

# 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.

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# 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 embedded files.
- Embedding files to the document, see package `embedfile`.
- Additionally use features 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 both the same?

- File name conversion, see PDF specification:

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

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

## 1.2 User interface

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

### 1.2.1 New options

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

### 1.2.2 Option color

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

This package `attachfile2` extends the syntax. The usual color specifications of packages `color` or `xcolor` may be used. The latter one requires that package `xcolor` is loaded. Without package `xcolor` a limited range of explicit color specifications are supported, the color models `rgb` and `gray` (and `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. However the main development preceded this pdfTeX version. Thus the Perl script `pdfatfi.pl` is used to provide this data. The use of the Perl script is not mandatory. This data can be shown by PDF viewers, but they are not a requirement of the PDF specification.

Package `attachfile2` and the Perl script communicate via an auxiliary file with file extension `.atfi`. The script is used between two 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.
- Setting and filling the `/Param` entry for files (file date, file size, ...).
- Perl script `pdfatfi.pl`.
- New options.
- Bug fixes.
- ...

## 2 Implementation

### 2.1 Package

```
1 \<package>
2 \NeedsTeXFormat{LaTeX2e}
3 \ProvidesPackage{attachfile2}%
4   [2008/07/29 v2.4 attach files into PDF (H0)]%
5 \RequirePackage{ifpdf}
6 \RequirePackage{keyval}
7 \RequirePackage{color}
8 \RequirePackage{kvoptions}[2006/08/17]
9
10 % --- hyperref ---
11
12 \RequirePackage{hyperref}
```

```

13 % because of \pdfstringdef
14 \RequirePackage{hycolor}[2008/07/29]
15
16 \def\atfi@pdfstringdef#1#2{%
17   \pdfstringdef\atfi@temp@string{#2}%
18   \edef#1{\atfi@temp@string}%
19 }
20
21 % --- convert to hex ---
22
23 \def\atfi@hexdigit#1{%
24   \ifcase#1%
25     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7\or 8\or 9\or
26     a\or b\or c\or d\or e\or f%
27   \fi
28 }
29 % detour via \dimexpr to avoid eTeX's nasty expression rounding
30 \def\atfi@hexchar#1{%
31   \atfi@hexdigit{\numexpr\dimexpr.0625\dimexpr'#1sp\relax\relax\relax}%
32   \atfi@hexdigit{%
33     \numexpr'#1-16*\dimexpr.0625\dimexpr'#1sp\relax\relax\relax
34   }%
35 }
36 \def\atfi@tohex#1{%
37   \ifx\relax#1%
38   \else
39     \atfi@hexchar{#1}%
40     \expandafter\atfi@tohex
41   \fi
42 }
43
44 % --- convert to name ---
45
46 \def\atfi@converttoname#1#2{%
47   \edef#1{#2}%
48   \@onelevel@sanitize#1%
49   \edef#1{\expandafter\atfi@spacetooother#1 \relax}%
50   \edef#1{\expandafter\atfi@converttokens#1\relax}%
51 }
52
53 \edef\atfi@hash{\string#}%
54 \catcode'\ =12\relax%
55 \def\atfi@space{ }%
56 \catcode'\ =10\relax%
57
58 \def\atfi@spacetooother#1 #2\relax{%
59   #1%
60   \ifx\#2\%
61   \else
62     \atfi@space
63     \@ReturnAfterFi{%
64       \atfi@spacetooother #2\relax
65     }%
66   \fi
67 }
68 \long\def\@ReturnAfterFi#1\fi{\fi#1}
69
70 \def\atfi@converttokens#1{%
71   \ifx\relax#1%
72   \else
73     \ifnum'#1<33 %
74     \ifcase'#1%

