

# 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

<b>1</b>	<b>Documentation</b>	<b>2</b>
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 <code>color</code>	4
1.2.3	Perl script <code>pdfatfi.pl</code>	4
1.3	Changes to <code>attachfile</code>	5
<b>2</b>	<b>Implementation</b>	<b>5</b>
2.1	Package	5
2.1.1	Loading of packages	5
2.1.2	Value checking	5
2.1.3	Option declarations	7
2.1.4	Option calling	11
2.1.5	Evaluate driver options	11
2.1.6	Evaluate options <code>draft/final</code>	12
2.1.7	Load driver file	13
2.1.8	Graphics	13
2.1.9	Reading the <code>.atfi</code> file	16
2.1.10	Writing the <code>.atfi</code> file	18
2.1.11	Annotation appearance	19
2.2	Drivers	22
2.2.1	pdfTeX	22
2.2.2	dvips	25
2.2.3	dvipdfmx	34
2.3	Perl script <code>pdfatfi.pl</code>	38

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\*Please report any issues at <https://github.com/ho-tex/oberdiek/issues>

<b>3</b>	<b>Installation</b>	<b>42</b>
3.1	Download	42
3.2	Bundle installation	42
3.3	Package installation	42
3.4	Refresh file name databases	43
3.5	Script installation	43
3.6	Some details for the interested	43
<b>4</b>	<b>Catalogue</b>	<b>43</b>
<b>5</b>	<b>References</b>	<b>44</b>
<b>6</b>	<b>History</b>	<b>44</b>
	[2005/02/23 v2.0]	44
	[2005/10/07 v2.1]	45
	[2006/08/17 v2.2]	45
	[2007/04/11 v2.3]	45
	[2008/07/29 v2.4]	45
	[2009/09/25 v2.5]	45
	[2010/09/27 v2.6]	45
	[2012/04/18 v2.7]	46
	[2016/05/16 v2.8]	46
<b>7</b>	<b>Index</b>	<b>46</b>

# 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 mentioned 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 (pdf<sub>tex</sub>, 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 featur 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`, `pdftex`, `dvipdfmx` and `xetex` that is an alias for `dvipdfmx`.
- Option `driverfallback` specifies a DVI driver if the driver cannot be detected automatically.
- 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`.
- New option `ucfilespec` for file names with characters outside ASCII (PDF 1.7).

### 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 `cmymk` 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}{cmymk}{.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. Since version 2.6 these data are used if available.

For older versions of pdfTeX and XeTeX the Perl script `pdfatfi.pl` is provided to get 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 L<sup>A</sup>T<sub>E</sub>X 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.
- Support for dvipdfmx/XeTeX.
- 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 [2016/05/16 v2.8 Attach files into PDF (H0)]%
```

#### 2.1.1 Loading of packages

```
5 \RequirePackage{ifpdf}[2009/04/10]
6 \RequirePackage{ifxetex}
7 \RequirePackage{ifluatex}[2009/04/10]
8 \RequirePackage{keyval}
9 \RequirePackage{color}
10 \RequirePackage{infwarerr}[2010/04/08]
11 \RequirePackage{ltxcmds}[2010/04/26]
12 \RequirePackage{kvoptions}[2009/07/21]
13 \RequirePackage{pdftexcmds}[2010/04/01]
14 \RequirePackage{pdfescape}[2007/11/11]
```

Package `hyperref` is needed because of `\pdfstringdef`.

```
15 \RequirePackage{hyperref}
16 \RequirePackage{hycolor}[2008/07/29]
```

#### 2.1.2 Value checking

`\atfi@Match`

```
17 \ltx@ifundefined{pdfmatch}{%
```

```

18 \def\atfi@Match#1#2#3#4#5{%
19 }{%
20 \def\atfi@Match#1#2#3{%
21 \begingroup
22 \edef\^{\ltx@backslashchar\string}%
23 \edef\.\{\ltx@backslashchar.}%
24 \let\#\ltx@hashchar
25 \edef\[{\ltx@backslashchar[]}%
26 \edef\${\ltx@backslashchar$}%
27 \let\%\ltx@percentchar
28 \edef\&\string&%
29 \edef\({\ltx@backslashchar}%
30 \edef\){\ltx@backslashchar}%
31 \edef\|{\ltx@backslashchar|}%
32 \edef\*{\ltx@backslashchar*}%
33 \edef\+{\ltx@backslashchar+}%
34 \edef\?{\ltx@backslashchar?}%
35 \edef\{{\ltx@backslashchar\ltx@leftbracechar}%
36 \edef\}{\ltx@rightbracechar}%
37 \edef\\{\ltx@backslashchar\ltx@backslashchar}%
38 \edef\~{\string~}%
39 \ifcase\pdfmatch#3{#2}{#1} %
40 \endgroup
41 \expandafter\ltx@secondoftwo
42 \or
43 \endgroup
44 \expandafter\ltx@firstoftwo
45 \else
46 \atfi@Warning{%
47 Internal error: Wrong pattern!\MessageBreak
48 --> #2 <--\MessageBreak
49 Pattern check ignored%
50 }%
51 \endgroup
52 \expandafter\ltx@firstoftwo
53 \fi
54 }%

\atfi@PatToken

55 \def\atfi@PatToken{%
56 [%
57 -% first character
58 !%
59 \#\$\%\&'%
60 \*\+\.\%
61 0-9%
62 A-Z%
63 \_\'%
64 a-z%
65 \{\}\|\~%
66 ]+%
67 }%

\atfi@CR

68 \begingroup
69 \lccode64=13 % @
70 \lowercase{\endgroup
71 \def\atfi@CR{@}%

```

```

72 }%

\atfi@PatQuotedString
73 \def\atfi@PatQuotedString{%
74   "%
75   ([^"\\ \atfi@CR] |\\.)*%
76   "%
77 }%

78 \ltx@ifpackagelater{ltxcmds}{2010/09/11}{-}{-}%

\atfi@ltx@leftbracechar
79 \begingroup
80 \lccode'0=' \relax
81 \lowercase{\endgroup
82 \def\ltx@leftbracechar{0}%
83 }%

\ltx@rightbracechar
84 \begingroup
85 \lccode'0=' \relax
86 \lowercase{\endgroup
87 \def\ltx@rightbracechar{0}%
88 }%

89 }%
90 }

\atfi@Warning
91 \def\atfi@Warning{\PackageWarning{attachfile2}}

```

### 2.1.3 Option declarations

```

92 \SetupKeyvalOptions{%
93   family=AtFi,%
94   prefix=atfi@%
95 }

\atfi@setup
96 \def\atfi@setup{\setkeys{AtFi}}

Options draft and final.
97 \DeclareBoolOption{draft}
98 \DeclareComplementaryOption{final}{draft}

Option mimetype.

\atfi@mimetype
99 \def\atfi@mimetype{}

100 \define@key{AtFi}{mimetype}{%
101   \edef\atfi@mimetype{#1}%
102   \ifx\atfi@mimetype\ltx@empty
103     \else
104       \atfi@Match\atfi@mimetype{%
105         ^ (application|audio|image|model|text|video|x-\atfi@PatToken)%
106         /%
107         ([a-z\-\+\.\0-9]+)%
108         (; ?\atfi@PatToken=(\atfi@PatToken|\atfi@PatQuotedString))*$%

```

```

109   }{icase}}{%
110     \atfi@Warning{%
111       Invalid value '\atfi@mimetype'\MessageBreak
112       of option 'mimetype'.\MessageBreak
113       Value is discarded%
114     }%
115     \let\atfi@mimetype\ltx@empty
116   }%
117 \fi
118 \ifx\atfi@mimetype\ltx@empty
119 \else
120   \EdefEscapeName\atfi@mimetype{\atfi@mimetype}%
121   \edef\atfi@mimetype{/Subtype/\atfi@mimetype}%
122 \fi
123 }

```

Option icon

```

124 \define@key{AtFi}{icon}{%
125   \def\atfi@icon{/Name/#1}%
126   \def\atfi@icon@icon{#1}%
127 }
128 \atfi@setup{icon=PushPin}

```

Option color

```

129 \define@key{AtFi}{color}{%
130   \HyColor@AttachfileColor{#1}%
131   \atfi@color@tex\atfi@color@inline\atfi@color@annot
132   {attachfile2}{color}%
133 }
134 \atfi@setup{color=1 0.9255 0.7765}

```

time options timezone and date

\atfi@pad@ii

```

135 \def\atfi@pad@ii#1{%
136   \ifnum#1>9 %
137     \number#1%
138   \else
139     0\number#1%
140   \fi%
141 }

```

atfi@timezone

```

142 \let\atfi@timezone\ltx@empty
143 \define@key{AtFi}{timezone}{\def\atfi@timezone{#1}}

```

\atfi@time

```

144 \edef\atfi@time{\the\time}

```

\atfi@hours

```

145 \def\atfi@hours{%
146   \numexpr\dimexpr0.01667\dimexpr\atfi@time sp\relax\relax\relax
147 }

```

\atfi@minutes

```

148 \def\atfi@minutes{%
149   \numexpr\atfi@time-60*\atfi@hours\relax
150 }

```



\atfi@seconds

```
151 \def\atfi@seconds{0}
```

\atfi@date

```
152 \def\atfi@date{%
153   /M(D:\the\year
154     \atfi@pad@ii\month
155     \atfi@pad@ii\day
156     \atfi@pad@ii\atfi@hours
157     \atfi@pad@ii\atfi@minutes
158     \atfi@pad@ii\atfi@seconds
159     \atfi@timezone)%
160 }
```

```
161 \define@key{AtFi}{date}{%
162   \EdefEscapeString\atfi@date{#1}%
163   \edef\atfi@date{/M(\atfi@date)}%
164 }
```

Text options author, description, and subject

\atfi@pdfstringdef

```
165 \DeclareRobustCommand{\atfi@pdfstringdef}[2]{%
166   \pdfstringdef\atfi@temp@string{#2}%
167   \edef#1{\atfi@temp@string}%
168 }
```

\atfi@NoValue

```
169 \def\atfi@NoValue{\NoValue}
```

\atfi@DefNoValueName

```
170 \def\atfi@DefNoValueName#1#2#3{%
171   \def#1{#3}%
172   \ifx#1\atfi@NoValue
173     \let#1\ltx@empty
174   \else
175     \atfi@pdfstringdef#1{#1}%
176     \edef#1{/#2(#1)}%
177   \fi
178 }
```

Name for annotation to be used in GoToE actions

\atfi@annotname

```
179 \let\atfi@annotname\ltx@empty
180 \define@key{AtFi}{annotname}[\NoValue]{%
181   \atfi@DefNoValueName\atfi@annotname{NM}{#1}%
182 }
```

Option author.

\atfi@author

```
183 \def\atfi@author{}
184 \define@key{AtFi}{author}[\NoValue]{%
185   \atfi@DefNoValueName\atfi@author{T}{#1}%
186 }
```

Option description.

\atfi@description

```
187 \def\atfi@description{}
188 \define@key{AtFi}{description}[\NoValue]{%
189   \atfi@DefNoValueName\atfi@description{Contents}{#1}%
190 }
```

Option subject.

\atfi@subject

```
191 \def\atfi@subject{}
192 \define@key{AtFi}{subject}[\NoValue]{%
193   \atfi@DefNoValueName\atfi@subject{Subj}{#1}%
194 }
```

Option print.

```
195 \DeclareBoolOption[true]{print}
```

Option zoom.

```
196 \DeclareBoolOption[true]{zoom}
```

Option appearance.

```
197 \DeclareBoolOption[true]{appearance}
```

Option scale.

```
198 \DeclareStringOption[1]{scale}
```

Option ucfilespec.

\atfi@ucfilespec

```
199 \def\atfi@ucfilespec{}
200 \define@key{AtFi}{ucfilespec}[1]{%
201   \def\atfi@ucfilespec{#1}%
202   \ifx\atfi@ucfilespec\ltx@empty
203     \else
204       \atfi@pdfstringdef\atfi@ucfilespec{#1}%
205     \fi
206 }
```

Option nofiles.

```
207 \DeclareBoolOption{nofiles}
```

Driver options.

```
208 \let\atfi@driver\ltx@empty
209 \def\atfi@driver@pdftex{pdftex}
210 \def\atfi@driver@dvips{dvips}
211 \def\atfi@driver@dvi@pdfmx{dvi@pdfmx}
212 \DeclareVoidOption{pdftex}{%
213   \let\atfi@driver\atfi@driver@pdftex
214 }
215 \DeclareVoidOption{dvips}{%
216   \let\atfi@driver\atfi@driver@dvips
217 }
218 \DeclareVoidOption{dvi@pdfmx}{%
219   \let\atfi@driver\atfi@driver@dvi@pdfmx
220 }
221 \DeclareVoidOption{xetex}{%
222   \let\atfi@driver\atfi@driver@dvi@pdfmx
223 }
224 \DeclareStringOption{driverfallback}
```

\attachfilesetup

```
225 \DeclareRobustCommand{\attachfilesetup}[1]{\setkeys{AtFi}{#1}}

226 \DeclareLocalOptions{%
227   annotname,%
228   appearance,%
229   author,%
230   color,%
231   date,%
232   description,%
233   icon,%
234   mimetype,%
235   nofiles,%
236   print,%
237   scale,%
238   subject,%
239   timezone,%
240   ucfilespec,%
241   zoom,%
242 }
```

#### 2.1.4 Option calling

Timezone setting, ...

