The sf298 Package*

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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. The latest revision includes the option of inserting the General Instructions page that typically appears after the form.

Contents

*This paper documents the sf298 package v1.3, last revised 2016/7/7.

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. The macro `\GeneralInstructions` causes the page of general instructions that accompanies the form to be printed. This is typically inserted after the `sf298` form.

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 5.1).

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 5.2); 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 6 that shows one approach to using the sf298 package.

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704–0188

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

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

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)*

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. You can use "\\" (newline) to override the default linebreaking, if desired (see section 5.2 for an example).

Table 1: Field Attributes and Approximate Maximum Size.

Field Number	Macro Name	Required	Default Value(1)	Max Lines	Chars.(6) per Line	Extra Space(8)	
						Skip(7)	Chars.(6)
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 (9)	—	(3)	3	120	70mm	75
13	\SupplementaryNotes (9)	—	—	2	120	45mm	92
14	\Abstract (9)	Yes	—	10	120	22mm	105
15	\SubjectTerms (9)	—	—	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	—	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 5.2) .

(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).
otherwise, there is no default (see section 5.3).

(6) The number of characters is approximate and for the Computer Modern Roman font family only.

(7) Amount to indent the extra first line, *e.g.* , \Title{\hspace{37mm} ... text... }.

(8) 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 5.2 and 6 for an example).

(9) If the floatlongboxes option is set when loading the pacakage, then 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 5.2.

\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--Vol21--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

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

or special markings are indicated follow agency authorization procedures, *e.g.* , RD/FRD, 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. The current implementation of the sf298 package uses the totpages package that is now commonly available with standard LaTeX distributions or can be easily obtained from Internet accessible package distribution sites such as the The Comprehensive TeX Archive Network (CTAN) (https://www.ctan.org/). 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 SF298 Form

The macro \ReportDescription will insert the standard form 298 on a separate page at the location where it appears. This will produce the Report Documentation page as appears earlier in this document.

4 General Instructions Page

Some government organizations require that a General Instructions page be included after the standard form 298. The macro \GeneralInstructions{typesize} causes the page to be printed according to a generic type size, *e.g.* footnotesize. The typesize argument was implemented to allow the end user control over the print size of the general instructions.

The\GeneralInstructions command need simply be inserted into your LaTeX document after the \MakeRptDocPage command. This will result in the following page appearing in the document.

INSTRUCTIONS FOR COMPLETING SF 298

1. REPORT DATE. Full publication date including day, month, and year, if available. Must cite at least the year and be Year 2000 compliant, *e.g.* 30-06-1998; xx-06-1998; xx-xx-1998.

2. REPORT TYPE. State the type of report, such as final, technical, interim, memorandum, master's thesis, progress, quarterly, research, special, group study, etc.

3. DATE COVERED. Indicate the time during which the work was performed and the report was written, *e.g.* , Jun 1997 - Jun 1998; 1-10 Jun 1996; May - Nov 1998; Nov 1998.

4. TITLE. Enter title and subtitle with volume number and part number, if applicable. On classified documents, enter the title classification in parentheses.

5a. CONTRACT NUMBER. Enter all contract numbers as they appear in the report, *e.g.* F33315-86-C-5169.

5b. GRANT NUMBER. Enter all grant numbers as they appear in the report. *e.g.* AFOSR-82-1234.

5c. PROGRAM ELEMENT NUMBER. Enter all program element numbers as they appear in the report, *e.g.* 61101A.

5e. TASK NUMBER. Enter all task numbers as they appear in the report, *e.g.* 05; RF0330201; T4112.

5f. WORK UNIT NUMBER. Enter all work unit numbers as they appear in the report, *e.g.* 001; AFAPL30480105.

6. AUTHOR(S). Enter name(s) of 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.* Smith, Richard, J, Jr.

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES). Self-explanatory.

8. PERFORMING ORGANIZATION REPORT NUMBER. Enter all unique alphanumeric report numbers assigned by the performing organization, *e.g.* BRL-1234; AFWL-TR-85-4017-Vol-21-PT-2.

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.

10. SPONSOR/MONITOR'S ACRONYM(S). Enter, if available, *e.g.* BRL, ARDEC, NADC.

11. SPONSOR/MONITOR'S REPORT NUMBER(S). Enter report number as assigned by the sponsoring/ monitoring agency, if available, *e.g.* BRL-TR-829; -215.

12. DISTRIBUTION/AVAILABILITY STATEMENT. Use agency-mandated availability statements to indicate 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, PROPIN, ITAR, etc. Include copyright information.

13. SUPPLEMENTARY NOTES. Enter information not included elsewhere such as: prepared in cooperation with; translation of; report supersedes; old edition number, etc.

14. ABSTRACT. A brief (approximately 200 words) factual summary of the most significant information.

15. SUBJECT TERMS. Key words or phrases identifying major concepts in the report.

16. SECURITY CLASSIFICATION. Enter security classification in accordance with security classification regulations, *e.g.* U, C, S, etc. If this form contains classified information, stamp classification level on the top and bottom of this page.

17. LIMITATION OF ABSTRACT. This block must be completed to assign a distribution limitation to the abstract. Enter UU (Unclassified Unlimited) or SAR (Same as Report). An entry in this block is necessary if the abstract is to be limited.

5 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.

