

The `attachfile2` package

Heiko Oberdiek*

<[heiko.oberdiek at gmail.com](mailto:heiko.oberdiek@gmail.com)>

2016/05/16 v2.8

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 <code>color</code>	3
1.2.3	Perl script <code>pdfatfi.pl</code>	4
1.3	Changes to <code>attachfile</code>	4
2	Implementation	5
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	10
2.1.5	Evaluate driver options	10
2.1.6	Evaluate options <code>draft/final</code>	11
2.1.7	Load driver file	12
2.1.8	Graphics	12
2.1.9	Reading the <code>.atfi</code> file	15
2.1.10	Writing the <code>.atfi</code> file	17
2.1.11	Annotation appearance	18
2.2	Drivers	20
2.2.1	pdfTeX	20
2.2.2	dvips	23
2.2.3	dvipdfmx	32
2.3	Perl script <code>pdfatfi.pl</code>	35
3	Installation	39
3.1	Download	39
3.2	Bundle installation	39
3.3	Package installation	39
3.4	Refresh file name databases	40
3.5	Script installation	40
3.6	Some details for the interested	40

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

4	Catalogue	40
5	References	41
6	History	41
	[2005/02/23 v2.0]	41
	[2005/10/07 v2.1]	41
	[2006/08/17 v2.2]	42
	[2007/04/11 v2.3]	42
	[2008/07/29 v2.4]	42
	[2009/09/25 v2.5]	42
	[2010/09/27 v2.6]	42
	[2012/04/18 v2.7]	42
	[2016/05/16 v2.8]	42
7	Index	42

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 (`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 featur of pdf \TeX 1.30. With a recent pdf \TeX 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}{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. Since version 2.6 these data are used if available.

For older versions of `pdfTeX` and `XYTeX` 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 `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`.
- Support for `dvipdfmx/XYTeX`.
- 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 (HO)]%

```

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\tx@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\tx@empty
203 \else
204 \atfi@pdfstringdef\atfi@ucfilespec{#1}%
205 \fi
206 }
```

Option nofiles.

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

Driver options.

```
208 \let\atfi@driver\tx@empty
209 \def\atfi@driver@pdftex{pdftex}
210 \def\atfi@driver@dvi{dvips}
211 \def\atfi@driver@dvi{dvipdfmx}
```

```

212 \DeclareVoidOption{pdftex}{%
213   \let\atfi@driver\atfi@driver@pdftex
214 }
215 \DeclareVoidOption{dvips}{%
216   \let\atfi@driver\atfi@driver@dvips
217 }
218 \DeclareVoidOption{dviPDFmx}{%
219   \let\atfi@driver\atfi@driver@dviPDFmx
220 }
221 \DeclareVoidOption{xetex}{%
222   \let\atfi@driver\atfi@driver@dviPDFmx
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@dvi
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{dvipdfmx}
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{0pt}{0pt}\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\tx@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@filesw
625 \else
626   \atfi@nofilestrue
627 \fi
628 \ifatfi@nofiles
629   \PackageInfo{attachfile2}{%
630     File `\

```

\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         \begingroup
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   \begingroup
745   \let\do\@makeother
746   \dospecials
747   \catcode`\{=1\relax
748   \catcode`\}=2\relax
749   \atfi@attachfile{#1}%
750 }
```

`\textattachfile`

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

`\noattachfile`

```
760 \DeclareRobustCommand{\noattachfile}[1][]{%
761   \begingroup
762   \atfi@setup{#1}%
763   \atfi@set@appearance@icon
764   \ifatfi@print
765   \expandafter
766   \atfi@refxform\cename atfi@appobj@\atfi@icon@icon\endcename
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\pdfastobj
802     \atfi@temp\pdfxform
803     \atfi@temp\pdfastxform
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#3{#1#2#3 }

```

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@CURVETOv{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\pdfastobj}%
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\pdfastxform}%
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 \begingroup
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@fobj@#1\endcsname{
910 \the\pdfastobj
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@fobj@#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 (HO)]%