```
243 \InputIfFileExists{attachfile.cfg}{}{}
244 \ProcessKeyvalOptions*
```

\atfi@DisableOption

```
245 \def\atfi@DisableOption{%
246   \DisableKeyvalOption[action=error,package=attachfile2]{AtFi}%
247 }
```

#### 2.1.5 Evaluate driver options

```
248 \ifpdf
249   % ignoring other driver options
250   \let\atfi@driver\atfi@driver@pdftex
251 \else
252   \ifx\atfi@driver\atfi@driver@pdftex
253     \let\atfi@driver\ltx@empty
254     \PackageError{attachfile2}{%
255       Wrong driver option ‘pdftex’,\MessageBreak
256       because pdfTeX in PDF mode is not detected%
257     }\@ehc
258   \fi
259   \ifxetex
260     \let\atfi@driver\atfi@driver@dvipdfmx
261   \else
262     \ifx\atfi@driver\ltx@empty
263       \ifx\atfi@driverfallback\ltx@empty
264       \else
265         \expandafter\let\expandafter\atfi@driver
266           \csname atfi@driver@\atfi@driverfallback\endcsname
267       \ifx\atfi@driver\atfi@driver@dvi
268       \else
269         \ifx\atfi@driver\atfi@driver@dvipdfmx
270       \else
```

```

271         \let\atfi@driver\ltx@empty
272         \PackageWarningNoLine{attachfile2}{%
273             Option 'driverfallback' with unsupported\MessageBreak
274             DVI driver (\atfi@driverfallback)%
275         }%
276     \fi
277 \fi
278 \fi
279 \ifx\atfi@driver\ltx@empty
280     \PackageWarningNoLine{attachfile2}{%
281         Driver is not specified,\MessageBreak
282         enforce draft settings%
283     }%
284     \atfi@drafttrue
285 \fi
286 \fi
287 \fi
288 \fi

289 \atfi@DisableOption{pdftex}
290 \atfi@DisableOption{dvips}
291 \atfi@DisableOption{dvi2pdf}
292 \atfi@DisableOption{xetex}
293 \atfi@DisableOption{driverfallback}

```

### 2.1.6 Evaluate options draft/final

\notextattachfile

```

294 \DeclareRobustCommand{\notextattachfile}[2][]{%
295     \begingroup
296     \atfi@setup{#1}%
297     \ifatfi@print
298         \leavevmode
299         \begingroup
300         \HyColor@UseColor\atfi@color@tex
301         #2\strut
302     \endgroup
303     \else
304         \sbox\ltx@zero{#2\strut}%
305         \makebox[\wd0]{}%
306     \fi
307 \endgroup
308 }

309 \atfi@DisableOption{draft}%
310 \atfi@DisableOption{final}%
311 \ifatfi@draft
312     \def\atfi@dummy@pushpin{%
313         \raisebox{-1.25bp}{\parbox[b][14bp]{24bp}{}}%
314     }%
315     \DeclareRobustCommand{\textattachfile}[3][]{%
316         \notextattachfile[{#1}]{#3}%
317     }%
318     \DeclareRobustCommand{\noattachfile}[1][]{%
319         \notextattachfile[{#1}]{\atfi@dummy@pushpin}%
320     }%
321     \DeclareRobustCommand{\attachfile}[2][]{%
322         \noattachfile[{#1}]%
323     }%
324     \expandafter\endinput

```

325 \fi

### 2.1.7 Load driver file

326 \input{atfi-\atfi@driver.def}

### 2.1.8 Graphics

\atfi@acroGraph@data

```
327 \def\atfi@acroGraph@data{%
328   \atfi@GSAVE
329   0.5 \atfi@SETGRAYFILL
330   1.1133 0 20.7202 18.2754 \atfi@RECTFILL
331   0 \atfi@SETFLAT
332   0.5 \atfi@SETLINEWIDTH
333   4 \atfi@SETMITERLIMIT
334   \atfi@RECTSTROKEFILL{%
335     1 \atfi@SETGRAYFILL
336   }{%
337     0 \atfi@SETGRAYSTROKE
338   }{%
339     0.25 1.6453 20.145 17.7715 %
340   }%
341   0 \atfi@SETGRAYFILL
342   2.7319 4.1367 3.9571 13.8867 \atfi@RECTFILL
343   8.7031 4.1367 3.9571 9.8867 \atfi@RECTFILL
344   14.7471 4.1367 3.9571 11.8867 \atfi@RECTFILL
345   \atfi@color@inline{FILL}%
346   1.689 3.0938 3.9571 13.8867 \atfi@RECTFILL
347   7.6602 3.0938 3.9571 9.8867 \atfi@RECTFILL
348   13.7041 3.0938 3.9571 11.8867 \atfi@RECTFILL
349   \atfi@GRESTORE
350 }
```

\atfi@acroGraph

```
351 \def\atfi@acroGraph{%
352   \raisebox{-1.5bp}{\parbox[b][20bp]{22bp}{%
353     \rule{Opt}{Opt}\atfi@literal{\atfi@acroGraph@data}}%
354   }%
355 }
```

\atfi@acroPaperclip@data

```
356 \newcommand{\atfi@acroPaperclip@data}{%
357   \atfi@GSAVE
358   0.75 \atfi@SETGRAYSTROKE
359   0 \atfi@SETFLAT
360   2.5 \atfi@SETLINEWIDTH
361   1 \atfi@SETLINECAP
362   4 \atfi@SETMITERLIMIT
363   1.9619 11.7559 \atfi@MOVETO
364   1.9619 3.3037 1.9619 2.5059 \atfi@CURVETOY
365   1.9619 1.707 4.0947 1.25 \atfi@CURVETOY
366   7.4141 1.25 \atfi@LINETO
367   9.4292 1.8223 9.4292 3.3066 \atfi@CURVETOY
368   9.4292 4.79 9.4292 16.8945 \atfi@CURVETOY
369   9.7852 18.1514 8.481 18.1514 \atfi@CURVETOY
370   7.1768 18.1514 5.1616 18.1514 \atfi@CURVETOY
371   3.8574 17.9209 3.8574 16.8945 \atfi@CURVETOY
372   3.8574 15.8652 3.8574 6.6172 \atfi@CURVETOY
```

```

373 4.3325 5.418 5.1025 5.418 \atfi@CURVETOY
374 5.8726 5.418 6.5845 5.418 \atfi@CURVETOY
375 7.6812 5.6455 7.6812 6.4736 \atfi@CURVETOY
376 7.6812 7.3027 7.6812 11.5264 \atfi@CURVETOY
377 \atfi@STROKE
378 0 \atfi@SETGRAYSTROKE
379 1.2495 12.4404 \atfi@MOVETO
380 1.2495 3.9883 1.2495 3.1895 \atfi@CURVETOY
381 1.2495 2.3906 3.3833 1.9326 \atfi@CURVETOY
382 6.7026 1.9326 \atfi@LINETO
383 8.7178 2.5068 8.7178 3.9902 \atfi@CURVETOY
384 8.7178 5.4736 8.7178 17.5781 \atfi@CURVETOY
385 9.0732 18.834 7.769 18.834 \atfi@CURVETOY
386 6.4653 18.834 4.4497 18.834 \atfi@CURVETOY
387 3.146 18.6055 3.146 17.5781 \atfi@CURVETOY
388 3.146 16.5498 3.146 7.3018 \atfi@CURVETOY
389 3.6201 6.1016 4.3911 6.1016 \atfi@CURVETOY
390 5.1611 6.1016 5.873 6.1016 \atfi@CURVETOY
391 6.9692 6.3301 6.9692 7.1572 \atfi@CURVETOY
392 6.9692 7.9863 6.9692 12.21 \atfi@CURVETOY
393 \atfi@STROKE
394 \atfi@color@inline{STROKE}%
395 1 \atfi@SETLINEWIDTH
396 1.2495 12.4404 \atfi@MOVETO
397 1.2495 3.9883 1.2495 3.1895 \atfi@CURVETOY
398 1.2495 2.3906 3.3833 1.9326 \atfi@CURVETOY
399 6.7026 1.9326 \atfi@LINETO
400 8.7178 2.5068 8.7178 3.9902 \atfi@CURVETOY
401 8.7178 5.4736 8.7178 17.5781 \atfi@CURVETOY
402 9.0732 18.834 7.769 18.834 \atfi@CURVETOY
403 6.4653 18.834 4.4497 18.834 \atfi@CURVETOY
404 3.146 18.6055 3.146 17.5781 \atfi@CURVETOY
405 3.146 16.5498 3.146 7.3018 \atfi@CURVETOY
406 3.6201 6.1016 4.3911 6.1016 \atfi@CURVETOY
407 5.1611 6.1016 5.873 6.1016 \atfi@CURVETOY
408 6.9692 6.3301 6.9692 7.1572 \atfi@CURVETOY
409 6.9692 7.9863 6.9692 12.21 \atfi@CURVETOY
410 \atfi@STROKE
411 \atfi@GRESTORE
412 }

```

\atfi@acroPaperclip

```

413 \def\atfi@acroPaperclip{%
414   \raisebox{-1.25bp}{\parbox[b][21bp]{12bp}{%
415     \rule{0pt}{0pt}\atfi@literal{\atfi@acroPaperclip@data}}}%
416   }%
417 }

```

\atfi@acroPushPin@data

```

418 \def\atfi@acroPushPin@data{%
419   \atfi@GSAVE
420   1 \atfi@SETLINEWIDTH
421   1 6 \atfi@MOVETO
422   11 6 \atfi@LINETO
423   11 13 \atfi@LINETO
424   12 13 \atfi@LINETO
425   14 11 \atfi@LINETO
426   21 11 \atfi@LINETO

```

```

427 22 12 \atfi@LINETO
428 23 12 \atfi@LINETO
429 23 2 \atfi@LINETO
430 22 2 \atfi@LINETO
431 21 3 \atfi@LINETO
432 14 3 \atfi@LINETO
433 12 1 \atfi@LINETO
434 11 1 \atfi@LINETO
435 11 6 \atfi@LINETO
436 \atfi@FILLSTROKE{%
437 \atfi@color@inline{FILL}}%
438 }{%
439 0 \atfi@SETGRAYSTROKE
440 }%
441 0.5 \atfi@SETGRAYSTROKE
442 0 7 \atfi@MOVETO
443 10 7 \atfi@LINETO
444 10 8 \atfi@LINETO
445 1 8 \atfi@LINETO
446 \atfi@STROKE
447 1 \atfi@SETGRAYSTROKE
448 12 12 \atfi@MOVETO
449 14 10 \atfi@LINETO
450 22 10 \atfi@LINETO
451 22 11 \atfi@LINETO
452 \atfi@STROKE
453 \atfi@GRESTORE
454 }

```

\atfi@acroPushPin

```

455 \def\atfi@acroPushPin{%
456 \raisebox{-1.25bp}{\parbox[b][14bp]{24bp}{%
457 \rule{0pt}{0pt}\atfi@literal{\atfi@acroPushPin@data}}}%
458 }%
459 }

```

\atfi@acroTag@data

```

460 \def\atfi@acroTag@data{%
461 \atfi@GSAVE
462 0.5 \atfi@SETGRAYFILL
463 10.0542 14.9873 \atfi@MOVETO
464 24.27 14.9873 \atfi@LINETO
465 25.252 14.0059 \atfi@LINETO
466 25.252 1.1455 \atfi@LINETO
467 24.1064 0 \atfi@LINETO
468 9.9609 0 \atfi@LINETO
469 6.0327 6.0088 \atfi@LINETO
470 6.0327 9.002 \atfi@LINETO
471 10.0542 14.9873 \atfi@LINETO
472 9.3994 9.376 \atfi@MOVETO
473 8.5215 9.376 7.8096 8.5596 7.8096 7.5527 \atfi@CURVETO
474 7.8096 6.5449 8.5215 5.7285 9.3994 5.7285 \atfi@CURVETO
475 10.2778 5.7285 10.9897 6.5449 10.9897 7.5527 \atfi@CURVETO
476 10.9897 8.5596 10.2778 9.376 9.3994 9.376 \atfi@CURVETO
477 \atfi@CLOSEPATH
478 \atfi@FILL
479 0 \atfi@SETFLAT
480 0.5 \atfi@SETLINEWIDTH

```

