

The `sf298` Package*

Steven Douglas Cochran

Digital Mapping Laboratory, School of Computer Science
Carnegie-Mellon University, 5000 Forbes Avenue
Pittsburgh, PA 15213-3891, USA

`sdc+@cs.cmu.edu`

2004/12/22

Abstract

This article documents the \LaTeX package for generating a completed standard form 298 (Rev. 8-98) as prescribed by ANSI Std. Z39.18 for report documentation, for instance, as part of a document delivered on a U.S. Government contract.

Contents

1	Introduction	2
2	The individual fields	2
3	Configuration	9
3.1	Fonts	9
3.2	Configuration file	10
3.3	“Number of Pages” field	10
3.4	Adjusting the form placement	10
4	An example of use with the article class	11
5	The DOCSTRIP modules	14
6	The code	15
6.1	Identification	15
6.2	Load the <code>totpages</code> package, if it exists.	15
6.3	Create the user interface	15
6.4	Options Processing: Check for a configuration file	18
6.5	Form placement fine tuning	18
6.6	Font definition	18
6.7	Error checking and reporting	19
6.8	Page layout	20

*This paper documents the `sf298` package v1.2, last revised 2004/12/22.

1 Introduction

The `sf298` package provides for creating a filled-in copy of the standard form 298 (Rev. 8–98), “Report Documentation Page” (shown in Figure 1). This form is used in announcing and cataloging reports submitted as deliverables on contracts with the U.S. Government. It is important that the information on the `sf298` page be consistent with the rest of the report, particularly the cover and title page. Instructions for filling in each block of the form are given below. The macro `\MakeRptDocPage` causes the page to be printed. If the `twoside` option is specified in the documentclass, then it is printed as a separate page with a blank back.

If you are changing the base font families for your paper (*e.g.*, you load the `times` package to use the PostScript fonts) and you want the fonts used on the `sf298` to change also, then you must change the font families before loading the `sf298` package (see section 3.1).

The package takes two sets of options: The `config` option (default), causes it to check for a configuration file, while `noconfig` disables this check (see section 3.2); The `nofloatlongboxes` option (default) causes the package to generate the fixed standard form, while the `floatlongboxes` option causes boxes 12–15 to distribute their vertical spacing in order to handle special cases such as a very long supplementary note in box 13.

A sample report is given in section 4 that shows one approach to using the `sf298` package.

2 The individual fields

There are nineteen fields, three with multiple sub-fields, on the `sf298`. The following macros, each having a single argument, define the data to be included in each field. Usually only a few fields will apply to a given report. Table 1 notes which fields are required and which have default values. It also gives an approximate number of lines and characters per line that will fit into each block (for the Computer Modern Roman font family, PostScript Times Roman or other fonts will differ). The best approach to insure that the form is properly filled-in is to preview the page and adjust any fields that appear to have a problem.

A few fields allow a partial extra line along the top of the box. The last two columns of Table 1 shows the offset needed to add such an extra line. To use this extra space, you must already have used up the maximum number of (regular) lines for this field and you must begin the argument with an `\hspace` of the size of the indicated **Skip**. The last **Chars.** column gives the approximate amount of extra characters that you can add.

For those blocks that allow more than one line (see Table 1), the text argument will automatically be broken to fit the box and the paragraph is usually vertically centered and left justified. Use can use “`\`” (newline) to override the default linebreaking, if desired (see section 3.2 for an example).

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.**

1. REPORT DATE (DD-MM-YYYY)		2. REPORT TYPE		3. DATES COVERED (From — To)	
4. TITLE AND SUBTITLE			5a. CONTRACT NUMBER		
			5b. GRANT NUMBER		
			5c. PROGRAM ELEMENT NUMBER		
6. AUTHOR(S)			5d. PROJECT NUMBER		
			5e. TASK NUMBER		
			5f. WORK UNIT NUMBER		
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION / AVAILABILITY STATEMENT					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			19b. TELEPHONE NUMBER (include area code)

Figure 1: Blank Special Form 298 (Report Documentation Page).

Table 1: Field Attributes and Approximate Maximum Size.

Field Number	Macro Name	Required	Default Value ⁽¹⁾	Max Lines	Chars. ⁽⁷⁾ per Line	Extra Space ⁽⁹⁾	
						Skip ⁽⁸⁾	Chars. ⁽⁷⁾
1	\ReportDate	Yes	(2)	1	31	—	—
2	\ReportType	Yes	—	1	46	—	—
3	\DatesCovered	Yes	—	1	39	—	—
4	\Title	Yes	—	7	72	35mm	48
5a	\ContractNumber	—	—	1	46	—	—
5b	\GrantNumber	—	—	1	46	—	—
5c	\ProgramElementNumber	—	—	1	46	—	—
5d	\ProjectNumber	—	—	1	46	—	—
5e	\TaskNumber	—	—	1	46	—	—
5f	\WorkUnitNumber	—	—	1	46	—	—
6	\Author	Yes	—	7	72	22mm	58
7	\PerformingOrg	Yes	—	4	81	—	—
8	\POReportNumber	—	—	4	39	18mm	26
9	\SponsoringAgency	Yes	—	5	81	—	—
10	\Acronym	—	—	2	30	—	—
11	\SMReportNumber	—	—	1	39	23mm	23
12	\DistributionStatement ⁽¹⁰⁾	—	(3)	3	120	70mm	75
13	\SupplementaryNotes ⁽¹⁰⁾	—	—	2	120	45mm	92
14	\Abstract ⁽¹⁰⁾	Yes	—	10	120	22mm	105
15	\SubjectTerms ⁽¹⁰⁾	—	—	3	125	32mm	103
16a	\ReportClassification	Yes	(4)	1	9	—	—
16b	\AbstractClassification	Yes	(4)	1	9	—	—
16c	\PageClassification	Yes	(4)	1	9	—	—
17	\AbstractLimitation	—	(5)	1	12	—	—
18	\NumberPages	Yes	(6)	1	8	—	—
19a	\ResponsiblePerson	—	—	1	41	—	—
19b	\RPTelephone	—	—	1	41	—	—

Notes:

- (1) All defaults may be overridden by specifying a value. Custom defaults may be assigned using a configuration file (see section 3.2)
- (2) Defaults to the current date (in dd-mm-yyyy format).
- (3) Defaults to “Approved for public release; distribution is unlimited”
- (4) Defaults to “U” (Unclassified)
- (5) Defaults to “UU” (Unclassified Unlimited).
- (6) If the `totpages` package is present, then the total number of pages is calculated automatically, otherwise, there is no default (see section 3.3).
- (7) The number of characters is approximate and for the Computer Modern Roman font family only.
- (8) Amount to indent the extra first line, *e.g.*, `\Title{\hspace{37mm}...text...}`.
- (9) More text may be placed in these blocks by adjusting the font family or size and/or changing the interline gap (see `\PerformingOrg` in sections 3.2 and 4 for an example).
- (10) If the `floatlongboxes` option is set when loading the package, than this box may hold more or less than indicated in this table, however the extra space sizes are still valid.

`\ReportDate` **1. REPORT DATE.**

Full publication date including day, and month if available. Must cite at least the year and be Year 2000 compliant, *e.g.*

`\ReportDate{30--06--1998}` → 30-06-1998

`\ReportDate{xx--06--1998}` → xx-06-1998

`\ReportDate{xx--xx--1998}` → xx-xx-1998

This field is required, but will default to the current date.

`\ReportType` **2. REPORT TYPE.**

State the type of report, such as final, technical, interim, memorandum, master's thesis, progress, quarterly, research, special, group study, *etc.* This field is required.

`\DatesCovered` **3. DATES COVERED.**

Indicate the time during which the work was performed and the report was written, *e.g.*,

`\DatesCovered{Jun 1997--Jun 1998}` → Jun 1997-Jun 1998

`\DatesCovered{1--10 Jun 1996}` → 1-10 Jun 1996

`\DatesCovered{May--Nov 1998}` → May-Nov 1998

`\DatesCovered{Nov 1998}` → Nov 1998

The month and year for at least one month are required.

`\Title` **4. TITLE AND SUBTITLE.**

A title is taken from the part of the report that provides the most meaningful and complete information. When a report is prepared in more than one volume, repeat the primary title, add volume number, and include subtitle for the specific volume. On classified documents enter the title classification in parentheses. This field is required.