5.1 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

5.2 Configuration file

When the package is loaded, it searches along the standard TEX search path, as configured in the system and modified by the `TEXINPUTS` environment variable (or equivalent) 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]2
               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 `\RPTelephone`. 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.

5.3 "Number of Pages" field

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 the `totpages` package is not present, and if the field is not defined, a warning will be issued.

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

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. An example of the latter is where there is an appendix whose pages are inserted and are, therefore, not automatically counted.

5.4 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.[3] 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:

```
\LeftShift{8.5}
\DownShift{-22.0}
```

6 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 to 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.

```
\documentclass[twoside]{article}
\usepackage{sf298}

 \setlength{\parindent}{5ex}
 \setlength{\paperwidth}{8.5in}
 \setlength{\textwidth}{6.5in}
 \setlength{\oddsidemargin}{0in}
 \setlength{\evensidemargin}{0in}

\makeatletter
```

`\@maketitle`

We modify the standard `\@maketitle` so that the title and author's address (from the internal `\sf@PeformingOrg` 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

[3] Note 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`.

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.

```
\renewcommand{\@maketitle}{%
  \newpage
  \null
  \vskip 2em%
  \begin{center}%
  \let\footnote\thanks
    {\LARGE\sf@Title\par}%
    \vskip 1.5em%
    {\large
      \lineskip .5em%
      \begin{tabular}[t]{c}%
        \@author\\[10pt]
        \sf@PerformingOrg
      \end{tabular}\par}%
    \vskip 1em%
    {\large\@date}%
  \end{center}%
  \par
  \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.

```
\newcommand{\showabstract}{%
  \noindent
  \sf@Abstract}
```

We are finished with our example integration, so we close off changing the internals and make '@' an "other" once more.

```
\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.

```
\date{June 1996}
\ReportDate{10--06--1996}
\ReportType{Final}
\DatesCovered{1 June 1996 --- 31 May 1999}
```

```
\Title{Final Report Title\thanks{We wish to thank all those who helped with
                        this project.  The views and conclusions contained
                        in this document are those of the authors and should
                        not be interpreted as representing anyone else.}}
\ContractNumber{DACA99--99--C--9999}
 %\GrantNumber{}
 %\ProgramElementNumber{}
 %\ProjectNumber{}
 %\TaskNumber{}
 %\WorkUnitNumber{}
\author{Joe A. Uthor and Jane E. Ditor}
\Author{Uthor, Joe, A., and Ditor, Jane, E.}
\PerformingOrg{%
  Our Little Laboratory\\[-1pt]
  Computer Science Department\\[-1pt]
  The Big University\\[-1pt]
  9999 Avenue Street\\[-1pt]
  Anytown, TX  19293--8765}
 %\POReportNumber{}
\SponsoringAgency{%
  U.S. Army Sponsoring Department\\
  P.O. Box 92919, Miltown, AK  97909--6543\\[10pt]
  U.S. Army Monitoring Agency\\
  909 Mission Rd., Somecity, MD  29399--9753}
 %\Acronyms{}
 %\SMReportNumber{}
 %\DistributionStatement{}
\SupplementaryNotes{%
  The views, opinions and/or findings contained in this report are
  those of the authors and should not be construed as an official
  U.S.\ Government position, policy or decision, unless so designated
  by other documentation.}
\Abstract{%
 This sample paper shows one way to use the sf298 package along with
 the article documentclass to generate a paper with the standard form 298
 as the second physical page in the document.

 In addition, the common text of the title, authors and abstract are
 shared and the ``{\tt \string\thanks}'' macro is treated specially so
 that it is active for the titlepage and inactive for the report
 documentation page.}
\SubjectTerms{keywords; associated words; other words}
 %\NumberPages{}
 %\ReportClassification{}
 %\PageClassification{}
 %\AbstractClassification{}
\AbstractLimitation{UU}
\ResponsiblePerson{Mr.\ Joe A. Uthor}
\RPTelephone{(412) 555--9999}
```

Finally we begin a very simple report. First we print the titlepage and the abstract. Next the report documentation and general instructions pages are written.

Following these two pages, the table of contents is output, followed by the very short report.

```
\begin{document}
\pagenumbering{roman}

\maketitle\thispagestyle{empty}
\begin{abstract}
 \showabstract
\end{abstract}

\ReportDescription

\GeneralInstructions{small}

\tableofcontents
\cleardoublepage
\pagenumbering{arabic}
\setcounter{page}{1}

\section{Introduction}

Blah, blah and blah.

\section{Conclusion}

More blah, blah and blah.

\end{document}
```

7 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 LaTeX template and test file.

8 The code

8.1 Identification

```
\NeedsTeXFormat{LaTeX2e}
\ProvidesPackage{sf298}[2016/07/07 Standard Form 298]
\typeout{Package: sf298 2016/07/07 v1.3)}
\providecommand{\eg}{{\it e.g.\/\ }}
```

8.2 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.