```

481 4 \atfi@SETMITERLIMIT
482 1 \atfi@SETLINEJOIN
483 8.5107 16.5313 \atfi@MOVETO
484 22.7266 16.5313 \atfi@LINETO
485 23.7085 15.5488 \atfi@LINETO
486 23.7085 2.6895 \atfi@LINETO
487 22.563 1.543 \atfi@LINETO
488 8.4175 1.543 \atfi@LINETO
489 4.4893 7.5527 \atfi@LINETO
490 4.4893 10.5449 \atfi@LINETO
491 8.5107 16.5313 \atfi@LINETO
492 7.856 10.9199 \atfi@MOVETO
493 6.978 10.9199 6.2661 10.1035 6.2661 9.0957 \atfi@CURVETO
494 6.2661 8.0879 6.978 7.2715 7.856 7.2715 \atfi@CURVETO
495 8.7344 7.2715 9.4463 8.0879 9.4463 9.0957 \atfi@CURVETO
496 9.4463 10.1035 8.7344 10.9199 7.856 10.9199 \atfi@CURVETO
497 \atfi@CLOSEPATH
498 \atfi@FILLSTROKE{%
499   \atfi@color@inline{FILL}%
500 }{%
501   0 \atfi@SETGRAYSTROKE
502 }%
503 1 \atfi@SETLINEWIDTH
504 12.3291 12.2656 \atfi@MOVETO
505 21.1206 12.2656 \atfi@LINETO
506 \atfi@STROKE
507 12.3291 9.1797 \atfi@MOVETO
508 21.1206 9.1797 \atfi@LINETO
509 \atfi@STROKE
510 12.3291 6.1875 \atfi@MOVETO
511 21.1206 6.1875 \atfi@LINETO
512 \atfi@STROKE
513 % 0 \atfi@SETGRAYSTROKE % redundant?
514 0.5 \atfi@SETLINEWIDTH
515 0 9.0488 \atfi@MOVETO
516 6.2661 9.0957 \atfi@LINETO
517 \atfi@STROKE
518 1.4028 5.2148 \atfi@MOVETO
519 1.4028 9.6094 \atfi@LINETO
520 1.6831 10.6387 2.4316 10.6387 \atfi@CURVETO
521 3.6475 10.6387 3.5542 9.0488 \atfi@CURVETO
522 \atfi@STROKE
523 \atfi@GRESTORE
524 }

```

\atfi@acroTag

```

525 \def\atfi@acroTag{%
526   \raisebox{-1.6bp}{\parbox[b][17bp]{25bp}}{%
527     \rule{0pt}{0pt}\atfi@literal{\atfi@acroTag@data}}%
528   }%
529 }

```

### 2.1.9 Reading the .atfi file

Commands used in \jobname.atfi:

- attachfile@timezone{<timezone in PDF format>}
- \attachfile@file[



```

        Size=<size>,
        CreationDate=<date>, % <date> local time without "D:" and timezone
        ModDateTZ=<date+TZ>,
        ModDate=<date>,
        CheckSum=<checksum>
    ]{<filename as hex string>}

\attachfile@timezone
530 \def\attachfile@timezone#1{%
531     \ifx\#1\%
532         % no timezone information given
533     \else
534         \def\atfi@timezone{#1}%
535     \fi
536 }

\attachfile@file
537 \newcommand*{\attachfile@file}[2][{}]{%
538     \EdefUnescapeHex\atfi@filename{#2}%
539     \ifx\atfi@filename\ltx@empty
540         \PackageError{attachfile2}{Empty file name}\@ehc
541     \else
542         \namedef{atfi@file@\atfi@filename}{#1}%
543     \fi
544 }

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

546 \newif\ifatfi@checksum
547 \define@key{AtFi@file}{Checksum}{%
548     \atfi@checksumtrue
549     \edef\atfi@params{\atfi@params/Checksum<#1>}%
550 }

551 \newif\ifatfi@creationdate
552 \define@key{AtFi@file}{CreationDateTZ}{%
553     \ifatfi@creationdate
554     \else
555         \atfi@creationdatetrue
556         \edef\atfi@params{%
557             \atfi@params
558             /CreationDate(#1)%
559         }%
560     \fi
561 }

562 \define@key{AtFi@file}{CreationDate}{%
563     \ifatfi@creationdate
564     \else
565         \atfi@creationdatetrue
566         \edef\atfi@params{%
567             \atfi@params
568             /CreationDate(#1\atfi@timezone)%
569         }%
570     \fi
571 }

572 \newif\ifatfi@moddate
573 \define@key{AtFi@file}{ModDateTZ}{%
574     \ifatfi@moddate
575     \else

```

```

576 \atfi@moddatetrue
577 \edef\atfi@params{%
578 \atfi@params
579 /ModDate(#1)%
580 }%
581 \fi
582 }

583 \define@key{AtFi@file}{ModDate}{%
584 \ifatfi@moddate
585 \else
586 \atfi@moddatetrue
587 \edef\atfi@params{%
588 \atfi@params
589 /ModDate(D:#1\atfi@timezone)%
590 }%
591 \fi
592 }

```

\atfi@pdftexdata

```

593 \let\atfi@temp\ltx@one
594 \ltx@ifundefined{pdf@filesize}{%
595 \let\atfi@temp\ltx@zero
596 }{}
597 \ltx@ifundefined{pdf@filemoddate}{%
598 \let\atfi@temp\ltx@zero
599 }{}
600 \ltx@ifundefined{pdf@filemdfivesum}{%
601 \let\atfi@temp\ltx@zero
602 }{}
603 \ifcase\atfi@temp
604 \let\atfi@pdftexdata\ltx@gobble
605 \or
606 \def\atfi@pdftexdata#1{%
607 \edef\atfi@temp{\pdf@filesize{#1}}%
608 \ifx\atfi@temp\ltx@empty
609 \else
610 \setkeys{AtFi@file}{Size=\atfi@temp}%
611 \edef\atfi@temp{\pdf@filemoddate{#1}}%
612 \ifx\atfi@temp\ltx@empty
613 \else
614 \setkeys{AtFi@file}{ModDateTZ=\atfi@temp}%
615 \fi
616 \edef\atfi@temp{\pdf@filemdfivesum{#1}}%
617 \ifx\atfi@temp\ltx@empty
618 \else
619 \setkeys{AtFi@file}{Checksum=\atfi@temp}%
620 \fi
621 \fi
622 }%
623 \fi

```

### 2.1.10 Writing the .atfi file

Respect \nofiles and option nofiles. \nofiles has more weight than option nofiles.

```

624 \if@files
625 \else

```

```

626 \atfi@nofilestrue
627 \fi
628 \ifatfi@nofiles
629 \PackageInfo{attachfile2}{%
630   File '\jobname.atfi' will not be written because of\MessageBreak
631   \string\nofiles\space or option 'nofiles'%
632 }%

\atfi@writefile

633 \let\atfi@writefile\ltx@gobble

634 \else

\atfi@stream

635 \newwrite\atfi@stream

636 \immediate\openout\atfi@stream=\jobname.atfi\relax
637 \immediate\write\atfi@stream{%
638   \string\attachfile@timezone{\atfi@timezone}%
639 }%

\atfi@writefile

640 \def\atfi@writefile#1{%
641   \begingroup
642     \EdefEscapeHex\atfi@temp{#1}%
643     \immediate\write\atfi@stream{%
644       \string\attachfile@file[%
645         \ltx@ifundefined{atfi@file@#1}{-}{\@nameuse{atfi@file@#1}}}%
646       ]{\atfi@temp}%
647     }%
648   \endgroup
649 }%

650 \fi
651 \atfi@DisableOption{nofiles}

\atfi@attachfile

652 \def\atfi@attachfile#1#2{%
653   \ltx@ifundefined{atfi@fileobj@#2}{%
654     \atfi@writefile{#2}%
655   }{%
656     % don't need duplicates
657   }%
658   \atfi@setup{#1}%
659   \atfi@embedfile{#2}%
660   \atfi@set@appearance@icon
661   \atfi@flags@to@int
662   \atfi@insert@file@annot{#2}%
663   \endgroup
664 }

```

### 2.1.11 Annotation appearance

```

\atfi@appearancewidth

665 \newlength{\atfi@appearancewidth}

\atfi@appearanceheight

666 \newlength{\atfi@appearanceheight}

```

```

\atfi@appearancedepth
667 \newlength{\atfi@appearancedepth}

\atfi@appearancebox
668 \newsavebox{\atfi@appearancebox}

\atfi@set@appearance@icon
669 \def\atfi@set@appearance@icon{%
670   \ltx@ifundefined{atfi@appobj@atfi@icon@icon}{%
671     \savebox{\atfi@appearancebox}{%
672       \@nameuse{atfi@acro\atfi@icon@icon}%
673     }%
674     \expandafter
675     \xdef\csname atfi@appwidth@atfi@icon@icon\endcsname{%
676       \the\wd\atfi@appearancebox
677     }%
678     \expandafter
679     \xdef\csname atfi@appheight@atfi@icon@icon\endcsname{%
680       \the\ht\atfi@appearancebox
681     }%
682     \expandafter
683     \xdef\csname atfi@appdepth@atfi@icon@icon\endcsname{%
684       \the\dp\atfi@appearancebox
685     }%
686     \atfi@xform@icon
687     \global\expandafter\let
688       \csname atfi@appobj@atfi@icon@icon\endcsname
689       \atfi@appearanceobj
690   }{%
691   }%
692   % optimization: \setlength dropped
693   \atfi@appearancewidth=%
694     \@nameuse{atfi@appwidth@atfi@icon@icon}\relax
695   \atfi@appearanceheight=%
696     \@nameuse{atfi@appheight@atfi@icon@icon}\relax
697   \atfi@appearancedepth=%
698     \@nameuse{atfi@appdepth@atfi@icon@icon}\relax
699   \expandafter\let\expandafter\atfi@appearanceobj
700     \csname atfi@appobj@atfi@icon@icon\endcsname
701 }

\atfi@set@appearance
702 \def\atfi@set@appearance#1{%
703   \savebox{\atfi@appearancebox}{#1}%
704   \atfi@appearancewidth=\wd\atfi@appearancebox
705   \atfi@appearanceheight=\ht\atfi@appearancebox
706   \atfi@appearancedepth=\dp\atfi@appearancebox
707   \atfi@xform
708 }

709 \newcounter{atfi@flags}

\atfi@flags@to@int
710 \DeclareRobustCommand{\atfi@flags@to@int}{%
711   \setcounter{atfi@flags}{0}%
712   \ifatfi@print
713     \addtocounter{atfi@flags}{4}%
714   \fi%

```

```

715 \ifatfi@zoom
716 \else
717 \addtocounter{atfi@flags}{8}%
718 \fi%
719 }

\atfi@textattachfile
720 \def\atfi@textattachfile#1#2{%
721 \endgroup
722 \atfi@textattachfile@i{#1}{#2}%
723 }

\atfi@textattachfile@i
724 \def\atfi@textattachfile@i#1#2#3{%
725 \ltx@ifundefined{atfi@fileobj@#2}{%
726 \atfi@writefile{#2}%
727 }{%
728 % don't need duplicates
729 }%
730 \atfi@setup{#1}%
731 \atfi@embedfile{#2}%
732 \atfi@set@appearance{%
733 \leavevmode
734 \beginingroup
735 \HyColor@UseColor\atfi@color@tex
736 #3\strut
737 \endgroup
738 }%
739 \atfi@flags@to@int
740 \atfi@insert@file@annot{#2}%
741 \endgroup
742 }

\attachfile
743 \DeclareRobustCommand{\attachfile}[1] [] {%
744 \beginingroup
745 \let\do\@makeoother
746 \dospecials
747 \catcode'\{=1\relax
748 \catcode'\}=2\relax
749 \atfi@attachfile{#1}%
750 }

\textattachfile
751 \DeclareRobustCommand{\textattachfile}[1] [] {%
752 \beginingroup
753 \beginingroup
754 \let\do\@makeoother
755 \dospecials
756 \catcode'\{=1\relax
757 \catcode'\}=2\relax
758 \atfi@textattachfile{#1}%
759 }

\noattachfile
760 \DeclareRobustCommand{\noattachfile}[1] [] {%
761 \beginingroup
762 \atfi@setup{#1}%

```

```

763 \atfi@set@appearance@icon
764 \ifatfi@print
765 \expandafter
766 \atfi@refxform\csname atfi@appobj@\atfi@icon@icon\endcsname
767 \else
768 \makebox[\atfi@appearancewidth]{}%
769 \fi
770 \endgroup
771 }

772 </package>

```

## 2.2 Drivers

### 2.2.1 pdfTeX

```

773 <*pdfTeX>
774 \NeedsTeXFormat{LaTeX2e}
775 \ProvidesFile{atfi-pdfTeX.def}%
776 [2016/05/16 v2.8 attachfile2 driver for pdfTeX (HO)]%

```

### LuaTeX

```

777 \ifluatex
778 \ifnum\luatexversion<39 %
779 \else
780 \begingroup
781 \escapechar=-1 %
782 \def\atfi@temp#1{%
783 \ltx@ifundefined{\string#1}{%
784 \let#1\ltx@undefined
785 \directlua{%
786 if tex.enableprimitives then %
787 tex.enableprimitives('', {\string#1})%
788 end%
789 }%
790 \ltx@ifundefined{\string#1}{%
791 }{%
792 \global#1=#1%
793 \@PackageInfoNoLine{attachfile2}{%
794 \string#1 enabled%
795 }%
796 }%
797 }{}%
798 }%
799 \atfi@temp\pdfliteral
800 \atfi@temp\pdfobj
801 \atfi@temp\pdflastobj
802 \atfi@temp\pdfxform
803 \atfi@temp\pdflastxform
804 \atfi@temp\pdfrefxform
805 \atfi@temp\pdfannot
806 \endgroup
807 \fi
808 \fi

```

### Macros for graphics data

