationContextRQ
 - gdcm::network::PresentationContextRQ, [572](#)
- PresentationDataValue
 - gdcm::network::PresentationDataValue, [574](#)
- PrimitiveData
 - gdcm::MeshPrimitive, [500](#)
- PrimitiveType
 - gdcm::MeshPrimitive, [500](#)
- PrimitivesData
 - gdcm::MeshPrimitive, [499](#)
- Print
 - gdcm::ApplicationEntity, [156](#)
 - gdcm::Attribute, [168](#)
 - gdcm::Attribute< Group, Element, TVR, VM::VM1 >, [174](#)
 - gdcm::Attribute< Group, Element, TVR, VM::VM1_n >, [180](#)
 - gdcm::BaseRootQuery, [199](#)
 - gdcm::Bitmap, [210](#)
 - gdcm::BoxRegion, [218](#)
 - gdcm::ByteValue, [225](#)
 - gdcm::CSAHeader, [262](#)
 - gdcm::Curve, [272](#)
 - gdcm::DataSet, [291](#)
 - gdcm::DictPrinter, [313](#)
 - gdcm::DirectionCosines, [318](#)
 - gdcm::Directory, [321](#)
 - gdcm::Element, [329](#)
 - gdcm::Element< TVR, VM::VM1_n >, [333](#)
 - gdcm::Element< VR::AS, VM::VM5 >, [340](#)
 - gdcm::Event, [351](#)
 - gdcm::Image, [401](#)
 - gdcm::LookupTable, [480](#)
 - gdcm::network::AAAbortPDU, [134](#)
 - gdcm::network::AAssociateACPDU, [137](#)
 - gdcm::network::AAssociateRJPDU, [139](#)
 - gdcm::network::AAssociateRQPDU, [142](#)
 - gdcm::network::AbstractSyntax, [145](#)
 - gdcm::network::ApplicationContext, [155](#)
 - gdcm::network::AReleaseRPPDU, [158](#)
 - gdcm::network::AReleaseRQPDU, [160](#)
 - gdcm::network::AsynchronousOperationsWindow-Sub, [163](#)
 - gdcm::network::BasePDU, [195](#)
 - gdcm::network::ImplementationClassUIDSub, [438](#)
 - gdcm::network::ImplementationVersionNameSub, [439](#)
 - gdcm::network::MaximumLengthSub, [485](#)
 - gdcm::network::PDataTFPDU, [532](#)
 - gdcm::network::PresentationContextAC, [568](#)
 - gdcm::network::PresentationContextRQ, [573](#)
 - gdcm::network::PresentationDataValue, [574](#)
 - gdcm::network::RoleSelectionSub, [614](#)
 - gdcm::network::ServiceClassApplicationInformation, [646](#)
 - gdcm::network::SOPClassExtendedNegociationSub, [661](#)
 - gdcm::network::TransferSyntaxSub, [732](#)
 - gdcm::network::UserInformation, [813](#)
 - gdcm::Object, [517](#)
 - gdcm::Orientation, [519](#)
 - gdcm::Overlay, [524](#)
 - gdcm::PDBHeader, [536](#)
 - gdcm::PersonName, [540](#)
 - gdcm::PixelFormat, [549](#)
 - gdcm::Pixmap, [553](#)
 - gdcm::Preamble, [566](#)
 - gdcm::PresentationContext, [567](#)
 - gdcm::Printer, [577](#)
 - gdcm::Region, [607](#)
 - gdcm::Scanner, [621](#)
 - gdcm::SegmentedPaletteColorLookupTable, [627](#)
 - gdcm::SequenceOfFragments, [636](#)
 - gdcm::SequenceOfItems, [641](#)
 - gdcm::Sorter, [665](#)
 - gdcm::TagPath, [720](#)
 - gdcm::Testing, [724](#)
 - gdcm::Version, [818](#)
- PrintJobSOPClass
 - gdcm::UIDs, [745](#)
- PrintQueueManagementSOPClassRetired
 - gdcm::UIDs, [746](#)
- PrintQueueSOPInstanceRetired
 - gdcm::UIDs, [746](#)
- PrintASCII

- gdcmm::ByteValue, 225
- PrintAsPipeSeparatedString
 - gdcmm::Tag, 717
- PrintDataElement
 - gdcmm::Printer, 577
- PrintDataElement2
 - gdcmm::DictPrinter, 313
- PrintDataSet
 - gdcmm::Printer, 577
- PrintDataSet2
 - gdcmm::DictPrinter, 313
- PrintGroupLength
 - gdcmm::ByteValue, 225
- PrintHex
 - gdcmm::ByteValue, 225
- PrintSQ
 - gdcmm::Printer, 577
- PrintSelf
 - vtkGDCMImageReader, 837
 - vtkGDCMImageWriter, 843
 - vtkGDCMMedicalImageProperties, 846
 - vtkGDCMPolyDataReader, 848
 - vtkGDCMPolyDataWriter, 851
 - vtkGDCMTesting, 854
 - vtkGDCMThreadedImageReader, 857
 - vtkGDCMThreadedImageReader2, 859
 - vtkImageColorViewer, 865
 - vtkImageMapToColors16, 869
 - vtkImageMapToWindowLevelColors2, 872
 - vtkImagePlanarComponentsToComponents, 874
 - vtkImageRGBToYBR, 876
 - vtkImageYBRToRGB, 878
 - vtkLookupTable16, 880
 - vtkRTStructSetProperties, 883
- PrintStyle
 - gdcmm::Printer, 578
- PrintStyles
 - gdcmm::Printer, 577
- PrintTable
 - gdcmm::network::ULTransitionTable, 803
- PrintXML
 - gdcmm::PrivateDict, 579
- Printer
 - gdcmm::Printer, 577
- PrinterConfigurationRetrievalSOPClass
 - gdcmm::UIDs, 745
- PrinterConfigurationRetrievalSOPInstance
 - gdcmm::UIDs, 745
- PrinterSOPClass
 - gdcmm::UIDs, 745
- PrinterSOPInstance
 - gdcmm::UIDs, 745
- PrivateDict
 - gdcmm::PrivateDict, 579
- PrivateTag
 - gdcmm::PrivateTag, 581
- ProceduralEventLoggingSOPClass
 - gdcmm::UIDs, 745
- ProceduralEventLoggingSOPInstance
 - gdcmm::UIDs, 745
- ProcedureLogStorage
 - gdcmm::UIDs, 747
- Process
 - gdcmm::Parser, 530
- ProcessDataSet
 - gdcmm::FileExplicitFilter, 369
- ProcessPublicTag
 - gdcmm::Scanner, 621
- ProduceCharacterSetDataElement
 - gdcmm::QueryFactory, 589
- ProduceQuery
 - gdcmm::QueryFactory, 590
- ProductCharacteristicsQuerySOPClass
 - gdcmm::UIDs, 749
- ProgressEvent
 - gdcmm::ProgressEvent, 583
- PropertyCategory
 - gdcmm::Segment, 625
- PropertyType
 - gdcmm::Segment, 625
- PseudoColorSoftcopyPresentationStateStorageSOPClass
 - gdcmm::UIDs, 747
- PullPrintRequestSOPClassRetired
 - gdcmm::UIDs, 746
- PullStoredPrintManagementMetaSOPClassRetired
 - gdcmm::UIDs, 746
- Push
 - gdcmm::TagPath, 720
- PushBackFile
 - vtkGDCMMedicalImageProperties, 846
- PythonFilter
 - gdcmm::PythonFilter, 586
- Quality
 - gdcmm::JPEGCodec, 468
- QueryFactory
 - gdcmm::BaseRootQuery, 200
 - gdcmm::FindPatientRootQuery, 384
 - gdcmm::FindStudyRootQuery, 386
 - gdcmm::MovePatientRootQuery, 510
 - gdcmm::MoveStudyRootQuery, 512
- RED
 - gdcmm::LookupTable, 479
- RFC2557MIMEencapsulation
 - gdcmm::UIDs, 744
- RGB
 - gdcmm::PhotometricInterpretation, 544

- RLE_COMPRESSION
 - vtkGDCMImageWriter, [842](#)
- RLELossless
 - gdcm::TransferSyntax, [730](#)
 - gdcm::UIDs, [744](#)
- ROI
 - gdcm::Overlay, [522](#)
- RTBeamsDeliveryInstructionStorageSupplement74-FrozenDraft
 - gdcm::UIDs, [748](#)
- RTBeamsTreatmentRecordStorage
 - gdcm::UIDs, [748](#)
- RTBrachyTreatmentRecordStorage
 - gdcm::UIDs, [748](#)
- RTConventionalMachineVerificationSupplement74Frozen-Draft
 - gdcm::UIDs, [748](#)
- RTDoseStorage
 - gdcm::MediaStorage, [490](#)
 - gdcm::UIDs, [748](#)
- RTImageStorage
 - gdcm::MediaStorage, [490](#)
 - gdcm::UIDs, [748](#)
- RTIonBeamsTreatmentRecordStorage
 - gdcm::MediaStorage, [491](#)
 - gdcm::UIDs, [748](#)
- RTIonMachineVerificationSupplement74FrozenDraft
 - gdcm::UIDs, [748](#)
- RTIonPlanStorage
 - gdcm::MediaStorage, [491](#)
 - gdcm::UIDs, [748](#)
- RTPlanStorage
 - gdcm::MediaStorage, [490](#)
 - gdcm::UIDs, [748](#)
- RTStructureSetStorage
 - gdcm::MediaStorage, [490](#)
 - gdcm::UIDs, [748](#)
- RTTreatmentSummaryRecordStorage
 - gdcm::MediaStorage, [491](#)
 - gdcm::UIDs, [748](#)
- RAWCodec
 - gdcm::RAWCodec, [599](#)
- README.txt, [1174](#)
- RGB2YBR
 - gdcm::ImageChangePhotometricInterpretation, [407](#)
- RGBPixelsToRGBPlanes
 - gdcm::ImageChangePlanarConfiguration, [410](#)
- RGBPlanesToRGBPixels
 - gdcm::ImageChangePlanarConfiguration, [410](#), [411](#)
- RGBToRecommendedDisplayCIELab
 - gdcm::SurfaceHelper, [696](#), [697](#)
- RGBToRecommendedDisplayGrayscale
 - gdcm::SurfaceHelper, [697](#)
- RLECodec
 - gdcm::RLECodec, [612](#)
- RTStructSetProperties
 - vtkGDCMPolyDataReader, [849](#)
 - vtkGDCMPolyDataWriter, [852](#)
- RawDataStorage
 - gdcm::MediaStorage, [490](#)
 - gdcm::UIDs, [747](#)
- Read
 - gdcm::BasicOffsetTable, [204](#)
 - gdcm::ByteValue, [225](#)
 - gdcm::CommandDataSet, [246](#)
 - gdcm::CP246ExplicitDataElement, [252](#)
 - gdcm::CSAHeader, [263](#)
 - gdcm::DataElement, [280](#)
 - gdcm::DataSet, [291](#)
 - gdcm::Element, [329](#)
 - gdcm::Element< TVR, VM::VM1_n >, [333](#)
 - gdcm::EncodingImplementation< VR::VRASCII >, [346](#)
 - gdcm::EncodingImplementation< VR::VRBINARY >, [347](#)
 - gdcm::ExplicitDataElement, [356](#)
 - gdcm::ExplicitImplicitDataElement, [358](#)
 - gdcm::File, [362](#)
 - gdcm::FileMetaInformation, [373](#)
 - gdcm::Fragment, [388](#)
 - gdcm::ImageReader, [429](#)
 - gdcm::ImageRegionReader, [432](#)
 - gdcm::ImplicitDataElement, [441](#)
 - gdcm::Item, [454](#)
 - gdcm::network::AAAbortPDU, [134](#)
 - gdcm::network::AAssociateACPDU, [137](#)
 - gdcm::network::AAssociateRJPDU, [139](#)
 - gdcm::network::AAssociateRQPDU, [142](#)
 - gdcm::network::AbstractSyntax, [145](#)
 - gdcm::network::ApplicationContext, [155](#)
 - gdcm::network::AReleaseRPPDU, [158](#)
 - gdcm::network::AReleaseRQPDU, [160](#)
 - gdcm::network::AsynchronousOperationsWindow-Sub, [163](#)
 - gdcm::network::BasePDU, [195](#)
 - gdcm::network::ImplementationClassUIDSub, [438](#)
 - gdcm::network::ImplementationVersionNameSub, [439](#)
 - gdcm::network::MaximumLengthSub, [485](#)
 - gdcm::network::PDataTFPDU, [532](#)
 - gdcm::network::PresentationContextAC, [569](#)
 - gdcm::network::PresentationContextRQ, [573](#)
 - gdcm::network::PresentationDataValue, [574](#)
 - gdcm::network::RoleSelectionSub, [614](#)
 - gdcm::network::ServiceClassApplicationInformation, [646](#)
 - gdcm::network::SOPClassExtendedNegotiationSub, [661](#)

- gdcm::network::TransferSyntaxSub, 732
- gdcm::network::UserInformation, 813
- gdcm::PGXCodec, 543
- gdcm::PixmapReader, 556
- gdcm::PNMCodec, 564
- gdcm::Preamble, 566
- gdcm::Reader, 604
- gdcm::SegmentReader, 630
- gdcm::SequenceOfFragments, 636
- gdcm::SequenceOfItems, 641
- gdcm::StreamImageReader, 673
- gdcm::SurfaceReader, 699
- gdcm::TableReader, 712
- gdcm::Tag, 718
- gdcm::UNExplicitDataElement, 806
- gdcm::UNExplicitImplicitDataElement, 808
- gdcm::ValueIO, 817
- gdcm::VL, 820
- gdcm::VR, 829
- gdcm::VR16ExplicitDataElement, 831
- gdcm::VRVLSize< 0 >, 833
- gdcm::VRVLSize< 1 >, 833
- Read16
 - gdcm::VL, 821
- ReadACRNEMAImage
 - gdcm::ImageReader, 430
 - gdcm::PixmapReader, 556
- ReadBacktrack
 - gdcm::Fragment, 388
- ReadCompat
 - gdcm::FileMetaInformation, 373
- ReadCompatInternal
 - gdcm::FileMetaInformation, 373
- ReadComputeLength
 - gdcm::EncodingImplementation< VR::VRASCII >, 346
 - gdcm::EncodingImplementation< VR::VRBINARY >, 347
- ReadDataSet
 - gdcm::Reader, 604
- ReadFiles
 - vtkGDCMThreadedImageReader, 857
- ReadFromCommaSeparatedString
 - gdcm::PrivateTag, 581
 - gdcm::Tag, 718
- ReadFromPipeSeparatedString
 - gdcm::Tag, 718
- ReadImage
 - gdcm::ImageReader, 430
 - gdcm::PixmapReader, 556
- ReadImageInformation
 - gdcm::StreamImageReader, 673
- ReadInformation
 - gdcm::ImageRegionReader, 432
- ReadInto
 - gdcm::network::PDataTFPDU, 532
 - gdcm::network::PresentationDataValue, 574
- ReadIntoBuffer
 - gdcm::ImageRegionReader, 432
- ReadMetaInformation
 - gdcm::Reader, 604
- ReadNested
 - gdcm::DataSet, 291
- ReadNoSwap
 - gdcm::EncodingImplementation< VR::VRASCII >, 346
 - gdcm::EncodingImplementation< VR::VRBINARY >, 347
- ReadOrSkip
 - gdcm::DataElement, 280
- ReadPointMacro
 - gdcm::SurfaceReader, 699
- ReadPreValue
 - gdcm::CP246ExplicitDataElement, 253
 - gdcm::DataElement, 280
 - gdcm::ExplicitDataElement, 356
 - gdcm::ExplicitImplicitDataElement, 358
 - gdcm::Fragment, 388
 - gdcm::ImplicitDataElement, 441
 - gdcm::SequenceOfFragments, 636
 - gdcm::UNExplicitDataElement, 807
 - gdcm::UNExplicitImplicitDataElement, 809
 - gdcm::VR16ExplicitDataElement, 832
- ReadPreamble
 - gdcm::Reader, 604
- ReadSegment
 - gdcm::SegmentReader, 630
- ReadSegments
 - gdcm::SegmentReader, 630
- ReadSelectedTags
 - gdcm::DataSet, 291
 - gdcm::Reader, 604
- ReadSelectedTagsWithLength
 - gdcm::DataSet, 291
- ReadSurface
 - gdcm::SurfaceReader, 699
- ReadSurfaces
 - gdcm::SurfaceReader, 699
- ReadUpToTag
 - gdcm::DataSet, 291
 - gdcm::Reader, 604
- ReadUpToTagWithLength
 - gdcm::DataSet, 291
- ReadVM
 - gdcm::DictConverter, 308
- ReadVR
 - gdcm::DictConverter, 308
- ReadValue