```

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 exch sub /atfi_days exch 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 exch def%
1024     /atfi_month atfi_month 1 add def %
1025     366 eq {29} {28} ifelse dup atfi_days lt%
1026     {%
1027         atfi_days exch sub /atfi_days exch def%
1028         /atfi_month atfi_month 1 add def %
1029         31 atfi_days lt%
1030     }{%
1031         atfi_days 31 sub /atfi_days exch def%
1032         /atfi_month atfi_month 1 add def %
1033         30 atfi_days lt%
1034     }{%
1035         atfi_days 30 sub /atfi_days exch def%
1036         /atfi_month atfi_month 1 add def %
1037         31 atfi_days lt%
1038     }{%
1039         atfi_days 31 sub /atfi_days exch def%
1040         /atfi_month atfi_month 1 add def %
1041         30 atfi_days lt%
1042     }{%
1043         atfi_days 30 sub /atfi_days exch def%
1044         /atfi_month atfi_month 1 add def %
1045         31 atfi_days lt%
1046     }{%
1047         atfi_days 31 sub /atfi_days exch def%
1048         /atfi_month atfi_month 1 add def %
1049         31 atfi_days lt%
1050     }{%
1051         atfi_days 31 sub /atfi_days exch def%
1052         /atfi_month atfi_month 1 add def %
1053         30 atfi_days lt%
1054     }{%
1055         atfi_days 30 sub /atfi_days exch def%
1056         /atfi_month atfi_month 1 add def %
1057         31 atfi_days lt%
1058     }{%
1059         atfi_days 31 sub /atfi_days exch def%
1060         /atfi_month atfi_month 1 add def %
1061         30 atfi_days lt%
1062     }{%
1063         atfi_days 30 sub /atfi_days exch def%
1064         /atfi_month atfi_month 1 add def %
1065         31 atfi_days lt%
1066     }{%
1067         atfi_days 31 sub /atfi_days exch 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_pdfvodvipsx { 72.27 div Resolution mul } bind def%
1130 /atfi_pdfvodvipsy { 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@CURVETO_V{atfi_curveto_v }
1164 \def\atfi@CURVETO_Y{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 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 \begingroup
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 \endgroup
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 (HO)]%

```

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{bxobj \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{Opt}{Opt}%
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     \begingroup
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 \begingroup
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 $atfile;
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:
1643     (defaults:)
1644 --help          print usage
1645 --version       print version number
1646 --(no)quiet     suppress messages      ($bool[$::opt_quiet])
1647 --(no)verbose   verbose printing      ($bool[$::opt_verbose])
1648 --(no)debug     debug informations    ($bool[$::opt_debug])
1649 END_OF_USAGE
1650
1651 ### process options
1652 my @OrgArgv = @ARGV;
1653 use Getopt::Long;
1654 GetOptions(
1655     "help!",
1656     "version!",
1657     "quiet!",
1658     "debug!",
1659     "verbose!",
1660 ) or die $usage;
1661 !$::opt_help or die $usage;
1662 if ($::opt_version) {
1663     print "$prj $date v$version\n";
1664     exit(0);
1665 }
1666 @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",
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 \langle /pdfatfi \rangle

3 Installation

3.1 Download

Package. This package is available on CTAN¹:

[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 T_EX 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 T_EX:

```
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`.

¹<http://ctan.org/pkg/attachfile2>

3.4 Refresh file name databases

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

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

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='lppl1.3'/>
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/](#).
- [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/>.

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.
- 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.