```

\atfi@literal

809 \let\atfi@literal\pdfliteral

```

```

810 \def\atfi@GSAVE{q }
811 \def\atfi@GRESTORE{Q }
812 \def\atfi@SETLINEWIDTH{w }
813 \def\atfi@LINETO{l }
814 \def\atfi@MOVETO{m }
815 \def\atfi@STROKE{S }
816 \def\atfi@FILL{f }
817 % \atfi@FILLSTROKE{<fill color>}{<stroke color>}
818 \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

```

819 \def\atfi@SETRGBCOLORSTROKE{RG }
820 \def\atfi@SETRGBCOLORFILL{rg }
821 \def\atfi@SETGRAYSTROKE{G }
822 \def\atfi@SETGRAYFILL{g }
823 \def\atfi@SETCMYKCOLORSTROKE{K }
824 \def\atfi@SETCMYKCOLORFILL{k }
825 \def\atfi@RECTFILL{re f }
826 \def\atfi@RECTSTROKEFILL#1#2#3{#1#2#3re B }
827 \def\atfi@SETMITERLIMIT{M }
828 \def\atfi@SETFLAT{i }
829 \def\atfi@SETLINECAP{J }
830 \def\atfi@CURVETO{c }
831 \def\atfi@CURVETO{v }
832 \def\atfi@CURVETOY{y }
833 \def\atfi@CLOSEPATH{h }
834 \def\atfi@SETLINEJOIN{j }

```

## File embedding

```

835 \define@key{AtFi@file}{Size}{%
836   \edef\atfi@params{\atfi@params/Size #1}%
837 }

```

\atfi@embedfile

```

838 \def\atfi@embedfile#1{%
839   \ltx@ifundefined{atfi@fileobj@#1}{%
840     \begingroup
841       \let\atfi@params\ltx@empty
842       \expandafter\let\expandafter\atfi@temp
843         \csname atfi@file@#1\endcsname
844       \ifx\atfi@temp\ltx@empty
845         \let\atfi@temp\relax
846       \fi
847       \ifx\atfi@temp\relax
848         \atfi@pdftexdata{#1}%
849       \else
850         \edef\x{%
851           \noexpand\setkeys{AtFi@file}{\@nameuse{atfi@file@#1}}%
852         }%
853         \x
854       \fi
855       \ifx\atfi@params\ltx@empty
856       \else
857         \edef\atfi@params{/Params<<\atfi@params>>}%
858       \fi
859       \immediate\pdfobj stream attr {%
860         /Type/EmbeddedFile%

```

```

861      \atfi@mimetype
862      \atfi@params
863    } file {#1}%
864    \expandafter
865    \xdef\csname atfi@fileobj@#1\endcsname{\the\pdflastobj}%
866    \endgroup
867  }{%
868    % file already embedded
869  }%
870 }

```

## Annotation appearance

\atfi@xform input: \atfi@appearancebox, output: \atfi@appearanceobj

```

871 \def\atfi@xform{%
872   \immediate\pdfxform\atfi@appearancebox
873   \edef\atfi@appearanceobj{\the\pdflastxform}%
874 }

```

\atfi@xform@icon

```

875 \let\atfi@xform@icon\atfi@xform

```

\atfi@refxform

```

876 \def\atfi@refxform#1{%
877   \pdfrefxform#1\relax
878 }

```

## File attachment annotation

\atfi@insert@file@annot

```

879 \def\atfi@insert@file@annot#1{%
880   \rule{0pt}{0pt}%
881   \ifatfi@appearance
882     \def\atfi@appearance@dict{%
883       /AP<<%
884       /N \atfi@appearanceobj\space 0 R%
885       /R \atfi@appearanceobj\space 0 R%
886       /D \atfi@appearanceobj\space 0 R%
887     >>%
888   }%
889   \else
890     \let\atfi@appearance@dict\ltx@empty
891   \fi
892   \ltx@ifundefined{atfi@fsobj@#1}{%
893     \beginingroup
894     \hypersetup{unicode=false}%
895     \atfi@pdfstringdef\atfi@file{#1}%
896     \immediate\pdfobj{%
897       <<%
898       /Type/Filespec%
899       /F(\atfi@file)%
900       \ifx\atfi@ucfilespec\ltx@empty
901       \else
902       /UF(\atfi@ucfilespec)%
903       \fi
904       /EF<<%
905       /F \@nameuse{atfi@fileobj@#1} 0 R%

```



```

906         >>%
907     >>%
908     }%
909     \expandafter\xdef\csname atfi@fsobj@#1\endcsname{%
910         \the\pdflastobj
911     }%
912     \endgroup
913 }{%
914 }%
915 \pdfannot width \atfi@scale\atfi@appearancewidth
916             height \atfi@scale\atfi@appearanceheight
917             depth \atfi@scale\atfi@appearancedepth {%
918     /Subtype/FileAttachment%
919     \atfi@icon
920     \atfi@color@annot
921     \atfi@author
922     \atfi@date
923     \atfi@annotname
924     \atfi@description
925     \atfi@subject
926     \atfi@appearance@dict
927     /F \theatfi@flags
928     /FS \@nameuse{atfi@fsobj@#1} 0 R%
929 }%
930 \rule{0pt}{\atfi@appearanceheight}%
931 \rule[-\atfi@appearancedepth]{0pt}{\atfi@appearancedepth}%
932 \rule{\atfi@appearancewidth}{0pt}%
933 }
934 </pdfTeX>

```

## 2.2.2 dvips

```

935 (*dvips)
936 \NeedsTeXFormat{LaTeX2e}
937 \ProvidesFile{atfi-dvips.def}%
938 [2016/05/16 v2.8 attachfile2 driver for dvips (H0)]%

```

### Macros for graphics data

\atfi@literal

```

939 \def\atfi@literal#1{%
940     \special{ps:atfi_dict begin{#1}atfi_?pdfmark end}%
941 }

```

\atfi@header

```

942 \def\atfi@header#1{%
943     \special{! #1}%
944 }
945 \atfi@header{%
946     userdict begin 20 dict dup /atfi_dict exch def end begin%
947     /atfi_?pdfmark systemdict %
948     dup/pdfmark known%
949     {%
950         /exec get def%
951     }{%
952         /pop get def%
953     } ifelse%

```

```

954  {%
955      %
956      % x y width height atfi_re ->
957      languagelevel 2 ge {%
958          /atfi_rectfill { rectfill } bind def%
959          /atfi_rectstroke { rectstroke } bind def%
960      }{%
961          /atfi_rect {%
962              /atfi_height exch def%
963              /atfi_width exch def%
964              /atfi_x exch def%
965              /atfi_y exch def %
966              newpath %
967              atfi_x atfi_y moveto %
968              atfi_x atfi_width add atfi_y lineto %
969              atfi_x atfi_width add atfi_y atfi_height add lineto %
970              atfi_x atfi_y atfi_height add lineto %
971              closepath%
972          } bind def%
973          /atfi_rectfill {%
974              atfi_rect fill%
975          } bind def%
976          /atfi_rectstroke {%
977              atfi_rect stroke%
978          } bind def%
979      } ifelse%
980      /atfi_curveto_v {%
981          currentpoint 6 2 roll curveto%
982      } bind def%
983      /atfi_curveto_y {%
984          2 copy curveto%
985      } bind def%
986      %
987      % help macro for atfi_convert_date
988      /atfi_two {%
989          dup 10 lt%
990          {%
991              1 string cvs %
992              exch 1 add exch%
993          }{%
994              2 string cvs%
995          } ifelse %
996          putinterval%
997      } bind def%
998      %
999      % <seconds since 1970-01-01> atfi_convert_date -> (D:...Z)
1000     /atfi_convert_date {%
1001         dup%
1002         /atfi_days exch 3600 idiv 24 idiv def%
1003         % calc date part
1004         /atfi_year 1970 def%
1005         {%
1006             atfi_year 400 mod 0 eq %
1007             atfi_year 100 mod 0 ne %
1008             atfi_year 4 mod 0 eq %
1009             and or%
1010             {366} {365} ifelse %
1011             dup atfi_days lt%

```

```

1012     {%
1013         atfi_days excl sub /atfi_days excl def%
1014         /atfi_year atfi_year 1 add def%
1015     }{%
1016         exit%
1017     } ifelse%
1018 } loop%
1019 /atfi_month 1 def%
1020 /atfi_days atfi_days 1 add def %
1021 31 atfi_days lt%
1022 {%
1023     atfi_days 31 sub /atfi_days excl def%
1024     /atfi_month atfi_month 1 add def %
1025     366 eq {29} {28} ifelse dup atfi_days lt%
1026     {%
1027         atfi_days excl sub /atfi_days excl def%
1028         /atfi_month atfi_month 1 add def %
1029     31 atfi_days lt%
1030     {%
1031         atfi_days 31 sub /atfi_days excl def%
1032         /atfi_month atfi_month 1 add def %
1033     30 atfi_days lt%
1034     {%
1035         atfi_days 30 sub /atfi_days excl def%
1036         /atfi_month atfi_month 1 add def %
1037     31 atfi_days lt%
1038     {%
1039         atfi_days 31 sub /atfi_days excl def%
1040         /atfi_month atfi_month 1 add def %
1041     30 atfi_days lt%
1042     {%
1043         atfi_days 30 sub /atfi_days excl def%
1044         /atfi_month atfi_month 1 add def %
1045     31 atfi_days lt%
1046     {%
1047         atfi_days 31 sub /atfi_days excl def%
1048         /atfi_month atfi_month 1 add def %
1049     31 atfi_days lt%
1050     {%
1051         atfi_days 31 sub /atfi_days excl def%
1052         /atfi_month atfi_month 1 add def %
1053     30 atfi_days lt%
1054     {%
1055         atfi_days 30 sub /atfi_days excl def%
1056         /atfi_month atfi_month 1 add def %
1057     31 atfi_days lt%
1058     {%
1059         atfi_days 31 sub /atfi_days excl def%
1060         /atfi_month atfi_month 1 add def %
1061     30 atfi_days lt%
1062     {%
1063         atfi_days 30 sub /atfi_days excl def%
1064         /atfi_month atfi_month 1 add def %
1065     31 atfi_days lt%
1066     {%
1067         atfi_days 31 sub /atfi_days excl def%
1068         /atfi_month atfi_month 1 add def%
1069     } if%

```

```

1070         } if%
1071         } if%
1072         } if%
1073         } if%
1074         } if%
1075         } if%
1076         } if%
1077         } if%
1078         } if%
1079     } { pop } ifelse%
1080 }{ pop } ifelse %
1081 % calc time part
1082 3600 24 mul mod %
1083 dup 3600 idiv dup /atfi_hour exch def %
1084 3600 mul sub %
1085 dup 60 idiv dup /atfi_min exch def %
1086 60 mul sub %
1087 /atfi_sec exch def%
1088 (D:19700101000000Z)%
1089 dup 2 atfi_year 4 string cvs putinterval %
1090 dup 6 atfi_month atfi_two %
1091 dup 8 atfi_days atfi_two %
1092 dup 10 atfi_hour atfi_two %
1093 dup 12 atfi_min atfi_two %
1094 dup 14 atfi_sec atfi_two%
1095 } bind def %
1096 %
1097 % <filename> atfi_calc_checksum -> /Checksum <checksum>
1098 % or returns nothing, if MD5Encode is not given
1099 false %
1100 languagelevel 2 ge {%
1101     (MD5Encode)%
1102     { pop true or }%
1103     (MD5Encode) length string%
1104     /Filter %
1105     resourceforall%
1106 } if%
1107 {%
1108     /atfi_calc_checksum {%
1109         /atfi_checksum 16 string def%
1110         /atfi_file exch (r) file def%
1111         /atfi_md5sum atfi_checksum /MD5Encode filter def %
1112         % not too efficient to read and write byte by byte,
1113         % using a buffer is probably faster
1114         atfi_size {%
1115             atfi_file read%
1116             {%
1117                 atfi_md5sum exch write%
1118             } if%
1119         } repeat %
1120         atfi_md5sum closefile %
1121         atfi_file closefile%
1122         /Checksum atfi_checksum%
1123     } bind def%
1124 }{%
1125     /atfi_calc_checksum { pop } bind def%
1126 } ifelse%
1127 %

