The attachfile2 package

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Abstract

This package can be used to attach files to a PDF document. It is a further development of Scott Pakin's package attachfile for pdfTeX. Apart from bug fixes, package attachfile2 adds support for dvips, some new options, gets and writes meta information data about the attached files.

Contents

1 Documentation **2**
1.1 Introduction . . . 2
1.1.1 Future development . . . 2
1.2 User interface . . . 3
1.2.1 New options . . . 3
1.2.2 Option color . . . 3
1.2.3 Perl script pdfatfi.pl . . . 4
1.3 Changes to attachfile . . . 4

2 Implementation **4**
2.1 Package . . . 4
2.2 Drivers . . . 17
2.2.1 pdfTeX . . . 17
2.2.2 dvips . . . 19
2.3 Perl script pdfatfi.pl . . . 27

3 Installation **30**
3.1 Download . . . 30
3.2 Bundle installation . . . 30
3.3 Package installation . . . 30
3.4 Refresh file name databases . . . 31
3.5 Script installation . . . 31
3.6 Some details for the interested . . . 31

4 References **32**

5 History **32**
[2005/02/23 v2.0] . . . 32
[2005/10/07 v2.1] . . . 32
[2006/08/17 v2.2] . . . 32
[2007/04/11 v2.3] . . . 32
[2008/07/29 v2.4] . . . 32

6 Index **33**

1 Documentation

1.1 Introduction

The PDF format ([3]) allows the inclusion of files inside the PDF document. The included files can be bound to an annotation on a page. Or they can be recorded in a sorted list of embedded files. The packages attachfile or attachfile2 follow the first approach, package embedfile uses the latter method.

1.1.1 Future development

My dream is a large package that merges the features of all these packages meantioned before:

- Files can be attached to a page.
- Files can be attached to the document.
- An easy user interface for simple, common tasks and beginners.
- An interface for the advanced users that want to setup every detail.
- Support of many drivers (pdftex, dvips, dvipdfm, ...).
- ...

However, I have not managed to take the time for this project. Instead:

- First I experimented with package attachfile, adding driver support, fixing bugs, ... The result is currently named as attachfile2. It uses an external script to get file properties (size, date, checksum, ...).
- In order to avoid an external program for getting basic file properties I provided a patch "EscapeAndOther" for pdfTeX that was accepted for version 1.30.
- Package embedfile closes a gap left by the packages for attaching files and allows the embedding of files to the document. Also it makes use of the new primitives of pdfTeX.

Until this future becomes true, I provide the intermediate step attachfile2 at its current state. There are many things to do:

- Documentation, documentation, ...
- Improving portability of the Perl script `pdfatfi.pl` (Windows, non-GNU, ...).
- Comfortable program for extracting embeddd files.
- Embedding files to the document, see package embedfile.
- Additionally use featurs of pdfTeX 1.30. With a recent pdfTeX the Perl script step is then obsolete.
- GoToE links.
- Layout of PinPush, especially the tip does not scale well.
- Driver for dvipsone, similar to dvips, changes:
  - coordinate transformation need to be fixed here, `hdvipson.def` contains:

```
/DvipsToPDF { 65781 div  } def
/PDFToDvips { 65781 mul } def
```

  - Syntax for `\special`: `hdvipson.def` contains both `\special{! #1}` and `\special{headertext= #1}`. Are bothe the same?

- File name conversion, see PDF specification:

  `c:\somewhere\foobar.txt` → `/c/somewhere/foobar.txt`

- Option scale for icons?
- Compatibility for plain-TEX.
- ToDos for `atfidvips.def`.

1.2 User interface

Basically this package attachfile2 follows the user interface of package attachfile, look into its documentation ([1]).

1.2.1 New options

- Driver options dvips and pdftex.
- New options final and draft.
- New option scale for scaling the annotation rectangle.
- Options file and nofile for controlling the generation of the auxiliary file `.atfi`.

1.2.2 Option color

Package attachfile's option color only understands explicit RGB values as three space separated real numbers in the range from 0 to 1.

This package attachfile2 extends the syntax. The usual color specifications of packages color or xcolor may be used. The latter one requires that package xcolor is loaded. Without package xcolor a limited range of explicit color specifications are supported, the color models `rgb` and `gray` (and `cmyk` if package hyperref's option pdfversion is set to `1.7` or greater.

Example without package xcolor:

```
\documentclass{article}
\usepackage[color={1 0 .5}]{attachfile2}
 % Spaces in option values in \usepackage or \documentclass
 % must be protected by curly braces. Otherwise LaTeX strips
 % the spaces and the package would see 'color=10.5'.
 % This protection is not necessary for \attachfilesetup.
\attachfilesetup{color=1 0 .5}
\attachfilesetup{color=[rgb]{1,0,.5}}
\attachfilesetup{color=[gray]{.5}}
```

The following example with package xcolor shows additional color specifications:

```
\documentclass{article}
\usepackage{xcolor}
\definecolor{attachfilecolor}{cmyk}{.1,.2,.3,.4}
\usepackage{color=red}{attachfile2}
\attachfilesetup{color=red}
\attachfilesetup{color=attachfilecolor}
```

For experts. If the color is used in annotations, the color is converted with the help of package xcolor to RGB. PDF versions 1.7 or later also understand color models Gray and CMYK. The PDF version is detected if the experimental option pdfversion of package hyperref is used, example:

```
\documentclass{article}
\usepackage[pdfversion=1.7]{hyperref}
\usepackage{attachfile2}
```

However, currently only driver pdftex also supports the actual setting of the PDF version in the output PDF file.

1.2.3 Perl script `pdfatfi.pl`

This package also tries to get and add meta information data, such as file size, file date, checksum, ... As package embedfile shows the new features of pdfTeX 1.30 are very useful for getting this kind of data. However the main development preceded this pdfTeX version. Thus the Perl script `pdfatfi.pl` is used to provide this data. The use of the Perl script is not mandatory. This data can be shown by PDF viewers, but they are not a requirement of the PDF specification.

Package attachfile2 and the Perl script communicate via an auxiliary file with file extension `.atfi`. The script is used between two LaTeX runs and updates the auxiliary file, example for dvips:

```
latex test
pdfatfi test
latex test
dvips test
ps2pdf test.ps test.pdf
```

1.3 Changes to attachfile

Some of the changes I can remember:

- Support for dvips.
- Setting and filling the /Param entry for files (file date, file size, ...).
- Perl script `pdfatfi.pl`.
- New options.
- Bug fixes.
- ...