`\ContractNumber` **5a. CONTRACT NUMBER.**

Enter all contract numbers as they appear in the report, *e.g.*

`\ContractNumber{F33615--86--C--5169}` → F33615-86-C-5169

`\GrantNumber` **5b. GRANT NUMBER.**

Enter all grant numbers as they appear in the report, *e.g.*

`\GrantNumber{AFOSR--82--1234}` → AFOSR-82-1234

`\ProgramElementNumber` **5c. PROGRAM ELEMENT NUMBER.**

Enter all program element numbers as they appear in the report, *e.g.*

`\ProgramElementNumber{61101A}` → 61101A

`\ProjectNumber` **5d. PROJECT NUMBER.**

Enter all project numbers as they appear in the report, *e.g.*

`\ProjectNumber{1F665702D1257; ILIR}` → 1F665702D1257; ILIR

`\TaskNumber` **5e. TASK NUMBER.**

Enter all task numbers as they appear in the report, *e.g.*

`\TaskNumber{05; RF0330201; T4112}` → 05; RF0330201; T4112

`\WorkUnitNumber` **5f. WORK UNIT NUMBER.**

Enter all work unit numbers as they appear in the report, *e.g.*

`\WorkUnitNumber{001; AFAPL30480105}` → 001; AFAPL30480105

`\Author` **6. AUTHOR(S).**

Enter name(s) of the person(s) responsible for writing the report, performing the research, or credited with the content of the report. The form of entry is the last name, first name, middle initial, and additional qualifiers separated by commas, *e.g.*

`\Author{Smith, Richard, J, Jr}` → Smith, Richard, J, Jr

If editor or compiler, this should follow the name(s).

`\PerformingOrg` **7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES).**

Self-explanatory. This field is one of the best examples of one that may be defined in a configuration file that may be used for many papers. For an example of how to use a configuration file, see section 3.2.

`\POReportNumber` **8. PERFORMING ORGANIZATION REPORT NUMBER.**

Enter the unique alphanumeric report number(s) assigned by the performing organization, *e.g.*

`\POReportNumber{BRL--1234; AFWL--TR--85--4017--Vo121--PT--2}`
→ BRL-1234; AFWL-TR-85-4017-Vol21-PT-2

`\SponsoringAgency` **9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES).**

Enter the name and address of the organization(s) financially responsible for and monitoring the work. If it is desired to place two organizations in this field, then they may be split up in two different ways, the first is to use two 2-line addresses with (for example) a “`\\[10pt]`” line break after the first address to show both the sponsoring and the monitoring agency addresses. The second method is to place the addresses in a `tabular` environment. An example of both methods is shown below.

```
\SponsoringAgency{%
  U.S. Government Sponsoring Department    \\
  P.O. Box 92919, Miltown, AK 97909--6543 \\[10pt]
  U.S. Army Monitoring Agency              \\
  909 Mission Rd., Somecity, MD 29399--9753}
```

```
\SponsoringAgency{%
  \begin{tabular}{@{}l@{\hspace{5mm}}l@{}}
    U.S. Government Sponsoring Dept. & U.S. Government Monitoring Agency \\
    P.O. Box 92919                    & 909 Mission Rd.                    \\
    Miltown, AK 97909--6543          & Somecity, MD 29399--9753          \\
  \end{tabular}}
```

These give the following, respectively:

U.S. Government Sponsoring Dept.
P.O. Box 92919, Miltown, AK 97909-6543

U.S. Government Monitoring Agency
909 Mission Rd., Somecity, MD 29399-9753

U.S. Government Sponsoring Dept.	U.S. Government Monitoring Agency
P.O. Box 92919	909 Mission Rd.
Miltown, AK 97909-6543	Somecity, MD 29399-9753

\Acronyms **10. SPONSOR/MONITOR'S ACRONYM(S).**
Enter any acronym(s) that pertain to the Sponsor/Monitor, separated with commas, if available, *e.g.*

```
\Acronyms{BRL, ARDEC, NADC} → BRL, ARDEC, NADC
```

\SMReportNumber **11. SPONSOR/MONITOR'S REPORT NUMBER(S).**
Enter the report number(s) as assigned by the sponsoring/monitoring agency, if available, *e.g.*

```
\SMReportNumber{BRL-TR--829} → BRL-TR-829
```

\DistributionStatement **12. DISTRIBUTION/AVAILABILITY STATEMENT.**¹
Use agency-mandated availability statements to indicated the public availability or distribution limitations of the report. If additional limitations/restrictions or special markings are indicated follow agency authorization procedures, *e.g.*, RD/FRD,

¹The `floatlongboxes` option may shrink or enlarge this box vertically as it equalizes the vertical space for boxes 12-15.

PROPIN, ITAR. Include copyright information. This field is **not** required, but will default to the first of the following examples:

“Approved for public release; distribution is unlimited.”

“Distribution authorized to DoD only; (reason and date). Other requests shall be referred to (controlling DoD office).”

“Further dissemination only as directed by (controlling DoD office and date) or higher DoD authority.”

For DoD — See DoDD 5230.24, “Distribution Statements on Technical Documents.”

For DoE — See authorities.

For NASA — See Handbook NHB 2200.2.

For NTIS — Leave blank.

`\SupplementaryNotes` **13. SUPPLEMENTARY NOTES.**¹

Enter information not included elsewhere such as: “Prepared in cooperation with...”; “Translation of...”; “To be published in...”. When a report is revised, include a statement whether the new report supersedes or supplements the older report and the older report number if different. ARO requires the following text:

“The views, opinions and/or findings contained in this report are those of the authors and should not be construed as an official Department of Army position, policy or decision, unless so designated by other documentation.”

`\Abstract` **14. ABSTRACT.**¹

Include a brief (approximately 200 words) factual summary of the most significant information contained in the report. This field is required.

`\SubjectTerms` **15. SUBJECT TERMS.**¹

Enter keywords or phrases identifying major subjects in the report. Separate key words and phrases with semicolons (;).

`\ReportClassification` **16a. REPORT SECURITY CLASSIFICATION.**

Enter U.S. Security Classification in accordance with U.S. Security Regulations, *e.g.* U, C, S, etc. If this form contains classified information, stamp classification level on the top and bottom of the page. This field is required, but will default to “U” (Unclassified).

`\AbstractClassification` **16b. ABSTRACT SECURITY CLASSIFICATION.**

See 16a (above).

`\PageClassification` **16c. THIS PAGE SECURITY CLASSIFICATION.**

See 16a (above).

- `\AbstractLimitation` **17. LIMITATION OF ABSTRACT.**
 This block must be completed to assign a distribution limitation to the abstract. Enter either “UU” (Unclassified Unlimited) or “SAR” (same as report). An entry in this block is necessary if the abstract is to be limited. If blank, the abstract is assumed to be unlimited. This field is **not** required, but defaults to “UU”.
- `\NumberPages` **18. NUMBER OF PAGES.**
`\NumberPages*` Enter the total number of pages (including including Roman numerals). This field is required. If the `totpages` package² is available at your site, then you may ignore this field and a value will be entered on the page after the processing of the document with \LaTeX . As with labels and citations referenced in the document, a message will be printed if \LaTeX must be run again to propagate a correct label value to the `sf298` form. If a value is given with this macro, then it **will** be the one used on the form.
- There is also a star version of the `\NumberPages` macro that is only used with the `totpages` package. This adds the given number of pages to the result rather than directly setting the page number. This macro is used when you are inserting a known number of pages, say for an appendix, into the document.
- `\ResponsiblePerson` **19a. NAME OF RESPONSIBLE PERSON.**
 Enter the name of the person responsible for submission of the document.
- `\RPTelephone` **19b. TELEPHONE NUMBER OF RESPONSIBLE PERSON.**
 Enter the telephone number of the person responsible for the submission of the document (including area code).

3 Configuration

In order to make the use of the report documentation page as easy as possible, several aspects of the package are automated or can be easily configured.

3.1 Fonts

When the package is loaded it defines the fonts that are used by basing them on the font families `\sfdefault` for the field labels and `\rmdefault` for the text entries. By default, they will be based on the Computer Modern font family. If you are changing the base font families for your paper and you want the fonts used on the `sf298` to change also, then you must change the font families before loading the `sf298` package. See [2, pages 229,236] for more information about the default font families.

For any specific field, you can override the default font by declaring your preferred value along with your entry, *e.g.*

`\Title{\Huge A Huge Title}` → A Huge Title

²In addition to the `totpages` package, you will need the `everyshi` package (`EVERY SHIPOUT`) that is used by the `totpages` package.

3.2 Configuration file

When the package is loaded, it searches the along the standard \TeX search path, as configured in the system and modified by the `TEXINPUTS` environment variable (or equivalent) for the for the file `sf298.cfg`. It loads the first such file that it finds and this file may be used to change defaults or make other changes to the `sf298` package, *e.g.*

```
\PerformingOrg{Our Little Laboratory \[-1pt]3
                Computer Science Department \[-1pt]
                The Big University \[-1pt]
                9999 Avenue Street \[-1pt]
                Anytown, TX 19293--8765
```

For an organization, other typical fields for inclusion in the configuration file are `\ResponsiblePerson` and `\RPTelescope`. For a set of papers that are part of the same contract, you could set the \TeX search path so that a local version of `sf298.cfg` is loaded that first `\inputs` the more global one and then sets contract specific defaults associated with a single contract, *e.g.*, `\ContractNumber`, `\SponsoringAgency`, `\Acronym`, *etc.*

The option `noconfig` turns off the input of the configuration file. For symmetry, there exists an option `config`, but that is the default and does not need to be specified.