```

```

1128      /atfi_pttobp { 72.27 div 72 mul } bind def%
1129      /atfi_pdftodvipsx { 72.27 div Resolution mul } bind def%
1130      /atfi_pdftodvipsy { 72.27 div VResolution mul } bind def%
1131      %
1132    } atfi_?pdfmark %
1133  end%
1134 }

1135 \def\atfi@GSAVE{gsave }
1136 \def\atfi@GRESTORE{grestore }
1137 \def\atfi@SETLINEWIDTH{setlinewidth }
1138 \def\atfi@LINETO{lineto }
1139 \def\atfi@MOVETO{moveto }
1140 \def\atfi@STROKE{stroke }
1141 \def\atfi@FILL{fill }
1142 \def\atfi@FILLSTROKE#1#2{gsave #1 fill grestore #2 stroke }
1143 \def\atfi@SETRGBCOLORSTROKE{setrgbcolor }
1144 \def\atfi@SETRGBCOLORFILL{setrgbcolor }
1145 \def\atfi@SETGRAYSTROKE{setgray }
1146 \def\atfi@SETGRAYFILL{setgray }
1147 \def\atfi@SETCMYKCOLORSTROKE{setcmykcolor }
1148 \def\atfi@SETCMYKCOLORFILL{setcmykcolor }
1149 \def\atfi@RECTFILL{atfi_rectfill }
1150 \def\atfi@RECTSTROKEFILL#1#2#3{%
1151   #3%
1152   #1%
1153   gsave atfi_rectfill grestore %
1154   #2%
1155   #3%
1156   atfi_rectstroke %
1157   #1%
1158 }
1159 \def\atfi@SETMITERLIMIT{setmiterlimit }
1160 \def\atfi@SETFLAT{setflat }
1161 \def\atfi@SETLINECAP{setlinecap }
1162 \def\atfi@CURVETO{curveto }
1163 \def\atfi@CURVETOY{atfi_curveto_v }
1164 \def\atfi@CURVETOY{atfi_curveto_y }
1165 \def\atfi@CLOSEPATH{closepath }
1166 \def\atfi@SETLINEJOIN{setlinejoin }

1167 \newcounter{atfi@obj}
1168 \renewcommand*{\theatfi@obj}{%
1169   {atfi_obj_\number\c@atfi@obj}%
1170 }

```

**File embedding** Most values for Params dictionary found in the .atfi file have priority:

- Recalculation (md5sum, ...) is avoided.
- An external script has more possibilities than programming at PostScript level (operating system, getting the date and time values of the file with correct interpretation.
- Exception: status is called to test file existence, thus we get the value of size for free.

```

1171 \define@key{AtFi@file}{Size}{%

```

\atfi@embedfile

```
1172 \def\atfi@embedfile#1{%
1173   \ltx@ifundefined{atfi@fileobj@#1}{%
1174     \atfi@pdfstringdef\atfi@psfilename{#1}%
1175     \stepcounter{atfi@obj}%
1176     \expandafter\xdef\csname atfi@fileobj@#1\endcsname{\theatfi@obj}%
1177     \begingroup
1178       \let\atfi@params\ltx@empty
1179       \expandafter\let\expandafter\atfi@temp
1180         \csname atfi@file@#1\endcsname
1181       \ifx\atfi@temp\ltx@empty
1182         \let\atfi@temp\relax
1183       \fi
1184       \ifx\atfi@temp\relax
1185         \atfi@pdftexdata{#1}%
1186       \else
1187         \edef\x{%
1188           \noexpand\setkeys{AtFi@file}{\@nameuse{atfi@file@#1}}%
1189         }%
1190         \x
1191       \fi
1192       \atfi@literal{%
1193         /atfi_filename(\atfi@psfilename)def %
1194         atfi_filename status%
1195       }%
```

ok: file found

save parameters of status command

```
1196         /atfi_created exch def%
1197         /atfi_referenced exch def%
1198         /atfi_size exch def %
1199         pop %
```

drop parameter "pages" (storage space), never needed

ghostscript:

```
created:      stat.st_ctime
referenced:   stat.st_mtime
stat.st_ctime: interpretation depends on operating system:
               * unix: inode change time (not interesting)
               * win32: probably creation time
                 --> /CreationDate
stat.st_mtime: modification time --> /ModDate
time values are seconds since 1970-01-01, GMT
```

TODO: ghostscript offers "getenv" for getting the value  
of an environment variable. That could be used to  
to detect windows and setting the /CreationDate entry.  
TODO: how are these values interpreted by other distiller  
programs?

```
1200     [%
1201       /_objdef \theatfi@obj
1202       /type/stream%
1203     /OBJ pdfmark%
1204     [%
1205       \theatfi@obj
1206     <<%
1207       /Type/EmbeddedFile%
1208       \atfi@mimetype
1209     /Params%
```

```

1210      <<%
1211      \atfi@params
1212      %
1213      /Size atfi_size%
1214      %
1215      /product where%
1216      {%
1217      pop %

check for ghostscript

1218      product (Ghostscript) search%
1219      {%
1220      pop pop pop %

ghostscript is running

1221      \ifatfi@creationdate
1222      \else
1223      false % TODO: test for windows
1224      {%
1225      /CreationDate atfi_created atfi_convert_date%
1226      } if%
1227      \fi
1228      \ifatfi@moddate
1229      \else
1230      /ModDate atfi_referenced atfi_convert_date%
1231      \fi
1232      } if%

look for MD5Encode filter and calculate CheckSum

1233      } if %
1234      \ifatfi@checksum
1235      \else
1236      atfi_filename atfi_calc_checksum%
1237      \fi
1238      >>%
1239      >>%
1240      /PUT pdfmark%
1241      [%
1242      \theatfi@obj
1243      atfi_filename (r) file%
1244      /PUT pdfmark%
1245      [%
1246      \theatfi@obj
1247      /CLOSE pdfmark%
1248      }{%

error: file not found
currently nothing is done

1249      } ifelse%
1250      }%
1251      \endgroup
1252      }{%

file already embedded

1253      }%
1254      }

```

**Annotation appearance** output: \atfi@appearanceobj  
input: \atfi@appearancebox, \atfi@icon@icon

atfi@xfrom@icon

```
1255 \def\atfi@xform@icon{%
1256   \stepcounter{atfi@obj}%
1257   \edef\atfi@appearanceobj{\theatfi@obj}%
1258   \atfi@literal{%
1259     [%
1260       /_objdef \atfi@appearanceobj
1261       /BBox[%
1262         0 %
1263         0 %
1264         \strip@pt\wd\atfi@appearancebox\space atfi_pttobp %
1265         \strip@pt\dimexpr\dp\atfi@appearancebox
1266         +\ht\atfi@appearancebox\relax\space atfi_pttobp%
1267       ]%
1268       /BP pdfmark %
1269       \csname atfi@acro\atfi@icon@icon @data\endcsname
1270       [%
1271       /EP pdfmark%
1272     }%
1273 }
```

\atfi@xform output: \atfi@appearanceobj, input: \atfi@appearancebox

```
1274 \def\atfi@xform{%
1275   \stepcounter{atfi@obj}%
1276   \edef\atfi@appearanceobj{\theatfi@obj}%
1277   \begin{group}
1278     \setbox\ltx@zero=\hbox{%
1279       \atfi@literal{%
1280         [%
1281           /_objdef \atfi@appearanceobj
1282           /BBox[%
1283             currentpoint %
1284             \strip@pt\dp\atfi@appearancebox\space sub %
1285             currentpoint %
1286             exch \strip@pt\wd\atfi@appearancebox\space add %
1287             exch \strip@pt\ht\atfi@appearancebox\space add%
1288           ]%
1289           /BP pdfmark %
1290           gsave %
1291           currentpoint %
1292           2 copy translate %
1293           72.27 Resolution div 72.27 VResolution div neg scale %
1294           exch neg exch neg translate%
1295         }%
1296         \usebox{\atfi@appearancebox}%
1297         \atfi@literal{%
1298           grestore%
1299           [%
1300           /EP pdfmark%
1301         }%
1302       }%
1303       % do not allocate any space for xobject definition
1304       \dp\ltx@zero=\z@
1305       \ht\ltx@zero=\z@
1306       \wd\ltx@zero=\z@
1307       \mbox{\usebox\ltx@zero}%
1308     \end{group}
1309 }
```



\atfi@refxform

```
1310 \def\atfi@refxform#1{%
1311   \raisebox{-\atfi@appearancedepth}{%
1312     \atfi@literal{%
1313       gsave %
1314         currentpoint translate %
1315         Resolution 72 div VResolution neg 72 div scale%
1316         [#1 /SP pdfmark % hash-ok
1317       grestore%
1318     }%
1319   \makebox[\atfi@appearancewidth]{}%
1320 }%
1321 \rule{0pt}{\atfi@appearanceheight}%
1322 }
```

### File attachment annotation

\atfi@insert@file@annot

```
1323 \def\atfi@insert@file@annot#1{%
1324   \rule{0pt}{0pt}%
1325   \ifatfi@appearance
1326     \def\atfi@appearance@dict{%
1327       /AP<<%
1328       /N \atfi@appearanceobj
1329       /R \atfi@appearanceobj
1330       /D \atfi@appearanceobj
1331       >>%
1332     }%
1333   \else
1334     \let\atfi@appearance@dict\ltx@empty
1335   \fi
1336   \ltx@ifundefined{atfi@fsobj@#1}{%
1337     \stepcounter{atfi@obj}%
1338     \expandafter
1339     \xdef\csname atfi@fsobj@#1\endcsname{\theatfi@obj}%
1340     \begingroup
1341       \hypersetup{unicode=false}%
1342       \atfi@pdfstringdef\atfi@file{#1}%
1343       \atfi@literal{%
1344         [%
1345           /_objdef \theatfi@obj
1346           /type/dict%
1347           /OBJ pdfmark%
1348         [%
1349           \theatfi@obj
1350         <<%
1351           /Type/Filespec%
1352           /F(\atfi@file)%
1353           \ifx\atfi@ucfilespec\ltx@empty
1354             \else
1355               /UF(\atfi@ucfilespec)%
1356             \fi
1357           /EF<<%
1358           /F \csname atfi@fileobj@#1\endcsname
1359         >>%
1360       >>%
1361       /PUT pdfmark%
1362     }%
```

```

1363 \endgroup
1364 }{%
1365 }%
1366 \atfi@literal{%
1367 [%
1368 /Subtype/FileAttachment%
1369 \atfi@icon
1370 \atfi@color@annot
1371 \atfi@author
1372 \atfi@date
1373 \atfi@annotname
1374 \atfi@description
1375 \atfi@subject
1376 \atfi@appearance@dict
1377 /F \theatfi@flags
1378 /FS \csname atfi@fsobj@#1\endcsname
1379 /Rect[%
1380 currentpoint %
1381 \strip@pt\dimexpr\atfi@scale\atfi@appearancedepth\relax
1382 \space atfi_pdftodvipsy add %
1383 currentpoint %
1384 exch %
1385 \strip@pt\dimexpr\atfi@scale\atfi@appearancewidth\relax
1386 \space atfi_pdftodvipsx add %
1387 exch %
1388 \strip@pt\dimexpr\atfi@scale\atfi@appearanceheight\relax
1389 \space atfi_pdftodvipsy sub %
1390 ]%
1391 /ANN pdfmark%
1392 }%
1393 \rule{0pt}{\atfi@appearanceheight}%
1394 \rule[-\atfi@appearancedepth]{0pt}{\atfi@appearancedepth}%
1395 \rule{\atfi@appearancewidth}{0pt}%
1396 }
1397 (/dvips)

```

### 2.2.3 dvipdfmx

```

1398 (*dvipdfmx)
1399 \NeedsTeXFormat{LaTeX2e}
1400 \ProvidesFile{atfi-dvipdfmx.def}%
1401 [2016/05/16 v2.8 attachfile2 driver for dvipdfmx/XeTeX (H0)]%

```

#### Macros for graphics data

\atfi@special

```

1402 \def\atfi@special#1{%
1403 \special{pdf:#1}%
1404 }

```

\atfi@literal

```

1405 \def\atfi@literal#1{%
1406 \atfi@special{content #1}%
1407 }

1408 \def\atfi@GSAVE{q }
1409 \def\atfi@GRESTORE{Q }
1410 \def\atfi@SETLINEWIDTH{w }

```

```

1411 \def\atfi@LINETO{l }
1412 \def\atfi@MOVETO{m }
1413 \def\atfi@STROKE{S }
1414 \def\atfi@FILL{f }
1415 \def\atfi@FILLSTROKE#1#2{#1#2B }
1416 \def\atfi@SETRGBCOLORSTROKE{RG }
1417 \def\atfi@SETRGBCOLORFILL{rg }
1418 \def\atfi@SETGRAYSTROKE{G }
1419 \def\atfi@SETGRAYFILL{g }
1420 \def\atfi@SETCMYKCOLORSTROKE{K }
1421 \def\atfi@SETCMYKCOLORFILL{k }
1422 \def\atfi@RECTFILL{re f }
1423 \def\atfi@RECTSTROKEFILL#1#2#3{#1#2#3re B }
1424 \def\atfi@SETMITERLIMIT{M }
1425 \def\atfi@SETFLAT{i }
1426 \def\atfi@SETLINECAP{J }
1427 \def\atfi@CURVETO{c }
1428 \def\atfi@CURVETOv{v }
1429 \def\atfi@CURVETOY{y }
1430 \def\atfi@CLOSEPATH{h }
1431 \def\atfi@SETLINEJOIN{j }

1432 \newcounter{atfi@obj}
1433 \renewcommand*{\theatfi@obj}{%
1434   @atfi_obj_ \number\c@atfi@obj
1435 }