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

8.3 Load the multicol package.

Check to see if the multicol package is present. If it is, then load the package to support multi-column formatting for the General Instructions page. If it is not present then report error and terminate.

```
\IfFileExists{multicol.sty}{%
  \usepackage{multicol}}
  {\PackageError {sf298}{The multicol package was not found.}
  {Install the multicol package on your system.}}
```

8.4 Load the fancyhdr Package

Check to see if the fancyhdr package is present. If it is, then load the package to define a custom footer. If it is not present then report error and terminate. This package is needed to define a custom footer where the form identifier appears on the General Instructions produced by `\GeneralInstructions`.

```
\IfFileExists{fancyhdr.sty}{%
  \usepackage{fancyhdr}}
  {\PackageError {sf298}{The fancyhdr package was not found.}
  {Install the fancyhdr package on your system.}}
```

8.5 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

```
\newcommand\ReportDate[1]{\renewcommand\sf@ReportDate{#1}}
\newcommand\sf@ReportDate{\number\day--\number\month--\number\year}
```

```
\ReportType
\sf@ReportType
\newcommand\ReportType[1]{\renewcommand\sf@ReportType{#1}}
\newcommand\sf@ReportType{\relax}

\DatesCovered
\sf@DatesCovered
\newcommand\DatesCovered[1]{\renewcommand\sf@DatesCovered{#1}}
\newcommand\sf@DatesCovered{\relax}

\Title
\sf@Title
\newcommand\Title[1]{\renewcommand\sf@Title{#1}}
\newcommand\sf@Title{\relax}

\ContractNumber
\sf@ContractNumber
\newcommand\ContractNumber[1]{\renewcommand\sf@ContractNumber{#1}}
\newcommand\sf@ContractNumber{\relax}

\GrantNumber
\sf@GrantNumber
\newcommand\GrantNumber[1]{\renewcommand\sf@GrantNumber{#1}}
\newcommand\sf@GrantNumber{\relax}

\ProgramElementNumber
\sf@ProgramElementNumber
\newcommand\ProgramElementNumber[1]{\renewcommand\sf@ProgramElementNumber{#1}}
\newcommand\sf@ProgramElementNumber{\relax}

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

\RPTelephone
\sf@RPTelephone
\newcommand\RPTelephone[1]{\renewcommand\sf@RPTelephone{#1}}
\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.

```
\newcommand\NumberPages{%
  \@ifnextchar *%
    {\def\@tempa*{\sf@SNumberPages}%
     \@tempa}%
    {\sf@NNumberPages}}
```

\sf@NNumberPages
\sf@NumberPages

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

\sf@SNumberPages
\sf@ExtraPages

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

\fancypagestyle

The macro \fancypagestyle{sf298FormIDStyle} is defined so the form identifier for the General Instructions page can be placed at the bottom of the page, namely "**Standard Form 298 Back** (Rev. 8/98)".

```
\fancypagestyle{sf298FormIDStyle}
{\fancyhf{}\renewcommand{\headrulewidth}{0pt}
\fancyfoot[R]{\footnotesize {\bfseries Standard Form 298 Back} (Rev.\ 8/98)} }
```

8.6 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.

```
\DeclareOption{config}{\def\sf@config{Y}}
\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.

```
\newif\ifsf@floatlongboxes
\DeclareOption{floatlongboxes}{\sf@floatlongboxestrue}
\DeclareOption{nofloatlongboxes}{\sf@floatlongboxesfalse}
```

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.

```
\ExecuteOptions{config,nofloatlongboxes}
\ProcessOptions

\if Y\sf@config
  \InputIfFileExists{sf298.cfg}{}{}
\fi
\let\sf@config\relax
```

8.7 Form placement fine tuning

\LeftShift
\DownShift

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

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

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

8.8 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.

```
\newcommand{\sf@setfont}[2]{%
  \renewcommand{\baselinestretch}{1.0}%
  \setlength{\baselineskip}{#2}%
  \setlength{\normalbaselineskip}{\baselineskip}%
  #1
  \spaceskip=\fontdimen2\font % space between words (\raggedright)
  \xspaceskip=\fontdimen2\font
  \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.

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

\sf@titlefontA
\sf@settitlefontA
\sf@titlefontB
\sf@settitlefontB
\sf@titlefontC
\sf@settitlefontC
\sf@titlefontD
\sf@settitlefontD
\sf@titlefontE
\sf@settitlefontE
\sf@titlefontF
\sf@settitlefontF

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

```
\DeclareFixedFont{\sf@titlefontA}{OT1}{\sfdefault}{bx}{n}{\@xivpt}
\newcommand{\sf@settitlefontA}{\sf@setfont{\sf@titlefontA}{18pt}}

\DeclareFixedFont{\sf@titlefontB}{OT1}{\sfdefault}{m}{sl}{\@xipt}
\newcommand{\sf@settitlefontB}{\sf@setfont{\sf@titlefontB}{13.6pt}}
```

```
\DeclareFixedFont{\sf@titlefontC}{OT1}{\sfdefault}{m}{n}{\@vipt}
\newcommand{\sf@settitlefontC}{\sf@setfont{\sf@titlefontC}{7pt}}
\DeclareFixedFont{\sf@titlefontD}{OT1}{\sfdefault}{bx}{n}{\@vipt}
\newcommand{\sf@settitlefontD}{\sf@setfont{\sf@titlefontD}{7pt}}
\DeclareFixedFont{\sf@titlefontE}{OT1}{\sfdefault}{bx}{n}{\@viiipt}
\newcommand{\sf@settitlefontE}{\sf@setfont{\sf@titlefontE}{9.5pt}}
\DeclareFixedFont{\sf@titlefontF}{OT1}{\sfdefault}{m}{sl}{\@viiipt}
\newcommand{\sf@settitlefontF}{\sf@setfont{\sf@titlefontF}{9.5pt}}
```

`\sf@entryfont` `\sf@setentryfont`

The form is filled in with Roman 10-point text. This insures that the text will 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].

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

`\sf@revfontbold` `\sf@setrevfontbold` `\sf@revfont` `\sf@setrevfont`

The form identifiers are filled in with Sans Serif at 9-point size to match the appearance of the form as publicly distributed in Portable Data Format (PDF) by the United States Government. Separate fonts are specified for the bold and non-bold portions of the identifiers.