2 Implementation

2.1 Package

```
1 ⟨*package⟩
2 \NeedsTeXFormat{LaTeX2e}
3 \ProvidesPackage{attachfile2}%
4   [2008/07/29 v2.4 attach files into PDF (HO)]%
5 \RequirePackage{ifpdf}
6 \RequirePackage{keyval}
7 \RequirePackage{color}
8 \RequirePackage{kvoptions}[2006/08/17]
9
10 % --- hyperref ---
11
12 \RequirePackage{hyperref}
```

```
% because of \pdfstringdef
\RequirePackage{hycolor}[2008/07/29]

\def\atfi@pdfstringdef#1#2{%
  \pdfstringdef\atfi@temp@string{#2}%
  \edef#1{\atfi@temp@string}%
}

% --- convert to hex ---

\def\atfi@hexdigit#1{%
  \ifcase#1%
    0\or 1\or 2\or 3\or 4\or 5\or 6\or 7\or 8\or 9\or
    a\or b\or c\or d\or e\or f%
  \fi
}
% detour via \dimexpr to avoid eTeX's nasty expression rounding
\def\atfi@hexchar#1{%
  \atfi@hexdigit{\numexpr\dimexpr.0625\dimexpr`#1sp\relax\relax\relax}%
  \atfi@hexdigit{%
    \numexpr`#1-16*\dimexpr.0625\dimexpr`#1sp\relax\relax\relax
  }%
}
\def\atfi@tohex#1{%
  \ifx\relax#1%
  \else
    \atfi@hexchar{#1}%
    \expandafter\atfi@tohex
  \fi
}

% --- convert to name ---

\def\atfi@converttoname#1#2{%
  \edef#1{#2}%
  \@onelevel@sanitize#1%
  \edef#1{\expandafter\atfi@spacetoother#1 \relax}%
  \edef#1{\expandafter\atfi@converttokens#1\relax}%
}

\edef\atfi@hash{\string#}%
\catcode`\ =12\relax%
\def\atfi@space{ }%
\catcode`\ =10\relax%

\def\atfi@spacetoother#1 #2\relax{%
  #1%
  \ifx\\#2\\%
  \else
    \atfi@space
    \@ReturnAfterFi{%
      \atfi@spacetoother #2\relax
    }%
  \fi
}
\long\def\@ReturnAfterFi#1\fi{\fi#1}

\def\atfi@converttokens#1{%
  \ifx\relax#1%
  \else
    \ifnum`#1<33 %
      \ifcase`#1%
```

```
        % drop illegal zero
      \else
        \atfi@hash\atfi@hexchar#1%
      \fi
    \else
      \ifnum`#1>126 %
        \atfi@hash\atfi@hexchar#1%
      \else
        \ifnum`#1=40 % (
          \atfi@hash 28%
        \else\ifnum`#1=41 % )
          \atfi@hash 29%
        \else\ifnum`#1=60 % <
          \atfi@hash 3c%
        \else\ifnum`#1=62 % >
          \atfi@hash 3e%
        \else\ifnum`#1=91 % [
          \atfi@hash 5b%
        \else\ifnum`#1=93 % ]
          \atfi@hash 5d%
        \else\ifnum`#1=123 % {
          \atfi@hash 7b%
        \else\ifnum`#1=125 % }
          \atfi@hash 7d%
        \else\ifnum`#1=47 % /
          \atfi@hash 2f%
        \else\ifnum`#1=37 % %
          \atfi@hash 25%
        \else
          #1%
        \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
      \fi
    \fi
    \expandafter\atfi@converttokens
  \fi
}


% --- options ---

% options "draft" and "final"
\newif\ifatfi@draft
\let\atfi@finaltrue\atfi@draftfalse
\let\atfi@finalfalse\atfi@drafttrue
\define@key{AtFi}{final}[true]{%
  \csname atfi@final#1\endcsname
}
\define@key{AtFi}{draft}[true]{%
  \csname atfi@draft#1\endcsname
}

% option mimetype
\def\atfi@mimetype{}
\define@key{AtFi}{mimetype}{%
  \atfi@converttoname\atfi@mimetype{#1}%
  \edef\atfi@mimetype{/Subtype/\atfi@mimetype}%
}

% option icon
\define@key{AtFi}{icon}{%
  \def\atfi@icon{/Name/#1}%
  \def\atfi@icon@icon{#1}%
```

```
}
\setkeys{AtFi}{icon=PushPin}

% option color
\define@key{AtFi}{color}{%
  \HyColor@AttachfileColor{#1}%
          \atfi@color@tex\atfi@color@inline\atfi@color@annot
          {attachfile2}{color}%
}
\setkeys{AtFi}{color=1 0.9255 0.7765}

% time options timezone and date
\def\atfi@pad@ii#1{%
  \ifnum#1>9 %
    \number#1%
  \else
    0\number#1%
  \fi%
}
\let\atfi@timezone\@empty
\define@key{AtFi}{timezone}{\def\atfi@timezone{#1}}
\edef\atfi@time{\the\time}
\def\atfi@hours{%
  \numexpr\dimexpr0.01667\dimexpr\atfi@time sp\relax\relax\relax
}
\def\atfi@minutes{%
  \numexpr\atfi@time-60*\atfi@hours\relax
}
\def\atfi@seconds{0}
\def\atfi@date{%
  /M(D:\the\year
      \atfi@pad@ii\month
      \atfi@pad@ii\day
      \atfi@pad@ii\atfi@hours
      \atfi@pad@ii\atfi@minutes
      \atfi@pad@ii\atfi@seconds
      \atfi@timezone)%
}
\define@key{AtFi}{date}{%
  \atfi@pdfstringdef\atfi@date{#1}%
  \edef\atfi@date{/M(\atfi@date)}%
}

% name for annotation to be used in GoToE actions
\let\atfi@annotname\@empty
\define@key{AtFi}{annotname}{%
  \atfi@pdfstringdef\atfi@annotname{#1}%
  \edef\atfi@annotname{/NM(\atfi@annotname)}%
}

% text options author, description, and subject
\DeclareRobustCommand{\atfi@pdfstringdef}[2]{%
  \pdfstringdef\atfi@temp@string{#2}%
  \edef#1{\atfi@temp@string}%
}

% option author
\def\atfi@author{}
\define@key{AtFi}{author}{%
  \atfi@pdfstringdef\atfi@author{#1}%
  \edef\atfi@author{/T(\atfi@author)}%
}
```

```
199
200 % option description
201 \def\atfi@description{}
202 \define@key{AtFi}{description}{%
203   \atfi@pdfstringdef\atfi@description{#1}%
204   \edef\atfi@description{/Contents(\atfi@description)}%
205 }
206
207 % option subject
208 \def\atfi@subject{}
209 \define@key{AtFi}{subject}{%
210   \atfi@pdfstringdef\atfi@subject{#1}%
211   \edef\atfi@subject{/Subj(\atfi@subject)}%
212 }
213
214 % option print
215 \newif\ifatfi@print
216 \atfi@printtrue
217 \define@key{AtFi}{print}[true]{\csname atfi@print#1\endcsname}
218
219 % option zoom
220 \newif\ifatfi@zoom
221 \atfi@zoomtrue
222 \define@key{AtFi}{zoom}[true]{\csname atfi@zoom#1\endcsname}
223
224 % option appearance
225 \newif\ifatfi@appearance
226 \atfi@appearancetrue
227 \define@key{AtFi}{appearance}[true]{%
228   \csname atfi@appearance#1\endcsname
229 }
230
231 % option scale
232 \def\atfi@scale{1}
233 \define@key{AtFi}{scale}[1]{%
234   \def\atfi@scale{#1}%
235 }
236
237 % option nofiles
238 \newif\ifatfi@nofiles
239 \atfi@nofilesfalse
240 \define@key{AtFi}{nofiles}[true]{%
241   \csname atfi@nofiles#1\endcsname
242 }
243
244 % driver options
245 \let\atfi@driver\@empty
246 \def\atfi@driver@pdftex{pdftex}
247 \def\atfi@driver@dvips{dvips}
248
249 \define@key{AtFi}{pdftex}[true]{%
250   \let\atfi@driver\atfi@driver@pdftex
251 }
252 \define@key{AtFi}{dvips}[true]{%
253   \let\atfi@driver\atfi@driver@dvips
254 }
255
256 \DeclareRobustCommand{\attachfilesetup}[1]{\setkeys{AtFi}{#1}}
257
258 % timezone setting, ...
259 \InputIfFileExists{attachfile.cfg}{}{}
260
```

```
\ProcessKeyvalOptions{AtFi}

% --- evaluate driver options ---

\ifpdf
  % ignoring other driver options
  \let\atfi@driver\atfi@driver@pdftex
\else
  \ifx\atfi@driver\@empty
    \PackageWarningNoLine{attachfile2}{%
      Driver is not specified,\MessageBreak
      enforce draft settings%
    }%
    \atfi@drafttrue
  \fi
\fi

% --- evaluate draft/final options ---

\DeclareRobustCommand{\notextattachfile}[2][]{%
  \begingroup
    \setkeys{AtFi}{#1}%
    \ifatfi@print
      \leavevmode
      \begingroup
        \HyColor@UseColor\atfi@color@tex
        #2\strut
      \endgroup
    \else
      \setbox0=\hbox{#2\strut}%
      \makebox[\wd0]{}%
    \fi
  \endgroup
}

\ifatfi@draft
  \def\atfi@dummy@pushpin{%
    \raisebox{-1.25bp}{\parbox[b][14bp]{24bp}{}}%
  }%
  \DeclareRobustCommand{\textattachfile}[3][]{%
    \notextattachfile[{#1}]{#3}%
  }%
  \DeclareRobustCommand{\noattachfile}[1][]{%
    \notextattachfile[{#1}]{\atfi@dummy@pushpin}%
  }%
  \DeclareRobustCommand{\attachfile}[2][]{%
    \noattachfile[{#1}]%
  }%
  \expandafter\endinput
\fi

% --- load driver file ---

\input{atfi\atfi@driver.def}

% --- graphics ---

\def\atfi@acroGraph@data{%
  \atfi@GSAVE
  0.5 \atfi@SETGRAYFILL
  1.1133 0 20.7202 18.2754 \atfi@RECTFILL
  0 \atfi@SETFLAT
```

```
  0.5 \atfi@SETLINEWIDTH
  4 \atfi@SETMITERLIMIT
  \atfi@RECTSTROKEFILL{%
    1 \atfi@SETGRAYFILL
  }{%
    0 \atfi@SETGRAYSTROKE
  }{%
    0.25 1.6453 20.145 17.7715 %
  }%
  0 \atfi@SETGRAYFILL
  2.7319 4.1367 3.9571 13.8867 \atfi@RECTFILL
  8.7031 4.1367 3.9571 9.8867 \atfi@RECTFILL
  14.7471 4.1367 3.9571 11.8867 \atfi@RECTFILL
  \atfi@color@inline{FILL}%
  1.689 3.0938 3.9571 13.8867 \atfi@RECTFILL
  7.6602 3.0938 3.9571 9.8867 \atfi@RECTFILL
  13.7041 3.0938 3.9571 11.8867 \atfi@RECTFILL
  \atfi@GRESTORE
}
\def\atfi@acroGraph{%
  \raisebox{-1.5bp}{\parbox[b][20bp]{22bp}{%
    \rule{0pt}{0pt}\atfi@literal{\atfi@acroGraph@data}}%
  }%
}
\newcommand{\atfi@acroPaperclip@data}{%
  \atfi@GSAVE
  0.75 \atfi@SETGRAYSTROKE
  0 \atfi@SETFLAT
  2.5 \atfi@SETLINEWIDTH
  1 \atfi@SETLINECAP
  4 \atfi@SETMITERLIMIT
  1.9619 11.7559 \atfi@MOVETO
  1.9619 3.3037 1.9619 2.5059 \atfi@CURVETOV
  1.9619 1.707 4.0947 1.25 \atfi@CURVETOY
  7.4141 1.25 \atfi@LINETO
  9.4292 1.8223 9.4292 3.3066 \atfi@CURVETOV
  9.4292 4.79 9.4292 16.8945 \atfi@CURVETOY
  9.7852 18.1514 8.481 18.1514 \atfi@CURVETOV
  7.1768 18.1514 5.1616 18.1514 \atfi@CURVETOY
  3.8574 17.9209 3.8574 16.8945 \atfi@CURVETOV
  3.8574 15.8652 3.8574 6.6172 \atfi@CURVETOY
  4.3325 5.418 5.1025 5.418 \atfi@CURVETOV
  5.8726 5.418 6.5845 5.418 \atfi@CURVETOY
  7.6812 5.6455 7.6812 6.4736 \atfi@CURVETOV
  7.6812 7.3027 7.6812 11.5264 \atfi@CURVETOY
  \atfi@STROKE
  0 \atfi@SETGRAYSTROKE
  1.2495 12.4404 \atfi@MOVETO
  1.2495 3.9883 1.2495 3.1895 \atfi@CURVETOV
  1.2495 2.3906 3.3833 1.9326 \atfi@CURVETOY
  6.7026 1.9326 \atfi@LINETO
  8.7178 2.5068 8.7178 3.9902 \atfi@CURVETOV
  8.7178 5.4736 8.7178 17.5781 \atfi@CURVETOY
  9.0732 18.834 7.769 18.834 \atfi@CURVETOV
  6.4653 18.834 4.4497 18.834 \atfi@CURVETOY
  3.146 18.6055 3.146 17.5781 \atfi@CURVETOV
  3.146 16.5498 3.146 7.3018 \atfi@CURVETOY
  3.6201 6.1016 4.3911 6.1016 \atfi@CURVETOV
  5.1611 6.1016 5.873 6.1016 \atfi@CURVETOY
  6.9692 6.3301 6.9692 7.1572 \atfi@CURVETOV
  6.9692 7.9863 6.9692 12.21 \atfi@CURVETOY
  \atfi@STROKE
```

```
  \atfi@color@inline{STROKE}%
  1 \atfi@SETLINEWIDTH