```

```

75      % drop illegal zero
76      \else
77      \atfi@hash\atfi@hexchar#1%
78      \fi
79      \else
80      \ifnum'#1>126 %
81      \atfi@hash\atfi@hexchar#1%
82      \else
83      \ifnum'#1=40 % (
84      \atfi@hash 28%
85      \else\ifnum'#1=41 % )
86      \atfi@hash 29%
87      \else\ifnum'#1=60 % <
88      \atfi@hash 3c%
89      \else\ifnum'#1=62 % >
90      \atfi@hash 3e%
91      \else\ifnum'#1=91 % [
92      \atfi@hash 5b%
93      \else\ifnum'#1=93 % ]
94      \atfi@hash 5d%
95      \else\ifnum'#1=123 % {
96      \atfi@hash 7b%
97      \else\ifnum'#1=125 % }
98      \atfi@hash 7d%
99      \else\ifnum'#1=47 % /
100     \atfi@hash 2f%
101     \else\ifnum'#1=37 % %
102     \atfi@hash 25%
103     \else
104     #1%
105     \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
106     \fi
107     \fi
108     \expandafter\atfi@converttokens
109 \fi
110 }
111
112
113 % --- options ---
114
115 % options "draft" and "final"
116 \newif\ifatfi@draft
117 \let\atfi@finaltrue\atfi@draftfalse
118 \let\atfi@finalfalse\atfi@drafttrue
119 \define@key{AtFi}{final}[true]{%
120   \csname atfi@final#1\endcsname
121 }
122 \define@key{AtFi}{draft}[true]{%
123   \csname atfi@draft#1\endcsname
124 }
125
126 % option mimetype
127 \def\atfi@mimetype{}
128 \define@key{AtFi}{mimetype}{%
129   \atfi@converttoname\atfi@mimetype{#1}%
130   \edef\atfi@mimetype{/Subtype/\atfi@mimetype}%
131 }
132
133 % option icon
134 \define@key{AtFi}{icon}{%
135   \def\atfi@icon{/Name/#1}%
136   \def\atfi@icon@icon{#1}%

```

```

137 }
138 \setkeys{AtFi}{icon=PushPin}
139
140 % option color
141 \define@key{AtFi}{color}{%
142   \HyColor@AttachfileColor{#1}%
143   \atfi@color@tex\atfi@color@inline\atfi@color@annot
144   {attachfile2}{color}%
145 }
146 \setkeys{AtFi}{color=1 0.9255 0.7765}
147
148 % time options timezone and date
149 \def\atfi@pad@ii#1{%
150   \ifnum#1>9 %
151     \number#1%
152   \else
153     0\number#1%
154   \fi%
155 }
156 \let\atfi@timezone\@empty
157 \define@key{AtFi}{timezone}{\def\atfi@timezone{#1}}
158 \edef\atfi@time{\the\time}
159 \def\atfi@hours{%
160   \numexpr\dimexpr0.01667\dimexpr\atfi@time sp\relax\relax\relax
161 }
162 \def\atfi@minutes{%
163   \numexpr\atfi@time-60*\atfi@hours\relax
164 }
165 \def\atfi@seconds{0}
166 \def\atfi@date{%
167   /M(D:\the\year
168     \atfi@pad@ii\month
169     \atfi@pad@ii\day
170     \atfi@pad@ii\atfi@hours
171     \atfi@pad@ii\atfi@minutes
172     \atfi@pad@ii\atfi@seconds
173     \atfi@timezone)%
174 }
175 \define@key{AtFi}{date}{%
176   \atfi@pdfstringdef\atfi@date{#1}%
177   \edef\atfi@date{/M(\atfi@date)}%
178 }
179
180 % name for annotation to be used in GoToE actions
181 \let\atfi@annotname\@empty
182 \define@key{AtFi}{annotname}{%
183   \atfi@pdfstringdef\atfi@annotname{#1}%
184   \edef\atfi@annotname{/NM(\atfi@annotname)}%
185 }
186
187 % text options author, description, and subject
188 \DeclareRobustCommand{\atfi@pdfstringdef}[2]{%
189   \pdfstringdef\atfi@temp@string{#2}%
190   \edef#1{\atfi@temp@string}%
191 }
192
193 % option author
194 \def\atfi@author{}
195 \define@key{AtFi}{author}{%
196   \atfi@pdfstringdef\atfi@author{#1}%
197   \edef\atfi@author{/T(\atfi@author)}%
198 }