3.3 “Number of Pages” field

If the `totpages` package is available, then the **Number of Pages** field will be automatically filled-in by calculating the difference between the page count of the `sf298` page and the last page. If this package is not present, and if the field is not defined, a warning will be issued.

If the **Number of Pages** is incorrectly calculated, then the correct value can be explicitly defined with the `\NumberPage` macro or offset by a fixed value with the `\NumberPage*` macro. The former may be needed if the `sf298` form is not the first page of the document and an example of the latter is where there is an appendix whose pages are inserted and are, therefore, not automatically counted.

3.4 Adjusting the form placement

`\LeftShift`
`\DownShift`

Sometimes you need to adjust the placement of a large form, such as to provide an extra amount of margin space or for a different page size. These two macros allow this fine-tuning: `\LeftShift{5}` will cause the form to be shifted 5 big points to the left.⁴ The `\DownShift{-8.5}` will cause the form to be shifted up $8\frac{1}{2}$ big points (*i.e.*, down a negative $8\frac{1}{2}$ big points). For example, the following commands will center the `sf298` form on A4 paper:

³Note that five lines are fit where only four are recommended in Table 1 by shrinking the `baselineskip` by one point.

⁴Note that there are no units here, the unit step is defined as one big point (1 bp) at the beginning of the `\MakeRptDocPage` command above by setting the `\unitlength`.

```

\LeftShift{8.5}
\DownShift{-22.0}

```

4 An example of use with the article class

This sample program demonstrates how the `sf298` package may be used and integrated with an existing class. Here we redefine `\@makefile` so that we can create a titlepage and report documentation page that share a common set of fields, such as the report title, the performing organization title and address and the report abstract.

First we have start the paper as an article with twosided pages and using the `sf298` package. We also make the '@' a letter so that we can update some internal names.

```

1 \documentclass[twoside]{article}
2 \usepackage{sf298}
3 \makeatletter

```

`\@maketitle` We modify the standard `\@maketitle` so that the title and author's address (from the internal `\sf@PerformingOrg` value) are integrated into the standard titlepage layout. This may not always be the best approach, since the blocks may contain different internal layout information on the title page and on the report documentation page. Here, the `\@date` macro is used for the date rather than `\sf@ReportDate` and similarly for the author's names, since the desired format is different for these fields, even though the information is the same. Another way to do the same thing is to define the macro to parse and format these values as desired in each case.

As much as possible, a document class that generates both a titlepage and the report documentation page (`sf298`) should allow the common information to be entered only once.

```

4 \renewcommand{\@maketitle}{%
5 \newpage
6 \null
7 \vskip 2em%
8 \begin{center}%
9 \let\footnote\thanks
10 {\LARGE\sf@Title\par}%
11 \vskip 1.5em%
12 {\large
13 \lineskip .5em%
14 \begin{tabular}[t]{c}%
15 \@author\[\[10pt]
16 \sf@PerformingOrg
17 \end{tabular}\par}%
18 \vskip 1em%
19 {\large\@date}%
20 \end{center}%
21 \par
22 \vskip 1.5em}

```

`\showabstract` The next macro, `\showabstract` shows one method of pulling the abstract text out of the internal (“hidden”) define, in order to include it on the titlepage as we show in the accompanying `sample298.txt` file. We just have to make sure that we use it before making the report documentation page, since this data is thrown away after that.

```
23 \newcommand{\showabstract}{%
24   \noindent
25   \sf@Abstract}
```

`\ReportDescription` At the end of the `\titlepage` command, the `\thanks` macro is redefined to be `\relax`. If we want to define the title once and also want to be able to have a `\thanks` message associated with the title on the titlepage, and want to use that same title text on the report documentation page, then we need to redefine the `\thanks` macro to eat it’s argument. This is done by setting `\thanks` to `\@gobble` while printing the report documentation page.

```
26 \newcommand{\ReportDescription}{%
27   \global\let\thanks\@gobble
28   \MakeRptDocPage
29   \global\let\thanks\relax}
```

We are finished with our example integration, so we close off changing the internals and make ‘@’ an “other” once more.

```
30 \makeatother
```

Now we fill in the fields needed for the title and the report documentation pages. For reference as a template, we have entered all of the `sf298` block macros below. The ones that are not being used are commented out. Note that although block 7 (Performing Organization Name) is rated at four lines according to Table 1, we can fit five lines if we compress them a little. Depending on your base font family and such small adjustments, you can probably fit any reasonable set of information onto this form in the way that you want to.

```
31 \date{June 1996}
32 \ReportDate{10--06--1996}
33 \ReportType{Final}
34 \DatesCovered{1 June 1996 --- 31 May 1999}
35 \Title{Final Report Title\thanks{We wish to thank all those who helped with
36   this project. The views and conclusions contained
37   in this document are those of the authors and should
38   not be interpreted as representing anyone else.}}
39 \ContractNumber{DACA99--99--C--9999}
40 %\GrantNumber{}
41 %\ProgramElementNumber{}
42 %\ProjectNumber{}
43 %\TaskNumber{}
44 %\WorkUnitNumber{}
45 \author{Joe A. Uthor and Jane E. Ditor}
46 \Author{Uthor, Joe, A., and Ditor, Jane, E.}
47 \PerformingOrg{%
48   Our Little Laboratory\[-1pt]
49   Computer Science Department\[-1pt]}
```

```

50 The Big University\[-1pt]
51 9999 Avenue Street\[-1pt]
52 Anytown, TX 19293--8765}
53 %\POReportNumber{}
54 \SponsoringAgency{%
55 U.S. Army Sponsoring Department\
56 P.O. Box 92919, Miltown, AK 97909--6543\[[10pt]
57 U.S. Army Monitoring Agency\
58 909 Mission Rd., Somecity, MD 29399--9753}
59 %\Acronyms{}
60 %\SMReportNumber{}
61 %\DistributionStatement{}
62 \SupplementaryNotes{%
63 The views, opinions and/or findings contained in this report are
64 those of the authors and should not be construed as an official
65 U.S.\ Government position, policy or decision, unless so designated
66 by other documentation.}
67 \Abstract{%
68 This sample paper shows one way to use the sf298 package along with
69 the article documentclass to generate a paper with the standard form 298
70 as the second physical page in the document.
71
72 In addition, the common text of the title, authors and abstract are
73 shared and the ‘\tt \string\thanks}’ macro is treated specially so
74 that it is active for the titlepage and inactive for the report
75 documentation page.}
76 \SubjectTerms{keywords; associated words; other words}
77 %\NumberPages{}
78 %\ReportClassification{}
79 %\PageClassification{}
80 %\AbstractClassification{}
81 \AbstractLimitation{UU}
82 \ResponsiblePerson{Mr.\ Joe A. Uthor}
83 \RPTelephone{(412) 555--9999}

Finally we begin a very simple report, First we print the titlepage and the
abstract. Next the report documentation page is written. Following these two
pages, the table of contents is output, followed by the very short report.

84 \begin{document}
85 \pagenumbering{roman}
86
87 \maketitle\thispagestyle{empty}
88 \begin{abstract}
89 \showabstract
90 \end{abstract}
91
92 \ReportDescription
93
94 \tableofcontents
95 \cleardoublepage
96 \pagenumbering{arabic}
97 \setcounter{page}{1}

```

```
98
99 \section{Introduction}
100
101 Blah, blah and blah.
102
103 \section{Conclusion}
104
105 More blah, blah and blah.
106
107 \end{document}
```

5 The DOCSTRIP modules

The following modules are used in the implementation to direct DOCSCRIPT in generating the external files:

driver	produces a documentation driver file.
package	produces the package sf298.sty.
sample	produces a sample L ^A T _E X template and test file.