  1.2495 12.4404 \atfi@MOVETO
  1.2495 3.9883 1.2495 3.1895 \atfi@CURVETOV
  1.2495 2.3906 3.3833 1.9326 \atfi@CURVETOY
  6.7026 1.9326 \atfi@LINETO
  8.7178 2.5068 8.7178 3.9902 \atfi@CURVETOV
  8.7178 5.4736 8.7178 17.5781 \atfi@CURVETOY
  9.0732 18.834 7.769 18.834 \atfi@CURVETOV
  6.4653 18.834 4.4497 18.834 \atfi@CURVETOY
  3.146 18.6055 3.146 17.5781 \atfi@CURVETOV
  3.146 16.5498 3.146 7.3018 \atfi@CURVETOY
  3.6201 6.1016 4.3911 6.1016 \atfi@CURVETOV
  5.1611 6.1016 5.873 6.1016 \atfi@CURVETOY
  6.9692 6.3301 6.9692 7.1572 \atfi@CURVETOV
  6.9692 7.9863 6.9692 12.21 \atfi@CURVETOY
  \atfi@STROKE
  \atfi@GRESTORE
}
\def\atfi@acroPaperclip{%
  \raisebox{-1.25bp}{\parbox[b][21bp]{12bp}{%
    \rule{0pt}{0pt}\atfi@literal{\atfi@acroPaperclip@data}}%
  }%
}
\def\atfi@acroPushPin@data{%
  \atfi@GSAVE
  1 \atfi@SETLINEWIDTH
  1 6   \atfi@MOVETO
  11 6  \atfi@LINETO
  11 13 \atfi@LINETO
  12 13 \atfi@LINETO
  14 11 \atfi@LINETO
  21 11 \atfi@LINETO
  22 12 \atfi@LINETO
  23 12 \atfi@LINETO
  23 2  \atfi@LINETO
  22 2  \atfi@LINETO
  21 3  \atfi@LINETO
  14 3  \atfi@LINETO
  12 1  \atfi@LINETO
  11 1  \atfi@LINETO
  11 6  \atfi@LINETO
  \atfi@FILLSTROKE{%
    \atfi@color@inline{FILL}%
  }{%
    0 \atfi@SETGRAYSTROKE
  }%
  0.5 \atfi@SETGRAYSTROKE
  0 7  \atfi@MOVETO
  10 7 \atfi@LINETO
  10 8 \atfi@LINETO
  1 8  \atfi@LINETO
  \atfi@STROKE
  1 \atfi@SETGRAYSTROKE
  12 12 \atfi@MOVETO
  14 10 \atfi@LINETO
  22 10 \atfi@LINETO
  22 11 \atfi@LINETO
  \atfi@STROKE
  \atfi@GRESTORE
}
\def\atfi@acroPushPin{%
```

```
  \raisebox{-1.25bp}{\parbox[b][14bp]{24bp}{%
    \rule{0pt}{0pt}\atfi@literal{\atfi@acroPushPin@data}}%
  }%
}
\def\atfi@acroTag@data{%
  \atfi@GSAVE
  0.5 \atfi@SETGRAYFILL
  10.0542 14.9873 \atfi@MOVETO
  24.27 14.9873 \atfi@LINETO
  25.252 14.0059 \atfi@LINETO
  25.252 1.1455 \atfi@LINETO
  24.1064 0 \atfi@LINETO
  9.9609 0 \atfi@LINETO
  6.0327 6.0088 \atfi@LINETO
  6.0327 9.002 \atfi@LINETO
  10.0542 14.9873 \atfi@LINETO
  9.3994 9.376 \atfi@MOVETO
  8.5215 9.376 7.8096 8.5596 7.8096 7.5527 \atfi@CURVETO
  7.8096 6.5449 8.5215 5.7285 9.3994 5.7285 \atfi@CURVETO
  10.2778 5.7285 10.9897 6.5449 10.9897 7.5527 \atfi@CURVETO
  10.9897 8.5596 10.2778 9.376 9.3994 9.376 \atfi@CURVETO
  \atfi@CLOSEPATH
  \atfi@FILL
  0 \atfi@SETFLAT
  0.5 \atfi@SETLINEWIDTH
  4 \atfi@SETMITERLIMIT
  1 \atfi@SETLINEJOIN
  8.5107 16.5313 \atfi@MOVETO
  22.7266 16.5313 \atfi@LINETO
  23.7085 15.5488 \atfi@LINETO
  23.7085 2.6895 \atfi@LINETO
  22.563 1.543 \atfi@LINETO
  8.4175 1.543 \atfi@LINETO
  4.4893 7.5527 \atfi@LINETO
  4.4893 10.5449 \atfi@LINETO
  8.5107 16.5313 \atfi@LINETO
  7.856 10.9199 \atfi@MOVETO
  6.978 10.9199 6.2661 10.1035 6.2661 9.0957 \atfi@CURVETO
  6.2661 8.0879 6.978 7.2715 7.856 7.2715 \atfi@CURVETO
  8.7344 7.2715 9.4463 8.0879 9.4463 9.0957 \atfi@CURVETO
  9.4463 10.1035 8.7344 10.9199 7.856 10.9199 \atfi@CURVETO
  \atfi@CLOSEPATH
  \atfi@FILLSTROKE{%
    \atfi@color@inline{FILL}%
  }{%
    0 \atfi@SETGRAYSTROKE
  }%
  1 \atfi@SETLINEWIDTH
  12.3291 12.2656 \atfi@MOVETO
  21.1206 12.2656 \atfi@LINETO
  \atfi@STROKE
  12.3291 9.1797 \atfi@MOVETO
  21.1206 9.1797 \atfi@LINETO
  \atfi@STROKE
  12.3291 6.1875 \atfi@MOVETO
  21.1206 6.1875 \atfi@LINETO
  \atfi@STROKE
  % 0 \atfi@SETGRAYSTROKE % redundant?
  0.5 \atfi@SETLINEWIDTH
  0 9.0488 \atfi@MOVETO
  6.2661 9.0957 \atfi@LINETO
  \atfi@STROKE
```

```
  1.4028 5.2148 \atfi@MOVETO
  1.4028 9.6094 \atfi@LINETO
  1.6831 10.6387 2.4316 10.6387 \atfi@CURVETOV
  3.6475 10.6387 3.5542 9.0488 \atfi@CURVETOY
  \atfi@STROKE
  \atfi@GRESTORE
}
\DeclareRobustCommand{\atfi@acroTag}{%
  \raisebox{-1.6bp}{\parbox[b][17bp]{25bp}{%
    \rule{0pt}{0pt}\atfi@literal{\atfi@acroTag@data}}%
  }%
}

% --- .atfi file reading support ---

% commands used in \jobname.atfi:
% * \attachfile@timezone{<timezone in PDF format>}
% * \attachfile@file[
%     Size=<size>,
%     CreationDate=<date>, % <date> local time without "D:" and timezone
%     ModDate=<date>,
%     CheckSum=<checksum>
%   ]{<filename as hex string>}
%
\def\attachfile@timezone#1{%
  \ifx\\#1\\%
    % no timezone information given
  \else
    \def\atfi@timezone{#1}%
  \fi
}
\newcommand*{\attachfile@file}[2][]{%
  \ifx\\#2\\%
    \PackageError{attachfile2}{Empty file name}\@ehc
  \else
    \edef\atfi@restore{\uccode0=\the\uccode0 \relax}%
    \let\atfi@filename\@empty
    \atfi@getfilename#2\relax\relax
    \atfi@restore
    \@namedef{atfi@file@\atfi@filename}{#1}%
  \fi
}
% convert file name from hex string
\begingroup
  \catcode0=12 %
  \gdef\atfi@getfilename#1#2{%
    \ifx\relax#1%
    \else
      \uccode0=\numexpr 16*\atfi@hexnum{#1} + \atfi@hexnum{#2}\relax
      \uppercase{%
        \edef\atfi@filename{%
          \atfi@filename^^@%
        }%
      }%
      \expandafter\atfi@getfilename
    \fi
  }%
\endgroup
\def\atfi@hexnum#1{%
  \ifnum`#1<58 %
    \numexpr `#1-48\relax
  \else
```

```
    \numexpr `#1-87\relax
  \fi
}

\InputIfFileExists{\jobname.atfi}{}{}%

\newif\ifatfi@checksum
\define@key{AtFi@file}{CheckSum}{%
  \atfi@checksumtrue
  \edef\atfi@params{\atfi@params/CheckSum<#1>}%
}
\newif\ifatfi@creationdate
\define@key{AtFi@file}{CreationDate}{%
  \atfi@creationdatetrue
  \edef\atfi@params{\atfi@params/CreationDate(D:#1\atfi@timezone)}%
}
\newif\ifatfi@moddate
\define@key{AtFi@file}{ModDate}{%
  \atfi@moddatetrue
  \edef\atfi@params{\atfi@params/ModDate(D:#1\atfi@timezone)}%
}

% --- .atfi file writing support ---

% respect \nofiles and option nofiles
% \nofiles has more weight than option nofiles
\if@filesw
\else
  \atfi@nofilestrue
\fi
\ifatfi@nofiles
  \PackageInfo{attachfile2}{%
    File `\jobname.atfi' will not be written because of\MessageBreak
    \string\nofiles\space or option `nofiles'%
  }%
  \let\atfi@writefile\@gobble
\else
  \newwrite\atfi@stream
  \immediate\openout\atfi@stream=\jobname.atfi\relax
  \immediate\write\atfi@stream{%
    \string\attachfile@timezone{\atfi@timezone}%
  }%
  \def\atfi@writefile#1{%
    \begingroup
      \def\file{#1}%
      \@onelevel@sanitize\file
      \edef\file{\@firstofone{\expandafter\atfi@replace\file} \@nil}%
      \edef\file{\expandafter\atfi@tohex\file\relax}%
      \immediate\write\atfi@stream{%
        \string\attachfile@file[%
          \@ifundefined{atfi@file@#1}{}{\@nameuse{atfi@file@#1}}%
        ]{\file}%
      }%
    \endgroup
  }%
\fi

\def\atfi@attachfile#1#2{%
  \@ifundefined{atfi@fileobj@#2}{%
    \atfi@writefile{#2}%
  }{%
    % don't need duplicates
```

```
  }%
  \setkeys{AtFi}{#1}%
  \atfi@embedfile{#2}%
  \atfi@set@appearance@icon
  \atfi@flags@to@int
  \atfi@insert@file@annot{#2}%
  \endgroup
}

% convert to hex string

\def\atfi@replace#1 #2\@nil{%
  #1%
  \ifx\\#2\\%
  \else
    \atfi@space
    \@ReturnAfterFi{%
      \atfi@replace#2\@nil
    }%
  \fi
}%

\long\def\@ReturnAfterFi#1\fi{\fi#1}

% ---

\newlength{\atfi@appearancewidth}
\newlength{\atfi@appearanceheight}
\newlength{\atfi@appearancedepth}
\newsavebox{\atfi@appearancebox}

\def\atfi@set@appearance@icon{%
  \@ifundefined{atfi@appobj@\atfi@icon@icon}{%
    \savebox{\atfi@appearancebox}{\@nameuse{atfi@acro\atfi@icon@icon}}%
    \expandafter\xdef\csname atfi@appwidth@\atfi@icon@icon\endcsname{%
      \the\wd\atfi@appearancebox
    }%
    \expandafter\xdef\csname atfi@appheight@\atfi@icon@icon\endcsname{%
      \the\ht\atfi@appearancebox
    }%
    \expandafter\xdef\csname atfi@appdepth@\atfi@icon@icon\endcsname{%
      \the\dp\atfi@appearancebox
    }%
    \atfi@xform@icon
    \global\expandafter\let\csname atfi@appobj@\atfi@icon@icon\endcsname
        \atfi@appearanceobj
  }{%
  }%
  % optimization: \setlength dropped
  \atfi@appearancewidth=\@nameuse{atfi@appwidth@\atfi@icon@icon}\relax
  \atfi@appearanceheight=\@nameuse{atfi@appheight@\atfi@icon@icon}\relax
  \atfi@appearancedepth=\@nameuse{atfi@appdepth@\atfi@icon@icon}\relax
  \expandafter\let\expandafter\atfi@appearanceobj
      \csname atfi@appobj@\atfi@icon@icon\endcsname
}

\def\atfi@set@appearance#1{%
  \savebox{\atfi@appearancebox}{#1}%
  \atfi@appearancewidth=\wd\atfi@appearancebox
  \atfi@appearanceheight=\ht\atfi@appearancebox
  \atfi@appearancedepth=\dp\atfi@appearancebox
  \atfi@xform
```

```
}

\newcounter{atfi@flags}
\DeclareRobustCommand{\atfi@flags@to@int}{%
  \setcounter{atfi@flags}{0}%
  \ifatfi@print
    \addtocounter{atfi@flags}{4}%
  \fi%
  \ifatfi@zoom
  \else
    \addtocounter{atfi@flags}{8}%
  \fi%
}

\def\atfi@textattachfile#1#2{%
    \endgroup
    \atfi@textattachfile@i{#1}{#2}%
}
\def\atfi@textattachfile@i#1#2#3{%
    \setkeys{AtFi}{#1}%
    \atfi@embedfile{#2}%
    \atfi@set@appearance{%
      \leavevmode
      \begingroup
        \HyColor@UseColor\atfi@color@tex
        #3\strut
      \endgroup
    }%
    \atfi@flags@to@int
    \atfi@insert@file@annot{#2}%
  \endgroup
}

\DeclareRobustCommand{\attachfile}[1][]{%
  \begingroup
    \let\do\@makeother
    \dospecials
    \catcode`\{=1\relax
    \catcode`\}=2\relax
    \atfi@attachfile{#1}%
}
\DeclareRobustCommand{\textattachfile}[1][]{%
  \begingroup
    \begingroup
      \let\do\@makeother
      \dospecials
      \catcode`\{=1\relax
      \catcode`\}=2\relax
      \atfi@textattachfile{#1}%
}
\DeclareRobustCommand{\noattachfile}[1][]{%
  \begingroup
    \setkeys{AtFi}{#1}%
    \atfi@set@appearance@icon
    \ifatfi@print
      \expandafter\atfi@refxform\csname atfi@appobj@\atfi@icon@icon\endcsname
    \else
      \makebox[\atfi@appearancewidth]{}%
    \fi
  \endgroup
}
```