- gdcmm::CP246ExplicitDataElement, 253
- gdcmm::DataElement, 280
- gdcmm::ExplicitDataElement, 356
- gdcmm::ExplicitImplicitDataElement, 358
- gdcmm::Fragment, 388
- gdcmm::ImplicitDataElement, 441
- gdcmm::SequenceOfFragments, 636
- gdcmm::UNExplicitDataElement, 807
- gdcmm::UNExplicitImplicitDataElement, 809
- gdcmm::VR16ExplicitDataElement, 832
- ReadWithLength
 - gdcmm::CP246ExplicitDataElement, 253
 - gdcmm::DataElement, 280
 - gdcmm::DataSet, 291
 - gdcmm::ExplicitDataElement, 356
 - gdcmm::ExplicitImplicitDataElement, 358
 - gdcmm::ImplicitDataElement, 441
 - gdcmm::UNExplicitDataElement, 807
 - gdcmm::VR16ExplicitDataElement, 832
- Reader
 - gdcmm::Reader, 603
- Readuint16
 - gdcmm::DictConverter, 308
- RealWorldValueMappingStorage
 - gdcmm::UIDs, 747
- RecommendedDisplayCIELabToRGB
 - gdcmm::SurfaceHelper, 695, 696
- RecurseDataSet
 - gdcmm::Anonymizer, 151
- red
 - gdcmm::terminal, 131
- reference
 - gdcmm::CodeString, 241
 - gdcmm::LO, 476
 - gdcmm::String, 681
- ReferenceFrameOfReferenceUID
 - vtkRTStructSetProperties, 884
- ReferenceSeriesInstanceUID
 - vtkRTStructSetProperties, 884
- ReferencedColorPrintManagementMetaSOPClassRetired
 - gdcmm::UIDs, 745
- ReferencedGrayscalePrintManagementMetaSOPClass-
Retired
 - gdcmm::UIDs, 745
- ReferencedImageBoxSOPClassRetired
 - gdcmm::UIDs, 745
- Region
 - gdcmm::Region, 606
- Register
 - gdcmm::Object, 517
- Remove
 - gdcmm::Anonymizer, 151
 - gdcmm::DataSet, 291
 - gdcmm::FileAnonymizer, 364
 - gdcmm::Preamble, 566
- RemoveAllObservers
 - gdcmm::Subject, 687
- RemoveDictEntry
 - gdcmm::PrivateDict, 579
- RemoveFile
 - gdcmm::System, 708
- RemoveGroupLength
 - gdcmm::Anonymizer, 151
- RemoveObserver
 - gdcmm::Subject, 687
- RemoveOverlay
 - gdcmm::Pixmap, 553
- RemovePrivateTags
 - gdcmm::Anonymizer, 151
- RemoveRetired
 - gdcmm::Anonymizer, 152
- Render
 - vtkImageColorViewer, 865
- RenderWindow
 - vtkImageColorViewer, 867
- Renderer
 - vtkImageColorViewer, 867
- Replace
 - gdcmm::Anonymizer, 152
 - gdcmm::CommandDataSet, 246
 - gdcmm::DataSet, 291
 - gdcmm::FileAnonymizer, 364
 - gdcmm::FileMetaInformation, 373
- ReplaceEmpty
 - gdcmm::DataSet, 291
- RequestData
 - vtkGDCMPolyDataReader, 848
 - vtkImageMapToColors16, 870
 - vtkImageMapToWindowLevelColors2, 872
 - vtkImagePlanarComponentsToComponents, 874
- RequestData_HemodynamicWaveformStorage
 - vtkGDCMPolyDataReader, 848
- RequestData_RTStructureSetStorage
 - vtkGDCMPolyDataReader, 848
- RequestDataCompat
 - vtkGDCMImageReader, 837
 - vtkGDCMThreadedImageReader, 857
- RequestInformation
 - vtkGDCMPolyDataReader, 849
 - vtkGDCMThreadedImageReader2, 859
 - vtkImageMapToColors16, 870
 - vtkImageMapToWindowLevelColors2, 872
- RequestInformation_HemodynamicWaveformStorage
 - vtkGDCMPolyDataReader, 849
- RequestInformation_RTStructureSetStorage
 - vtkGDCMPolyDataReader, 849
- RequestInformationCompat
 - vtkGDCMImageReader, 837

- RequestPaddedCompositePixelCode
 - gdcm::ImageCodec, [420](#)
- RequestPlanarConfiguration
 - gdcm::ImageCodec, [420](#)
- Rescale
 - gdcm::Rescaler, [609](#)
- RescaleFunctionIntoBestFit
 - gdcm::Rescaler, [609](#)
- Rescaler
 - gdcm::Rescaler, [609](#)
- reset
 - gdcm::terminal, [131](#)
- ResetHandledDataSet
 - gdcm::network::ULConnectionCallback, [797](#)
- RetrieveSOPInstanceUIDFromIndex
 - gdcm::DirectoryHelper, [323](#)
- RetrieveSOPInstanceUIDFromZPosition
 - gdcm::DirectoryHelper, [323](#)
- reverse
 - gdcm::terminal, [131](#)
- reverse_iterator
 - gdcm::CodeString, [241](#)
 - gdcm::LO, [476](#)
 - gdcm::String, [681](#)
- RoleSelectionSub
 - gdcm::network::RoleSelectionSub, [614](#)
- SAGITTAL
 - gdcm::Orientation, [519](#)
- SH
 - gdcm::VR, [828](#)
- SIEMENS
 - gdcm::Dicts, [314](#)
- SINGLEBIT
 - gdcm::PixelFormat, [547](#)
- SL
 - gdcm::VR, [828](#)
- SLICE_ORIENTATION_XY
 - vtkImageColorViewer, [864](#)
- SLICE_ORIENTATION_XZ
 - vtkImageColorViewer, [864](#)
- SLICE_ORIENTATION_YZ
 - vtkImageColorViewer, [864](#)
- SPM2AVG152PDFrameofReference
 - gdcm::UIDs, [744](#)
- SPM2AVG152T1FrameofReference
 - gdcm::UIDs, [744](#)
- SPM2AVG152T2FrameofReference
 - gdcm::UIDs, [744](#)
- SPM2AVG305T1FrameofReference
 - gdcm::UIDs, [744](#)
- SPM2BRAINMASKFrameofReference
 - gdcm::UIDs, [744](#)
- SPM2CSFFFrameofReference
 - gdcm::UIDs, [744](#)
- SPM2EPIFrameofReference
 - gdcm::UIDs, [744](#)
- SPM2FILT1FrameofReference
 - gdcm::UIDs, [744](#)
- SPM2GRAYFrameofReference
 - gdcm::UIDs, [744](#)
- SPM2PDFFrameofReference
 - gdcm::UIDs, [744](#)
- SPM2PETFrameofReference
 - gdcm::UIDs, [744](#)
- SPM2SINGLESUBJT1FrameofReference
 - gdcm::UIDs, [744](#)
- SPM2SPECTFrameofReference
 - gdcm::UIDs, [744](#)
- SPM2T1FrameofReference
 - gdcm::UIDs, [744](#)
- SPM2T2FrameofReference
 - gdcm::UIDs, [744](#)
- SPM2TRANSMFrameofReference
 - gdcm::UIDs, [744](#)
- SPM2WHITEFrameofReference
 - gdcm::UIDs, [744](#)
- SQ
 - gdcm::VR, [828](#)
- SS
 - gdcm::VR, [828](#)
- ST
 - gdcm::VR, [828](#)
- STATES_END
 - gdcm::Surface, [691](#)
- SURFACE
 - gdcm::Surface, [691](#)
- SV10
 - gdcm::CSAHeader, [261](#)
- SHA1
 - gdcm::SHA1, [652](#)
- SHComp
 - gdcm, [118](#)
- SOPClassExtendedNegociationSub
 - gdcm::network::SOPClassExtendedNegociationSub, [661](#)
- SOPInstanceUID
 - vtkRTStructSetProperties, [884](#)
- STATES
 - gdcm::Surface, [691](#)
- STComp
 - gdcm, [118](#)
- ScalarType
 - gdcm::PixelFormat, [547](#)
- Scale
 - vtkGDCMImageReader, [840](#)
- Scan
 - gdcm::Scanner, [621](#)

- Scanner
 - gdcm::Scanner, [619](#)
- SecondaryCaptureImageStorage
 - gdcm::MediaStorage, [489](#)
 - gdcm::UIDs, [746](#)
- Segment
 - gdcm::Segment, [624](#)
- SegmentAlgorithmName
 - gdcm::Segment, [625](#)
- SegmentAlgorithmType
 - gdcm::Segment, [625](#)
- SegmentDescription
 - gdcm::Segment, [625](#)
- SegmentLabel
 - gdcm::Segment, [625](#)
- SegmentMap
 - gdcm::SegmentReader, [629](#)
- SegmentNumber
 - gdcm::Segment, [625](#)
- SegmentReader
 - gdcm::SegmentReader, [629](#)
- SegmentVector
 - gdcm::SegmentReader, [629](#)
 - gdcm::SegmentWriter, [632](#)
- SegmentWriter
 - gdcm::SegmentWriter, [632](#)
- Segmentation
 - gdcm::MediaStorage, [491](#)
- SegmentationStorage
 - gdcm::MediaStorage, [491](#)
 - gdcm::UIDs, [747](#)
- SegmentedPaletteColorLookupTable
 - gdcm::SegmentedPaletteColorLookupTable, [627](#)
- Segments
 - gdcm::SegmentReader, [630](#)
 - gdcm::SegmentWriter, [632](#)
- Selection
 - gdcm::Sorter, [666](#)
- SelectionMap
 - gdcm::Sorter, [664](#)
- Self
 - gdcm::AnonymizeEvent, [147](#)
 - gdcm::DataEvent, [284](#)
 - gdcm::DataSetEvent, [293](#)
 - gdcm::MemberCommand, [495](#)
 - gdcm::ProgressEvent, [583](#)
 - gdcm::SimpleMemberCommand, [655](#)
- SendEcho
 - gdcm::network::ULConnectionManager, [801](#)
 - gdcm::ServiceClassUser, [650](#)
- SendFind
 - gdcm::network::ULConnectionManager, [801](#)
 - gdcm::ServiceClassUser, [650](#)
- SendMove
 - gdcm::network::ULConnectionManager, [801](#)
 - gdcm::ServiceClassUser, [650](#)
- SendStore
 - gdcm::network::ULConnectionManager, [801](#)
 - gdcm::ServiceClassUser, [650](#)
- Separator
 - gdcm::ApplicationEntity, [156](#)
 - gdcm::PersonName, [541](#)
- SequenceLengthField
 - gdcm::SequenceOfItems, [642](#)
- SequenceOfFragments
 - gdcm::SequenceOfFragments, [635](#)
- SequenceOfItems
 - gdcm::SequenceOfItems, [640](#)
- SerieHelper
 - gdcm::SerieHelper, [644](#)
- SerieRestrictions
 - gdcm::SerieHelper, [644](#)
- Series
 - gdcm::Series, [646](#)
- SeriesInstanceUID
 - vtkRTStructSetProperties, [884](#)
- ServiceClassApplicationInformation
 - gdcm::network::ServiceClassApplicationInformation, [646](#)
- ServiceClassUser
 - gdcm::ServiceClassUser, [649](#)
- Set
 - gdcm::Attribute, [168](#)
 - gdcm::Attribute< Group, Element, TVR, VM::VM1 >, [174](#)
 - gdcm::Attribute< Group, Element, TVR, VM::VM1_n >, [180](#)
 - gdcm::Element, [329](#)
 - gdcm::Element< TVR, VM::VM1_n >, [333](#)
- SetAETitle
 - gdcm::ServiceClassUser, [650](#)
- SetAbstractSyntax
 - gdcm::network::PresentationContextRQ, [573](#)
 - gdcm::PresentationContext, [568](#)
- SetAlgorithmFamily
 - gdcm::Surface, [693](#)
- SetAlgorithmName
 - gdcm::Surface, [693](#)
- SetAlgorithmVersion
 - gdcm::Surface, [693](#)
- SetAnatomicRegion
 - gdcm::Segment, [625](#)
- SetArray
 - gdcm::Element< TVR, VM::VM1_n >, [333](#)
- SetAxisOfRotation
 - gdcm::Surface, [693](#)
- SetBitPosition
 - gdcm::Overlay, [525](#)