[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>	28, 59
<code>\#</code>	24, 59	<code>\(</code>	29
<code>\\$</code>	26	<code>\)</code>	30
<code>\%</code>	27, 59	<code>*</code>	32, 60

\+ 33, 60, 107
\ - 107
\ 23, 60, 107
\ ? 34
\@PackageInfoNoLine 793
\@ehc 257, 540
\@makeother 745, 754
\@namedef 542
\@nameuse
. 645, 672, 694, 696, 698, 851,
905, 928, 1188, 1453, 1537, 1566
\[..... 25
\\ 37, 75, 531
\{ 35, 65, 80, 747, 756
\} 36, 65, 85, 748, 757
\~ 22, 63
\| 31, 65
\~ 38, 65

A

\addtocounter 713, 717
\atfi@acroGraph 351
\atfi@acroGraph@data 327, 353
\atfi@acroPaperclip 413
\atfi@acroPaperclip@data 356, 415
\atfi@acroPushPin 455
\atfi@acroPushPin@data 418, 457
\atfi@acroTag 525
\atfi@acroTag@data 460, 527
\atfi@annotname 179, 181, 923, 1373, 1561
\atfi@appearance@dict 882, 890, 926,
1326, 1334, 1376, 1507, 1515, 1564
\atfi@appearancebox
. 668, 671, 676, 680,
684, 703, 704, 705, 706, 872,
1264, 1265, 1266, 1284, 1286,
1287, 1296, 1489, 1490, 1491, 1493
\atfi@appearancedepth
. 667, 697, 706, 917,
931, 1311, 1381, 1394, 1552, 1571
\atfi@appearanceheight
. 666, 695, 705, 916,
930, 1321, 1388, 1393, 1550, 1570
\atfi@appearanceobj
. 689, 699, 873, 884, 885, 886,
1257, 1260, 1276, 1281, 1328,
1329, 1330, 1497, 1509, 1510, 1511
\atfi@appearancewidth
. 665, 693, 704, 768, 915,
932, 1319, 1385, 1395, 1548, 1572
\atfi@attachfile 652, 749
\atfi@author . 183, 185, 921, 1371, 1559
\atfi@checksumtrue 548
\atfi@CLOSEPATH
. 477, 497, 833, 1165, 1430
\atfi@color@annot . 131, 920, 1370, 1558
\atfi@color@inline 131, 345, 394, 437, 499
\atfi@color@tex 131, 300, 735
\atfi@CR 68, 75
\atfi@creationdatetrue 555, 565
\atfi@CURVETO 473, 474, 475, 476,
493, 494, 495, 496, 830, 1162, 1427
\atfi@CURVETOV ... 364, 367, 369,
371, 373, 375, 380, 383, 385,
387, 389, 391, 397, 400, 402,
404, 406, 408, 520, 831, 1163, 1428
\atfi@CURVETOY ... 365, 368, 370,
372, 374, 376, 381, 384, 386,
388, 390, 392, 398, 401, 403,
405, 407, 409, 521, 832, 1164, 1429
\atfi@date 152, 162, 163, 922, 1372, 1560
\atfi@DefNoValueName
. 170, 181, 185, 189, 193
\atfi@description 187, 189, 924, 1374, 1562
\atfi@DisableOption 245, 289,
290, 291, 292, 293, 309, 310, 651
\atfi@drafttrue 284
\atfi@driver 208, 213, 216,
219, 222, 250, 252, 253, 260,
262, 265, 267, 269, 271, 279, 326
\atfi@driver@dvpdflmx
. 211, 219, 222, 260, 269
\atfi@driver@dvi 210, 216, 267
\atfi@driver@pdftex . 209, 213, 250, 252
\atfi@driverfallback 263, 266, 274
\atfi@dummy@pushpin 312, 319
\atfi@embedfile 659, 731, 838, 1172, 1439
\atfi@FILE 1461, 1462, 1464, 1466, 1469
\atfi@file 895, 899, 1342, 1352, 1527, 1531
\atfi@filename 538, 539, 542
\atfi@FILL 478, 816, 1141, 1414
\atfi@FILLSTROKE
. 436, 498, 817, 818, 1142, 1415
\atfi@flags@to@int 661, 710, 739
\atfi@GRESTORE
. 349, 411, 453, 523, 811, 1136, 1409
\atfi@GSAVE
. 328, 357, 419, 461, 810, 1135, 1408
\atfi@header 942, 945
\atfi@hours 145, 149, 156
\atfi@icon 125, 919, 1369, 1557
\atfi@icon@icon
. 126, 670, 672, 675, 679, 683,
688, 694, 696, 698, 700, 766, 1269
\atfi@insert@file@annot
. 662, 740, 879, 1323, 1504
\atfi@LINETO . 366, 382, 399, 422,
423, 424, 425, 426, 427, 428,
429, 430, 431, 432, 433, 434,
435, 443, 444, 445, 449, 450,
451, 464, 465, 466, 467, 468,
469, 470, 471, 484, 485, 486,
487, 488, 489, 490, 491, 505,
508, 511, 516, 519, 813, 1138, 1411
\atfi@literal 353, 415,
457, 527, 809, 939, 1192, 1258,
1279, 1297, 1312, 1343, 1366, 1405
\atfi@ltx@leftbracechar 79
\atfi@Match 17, 104
\atfi@mimetype 99, 101, 102, 104, 111,
115, 118, 120, 121, 861, 1208, 1472
\atfi@minutes 148, 157
\atfi@moddatetrue 576, 586