⟨/package⟩

2.2 Drivers

2.2.1 pdfTeX

```
⟨*pdftex⟩
\NeedsTeXFormat{LaTeX2e}
\ProvidesFile{atfipdftex.def}%
  [2008/07/29 v2.4 attachfile2 driver for pdfTeX (HO)]%
\let\atfi@literal\pdfliteral

% --- macros for graphics data ---

\def\atfi@GSAVE{q }
\def\atfi@GRESTORE{Q }
\def\atfi@SETLINEWIDTH{w }
\def\atfi@LINETO{l }
\def\atfi@MOVETO{m }
\def\atfi@STROKE{S }
\def\atfi@FILL{f }
% \atfi@FILLSTROKE{<fill color>}{<stroke color>}
\def\atfi@FILLSTROKE#1#2{#1#2B }
% color: uppercase are stroke colors, lowercase non-stroke (fill) colors
% PS, however, does not different between stroke and not-stroke colors
\def\atfi@SETRGBCOLORSTROKE{RG }
\def\atfi@SETRGBCOLORFILL{rg }
\def\atfi@SETGRAYSTROKE{G }
\def\atfi@SETGRAYFILL{g }
\def\atfi@SETCMYKCOLORSTROKE{K }
\def\atfi@SETCMYKCOLORFILL{k }
\def\atfi@RECTFILL{re f }
\def\atfi@RECTSTROKEFILL#1#2#3{#1#2#3re B }
\def\atfi@SETMITERLIMIT{M }
\def\atfi@SETFLAT{i }
\def\atfi@SETLINECAP{J }
\def\atfi@CURVETO{c }
\def\atfi@CURVETOV{v }
\def\atfi@CURVETOY{y }
\def\atfi@CLOSEPATH{h }
\def\atfi@SETLINEJOIN{j }

% ---

\define@key{AtFi@file}{Size}{%
  \edef\atfi@params{\atfi@params/Size #1}%
}

\def\atfi@embedfile#1{%
  \@ifundefined{atfi@fileobj@#1}{%
    \begingroup
      \let\atfi@params\@empty
      \@ifundefined{atfi@file@#1}{}{%
        \edef\x{\noexpand\setkeys{AtFi@file}{\@nameuse{atfi@file@#1}}}%
        \x
      }%
      \ifx\atfi@params\@empty
      \else
        \edef\atfi@params{/Params<<\atfi@params>>}%
      \fi
      \immediate\pdfobj stream attr {%
        /Type/EmbeddedFile%
        \atfi@mimetype
        \atfi@params
      } file {#1}%
```

```
      \expandafter\xdef\csname atfi@fileobj@#1\endcsname{\the\pdflastobj}%
    \endgroup
  }{%
    % file already embedded
  }%
}

% ---

% input: \atfi@appearancebox, output: \atfi@appearanceobj
\def\atfi@xform{%
  \immediate\pdfxform\atfi@appearancebox
  \edef\atfi@appearanceobj{\the\pdflastxform}%
}
\let\atfi@xform@icon\atfi@xform

\def\atfi@refxform#1{%
  \pdfrefxform#1\relax
}

% ---

\def\atfi@insert@file@annot#1{%
  \rule{0pt}{0pt}%
  \ifatfi@appearance
    \def\atfi@appearance@dict{%
      /AP<<%
        /N \atfi@appearanceobj\space 0 R%
        /R \atfi@appearanceobj\space 0 R%
        /D \atfi@appearanceobj\space 0 R%
      >>%
    }%
  \else
    \let\atfi@appearance@dict\@empty
  \fi
  \@ifundefined{atfi@fsobj@#1}{%
    \atfi@pdfstringdef\atfi@file{#1}%
    \immediate\pdfobj{%
      <<%
        /Type/Filespec%
        /F(\atfi@file)%
        /EF<<%
          /F \@nameuse{atfi@fileobj@#1} 0 R%
        >>%
      >>%
    }%
    \expandafter\xdef\csname atfi@fsobj@#1\endcsname{%
      \the\pdflastobj
    }%
  }{%
  }%
  \pdfannot width \atfi@scale\atfi@appearancewidth
            height \atfi@scale\atfi@appearanceheight
            depth \atfi@scale\atfi@appearancedepth {%
    /Subtype/FileAttachment%
    \atfi@icon
    \atfi@color@annot
    \atfi@author
    \atfi@date
    \atfi@annotname
    \atfi@description
    \atfi@subject
```

```
    \atfi@appearance@dict
    /F \theatfi@flags
    /FS \@nameuse{atfi@fsobj@#1} 0 R%
  }%
  \rule{0pt}{\atfi@appearanceheight}%
  \rule[-\atfi@appearancedepth]{0pt}{\atfi@appearancedepth}%
  \rule{\atfi@appearancewidth}{0pt}%
}
```