- SetBitSample
 - gdcm::JPEGCodec, [468](#)
- SetBitsAllocated
 - gdcm::Overlay, [525](#)
 - gdcm::PixelFormat, [549](#)
- SetBitsStored
 - gdcm::PixelFormat, [549](#)
- SetBlob
 - gdcm::ApplicationEntity, [156](#)
 - gdcm::network::PresentationDataValue, [574](#)
 - gdcm::PersonName, [540](#)
- SetBlueLUT
 - gdcm::LookupTable, [480](#)
- SetBufferLength
 - gdcm::JPEGLSCodec, [471](#)
 - gdcm::PNMCodec, [564](#)
 - gdcm::RLECodec, [613](#)
- SetByteSwapTag
 - gdcm::ByteSwapFilter, [221](#)
- SetByteValue
 - gdcm::Attribute, [168](#)
 - gdcm::Attribute< Group, Element, TVR, VM::VM1 >, [174](#)
 - gdcm::Attribute< Group, Element, TVR, VM::VM1_n >, [181](#)
 - gdcm::CSAElement, [258](#)
 - gdcm::DataElement, [280](#)
- SetByteValueNoSwap
 - gdcm::Attribute, [168](#)
 - gdcm::Attribute< Group, Element, TVR, VM::VM1 >, [174](#)
- SetCallbackFunction
 - gdcm::MemberCommand, [496](#)
 - gdcm::SimpleMemberCommand, [656](#)
- SetCalledAETitle
 - gdcm::network::AAssociateACPDU, [137](#)
 - gdcm::network::AAssociateRQPDU, [142](#)
 - gdcm::ServiceClassUser, [650](#)
- SetCallingAETitle
 - gdcm::network::AAssociateACPDU, [137](#)
 - gdcm::network::AAssociateRQPDU, [142](#)
- SetCenterOfRotation
 - gdcm::Surface, [693](#)
- SetChangePrivateTags
 - gdcm::FileExplicitFilter, [369](#)
- SetCheckFileMetaInformation
 - gdcm::Writer, [889](#)
- SetCipherType
 - gdcm::CryptographicMessageSyntax, [254](#)
- SetColor
 - gdcm::Printer, [578](#)
- SetColorLevel
 - vtkImageColorViewer, [865](#)
- SetColorWindow
 - vtkImageColorViewer, [865](#)
- SetColumns
 - gdcm::Bitmap, [210](#)
 - gdcm::Overlay, [525](#)
- SetCommand
 - gdcm::network::PresentationDataValue, [574](#)
- SetComponents
 - gdcm::PersonName, [540](#)
- SetCompressIconImage
 - gdcm::ImageChangeTransferSyntax, [413](#)
- SetComputeZSpacing
 - gdcm::IPPSorter, [450](#)
- SetCoordinateStartValue
 - gdcm::Curve, [272](#)
- SetCoordinateStepValue
 - gdcm::Curve, [273](#)
- SetCryptographicMessageSyntax
 - gdcm::Anonymizer, [152](#)
- SetCurve
 - gdcm::Curve, [273](#)
 - vtkGDCMImageReader, [837](#)
- SetCurveDataDescriptor
 - gdcm::Curve, [273](#)
- SetCurveDescription
 - gdcm::Curve, [273](#)
- SetData
 - gdcm::DataEvent, [285](#)
- SetDataElement
 - gdcm::Bitmap, [210](#)
- SetDataSet
 - gdcm::File, [362](#)
 - gdcm::network::PresentationDataValue, [574](#)
- SetDataSetTransferSyntax
 - gdcm::FileMetaInformation, [374](#)
- SetDataValueRepresentation
 - gdcm::Curve, [273](#)
- SetDebug
 - gdcm::Trace, [726](#)
- SetDebugStream
 - gdcm::Trace, [726](#)
- SetDefaultTransferSyntax
 - gdcm::PresentationContextGenerator, [571](#)
- SetDerivationCodeSequenceCodeValue
 - gdcm::FileDerivation, [367](#)
- SetDerivationDescription
 - gdcm::FileDerivation, [367](#)
- SetDescription
 - gdcm::CSAHeaderDictEntry, [266](#)
 - gdcm::ModuleEntry, [506](#)
 - gdcm::Overlay, [525](#)
- SetDescriptor
 - gdcm::DICOMDIRGenerator, [303](#)
- SetDictName
 - gdcm::DictConverter, [308](#)

- SetDicts
 - gdcm::PythonFilter, [586](#)
 - gdcm::StringFilter, [684](#)
- SetDimension
 - gdcm::Bitmap, [210](#)
- SetDimensions
 - gdcm::Bitmap, [211](#)
 - gdcm::Curve, [273](#)
 - gdcm::ImageCodec, [419](#)
- SetDimensionsValue
 - gdcm::ImageHelper, [426](#)
- SetDirectionCosines
 - gdcm::Image, [401](#)
 - vtkGDCMImageWriter, [843](#)
- SetDirectionCosinesFromImageOrientationPatient
 - vtkGDCMImageWriter, [843](#)
- SetDirectionCosinesTolerance
 - gdcm::IPPSorter, [450](#)
- SetDirectionCosinesValue
 - gdcm::ImageHelper, [426](#)
- SetDirectory
 - gdcm::network::ULWritingCallback, [805](#)
 - gdcm::SerieHelper, [645](#)
- SetDisplayId
 - vtkImageColorViewer, [865](#)
- SetDomain
 - gdcm::BoxRegion, [218](#)
- SetElement
 - gdcm::Tag, [718](#)
- SetElementHandler
 - gdcm::Parser, [530](#)
- SetElementTag
 - gdcm::Tag, [718](#)
- SetElementXX
 - gdcm::DictEntry, [310](#)
- SetError
 - gdcm::Trace, [726](#)
- SetErrorStream
 - gdcm::Trace, [727](#)
- SetEvent
 - gdcm::network::ULEvent, [802](#)
- SetFile
 - gdcm::Anonymizer, [152](#)
 - gdcm::DICOMDIRGenerator, [303](#)
 - gdcm::FileDerivation, [367](#)
 - gdcm::FileExplicitFilter, [369](#)
 - gdcm::IconImageFilter, [395](#)
 - gdcm::Printer, [578](#)
 - gdcm::PythonFilter, [586](#)
 - gdcm::Reader, [604](#)
 - gdcm::SplitMosaicFilter, [669](#)
 - gdcm::StreamImageWriter, [677](#)
 - gdcm::StringFilter, [684](#)
 - gdcm::Validate, [815](#)
 - gdcm::Writer, [889](#)
- SetFileName
 - gdcm::Reader, [604](#)
 - gdcm::StreamImageReader, [673](#)
 - gdcm::StreamImageWriter, [677](#)
 - gdcm::Writer, [890](#)
 - vtkGDCMThreadedImageReader2, [859](#)
- SetFileNames
 - vtkGDCMImageReader, [837](#)
 - vtkGDCMImageWriter, [843](#)
 - vtkGDCMThreadedImageReader2, [859](#)
- SetFilePattern
 - vtkGDCMImageReader, [838](#)
- SetFilePrefix
 - vtkGDCMImageReader, [838](#)
- SetFilename
 - gdcm::TableReader, [712](#)
- SetFilenames
 - gdcm::DICOMDIRGenerator, [303](#)
- SetFiles
 - gdcm::FileSet, [380](#)
- SetFiniteVolume
 - gdcm::Surface, [693](#)
- SetForce
 - gdcm::ImageChangeTransferSyntax, [414](#)
 - gdcm::ImageFragmentSplitter, [423](#)
- SetForcePixelSpacing
 - gdcm::ImageHelper, [426](#)
- SetForceRescaleInterceptSlope
 - gdcm::ImageHelper, [426](#)
- SetFragmentSizeMax
 - gdcm::ImageFragmentSplitter, [423](#)
- SetFrameOrigin
 - gdcm::Overlay, [525](#)
- SetFromDataElement
 - gdcm::Attribute, [169](#)
 - gdcm::Attribute< Group, Element, TVR, VM::VM1 >, [174](#)
 - gdcm::Attribute< Group, Element, TVR, VM::VM1_n >, [181](#)
 - gdcm::Element, [329](#)
 - gdcm::Element< TVR, VM::VM1_n >, [333](#)
- SetFromDataSet
 - gdcm::Attribute, [169](#)
 - gdcm::Attribute< Group, Element, TVR, VM::VM1 >, [174](#)
 - gdcm::Attribute< Group, Element, TVR, VM::VM1_n >, [181](#)
 - gdcm::MediaStorage, [493](#)
- SetFromFile
 - gdcm::MediaStorage, [493](#)
- SetFromHeader
 - gdcm::MediaStorage, [493](#)
- SetFromModality

- gdcm::MediaStorage, [493](#)
- SetFromSourceImageSequence
 - gdcm::MediaStorage, [493](#)
- SetFromString
 - gdcm::DirectionCosines, [319](#)
- SetFromUID
 - gdcm::UIDs, [757](#)
- SetGreenLUT
 - gdcm::LookupTable, [480](#)
- SetGroup
 - gdcm::Curve, [273](#)
 - gdcm::Overlay, [525](#)
 - gdcm::Tag, [718](#)
- SetGroupXX
 - gdcm::DictEntry, [310](#)
- SetHeader
 - gdcm::File, [362](#)
- SetHighBit
 - gdcm::PixelFormat, [549](#)
- SetHostname
 - gdcm::ServiceClassUser, [651](#)
- SetIE
 - gdcm::IODEntry, [446](#)
- SetIconImage
 - gdcm::Pixmap, [553](#)
- SetImage
 - gdcm::PixmapWriter, [561](#)
 - gdcm::SplitMosaicFilter, [669](#)
- SetImplementationClassUID
 - gdcm::FileMetaInformation, [374](#)
- SetImplementationVersionName
 - gdcm::FileMetaInformation, [374](#)
- SetInput
 - gdcm::BitmapToBitmapFilter, [215](#)
 - gdcm::ImageConverter, [421](#)
 - vtkImageColorViewer, [865](#)
- SetInputConnection
 - vtkImageColorViewer, [865](#)
- SetInputFileName
 - gdcm::DictConverter, [308](#)
 - gdcm::FileAnonymizer, [364](#)
- SetIntercept
 - gdcm::Image, [401](#)
 - gdcm::Rescaler, [609](#)
- SetKey
 - gdcm::CSAElement, [258](#)
- SetKeyword
 - gdcm::DictEntry, [310](#)
- SetLUT
 - gdcm::Bitmap, [211](#)
 - gdcm::ImageCodec, [419](#)
 - gdcm::LookupTable, [480](#)
 - gdcm::SegmentedPaletteColorLookupTable, [627](#)
- SetLastElement
 - gdcm::ParseException, [527](#)
- SetLastFragment
 - gdcm::network::PresentationDataValue, [574](#)
- SetLength
 - gdcm::ByteValue, [225](#)
 - gdcm::Element< TVR, VM::VM1_2 >, [331](#)
 - gdcm::Element< TVR, VM::VM1_n >, [333](#)
 - gdcm::Element< TVR, VM::VM2_2n >, [335](#)
 - gdcm::Element< TVR, VM::VM2_n >, [337](#)
 - gdcm::Element< TVR, VM::VM3_3n >, [338](#)
 - gdcm::Element< TVR, VM::VM3_n >, [340](#)
 - gdcm::RLECodec, [613](#)
 - gdcm::SequenceOfFragments, [636](#)
 - gdcm::SequenceOfItems, [642](#)
 - gdcm::Value, [817](#)
- SetLengthToUndefined
 - gdcm::SequenceOfItems, [642](#)
- SetLoadMode
 - gdcm::SerieHelper, [645](#)
- SetLookupTable
 - vtkImageMapToColors16, [870](#)
- SetLossless
 - gdcm::JPEGCodec, [468](#)
 - gdcm::JPEGLSCodec, [471](#)
- SetLossyError
 - gdcm::JPEGLSCodec, [471](#)
- SetLossyFlag
 - gdcm::Bitmap, [211](#)
 - gdcm::ImageCodec, [419](#)
- SetManifold
 - gdcm::Surface, [693](#)
- SetMaxPDULength
 - gdcm::network::ULConnectionInfo, [798](#)
- SetMaxPDUSize
 - gdcm::network::ULConnection, [796](#)
- SetMaximumLength
 - gdcm::network::MaximumLengthSub, [485](#)
- SetMaximumPointDistance
 - gdcm::Surface, [693](#)
- SetMeanPointDistance
 - gdcm::Surface, [693](#)
- SetMedicalImageProperties
 - vtkGDCMImageReader, [838](#)
 - vtkGDCMImageWriter, [843](#)
 - vtkGDCMPolyDataWriter, [851](#)
- SetMergeModeToAbstractSyntax
 - gdcm::PresentationContextGenerator, [571](#)
- SetMergeModeToTransferSyntax
 - gdcm::PresentationContextGenerator, [571](#)
- SetMeshPrimitive
 - gdcm::Surface, [693](#)
- SetMessageHeader
 - gdcm::network::PresentationDataValue, [574](#)
- SetMinMaxForPixelType

- gdcm::Rescaler, [609](#)
- SetName
 - gdcm::CSAElement, [258](#)
 - gdcm::CSAHeaderDictEntry, [266](#)
 - gdcm::DictEntry, [310](#)
 - gdcm::IODEntry, [446](#)
 - gdcm::Macro, [482](#)
 - gdcm::Module, [503](#)
 - gdcm::ModuleEntry, [506](#)
 - gdcm::network::AbstractSyntax, [145](#)
 - gdcm::network::ApplicationContext, [155](#)
 - gdcm::network::TransferSyntaxSub, [732](#)
 - gdcm::PDBelement, [534](#)
- SetNameFromUID
 - gdcm::network::AbstractSyntax, [145](#)
 - gdcm::network::TransferSyntaxSub, [732](#)
- SetNeedByteSwap
 - gdcm::Bitmap, [211](#)
 - gdcm::ImageCodec, [419](#)
- SetNeedOverlayCleanup
 - gdcm::ImageCodec, [419](#)
- SetNestedDataSet
 - gdcm::Item, [454](#)
- SetNoOfItems
 - gdcm::CSAElement, [258](#)
- SetNoSwap
 - gdcm::Element, [329](#)
 - gdcm::Element< TVR, VM::VM1_n >, [333](#)
- SetNumberOfCurves
 - gdcm::Pixmap, [553](#)
- SetNumberOfDimensions
 - gdcm::Bitmap, [211](#)
 - gdcm::ImageCodec, [419](#)
- SetNumberOfFileNames
 - gdcm::FilenameGenerator, [379](#)
- SetNumberOfFrames
 - gdcm::Overlay, [525](#)
- SetNumberOfInputPorts
 - vtkGDCMPolyDataWriter, [852](#)
- SetNumberOfItems
 - gdcm::SequenceOfItems, [642](#)
- SetNumberOfOverlays
 - gdcm::Pixmap, [553](#)
- SetNumberOfPoints
 - gdcm::Curve, [273](#)
- SetNumberOfResolutions
 - gdcm::JPEG2000Codec, [462](#)
- SetNumberOfSegments
 - gdcm::SegmentWriter, [632](#)
- SetNumberOfSurfacePoints
 - gdcm::Surface, [693](#)
- SetNumberOfSurfaces
 - gdcm::SurfaceWriter, [701](#)
- SetNumberOfTableValues
 - vtkLookupTable16, [880](#)
- SetNumberOfValues
 - gdcm::Attribute< Group, Element, TVR, VM::VM1_n >, [181](#)
- SetNumberOfVectors
 - gdcm::Surface, [693](#)
- SetObliquityThresholdCosineValue
 - gdcm::Orientation, [519](#)
- SetOffScreenRendering
 - vtkImageColorViewer, [865](#)
- SetOrigin
 - gdcm::Image, [401](#)
 - gdcm::Overlay, [525](#)
- SetOriginValue
 - gdcm::ImageHelper, [426](#)
- SetOutputDimensions
 - gdcm::IconImageGenerator, [397](#)
- SetOutputFileName
 - gdcm::DictConverter, [308](#)
 - gdcm::FileAnonymizer, [365](#)
- SetOutputFormatToLuminance
 - vtkImageMapToColors16, [870](#)
- SetOutputFormatToLuminanceAlpha
 - vtkImageMapToColors16, [870](#)
- SetOutputFormatToRGB
 - vtkImageMapToColors16, [870](#)
- SetOutputFormatToRGBA
 - vtkImageMapToColors16, [870](#)
- SetOutputType
 - gdcm::DictConverter, [308](#)
- SetOutsideValuePixel
 - gdcm::IconImageGenerator, [397](#)
- SetOverlay
 - gdcm::Overlay, [525](#)
- SetOverlayVisibility
 - vtkImageColorViewer, [865](#)
- SetOwner
 - gdcm::PrivateTag, [581](#)
- SetPDU
 - gdcm::network::ULEvent, [802](#)
- SetParentId
 - vtkImageColorViewer, [865](#)
- SetPattern
 - gdcm::FilenameGenerator, [379](#)
- SetPermissions
 - gdcm::System, [708](#)
- SetPhotometricInterpretation
 - gdcm::Bitmap, [211](#)
 - gdcm::ImageChangePhotometricInterpretation, [408](#)
 - gdcm::ImageCodec, [419](#)
- SetPixelFormat
 - gdcm::Bitmap, [211](#)
 - gdcm::ImageCodec, [419](#)
 - gdcm::JPEGCodec, [468](#)