```
\DeclareFixedFont{\sf@revfontbold}{OT1}{\sfdefault}{bx}{n}{9pt}
\newcommand{\sf@setrevfontbold}{\sf@setfont{\sf@revfontbold}{10pt}}
\DeclareFixedFont{\sf@revfont}{OT1}{\sfdefault}{m}{n}{9pt}
\newcommand{\sf@setrevfont}{\sf@setfont{\sf@revfont}{10pt}}
```

8.9 Error checking and reporting

`\ifsf@undef` `\sf@undeftrue` `\sf@undeffalse`

This switch is used by the error reporting at the end of the document to generate a general message that there was an undefined required field.

```
\newif\ifsf@undef
\sf@undeffalse
```

`\sf@undefined`

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

```
\newcommand{\sf@undefined}[1][\@empty]{%
  \ifx \@empty#1\relax
    \ifsf@undef
       \typeout{^^J%
                SF298 Warning: There are required fields that are undefined.%
                ^^J}%
     \fi
  \else
    \sf@undeftrue
    \typeout{^^J%
             SF298 Warning: \expandafter\string\csname #1\endcsname\space
             is undefined.%
             ^^J}%
  \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.

```
\newcommand{\sf@checkfield}[1]{%
  \setbox\@tempboxa\vbox{\csname sf@#1\endcsname}%
  \ifdim \wd\@tempboxa =0pt
    \sf@undefined[#1]
  \fi}

\AtEndDocument{\sf@undefined}
```

8.10 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.

8.10.1 Form setup and cleanup

\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.

```
\newcommand{\ReportDescription}{%
   \global\let\thanks\@gobble
   \MakeRptDocPage
   \global\let\thanks\relax}
```

\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.

```
\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 is treated as page '*i*' (if the documentclass twoside option is specified, then the back treated as page '*ii*'.

```
  \newpage
  \if@twoside\ifodd\c@page\else
    \null
    \thispagestyle{empty}%
    \newpage
  \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.

```
\sf@checkfield{ReportDate}
\sf@checkfield{ReportType}
\sf@checkfield{DatesCovered}
\sf@checkfield{Title}
\sf@checkfield{Author}
\sf@checkfield{PerformingOrg}
\sf@checkfield{SponsoringAgency}
\sf@checkfield{Abstract}
\sf@checkfield{ReportClassification}
\sf@checkfield{AbstractClassification}
\sf@checkfield{PageClassification}
\sf@checkfield{AbstractLimitation}

\edef\@tempa{\sf@NumberPages}%
\edef\@tempa{\expandafter\@car\@tempa \@nil}%
\if \relax\@tempa\relax
  \@ifundefined{c@TotPages}%
    {\sf@undefined[NumberPages]}
    {\@ifundefined{r@TotPages}%
       {\renewcommand{\sf@NumberPages}{{\bf ??}}}%
       {\setcounter{sf@page}{\expandafter\@car\r@TotPages\@nil}
        \addtocounter{sf@page}{-\value{TotPages}}
        \addtocounter{sf@page}{\sf@ExtraPages}
        \renewcommand{\sf@NumberPages}{\arabic{sf@page}}}}
\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 LaTeX from issuing warnings about overfull boxes.

```
\setcounter{page}{1}%
\thispagestyle{empty}
\vbox to 0pt{%
  \@tempskipa 34pt
  \advance\@tempskipa\voffset
  \advance\@tempskipa\topmargin
  \advance\@tempskipa\headheight
  \advance\@tempskipa\headsep
  \advance\@tempskipa\baselineskip
  \vskip-\@tempskipa
  \hbox to 0pt{%
    \@tempskipa\oddsidemargin
    \advance\@tempskipa 42pt
    \hskip-\@tempskipa

    \sf@drawform

    \hss}%
  \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*').

```
\newpage
\if@twoside
  \null
  \thispagestyle{empty}%
  \newpage
\fi
```