⟨/pdftex⟩

2.2.2 dvips

⟨*dvips⟩

```
\NeedsTeXFormat{LaTeX2e}
\ProvidesFile{atfipdftex.def}%
  [2008/07/29 v2.4 attachfile2 driver for dvips (HO)]%
\def\atfi@literal#1{%
  \special{ps:atfi_dict begin{#1}atfi_?pdfmark end}%
}

\def\atfi@header#1{%
  \special{! #1}%
}

% --- macros for graphics data ---

\atfi@header{%
  userdict begin 20 dict dup /atfi_dict exch def end begin%
    /atfi_?pdfmark systemdict %
    dup/pdfmark known%
    {%
      /exec get def%
    }{%
      /pop get def%
    } ifelse%
    {%
      %
      % x y width height atfi_re ->
      languagelevel 2 ge {%
        /atfi_rectfill { rectfill } bind def%
        /atfi_rectstroke { rectstroke } bind def%
      }{%
        /atfi_rect {%
          /atfi_height exch def%
          /atfi_width exch def%
          /atfi_x exch def%
          /atfi_y exch def %
          newpath %
          atfi_x atfi_y moveto %
          atfi_x atfi_width add atfi_y lineto %
          atfi_x atfi_width add atfi_y atfi_height add lineto %
          atfi_x atfi_y atfi_height add lineto %
          closepath%
        } bind def%
        /atfi_rectfill {%
          atfi_rect fill%
        } bind def%
        /atfi_rectstroke {%
          atfi_rect stroke%
        } bind def%
      } ifelse%
      /atfi_curveto_v {%
        currentpoint 6 2 roll curveto%
```

```
938       } bind def%
939       /atfi_curveto_y {%
940         2 copy curveto%
941       } bind def%
942       %
943       % help macro for atfi_convert_date
944       /atfi_two {%
945         dup 10 lt%
946         {%
947           1 string cvs %
948           exch 1 add exch%
949         }{%
950           2 string cvs%
951         } ifelse %
952         putinterval%
953       } bind def%
954       %
955       % <seconds since 1970-01-01> atfi_convert_date -> (D:...Z)
956       /atfi_convert_date {%
957         dup%
958         /atfi_days exch 3600 idiv 24 idiv def%
959         % calc date part
960         /atfi_year 1970 def%
961         {%
962           atfi_year 400 mod 0 eq %
963           atfi_year 100 mod 0 ne %
964           atfi_year 4   mod 0 eq %
965           and or%
966           {366} {365} ifelse %
967           dup atfi_days lt%
968           {%
969             atfi_days exch sub /atfi_days exch def%
970             /atfi_year atfi_year 1 add def%
971           }{%
972             exit%
973           } ifelse%
974         } loop%
975         /atfi_month 1 def%
976         /atfi_days atfi_days 1 add def %
977         31 atfi_days lt%
978         {%
979           atfi_days 31 sub /atfi_days exch def%
980           /atfi_month atfi_month 1 add def %
981           366 eq {29} {28} ifelse dup atfi_days lt%
982           {%
983             atfi_days exch sub /atfi_days exch def%
984             /atfi_month atfi_month 1 add def %
985           31 atfi_days lt%
986           {%
987             atfi_days 31 sub /atfi_days exch def%
988             /atfi_month atfi_month 1 add def %
989           30 atfi_days lt%
990           {%
991             atfi_days 30 sub /atfi_days exch def%
992             /atfi_month atfi_month 1 add def %
993             31 atfi_days lt%
994             {%
995               atfi_days 31 sub /atfi_days exch def%
996               /atfi_month atfi_month 1 add def %
997             30 atfi_days lt%
998             {%
999               atfi_days 30 sub /atfi_days exch def%
```

```
            /atfi_month atfi_month 1 add def %
          31 atfi_days lt%
          {%
            atfi_days 31 sub /atfi_days exch def%
            /atfi_month atfi_month 1 add def %
          31 atfi_days lt%
          {%
            atfi_days 31 sub /atfi_days exch def%
            /atfi_month atfi_month 1 add def %
          30 atfi_days lt%
          {%
            atfi_days 30 sub /atfi_days exch def%
            /atfi_month atfi_month 1 add def %
          31 atfi_days lt%
          {%
            atfi_days 31 sub /atfi_days exch def%
            /atfi_month atfi_month 1 add def %
          30 atfi_days lt%
          {%
            atfi_days 30 sub /atfi_days exch def%
            /atfi_month atfi_month 1 add def %
          31 atfi_days lt%
          {%
            atfi_days 31 sub /atfi_days exch def%
            /atfi_month atfi_month 1 add def%
          } if%
          } if%
          } if%
          } if%
          } if%
          } if%
          } if%
          } if%
          } if%
          } if%
        } { pop } ifelse%
      }{ pop } ifelse %
      % calc time part
      3600 24 mul mod %
      dup 3600 idiv dup /atfi_hour exch def %
      3600 mul sub %
      dup 60 idiv dup /atfi_min exch def %
      60 mul sub %
      /atfi_sec exch def%
      (D:19700101000000Z)%
      dup 2  atfi_year 4 string cvs putinterval %
      dup 6  atfi_month atfi_two %
      dup 8  atfi_days  atfi_two %
      dup 10 atfi_hour  atfi_two %
      dup 12 atfi_min   atfi_two %
      dup 14 atfi_sec   atfi_two%
    } bind def %
    %
    % <filename> atfi_calc_checksum -> /CheckSum <checksum>
    % or returns nothing, if MD5Encode is not given
    false %
    languagelevel 2 ge {%
      (MD5Encode)%
      { pop true or }%
      (MD5Encode) length string%
      /Filter %
      resourceforall%
```

```
      } if%
      {%
        /atfi_calc_checksum {%
          /atfi_checksum 16 string def%
          /atfi_file exch (r) file def%
          /atfi_md5sum atfi_checksum /MD5Encode filter def %
          % not too efficient to read and write byte by byte,
          % using a buffer is probably faster
          atfi_size {%
            atfi_file read%
            {%
              atfi_md5sum exch write%
            } if%
          } repeat %
          atfi_md5sum closefile %
          atfi_file closefile%
          /CheckSum atfi_checksum%
        } bind def%
      }{%
        /atfi_calc_checksum { pop } bind def%
      } ifelse%
      %
      /atfi_pttobp { 72.27 div 72 mul } bind def%
      /atfi_pdftodvipsx { 72.27 div Resolution mul } bind def%
      /atfi_pdftodvipsy { 72.27 div VResolution mul } bind def%
      %
    } atfi_?pdfmark %
  end%
}

\def\atfi@GSAVE{gsave }
\def\atfi@GRESTORE{grestore }
\def\atfi@SETLINEWIDTH{setlinewidth }
\def\atfi@LINETO{lineto }
\def\atfi@MOVETO{moveto }
\def\atfi@STROKE{stroke }
\def\atfi@FILL{fill }
\def\atfi@FILLSTROKE#1#2{gsave #1 fill grestore #2 stroke }
\def\atfi@SETRGBCOLORSTROKE{setrgbcolor }
\def\atfi@SETRGBCOLORFILL{setrgbcolor }
\def\atfi@SETGRAYSTROKE{setgray }
\def\atfi@SETGRAYFILL{setgray }
\def\atfi@SETCMYKCOLORSTROKE{setcmykcolor }
\def\atfi@SETCMYKCOLORFILL{setcmykcolor }
\def\atfi@RECTFILL{atfi_rectfill }
\def\atfi@RECTSTROKEFILL#1#2#3{%
  #3%
  #1%
  gsave atfi_rectfill grestore %
  #2%
  #3%
  atfi_rectstroke %
  #1%
}
\def\atfi@SETMITERLIMIT{setmiterlimit }
\def\atfi@SETFLAT{setflat }
\def\atfi@SETLINECAP{setlinecap }
\def\atfi@CURVETO{curveto }
\def\atfi@CURVETOV{atfi_curveto_v }
\def\atfi@CURVETOY{atfi_curveto_y }
\def\atfi@CLOSEPATH{closepath }
\def\atfi@SETLINEJOIN{setlinejoin }
```

```
1124
1125 % ---
1126
1127 \newcounter{atfi@obj}
1128 \renewcommand*{\theatfi@obj}{%
1129   {atfi_obj_\number\c@atfi@obj}%
1130 }
1131
1132
1133 % most values for Params dictionary found in the .atfi file have
1134 % priority:
1135 % * Recalculation (md5sum, ...) is avoided.
1136 % * An external script has more possibilities than programming
1137 %   at PostScript level (operating system, getting the date and
1138 %   time values of the file with correct interpretation.
1139 % * Exception: status is called to test file existence, thus
1140 %   we get the value of size for free
1141
1142 \define@key{AtFi@file}{Size}{}
1143
1144 \def\atfi@embedfile#1{%
1145   \@ifundefined{atfi@fileobj@#1}{%
1146     \atfi@pdfstringdef\atfi@psfilename{#1}%
1147     \stepcounter{atfi@obj}%
1148     \expandafter\xdef\csname atfi@fileobj@#1\endcsname{\theatfi@obj}%
1149     \begingroup
1150       \let\atfi@params\@empty
1151       \@ifundefined{atfi@file@#1}{}{%
1152         \edef\x{\noexpand\setkeys{AtFi@file}{\@nameuse{atfi@file@#1}}}%
1153         \x
1154       }%
1155       \atfi@literal{%
1156         /atfi_filename(\atfi@psfilename)def %
1157         atfi_filename status%
1158         {%
1159           % ok: file found
1160           % save parameters of status command
1161           /atfi_created exch def%
1162           /atfi_referenced exch def%
1163           /atfi_size exch def %
1164           pop % drop parameter "pages" (storage space), never needed
1165           % ghostscript:
1166           %   created:       stat.st_ctime
1167           %   referenced:    stat.st_mtime
1168           %   stat.st_ctime: interpretion depends on operating system:
1169           %                  * unix: inode change time (not interesting)
1170           %                  * win32: probably creation time
1171           %                           --> /CreationDate
1172           %   stat.st_mtime: modification time --> /ModDate
1173           %   time values are seconds since 1970-01-01, GMT
1174           % TODO: ghostscript offers "getenv" for getting the value
1175           %       of an environment variable. That could be used to
1176           %       to detect windows and settingthe /CreationDate entry.
1177           % TODO: how are these values interpreted by other distiller
1178           %       programs?
1179           %
1180           [%
1181             /_objdef \theatfi@obj
1182             /type/stream%
1183           /OBJ pdfmark%
1184           [%
1185             \theatfi@obj
```

```
            <<%
              /Type/EmbeddedFile%
              \atfi@mimetype
              /Params%
              <<%
                \atfi@params
                %
                /Size atfi_size%
                %
                /product where%
                {%
                  pop %
                  % check for ghostscript
                  product (Ghostscript) search%
                  {%
                    pop pop pop %
                    % ghostscript is running
                    %
                    \ifatfi@creationdate
                    \else
                      false % TODO: test for windows
                      {%
                        /CreationDate atfi_created atfi_convert_date%
                      } if%
                    \fi
                    \ifatfi@moddate
                    \else
                      /ModDate atfi_referenced atfi_convert_date%
                    \fi
                  } if%
                  %
                  % look for MD5Encode filter and calculate CheckSum
                } if %
                \ifatfi@checksum
                \else
                  atfi_filename atfi_calc_checksum%
                \fi
              >>%
            >>%
          /PUT pdfmark%
          [%
            \theatfi@obj
            atfi_filename (r) file%
          /PUT pdfmark%
          [%
            \theatfi@obj
          /CLOSE pdfmark%
        }{%
          % error: file not found
          % currently nothing is done
        } ifelse%
      }%
    \endgroup
  }{%
    % file already embedded
  }%
}

% ---

% output: \atfi@appearanceobj
% input: \atfi@appearancebox, \atfi@icon@icon
```

```
\def\atfi@xform@icon{%
  \stepcounter{atfi@obj}%
  \edef\atfi@appearanceobj{\theatfi@obj}%
  \atfi@literal{%
    [%
      /_objdef \atfi@appearanceobj
      /BBox[%
        0 %
        0 %
        \strip@pt\wd\atfi@appearancebox\space atfi_pttobp %
        \strip@pt\dimexpr\dp\atfi@appearancebox
            +\ht\atfi@appearancebox\relax\space atfi_pttobp%
      ]%
    /BP pdfmark %
    \csname atfi@acro\atfi@icon@icon @data\endcsname
    [%
    /EP pdfmark%
  }%
}
% output: \atfi@appearanceobj
% input: \atfi@appearancebox
\def\atfi@xform{%
  \stepcounter{atfi@obj}%
  \edef\atfi@appearanceobj{\theatfi@obj}%
  \begingroup
    \setbox0=\hbox{%
      \atfi@literal{%
        [%
          /_objdef \atfi@appearanceobj
          /BBox[%
            currentpoint %
              \strip@pt\dp\atfi@appearancebox\space sub %
            currentpoint %
              exch \strip@pt\wd\atfi@appearancebox\space add %
              exch \strip@pt\ht\atfi@appearancebox\space add%
          ]%
        /BP pdfmark %
        gsave %
        currentpoint %
        2 copy translate %
        72.27 Resolution div 72.27 VResolution div neg scale %
        exch neg exch neg translate%
      }%
      \usebox{\atfi@appearancebox}%
      \atfi@literal{%
        grestore%
        [%
        /EP pdfmark%
      }%
    }%
    % do not allocate any space for xobject definition
    \dp0=\z@
    \ht0=\z@
    \wd0=\z@
    \mbox{\usebox0}%
  \endgroup
}

\def\atfi@refxform#1{%
  \raisebox{-\atfi@appearancedepth}{%
    \atfi@literal{%
      gsave %
```

```
        currentpoint translate %
        Resolution 72 div VResolution neg 72 div scale%
        [#1 /SP pdfmark % hash-ok
      grestore%
    }%
    \makebox[\atfi@appearancewidth]{}%
  }%
  \rule{0pt}{\atfi@appearanceheight}%
}

% ---

\def\atfi@insert@file@annot#1{%
  \rule{0pt}{0pt}%
  \ifatfi@appearance
    \def\atfi@appearance@dict{%
      /AP<<%
        /N \atfi@appearanceobj
        /R \atfi@appearanceobj
        /D \atfi@appearanceobj
      >>%
    }%
  \else
    \let\atfi@appearance@dict\@empty
  \fi
  \@ifundefined{atfi@fsobj@#1}{%
    \stepcounter{atfi@obj}%
    \expandafter\xdef\csname atfi@fsobj@#1\endcsname{\theatfi@obj}%
    \atfi@pdfstringdef\atfi@file{#1}%
    \atfi@literal{%
      [%
        /_objdef \theatfi@obj
        /type/dict%
      /OBJ pdfmark%
      [%
        \theatfi@obj
        <<%
          /Type/Filespec%
          /F(\atfi@file)%
          /EF<<%
            /F \csname atfi@fileobj@#1\endcsname
          >>%
        >>%
      /PUT pdfmark%
    }%
  }{%
  }%
  \atfi@literal{%
    [%
      /Subtype/FileAttachment%
      \atfi@icon
      \atfi@color@annot
      \atfi@author
      \atfi@date
      \atfi@annotname
      \atfi@description
      \atfi@subject
      \atfi@appearance@dict
      /F \theatfi@flags
      /FS \csname atfi@fsobj@#1\endcsname
      /Rect[%
        currentpoint %
```

```
          \strip@pt\dimexpr\atfi@scale\atfi@appearancedepth\relax
            \space atfi_pdftodvipsy add %
        currentpoint %
          exch \strip@pt\dimexpr\atfi@scale\atfi@appearancewidth\relax
            \space atfi_pdftodvipsx add %
          exch \strip@pt\dimexpr\atfi@scale\atfi@appearanceheight\relax
            \space atfi_pdftodvipsy sub %
      ]%
    /ANN pdfmark%
  }%
  \rule{0pt}{\atfi@appearanceheight}%
  \rule[-\atfi@appearancedepth]{0pt}{\atfi@appearancedepth}%
  \rule{\atfi@appearancewidth}{0pt}%
}
```