<code>\atfi@MOVETO</code>	847, 1179, 1181, 1182, 1184, 1444, 1446, 1447, 1449, 1520, 1525
..... 363, 379, 396, 421, 442, 448, 463, 472, 483, 492, 504, 507, 510, 515, 518, 814, 1139, 1412	
<code>\atfi@nofilestrue</code>	626
<code>\atfi@NoValue</code>	169, 172
<code>\atfi@pad@ii</code> 135 , 154, 155, 156, 157, 158	
<code>\atfi@params</code>	549, 556, 557, 566, 567, 577, 578, 587, 588, 836, 841, 855, 857, 862, 1178, 1211, 1437, 1443, 1457, 1459, 1473
<code>\atfi@PatQuotedString</code>	73 , 108
<code>\atfi@PatToken</code>	55 , 105, 108
<code>\atfi@pdfstringdef</code>	165, 175, 204, 895, 1174, 1342, 1527
<code>\atfi@pdftexdata</code> ..	593 , 848, 1185, 1450
<code>\atfi@psfilename</code>	1174, 1193
<code>\atfi@RECTFILL</code>	330, 342, 343, 344, 346, 347, 348, 825, 1149, 1422
<code>\atfi@RECTSTROKEFILL</code>	334, 826, 1150, 1423
<code>\atfi@refxform</code>	766, 876 , 1310 , 1500
<code>\atfi@rule</code>	1549, 1551, 1553, 1554
<code>\atfi@scale</code>	915, 916, 917, 1381, 1385, 1388, 1548, 1550, 1552
<code>\atfi@seconds</code>	151 , 158
<code>\atfi@set@appearance</code>	702 , 732
<code>\atfi@set@appearance@icon</code>	660 , 669 , 763
<code>\atfi@SETCMYKCOLORFILL</code>	824, 1148, 1421
<code>\atfi@SETCMYKCOLORSTROKE</code> .	823, 1147, 1420
<code>\atfi@SETFLAT</code>	331, 359 , 479 , 828, 1160, 1425
<code>\atfi@SETGRAYFILL</code>	329, 335, 341, 462, 822, 1146, 1419
<code>\atfi@SETGRAYSTROKE</code>	337, 358, 378, 439, 441, 447, 501, 513, 821, 1145, 1418
<code>\atfi@SETLINECAP</code>	361, 829, 1161, 1426
<code>\atfi@SETLINEJOIN</code>	482, 834, 1166, 1431
<code>\atfi@SETLINEWIDTH</code>	332, 360, 395, 420, 480, 503, 514, 812, 1137, 1410
<code>\atfi@SETMITERLIMIT</code>	333, 362, 481, 827, 1159, 1424
<code>\atfi@SETRGBCOLORFILL</code>	820, 1144, 1417
<code>\atfi@SETRGBCOLORSTROKE</code> ...	819, 1143, 1416
<code>\atfi@setup</code> 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