6 The code

6.1 Identification

```
108 \NeedsTeXFormat{LaTeX2e}
109 \ProvidesPackage{sf298}[2004/12/22 Standard Form 298]
110 \typeout{Package: sf298 2004/12/22 v1.2)}
```

6.2 Load the `totpages` package, if it exists.

`\sf@page` Check to see if the `totpages` package is present. If it is, then load the package and create a local page counter for use in calculating the actual total pages.

```
111 \IfFileExists{totpages.sty}{%
112   \usepackage{totpages}
113   \newcounter{sf@page}}{}
```

6.3 Create the user interface

The following macros define the external and internal portions of the user interface. These macros are used to fill the various blocks of the form. All but one of the macros have the same pattern: a public version which sets the internal value, both based on the block name. The exception is the `\NumberPages` macro that has a starred form for special use when the `totpages` when the page count is calculated automatically (see below).

```

\ReportDate
\sF@ReportDate 114 \newcommand\ReportDate[1]{\renewcommand\sF@ReportDate{#1}}
115 \newcommand\sF@ReportDate{\number\day--\number\month--\number\year}

\ReportType
\sF@ReportType 116 \newcommand\ReportType[1]{\renewcommand\sF@ReportType{#1}}
117 \newcommand\sF@ReportType{\relax}

\DatesCovered
\sF@DatesCovered 118 \newcommand\DatesCovered[1]{\renewcommand\sF@DatesCovered{#1}}
119 \newcommand\sF@DatesCovered{\relax}

\Title
\sF@Title 120 \newcommand\Title[1]{\renewcommand\sF@Title{#1}}
121 \newcommand\sF@Title{\relax}

\ContractNumber
\sF@ContractNumber 122 \newcommand\ContractNumber[1]{\renewcommand\sF@ContractNumber{#1}}
123 \newcommand\sF@ContractNumber{\relax}

\GrantNumber
\sF@GrantNumber 124 \newcommand\GrantNumber[1]{\renewcommand\sF@GrantNumber{#1}}
125 \newcommand\sF@GrantNumber{\relax}

\ProgramElementNumber
\sF@ProgramElementNumber 126 \newcommand\ProgramElementNumber[1]{\renewcommand\sF@ProgramElementNumber{#1}}
127 \newcommand\sF@ProgramElementNumber{\relax}
```

```

\ProjectNumber
\sf@ProjectNumber 128 \newcommand\ProjectNumber[1]{\renewcommand\sf@ProjectNumber{#1}}
129 \newcommand\sf@ProjectNumber{\relax}

\TaskNumber
\sf@TaskNumber 130 \newcommand\TaskNumber[1]{\renewcommand\sf@TaskNumber{#1}}
131 \newcommand\sf@TaskNumber{\relax}

\WorkUnitNumber
\sf@WorkUnitNumber 132 \newcommand\WorkUnitNumber[1]{\renewcommand\sf@WorkUnitNumber{#1}}
133 \newcommand\sf@WorkUnitNumber{\relax}

\Author
\sf@Author 134 \newcommand\Author[1]{\renewcommand\sf@Author{#1}}
135 \newcommand\sf@Author{\relax}

\PerformingOrg
\sf@PerformingOrg 136 \newcommand\PerformingOrg[1]{\renewcommand\sf@PerformingOrg{#1}}
137 \newcommand\sf@PerformingOrg{\relax}

\POReportNumber
\sf@POReportNumber 138 \newcommand\POReportNumber[1]{\renewcommand\sf@POReportNumber{#1}}
139 \newcommand\sf@POReportNumber{\relax}

\SponsoringAgency
\sf@SponsoringAgency 140 \newcommand\SponsoringAgency[1]{\renewcommand\sf@SponsoringAgency{#1}}
141 \newcommand\sf@SponsoringAgency{\relax}

\Acronyms
\sf@Acronyms 142 \newcommand\Acronyms[1]{\renewcommand\sf@Acronyms{#1}}
143 \newcommand\sf@Acronyms{\relax}

\SMReportNumber
\sf@SMReportNumber 144 \newcommand\SMReportNumber[1]{\renewcommand\sf@SMReportNumber{#1}}
145 \newcommand\sf@SMReportNumber{\relax}

\DistributionStatement
\sf@DistributionStatement 146 \newcommand\DistributionStatement[1]{%
147 \renewcommand\sf@DistributionStatement{#1}}
148 \newcommand\sf@DistributionStatement{Approval for public release;
149 distribution is unlimited.}

\SupplementaryNotes
\sf@SupplementaryNotes 150 \newcommand\SupplementaryNotes[1]{\renewcommand\sf@SupplementaryNotes{#1}}
151 \newcommand\sf@SupplementaryNotes{\relax}

\Abstract
\sf@Abstract 152 \newcommand\Abstract[1]{\renewcommand\sf@Abstract{#1}}
153 \newcommand\sf@Abstract{\relax}

```

```

\SubjectTerms
\sf@SubjectTerms 154 \newcommand\SubjectTerms[1]{\renewcommand\sf@SubjectTerms{#1}}
155 \newcommand\sf@SubjectTerms{\relax}

\ReportClassification
\sf@ReportClassification 156 \newcommand\ReportClassification[1]{\renewcommand\sf@ReportClassification{#1}}
157 \newcommand\sf@ReportClassification{U}

\AbstractClassification
\sf@AbstractClassification 158 \newcommand\AbstractClassification[1]{%
159 \renewcommand\sf@AbstractClassification{#1}}
160 \newcommand\sf@AbstractClassification{U}

\PageClassification
\sf@PageClassification 161 \newcommand\PageClassification[1]{\renewcommand\sf@PageClassification{#1}}
162 \newcommand\sf@PageClassification{U}

\AbstractLimitation
\sf@AbstractLimitation 163 \newcommand\AbstractLimitation[1]{\renewcommand\sf@AbstractLimitation{#1}}
164 \newcommand\sf@AbstractLimitation{UU}

\ResponsiblePerson
\sf@ResponsiblePerson 165 \newcommand\ResponsiblePerson[1]{\renewcommand\sf@ResponsiblePerson{#1}}
166 \newcommand\sf@ResponsiblePerson{\relax}

\RPTelephone
\sf@RPTelephone 167 \newcommand\RPTelephone[1]{\renewcommand\sf@RPTelephone{#1}}
168 \newcommand\sf@RPTelephone{\relax}

\NumberPages
\NumberPages* The \NumberPages macro that has a both a regular form (\NumberPages) that is
used when setting the number of pages, and a starred form (\NumberPages*) that
is used to offset the automatically calculated number of pages calculated using the
totpages package. The value supplied by the starred form is added to account for
inserted pages that are not part of the LATEX paper. For instance, when you are
inserting a known number of pages from an alternative source, say for an appendix,
into the document.

The \NumberPages macro looks ahead for an asterisk and if it finds one, then
it “eats” it and passes the argument to the internal \sf@SNumberPages macro
where it is stored for later use to with the total pages calculation. Otherwise, it
sends the argument to the \sf@NNumberPages macro where it becomes the actual
page number.

169 \newcommand\NumberPages{%
170 \ifnextchar *%
171 {\def\@tempa*\sf@SNumberPages}%
172 \@tempa}%
173 {\sf@NNumberPages}}

\sf@NNumberPages
\sf@NumberPages 174 \newcommand\sf@NNumberPages[1]{\renewcommand\sf@NumberPages{#1}}
175 \newcommand\sf@NumberPages{\relax}

```

```

\sf@SNumberPages
\sf@ExtraPages 176 \newcommand\sf@SNumberPages[1]{\renewcommand\sf@ExtraPages{#1}}
177 \newcommand\sf@ExtraPages{0}

```

6.4 Options Processing: Check for a configuration file

First we define a switch that we can set with the optional arguments and then declare the optional arguments themselves.

```

178 \DeclareOption{config}{\def\sf@config{Y}}
179 \DeclareOption{noconfig}{\def\sf@config{N}}

```

Second, we define an option that floats the four long boxes near the bottom of the page. This allows for more flexibility in the layout without greatly modifying the standard form.

```

180 \newif\ifsfloatlongboxes
181 \DeclareOption{floatlongboxes}{\sffloatlongboxestruel}
182 \DeclareOption{nofloatlongboxes}{\sffloatlongboxesfalse}

```

Next we process the optional arguments. We set the default to read the configuration file and process any options to allow the user to turn it off. Then, depending on the current value of the configuration switch, we check for the configuration file.

```

183 \ExecuteOptions{config,nofloatlongboxes}
184 \ProcessOptions

185 \if Y\sf@config
186   \InputIfFileExists{sf298.cfg}{}{}
187 \fi
188 \let\sf@config\relax

```

6.5 Form placement fine tuning

`\LeftShift` These two macros allow the user to set any offset for the form. This allows fine
`\DownShift` tuning of the form placement as necessary.

```

189 \newcommand\LeftShift[1]{\renewcommand\sf@LeftShift{#1}}
190 \newcommand\sf@LeftShift{0}

191 \newcommand\DownShift[1]{\renewcommand\sf@DownShift{#1}}
192 \newcommand\sf@DownShift{0}

```

6.6 Font definition

`\sf@setfont` This macro is used to set the baseline and insure that the interword spacing has not been changed by evil outside influences when typesetting the form titles and entries.

```

193 \newcommand{\sf@setfont}[2]{%
194   \renewcommand{\baselinestretch}{1.0}%
195   \setlength{\baselineskip}{#2}%
196   \setlength{\normalbaselineskip}{\baselineskip}%
197   #1

```

```

198 \spaceskip=\fontdimen2\font % space between words (\raggedright)
199 \xspaceskip=\fontdimen2\font
200 \advance\xspaceskip by\fontdimen7\font}