- gdcm::Rescaler, [609](#)
- SetPixelMinMax
 - gdcm::IconImageGenerator, [397](#)
- SetPixelRepresentation
 - gdcm::PixelFormat, [549](#)
- SetPixmap
 - gdcm::IconImageGenerator, [397](#)
 - gdcm::PixmapWriter, [562](#)
- SetPlanarConfiguration
 - gdcm::Bitmap, [211](#)
 - gdcm::ImageChangePlanarConfiguration, [411](#)
 - gdcm::ImageCodec, [419](#)
- SetPointCoordinatesData
 - gdcm::Surface, [693](#)
- SetPointPositionAccuracy
 - gdcm::Surface, [694](#)
- SetPointsBoundingBoxCoordinates
 - gdcm::Surface, [694](#)
- SetPort
 - gdcm::ServiceClassUser, [651](#)
- SetPortSCP
 - gdcm::ServiceClassUser, [651](#)
- SetPosition
 - vtkImageColorViewer, [866](#)
- SetPreamble
 - gdcm::FileMetaInformation, [374](#)
- SetPrefix
 - gdcm::FilenameGenerator, [379](#)
- SetPresentationContextID
 - gdcm::network::PresentationContextAC, [569](#)
 - gdcm::network::PresentationContextRQ, [573](#)
 - gdcm::network::PresentationDataValue, [574](#)
 - gdcm::PresentationContext, [568](#)
- SetPresentationContexts
 - gdcm::network::ULConnection, [796](#)
 - gdcm::ServiceClassUser, [651](#)
- SetPrimitiveData
 - gdcm::MeshPrimitive, [500](#)
- SetPrimitiveType
 - gdcm::MeshPrimitive, [500](#)
- SetPrimitivesData
 - gdcm::MeshPrimitive, [500](#)
- SetPrivateCreator
 - gdcm::Tag, [718](#)
- SetProcessingAlgorithm
 - gdcm::Surface, [694](#)
- SetProgress
 - gdcm::ProgressEvent, [583](#)
- SetPropertyCategory
 - gdcm::Segment, [625](#)
- SetPropertyType
 - gdcm::Segment, [625](#)
- SetPurposeOfReferenceCodeSequenceCodeValue
 - gdcm::FileDerivation, [367](#)
- SetQuality
 - gdcm::JPEG2000Codec, [462](#)
 - gdcm::JPEGCodec, [468](#)
- SetRTStructSetProperties
 - vtkGDCMPolyDataWriter, [852](#)
- SetRate
 - gdcm::JPEG2000Codec, [462](#)
- SetReason
 - gdcm::network::PresentationContextAC, [569](#)
- SetRecommendedDisplayCIELabValue
 - gdcm::Surface, [694](#)
- SetRecommendedDisplayGrayscaleValue
 - gdcm::Surface, [694](#)
- SetRecommendedPresentationOpacity
 - gdcm::Surface, [694](#)
- SetRecommendedPresentationType
 - gdcm::Surface, [694](#)
- SetRecomputeItemLength
 - gdcm::FileExplicitFilter, [369](#)
- SetRecomputeSequenceLength
 - gdcm::FileExplicitFilter, [369](#)
- SetRedLUT
 - gdcm::LookupTable, [480](#)
- SetRef
 - gdcm::IODEntry, [446](#)
- SetRegion
 - gdcm::ImageRegionReader, [433](#)
- SetRenderWindow
 - vtkImageColorViewer, [866](#)
- SetRenderer
 - vtkImageColorViewer, [866](#)
- SetRescaleInterceptSlopeValue
 - gdcm::ImageHelper, [426](#)
- SetRetired
 - gdcm::DictEntry, [310](#)
- SetReversible
 - gdcm::JPEG2000Codec, [462](#)
- SetRoot
 - gdcm::UIDGenerator, [738](#)
- SetRootDirectory
 - gdcm::DICOMDIRGenerator, [303](#)
- SetRows
 - gdcm::Bitmap, [211](#)
 - gdcm::Overlay, [525](#)
- SetSamplesPerPixel
 - gdcm::PixelFormat, [549](#)
- SetScalarType
 - gdcm::PixelFormat, [549](#)
- SetSearchParameter
 - gdcm::BaseRootQuery, [199](#)
- SetSegmentAlgorithmName
 - gdcm::Segment, [625](#)
- SetSegmentAlgorithmType
 - gdcm::Segment, [625](#)

- SetSegmentDescription
 - gdcm::Segment, 625
- SetSegmentLabel
 - gdcm::Segment, 625
- SetSegmentNumber
 - gdcm::Segment, 625
- SetSegments
 - gdcm::SegmentWriter, 632
- SetSize
 - vtkImageColorViewer, 866
- SetSlice
 - vtkImageColorViewer, 866
- SetSliceOrientation
 - vtkImageColorViewer, 866
- SetSliceOrientationToXY
 - vtkImageColorViewer, 866
- SetSliceOrientationToXZ
 - vtkImageColorViewer, 866
- SetSliceOrientationToYZ
 - vtkImageColorViewer, 866
- SetSlope
 - gdcm::Image, 401
 - gdcm::Rescaler, 610
- SetSortFunction
 - gdcm::Sorter, 665
- SetSourceApplicationEntityTitle
 - gdcm::FileMetaInformation, 374
- SetSpacing
 - gdcm::Image, 401
- SetSpacingValue
 - gdcm::ImageHelper, 426
- SetState
 - gdcm::network::ULConnection, 796
- SetStream
 - gdcm::Reader, 605
 - gdcm::StreamImageReader, 674
 - gdcm::StreamImageWriter, 677
 - gdcm::Trace, 727
 - gdcm::Writer, 890
- SetStreamToFile
 - gdcm::Trace, 727
- SetStyle
 - gdcm::Printer, 578
- SetSurfaceComments
 - gdcm::Surface, 694
- SetSurfaceCount
 - gdcm::Segment, 625
- SetSurfaceNumber
 - gdcm::Surface, 694
- SetSurfaceProcessing
 - gdcm::Surface, 694
- SetSurfaceProcessingDescription
 - gdcm::Surface, 694
- SetSurfaceProcessingRatio
 - gdcm::Surface, 694
- SetSyngoDT
 - gdcm::CSAElement, 258
- SetTag
 - gdcm::AnonymizeEvent, 147
 - gdcm::DataElement, 280
- SetTargetPixelType
 - gdcm::Rescaler, 610
- SetTileSize
 - gdcm::JPEG2000Codec, 462
- SetTimeout
 - gdcm::network::ARTIMTimer, 161
 - gdcm::ServiceClassUser, 651
- SetToUndefined
 - gdcm::VL, 821
- SetTransferSyntax
 - gdcm::Bitmap, 212
 - gdcm::ImageChangeTransferSyntax, 414
 - gdcm::network::PresentationContextAC, 569
- SetTuple
 - gdcm::network::RoleSelectionSub, 614
 - gdcm::network::ServiceClassApplicationInformation, 646
 - gdcm::network::SOPClassExtendedNegociationSub, 661
- SetType
 - gdcm::ModuleEntry, 506
 - gdcm::Overlay, 525
- SetTypeOfData
 - gdcm::Curve, 273
- SetUsage
 - gdcm::IODEntry, 446
- SetUseSeriesDetails
 - gdcm::SerieHelper, 645
- SetUseTargetPixelType
 - gdcm::Rescaler, 610
- SetUseVRUN
 - gdcm::FileExplicitFilter, 369
- SetUserCodec
 - gdcm::ImageChangeTransferSyntax, 414
- SetUserData
 - gdcm::Parser, 530
- SetVL
 - gdcm::DataElement, 281
- SetVLToUndefined
 - gdcm::DataElement, 281
- SetVM
 - gdcm::CSAElement, 258
 - gdcm::CSAHeaderDictEntry, 266
 - gdcm::DictEntry, 310
- SetVR
 - gdcm::CSAElement, 258
 - gdcm::CSAHeaderDictEntry, 266
 - gdcm::DataElement, 281

- gdcmm::DictEntry, [310](#)
- SetValue
 - gdcmm::Attribute, [169](#)
 - gdcmm::Attribute< Group, Element, TVR, VM::VM1 >, [174](#)
 - gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >, [181](#)
 - gdcmm::CSAElement, [258](#)
 - gdcmm::DataElement, [280](#)
 - gdcmm::Element, [329](#)
 - gdcmm::Element< TVR, VM::VM1_n >, [334](#)
 - gdcmm::PDBelement, [534](#)
- SetValues
 - gdcmm::Attribute, [169](#)
 - gdcmm::Attribute< Group, Element, TVR, VM::VM1_n >, [181](#)
- SetVectorAccuracy
 - gdcmm::Surface, [694](#)
- SetVectorCoordinateData
 - gdcmm::Surface, [694](#)
- SetVectorDimensionality
 - gdcmm::Surface, [694](#)
- SetWarning
 - gdcmm::Trace, [727](#)
- SetWarningStream
 - gdcmm::Trace, [727](#)
- SetWindowId
 - vtkImageColorViewer, [866](#)
- SetWriteDataSetOnly
 - gdcmm::Writer, [890](#)
- SetZSpacingTolerance
 - gdcmm::IPPSorter, [450](#)
- setAttribute
 - gdcmm::terminal, [131](#)
- setbgcolor
 - gdcmm::terminal, [131](#)
- setfgcolor
 - gdcmm::terminal, [131](#)
- setmode
 - gdcmm::terminal, [131](#)
- SetupInteractor
 - vtkImageColorViewer, [866](#)
- Shift
 - vtkGDCMImageReader, [840](#)
- ShiftEnd
 - gdcmm::ByteBuffer, [219](#)
- ShowAbort
 - gdcmm::SimpleSubjectWatcher, [657](#)
- ShowAnonymization
 - gdcmm::SimpleSubjectWatcher, [657](#)
- ShowData
 - gdcmm::SimpleSubjectWatcher, [657](#)
- ShowDataSet
 - gdcmm::SimpleSubjectWatcher, [657](#)
- ShowIteration
 - gdcmm::SimpleSubjectWatcher, [657](#)
- ShowProgress
 - gdcmm::SimpleSubjectWatcher, [657](#)
- SimpleMemberCommand
 - gdcmm::SimpleMemberCommand, [655](#)
- SimpleSubjectWatcher
 - gdcmm::SimpleSubjectWatcher, [657](#)
- SingleSerieUIDFileSetHT
 - gdcmm::SerieHelper, [645](#)
- SingleSerieUIDFileSetmap
 - gdcmm::SerieHelper, [644](#)
- Size
 - gdcmm::CodeString, [242](#)
 - gdcmm::DataSet, [292](#)
 - gdcmm::GroupDict, [393](#)
 - gdcmm::network::AAAbortPDU, [134](#)
 - gdcmm::network::AAAssociateACPDU, [137](#)
 - gdcmm::network::AAAssociateRJPDU, [139](#)
 - gdcmm::network::AAAssociateRQPDU, [142](#)
 - gdcmm::network::AbstractSyntax, [145](#)
 - gdcmm::network::ApplicationContext, [155](#)
 - gdcmm::network::AResponseRPPDU, [158](#)
 - gdcmm::network::AResponseRQPDU, [160](#)
 - gdcmm::network::AsynchronousOperationsWindow-Sub, [163](#)
 - gdcmm::network::BasePDU, [195](#)
 - gdcmm::network::ImplementationClassUIDSub, [438](#)
 - gdcmm::network::ImplementationVersionNameSub, [439](#)
 - gdcmm::network::MaximumLengthSub, [485](#)
 - gdcmm::network::PDataTFPDU, [532](#)
 - gdcmm::network::PresentationContextAC, [569](#)
 - gdcmm::network::PresentationContextRQ, [573](#)
 - gdcmm::network::PresentationDataValue, [575](#)
 - gdcmm::network::RoleSelectionSub, [614](#)
 - gdcmm::network::ServiceClassApplicationInformation, [646](#)
 - gdcmm::network::SOPClassExtendedNegotiationSub, [661](#)
 - gdcmm::network::TransferSyntaxSub, [732](#)
 - gdcmm::network::UserInformation, [813](#)
- size_type
 - gdcmm::CodeString, [241](#)
 - gdcmm::LO, [476](#)
 - gdcmm::String, [681](#)
- SizeType
 - gdcmm::DataSet, [288](#)
 - gdcmm::FilenameGenerator, [378](#)
 - gdcmm::IOD, [443](#)
 - gdcmm::NestedModuleEntries, [514](#)
 - gdcmm::network::AAAssociateACPDU, [137](#)
 - gdcmm::network::AAAssociateRQPDU, [141](#)
 - gdcmm::network::PDataTFPDU, [532](#)

- gdcm::network::PresentationContextRQ, 572
- gdcm::PresentationContext, 567
- gdcm::PresentationContextGenerator, 570
- gdcm::SequenceOfFragments, 635
- gdcm::SequenceOfItems, 640
- Slice
 - vtkImageColorViewer, 867
- SliceOrientation
 - vtkImageColorViewer, 867
- SmartPointer
 - gdcm::Object, 517
 - gdcm::SmartPointer, 659
- Sort
 - gdcm::IPPSorter, 450
 - gdcm::Sorter, 665
- SortFunc
 - gdcm::Sorter, 666
- SortFunction
 - gdcm::Sorter, 664
- Sorter
 - gdcm::Sorter, 665
- SpacialFiducialsStorage
 - gdcm::MediaStorage, 490
- SpacialRegistrationStorage
 - gdcm::MediaStorage, 490
- Spacing
 - gdcm::Spacing, 667
- SpacingType
 - gdcm::Spacing, 667
- SpatialFiducialsStorage
 - gdcm::UIDs, 747
- SpatialRegistrationStorage
 - gdcm::UIDs, 747
- Spectroscopy
 - gdcm::Spectroscopy, 668
- Split
 - gdcm::ImageFragmentSplitter, 423
 - gdcm::SplitMosaicFilter, 669
- SplitExtent
 - vtkGDCMThreadedImageReader2, 860
- SplitMosaicFilter
 - gdcm::SplitMosaicFilter, 669
- Squeeze
 - gdcm::ApplicationEntity, 156
- StableSort
 - gdcm::Sorter, 665
- StandaloneCurveStorage
 - gdcm::MediaStorage, 490
- StandaloneCurveStorageRetired
 - gdcm::UIDs, 746
- StandaloneModalityLUTStorage
 - gdcm::MediaStorage, 490
- StandaloneModalityLUTStorageRetired
 - gdcm::UIDs, 747
- StandaloneOverlayStorage
 - gdcm::MediaStorage, 490
- StandaloneOverlayStorageRetired
 - gdcm::UIDs, 746
- StandalonePETCurveStorageRetired
 - gdcm::UIDs, 748
- StandaloneVOILUTStorage
 - gdcm::MediaStorage, 490
- StandaloneVOILUTStorageRetired
 - gdcm::UIDs, 747
- Start
 - gdcm::network::ARTIMTimer, 161
- StartAssociation
 - gdcm::ServiceClassUser, 651
- StartElement
 - gdcm::TableReader, 712
 - gdcm::XMLDictReader, 892
 - gdcm::XMLPrivateDictReader, 894
- StartElementHandler
 - gdcm::Parser, 529
- StartFilter
 - gdcm::SimpleSubjectWatcher, 657
- StereometricRelationshipStorage
 - gdcm::UIDs, 747
- Stop
 - gdcm::network::ARTIMTimer, 161
- StopAssociation
 - gdcm::ServiceClassUser, 651
- StopProtocol
 - gdcm::network::ULConnection, 796
- StorageCommitmentPullModelSOPClassRetired
 - gdcm::UIDs, 745
- StorageCommitmentPullModelSOPInstanceRetired
 - gdcm::UIDs, 745
- StorageCommitmentPushModelSOPClass
 - gdcm::UIDs, 745
- StorageCommitmentPushModelSOPInstance
 - gdcm::UIDs, 745
- StorageServiceClass
 - gdcm::UIDs, 745
- StoredPrintStorageSOPClassRetired
 - gdcm::UIDs, 746
- StrCaseCmp
 - gdcm::System, 708
- StrNCaseCmp
 - gdcm::System, 708
- StrTokR
 - gdcm::System, 708
- Stream
 - gdcm::Writer, 890
- StreamImageReader
 - gdcm::Reader, 605
 - gdcm::StreamImageReader, 672
- StreamImageWriter