```

### File embedding

```

1436 \define@key{AtFi@file}{Size}{%
1437   \edef\atfi@params{\atfi@params/Size #1}%
1438 }

```

\atfi@embedfile

```

1439 \def\atfi@embedfile#1{%
1440   \ltx@ifundefined{atfi@fileobj@#1}{%
1441     \stepcounter{atfi@obj}%
1442     \begingroup
1443       \let\atfi@params\ltx@empty
1444       \expandafter\let\expandafter\atfi@temp
1445       \csname atfi@file@#1\endcsname
1446       \ifx\atfi@temp\ltx@empty
1447         \let\atfi@temp\relax
1448       \fi
1449       \ifx\atfi@temp\relax
1450         \atfi@pdftexdata{#1}%
1451       \else
1452         \edef\x{%
1453           \noexpand\setkeys{AtFi@file}{\@nameuse{atfi@file@#1}}%
1454         }%
1455         \x
1456       \fi
1457       \ifx\atfi@params\ltx@empty
1458       \else
1459         \edef\atfi@params{/Params<<\atfi@params>>}%
1460       \fi
1461       \edef\atfi@FILE{#1}%
1462       \filename@parse\atfi@FILE
1463       \ifx\filename@area\ltx@empty

```

```

1464      \edef\atfi@FILE{./\atfi@FILE}%
1465      \fi
1466      \EdefEscapeString\atfi@FILE{\atfi@FILE}%
1467      \atfi@special{fstream %
1468        \theatfi@obj
1469        (\atfi@FILE)%
1470        <<%
1471          /Type/EmbeddedFile%
1472          \atfi@mimetype
1473          \atfi@params
1474          >>%
1475        }%
1476      \atfi@special{close \theatfi@obj}%
1477      \expandafter
1478      \xdef\csname atfi@fileobj@#1\endcsname{\theatfi@obj}%
1479      \endgroup
1480    }{%
1481      % file already embedded
1482    }%
1483 }

```

### Annotation appearance

\atfi@xform input: \atfi@appearancebox, output: \atfi@appearanceobj

```

1484 \def\atfi@xform{%
1485   \stepcounter{atfi@obj}%
1486   \smash{%
1487     \rlap{%
1488       \atfi@special{bobj \theatfi@obj\space
1489         width \the\wd\atfi@appearancebox\space
1490         height \the\ht\atfi@appearancebox\space
1491         depth \the\dp\atfi@appearancebox
1492       }%
1493       \usebox\atfi@appearancebox
1494       \atfi@special{exobj}%
1495     }%
1496   }%
1497   \edef\atfi@appearanceobj{\theatfi@obj}%
1498 }

```

\atfi@xform@icon

```

1499 \let\atfi@xform@icon\atfi@xform

```

\atfi@refxform

```

1500 \def\atfi@refxform#1{%
1501   \leavevmode
1502   \atfi@special{uxobj #1}%
1503 }

```

### File attachment annotation

\atfi@insert@file@annot

```

1504 \def\atfi@insert@file@annot#1{%
1505   \rule{0pt}{0pt}%
1506   \ifatfi@appearance
1507     \def\atfi@appearance@dict{%
1508       /AP<<%

```

```

1509         /N \atfi@appearanceobj
1510         /R \atfi@appearanceobj
1511         /D \atfi@appearanceobj
1512     >>%
1513 }%
1514 \else
1515     \let\atfi@appearance@dict\ltx@empty
1516 \fi
1517 \ltx@ifundefined{atfi@fsobj@#1}{%
1518     \beginingroup
1519         \ifxetex
1520             \let\atfi@temp\Hy@Warning
1521             \let\Hy@Warning\ltx@gobble
1522         \fi
1523         \hypersetup{unicode=false}%
1524         \ifxetex
1525             \let\Hy@Warning\atfi@temp
1526         \fi
1527         \atfi@pdfstringdef\atfi@file{#1}%
1528         \stepcounter{atfi@obj}%
1529         \atfi@special{obj \theatfi@obj <<%
1530             /Type/Filespec%
1531             /F(\atfi@file)%
1532             \ifx\atfi@ucfilespec\ltx@empty
1533             \else
1534                 /UF(\atfi@ucfilespec)%
1535             \fi
1536             /EF<<%
1537             /F \@nameuse{atfi@fileobj@#1}%
1538             >>%
1539         >>%
1540     }%
1541     \expandafter\xdef\csname atfi@fsobj@#1\endcsname{%
1542         \theatfi@obj
1543     }%
1544 \endgroup
1545 }{%
1546 }%
1547 \beginingroup
1548     \dimen@=\atfi@scale\atfi@appearancewidth
1549     \edef\atfi@rule{width \the\dimen@}%
1550     \dimen@=\atfi@scale\atfi@appearanceheight
1551     \edef\atfi@rule{\atfi@rule\space height \the\dimen@}%
1552     \dimen@=\atfi@scale\atfi@appearancedepth
1553     \edef\atfi@rule{\atfi@rule\space depth \the\dimen@}%
1554     \atfi@special{ann \atfi@rule
1555     <<%
1556         /Subtype/FileAttachment%
1557         \atfi@icon
1558         \atfi@color@annot
1559         \atfi@author
1560         \atfi@date
1561         \atfi@annotname
1562         \atfi@description
1563         \atfi@subject
1564         \atfi@appearance@dict
1565         /F \theatfi@flags
1566         /FS \@nameuse{atfi@fsobj@#1}%

```

```

1567     >>%
1568   }%
1569 \endgroup
1570 \rule{0pt}{\atfi@appearanceheight}%
1571 \rule[-\atfi@appearancedepth]{0pt}{\atfi@appearancedepth}%
1572 \rule{\atfi@appearancewidth}{0pt}%
1573 }
1574 </dvipdfmx>

```

## 2.3 Perl script pdfatfi.pl

```

1575 (*pdfatfi)

1576 #!/usr/bin/env perl
1577 use strict;
1578 $^W=1; # turn warning on
1579 #
1580 # pdfatfi.pl
1581 #
1582 # Copyright (C) 2005-2010, 2012 Heiko Oberdiek.
1583 #
1584 # This work may be distributed and/or modified under the
1585 # conditions of the LaTeX Project Public License, either
1586 # version 1.3c of this license or (at your option) any later
1587 # version. This version of this license is in
1588 #   http://www.latex-project.org/lppl/lppl-1-3c.txt
1589 # and the latest version of this license is in
1590 #   http://www.latex-project.org/lppl.txt
1591 # and version 1.3 or later is part of all distributions of
1592 # LaTeX version 2005/12/01 or later.
1593 #
1594 # This work has the LPPL maintenance status "maintained".
1595 #
1596 # This Current Maintainer of this work is Heiko Oberdiek.
1597 #
1598 # See file "attachfile2.pdf" for a list of files that belong to
1599 # this project.
1600 #
1601 # This file "pdfatfi.pl" may be renamed to "pdfatfi"
1602 # for installation purposes.
1603 #
1604 my $prj      = 'pdfatfi';
1605 my $file     = "$prj.pl";
1606 my $program  = uc($&) if $file =~ /\w+/;
1607 my $version  = "2.7";
1608 my $date     = "2016/05/16";
1609 my $author   = "Heiko Oberdiek";
1610 my $copyright = "Copyright (c) 2005-2010, 2012 by $author.";
1611 #
1612 # History:
1613 #   2005/05/21 v1.0: First release.
1614 #   2006/08/16 v2.2: Included in DTX file of attachfile2.dtx.
1615 #   2010/09/27 v2.6: Keys ModDateTZ and CreationDateTZ added.
1616 #   2016/05/16 v2.8: Option --version added.
1617 #
1618
1619 use POSIX qw(strftime); # %z is used (GNU)
1620 use Digest::MD5;

```

```

1621
1622 ### program identification
1623 my $title = "$program $version, $date - $copyright\n";
1624
1625 ### error strings
1626 my $Error = "!!! Error: "; # error prefix
1627
1628 ### variables
1629 my $atffile;
1630
1631 ### option variables
1632 my @bool = ("false", "true");
1633 $::opt_help      = 0;
1634 $::opt_quiet     = 0;
1635 $::opt_debug     = 0;
1636 $::opt_verbose   = 0;
1637 $::opt_version   = 0;
1638
1639 my $usage = <<"END_OF_USAGE";
1640 ${title}Syntax:  \L$program\E [options] <file[.atfi]>
1641 Function: Help program for LaTeX package "attachfile2".
1642 Options:                                     (defaults:)
1643 --help          print usage
1644 --version       print version number
1645 --(no)quiet     suppress messages          ($bool[$::opt_quiet])
1646 --(no)verbose   verbose printing          ($bool[$::opt_verbose])
1647 --(no)debug     debug informations        ($bool[$::opt_debug])
1648 END_OF_USAGE
1649
1650 ### process options
1651 my @OrgArgv = @ARGV;
1652 use Getopt::Long;
1653 GetOptions(
1654   "help!",
1655   "version!",
1656   "quiet!",
1657   "debug!",
1658   "verbose!",
1659 ) or die $usage;
1660 !$::opt_help or die $usage;
1661 if ($::opt_version) {
1662   print "$prj $date v$version\n";
1663   exit(0);
1664 }
1665 @ARGV == 1 or die "$usage$Error Missing jobname!\n";
1666
1667 $::opt_quiet = 0 if $::opt_verbose;
1668
1669 print $title unless $::opt_quiet;
1670
1671 ### get jobname
1672 $atffile = $ARGV[0];
1673 if (!-f $atffile && -f "$atffile.atfi") {
1674   $atffile .= ".atfi";
1675 }
1676 -f $atffile or die "$Error File '$atffile' not found!\n";
1677
1678 print "* job file      = $atffile\n" if $::opt_verbose;

```

```

1679
1680 if ($::opt_debug) {
1681     print <<"END_DEB";
1682 * OSNAME: $^O
1683 * PERL_VERSION: $]
1684 * ARGV: @OrgArgv
1685 END_DEB
1686 }
1687
1688 my $tmpfile = $atffile . ".tmp";
1689
1690 my $timezone = strftime "%z", localtime;
1691
1692 sub gettz ($) {
1693     my $time = shift;
1694     my $tz = strftime "%z", localtime($time);
1695     return '' unless $tz;
1696     return 'Z' if $tz eq '+0000';
1697     $tz =~ s/^( [+ - ] \d \d ) ( \d \d ) $ / $1 '$2' /;
1698     return $tz;
1699 }
1700
1701 open(IN, $atffile) or die "$Error Cannot open '$atffile'!\n";
1702 open(OUT, ">$tmpfile") or die "$Error Cannot write '$tmpfile'!\n";
1703
1704 while(<IN>) {
1705     # timezone
1706     if (s/^(\\attachfile\\@timezone\\{ }.*\\})$/$1$timezone$2/) {
1707         print "* timezone      = $timezone\n" if $::opt_verbose;
1708     }
1709
1710     # file entry
1711     if (/^(\\attachfile\\@file\\[[^\\]]*\\){(.*\\)}$/) {
1712         my $hexfile = $1;
1713         my $file = pack('H*', $hexfile);
1714         my @s = stat($file);
1715         if (@s == 0) {
1716             print "!!! Warning: File '$file' not found!\n";
1717         }
1718         else {
1719             my $size = @s[7];
1720             my $mtime = @s[9];
1721             my $ctime = @s[10]; # inode change time
1722
1723             my ($sec, $min, $hour, $mday, $mon, $year) =
1724                 localtime($mtime);
1725             my $moddate = sprintf("%04d%02d%02d%02d%02d%02d",
1726                                     $year + 1900, $mon + 1, $mday,
1727                                     $hour, $min, $sec);
1728             my $moddatetz = 'D:' . $moddate . gettz($mtime);
1729
1730             # Manual page "perlport" says that "ctime" is creation
1731             # time instead of inode change time for "Win32" and
1732             # "Mac OS", but it is unsupported for "Mac OS X".
1733             my $creationdate = "";
1734             my $creationdatetz = "";
1735             if ($^O eq 'MSWin32') { # cygwin?
1736                 ($sec, $min, $hour, $mday, $mon, $year) =