<code>\atfi@time</code>	144 , 146, 149
<code>\atfi@timezone</code>	142 , 142, 143, 159, 534, 568, 589, 638
<code>\atfi@ucfilespec</code> .	199 , 201, 202, 204, 900, 902, 1353, 1355, 1532, 1534
<code>\atfi@Warning</code>	46, 91 , 110
<code>\atfi@writefile</code>	633 , 640 , 654 , 726
<code>\atfi@xform</code>	707, 871 , 875, 1274 , 1484 , 1499
<code>\atfi@xform@icon</code> ..	686, 875 , 1255 , 1499
<code>\atfi@xfrom@icon</code>	1255
<code>\attachfile</code>	321 , 743
<code>\attachfile@file</code>	537 , 644
<code>\attachfile@timezone</code>	530 , 638
<code>\attachfilesetup</code>	225
C	
<code>\c@atfi@obj</code>	1169, 1434
<code>\catcode</code>	747, 748, 756, 757
<code>\csname</code>	266, 675, 679, 683, 688, 700, 766, 843, 865, 909, 1176, 1180, 1269, 1339, 1358, 1378, 1445, 1478, 1541
D	
<code>\day</code>	155
<code>\DeclareBoolOption</code>	97, 195, 196, 197, 207
<code>\DeclareComplementaryOption</code>	98
<code>\DeclareLocalOptions</code>	226
<code>\DeclareRobustCommand</code>	165, 225, 294, 315, 318, 321, 710, 743, 751, 760
<code>\DeclareStringOption</code>	198, 224
<code>\DeclareVoidOption</code> .	212, 215, 218, 221
<code>\define@key</code> .	100, 124, 129, 143, 161, 180, 184, 188, 192, 200, 547, 552, 562, 573, 583, 835, 1171, 1436
<code>\dimen@</code>	1548, 1549, 1550, 1551, 1552, 1553
<code>\dimexpr</code> ..	146, 1265, 1381, 1385, 1388
<code>\directlua</code>	785
<code>\DisableKeyvalOption</code>	246
<code>\do</code>	745, 754
<code>\dospecials</code>	746, 755
<code>\dp</code> ...	684, 706, 1265, 1284, 1304, 1491
E	
<code>\EdefEscapeHex</code>	642
<code>\EdefEscapeName</code>	120
<code>\EdefEscapeString</code>	162, 1466
<code>\EdefUnescapeHex</code>	538
<code>\endcsname</code>	266, 675, 679, 683, 688, 700, 766, 843, 865, 909, 1176, 1180, 1269, 1339, 1358, 1378, 1445, 1478, 1541
<code>\endinput</code>	324
<code>\escapechar</code>	781