- gdcm::StreamImageWriter, 676
- gdcm::Writer, 890
- String
 - gdcm::String, 682
- StringFilter
 - gdcm::StringFilter, 683
- StructureSetDate
 - vtkRTStructSetProperties, 884
- StructureSetLabel
 - vtkRTStructSetProperties, 884
- StructureSetName
 - vtkRTStructSetProperties, 884
- StructureSetTime
 - vtkRTStructSetProperties, 885
- Study
 - gdcm::Study, 685
- StudyComponentManagementSOPClass
 - gdcm::MediaStorage, 490
- StudyComponentManagementSOPClassRetired
 - gdcm::UIDs, 745
- StudyRootQueryRetrieveInformationModelFIND
 - gdcm::UIDs, 748
- StudyRootQueryRetrieveInformationModelGET
 - gdcm::UIDs, 748
- StudyRootQueryRetrieveInformationModelMOVE
 - gdcm::UIDs, 748
- StudyInstanceUID
 - vtkRTStructSetProperties, 885
- Subject
 - gdcm::Subject, 687
- SubstanceAdministrationLoggingSOPClass
 - gdcm::UIDs, 745
- SubstanceAdministrationLoggingSOPInstance
 - gdcm::UIDs, 745
- SubstanceApprovalQuerySOPClass
 - gdcm::UIDs, 749
- Superclass
 - gdcm::AnonymizeEvent, 147
 - gdcm::DataEvent, 284
 - gdcm::DataSetEvent, 293
 - gdcm::LO, 476
 - gdcm::ProgressEvent, 583
- Surface
 - gdcm::Surface, 691
- SurfaceSegmentationStorage
 - gdcm::MediaStorage, 491
 - gdcm::UIDs, 750
- SurfaceCount
 - gdcm::Segment, 625
- SurfaceReader
 - gdcm::SurfaceReader, 699
- SurfaceVector
 - gdcm::Segment, 624
- SurfaceWriter
 - gdcm::SurfaceWriter, 701
- Surfaces
 - gdcm::Segment, 625
- Swap
 - gdcm::ByteSwap, 220
 - gdcm::SwapperDoOp, 703
 - gdcm::SwapperNoOp, 704
- SwapArray
 - gdcm::SwapperDoOp, 703
 - gdcm::SwapperNoOp, 704
- SwapCode
 - gdcm::SwapCode, 703
- SwapCodeType
 - gdcm::SwapCode, 702
- SwapFromSwapCodeIntoSystem
 - gdcm::ByteSwap, 220
- SwapRange
 - gdcm::ByteSwap, 220
- SwapRangeFromSwapCodeIntoSystem
 - gdcm::ByteSwap, 220
- SyngoDTField
 - gdcm::CSAElement, 259
- SyntaxError
 - gdcm::Parser, 529
- SystemIsBigEndian
 - gdcm::ByteSwap, 220
- SystemIsLittleEndian
 - gdcm::ByteSwap, 220
- T1
 - gdcm::Type, 735
- T1C
 - gdcm::Type, 735
- T2
 - gdcm::Type, 735
- T2C
 - gdcm::Type, 735
- T3
 - gdcm::Type, 735
- TM
 - gdcm::VR, 828
- TRIANGLE
 - gdcm::MeshPrimitive, 499
- TRIANGLE_FAN
 - gdcm::MeshPrimitive, 499
- TRIANGLE_STRIP
 - gdcm::MeshPrimitive, 499
- TS_END
 - gdcm::TransferSyntax, 730
- TConstMemberFunctionPointer
 - gdcm::MemberCommand, 495
- TMComp
 - gdcm, 118
- TMemberFunctionPointer

- gdcm::MemberCommand, [496](#)
- gdcm::SimpleMemberCommand, [655](#)
- TS
 - gdcm::Bitmap, [213](#)
- TSName
 - gdcm::UIDs, [743](#)
- TSType
 - gdcm::TransferSyntax, [729](#)
 - gdcm::UIDs, [750](#)
- TYPETOENCODING
 - gdcm, [124](#)
 - gdcmVR.h, [1170](#)
- TYPETOLENGTH
 - gdcmVM.h, [1168](#)
- Table
 - gdcm::Table, [709](#)
- Table16
 - vtkLookupTable16, [880](#)
- TableEntry
 - gdcm::TableEntry, [710](#)
- TableReader
 - gdcm::TableReader, [711](#)
- TableRow
 - gdcm::network::TableRow, [713](#)
- Tag
 - gdcm::Tag, [715](#)
- tag
 - gdcm::Tag, [719](#)
- TagMismatchError
 - gdcm::Parser, [529](#)
- TagField
 - gdcm::DataElement, [282](#)
- TagPath
 - gdcm::TagPath, [720](#)
- TagToValue
 - gdcm::Scanner, [618](#)
- TagToValueValueType
 - gdcm::Scanner, [618](#)
- tags
 - gdcm::Tag, [719](#)
- TalairachBrainAtlasFrameofReference
 - gdcm::UIDs, [744](#)
- TestAbortOff
 - gdcm::SimpleSubjectWatcher, [657](#)
- TestAbortOn
 - gdcm::SimpleSubjectWatcher, [657](#)
- TestPBKDF2
 - gdcm::ASN1, [162](#)
- Testing
 - gdcm::Testing, [722](#)
- TestsList.txt, [1174](#)
- TextSRStorageTrialRetired
 - gdcm::UIDs, [747](#)
- ThreadedExecute
 - vtkImageRGBToYBR, [876](#)
 - vtkImageYBRToRGB, [878](#)
- ThreadedRequestData
 - vtkGDCMThreadedImageReader2, [860](#)
 - vtkImageMapToColors16, [870](#)
 - vtkImageMapToWindowLevelColors2, [872](#)
- to_string
 - gdcm, [124](#)
- ToPyObject
 - gdcm::PythonFilter, [586](#)
- ToString
 - gdcm::StringFilter, [684](#)
- ToStringPair
 - gdcm::StringFilter, [684](#)
- ToUnixSlashes
 - gdcm::Filename, [376](#)
- ToWindowsSlashes
 - gdcm::Filename, [376](#)
- ToshibaPrivateDataStorage
 - gdcm::MediaStorage, [490](#)
- Trace
 - gdcm::Trace, [726](#)
- TransferSyntax
 - gdcm::TransferSyntax, [730](#)
- TransferSyntaxArrayType
 - gdcm::PresentationContext, [567](#)
- TransferSyntaxStringsType
 - gdcm::UIDs, [743](#)
- TransferSyntaxSub
 - gdcm::network::TransferSyntaxSub, [732](#)
- Transition
 - gdcm::network::Transition, [733](#)
- transitions
 - gdcm::network::TableRow, [713](#)
- Trim
 - gdcm::String, [682](#)
- TrimInternal
 - gdcm::CodeString, [242](#)
- Truncate
 - gdcm::String, [682](#)
- TryJPEG2000Codec
 - gdcm::Bitmap, [212](#)
 - gdcm::ImageChangeTransferSyntax, [414](#)
- TryJPEG2000Codec2
 - gdcm::Bitmap, [212](#)
- TryJPEGCodec
 - gdcm::Bitmap, [212](#)
 - gdcm::ImageChangeTransferSyntax, [414](#)
- TryJPEGCodec2
 - gdcm::Bitmap, [212](#)
- TryJPEGLSCodec
 - gdcm::Bitmap, [212](#)
 - gdcm::ImageChangeTransferSyntax, [414](#)
- TryKAKADUCodec

- gdcm::Bitmap, [212](#)
- TryPVRGCodec
 - gdcm::Bitmap, [212](#)
- TryRAWCodec
 - gdcm::Bitmap, [212](#)
 - gdcm::ImageChangeTransferSyntax, [414](#)
- TryRLECodec
 - gdcm::Bitmap, [212](#)
 - gdcm::ImageChangeTransferSyntax, [414](#)
- Type
 - gdcm::Element, [328](#)
 - gdcm::Element< TVR, VM::VM1_n >, [332](#)
 - gdcm::Type, [735](#)
 - gdcm::VL, [820](#)
- TypeType
 - gdcm::Type, [735](#)
- UI
 - gdcm::VR, [828](#)
- UINT12
 - gdcm::PixelFormat, [547](#)
- UINT16
 - gdcm::PixelFormat, [547](#)
- UINT32
 - gdcm::PixelFormat, [547](#)
- UINT8
 - gdcm::PixelFormat, [547](#)
- UL
 - gdcm::VR, [828](#)
- UN
 - gdcm::VR, [828](#)
- UNKNOWN
 - gdcm::PhotometricInterpretation, [544](#)
- UNKNOWN
 - gdcm::CSAHeader, [261](#)
 - gdcm::LookupTable, [479](#)
 - gdcm::Orientation, [519](#)
 - gdcm::PixelFormat, [547](#)
 - gdcm::Spacing, [667](#)
 - gdcm::Surface, [691](#)
 - gdcm::Type, [735](#)
- URI
 - gdcm::MediaStorage, [491](#)
- US
 - gdcm::VR, [828](#)
- US_SS
 - gdcm::VR, [828](#)
- US_SS_OW
 - gdcm::VR, [828](#)
- UT
 - gdcm::VR, [828](#)
- UIComp
 - gdcm, [118](#)
- UIDGenerator
 - gdcm::UIDGenerator, [737](#)
- ULAction
 - gdcm::network::ULAction, [759](#)
- ULBasicCallback
 - gdcm::network::ULBasicCallback, [793](#)
- ULConnection
 - gdcm::network::ULConnection, [795](#)
- ULConnectionCallback
 - gdcm::network::ULConnectionCallback, [797](#)
- ULConnectionInfo
 - gdcm::network::ULConnectionInfo, [798](#)
- ULConnectionManager
 - gdcm::network::ULConnectionManager, [801](#)
- ULEvent
 - gdcm::network::ULEvent, [802](#)
- ULTransitionTable
 - gdcm::network::ULTransitionTable, [803](#)
- ULWritingCallback
 - gdcm::network::ULWritingCallback, [804](#)
- UTComp
 - gdcm, [118](#)
- uid_1_2_840_10008_15_0_3_1
 - gdcm::UIDs, [755](#)
- uid_1_2_840_10008_15_0_3_10
 - gdcm::UIDs, [755](#)
- uid_1_2_840_10008_15_0_3_11
 - gdcm::UIDs, [755](#)
- uid_1_2_840_10008_15_0_3_12
 - gdcm::UIDs, [756](#)
- uid_1_2_840_10008_15_0_3_13
 - gdcm::UIDs, [756](#)
- uid_1_2_840_10008_15_0_3_14
 - gdcm::UIDs, [756](#)
- uid_1_2_840_10008_15_0_3_15
 - gdcm::UIDs, [756](#)
- uid_1_2_840_10008_15_0_3_16
 - gdcm::UIDs, [756](#)
- uid_1_2_840_10008_15_0_3_17
 - gdcm::UIDs, [756](#)
- uid_1_2_840_10008_15_0_3_18
 - gdcm::UIDs, [756](#)
- uid_1_2_840_10008_15_0_3_19
 - gdcm::UIDs, [756](#)
- uid_1_2_840_10008_15_0_3_2
 - gdcm::UIDs, [755](#)
- uid_1_2_840_10008_15_0_3_20
 - gdcm::UIDs, [756](#)
- uid_1_2_840_10008_15_0_3_21
 - gdcm::UIDs, [756](#)
- uid_1_2_840_10008_15_0_3_22
 - gdcm::UIDs, [756](#)
- uid_1_2_840_10008_15_0_3_23
 - gdcm::UIDs, [756](#)
- uid_1_2_840_10008_15_0_3_24

gdcm::UIDs, [756](#)
uid_1_2_840_10008_15_0_3_25
gdcm::UIDs, [756](#)
uid_1_2_840_10008_15_0_3_26
gdcm::UIDs, [756](#)
uid_1_2_840_10008_15_0_3_27
gdcm::UIDs, [756](#)
uid_1_2_840_10008_15_0_3_28
gdcm::UIDs, [756](#)
uid_1_2_840_10008_15_0_3_29
gdcm::UIDs, [756](#)
uid_1_2_840_10008_15_0_3_3
gdcm::UIDs, [755](#)
uid_1_2_840_10008_15_0_3_30
gdcm::UIDs, [756](#)
uid_1_2_840_10008_15_0_3_31
gdcm::UIDs, [756](#)
uid_1_2_840_10008_15_0_3_4
gdcm::UIDs, [755](#)
uid_1_2_840_10008_15_0_3_5
gdcm::UIDs, [755](#)
uid_1_2_840_10008_15_0_3_6
gdcm::UIDs, [755](#)
uid_1_2_840_10008_15_0_3_7
gdcm::UIDs, [755](#)
uid_1_2_840_10008_15_0_3_8
gdcm::UIDs, [755](#)
uid_1_2_840_10008_15_0_3_9
gdcm::UIDs, [755](#)
uid_1_2_840_10008_15_0_4_1
gdcm::UIDs, [756](#)
uid_1_2_840_10008_15_0_4_2
gdcm::UIDs, [756](#)
uid_1_2_840_10008_15_0_4_3
gdcm::UIDs, [756](#)
uid_1_2_840_10008_15_0_4_4
gdcm::UIDs, [756](#)
uid_1_2_840_10008_15_0_4_5
gdcm::UIDs, [756](#)
uid_1_2_840_10008_15_0_4_6
gdcm::UIDs, [756](#)
uid_1_2_840_10008_15_0_4_7
gdcm::UIDs, [756](#)
uid_1_2_840_10008_15_0_4_8
gdcm::UIDs, [756](#)
uid_1_2_840_10008_1_1
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_20_1
gdcm::UIDs, [751](#)
uid_1_2_840_10008_1_20_1_1
gdcm::UIDs, [751](#)
uid_1_2_840_10008_1_20_2