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

```
\global\let\ReportDate\relax
\global\let\sf@ReportDate\relax
\global\let\ReportType\relax
\global\let\sf@ReportType\relax
\global\let\DatesCovered\relax
\global\let\sf@DatesCovered\relax
\global\let\Title\relax
\global\let\sf@Title\relax
\global\let\ContractNumber\relax
\global\let\sf@ContractNumber\relax
\global\let\GrantNumber\relax
\global\let\sf@GrantNumber\relax
\global\let\ProgramElementNumber\relax
\global\let\sf@ProgramElementNumber\relax
\global\let\ProjectNumber\relax
\global\let\sf@ProjectNumber\relax
\global\let\TaskNumber\relax
\global\let\sf@TaskNumber\relax
\global\let\WorkUnitNumber\relax
\global\let\sf@WorkUnitNumber\relax
\global\let\Author\relax
\global\let\sf@Author\relax
\global\let\PerformingOrg\relax
\global\let\sf@PerformingOrg\relax
\global\let\POReportNumber\relax
\global\let\sf@POReportNumber\relax
\global\let\SponsoringAgency\relax
\global\let\sf@SponsoringAgency\relax
\global\let\Acronyms\relax
\global\let\sf@Acronyms\relax
\global\let\SMReportNumber\relax
\global\let\sf@SMReportNumber\relax
\global\let\DistributionStatement\relax
\global\let\sf@DistributionStatement\relax
\global\let\SupplementaryNotes\relax
\global\let\sf@SupplementaryNotes\relax
\global\let\Abstract\relax
\global\let\sf@Abstract\relax
\global\let\SubjectTerms\relax
\global\let\sf@SubjectTerms\relax
\global\let\ReportClassification\relax
```

```
\global\let\sf@ReportClassification\relax
\global\let\AbstractClassification\relax
\global\let\sf@AbstractClassification\relax
\global\let\PageClassification\relax
\global\let\sf@PageClassification\relax
\global\let\AbstractLimitation\relax
\global\let\sf@AbstractLimitation\relax
\global\let\ResponsiblePerson\relax
\global\let\sf@ResponsiblePerson\relax
\global\let\RPTelephone\relax
\global\let\NumberPages\relax
\global\let\sf@NNumberPages\relax
\global\let\sf@NumberPages\relax
\global\let\sf@SNumberPages\relax
\global\let\sf@ExtraPages\relax
\global\let\LeftShift\relax
\global\let\sf@LeftShift\relax
\global\let\DownShift\relax
\global\let\sf@DownShift\relax
\global\let\sf@RPTelephone\relax
\global\let\sf@setfont
\global\let\sf@strut\relax
\global\let\sf@titlefontA\relax
\global\let\sf@settitlefontA\relax
\global\let\sf@titlefontB\relax
\global\let\sf@settitlefontB\relax
\global\let\sf@titlefontC\relax
\global\let\sf@settitlefontC\relax
\global\let\sf@titlefontD\relax
\global\let\sf@settitlefontD\relax
\global\let\sf@titlefontE\relax
\global\let\sf@settitlefontE\relax
\global\let\sf@titlefontF\relax
\global\let\sf@settitlefontF\relax
\global\let\sf@entryfont\relax
\global\let\sf@setentryfont\relax
\global\let\sf@revfontbold\relax
\global\let\sf@setrevfontbold\relax
\global\let\sf@revfont\relax
\global\let\sf@setrevfont\relax
\global\let\sf@checkfield\relax
\global\let\sf@parbox\relax
\global\let\sf@drawform\relax
\global\let\MakeRptDocPage\relax}
```

8.10.2 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.

```
\def\sf@parbox(#1,#2)#3{%
  \makebox(0,0)[bl]{%
    \vbox to #1\unitlength{%
```

```
      \vss
      \noindent
      \parbox{#2\unitlength}{\raggedright#3}%
    \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.