```



```

1737         localtime($ctime);
1738         $creationdate = sprintf("%04d%02d%02d%02d%02d",
1739                                 $year + 1900, $mon + 1, $mday,
1740                                 $hour, $min, $sec);
1741         $creationdatetz =
1742             'D:' . $creationdate . gettz($ctime);
1743     }
1744
1745     # md5 checksum
1746     my $checksum = "";
1747     my $ctx = Digest::MD5->new;
1748     if (open(FILE, $file)) {
1749         $ctx->addfile(*FILE);
1750         $checksum = $ctx->hexdigest;
1751         close(FILE);
1752     }
1753     else {
1754         print "!!! Warning: File '$file' cannot be read,"
1755             . " dropping checksum!\n";
1756     }
1757
1758     $_ = "\\attachfile\\@file["
1759         . "ModDateTZ=$moddatetz"
1760         . ",Size=$size"
1761         . ($checksum ? ",Checksum=$checksum" : "")
1762         . ($creationdatetz ?
1763             ",CreationDateTZ=$creationdatetz" :
1764             ($creationdate ?
1765                 ",CreationDate=$creationdate" : ""))
1766         . "]{ $hexfile}\n";
1767     if ($::opt_verbose) {
1768         print "* file entry    = $file\n";
1769         print "  size          = $size\n";
1770         print "  moddate         = $moddate\n";
1771         print "  creationdate    = $creationdate\n";
1772         if $creationdate;
1773         print "  checksum       = $checksum\n" if $checksum;
1774     }
1775 }
1776 }
1777
1778     print OUT $_;
1779 }
1780
1781 close(IN);
1782 close(OUT);
1783
1784 unlink($atffile) or die "$Error Cannot delete old '$atffile'!\n";
1785 rename $tmpfile, $atffile
1786     or die "$Error Cannot move '$tmpfile' to '$atffile'!\n";
1787
1788 print "*** ready. ***\n" unless $::opt_quiet;
1789
1790 __END__
1791 </pdfatfi>

```

## 3 Installation

### 3.1 Download

**Package.** This package is available on CTAN<sup>1</sup>:

[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
```

**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
atfi-dvips.def  → tex/latex/oberdiek/atfi-dvips.def
atfi-pdftex.def → tex/latex/oberdiek/atfi-pdftex.def
atfi-dvipdfmx.def → tex/latex/oberdiek/atfi-dvipdfmx.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`.

---

<sup>1</sup><http://ctan.org/pkg/attachfile2>

### 3.4 Refresh file name databases

If your  $\text{T}_{\text{E}}\text{X}$  distribution ( $\text{t}_{\text{E}}\text{X}$ ,  $\text{m}_{\text{ik}}\text{T}_{\text{E}}\text{X}$ , ...) relies on file name databases, you must refresh these. For example,  $\text{t}_{\text{E}}\text{X}$  users run `texhash` or `mktextlsr`.

### 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  $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ .** The `.dtx` chooses its action depending on the format:

**plain  $\text{T}_{\text{E}}\text{X}$ :** Run `docstrip` and extract the files.

**$\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ :** Generate the documentation.

If you insist on using  $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$  for `docstrip` (really, `docstrip` does not need  $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ ), 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 `pdf $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$` :

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

## 4 Catalogue

The following XML file can be used as source for the  [\$\text{T}\_{\text{E}}\text{X}\$  Catalogue](#). The elements `caption` and `description` are imported from the original XML file from the Catalogue. The name of the XML file in the Catalogue is `attachfile2.xml`.

```
1792 <*catalogue>
1793 <?xml version='1.0' encoding='us-ascii'?>
1794 <!DOCTYPE entry SYSTEM 'catalogue.dtd'>
```