```

`\sf@strut` This strut is added at the beginning of each block title to place the title text at the desired offset from the upper left corner of the block.

```
201 \newcommand{\sf@strut}{\rule{0pt}{7pt}}
```

`\sf@titlefontA` The form headings are set with Sans Serif at 14-, 11-, 8-, and 6-point sizes and
`\sf@settitlefontA` a couple of different shapes and sizes. Each font is actually set by the related
`\sf@titlefontB` `\settitlefont?` macro which switches to the indicated fixed font, sets the new
`\sf@settitlefontB` baseline and protects the text from external settings. The actual font family used
`\sf@titlefontC` depends on the current setting of `\sfdefault` [2, pages 229,236].

```

\sf@settitlefontC 202 \DeclareFixedFont{\sf@titlefontA}{OT1}{\sfdefault}{bx}{n}{\@xivpt}
\sf@titlefontD 203 \newcommand{\sf@settitlefontA}{\sf@setfont{\sf@titlefontA}{18pt}}
\sf@settitlefontD 204 \DeclareFixedFont{\sf@titlefontB}{OT1}{\sfdefault}{m}{sl}{\@xipt}
\sf@titlefontE 205 \newcommand{\sf@settitlefontB}{\sf@setfont{\sf@titlefontB}{13.6pt}}
\sf@settitlefontE 206 \DeclareFixedFont{\sf@titlefontC}{OT1}{\sfdefault}{m}{n}{\@viipt}
\sf@titlefontF 207 \newcommand{\sf@settitlefontC}{\sf@setfont{\sf@titlefontC}{7pt}}
\sf@settitlefontF 208 \DeclareFixedFont{\sf@titlefontD}{OT1}{\sfdefault}{bx}{n}{\@viipt}
209 \newcommand{\sf@settitlefontD}{\sf@setfont{\sf@titlefontD}{7pt}}
210 \DeclareFixedFont{\sf@titlefontE}{OT1}{\sfdefault}{bx}{n}{\@viiipt}
211 \newcommand{\sf@settitlefontE}{\sf@setfont{\sf@titlefontE}{9.5pt}}
212 \DeclareFixedFont{\sf@titlefontF}{OT1}{\sfdefault}{m}{sl}{\@viiipt}
213 \newcommand{\sf@settitlefontF}{\sf@setfont{\sf@titlefontF}{9.5pt}}

```

`\sf@entryfont` The form is filled in with Roman 10-point text. This insures that the text will
`\sf@setentryfont` reasonably fit in the form boxes and will not vary with the choice of the normal
fontsize of the document. As with the title fonts, above, the entry font is actually
set by the related `\setentryfont` macro. The actual font family used depends on
the current setting of `\rmdefault` [2, pages 229,236].

```

214 \DeclareFixedFont{\sf@entryfont}{OT1}{\rmdefault}{m}{n}{\@xpt}
215 \newcommand{\sf@setentryfont}{\sf@setfont{\sf@entryfont}{11pt}}

```

6.7 Error checking and reporting

`\ifsf@undef` This switch is used by the error reporting at the end of the document to generate
`\sf@undeftrue` a general message that there was an undefined required field.

```

\sf@undeffalse 216 \newif\ifsf@undef
217 \sf@undeffalse

```

`\sf@undefined` The `\sf@undefined` macro is executed with the optional argument for each re-
quired field and without the optional argument at the end of the document.

```

218 \newcommand{\sf@undefined}[1][\@empty]{%
219 \ifx \@empty#1\relax
220 \ifsf@undef
221 \typeout{^^J%

```

```

222             SF298 Warning: There are required fields that are undefined.%
223             ^^J}%
224     \fi
225 \else
226     \sf@undeftrue
227     \typeout{^^J%
228             SF298 Warning: \expandafter\string\csname #1\endcsname\space
229             is undefined.%
230             ^^J}%
231 \fi}

```

`\sf@checkfield` This macro does the actual checking for undefined required fields. Because of the different sorts of field definitions that could be created, it was easier to just fill a box with whatever the user defined and check to see if the box has a non-zero width. You could defeat this if you really wanted to, but it should work for reasonable field values.

```

232 \newcommand{\sf@checkfield}[1]{%
233   \setbox\@tempboxa\vbox{\csname sf@#1\endcsname}%
234   \ifdim \wd\@tempboxa =0pt
235     \sf@undefined[#1]
236   \fi}
237 \AtEndDocument{\sf@undefined}

```

6.8 Page layout

This is the part of the code that actually sets up the form page and draws the form. After the form is drawn, most of the macros are set to `\relax` in order to recover as much pool space as possible.

6.8.1 Form setup and cleanup

`\MakeRptDocPage` The `\MakeRptDocPage` command creates the Report Documentation Page using the information defined by the associated field macros. This should be used at the beginning of a deliverable report just after the cover or title page and counts as the first actual page of the document.

```

238 \newcommand\MakeRptDocPage{%

```

If the `twoside` option is specified in the documentclass, then it is printed as a separate page with a blank back. This page treated as page ‘*i*’ (if the documentclass `twoside` option is specified, then the back treated as page ‘*ii*’.

```

239   \newpage
240   \if@twoside\ifodd\c@page\else
241     \null
242     \thispagestyle{empty}%
243   \newpage
244 \fi\fi

```

Check for missing required fields. If the field value is missing, then print a warning. In the case of the number of pages, if the `totpages` package was loaded, then calculate the value, else if the total pages is not given, then give a warning.

```

245 \sf@checkfield{ReportDate}
246 \sf@checkfield{ReportType}
247 \sf@checkfield{DatesCovered}
248 \sf@checkfield{Title}
249 \sf@checkfield{Author}
250 \sf@checkfield{PerformingOrg}
251 \sf@checkfield{SponsoringAgency}
252 \sf@checkfield{Abstract}
253 \sf@checkfield{ReportClassification}
254 \sf@checkfield{AbstractClassification}
255 \sf@checkfield{PageClassification}
256 \sf@checkfield{AbstractLimitation}

257 \edef\@tempa{\sf@NumberPages}%
258 \edef\@tempa{\expandafter\@car\@tempa \@nil}%
259 \if \relax\@tempa\relax
260   \ifundefined{c@TotPages}%
261     {\sf@undefined[NumberPages]}
262     {\@ifundefined{r@TotPages}%
263       {\renewcommand{\sf@NumberPages}{\bf ??}}%
264       {\setcounter{sf@page}{\expandafter\@car\r@TotPages\@nil}
265         \addtocounter{sf@page}{-\value{TotPages}}
266         \addtocounter{sf@page}{\sf@ExtraPages}
267         \renewcommand{\sf@NumberPages}{\arabic{sf@page}}}}
268 \fi

```

Next we make this page number one of the document and draw the form on an $8\frac{1}{2} \times 11$ inch letter-size page and all offsets in the actual form layout are in pixels from the lower-left corner of the picture box as defined by the `\sf@drawform` macro. When we close off the boxes, we allow the form to expand beyond the zero sized box. This keeps L^AT_EX from issuing warnings about overfull boxes.

```

269 \setcounter{page}{1}%
270 \thispagestyle{empty}
271 \vbox to 0pt{%
272   \@tempskipa 34pt
273   \advance\@tempskipa\voffset
274   \advance\@tempskipa\topmargin
275   \advance\@tempskipa\headheight
276   \advance\@tempskipa\headsep
277   \advance\@tempskipa\baselineskip
278   \vskip-\@tempskipa
279   \hbox to 0pt{%
280     \@tempskipa\oddsidemargin
281     \advance\@tempskipa 42pt
282     \hskip-\@tempskipa
283     \sf@drawform
284     \hss}%
285   \vss}%

```

The page is now done, so, if the documentclass `twoside` option is specified, generate a blank page for its back, which counts as page ‘*ii*’).

```

286 \newpage
287 \if@twoside
288   \null
289   \thispagestyle{empty}%
290   \newpage
291 \fi