```
\newcommand\sf@drawform{%
  \sf@setentryfont
  \setlength{\unitlength}{1bp}
  \begin{picture}(539,707)(\sf@LeftShift,\sf@DownShift)
    % Draw blank form
    \linethickness{1bp}%
    \put(  0,  0){\framebox(539,707){}}
    % Horizontal lines
    \linethickness{0.5bp}%
    \put(  0,677){\line(1,0){539}}
    \put(  0,635){\line(1,0){539}}
    \put(  0,611){\line(1,0){539}}
    \put(324,581){\line(1,0){215}}
    \put(324,551){\line(1,0){215}}
    \put(  0,521){\line(1,0){539}}
    \put(324,491){\line(1,0){215}}
    \put(324,461){\line(1,0){215}}
    \put(  0,431){\line(1,0){539}}
    \put(  0,372){\line(1,0){539}}
    \put(359,336){\line(1,0){180}}
    \put(  0,300){\line(1,0){539}}
    \ifsf@floatlongboxes\else
      \put(  0,252){\line(1,0){539}}
      \put(  0,215){\line(1,0){539}}
      \put(  0, 95){\line(1,0){539}}
    \fi
    \put(  0, 48){\line(1,0){539}}
    \put(  0, 36){\line(1,0){180}}
    \put(324, 24){\line(1,0){215}}
    % Vertical lines
    \put(359,707){\line(0,-1){ 30}}
    \put(144,635){\line(0,-1){ 24}}
    \put(359,635){\line(0,-1){ 24}}
    \put(324,611){\line(0,-1){180}}
    \put(359,431){\line(0,-1){131}}
    \put(180, 48){\line(0,-1){ 48}}
    \put(266, 48){\line(0,-1){ 48}}
    \put(324, 48){\line(0,-1){ 48}}
    \put( 60, 36){\line(0,-1){ 36}}
    \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.

```
    % Title text
    \put(  0,677){\makebox(359, 30){%
```

```
451       \sf@settitlefontA REPORT DOCUMENTATION PAGE}}
452     \put(359,677){\makebox(180, 30){%
453       \sf@settitlefontB\shortstack[c]{%
454         Form Approved\\[-2pt]%
455         OMB No. 0704--0188}}}
456     \put(  3,635){\makebox(533, 42){%
457       \sf@settitlefontC\parbox{533bp}{\raggedright
458       The public reporting burden for this collection of information
459       is estimated to average 1 hour per response, including the
460       time for reviewing instructions, searching existing data
461       sources, gathering and maintaining the data needed, and
462       completing and reviewing the collection of information.
463       Send comments regarding this burden estimate or any other
464       aspect of this collection of information, including
465       suggestions for reducing this burden to Department of
466       Defense, Washington Headquarters Services, Directorate for
467       Information Operations and Reports (0704--0188), 1215
468       Jefferson Davis Highway, Suite 1204, Arlington, VA
469       22202--4302.  Respondents should be aware that
470       notwithstanding any other provision of law, no person shall
471       be subject to any penalty for failing to comply with a
472       collection of information if it does not display a currently
473       valid OMB control number.
474       {\sf@settitlefontD
475        PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.}}}}
476     \put(  0,611){\makebox(144, 24)[tl]{%
477       \sf@settitlefontE\sf@strut 1.\ REPORT DATE
478       \sf@settitlefontF (DD--MM--YYYY)}}
479     \put(144,611){\makebox(215, 24)[tl]{%
480       \sf@settitlefontE\sf@strut 2.\ REPORT TYPE}}
481     \put(359,611){\makebox(180, 24)[tl]{%
482       \sf@settitlefontE\sf@strut 3.\ DATES COVERED
483       \sf@settitlefontF (From --- To)}}
484     \put(  0,521){\makebox(324,90)[tl]{%
485       \sf@settitlefontE\sf@strut 4.\ TITLE AND SUBTITLE}}
486     \put(324,581){\makebox(215, 30)[tl]{%
487       \sf@settitlefontE\sf@strut 5a.\ CONTRACT NUMBER}}
488     \put(324,551){\makebox(215, 30)[tl]{%
489       \sf@settitlefontE\sf@strut 5b.\ GRANT NUMBER}}
490     \put(324,521){\makebox(215, 30)[tl]{%
491       \sf@settitlefontE\sf@strut 5c.\ PROGRAM ELEMENT NUMBER}}
492     \put(324,491){\makebox(215, 30)[tl]{%
493       \sf@settitlefontE\sf@strut 5d.\ PROJECT NUMBER}}
494     \put(324,461){\makebox(215, 30)[tl]{%
495       \sf@settitlefontE\sf@strut 5e.\ TASK NUMBER}}
496     \put(324,431){\makebox(215, 30)[tl]{%
497       \sf@settitlefontE\sf@strut 5f.\ WORK UNIT NUMBER}}
498     \put(  0,431){\makebox(324, 90)[tl]{%
499       \sf@settitlefontE\sf@strut 6.\ AUTHOR(S)}}
500     \put(  0,372){\makebox(359, 59)[tl]{%
501       \sf@settitlefontE\sf@strut
502       7.\ PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)}}
```

```
  \put(359,372){\makebox(180, 59)[tl]{%
    \sf@settitlefontE\shortstack[l]{%
      \sf@strut 8.\ PERFORMING ORGANIZATION REPORT\\[-2pt]
      \sf@strut\phantom{8.\ }NUMBER}}}
  \put(  0,300){\makebox(359, 72)[tl]{%
    \sf@settitlefontE\sf@strut
    9.\ SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)}}
  \put(359,336){\makebox(180, 36)[tl]{%
    \sf@settitlefontE\sf@strut 10.\ SPONSOR/MONITOR'S ACRONYM(S)}}
  \put(359,300){\makebox(180, 36)[tl]{%
    \sf@settitlefontE\shortstack[l]{%
      \sf@strut 11.\ SPONSOR/MONITOR'S REPORT\\[-3pt]
      \sf@strut\phantom{11.\ }NUMBER(S)}}}
  \ifsf@floatlongboxes\else
    \put(  0,252){\makebox(539, 48)[tl]{%
      \sf@settitlefontE\sf@strut
      12.\ DISTRIBUTION / AVAILABILITY STATEMENT}}
    \put(  0,215){\makebox(539, 37)[tl]{%
      \sf@settitlefontE\sf@strut 13.\ SUPPLEMENTARY NOTES}}
    \put(  0,95){\makebox(539,120)[tl]{%
      \sf@settitlefontE\sf@strut 14.\ ABSTRACT}}
    \put(  0, 48){\makebox(539, 46)[tl]{%
      \sf@settitlefontE\sf@strut 15.\ SUBJECT TERMS}}
  \fi
  \put(  0, 36){\makebox(180, 12)[tl]{%
    \sf@settitlefontE\sf@strut 16.\ SECURITY CLASSIFICATION OF:}}
  \put(  0,  0){\makebox( 60, 36)[tl]{%
    \sf@settitlefontE\sf@strut a.\ REPORT}}
  \put( 60,  0){\makebox(60, 36)[tl]{%
    \sf@settitlefontE\sf@strut b.\ ABSTRACT}}
  \put(120,  0){\makebox(60, 36)[tl]{%
    \sf@settitlefontE\sf@strut c.\ THIS PAGE}}
  \put(180,  0){\makebox( 86, 48)[tl]{%
    \sf@settitlefontE\shortstack[l]{%
      \sf@strut 17.\ LIMITATION OF\\[-2pt]
      \sf@strut\phantom{17.\ }ABSTRACT}}}
  \put(266,  0){\makebox( 68, 48)[tl]{%
    \sf@settitlefontE\shortstack[l]{%
      \sf@strut 18.\ NUMBER\\[-2pt]
      \sf@strut\phantom{18.\ }OF\\[-2pt]
      \sf@strut\phantom{18.\ }PAGES}}}
  \put(324, 24){\makebox(215, 24)[tl]{%
    \sf@settitlefontE\sf@strut 19a.\ NAME OF RESPONSIBLE PERSON}}
  \put(324,  0){\makebox(215, 24)[tl]{%
    \sf@settitlefontE\sf@strut 19b.\ TELEPHONE NUMBER
      \sf@settitlefontF (include area code)}}
  \put(405,-25){\makebox(123, 17)[bl]{%
    \shortstack[l]{%
      {\sf@setrevfontbold Standard Form 298} \sf@setrevfont (Rev.\ 8/98)}\\[-2pt]%
      {\sf@setrevfont 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 a warning issued if any of them are empty.