⟨/dvips⟩

2.3 Perl script pdfatfi.pl

⟨∗pdfatfi⟩

```
eval '(exit $?0)' && eval 'exec perl -S $0 ${1+"$@"}' && eval 'exec perl -S $0 $argv:q'
  if 0;
use strict;
$^W=1; # turn warning on
#
# pdfatfi.pl
#
# Copyright (C) 2005, 2006 Heiko Oberdiek.
#
# This work may be distributed and/or modified under the
# conditions of the LaTeX Project Public License, either version 1.3
# of this license or (at your option) any later version.
# The latest version of this license is in
#   http://www.latex-project.org/lppl.txt
# and version 1.3 or later is part of all distributions of LaTeX
# version 2005/12/01 or later.
#
# This work has the LPPL maintenance status "maintained".
#
# This Current Maintainer of this work is Heiko Oberdiek.
#
# See file "attachfile2.pdf" for a list of files that belong to this project.
#
# This file "pdfatfi.pl" may be renamed to "pdfatfi"
# for installation purposes.
#
my $file        = "pdfatfi.pl";
my $program     = uc($&) if $file =~ /^\w+/;
my $version     = "2.4";
my $date        = "2008/07/29";
my $author      = "Heiko Oberdiek";
my $copyright   = "Copyright (c) 2005, 2006 by $author.";
#
# History:
#   2005/05/21 v1.0: First release.
#   2006/08/16 v2.2: Included in DTX file of attachfile2.dtx.
#

use POSIX qw(strftime); # %z is used (GNU)
use Digest::MD5;

### program identification
my $title = "$program $version, $date - $copyright\n";

```

```
### error strings
my $Error = "!!! Error:"; # error prefix

### variables
my $atfifile;

### option variables
my @bool = ("false", "true");
$::opt_help       = 0;
$::opt_quiet      = 0;
$::opt_debug      = 0;
$::opt_verbose    = 0;

my $usage = <<"END_OF_USAGE";
${title}Syntax:   \L$program\E [options] <file[.atfi]>
Function: Help program for LaTeX package "attachfile2".
Options:                                              (defaults:)
  --help          print usage
  --(no)quiet     suppress messages                   ($bool[$::opt_quiet])
  --(no)verbose   verbose printing                    ($bool[$::opt_verbose])
  --(no)debug     debug informations                  ($bool[$::opt_debug])
END_OF_USAGE

### process options
my @OrgArgv = @ARGV;
use Getopt::Long;
GetOptions(
  "help!",
  "quiet!",
  "debug!",
  "verbose!",
) or die $usage;
!$::opt_help or die $usage;
@ARGV == 1 or die "$usage$Error Missing jobname!\n";

$::opt_quiet = 0 if $::opt_verbose;

print $title unless $::opt_quiet;

### get jobname
$atfifile = $ARGV[0];
if (!-f $atfifile && -f "$atfifile.atfi") {
    $atfifile .= ".atfi";
}
-f $atfifile or die "$Error File `$atfifile' not found!\n";

print "* job file     = $atfifile\n" if $::opt_verbose;

if ($::opt_debug) {
  print <<"END_DEB";
* OSNAME: $^O
* PERL_VERSION: $]
* ARGV: @OrgArgv
END_DEB
}

my $tmpfile = $atfifile . ".tmp";

my $timezone = strftime "%z", localtime;
$timezone =~ s/^([+\-]\d\d)(\d\d)$/$1'$2'/;

open(IN, $atfifile) or die "$Error Cannot open `$atfifile'!\n";
```

```
1494 open(OUT, ">$tmpfile") or die "$Error Cannot write ‘$tmpfile’!\n";
1495
1496 while(<IN>) {
1497     # timezone
1498     if (s/^(\\attachfile\@timezone\{).*(\})$/$1$timezone$2/) {
1499         print "* timezone     = $timezone\n" if $::opt_verbose;
1500     }
1501
1502     # file entry
1503     if (/^\\attachfile\@file\[[^\]]*\]\{(.*)\}$/) {
1504         my $hexfile = $1;
1505         my $file = pack('H*', $hexfile);
1506         my @s = stat($file);
1507         if (@s == 0) {
1508             print "!!! Warning: File ‘$file’ not found!\n";
1509         }
1510         else {
1511             my $size = @s[7];
1512             my $mtime = @s[9];
1513             my $ctime = @s[10]; # inode change time
1514
1515             my ($sec, $min, $hour, $mday, $mon, $year) = localtime($mtime);
1516             my $moddate = sprintf("%04d%02d%02d%02d%02d%02d",
1517                                   $year + 1900, $mon + 1, $mday,
1518                                   $hour, $min, $sec);
1519
1520             # Manual page "perlport" says that "ctime" is creation
1521             # time instead of inode change time for "Win32" and
1522             # "Mac OS", but it is unsupported for "Mac OS X".
1523             my $creationdate = "";
1524             if ($^O eq 'MSWin32') { # cygwin?
1525                 ($sec, $min, $hour, $mday, $mon, $year) = localtime($ctime);
1526                 $creationdate = sprintf("%04d%02d%02d%02d%02d%02d",
1527                                         $year + 1900, $mon + 1, $mday,
1528                                         $hour, $min, $sec);
1529             }
1530
1531             # md5 checksum
1532             my $checksum = "";
1533             my $ctx = Digest::MD5->new;
1534             if (open(FILE, $file)) {
1535                 $ctx->addfile(*FILE);
1536                 $checksum = $ctx->hexdigest;
1537                 close(FILE);
1538             }
1539             else {
1540                 print "!!! Warning: File ‘$file’ cannot be read,"
1541                       . " dropping checksum!\n";
1542             }
1543
1544             $_ = "\\attachfile\@file["
1545                  . "ModDate=$moddate,Size=$size"
1546                  . (($checksum) ? ",CheckSum=$checksum" : "")
1547                  . (($creationdate) ? ",CreationDate=$creationdate" : "")
1548                  . "]{$hexfile}\n";
1549             if ($::opt_verbose) {
1550                 print "* file entry   = $file\n";
1551                 print "  size         = $size\n";
1552                 print "  moddate      = $moddate\n";
1553                 print "  creationdate = $creationdate\n" if $creationdate;
1554                 print "  checksum     = $checksum\n" if $checksum;
1555             }
```

```
        }
    }

    print OUT $_;
}

close(IN);
close(OUT);

unlink($atfifile) or die "$Error Cannot delete old ‘$atfifile’!\n";
rename $tmpfile, $atfifile
        or die "$Error Cannot move ‘$tmpfile’ to ‘$atfifile’!\n";

print "*** ready. ***\n" unless $::opt_quiet;

__END__
```