F		<code>\ltx@secondoftwo</code> 41	
<code>\filename@area</code> 1463		<code>\ltx@undefined</code> 784	
<code>\filename@parse</code> 1462		<code>\ltx@zero</code> 304, 595, 598, 601, 1278, 1304, 1305, 1306, 1307	
H		<code>\luatexversion</code> 778	
<code>\hbox</code> 1278		M	
<code>\ht</code> 680, 705, 1266, 1287, 1305, 1490		<code>\makebox</code> 305, 768, 1319	
<code>\Hy@Warning</code> 1520, 1521, 1525		<code>\mbox</code> 1307	
<code>\HyColor@AttachfileColor</code> 130		<code>\MessageBreak</code> 47, 48, 111, 112, 255, 273, 281, 630	
<code>\HyColor@UseColor</code> 300, 735		<code>\month</code> 154	
<code>\hypersetup</code> 894, 1341, 1523		N	
I		<code>\NeedsTeXFormat</code> 2, 774, 936, 1399	
<code>\if@filesw</code> 624		<code>\newcommand</code> 356, 537	
<code>\ifatfi@appearance</code> 881, 1325, 1506		<code>\newcounter</code> 709, 1167, 1432	
<code>\ifatfi@checksum</code> 546, 1234		<code>\newif</code> 546, 551, 572	
<code>\ifatfi@creationdate</code> 551, 553, 563, 1221		<code>\newlength</code> 665, 666, 667	
<code>\ifatfi@draft</code> 311		<code>\newsavebox</code> 668	
<code>\ifatfi@moddate</code> 572, 574, 584, 1228		<code>\newwrite</code> 635	
<code>\ifatfi@nofiles</code> 628		<code>\noattachfile</code> 318, 322, 760	
<code>\ifatfi@print</code> 297, 712, 764		<code>\nofiles</code> 631	
<code>\ifatfi@zoom</code> 715		<code>\notextattachfile</code> 294, 316, 319	
<code>\ifcase</code> 39, 603		<code>\NoValue</code> 169, 180, 184, 188, 192	
<code>\ifuatex</code> 777		<code>\number</code> 137, 139, 1169, 1434	
<code>\ifnum</code> 136, 778		<code>\numexpr</code> 146, 149	
<code>\ifpdf</code> 248		O	
<code>\ifx</code> 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		<code>\openout</code> 636	
<code>\ifxetex</code> 259, 1519, 1524		P	
<code>\immediate</code> 636, 637, 643, 859, 872, 896		<code>\PackageError</code> 254, 540	
<code>\input</code> 326		<code>\PackageInfo</code> 629	
<code>\InputIfFileExists</code> 243, 545		<code>\PackageWarning</code> 91	
J		<code>\PackageWarningNoLine</code> 272, 280	
<code>\jobname</code> 545, 630, 636		<code>\parbox</code> 313, 352, 414, 456, 526	
L		<code>\pdf@filemddfivesum</code> 616	
<code>\lccode</code> 69, 80, 85		<code>\pdf@filemoddate</code> 611	
<code>\leavevmode</code> 298, 733, 1501		<code>\pdf@filesize</code> 607	
<code>\lowercase</code> 70, 81, 86		<code>\pdfannot</code> 805, 915	
<code>\ltx@backslashchar</code> 22, 23, 25, 26, 29, 30, 31, 32, 33, 34, 35, 37		<code>\pdfastobj</code> 801, 865, 910	
<code>\ltx@empty</code> 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		<code>\pdfastxform</code> 803, 873	
<code>\ltx@firstoftwo</code> 44, 52		<code>\pdfliteral</code> 799, 809	
<code>\ltx@gobble</code> 604, 633, 1521		<code>\pdfmatch</code> 39	
<code>\ltx@hashchar</code> 24		<code>\pdfobj</code> 800, 859, 896	
<code>\ltx@ifpackagelater</code> 78		<code>\pdfrefxform</code> 804, 877	
<code>\ltx@ifUndefined</code> 17, 594, 597, 600, 653, 670, 725, 783, 839, 892, 1173, 1336, 1440, 1517		<code>\pdfstringdef</code> 166	
<code>\ltx@ifundefined</code> 645, 790		<code>\pdfxform</code> 802, 872	
<code>\ltx@leftbracechar</code> 35, 82		<code>\ProcessKeyvalOptions</code> 244	
<code>\ltx@one</code> 593		<code>\ProvidesFile</code> 775, 937, 1400	
<code>\ltx@percentchar</code> 27		<code>\ProvidesPackage</code> 3	
<code>\ltx@rightbracechar</code> 36, 84		R	
		<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	

S	
<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
T	
<code>\textattachfile</code>	315, <u>751</u>
<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
U	
<code>\usebox</code>	1296, 1307, 1493
W	
<code>\wd</code> 305, 676, 704, 1264, 1286, 1306, 1489	
<code>\write</code>	637, 643
X	
<code>\x</code>	850, 853, 1187, 1190, 1452, 1455
Y	
<code>\year</code>	153
Z	
<code>\z@</code>	1304, 1305, 1306