```
  % Fill in form
  \put(  4,614){\makebox(0,0)[bl]{\sf@ReportDate}}
  \put(148,614){\makebox(0,0)[bl]{\sf@ReportType}}
  \put(363,614){\makebox(0,0)[bl]{\sf@DatesCovered}}
  \put(  4,523){\sf@parbox( 80,324){\sf@Title}}
  \put(328,585){\makebox(0,0)[bl]{\sf@ContractNumber}}
  \put(328,555){\makebox(0,0)[bl]{\sf@GrantNumber}}
  \put(328,525){\makebox(0,0)[bl]{\sf@ProgramElementNumber}}
  \put(328,495){\makebox(0,0)[bl]{\sf@ProjectNumber}}
  \put(328,465){\makebox(0,0)[bl]{\sf@TaskNumber}}
  \put(328,435){\makebox(0,0)[bl]{\sf@WorkUnitNumber}}
  \put(  4,434){\sf@parbox( 80,321){\sf@Author}}
  \put(  4,397){\makebox(0,0)[l]{%
    \parbox{355bp}{\raggedright\sf@PerformingOrg}}}
  \put(363,372){\sf@parbox( 46,176){\sf@POReportNumber}}
  \put(  4,331){\makebox(0,0)[l]{%
    \parbox{355bp}{\raggedright \sf@SponsoringAgency}}}
  \put(363,349){\makebox(0,0)[l]{%
    \parbox{176bp}{\raggedright\sf@Acronyms}}}
  \put(363,304){\makebox(0,0)[bl]{%
    \vbox to 26bp{%
      \vss
      \noindent
      \parbox{176bp}{\raggedright\sf@SMReportNumber}}}}
  \ifsf@floatlongboxes
    \put(  0,49){\parbox[b]{541bp}{%
     \leftskip=4bp
     \rightskip=4bp plus 2em
      \vbox to 250bp{%
        \vbox to 0bp{%
          \hbox{\sf@settitlefontE\sf@strut
              12.\ DISTRIBUTION / AVAILABILITY STATEMENT}
          \vss}
        \vfil
        \sf@DistributionStatement
        \vfil
        \hrule width\linewidth height0.5bp
        \vbox to 0bp{%
          \hbox{\sf@settitlefontE\sf@strut 13.\ SUPPLEMENTARY NOTES}
          \vss}
        \vfil
        \sf@SupplementaryNotes
        \vfil
        \hrule width\linewidth height0.5bp
        \vbox to 0bp{%
          \hbox{\sf@settitlefontE\sf@strut 14.\ ABSTRACT}
          \vss}
        \vfil
        \sf@Abstract
```

```
          \vfil
          \hrule width\linewidth height0.5bp
          \vbox to 0bp{%
            \hbox{\sf@settitlefontE\sf@strut 15.\ SUBJECT TERMS}
            \vss}
          \vfil
          \sf@SubjectTerms
          \vfil}}}
    \else
      \put(  4,255){\sf@parbox( 38,532){\sf@DistributionStatement}}
      \put(  4,217){\sf@parbox( 25,532){\sf@SupplementaryNotes}}
      \put(  4, 95){\sf@parbox(110,533){\sf@Abstract}}
      \put(  4, 51){\sf@parbox( 36,533){\sf@SubjectTerms}}
    \fi
    \put( 30, 13){\makebox(0,0){\sf@ReportClassification}}
    \put( 90, 13){\makebox(0,0){\sf@AbstractClassification}}
    \put(150, 13){\makebox(0,0){\sf@PageClassification}}
    \put(223, 13){\makebox(0,0){\sf@AbstractLimitation}}
    \put(295, 13){\makebox(0,0){\large\sf@NumberPages}}
    \put(328, 33){\makebox(0,0)[l]{\sf@ResponsiblePerson}}
    \put(328,  9){\makebox(0,0)[l]{\sf@RPTelephone}}
  \end{picture}}
```

\GeneralInstructions The \GeneralInstructions command creates the General Instructions Page, which uses a two column format. This is optionally included in some technical reports and should be used immediately after the \ReportDescription command so the General Instructions Page appears on the page immediately following the SF298 form.

```
\newcommand\GeneralInstructions[1]{%
   \global\let\thanks\@gobble
   \MakeGenInsPage{#1}
   \global\let\thanks\relax}
```

\MakeGenInsPage The \MakeGenInsPage command creates a new page containing the General Instructions for the SF298 form in a two-column format.