gdcm::UIDs, [751](#)
uid_1_2_840_10008_1_20_2_1
gdcm::UIDs, [751](#)
uid_1_2_840_10008_1_2_1
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_1_99
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_2
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_100
gdcm::UIDs, [751](#)
uid_1_2_840_10008_1_2_4_50
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_51
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_52
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_53
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_54
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_55
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_56
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_57
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_58
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_59
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_60
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_61
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_62
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_63
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_64
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_65
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_66
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_70
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_80
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_81
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_90
gdcm::UIDs, [750](#)
uid_1_2_840_10008_1_2_4_91

gdcmm::UIDs, 750
uid_1_2_840_10008_1_2_4_92
gdcmm::UIDs, 750
uid_1_2_840_10008_1_2_4_93
gdcmm::UIDs, 750
uid_1_2_840_10008_1_2_4_94
gdcmm::UIDs, 750
uid_1_2_840_10008_1_2_4_95
gdcmm::UIDs, 751
uid_1_2_840_10008_1_2_5
gdcmm::UIDs, 751
uid_1_2_840_10008_1_2_6_1
gdcmm::UIDs, 751
uid_1_2_840_10008_1_2_6_2
gdcmm::UIDs, 751
uid_1_2_840_10008_1_3_10
gdcmm::UIDs, 751
uid_1_2_840_10008_1_40
gdcmm::UIDs, 751
uid_1_2_840_10008_1_40_1
gdcmm::UIDs, 751
uid_1_2_840_10008_1_42
gdcmm::UIDs, 751
uid_1_2_840_10008_1_42_1
gdcmm::UIDs, 751
uid_1_2_840_10008_1_4_1_1
gdcmm::UIDs, 751
uid_1_2_840_10008_1_4_1_10
gdcmm::UIDs, 751
uid_1_2_840_10008_1_4_1_11
gdcmm::UIDs, 751
uid_1_2_840_10008_1_4_1_12
gdcmm::UIDs, 751
uid_1_2_840_10008_1_4_1_13
gdcmm::UIDs, 751
uid_1_2_840_10008_1_4_1_14
gdcmm::UIDs, 751
uid_1_2_840_10008_1_4_1_15
gdcmm::UIDs, 751
uid_1_2_840_10008_1_4_1_16
gdcmm::UIDs, 751
uid_1_2_840_10008_1_4_1_17
gdcmm::UIDs, 751
uid_1_2_840_10008_1_4_1_18
gdcmm::UIDs, 751
uid_1_2_840_10008_1_4_1_2
gdcmm::UIDs, 751
uid_1_2_840_10008_1_4_1_3
gdcmm::UIDs, 751
uid_1_2_840_10008_1_4_1_4
gdcmm::UIDs, 751
uid_1_2_840_10008_1_4_1_5
gdcmm::UIDs, 751
uid_1_2_840_10008_1_4_1_6
gdcmm::UIDs, 751
uid_1_2_840_10008_1_4_1_7
gdcmm::UIDs, 751
uid_1_2_840_10008_1_4_1_8
gdcmm::UIDs, 751
uid_1_2_840_10008_1_4_1_9
gdcmm::UIDs, 751
uid_1_2_840_10008_1_4_2_1
gdcmm::UIDs, 751
uid_1_2_840_10008_1_4_2_2
gdcmm::UIDs, 751
uid_1_2_840_10008_1_9
gdcmm::UIDs, 751
uid_1_2_840_10008_2_16_4
gdcmm::UIDs, 751
uid_1_2_840_10008_2_6_1
gdcmm::UIDs, 751
uid_1_2_840_10008_3_1_1_1
gdcmm::UIDs, 751
uid_1_2_840_10008_3_1_2_1_1
gdcmm::UIDs, 751
uid_1_2_840_10008_3_1_2_1_4
gdcmm::UIDs, 751
uid_1_2_840_10008_3_1_2_2_1
gdcmm::UIDs, 751
uid_1_2_840_10008_3_1_2_3_1
gdcmm::UIDs, 751
uid_1_2_840_10008_3_1_2_3_2
gdcmm::UIDs, 752
uid_1_2_840_10008_3_1_2_3_3
gdcmm::UIDs, 752
uid_1_2_840_10008_3_1_2_3_4
gdcmm::UIDs, 752
uid_1_2_840_10008_3_1_2_3_5
gdcmm::UIDs, 752
uid_1_2_840_10008_3_1_2_5_1
gdcmm::UIDs, 752
uid_1_2_840_10008_3_1_2_5_4
gdcmm::UIDs, 752
uid_1_2_840_10008_3_1_2_5_5
gdcmm::UIDs, 752
uid_1_2_840_10008_3_1_2_6_1
gdcmm::UIDs, 752
uid_1_2_840_10008_4_2
gdcmm::UIDs, 752
uid_1_2_840_10008_5_1_1_1
gdcmm::UIDs, 752
uid_1_2_840_10008_5_1_1_14
gdcmm::UIDs, 752
uid_1_2_840_10008_5_1_1_15
gdcmm::UIDs, 752
uid_1_2_840_10008_5_1_1_16
gdcmm::UIDs, 752
uid_1_2_840_10008_5_1_1_16_376

gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_17
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_17_376
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_18
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_18_1
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_2
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_22
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_23
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_24
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_24_1
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_25
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_26
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_27
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_29
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_30
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_31
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_32
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_33
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_4
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_4_1
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_4_2
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_9
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_1_9_1
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_4_1_1_1
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_4_1_1_10
 gdcmm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_104_1
 gdcmm::UIDs, [754](#)
 uid_1_2_840_10008_5_1_4_1_1_104_2
 gdcmm::UIDs, [754](#)
 uid_1_2_840_10008_5_1_4_1_1_11

gdcmm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_11_1
 gdcmm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_11_2
 gdcmm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_11_3
 gdcmm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_11_4
 gdcmm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_128
 gdcmm::UIDs, [754](#)
 uid_1_2_840_10008_5_1_4_1_1_129
 gdcmm::UIDs, [754](#)
 uid_1_2_840_10008_5_1_4_1_1_12_1
 gdcmm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_12_1_1
 gdcmm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_12_2
 gdcmm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_12_2_1
 gdcmm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_12_3
 gdcmm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_13_1_1
 gdcmm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_13_1_2
 gdcmm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_13_1_3
 gdcmm::UIDs, [756](#)
 uid_1_2_840_10008_5_1_4_1_1_1_1
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_4_1_1_1_1_1
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_4_1_1_1_2
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_4_1_1_1_2_1
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_4_1_1_1_3
 gdcmm::UIDs, [752](#)
 uid_1_2_840_10008_5_1_4_1_1_1_3_1
 gdcmm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_2
 gdcmm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_20
 gdcmm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_2_1
 gdcmm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_3
 gdcmm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_3_1
 gdcmm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_4
 gdcmm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_481_1

gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_481_2
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_481_3
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_481_4
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_481_5
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_481_6
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_481_7
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_481_8
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_481_9
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_4_1
gdcm::UIDs, [753](#)
uid_1_2_840_10008_5_1_4_1_1_4_2
gdcm::UIDs, [753](#)
uid_1_2_840_10008_5_1_4_1_1_5
gdcm::UIDs, [753](#)
uid_1_2_840_10008_5_1_4_1_1_6
gdcm::UIDs, [753](#)
uid_1_2_840_10008_5_1_4_1_1_66
gdcm::UIDs, [753](#)
uid_1_2_840_10008_5_1_4_1_1_66_1
gdcm::UIDs, [753](#)
uid_1_2_840_10008_5_1_4_1_1_66_2
gdcm::UIDs, [753](#)
uid_1_2_840_10008_5_1_4_1_1_66_3
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_66_4
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_66_5
gdcm::UIDs, [756](#)
uid_1_2_840_10008_5_1_4_1_1_67
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_6_1
gdcm::UIDs, [753](#)
uid_1_2_840_10008_5_1_4_1_1_6_2
gdcm::UIDs, [756](#)
uid_1_2_840_10008_5_1_4_1_1_7
gdcm::UIDs, [753](#)
uid_1_2_840_10008_5_1_4_1_1_77_1
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_77_1_1
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_77_1_1_1
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_77_1_2
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_77_1_2_1

gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_77_1_3
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_77_1_4
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_77_1_4_1
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_77_1_5_1
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_77_1_5_2
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_77_1_5_3
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_77_1_5_4
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_77_1_6
gdcm::UIDs, [756](#)
uid_1_2_840_10008_5_1_4_1_1_77_2
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_7_1
gdcm::UIDs, [753](#)
uid_1_2_840_10008_5_1_4_1_1_7_2
gdcm::UIDs, [753](#)
uid_1_2_840_10008_5_1_4_1_1_7_3
gdcm::UIDs, [753](#)
uid_1_2_840_10008_5_1_4_1_1_7_4
gdcm::UIDs, [753](#)
uid_1_2_840_10008_5_1_4_1_1_8
gdcm::UIDs, [753](#)
uid_1_2_840_10008_5_1_4_1_1_88_1
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_88_11
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_88_2
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_88_22
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_88_3
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_88_33
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_88_4
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_88_40
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_88_50
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_88_59
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_88_65
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_88_67
gdcm::UIDs, [754](#)
uid_1_2_840_10008_5_1_4_1_1_9

gdcm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_9_1
 gdcm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_9_1_1
 gdcm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_9_1_2
 gdcm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_9_1_3
 gdcm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_9_2_1
 gdcm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_9_3_1
 gdcm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_1_9_4_1
 gdcm::UIDs, [753](#)
 uid_1_2_840_10008_5_1_4_1_2_1_1
 gdcm::UIDs, [754](#)
 uid_1_2_840_10008_5_1_4_1_2_1_2
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_1_2_1_3
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_1_2_2_1
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_1_2_2_2
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_1_2_2_3
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_1_2_3_1
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_1_2_3_2
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_1_2_3_3
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_31
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_32
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_32_1
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_32_2
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_32_3
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_33
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_34_1
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_34_2
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_34_3
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_34_4
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_34_4_1
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_34_4_2
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_34_4_3
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_34_4_4
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_37_1
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_37_2
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_37_3
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_38_1
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_38_2
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_38_3
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_41
 gdcm::UIDs, [755](#)
 uid_1_2_840_10008_5_1_4_42
 gdcm::UIDs, [755](#)
 UltrasoundImageStorage
 gdcm::MediaStorage, [489](#)
 gdcm::UIDs, [746](#)
 UltrasoundImageStorageRetired
 gdcm::MediaStorage, [489](#)
 gdcm::UIDs, [746](#)
 UltrasoundMultiFrameImageStorage
 gdcm::MediaStorage, [489](#)
 UltrasoundMultiFrameImageStorageRetired
 gdcm::MediaStorage, [489](#)
 UltrasoundMultiframeImageStorage
 gdcm::UIDs, [746](#)
 UltrasoundMultiframeImageStorageRetired
 gdcm::UIDs, [746](#)
 UnInstallPipeline
 vtkImageColorViewer, [867](#)
 UnRegister
 gdcm::Object, [517](#)
 UndefinedEntityError
 gdcm::Parser, [529](#)
 underline
 gdcm::terminal, [131](#)
 UnexpectedStateError
 gdcm::Parser, [529](#)
 UnifiedProcedureStepEventSOPClass
 gdcm::UIDs, [748](#)
 UnifiedProcedureStepPullSOPClass
 gdcm::UIDs, [748](#)
 UnifiedProcedureStepPushSOPClass

- gdcm::UIDs, [748](#)
- UnifiedProcedureStepWatchSOPClass
 - gdcm::UIDs, [748](#)
- UnifiedWorklistandProcedureStepSOPInstance
 - gdcm::UIDs, [748](#)
- UnifiedWorklistandProcedureStepServiceClass
 - gdcm::UIDs, [748](#)
- Unknown
 - gdcm::SwapCode, [702](#)
 - gdcm::TransferSyntax, [729](#)
- Unpack
 - gdcm::Unpacker12Bits, [809](#)
- Update
 - gdcm::Curve, [273](#)
 - gdcm::Overlay, [526](#)
- UpdateDisplayExtent
 - vtkImageColorViewer, [867](#)
- UpdateOrientation
 - vtkImageColorViewer, [867](#)
- UpdatePosition
 - gdcm::ByteBuffer, [219](#)
- Usage
 - gdcm::Usage, [811](#)
- UsageType
 - gdcm::Usage, [811](#)
- UseDictAlways
 - gdcm::PythonFilter, [586](#)
 - gdcm::StringFilter, [685](#)
- UserOption
 - gdcm::Usage, [811](#)
- UserInfoormation
 - gdcm::network::UserInfoormation, [813](#)
- UserOrdering
 - gdcm::SerieHelper, [645](#)
- V
 - gdcm::Validate, [815](#)
- VERBOSE_STYLE
 - gdcm::Printer, [577](#)
- VERTEX
 - gdcm::MeshPrimitive, [499](#)
- VIEWType_END
 - gdcm::Surface, [691](#)
- VL16
 - gdcm::VR, [828](#)
- VL32
 - gdcm::VR, [828](#)
- VLEndoscopicImageStorage
 - gdcm::MediaStorage, [491](#)
 - gdcm::UIDs, [747](#)
- VLImageStorageTrialRetired
 - gdcm::UIDs, [747](#)
- VLMicroscopicImageStorage
 - gdcm::UIDs, [747](#)
- VLMultiframeImageStorageTrialRetired
 - gdcm::UIDs, [747](#)
- VLPhotographicImageStorage
 - gdcm::MediaStorage, [491](#)
 - gdcm::UIDs, [747](#)
- VLSlideCoordinatesMicroscopicImageStorage
 - gdcm::UIDs, [747](#)
- VLWholeSlideMicroscopyImageStorage
 - gdcm::MediaStorage, [491](#)
 - gdcm::UIDs, [750](#)
- VM0
 - gdcm::VM, [823](#)
- VM1
 - gdcm::VM, [823](#)
- VM10
 - gdcm::VM, [823](#)
- VM12
 - gdcm::VM, [823](#)
- VM16
 - gdcm::VM, [823](#)
- VM18
 - gdcm::VM, [823](#)
- VM1_2
 - gdcm::VM, [824](#)
- VM1_3
 - gdcm::VM, [824](#)
- VM1_32
 - gdcm::VM, [824](#)
- VM1_4
 - gdcm::VM, [824](#)
- VM1_5
 - gdcm::VM, [824](#)
- VM1_8
 - gdcm::VM, [824](#)
- VM1_99
 - gdcm::VM, [824](#)
- VM1_n
 - gdcm::VM, [824](#)
- VM2
 - gdcm::VM, [823](#)
- VM24
 - gdcm::VM, [823](#)
- VM256
 - gdcm::VM, [824](#)
- VM28
 - gdcm::VM, [823](#)
- VM2_2n
 - gdcm::VM, [824](#)
- VM2_n
 - gdcm::VM, [824](#)
- VM3
 - gdcm::VM, [823](#)
- VM30_30n
 - gdcm::VM, [824](#)