⟨/pdfatfi⟩

3 Installation

3.1 Download

Package. This package is available on CTAN[1]:

CTAN:macros/latex/contrib/oberdiek/attachfile2.dtx The source file.

CTAN:macros/latex/contrib/oberdiek/attachfile2.pdf Documentation.

Bundle. All the packages of the bundle ‘oberdiek’ are also available in a TDS compliant ZIP archive. There the packages are already unpacked and the documentation files are generated. The files and directories obey the TDS standard.

CTAN:install/macros/latex/contrib/oberdiek.tds.zip

TDS refers to the standard “A Directory Structure for TEX Files” (CTAN:tds/tds.pdf). Directories with `texmf` in their name are usually organized this way.

3.2 Bundle installation

Unpacking. Unpack the `oberdiek.tds.zip` in the TDS tree (also known as `texmf` tree) of your choice. Example (linux):

```
unzip oberdiek.tds.zip -d ~/texmf
```

Script installation. Check the directory `TDS:scripts/oberdiek/` for scripts that need further installation steps. Package attachfile2 comes with the Perl script `pdfatfi.pl` that should be installed in such a way that it can be called as `pdfatfi`. Example (linux):

```
chmod +x scripts/oberdiek/pdfatfi.pl
cp scripts/oberdiek/pdfatfi.pl /usr/local/bin/
```

3.3 Package installation

Unpacking. The `.dtx` file is a self-extracting docstrip archive. The files are extracted by running the `.dtx` through plain-TEX:

```
tex attachfile2.dtx
```

[1] ftp://ftp.ctan.org/tex-archive/

TDS. Now the different files must be moved into the different directories in your installation TDS tree (also known as `texmf` tree):

```
attachfile2.sty → tex/latex/oberdiek/attachfile2.sty
atfidvips.def   → tex/latex/oberdiek/atfidvips.def
atfipdftex.def  → tex/latex/oberdiek/atfipdftex.def
pdfatfi.pl      → scripts/oberdiek/pdfatfi.pl
attachfile2.pdf → doc/latex/oberdiek/attachfile2.pdf
attachfile2.dtx → source/latex/oberdiek/attachfile2.dtx
```

If you have a `docstrip.cfg` that configures and enables docstrip's TDS installing feature, then some files can already be in the right place, see the documentation of docstrip.

3.4 Refresh file name databases

If your TEX distribution (teTEX, mikTEX, ...) relies on file name databases, you must refresh these. For example, teTEX users run `texhash` or `mktexlsr`.

3.5 Script installation

This package comes with a Perl script `pdfatfi.pl`. Install it somewhere so that it is executed, when it is called as `pdfatfi` on the command line. Example for installing it under Linux:

```
cp pdfatfi.pl /usr/local/bin/pdfatfi
chmod +x /usr/local/bin/pdfatfi
```

3.6 Some details for the interested

Attached source. The PDF documentation on CTAN also includes the `.dtx` source file. It can be extracted by AcrobatReader 6 or higher. Another option is pdftk, e.g. unpack the file into the current directory:

```
pdftk attachfile2.pdf unpack_files output .
```

Unpacking with LATEX. The `.dtx` chooses its action depending on the format:

plain-TEX: Run docstrip and extract the files.

LATEX: Generate the documentation.

If you insist on using LATEX for docstrip (really, docstrip does not need LATEX), then inform the autodetect routine about your intention:

```
latex \let\install=y\input{attachfile2.dtx}
```

Do not forget to quote the argument according to the demands of your shell.

Generating the documentation. You can use both the `.dtx` or the `.drv` to generate the documentation. The process can be configured by the configuration file `ltxdoc.cfg`. For instance, put this line into this file, if you want to have A4 as paper format:

```
\PassOptionsToClass{a4paper}{article}
```

An example follows how to generate the documentation with pdfLATEX:

```
pdflatex attachfile2.dtx
makeindex -s gind.ist attachfile2.idx
pdflatex attachfile2.dtx
makeindex -s gind.ist attachfile2.idx
pdflatex attachfile2.dtx
```

4 References

[1] Scott Pakin: *The attachfile package*; 2005/02/20 v1.2; CTAN:macros/latex/contrib/attachfile/.

[2] Heiko Oberdiek: *The embedfile package*; 2006/08/16 v1.0; CTAN:macros/latex/contrib/oberdiek/embedfile.pdf.

[3] Adobe Systems Incorporated: *PDF Reference, Fifth Edition, Version 1.6*, November 2004; http://partners.adobe.com/public/developer/pdf/index_reference.html.

[4] Network Working Group: RFC 2046, *Multipurpose Internet Mail Extensions (MIME) Part Two: Media Types*, November 1996; http://www.rfc-editor.org/.

[5] IANA (Internet Assigned Numbers Authority): *MIME Media Types*, May 2006; http://www.iana.org/assignments/media-types/.

5 History

[2005/02/23 v2.0]

- New options: draft/final.
- New option scale for scaling the annotation rectangle.
- Supported driver options: pdftex, dvips.
- Configuration file 'attachfile.cfg' supported.
- Dependency of package calc dropped.
- ε-TEX (`\numexpr`, `\dimexpr`) used.
- New auxiliary file `\jobname.atfi` to get data unavailable by (pdf)TEX, controlled by `\nofiles` and option nofiles.
- Use of package prokvopt (never released).

[2005/10/07 v2.1]

- Option annotname for naming annotations (this name can be used for embedded go-to actions).

[2006/08/17 v2.2]

- Use of package kvoptions instead of prokvopt.
- DTX framework.
- A little documentation.

[2007/04/11 v2.3]

- Line ends sanitized.

[2008/07/29 v2.4]

- Improved color support. Option color now understands the usual color specifications if package xcolor is loaded.

6 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

\- 1491
\@ReturnAfterFi 63, 68, 649, 655
\@ehc 542
\@empty 156, 181, 245, 269, 545, 802, 807, 849, 1150, 1333
\@file 1503, 1544
\@firstofone 617
\@gobble 606
\@ifundefined 621, 629, 665, 800, 803, 851, 1145, 1151, 1335
\@makeother 730, 739
\@namedef 548
\@nameuse 621, 666, 682, 683, 684, 804, 858, 880, 1152
\@nil 617, 644, 650
\@onelevel@sanitize 48, 616
\@timezone 1498
\[. 1503
\\ . . 60, 534, 541, 646, 1498, 1503, 1544
\{ 732, 741, 1498, 1503
\} 733, 742, 1498, 1503
\] 1503