```

Finally, the last step is to set all of the now unused definitions to `\relax`, thereby freeing some space.

```

292 \global\let\ReportDate\relax
293 \global\let\sf@ReportDate\relax
294 \global\let\ReportType\relax
295 \global\let\sf@ReportType\relax
296 \global\let\DatesCovered\relax
297 \global\let\sf@DatesCovered\relax
298 \global\let\Title\relax
299 \global\let\sf@Title\relax
300 \global\let\ContractNumber\relax
301 \global\let\sf@ContractNumber\relax
302 \global\let\GrantNumber\relax
303 \global\let\sf@GrantNumber\relax
304 \global\let\ProgramElementNumber\relax
305 \global\let\sf@ProgramElementNumber\relax
306 \global\let\ProjectNumber\relax
307 \global\let\sf@ProjectNumber\relax
308 \global\let\TaskNumber\relax
309 \global\let\sf@TaskNumber\relax
310 \global\let\WorkUnitNumber\relax
311 \global\let\sf@WorkUnitNumber\relax
312 \global\let\Author\relax
313 \global\let\sf@Author\relax
314 \global\let\PerformingOrg\relax
315 \global\let\sf@PerformingOrg\relax
316 \global\let\POReportNumber\relax
317 \global\let\sf@POReportNumber\relax
318 \global\let\SponsoringAgency\relax
319 \global\let\sf@SponsoringAgency\relax
320 \global\let\Acronyms\relax
321 \global\let\sf@Acronyms\relax
322 \global\let\SMReportNumber\relax
323 \global\let\sf@SMReportNumber\relax
324 \global\let\DistributionStatement\relax
325 \global\let\sf@DistributionStatement\relax
326 \global\let\SupplementaryNotes\relax
327 \global\let\sf@SupplementaryNotes\relax
328 \global\let\Abstract\relax
329 \global\let\sf@Abstract\relax
330 \global\let\SubjectTerms\relax
331 \global\let\sf@SubjectTerms\relax
332 \global\let\ReportClassification\relax
333 \global\let\sf@ReportClassification\relax
334 \global\let\AbstractClassification\relax

```

```

335 \global\let\sf@AbstractClassification\relax
336 \global\let\PageClassification\relax
337 \global\let\sf@PageClassification\relax
338 \global\let\AbstractLimitation\relax
339 \global\let\sf@AbstractLimitation\relax
340 \global\let\ResponsiblePerson\relax
341 \global\let\sf@ResponsiblePerson\relax
342 \global\let\RPTelephone\relax
343 \global\let\NumberPages\relax
344 \global\let\sf@NumberPages\relax
345 \global\let\sf@NumberPages\relax
346 \global\let\sf@SNumberPages\relax
347 \global\let\sf@ExtraPages\relax
348 \global\let\LeftShift\relax
349 \global\let\sf@LeftShift\relax
350 \global\let\DownShift\relax
351 \global\let\sf@DownShift\relax
352 \global\let\sf@RPTelephone\relax
353 \global\let\sf@setfont
354 \global\let\sf@strut\relax
355 \global\let\sf@titlefontA\relax
356 \global\let\sf@setttitlefontA\relax
357 \global\let\sf@titlefontB\relax
358 \global\let\sf@setttitlefontB\relax
359 \global\let\sf@titlefontC\relax
360 \global\let\sf@setttitlefontC\relax
361 \global\let\sf@titlefontD\relax
362 \global\let\sf@setttitlefontD\relax
363 \global\let\sf@titlefontE\relax
364 \global\let\sf@setttitlefontE\relax
365 \global\let\sf@titlefontF\relax
366 \global\let\sf@setttitlefontF\relax
367 \global\let\sf@entryfont\relax
368 \global\let\sf@setentryfont\relax
369 \global\let\sf@checkfield\relax
370 \global\let\sf@parbox\relax
371 \global\let\sf@drawform\relax
372 \global\let\MakeRptDocPage\relax}

```

6.8.2 Form layout

`\sf@parbox` This macro is used in the following `\sf@drawform` to contain fields that are to be centered in a block, but expand upward when overfull.

```

373 \def\sf@parbox(#1,#2)#3{%
374 \makebox(0,0)[bl]{%
375 \vbox to #1\unitlength{%
376 \vss
377 \noindent
378 \parbox{#2\unitlength}{\raggedright#3}%
379 \vfil}}}

```

`\sf@drawform` First draw the boxes of the form as a large thick-walled box with a series of thin horizontal and vertical lines.

```

380 \newcommand\sf@drawform{%
381   \sf@setentryfont
382   \setlength{\unitlength}{1bp}
383   \begin{picture}(539,707)(\sf@LeftShift,\sf@DownShift)
384     % Draw blank form
385     \linethickness{1bp}%
386     \put( 0, 0){\framebox(539,707){}}
387     % Horizontal lines
388     \linethickness{0.5bp}%
389     \put( 0,677){\line(1,0){539}}
390     \put( 0,635){\line(1,0){539}}
391     \put( 0,611){\line(1,0){539}}
392     \put(324,581){\line(1,0){215}}
393     \put(324,551){\line(1,0){215}}
394     \put( 0,521){\line(1,0){539}}
395     \put(324,491){\line(1,0){215}}
396     \put(324,461){\line(1,0){215}}
397     \put( 0,431){\line(1,0){539}}
398     \put( 0,372){\line(1,0){539}}
399     \put(359,336){\line(1,0){180}}
400     \put( 0,300){\line(1,0){539}}
401     \ifsf@floatlongboxes\else
402       \put( 0,252){\line(1,0){539}}
403       \put( 0,215){\line(1,0){539}}
404       \put( 0, 95){\line(1,0){539}}
405     \fi
406     \put( 0, 48){\line(1,0){539}}
407     \put( 0, 36){\line(1,0){180}}
408     \put(324, 24){\line(1,0){215}}
409     % Vertical lines
410     \put(359,707){\line(0,-1){ 30}}
411     \put(144,635){\line(0,-1){ 24}}
412     \put(359,635){\line(0,-1){ 24}}
413     \put(324,611){\line(0,-1){180}}
414     \put(359,431){\line(0,-1){131}}
415     \put(180, 48){\line(0,-1){ 48}}
416     \put(266, 48){\line(0,-1){ 48}}
417     \put(324, 48){\line(0,-1){ 48}}
418     \put( 60, 36){\line(0,-1){ 36}}
419     \put(120, 36){\line(0,-1){ 36}}

```

Next, fill in the individual box titles. Note the use of the `\sf@strut` to set the block titles a little down and to the right of the absolute corner of the box.

```

420   % Title text
421   \put( 0,677){\makebox(359, 30){%
422     \sf@setttitlefontA REPORT DOCUMENTATION PAGE}}
423   \put(359,677){\makebox(180, 30){%
424     \sf@setttitlefontB\shortstack[c]{%
425     Form Approved\[-2pt]%
426     OMB No. 0704--0188}}}

```

```

427 \put( 3,635){\makebox(533, 42){%
428 \sf@settitlefontC\parbox{533bp}{\raggedright
429 The public reporting burden for this collection of information
430 is estimated to average 1 hour per response, including the
431 time for reviewing instructions, searching existing data
432 sources, gathering and maintaining the data needed, and
433 completing and reviewing the collection of information.
434 Send comments regarding this burden estimate or any other
435 aspect of this collection of information, including
436 suggestions for reducing this burden to Department of
437 Defense, Washington Headquarters Services, Directorate for
438 Information Operations and Reports (0704--0188), 1215
439 Jefferson Davis Highway, Suite 1204, Arlington, VA
440 22202--4302. Respondents should be aware that
441 notwithstanding any other provision of law, no person shall
442 be subject to any penalty for failing to comply with a
443 collection of information if it does not display a currently
444 valid OMB control number.
445 {\sf@settitlefontD
446 PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.}}}}
447 \put( 0,611){\makebox(144, 24)[t1]{%
448 \sf@settitlefontE\sf@strut 1.\ REPORT DATE
449 \sf@settitlefontF (DD--MM--YYYY)}}
450 \put(144,611){\makebox(215, 24)[t1]{%
451 \sf@settitlefontE\sf@strut 2.\ REPORT TYPE}}
452 \put(359,611){\makebox(180, 24)[t1]{%
453 \sf@settitlefontE\sf@strut 3.\ DATES COVERED
454 \sf@settitlefontF (From --- To)}}
455 \put( 0,521){\makebox(324,90)[t1]{%
456 \sf@settitlefontE\sf@strut 4.\ TITLE AND SUBTITLE}}
457 \put(324,581){\makebox(215, 30)[t1]{%
458 \sf@settitlefontE\sf@strut 5a.\ CONTRACT NUMBER}}
459 \put(324,551){\makebox(215, 30)[t1]{%
460 \sf@settitlefontE\sf@strut 5b.\ GRANT NUMBER}}
461 \put(324,521){\makebox(215, 30)[t1]{%
462 \sf@settitlefontE\sf@strut 5c.\ PROGRAM ELEMENT NUMBER}}
463 \put(324,491){\makebox(215, 30)[t1]{%
464 \sf@settitlefontE\sf@strut 5d.\ PROJECT NUMBER}}
465 \put(324,461){\makebox(215, 30)[t1]{%
466 \sf@settitlefontE\sf@strut 5e.\ TASK NUMBER}}
467 \put(324,431){\makebox(215, 30)[t1]{%
468 \sf@settitlefontE\sf@strut 5f.\ WORK UNIT NUMBER}}
469 \put( 0,431){\makebox(324, 90)[t1]{%
470 \sf@settitlefontE\sf@strut 6.\ AUTHOR(S)}}
471 \put( 0,372){\makebox(359, 59)[t1]{%
472 \sf@settitlefontE\sf@strut
473 7.\ PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)}}
474 \put(359,372){\makebox(180, 59)[t1]{%
475 \sf@settitlefontE\shortstack[l]{%
476 \sf@strut 8.\ PERFORMING ORGANIZATION REPORT\[-2pt]
477 \sf@strut\phantom{8.\ }NUMBER}}}}
478 \put( 0,300){\makebox(359, 72)[t1]{%