```
\newcommand\MakeGenInsPage[1]{%
  \newpage
  \if@twoside\ifodd\c@page\else
    \null
    \thispagestyle{empty}%
    \newpage
  \fi\fi
  \vspace{1ex}

  \thispagestyle{sf298FormIDStyle} % insert document code in footer
\begin{#1} % set font size
\noindent
\fbox{\begin{minipage}{\textwidth}
\vspace{3ex}
\begin{center}
```

```
\textbf{INSTRUCTIONS FOR COMPLETING SF 298}
\end{center}

\vspace{1ex}

\setlength{\columnsep}{0.8cm}
\setlength{\columnseprule}{0.2pt}
\vspace{-4ex}

\begin{multicols}{2}
\noindent
\textbf{1.~REPORT DATE.} Full publication date including day, month,
and year, if available. Must cite at least the year and be Year 2000
compliant, \eg 30-06-1998; xx-06-1998; xx-xx-1998.\hfill
\\ \\ \noindent
\textbf{2.~REPORT TYPE.} State the type of report, such as final,
technical, interim, memorandum, master's thesis, progress, quarterly,
research, special, group study, etc.\hfill
\\ \\ \noindent
\textbf{3.~DATE COVERED.} Indicate the time during which the work was
performed and the report was written, \eg, Jun 1997 - Jun 1998;
1-10 Jun 1996; May - Nov 1998; Nov 1998.\hfill
\\ \\ \noindent
\textbf{4.~TITLE.} Enter title and subtitle with volume number and part
number, if applicable. On classified documents, enter the title
classification in parentheses.\hfill
\\ \\ \noindent
\textbf{5a.~CONTRACT NUMBER.} Enter all contract numbers as they
appear in the report, \eg F33315-86-C-5169.\hfill
\\ \\ \noindent
\textbf{5b.~GRANT NUMBER.} Enter all grant numbers as they appear in the
report. \eg AFOSR-82-1234.\hfill
\\ \\ \noindent
\textbf{5c.~PROGRAM ELEMENT NUMBER.} Enter all program element numbers
as they appear in the report, \eg 61101A.\hfill
\\ \\ \noindent
\textbf{5e.~TASK NUMBER.}  Enter all task numbers as they appear in the
report, \eg 05; RF0330201; T4112.\hfill
\\ \\ \noindent
\textbf{5f.~WORK UNIT NUMBER.} Enter all work unit numbers as they
appear in the report, \eg 001; AFAPL30480105.\hfill
\\ \\ \noindent
\textbf{6.~AUTHOR(S).} Enter name(s) of 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, \eg Smith,
Richard, J, Jr.\hfill
\\ \\ \noindent
\textbf{7.~PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES).} Self-explanatory. \hfill
\vfill
\columnbreak

```

```
\noindent
\textbf{8.~PERFORMING ORGANIZATION REPORT NUMBER.} Enter all unique
alphanumeric report numbers assigned by the performing organization,
\eg BRL-1234; AFWL-TR-85-4017-Vol-21-PT-2.\hfill
\\ \\ \noindent
\textbf{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.\hfill
\\ \\ \noindent
\textbf{10.~SPONSOR/MONITOR'S ACRONYM(S).} Enter, if available, \eg BRL,
ARDEC, NADC.\hfill
\\ \\ \noindent
\textbf{11.~SPONSOR/MONITOR'S REPORT NUMBER(S).} Enter report number as
assigned by the sponsoring/ monitoring agency, if available, \eg BRL-TR-829;
-215.\hfill
\\ \\ \noindent
\textbf{12.~DISTRIBUTION/AVAILABILITY STATEMENT.} Use agency-mandated
availability statements to indicate the public availability or distribution
 limitations of the report. If additional limitations/ restrictions or
 special markings are indicated, follow agency authorization procedures,
 \eg RD/FRD, PROPIN, ITAR, etc. Include copyright information.\hfill
\\ \\ \noindent
\textbf{13.~SUPPLEMENTARY NOTES.} Enter information not included elsewhere
such as: prepared in cooperation with; translation of; report supersedes;
old edition number, etc.\hfill
\\ \\ \noindent
\textbf{14.~ABSTRACT.} A brief (approximately 200 words) factual summary
of the most significant information.\hfill
\\ \\ \noindent
\textbf{15.~SUBJECT TERMS.} Key words or phrases identifying major concepts
in the report.\hfill
\\ \\ \noindent
\textbf{16.~SECURITY CLASSIFICATION.} Enter security classification in
accordance with security classification regulations, \eg U, C, S, etc. If
this form contains classified information, stamp classification level on
the top and bottom of this page.\hfill
\\ \\ \noindent
\textbf{17.~LIMITATION OF ABSTRACT.} This block must be completed to assign
a distribution limitation to the abstract. Enter UU (Unclassified Unlimited)
or SAR (Same as Report). An entry in this block is necessary if the abstract
is to be limited. \hfill

\end{multicols}
\end{minipage}
}
\end{#1}

\normalsize % return font to normal size
}
```

9 Acknowledgments

Dr. Cochran 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 him to original write the entire package in LaTeX (versions 1.1 & 1.2). Also, to Dr. Nino Pereira (pereira@speakeasy.net) for the suggestion to make some of the fields more flexible.

Dr. Rochford would like to thank Dr. Cochran for creating the orginal version of the package, to which he added the option of providing the page of General Instructions (version 1.3).

References

[1] Wihelm Müller, *The totpages package*, 1999/07/13.

[2] Michel Goossens, Framk Mittelbach, and Alexander Samarin, *A Guide to LaTeX 2ε*, 1993, 2^{nd} edition (revised 1995).