\␣ 54, 56

A

\addtocounter 701, 705
\atfi@acroGraph 342
\atfi@acroGraph@data 318, 344
\atfi@acroPaperclip 404
\atfi@acroPaperclip@data . . . 347, 406
\atfi@acroPushPin 446
\atfi@acroPushPin@data 409, 448
\atfi@acroTag 516
\atfi@acroTag@data 451, 518
\atfi@annotname 181, 183, 184, 875, 1364
\atfi@appearance@dict 841, 849, 878, 1325, 1333, 1367
\atfi@appearancebox 662, 666, 668, 671, 674, 690, 691, 692, 693, 825, 827, 1247, 1257, 1258, 1259, 1268, 1279, 1281, 1282, 1291
\atfi@appearancedepth 661, 684, 693, 869, 883, 1307, 1372, 1383
\atfi@appearanceheight 660, 683, 692, 868, 882, 1317, 1377, 1382
\atfi@appearanceobj 678, 685, 825, 828, 843, 844, 845, 1246, 1250, 1253, 1267, 1271, 1276, 1327, 1328, 1329
\atfi@appearancetrue 226
\atfi@appearancewidth . . 659, 682, 691, 752, 867, 884, 1315, 1375, 1384
\atfi@attachfile 628, 734
\atfi@author . . 194, 196, 197, 873, 1362
\atfi@checksumtrue 579
\atfi@CLOSEPATH . . 468, 488, 790, 1122
\atfi@color@annot 143, 872, 1361
\atfi@color@inline 143, 336, 385, 428, 490
\atfi@color@tex 143, 286, 719
\atfi@converttokens 50, 70, 108
\atfi@converttoname 46, 129
\atfi@creationdatetrue 584
\atfi@CURVETO 464, 465, 466, 467, 484, 485, 486, 487, 787, 1119
\atfi@CURVETOV 355, 358, 360, 362, 364, 366, 371, 374, 376, 378, 380, 382, 388, 391, 393, 395, 397, 399, 511, 788, 1120
\atfi@CURVETOY 356, 359, 361, 363, 365, 367, 372, 375, 377, 379, 381, 383, 389, 392, 394, 396, 398, 400, 512, 789, 1121
\atfi@date . . . 166, 176, 177, 874, 1363
\atfi@description 201, 203, 204, 876, 1365
\atfi@draftfalse 117
\atfi@drafttrue 118, 274
\atfi@driver 245, 250, 253, 267, 269, 314
\atfi@driver@dvips 247, 253
\atfi@driver@pdftex . . . 246, 250, 267
\atfi@dummy@pushpin 297, 304
\atfi@embedfile . . 635, 715, 799, 1144
\atfi@file 852, 856, 1338, 1348
\atfi@filename 545, 548, 559, 560
\atfi@FILL 469, 771, 1098
\atfi@FILLSTROKE 427, 489, 772, 773, 1099
\atfi@finalfalse 118
\atfi@finaltrue 117
\atfi@flags@to@int 637, 698, 723
\atfi@getfilename 546, 554, 563
\atfi@GRESTORE 340, 402, 444, 514, 766, 1093
\atfi@GSAVE 319, 348, 410, 452, 765, 1092
\atfi@hash 53, 77, 81, 84, 86, 88, 90, 92, 94, 96, 98, 100, 102
\atfi@header 895, 901
\atfi@hexchar 30, 39, 77, 81
\atfi@hexdigit 23, 31, 32
\atfi@hexnum 557, 567
\atfi@hours 159, 163, 170
\atfi@icon 135, 871, 1360
\atfi@icon@icon 136, 665, 666, 667, 670, 673, 677, 682, 683, 684, 686, 750, 1247, 1262
\atfi@insert@file@annot 638, 724, 838, 1322

\atfi@LINETO 357, 373, 390, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 434, 435, 436, 440, 441, 442, 455, 456, 457, 458, 459, 460, 461, 462, 475, 476, 477, 478, 479, 480, 481, 482, 496, 499, 502, 507, 510, 768, 1095
\atfi@literal 344, 406, 448, 518, 761, 891, 1155, 1251, 1274, 1292, 1308, 1339, 1357
\atfi@mimetype 127, 129, 130, 813, 1188
\atfi@minutes 162, 171
\atfi@moddatetrue 589
\atfi@MOVETO . . . 354, 370, 387, 412, 433, 439, 454, 463, 474, 483, 495, 498, 501, 506, 509, 769, 1096
\atfi@nofilesfalse 239
\atfi@nofilestrue 599
\atfi@pad@ii 149, 168, 169, 170, 171, 172
\atfi@params 580, 585, 590, 796, 802, 807, 809, 814, 1150, 1191
\atfi@pdfstringdef . . 16, 176, 183, 188, 196, 203, 210, 852, 1146, 1338
\atfi@printtrue 216
\atfi@psfilename 1146, 1156
\atfi@RECTFILL 321, 333, 334, 335, 337, 338, 339, 782, 1106
\atfi@RECTSTROKEFILL . . 325, 783, 1107
\atfi@refxform 750, 832, 1306
\atfi@replace 617, 644, 650
\atfi@restore 544, 547
\atfi@scale 232, 234, 867, 868, 869, 1372, 1375, 1377
\atfi@seconds 165, 172
\atfi@set@appearance 689, 716
\atfi@set@appearance@icon 636, 664, 748
\atfi@SETCMYKCOLORFILL . . . 781, 1105
\atfi@SETCMYKCOLORSTROKE . . 780, 1104
\atfi@SETFLAT . 322, 350, 470, 785, 1117
\atfi@SETGRAYFILL 320, 326, 332, 453, 779, 1103
\atfi@SETGRAYSTROKE 328, 349, 369, 430, 432, 438, 492, 504, 778, 1102
\atfi@SETLINECAP 352, 786, 1118
\atfi@SETLINEJOIN 473, 791, 1123
\atfi@SETLINEWIDTH 323, 351, 386, 411, 471, 494, 505, 767, 1094
\atfi@SETMITERLIMIT 324, 353, 472, 784, 1116
\atfi@SETRGBCOLORFILL 777, 1101
\atfi@SETRGBCOLORSTROKE . . 776, 1100
\atfi@space 55, 62, 648
\atfi@spacetoother 49, 58, 64
\atfi@stream 608, 609, 610, 619
\atfi@STROKE 368, 384, 401, 437, 443, 497, 500, 503, 508, 513, 770, 1097
\atfi@subject . 208, 210, 211, 877, 1366
\atfi@temp@string . . . 17, 18, 189, 190
\atfi@textattachfile 709, 743
\atfi@textattachfile@i 711, 713
\atfi@time 158, 160, 163
\atfi@timezone 156, 157, 173, 537, 585, 590, 611
\atfi@tohex 36, 40, 618
\atfi@writefile 606, 613, 630
\atfi@xform 694, 826, 830, 1269
\atfi@xform@icon 676, 830, 1248
\atfi@zoomtrue 221
\attachfile 306, 728
\attachfile@file 526, 540, 620
\attachfile@timezone . . 525, 533, 611
\attachfilesetup 256

C

\c@atfi@obj 1129
\catcode 54, 56, 553, 732, 733, 741, 742
\csname 120, 123, 217, 222, 228, 241, 667, 670, 673, 677, 686, 750, 816, 862, 1148, 1262, 1337, 1350, 1369

D

\d 1491
\day 169
\DeclareRobustCommand 188, 256, 280, 300, 303, 306, 516, 698, 728, 736, 745
\define@key 119, 122, 128, 134, 141, 157, 175, 182, 195, 202, 209, 217, 222, 227, 233, 240, 249, 252, 578, 583, 588, 795, 1142
\dimexpr 29, 31, 33, 160, 1258, 1372, 1375, 1377
\do 730, 739
\dospecials 731, 740
\dp 674, 693, 1258, 1279, 1299

E

\E 1446
\endcsname 120, 123, 217, 222, 228, 241, 667, 670, 673, 677, 686, 750, 816, 862, 1148, 1262, 1337, 1350, 1369
\endinput 309

F

\file 615, 616, 617, 618, 622

G

\gdef 554

H

\hbox 290, 1273
\ht 671, 692, 1259, 1282, 1300
\HyColor@AttachfileColor 142
\HyColor@UseColor 286, 719

I

\if@filesw 597
\ifatfi@appearance 225, 840, 1324
\ifatfi@checksum 577, 1219
\ifatfi@creationdate 582, 1204
\ifatfi@draft 116, 296

\ifatfi@moddate 587, 1211
\ifatfi@nofiles 238, 601
\ifatfi@print 215, 283, 700, 749
\ifatfi@zoom 220, 703
\ifcase 24, 74
\ifnum 73, 80, 83, 85, 87, 89, 91, 93, 95, 97, 99, 101, 150, 568
\ifpdf 265
\ifx 37, 60, 71, 269, 534, 541, 555, 646, 807
\immediate 609, 610, 619, 811, 827, 853
\input 314
\InputIfFileExists 259, 575

J

\jobname 524, 575, 603, 609

L

\L 1446
\leavevmode 284, 717

M

\makebox 291, 752, 1315
\mbox 1302
\MessageBreak 271, 603
\month 168

N

\n 1430, 1465, 1476, 1478, 1493, 1494, 1499, 1508, 1541, 1548, 1550, 1551, 1552, 1553, 1554, 1565, 1567, 1569
\NeedsTeXFormat 2, 758, 888
\newcommand 347, 540
\newcounter 697, 1127
\newif 116, 215, 220, 225, 238, 577, 582, 587
\newlength 659, 660, 661
\newsavebox 662
\newwrite 608
\noattachfile 303, 307, 745
\nofiles 595, 596, 604
\notextattachfile 280, 301, 304
\number 151, 153, 1129
\numexpr 31, 33, 160, 163, 557, 569, 571

O

\openout 609

P

\PackageError 542
\PackageInfo 602
\PackageWarningNoLine 270
\parbox 298, 343, 405, 447, 517
\pdfannot 867
\pdflastobj 816, 863
\pdflastxform 828
\pdfliteral 761
\pdfobj 811, 853
\pdfrefxform 833
\pdfstringdef 13, 17, 189
\pdfxform 827
\ProcessKeyvalOptions 261
\ProvidesFile 759, 889
\ProvidesPackage 3

R

\raisebox 298, 343, 405, 447, 517, 1307
\renewcommand 1128
\RequirePackage 5, 6, 7, 8, 12, 14
\rule 344, 406, 448, 518, 839, 882, 883, 884, 1317, 1323, 1382, 1383, 1384

S

\savebox 666, 690
\setbox 290, 1273
\setcounter 699
\setkeys 138, 146, 256, 282, 634, 714, 747, 804, 1152
\setlength 681
\space 604, 843, 844, 845, 1257, 1259, 1279, 1281, 1282, 1373, 1376, 1378
\special 892, 896
\stepcounter . . . 1147, 1249, 1270, 1336
\strip@pt 1257, 1258, 1279, 1281, 1282, 1372, 1375, 1377
\strut 287, 290, 720

T

\textattachfile 300, 736
\the 158, 167, 544, 668, 671, 674, 816, 828, 863
\theatfi@flags 879, 1368
\theatfi@obj 1128, 1148, 1181, 1185, 1227, 1231, 1250, 1271, 1337, 1341, 1345
\time 158

U

\uccode 544, 557
\uppercase 558
\usebox 1291, 1302

W

\w 1415
\wd . . . 291, 668, 691, 1257, 1281, 1301
\write 610, 619

X

\x 804, 805, 1152, 1153

Y

\year 167

Z

\z@ 1299, 1300, 1301