- VM32
 - gdcm::VM, [823](#)
- VM35
 - gdcm::VM, [823](#)
- VM3_3n
 - gdcm::VM, [824](#)
- VM3_4
 - gdcm::VM, [824](#)
- VM3_n
 - gdcm::VM, [824](#)
- VM4
 - gdcm::VM, [823](#)
- VM47_47n
 - gdcm::VM, [824](#)
- VM4_4n
 - gdcm::VM, [824](#)
- VM5
 - gdcm::VM, [823](#)
- VM6
 - gdcm::VM, [823](#)
- VM6_6n
 - gdcm::VM, [824](#)
- VM7_7n
 - gdcm::VM, [824](#)
- VM8
 - gdcm::VM, [823](#)
- VM9
 - gdcm::VM, [823](#)
- VM99
 - gdcm::VM, [824](#)
- VM_END
 - gdcm::VM, [824](#)
- VMType
 - gdcm::Attribute, [165](#)
 - gdcm::Attribute< Group, Element, TVR, VM::VM1 >, [172](#)
- VOILUTBoxSOPClass
 - gdcm::UIDs, [746](#)
- VR_END
 - gdcm::VR, [828](#)
- VR_VM1
 - gdcm::VR, [828](#)
- VRALL
 - gdcm::VR, [828](#)
- VRASCII
 - gdcm::VR, [828](#)
- VRBINARY
 - gdcm::VR, [828](#)
- VT100
 - gdcm::terminal, [131](#)
- VIEWType
 - gdcm::Surface, [691](#)
- VL
 - gdcm::VL, [820](#)
- VM
 - gdcm::VM, [824](#)
- VMType
 - gdcm::VM, [823](#)
- VR
 - gdcm::VR, [828](#)
- VRBINARY
 - gdcm, [124](#)
- VRField
 - gdcm::CSAElement, [259](#)
 - gdcm::DataElement, [282](#)
- VRType
 - gdcm::VR, [827](#)
- VRTypeTemplateCase
 - gdcmVR.h, [1170](#)
- VTK_CMYK
 - vtkGDCMImageReader.h, [1176](#)
- VTK_LEGACY
 - vtkImageColorViewer, [867](#)
- VTK_LOOKUP_TABLE
 - vtkGDCMImageReader.h, [1176](#)
- VTK_YBR
 - vtkGDCMImageReader.h, [1176](#)
- Valid
 - gdcm::Preamble, [566](#)
- Validate
 - gdcm::PixelFormat, [550](#)
 - gdcm::Validate, [814](#)
- ValidateQuery
 - gdcm::BaseRootQuery, [199](#)
 - gdcm::FindPatientRootQuery, [384](#)
 - gdcm::FindStudyRootQuery, [386](#)
 - gdcm::MovePatientRootQuery, [509](#)
 - gdcm::MoveStudyRootQuery, [512](#)
- Validation
 - gdcm::Validate, [815](#)
- Value
 - gdcm::Value, [816](#)
- value
 - gdcm::SerieHelper::Rule, [615](#)
 - gdcm::STATIC_ASSERTION_FAILURE< true >, [671](#)
- value_type
 - gdcm::CodeString, [242](#)
 - gdcm::LO, [476](#)
 - gdcm::String, [681](#)
- ValueField
 - gdcm::DataElement, [282](#)
 - gdcm::PDBelement, [534](#)
- ValueLengthField
 - gdcm::DataElement, [282](#)
- ValueMultiplicityField
 - gdcm::CSAElement, [259](#)
- ValuePtr

- gdcmm::DataElement, 276
- ValueType
 - gdcmm::Scanner, 619
- VerificationSOPClass
 - gdcmm::UIDs, 743
- Verify
 - gdcmm::Defs, 298, 299
 - gdcmm::Macro, 482
 - gdcmm::Module, 503
- Version
 - gdcmm::Version, 818
- Video
 - gdcmm::MediaStorage, 491
- VideoEndoscopicImageStorage
 - gdcmm::MediaStorage, 490
 - gdcmm::UIDs, 747
- VideoMicroscopicImageStorage
 - gdcmm::UIDs, 747
- VideoPhotographicImageStorage
 - gdcmm::UIDs, 747
- vtkGDCMImageWriter
 - JPEG2000_COMPRESSION, 842
 - JPEG_COMPRESSION, 842
 - JPEGLS_COMPRESSION, 842
 - NO_COMPRESSION, 842
 - RLE_COMPRESSION, 842
- vtkImageColorViewer
 - SLICE_ORIENTATION_XY, 864
 - SLICE_ORIENTATION_XZ, 864
 - SLICE_ORIENTATION_YZ, 864
- vtkBooleanMacro
 - vtkGDCMImageReader, 838
 - vtkGDCMImageWriter, 843
 - vtkGDCMThreadedImageReader, 857
 - vtkGDCMThreadedImageReader2, 860
 - vtkImageColorViewer, 867
 - vtkImageMapToColors16, 870
- vtkGDCMImageReader, 834
 - ~vtkGDCMImageReader, 836
 - ApplyInverseVideo, 839
 - ApplyLookupTable, 839
 - ApplyPlanarConfiguration, 839
 - ApplyShiftScale, 839
 - ApplyYBRToRGB, 839
 - CanReadFile, 837
 - Curve, 839
 - DirectionCosines, 839
 - ExecuteData, 837
 - ExecuteInformation, 837
 - FileNames, 839
 - FillMedicalImageInformation, 837
 - ForceRescale, 839
 - GetDescriptiveName, 837
 - GetFileExtensions, 837
 - GetIconImage, 837
 - GetOverlay, 837
 - IconDataScalarType, 839
 - IconImageDataExtent, 839
 - IconNumberOfScalarComponents, 839
 - ImageFormat, 839
 - ImageOrientationPatient, 839
 - ImagePositionPatient, 839
 - LoadIconImage, 840
 - LoadOverlays, 840
 - LoadSingleFile, 837
 - LossyFlag, 840
 - MedicalImageProperties, 840
 - New, 837
 - NumberOfIconImages, 840
 - NumberOfOverlays, 840
 - PlanarConfiguration, 840
 - PrintSelf, 837
 - RequestDataCompat, 837
 - RequestInformationCompat, 837
 - Scale, 840
 - SetCurve, 837
 - SetFileNames, 837
 - SetFilePattern, 838
 - SetFilePrefix, 838
 - SetMedicalImageProperties, 838
 - Shift, 840
 - vtkBooleanMacro, 838
 - vtkGDCMImageReader, 836
 - vtkGetMacro, 838
 - vtkGetObjectMacro, 838
 - vtkGetStringMacro, 839
 - vtkGetVector3Macro, 839
 - vtkGetVector6Macro, 839
 - vtkSetMacro, 839
 - vtkSetVector6Macro, 839
 - vtkTypeRevisionMacro, 839
 - vtkGDCMImageReader, 836
 - vtkGDCMMedicalImageProperties, 846
- vtkGDCMImageReader.h, 1174
 - VTK_CMYK, 1176
 - VTK_YBR, 1176
- vtkGDCMImageWriter, 840
 - ~vtkGDCMImageWriter, 842
 - CompressionTypes, 842
 - GetDescriptiveName, 842
 - GetFileExtensions, 843
 - GetFileName, 843
 - New, 843
 - PrintSelf, 843
 - SetDirectionCosines, 843
 - SetDirectionCosinesFromImageOrientationPatient, 843
 - SetFileNames, 843

- SetMedicalImageProperties, 843
- vtkBooleanMacro, 843
- vtkGDCMImageWriter, 842
- vtkGetMacro, 843, 844
- vtkGetObjectMacro, 844
- vtkGetStringMacro, 844
- vtkSetMacro, 844
- vtkSetStringMacro, 844
- vtkTypeRevisionMacro, 844
- vtkGDCMImageWriter, 842
- vtkGDCMMedicalImageProperties, 846
- Write, 844
- WriteGDCMData, 844
- WriteSlice, 844
- vtkGDCMImageWriter.h, 1176
- vtkGDCMMedicalImageProperties, 845
 - ~vtkGDCMMedicalImageProperties, 846
 - Clear, 846
 - GetFile, 846
 - New, 846
 - PrintSelf, 846
 - PushBackFile, 846
 - vtkGDCMImageReader, 846
 - vtkGDCMImageWriter, 846
 - vtkGDCMMedicalImageProperties, 846
 - vtkTypeRevisionMacro, 846
 - vtkGDCMMedicalImageProperties, 846
- vtkGDCMMedicalImageProperties.h, 1176
- vtkGDCMPolyDataReader, 846
 - ~vtkGDCMPolyDataReader, 848
 - FileName, 849
 - FillMedicalImageInformation, 848
 - MedicalImageProperties, 849
 - New, 848
 - PrintSelf, 848
 - RTStructSetProperties, 849
 - RequestData, 848
 - RequestData_HemodynamicWaveformStorage, 848
 - RequestData_RTStructureSetStorage, 848
 - RequestInformation, 849
 - RequestInformation_HemodynamicWaveformStorage, 849
 - RequestInformation_RTStructureSetStorage, 849
- vtkGDCMPolyDataReader, 848
- vtkGetObjectMacro, 849
- vtkGetStringMacro, 849
- vtkSetStringMacro, 849
- vtkTypeRevisionMacro, 849
- vtkGDCMPolyDataReader, 848
- vtkGDCMPolyDataReader.h, 1177
- vtkGDCMPolyDataWriter, 849
 - ~vtkGDCMPolyDataWriter, 851
 - InitializeRTStructSet, 851
 - MedicalImageProperties, 852
 - New, 851
 - PrintSelf, 851
 - RTStructSetProperties, 852
 - SetMedicalImageProperties, 851
 - SetNumberOfInputPorts, 852
 - SetRTStructSetProperties, 852
 - vtkGDCMPolyDataWriter, 851
 - vtkTypeRevisionMacro, 852
 - vtkGDCMPolyDataWriter, 851
 - WriteData, 852
 - WriteRTSTRUCTData, 852
 - WriteRTSTRUCTInfo, 852
- vtkGDCMPolyDataWriter.h, 1178
- vtkGDCMTesting, 852
 - ~vtkGDCMTesting, 854
 - GetGDCMDataRoot, 854
 - GetMD5MetaImage, 854
 - GetMHDMD5FromFile, 854
 - GetNumberOfMD5MetaImages, 854
 - GetRAWMD5FromFile, 854
 - GetVTKDataRoot, 854
 - MD5MetaImagesType, 854
 - New, 854
 - PrintSelf, 854
 - vtkGDCMTesting, 854
 - vtkTypeRevisionMacro, 855
 - vtkGDCMTesting, 854
- vtkGDCMTesting.h, 1179
- vtkGDCMThreadedImageReader, 855
 - ~vtkGDCMThreadedImageReader, 857
 - ExecuteData, 857
 - ExecuteInformation, 857
 - New, 857
 - PrintSelf, 857
 - ReadFiles, 857
 - RequestDataCompat, 857
 - vtkBooleanMacro, 857
 - vtkGDCMThreadedImageReader, 856
 - vtkGetMacro, 857
 - vtkSetMacro, 857
 - vtkTypeRevisionMacro, 857
 - vtkGDCMThreadedImageReader, 856
- vtkGDCMThreadedImageReader.h, 1179
- vtkGDCMThreadedImageReader2, 857
 - ~vtkGDCMThreadedImageReader2, 859
 - GetFileName, 859
 - New, 859
 - PrintSelf, 859
 - RequestInformation, 859
 - SetFileName, 859
 - SetFileNames, 859
 - SplitExtent, 860
 - ThreadedRequestData, 860
 - vtkBooleanMacro, 860

- vtkGDCMThreadedImageReader2, [859](#)
- vtkGetMacro, [860](#)
- vtkGetObjectMacro, [860](#)
- vtkGetVector3Macro, [860](#)
- vtkGetVector6Macro, [860](#)
- vtkSetMacro, [860](#)
- vtkSetVector3Macro, [860](#), [861](#)
- vtkSetVector6Macro, [861](#)
- vtkTypeRevisionMacro, [861](#)
- vtkGDCMThreadedImageReader2, [859](#)
- vtkGDCMThreadedImageReader2.h, [1180](#)
- vtkGetMacro
 - vtkGDCMImageReader, [838](#)
 - vtkGDCMImageWriter, [843](#), [844](#)
 - vtkGDCMThreadedImageReader, [857](#)
 - vtkGDCMThreadedImageReader2, [860](#)
 - vtkImageColorViewer, [867](#)
 - vtkImageMapToColors16, [870](#)
 - vtkImageMapToWindowLevelColors2, [872](#)
- vtkGetObjectMacro
 - vtkGDCMImageReader, [838](#)
 - vtkGDCMImageWriter, [844](#)
 - vtkGDCMPolyDataReader, [849](#)
 - vtkGDCMThreadedImageReader2, [860](#)
 - vtkImageColorViewer, [867](#)
 - vtkImageMapToColors16, [870](#)
- vtkGetStringMacro
 - vtkGDCMImageReader, [839](#)
 - vtkGDCMImageWriter, [844](#)
 - vtkGDCMPolyDataReader, [849](#)
 - vtkRTStructSetProperties, [883](#), [884](#)
- vtkGetVector3Macro
 - vtkGDCMImageReader, [839](#)
 - vtkGDCMThreadedImageReader2, [860](#)
- vtkGetVector6Macro
 - vtkGDCMImageReader, [839](#)
 - vtkGDCMThreadedImageReader2, [860](#)
- vtkImageColorViewer, [861](#)
 - ~vtkImageColorViewer, [864](#)
 - AddInput, [864](#)
 - AddInputConnection, [864](#)
 - FirstRender, [867](#)
 - GetColorLevel, [864](#)
 - GetColorWindow, [864](#)
 - GetInput, [864](#)
 - GetOffScreenRendering, [864](#)
 - GetOverlayVisibility, [864](#)
 - GetPosition, [864](#)
 - GetSize, [865](#)
 - GetSliceMax, [865](#)
 - GetSliceMin, [865](#)
 - GetSliceRange, [865](#)
 - GetWindowName, [865](#)
 - ImageActor, [867](#)
 - InstallPipeline, [865](#)
 - Interactor, [867](#)
 - InteractorStyle, [867](#)
 - New, [865](#)
 - OverlayImageActor, [867](#)
 - PrintSelf, [865](#)
 - Render, [865](#)
 - RenderWindow, [867](#)
 - Renderer, [867](#)
 - SetColorLevel, [865](#)
 - SetColorWindow, [865](#)
 - SetDisplayId, [865](#)
 - SetInput, [865](#)
 - SetInputConnection, [865](#)
 - SetOffScreenRendering, [865](#)
 - SetOverlayVisibility, [865](#)
 - SetParentId, [865](#)
 - SetPosition, [866](#)
 - SetRenderWindow, [866](#)
 - SetRenderer, [866](#)
 - SetSize, [866](#)
 - SetSlice, [866](#)
 - SetSliceOrientation, [866](#)
 - SetSliceOrientationToXY, [866](#)
 - SetSliceOrientationToXZ, [866](#)
 - SetSliceOrientationToYZ, [866](#)
 - SetWindowId, [866](#)
 - SetupInteractor, [866](#)
 - Slice, [867](#)
 - SliceOrientation, [867](#)
 - UnInstallPipeline, [867](#)
 - UpdateDisplayExtent, [867](#)
 - UpdateOrientation, [867](#)
 - VTK_LEGACY, [867](#)
 - vtkBooleanMacro, [867](#)
 - vtkGetMacro, [867](#)
 - vtkGetObjectMacro, [867](#)
 - vtkImageColorViewer, [864](#)
 - vtkTypeRevisionMacro, [867](#)
 - vtkImageColorViewer, [864](#)
 - WindowLevel, [868](#)
- vtkImageColorViewer.h, [1180](#)
- vtkImageMapToColors16, [868](#)
 - ~vtkImageMapToColors16, [869](#)
 - ActiveComponent, [870](#)
 - DataWasPassed, [870](#)
 - GetMTime, [869](#)
 - LookupTable, [870](#)
 - New, [869](#)
 - OutputFormat, [870](#)
 - PassAlphaToOutput, [870](#)
 - PrintSelf, [869](#)
 - RequestData, [870](#)
 - RequestInformation, [870](#)