```

```

479     \sf@settitlefontE\sff@strut
480     9.\ SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)}}
481 \put(359,336){\makebox(180, 36)[t1]{%
482     \sf@settitlefontE\sff@strut 10.\ SPONSOR/MONITOR'S ACRONYM(S)}}
483 \put(359,300){\makebox(180, 36)[t1]{%
484     \sf@settitlefontE\shortstack[1]{%
485         \sf@strut 11.\ SPONSOR/MONITOR'S REPORT\[-3pt]
486         \sf@strut\phantom{11.\ }NUMBER(S)}}}
487 \ifsf@floatlongboxes\else
488     \put( 0,252){\makebox(539, 48)[t1]{%
489         \sf@settitlefontE\sff@strut
490         12.\ DISTRIBUTION / AVAILABILITY STATEMENT}}
491     \put( 0,215){\makebox(539, 37)[t1]{%
492         \sf@settitlefontE\sff@strut 13.\ SUPPLEMENTARY NOTES}}
493     \put( 0,95){\makebox(539,120)[t1]{%
494         \sf@settitlefontE\sff@strut 14.\ ABSTRACT}}
495     \put( 0, 48){\makebox(539, 46)[t1]{%
496         \sf@settitlefontE\sff@strut 15.\ SUBJECT TERMS}}
497 \fi
498 \put( 0, 36){\makebox(180, 12)[t1]{%
499     \sf@settitlefontE\sff@strut 16.\ SECURITY CLASSIFICATION OF:}}
500 \put( 0, 0){\makebox( 60, 36)[t1]{%
501     \sf@settitlefontE\sff@strut a.\ REPORT}}
502 \put( 60, 0){\makebox(60, 36)[t1]{%
503     \sf@settitlefontE\sff@strut b.\ ABSTRACT}}
504 \put(120, 0){\makebox(60, 36)[t1]{%
505     \sf@settitlefontE\sff@strut c.\ THIS PAGE}}
506 \put(180, 0){\makebox( 86, 48)[t1]{%
507     \sf@settitlefontE\shortstack[1]{%
508         \sf@strut 17.\ LIMITATION OF\[-2pt]
509         \sf@strut\phantom{17.\ }ABSTRACT}}}}
510 \put(266, 0){\makebox( 68, 48)[t1]{%
511     \sf@settitlefontE\shortstack[1]{%
512         \sf@strut 18.\ NUMBER\[-2pt]
513         \sf@strut\phantom{18.\ }OF\[-2pt]
514         \sf@strut\phantom{18.\ }PAGES}}}}
515 \put(324, 24){\makebox(215, 24)[t1]{%
516     \sf@settitlefontE\sff@strut 19a.\ NAME OF RESPONSIBLE PERSON}}
517 \put(324, 0){\makebox(215, 24)[t1]{%
518     \sf@settitlefontE\sff@strut 19b.\ TELEPHONE NUMBER
519     \sf@settitlefontF (include area code)}}
520 \put(415,-17){\makebox(123, 17)[b1]{%
521     \shortstack[1]{%
522         {\sf@settitlefontE Standard Form 298 (Rev.\ 8--98)}\[-2pt]%
523         {\sf@settitlefontD Prescribed by ANSI Std.\ Z39.18}}}}

```

Now, we add the user's entries to the form. For undefined entries, we just add null text, the required fields are checked above and warning issued if any of them are empty.

```

524 % Fill in form
525 \put( 4,614){\makebox(0,0)[b1]{\sf@ReportDate}}
526 \put(148,614){\makebox(0,0)[b1]{\sf@ReportType}}

```

```

527 \put(363,614){\makebox(0,0)[bl]{\sf@DatesCovered}}
528 \put( 4,523){\sf@parbox( 80,324){\sf@Title}}
529 \put(328,585){\makebox(0,0)[bl]{\sf@ContractNumber}}
530 \put(328,555){\makebox(0,0)[bl]{\sf@GrantNumber}}
531 \put(328,525){\makebox(0,0)[bl]{\sf@ProgramElementNumber}}
532 \put(328,495){\makebox(0,0)[bl]{\sf@ProjectNumber}}
533 \put(328,465){\makebox(0,0)[bl]{\sf@TaskNumber}}
534 \put(328,435){\makebox(0,0)[bl]{\sf@WorkUnitNumber}}
535 \put( 4,434){\sf@parbox( 80,321){\sf@Author}}
536 \put( 4,397){\makebox(0,0)[l]{%
537 \parbox{355bp}{\raggedright\sf@PerformingOrg}}}
538 \put(363,372){\sf@parbox( 46,176){\sf@POReportNumber}}
539 \put( 4,331){\makebox(0,0)[l]{%
540 \parbox{355bp}{\raggedright \sf@SponsoringAgency}}}
541 \put(363,349){\makebox(0,0)[l]{%
542 \parbox{176bp}{\raggedright\sf@Acronyms}}}
543 \put(363,304){\makebox(0,0)[bl]{%
544 \vbox to 26bp{%
545 \vss
546 \noindent
547 \parbox{176bp}{\raggedright\sf@SMReportNumber}}}}
548 \ifsf@floatlongboxes
549 \put( 0,49){\parbox[b]{541bp}{%
550 \leftskip=4bp
551 \rightskip=4bp plus 2em
552 \vbox to 250bp{%
553 \vbox to 0bp{%
554 \hbox{\sf@settitlefontE\sf@strut
555 12.\ DISTRIBUTION / AVAILABILITY STATEMENT}
556 \vss}
557 \vfil
558 \sf@DistributionStatement
559 \vfil
560 \hrule width\linewidth height0.5bp
561 \vbox to 0bp{%
562 \hbox{\sf@settitlefontE\sf@strut 13.\ SUPPLEMENTARY NOTES}
563 \vss}
564 \vfil
565 \sf@SupplementaryNotes
566 \vfil
567 \hrule width\linewidth height0.5bp
568 \vbox to 0bp{%
569 \hbox{\sf@settitlefontE\sf@strut 14.\ ABSTRACT}
570 \vss}
571 \vfil
572 \sf@Abstract
573 \vfil
574 \hrule width\linewidth height0.5bp
575 \vbox to 0bp{%
576 \hbox{\sf@settitlefontE\sf@strut 15.\ SUBJECT TERMS}
577 \vss}
578 \vfil

```

```

579         \sf@SubjectTerms
580         \vfil}}}}
581     \else
582         \put( 4,255){\sf@parbox( 38,532){\sf@DistributionStatement}}
583         \put( 4,217){\sf@parbox( 25,532){\sf@SupplementaryNotes}}
584         \put( 4, 95){\sf@parbox(110,533){\sf@Abstract}}
585         \put( 4, 51){\sf@parbox( 36,533){\sf@SubjectTerms}}
586     \fi
587     \put( 30, 13){\makebox(0,0){\sf@ReportClassification}}
588     \put( 90, 13){\makebox(0,0){\sf@AbstractClassification}}
589     \put(150, 13){\makebox(0,0){\sf@PageClassification}}
590     \put(223, 13){\makebox(0,0){\sf@AbstractLimitation}}
591     \put(295, 13){\makebox(0,0){\large\sf@NumberPages}}
592     \put(328, 33){\makebox(0,0)[1]{\sf@ResponsiblePerson}}
593     \put(328,  9){\makebox(0,0)[1]{\sf@RPTelephone}}
594 \end{picture}}

```

7 Acknowledgments

I would like to thank Professor Bruce M. Boghosian at the Center for Computational Science, Boston University (bruceb@bu.edu) for discovering problems with the use of a PostScript background for the sf298 form which convinced me to write the entire package in L^AT_EX.

Also, to Dr. Nino Pereira (pereira@speakeasy.net) for the suggestion to make some of the fields more flexible.

References

- [1] Wilhelm Müller, *The totpages package*, 1999/07/13.
- [2] Michel Goossens, Frank Mittelbach, and Alexander Samarin, *A Guide to L^AT_EX 2_ε*, 1993, 2nd edition (revised 1995).