```

1795 <entry datestamp='$Date$' modifier='$Author$' id='attachfile2'>
1796   <name>attachfile2</name>
1797   <caption>Attach files into PDF.</caption>
1798   <authorref id='auth:oberdiek' />
1799   <copyright owner='Heiko Oberdiek' year='2005-2010,2012' />
1800   <license type='lpl1.3' />
1801   <version number='2.8' />
1802   <description>
1803     This package can be used to attach files to a PDF document.
1804     It is a further development of Scott Pakin's package
1805     <xref refid='attachfile'>attachfile</xref> for
1806     <xref refid='pdftex'>pdfTeX</xref>. Apart from bug fixes,
1807     this package adds support for dvips,
1808     some new options, and gets and writes meta information data about
1809     the attached files.
1810   <p/>
1811   The package is part of the <xref refid='oberdiek'>oberdiek</xref>
1812   bundle.
1813 </description>
1814 <documentation details='Package documentation'
1815   href='ctan:/macros/latex/contrib/oberdiek/attachfile2.pdf' />
1816 <ctan file='true' path='/macros/latex/contrib/oberdiek/attachfile2.dtx' />
1817 <miktex location='oberdiek' />
1818 <texlive location='oberdiek' />
1819 <install path='/macros/latex/contrib/oberdiek/oberdiek.tds.zip' />
1820 </entry>
1821 </catalogue>

```

## 5 References

- [1] Scott Pakin: *The attachfile package*; 2005/02/20 v1.2; [CTAN:macros/latex/contrib/attachfile/](http://ctan.org/macros/latex/contrib/attachfile/).
- [2] Heiko Oberdiek: *The embedfile package*; 2006/08/16 v1.0; [CTAN:macros/latex/contrib/oberdiek/embedfile.pdf](http://ctan.org/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](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/>.

## 6 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.
- $\epsilon$ -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.

#### [2009/09/25 v2.5]

- New option `ucfilespec` (since PDF 1.7).
- Fix: `hyperref`’s option `unicode` is disabled for file names except for `ucfilespec`.

#### [2010/09/27 v2.6]

- Support for `dvipdfmx` added, new option `dvipdfmx` and alias option `xetex`. (Thanks Will Robertson for pointing to `\special{pdf:fstream ...}`).
- New option `driverfallback`.
- All options except driver options are local options, that means they are ignored as global options.
- Some options are disabled after they are used (driver options, `draft`, `final`, `nofiles`).
- Driver files renamed from `atfi<driver>.def` to `atfi-<driver>.def`.
- Bug fix: `\textattachfile` now adds an entry into the `.atfi` file.
- Program `pdfatfi.pl` sets modification and creation time with time zone, because the time zone offset might differ with the file date.

[2012/04/18 v2.7]

- Program pdfatfi.pl: Option version added.

[2016/05/16 v2.8]

- Documentation updates.

## 7 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; plain numbers refer to the code lines where the entry is used.

Symbols	
<code>\#</code> .....	24, 59
<code>\\$</code> .....	26
<code>\%</code> .....	27, 59
<code>\&amp;</code> .....	28, 59
<code>\(</code> .....	29
<code>\)</code> .....	30
<code>\*</code> .....	32, 60
<code>\+</code> .....	33, 60, 107
<code>\-</code> .....	107
<code>\.</code> .....	23, 60, 107
<code>\?</code> .....	34
<code>\@PackageInfoNoLine</code> .....	793
<code>\@ehc</code> .....	257, 540
<code>\@makeother</code> .....	745, 754
<code>\@namedef</code> .....	542
<code>\@nameuse</code> .....	645, 672, 694, 696, 698, 851, 905, 928, 1188, 1453, 1537, 1566
<code>\[</code> .....	25
<code>\]</code> .....	37, 75, 531
<code>\{</code> .....	35, 65, 80, 747, 756
<code>\}</code> .....	36, 65, 85, 748, 757
<code>\^</code> .....	22, 63
<code>\ </code> .....	31, 65
<code>\~</code> .....	38, 65
A	
<code>\addtocounter</code> .....	713, 717
<code>\atfi@acroGraph</code> .....	<u>351</u>
<code>\atfi@acroGraph@data</code> .....	<u>327</u> , 353
<code>\atfi@acroPaperclip</code> .....	<u>413</u>
<code>\atfi@acroPaperclip@data</code> ...	<u>356</u> , 415
<code>\atfi@acroPushPin</code> .....	<u>455</u>
<code>\atfi@acroPushPin@data</code> ....	<u>418</u> , 457
<code>\atfi@acroTag</code> .....	<u>525</u>
<code>\atfi@acroTag@data</code> .....	<u>460</u> , 527
<code>\atfi@annotname</code> .....	..... <u>179</u> , 181, 923, 1373, 1561
<code>\atfi@appearance@dict</code> .....	882, 890, 926, 1326, 1334, 1376, 1507, 1515, 1564
<code>\atfi@appearancebox</code> .....	..... <u>668</u> , 671, 676, 680, 684, 703, 704, 705, 706, 872, 1264, 1265, 1266, 1284, 1286, 1287, 1296, 1489, 1490, 1491, 1493
<code>\atfi@appearancedepth</code> .....	..... <u>667</u> , 697, 706, 917, 931, 1311, 1381, 1394, 1552, 1571
<code>\atfi@appearanceheight</code> .....	..... <u>666</u> , 695, 705, 916, 930, 1321, 1388, 1393, 1550, 1570
<code>\atfi@appearanceobj</code> .....	..... 689, 699, 873, 884, 885, 886, 1257, 1260, 1276, 1281, 1328, 1329, 1330, 1497, 1509, 1510, 1511
<code>\atfi@appearancewidth</code> .....	..... <u>665</u> , 693, 704, 768, 915, 932, 1319, 1385, 1395, 1548, 1572
<code>\atfi@attachfile</code> .....	<u>652</u> , 749
<code>\atfi@author</code> .....	<u>183</u> , 185, 921, 1371, 1559
<code>\atfi@checksumtrue</code> .....	548
<code>\atfi@CLOSEPATH</code> .....	..... 477, 497, 833, 1165, 1430
<code>\atfi@color@annot</code> .....	131, 920, 1370, 1558
<code>\atfi@color@inline</code> .....	..... 131, 345, 394, 437, 499
<code>\atfi@color@tex</code> .....	131, 300, 735
<code>\atfi@CR</code> .....	<u>68</u> , 75
<code>\atfi@creationdatetrue</code> ....	555, 565
<code>\atfi@CURVETO</code> ..	<u>473</u> , 474, 475, 476, 493, 494, 495, 496, 830, 1162, 1427
<code>\atfi@CURVETOY</code> ....	364, 367, 369, 371, 373, 375, 380, 383, 385, 387, 389, 391, 397, 400, 402, 404, 406, 408, 520, 831, 1163, 1428
<code>\atfi@CURVETOY</code> ....	365, 368, 370, 372, 374, 376, 381, 384, 386, 388, 390, 392, 398, 401, 403, 405, 407, 409, 521, 832, 1164, 1429
<code>\atfi@date</code> .....	<u>152</u> , 162, 163, 922, 1372, 1560
<code>\atfi@DefNoValueName</code> .....	..... <u>170</u> , 181, 185, 189, 193
<code>\atfi@description</code> .....	..... <u>187</u> , 189, 924, 1374, 1562
<code>\atfi@DisableOption</code> ....	<u>245</u> , 289, 290, 291, 292, 293, 309, 310, 651

<code>\atfi@drafttrue</code> .....	284	836, 841, 855, 857, 862, 1178,
<code>\atfi@driver</code> .....	208, 213, 216,	1211, 1437, 1443, 1457, 1459, 1473
	219, 222, 250, 252, 253, 260,	
	262, 265, 267, 269, 271, 279, 326	<code>\atfi@PatQuotedString</code> .....
<code>\atfi@driver@dvipdfmx</code> .....		73, 108
	211, 219, 222, 260, 269	<code>\atfi@PatToken</code> .....
<code>\atfi@driver@dvi</code> .....	210, 216, 267	55, 105, 108
<code>\atfi@driver@pdftex</code> .....	209, 213, 250, 252	<code>\atfi@pdfstringdef</code> .....
<code>\atfi@driver@fallback</code> ..	263, 266, 274	165, 175, 204, 895, 1174, 1342, 1527
<code>\atfi@dummy@pushpin</code> .....	312, 319	<code>\atfi@pdftexdata</code> .....
<code>\atfi@embedfile</code> .....		593, 848, 1185, 1450
	659, 731, 838, 1172, 1439	<code>\atfi@psfilename</code> .....
<code>\atfi@FILE</code> .....	1461, 1462, 1464, 1466, 1469	1174, 1193
<code>\atfi@file</code> .....		<code>\atfi@RECTFILL</code> .....
	895, 899, 1342, 1352, 1527, 1531	330, 342, 343,
<code>\atfi@filename</code> .....	538, 539, 542	344, 346, 347, 348, 825, 1149, 1422
<code>\atfi@FILL</code> .....	478, 816, 1141, 1414	<code>\atfi@RECTSTROKEFILL</code> .....
<code>\atfi@FILLSTROKE</code> .....		334, 826, 1150, 1423
	436, 498, 817, 818, 1142, 1415	<code>\atfi@refxform</code> ..
<code>\atfi@flags@to@int</code> .....	661, 710, 739	766, 876, 1310, 1500
<code>\atfi@GRESTORE</code> .....		<code>\atfi@rule</code> .....
	349, 411, 453, 523, 811, 1136, 1409	1549, 1551, 1553, 1554
<code>\atfi@GSAVE</code> .....		<code>\atfi@scale</code> .....
	328, 357, 419, 461, 810, 1135, 1408	915, 916, 917,
<code>\atfi@header</code> .....	942, 945	1381, 1385, 1388, 1548, 1550, 1552
<code>\atfi@hours</code> .....	145, 149, 156	<code>\atfi@seconds</code> .....
<code>\atfi@icon</code> .....	125, 919, 1369, 1557	151, 158
<code>\atfi@icon@icon</code> .....		<code>\atfi@set@appearance</code> .....
	126, 670, 672, 675, 679, 683,	702, 732
	688, 694, 696, 698, 700, 766, 1269	<code>\atfi@set@appearance@icon</code> .....
<code>\atfi@insert@file@cannot</code> .....		660, 669, 763
	662, 740, 879, 1323, 1504	<code>\atfi@SETCMYKCOLORFILL</code> .....
<code>\atfi@LINETO</code> ...	366, 382, 399, 422,	824, 1148, 1421
	423, 424, 425, 426, 427, 428,	<code>\atfi@SETCMYKCOLORSTROKE</code> .....
	429, 430, 431, 432, 433, 434,	823, 1147, 1420
	435, 443, 444, 445, 449, 450,	<code>\atfi@SETFLAT</code> .....
	451, 464, 465, 466, 467, 468,	331, 359, 479, 828, 1160, 1425
	469, 470, 471, 484, 485, 486,	<code>\atfi@SETGRAYFILL</code> .....
	487, 488, 489, 490, 491, 505,	329, 335, 341, 462, 822, 1146, 1419
	508, 511, 516, 519, 813, 1138, 1411	<code>\atfi@SETGRAYSTROKE</code> .....
<code>\atfi@literal</code> .....	353, 415,	337, 358, 378, 439,
	457, 527, 809, 939, 1192, 1258,	441, 447, 501, 513, 821, 1145, 1418
	1279, 1297, 1312, 1343, 1366, 1405	<code>\atfi@SETLINECAP</code> .....
<code>\atfi@ltx@leftbracechar</code> .....	79	361, 829, 1161, 1426
<code>\atfi@Match</code> .....	17, 104	<code>\atfi@SETLINEJOIN</code> .....
<code>\atfi@mimetype</code> .....	99, 101, 102, 104, 111,	482, 834, 1166, 1431
	115, 118, 120, 121, 861, 1208, 1472	<code>\atfi@SETLINEWIDTH</code> ..
<code>\atfi@minutes</code> .....	148, 157	332, 360, 395,
<code>\atfi@moddatetrue</code> .....	576, 586	420, 480, 503, 514, 812, 1137, 1410
<code>\atfi@MOVETO</code> .....	363, 379, 396, 421, 442,	<code>\atfi@SETMITERLIMIT</code> .....
	448, 463, 472, 483, 492, 504,	333, 362, 481, 827, 1159, 1424
	507, 510, 515, 518, 814, 1139, 1412	<code>\atfi@SETRGBCOLORFILL</code> .....
<code>\atfi@nofilestrue</code> .....	626	820, 1144, 1417
<code>\atfi@NoValue</code> .....	169, 172	<code>\atfi@SETRGBCOLORSTROKE</code> .....
<code>\atfi@pad@ii</code> .....	135, 154, 155, 156, 157, 158	819, 1143, 1416
<code>\atfi@params</code> .....	549, 556, 557,	<code>\atfi@setup</code> .....
	566, 567, 577, 578, 587, 588,	96, 128, 134, 296, 658, 730, 762
		<code>\atfi@special</code> ...
		1402, 1406, 1467,
		1476, 1488, 1494, 1502, 1529, 1554
		<code>\atfi@stream</code> .....
		635, 636, 637, 643
		<code>\atfi@STROKE</code> .....
		377, 393, 410, 446, 452, 506,
		509, 512, 517, 522, 815, 1140, 1413
		<code>\atfi@subject</code> .....
		191, 193, 925, 1375, 1563
		<code>\atfi@temp</code> .....
		593, 595, 598,
		601, 603, 607, 608, 610, 611,
		612, 614, 616, 617, 619, 642,
		646, 782, 799, 800, 801, 802,
		803, 804, 805, 842, 844, 845,
		847, 1179, 1181, 1182, 1184,
		1444, 1446, 1447, 1449, 1520, 1525
		<code>\atfi@temp@string</code> .....
		166, 167
		<code>\atfi@textattachfile</code> .....
		720, 758
		<code>\atfi@textattachfile@i</code> ....
		722, 724

\atfi@time	144, 146, 149	\filename@parse	1462
\atfi@timezone	142, 143, 159, 534, 568, 589, 638	<b>H</b>	
\atfi@ucfilespec	199, 201, 202, 204, 900, 902, 1353, 1355, 1532, 1534	\hbox	1278
\atfi@Warning	46, 91, 110	\ht	680, 705, 1266, 1287, 1305, 1490
\atfi@writefile	633, 640, 654, 726	\Hy@Warning	1520, 1521, 1525
\atfi@xform	707, 871, 875, 1274, 1484, 1499	\HyColor@AttachfileColor	130
\atfi@xform@icon	686, 875, 1255, 1499	\HyColor@UseColor	300, 735
\atfi@xfrom@icon	1255	\hypersetup	894, 1341, 1523
\attachfile	321, 743	<b>I</b>	
\attachfile@file	537, 644	\if@files	624
\attachfile@timezone	530, 638	\ifatfi@appearance	881, 1325, 1506
\attachfilesetup	225	\ifatfi@checksum	546, 1234
<b>C</b>		\ifatfi@creationdate	551, 553, 563, 1221
\c@atfi@obj	1169, 1434	\ifatfi@draft	311
\catcode	747, 748, 756, 757	\ifatfi@moddate	572, 574, 584, 1228
\csname	675, 679, 683, 688, 700, 766, 843, 865, 909, 1176, 1180, 1269, 1339, 1358, 1378, 1445, 1478, 1541	\ifatfi@nofiles	628
<b>D</b>		\ifatfi@print	297, 712, 764
\day	155	\ifatfi@zoom	715
\DeclareBoolOption	97, 195, 196, 197, 207	\ifcase	39, 603
\DeclareComplementaryOption	98	\ifluatex	777
\DeclareLocalOptions	226	\ifnum	136, 778
\DeclareRobustCommand	165, 225, 294, 315, 318, 321, 710, 743, 751, 760	\ifpdf	248
\DeclareStringOption	198, 224	\ifx	102, 118, 172, 202, 252, 262, 263, 267, 269, 279, 531, 539, 608, 612, 617, 844, 847, 855, 900, 1181, 1184, 1353, 1446, 1449, 1457, 1463, 1532
\DeclareVoidOption	212, 215, 218, 221	\ifxetex	259, 1519, 1524
\define@key	100, 124, 129, 143, 161, 180, 184, 188, 192, 200, 547, 552, 562, 573, 583, 835, 1171, 1436	\immediate	636, 637, 643, 859, 872, 896
\dimen@	1548, 1549, 1550, 1551, 1552, 1553	\input	326
\dimexpr	146, 1265, 1381, 1385, 1388	\InputIfFileExists	243, 545
\directlua	785	<b>J</b>	
\DisableKeyvalOption	246	\jobname	545, 630, 636
\do	745, 754	<b>L</b>	
\dospecials	746, 755	\lccode	69, 80, 85
\dp	684, 706, 1265, 1284, 1304, 1491	\leavevmode	298, 733, 1501
<b>E</b>		\lowercase	70, 81, 86
\EdefEscapeHex	642	\ltx@backslashchar	22, 23, 25, 26, 29, 30, 31, 32, 33, 34, 35, 37
\EdefEscapeName	120	\ltx@empty	102, 115, 118, 142, 173, 179, 202, 208, 253, 262, 263, 271, 279, 539, 608, 612, 617, 841, 844, 855, 890, 900, 1178, 1181, 1334, 1353, 1443, 1446, 1457, 1463, 1515, 1532
\EdefEscapeString	162, 1466	\ltx@firstoftwo	44, 52
\EdefUnescapeHex	538	\ltx@gobble	604, 633, 1521
\endcsname	266, 675, 679, 683, 688, 700, 766, 843, 865, 909, 1176, 1180, 1269, 1339, 1358, 1378, 1445, 1478, 1541	\ltx@hashchar	24
\endinput	324	\ltx@ifpackagelater	78
\escapechar	781	\ltx@ifUndefined	17, 594, 597, 600, 653, 670, 725, 783, 839, 892, 1173, 1336, 1440, 1517
<b>F</b>		\ltx@ifundefined	645, 790
\filename@area	1463	\ltx@leftbracechar	35, 82



<code>\ltx@one</code> .....	593		
<code>\ltx@percentchar</code> .....	27		
<code>\ltx@rightbracechar</code> .....	36, 84		
<code>\ltx@secondoftwo</code> .....	41		
<code>\ltx@undefined</code> .....	784		
<code>\ltx@zero</code> .....	304, 595, 598, 601, 1278, 1304, 1305, 1306, 1307		
<code>\luatexversion</code> .....	778		
<b>M</b>			
<code>\makebox</code> .....	305, 768, 1319		
<code>\mbox</code> .....	1307		
<code>\MessageBreak</code> .....	47, 48, 111, 112, 255, 273, 281, 630		
<code>\month</code> .....	154		
<b>N</b>			
<code>\NeedsTeXFormat</code> ....	2, 774, 936, 1399		
<code>\newcommand</code> .....	356, 537		
<code>\newcounter</code> .....	709, 1167, 1432		
<code>\newif</code> .....	546, 551, 572		
<code>\newlength</code> .....	665, 666, 667		
<code>\newsavebox</code> .....	668		
<code>\newwrite</code> .....	635		
<code>\noattachfile</code> .....	318, 322, 760		
<code>\nofiles</code> .....	631		
<code>\notextattachfile</code> ....	294, 316, 319		
<code>\NoValue</code> .....	169, 180, 184, 188, 192		
<code>\number</code> .....	137, 139, 1169, 1434		
<code>\numexpr</code> .....	146, 149		
<b>O</b>			
<code>\openout</code> .....	636		
<b>P</b>			
<code>\PackageError</code> .....	254, 540		
<code>\PackageInfo</code> .....	629		
<code>\PackageWarning</code> .....	91		
<code>\PackageWarningNoLine</code> ....	272, 280		
<code>\parbox</code> .....	313, 352, 414, 456, 526		
<code>\pdf@filemdfivesum</code> .....	616		
<code>\pdf@filemoddate</code> .....	611		
<code>\pdf@filesize</code> .....	607		
<code>\pdfannot</code> .....	805, 915		
<code>\pdflastobj</code> .....	801, 865, 910		
<code>\pdflastxform</code> .....	803, 873		
<code>\pdfliteral</code> .....	799, 809		
<code>\pdfmatch</code> .....	39		
<code>\pdfobj</code> .....	800, 859, 896		
<code>\pdfrefxform</code> .....	804, 877		
<code>\pdfstringdef</code> .....	166		
<code>\pdfxform</code> .....	802, 872		
<code>\ProcessKeyvalOptions</code> .....	244		
<code>\ProvidesFile</code> .....	775, 937, 1400		
<code>\ProvidesPackage</code> .....	3		
<b>R</b>			
<code>\raisebox</code> .....	313, 352, 414, 456, 526, 1311		
<code>\renewcommand</code> .....	1168, 1433		
<code>\RequirePackage</code> .....	5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16		
<code>\rlap</code> .....	1487		
<code>\rule</code> .....	353, 415, 457, 527, 880, 930, 931, 932, 1321, 1324, 1393, 1394, 1395, 1505, 1570, 1571, 1572		
<b>S</b>			
<code>\savebox</code> .....	671, 703		
<code>\sbox</code> .....	304		
<code>\setbox</code> .....	1278		
<code>\setcounter</code> .....	711		
<code>\setkeys</code> .....	96, 225, 610, 614, 619, 851, 1188, 1453		
<code>\setlength</code> .....	692		
<code>\SetupKeyvalOptions</code> .....	92		
<code>\smash</code> .....	1486		
<code>\space</code> .....	631, 884, 885, 886, 1264, 1266, 1284, 1286, 1287, 1382, 1386, 1389, 1488, 1489, 1490, 1551, 1553		
<code>\special</code> .....	940, 943, 1403		
<code>\stepcounter</code> .....	1175, 1256, 1275, 1337, 1441, 1485, 1528		
<code>\strip@pt</code> .....	1264, 1265, 1284, 1286, 1287, 1381, 1385, 1388		
<code>\strut</code> .....	301, 304, 736		
<b>T</b>			
<code>\textattachfile</code> .....	315, 751		
<code>\the</code> .....	144, 153, 676, 680, 684, 865, 873, 910, 1489, 1490, 1491, 1549, 1551, 1553		
<code>\theatfi@flags</code> .....	927, 1377, 1565		
<code>\theatfi@obj</code> ....	1168, 1176, 1201, 1205, 1242, 1246, 1257, 1276, 1339, 1345, 1349, 1433, 1468, 1476, 1478, 1488, 1497, 1529, 1542		
<code>\time</code> .....	144		
<b>U</b>			
<code>\usebox</code> .....	1296, 1307, 1493		
<b>W</b>			
<code>\wd</code> .....	305, 676, 704, 1264, 1286, 1306, 1489		
<code>\write</code> .....	637, 643		
<b>X</b>			
<code>\x</code> .....	850, 853, 1187, 1190, 1452, 1455		
<b>Y</b>			
<code>\year</code> .....	153		
<b>Z</b>			
<code>\z@</code> .....	1304, 1305, 1306		