- SetLookupTable, [870](#)
- SetOutputFormatToLuminance, [870](#)
- SetOutputFormatToLuminanceAlpha, [870](#)
- SetOutputFormatToRGB, [870](#)
- SetOutputFormatToRGBA, [870](#)
- ThreadedRequestData, [870](#)
- vtkBooleanMacro, [870](#)
- vtkGetMacro, [870](#)
- vtkGetObjectMacro, [870](#)
- vtkImageMapToColors16, [869](#)
- vtkSetMacro, [870](#)
- vtkTypeRevisionMacro, [870](#)
- vtkImageMapToColors16, [869](#)
- vtkImageMapToColors16.h, [1181](#)
- vtkImageMapToWindowLevelColors2, [871](#)
 - ~vtkImageMapToWindowLevelColors2, [872](#)
 - Level, [873](#)
 - New, [872](#)
 - PrintSelf, [872](#)
 - RequestData, [872](#)
 - RequestInformation, [872](#)
 - ThreadedRequestData, [872](#)
 - vtkGetMacro, [872](#)
 - vtkImageMapToWindowLevelColors2, [872](#)
 - vtkSetMacro, [873](#)
 - vtkTypeRevisionMacro, [873](#)
 - vtkImageMapToWindowLevelColors2, [872](#)
 - Window, [873](#)
- vtkImageMapToWindowLevelColors2.h, [1181](#)
- vtkImagePlanarComponentsToComponents, [873](#)
 - ~vtkImagePlanarComponentsToComponents, [874](#)
 - New, [874](#)
 - PrintSelf, [874](#)
 - RequestData, [874](#)
 - vtkImagePlanarComponentsToComponents, [874](#)
 - vtkTypeRevisionMacro, [875](#)
 - vtkImagePlanarComponentsToComponents, [874](#)
- vtkImagePlanarComponentsToComponents.h, [1182](#)
- vtkImageRGBToYBR, [875](#)
 - ~vtkImageRGBToYBR, [876](#)
 - New, [876](#)
 - PrintSelf, [876](#)
 - ThreadedExecute, [876](#)
 - vtkImageRGBToYBR, [876](#)
 - vtkTypeRevisionMacro, [876](#)
 - vtkImageRGBToYBR, [876](#)
- vtkImageRGBToYBR.h, [1182](#)
- vtkImageYBRToRGB, [876](#)
 - ~vtkImageYBRToRGB, [878](#)
 - New, [878](#)
 - PrintSelf, [878](#)
 - ThreadedExecute, [878](#)
 - vtkImageYBRToRGB, [878](#)
 - vtkTypeRevisionMacro, [878](#)
- vtkImageYBRToRGB, [878](#)
- vtkImageYBRToRGB.h, [1183](#)
- vtkLookupTable16, [878](#)
 - ~vtkLookupTable16, [879](#)
 - Build, [879](#)
 - GetPointer, [880](#)
 - MapScalarsThroughTable2, [880](#)
 - New, [880](#)
 - PrintSelf, [880](#)
 - SetNumberOfTableValues, [880](#)
 - Table16, [880](#)
 - vtkLookupTable16, [879](#)
 - vtkTypeRevisionMacro, [880](#)
 - vtkLookupTable16, [879](#)
 - WritePointer, [880](#)
- vtkLookupTable16.h, [1183](#)
- vtkRTStructSetProperties, [880](#)
 - ~vtkRTStructSetProperties, [882](#)
 - AddContourReferencedFrameOfReference, [882](#)
 - AddReferencedFrameOfReference, [882](#)
 - AddStructureSetROI, [883](#)
 - AddStructureSetROIObservation, [883](#)
 - Clear, [883](#)
 - DeepCopy, [883](#)
 - GetContourReferencedFrameOfReferenceClassUID, [883](#)
 - GetContourReferencedFrameOfReferenceInstanceUID, [883](#)
 - GetNumberOfContourReferencedFrameOfReferences, [883](#)
 - GetNumberOfReferencedFrameOfReferences, [883](#)
 - GetNumberOfStructureSetROIs, [883](#)
 - GetReferencedFrameOfReferenceClassUID, [883](#)
 - GetReferencedFrameOfReferenceInstanceUID, [883](#)
 - GetStructureSetObservationNumber, [883](#)
 - GetStructureSetROIGenerationAlgorithm, [883](#)
 - GetStructureSetROIName, [883](#)
 - GetStructureSetROINumber, [883](#)
 - GetStructureSetROIRefFrameRefUID, [883](#)
 - GetStructureSetRTROIInterpretedType, [883](#)
 - Internals, [884](#)
 - New, [883](#)
 - PrintSelf, [883](#)
 - ReferenceFrameOfReferenceUID, [884](#)
 - ReferenceSeriesInstanceUID, [884](#)
 - SOPInstanceUID, [884](#)
 - SeriesInstanceUID, [884](#)
 - StructureSetDate, [884](#)
 - StructureSetLabel, [884](#)
 - StructureSetName, [884](#)
 - StructureSetTime, [885](#)
 - StudyInstanceUID, [885](#)
 - vtkGetStringMacro, [883](#), [884](#)
 - vtkRTStructSetProperties, [882](#)

- vtkSetStringMacro, [884](#)
 - vtkTypeRevisionMacro, [884](#)
 - vtkRTStructSetProperties, [882](#)
- vtkRTStructSetProperties.h, [1184](#)
- vtkSetMacro
 - vtkGDCMImageReader, [839](#)
 - vtkGDCMImageWriter, [844](#)
 - vtkGDCMThreadedImageReader, [857](#)
 - vtkGDCMThreadedImageReader2, [860](#)
 - vtkImageMapToColors16, [870](#)
 - vtkImageMapToWindowLevelColors2, [873](#)
- vtkSetStringMacro
 - vtkGDCMImageWriter, [844](#)
 - vtkGDCMPolyDataReader, [849](#)
 - vtkRTStructSetProperties, [884](#)
- vtkSetVector3Macro
 - vtkGDCMThreadedImageReader2, [860](#), [861](#)
- vtkSetVector6Macro
 - vtkGDCMImageReader, [839](#)
 - vtkGDCMThreadedImageReader2, [861](#)
- vtkTypeRevisionMacro
 - vtkGDCMImageReader, [839](#)
 - vtkGDCMImageWriter, [844](#)
 - vtkGDCMMedicalImageProperties, [846](#)
 - vtkGDCMPolyDataReader, [849](#)
 - vtkGDCMPolyDataWriter, [852](#)
 - vtkGDCMTesting, [855](#)
 - vtkGDCMThreadedImageReader, [857](#)
 - vtkGDCMThreadedImageReader2, [861](#)
 - vtkImageColorViewer, [867](#)
 - vtkImageMapToColors16, [870](#)
 - vtkImageMapToWindowLevelColors2, [873](#)
 - vtkImagePlanarComponentsToComponents, [875](#)
 - vtkImageRGBToYBR, [876](#)
 - vtkImageYBRToRGB, [878](#)
 - vtkLookupTable16, [880](#)
 - vtkRTStructSetProperties, [884](#)
- WIREFRAME
 - gdcm::Surface, [691](#)
- WarningOff
 - gdcm::Trace, [727](#)
- WarningOn
 - gdcm::Trace, [727](#)
- Waveform
 - gdcm::Waveform, [885](#)
 - gdcm::MediaStorage, [491](#)
- WaveformStorageTrialRetired
 - gdcm::UIDs, [746](#)
- what
 - gdcm::Exception, [353](#)
- white
 - gdcm::terminal, [131](#)
- Window
 - vtkImageMapToWindowLevelColors2, [873](#)
- WindowLevel
 - vtkImageColorViewer, [868](#)
- Write
 - gdcm::ByteValue, [225](#)
 - gdcm::CommandDataSet, [246](#)
 - gdcm::CSAHeader, [263](#)
 - gdcm::DataElement, [281](#)
 - gdcm::DataSet, [292](#)
 - gdcm::Element, [329](#)
 - gdcm::Element< TVR, VM::VM1_n >, [334](#)
 - gdcm::EncodingImplementation< VR::VRASCII >, [346](#)
 - gdcm::EncodingImplementation< VR::VRBINARY >, [347](#)
 - gdcm::ExplicitDataElement, [356](#)
 - gdcm::File, [362](#)
 - gdcm::FileAnonymizer, [365](#)
 - gdcm::FileMetaInformation, [374](#)
 - gdcm::Fragment, [388](#)
 - gdcm::ImageWriter, [437](#)
 - gdcm::ImplicitDataElement, [441](#)
 - gdcm::Item, [454](#)
 - gdcm::network::AAAbortPDU, [135](#)
 - gdcm::network::AAAssociateACPDU, [137](#)
 - gdcm::network::AAAssociateRJPDU, [139](#)
 - gdcm::network::AAAssociateRQPDU, [142](#)
 - gdcm::network::AbstractSyntax, [145](#)
 - gdcm::network::ApplicationContext, [155](#)
 - gdcm::network::AReleaseRPPDU, [158](#)
 - gdcm::network::AReleaseRQPDU, [160](#)
 - gdcm::network::AsynchronousOperationsWindow-Sub, [163](#)
 - gdcm::network::BasePDU, [196](#)
 - gdcm::network::ImplementationClassUIDSub, [438](#)
 - gdcm::network::ImplementationUIDSub, [439](#)
 - gdcm::network::ImplementationVersionNameSub, [439](#)
 - gdcm::network::MaximumLengthSub, [485](#)
 - gdcm::network::PDataTFPDU, [532](#)
 - gdcm::network::PresentationContextAC, [569](#)
 - gdcm::network::PresentationContextRQ, [573](#)
 - gdcm::network::PresentationDataValue, [575](#)
 - gdcm::network::RoleSelectionSub, [614](#)
 - gdcm::network::ServiceClassApplicationInformation, [647](#)
 - gdcm::network::SOPClassExtendedNegociationSub, [661](#)
 - gdcm::network::TransferSyntaxSub, [732](#)
 - gdcm::network::UserInformation, [813](#)
 - gdcm::PGXCodec, [543](#)
 - gdcm::PixmapWriter, [562](#)
 - gdcm::PNMCodec, [564](#)
 - gdcm::Preamble, [566](#)

- gdcmm::SegmentWriter, [632](#)
- gdcmm::SequenceOfFragments, [637](#)
- gdcmm::SequenceOfItems, [642](#)
- gdcmm::StreamImageWriter, [677](#)
- gdcmm::SurfaceWriter, [701](#)
- gdcmm::Tag, [719](#)
- gdcmm::ValueIO, [817](#)
- gdcmm::VL, [821](#)
- gdcmm::VR, [829](#)
- gdcmm::VRVLSIZE< 0 >, [833](#)
- gdcmm::VRVLSIZE< 1 >, [833](#)
- gdcmm::Writer, [890](#)
- vtkGDCMImageWriter, [844](#)
- Write16
 - gdcmm::VL, [821](#)
- WriteASCII
 - gdcmm::Element< TVR, VM::VM1_n >, [334](#)
- WriteBuffer
 - gdcmm::ByteValue, [226](#)
 - gdcmm::SequenceOfFragments, [637](#)
- WriteBufferAsRGBA
 - gdcmm::LookupTable, [480](#)
- WriteData
 - vtkGDCMPolyDataWriter, [852](#)
- WriteFooter
 - gdcmm::DictConverter, [308](#)
- WriteGDCMData
 - vtkGDCMImageWriter, [844](#)
- WriteHeader
 - gdcmm::DictConverter, [308](#)
- WriteHelpFile
 - gdcmm::BaseRootQuery, [199](#)
- WriteImageInformation
 - gdcmm::StreamImageWriter, [678](#)
- WriteImageSubregionRAW
 - gdcmm::StreamImageWriter, [678](#)
- WritePointer
 - vtkLookupTable16, [880](#)
- WriteQuery
 - gdcmm::BaseRootQuery, [199](#)
- WriteRTSTRUCTData
 - vtkGDCMPolyDataWriter, [852](#)
- WriteRTSTRUCTInfo
 - vtkGDCMPolyDataWriter, [852](#)
- WriteRawHeader
 - gdcmm::StreamImageWriter, [678](#)
- WriteSlice
 - vtkGDCMImageWriter, [844](#)
- Writer
 - gdcmm::Writer, [889](#)
- XML
 - gdcmm::Printer, [577](#)
- XMLEncoding
 - gdcmm::UIDs, [744](#)
- XRay3DAngiographicImageStorage
 - gdcmm::MediaStorage, [491](#)
 - gdcmm::UIDs, [747](#)
- XRay3DCraniofacialImageStorage
 - gdcmm::UIDs, [747](#)
- XRayAngiographicBiPlaneImageStorageRetired
 - gdcmm::MediaStorage, [490](#)
 - gdcmm::UIDs, [747](#)
- XRayAngiographicImageStorage
 - gdcmm::MediaStorage, [490](#)
 - gdcmm::UIDs, [747](#)
- XRayRadiationDoseSR
 - gdcmm::MediaStorage, [491](#)
- XRayRadiationDoseSRStorage
 - gdcmm::UIDs, [748](#)
- XRayRadiofluoroscopicImageStorage
 - gdcmm::UIDs, [747](#)
- XRayRadiofluoroscopicImageStorage
 - gdcmm::MediaStorage, [490](#)
- XMLDictReader
 - gdcmm::XMLDictReader, [892](#)
- XMLPrivateDictReader
 - gdcmm::XMLPrivateDictReader, [894](#)
- YBR_FULL
 - gdcmm::PhotometricInterpretation, [544](#)
- YBR_FULL_422
 - gdcmm::PhotometricInterpretation, [544](#)
- YBR_ICT
 - gdcmm::PhotometricInterpretation, [544](#)
- YBR_PARTIAL_420
 - gdcmm::PhotometricInterpretation, [544](#)
- YBR_PARTIAL_422
 - gdcmm::PhotometricInterpretation, [544](#)
- YBR_RCT
 - gdcmm::PhotometricInterpretation, [544](#)
- YES
 - gdcmm::Surface, [691](#)
- YBR2RGB
 - gdcmm::ImageChangePhotometricInterpretation, [408](#)
- yellow
 - gdcmm::terminal, [131](#)
- ZEROED_OUT
 - gdcmm::CSAHeader, [261](#)
- ZSpacing
 - gdcmm::IPPSorter, [451](#)
- ZTolerance
 - gdcmm::IPPSorter, [451](#)