Change History

v1.0		and default prior to loading a configuration file	15
	General: Initial revision.		1
v1.1		No longer require the graphicx package.	15
	General: Added check for a configuration file.		18
	Added option to turn on/off the configuration file check.		18
	Added the error checking and reporting.		19
	Changed reference of millimeters to big points.		10
	Moved user interface commands	\MakeRptDocPage : Added calculation of total pages (if the totpages package is present). Added check for missing fields.	20
		Added font macros to the list of unused definitions. Also \ReportDate and \sf@ReportDate	22

Adjusted offset calculations for new blank form.	21	so that they will adjust to the preferred font family.	19
<code>\NumberPages*</code> : Added ability to offset the automatic number of pages calculation.	17	<code>\sf@strut</code> : Added strut to space the block heading at the exactly proper position in the upper left corner.	19
<code>\sf@drawform</code> : Changed from millimeter to big point spacing.	23	v1.2	
<code>\sf@page</code> : Added the optional loading of the <code>totpages</code> package. If present, then the total pages block is automatically set.	15	General: Added new option: <code>[no]floatlongboxes</code>	18
<code>\sf@parbox</code> : Added.	23	Added note about the <code>floatlongboxes</code> option.	2, 7, 8
<code>\sf@setentryfont</code> : Changed font declaration to use <code>\rmdefault</code> so that it will adjust to the preferred font family.	19	Updated package ID.	15
<code>\sf@setfont</code> : Added titlefonts to support a L ^A T _E X-based blank form (rather than the previous PostScript one). Added setfont stuff to fix weird things that can be done to upset a fixed format.	18	<code>\sf@drawform</code> : If ‘floatlingboxes’ is used, then the four long box separator lines and titles are typset along with the text so that they may act more dynamically.	26
<code>\sf@settitlefontF</code> : Changed font declarations to use <code>\sfdefault</code>		Removed hard lines on the four long boxes if ‘floatlingboxes’ is used.	23
		Removed hard titles on the four long boxes if ‘floatlingboxes’ is used.	24

Index

Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.

Symbols	A	<code>\DistributionStatement</code>
<code>\@author</code>	<code>\Abstract</code> 8, 67, <u>152</u> , 328	. . . 7, 61, <u>146</u> , 324
<code>\@maketitle</code>	<code>\AbstractClassification</code>	<code>\DownShift</code> 10, <u>189</u> , 350
	. . . 8, 80, <u>158</u> , 334	
	<code>\AbstractLimitation</code>	G
	. . . 9, 81, <u>163</u> , 338	<code>\GrantNumber</code>
<code>_</code>	<code>\Acronyms</code> 7, 59, <u>142</u> , 320	. . . 5, 40, <u>124</u> , 302
451, 453, 456,	<code>\Author</code> . 6, 46, <u>134</u> , 312	
458, 460, 462,	<code>\author</code>	I
464, 466, 468,	. . . . . 45	<code>\ifsf@floatlongboxes</code>
470, 473, 476,		. 180, 401, 487, 548
477, 480, 482,	C	<code>\ifsf@undef</code>
485, 486, 490,	<code>\ContractNumber</code> . . . . .	. . . <u>216</u> , 220
492, 494, 496,	. . . 5, 39, <u>122</u> , 300	
499, 501, 503,		L
505, 508, 509,	D	<code>\LeftShift</code> 10, <u>189</u> , 348
512–514, 516,	<code>\DatesCovered</code>	
518, 522, 523,	. . . 5, 34, <u>118</u> , 296	M
555, 562, 569, 576	<code>\DeclareOption</code>	<code>\MakeRptDocPage</code> 28, <u>238</u>
	. 178, 179, 181, 182	

N	\sf@DistributionStatement	\sf@setttitlefontA
\NumberPages . . . . .	. 146, 325, 558, 582	. . . . . 202, 356, 422
... 9, 77, 169, 343	\sf@DownShift	\sf@setttitlefontB .
\NumberPages* ... 9, 169	. 191, 192, 351, 383	. . . . . 202, 358, 424
P	\sf@drawform	\sf@setttitlefontC .
\PageClassification	. . . . . 283, 371, 380	. . . . . 202, 360, 428
... 8, 79, 161, 336	\sf@entryfont . 214, 367	\sf@setttitlefontD .
\PerformingOrg	\sf@ExtraPages . . . . .	. 202, 362, 445, 523
... 6, 47, 136, 314	. . . . . 176, 266, 347	\sf@setttitlefontE .
\POReportNumber	\sf@floatlongboxesfalse	. . . . . 202,
... 6, 53, 138, 316	. . . . . 182	364, 448, 451,
\ProcessOptions ... 184	\sf@floatlongboxestrue	453, 456, 458,
\ProgramElementNumber	. . . . . 181	460, 462, 464,
... 5, 41, 126, 304	\sf@GrantNumber	466, 468, 470,
\ProjectNumber . . . . .	. . . . . 124, 303, 530	472, 475, 479,
... 6, 42, 128, 306	\sf@LeftShift	482, 484, 489,
R	. 189, 190, 349, 383	492, 494, 496,
\ReportClassification	\sf@NNumberPages	499, 501, 503,
... 8, 78, 156, 332	. . . . . 173, 174, 344	505, 507, 511,
\ReportDate	\sf@NumberPages	516, 518, 522,
... 5, 32, 114, 292	. . . . . 174, 257,	554, 562, 569, 576
\ReportDescription	263, 267, 345, 591	\sf@setttitlefontF .
... 26, 92	\sf@page 111	. . . . . 202,
\ReportType	\sf@PageClassification	366, 449, 454, 519
... 5, 33, 116, 294	. . . . . 161, 337, 589	\sf@SMReportNumber .
\ResponsiblePerson	\sf@parbox . . . . .	. . . . . 144, 323, 547
... 9, 82, 165, 340	. 370, 373, 528,	\sf@SNumberPages
\rmdefault 214	535, 538, 582–585	. . . . . 171, 176, 346
\RPTelephone	\sf@PerformingOrg	\sf@SponsoringAgency
... 9, 83, 167, 342	. 16, 136, 315, 537	. . . . . 140, 319, 540
S	\sf@POReportNumber	\sf@strut 201,
\sf@Abstract 25,	. . . . . 138, 317, 538	354, 448, 451,
152, 329, 572, 584	\sf@ProgramElementNumber	453, 456, 458,
\sf@AbstractClassification	. . . . . 126, 305, 531	460, 462, 464,
. 158, 335, 588	\sf@ProjectNumber	466, 468, 470,
\sf@AbstractLimitation	. . . . . 128, 307, 532	472, 476, 477,
. 163, 339, 590	\sf@ReportClassification	479, 482, 485,
\sf@Acronyms . . . . .	. . . . . 156, 333, 587	486, 489, 492,
. 142, 321, 542	\sf@ReportDate	494, 496, 499,
\sf@Author 134, 313, 535	. . . . . 114, 293, 525	501, 503, 505,
\sf@checkfield	\sf@ReportType	508, 509, 512–
. 232, 245–256, 369	. . . . . 116, 295, 526	514, 516, 518,
\sf@config	\sf@ResponsiblePerson	554, 562, 569, 576
. 178, 179, 185, 188	. . . . . 165, 341, 592	\sf@SubjectTerms
\sf@ContractNumber	\sf@RPTelephone . . . . .	. 154, 331, 579, 585
. 122, 301, 529	. . . . . 167, 352, 593	\sf@SupplementaryNotes
\sf@DatesCovered	\sf@setentryfont . . . . .	. 150, 327, 565, 583
. 118, 297, 527	. . . . . 214, 368, 381	\sf@TaskNumber
	\sf@setfont 193, 203,	. . . . . 130, 309, 533
	205, 207, 209,	\sf@Title
	211, 213, 215, 353	. 10, 120, 299, 528
		\sf@titlefontA 202, 355

<code>\sf@titlefontB</code>	202 , 357	<code>\sfdefault</code>	202 , 204 ,		T
<code>\sf@titlefontC</code>	202 , 359		206 , 208 , 210 , 212	<code>\TaskNumber</code>
<code>\sf@titlefontD</code>	202 , 361	<code>\showabstract</code>	... 23 , 89	...	6 , 43 , 130 , 308
<code>\sf@titlefontE</code>	202 , 363	<code>\SMReportNumber</code>	...	<code>\thanks</code>	9 , 27 , 29 , 35 , 73
<code>\sf@titlefontF</code>	202 , 365		... 7 , 60 , 144 , 322	<code>\Title</code>	... 5 , 35 , 120 , 298
<code>\sf@undeffalse</code>	.... 216	<code>\SponsoringAgency</code>	.		
<code>\sf@undefined</code>	.....		... 6 , 54 , 140 , 318		
	. 218 , 235 , 237 , 261	<code>\SubjectTerms</code>		W
<code>\sf@undeftrue</code>	. 216 , 226		... 8 , 76 , 154 , 330	<code>\WorkUnitNumber</code>	...
<code>\sf@WorkUnitNumber</code>	.	<code>\SupplementaryNotes</code>	...	...	6 , 44 , 132 , 310
	.... 132 , 311 , 534		... 8 , 62 , 150 , 326		