```

```

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

```



```

261 \ProcessKeyvalOptions{AtFi}
262
263 % --- evaluate driver options ---
264
265 \ifpdf
266 % ignoring other driver options
267 \let\atfi@driver\atfi@driver@pdftex
268 \else
269 \ifx\atfi@driver\@empty
270 \PackageWarningNoLine{attachfile2}{%
271 Driver is not specified,\MessageBreak
272 enforce draft settings%
273 }%
274 \atfi@drafttrue
275 \fi
276 \fi
277
278 % --- evaluate draft/final options ---
279
280 \DeclareRobustCommand{\notextattachfile}[2][{}]{%
281 \begingroup
282 \setkeys{AtFi}{#1}%
283 \ifatfi@print
284 \leavevmode
285 \begingroup
286 \HyColor@UseColor\atfi@color@tex
287 #2\strut
288 \endgroup
289 \else
290 \setbox0=\hbox{#2\strut}%
291 \makebox[\wd0]{}%
292 \fi
293 \endgroup
294 }
295
296 \ifatfi@draft
297 \def\atfi@dummy@pushpin{%
298 \raisebox{-1.25bp}{\parbox[b][14bp]{24bp}{}}%
299 }%
300 \DeclareRobustCommand{\textattachfile}[3][{}]{%
301 \notextattachfile[{#1}]{#3}%
302 }%
303 \DeclareRobustCommand{\noattachfile}[1][{}]{%
304 \notextattachfile[{#1}]{\atfi@dummy@pushpin}%
305 }%
306 \DeclareRobustCommand{\attachfile}[2][{}]{%
307 \noattachfile[{#1}]%
308 }%
309 \expandafter\endinput
310 \fi
311
312 % --- load driver file ---
313
314 \input{atfi\atfi@driver.def}
315
316 % --- graphics ---
317
318 \def\atfi@acroGraph@data{%
319 \atfi@GSAVE
320 0.5 \atfi@SETGRAYFILL
321 1.1133 0 20.7202 18.2754 \atfi@RECTFILL
322 0 \atfi@SETFLAT

```

```

323 0.5 \atfi@SETLINEWIDTH
324 4 \atfi@SETMITERLIMIT
325 \atfi@RECTSTROKEFILL{%
326 1 \atfi@SETGRAYFILL
327 }{%
328 0 \atfi@SETGRAYSTROKE
329 }{%
330 0.25 1.6453 20.145 17.7715 %
331 }%
332 0 \atfi@SETGRAYFILL
333 2.7319 4.1367 3.9571 13.8867 \atfi@RECTFILL
334 8.7031 4.1367 3.9571 9.8867 \atfi@RECTFILL
335 14.7471 4.1367 3.9571 11.8867 \atfi@RECTFILL
336 \atfi@color@inline{FILL}%
337 1.689 3.0938 3.9571 13.8867 \atfi@RECTFILL
338 7.6602 3.0938 3.9571 9.8867 \atfi@RECTFILL
339 13.7041 3.0938 3.9571 11.8867 \atfi@RECTFILL
340 \atfi@GRESTORE
341 }
342 \def\atfi@acroGraph{%
343 \raisebox{-1.5bp}{\parbox[b][20bp]{22bp}{%
344 \rule{0pt}{0pt}\atfi@literal{\atfi@acroGraph@data}}}%
345 }%
346 }
347 \newcommand{\atfi@acroPaperclip@data}{%
348 \atfi@GSAVE
349 0.75 \atfi@SETGRAYSTROKE
350 0 \atfi@SETFLAT
351 2.5 \atfi@SETLINEWIDTH
352 1 \atfi@SETLINECAP
353 4 \atfi@SETMITERLIMIT
354 1.9619 11.7559 \atfi@MOVETO
355 1.9619 3.3037 1.9619 2.5059 \atfi@CURVETOY
356 1.9619 1.707 4.0947 1.25 \atfi@CURVETOY
357 7.4141 1.25 \atfi@LINETO
358 9.4292 1.8223 9.4292 3.3066 \atfi@CURVETOY
359 9.4292 4.79 9.4292 16.8945 \atfi@CURVETOY
360 9.7852 18.1514 8.481 18.1514 \atfi@CURVETOY
361 7.1768 18.1514 5.1616 18.1514 \atfi@CURVETOY
362 3.8574 17.9209 3.8574 16.8945 \atfi@CURVETOY
363 3.8574 15.8652 3.8574 6.6172 \atfi@CURVETOY
364 4.3325 5.418 5.1025 5.418 \atfi@CURVETOY
365 5.8726 5.418 6.5845 5.418 \atfi@CURVETOY
366 7.6812 5.6455 7.6812 6.4736 \atfi@CURVETOY
367 7.6812 7.3027 7.6812 11.5264 \atfi@CURVETOY
368 \atfi@STROKE
369 0 \atfi@SETGRAYSTROKE
370 1.2495 12.4404 \atfi@MOVETO
371 1.2495 3.9883 1.2495 3.1895 \atfi@CURVETOY
372 1.2495 2.3906 3.3833 1.9326 \atfi@CURVETOY
373 6.7026 1.9326 \atfi@LINETO
374 8.7178 2.5068 8.7178 3.9902 \atfi@CURVETOY
375 8.7178 5.4736 8.7178 17.5781 \atfi@CURVETOY
376 9.0732 18.834 7.769 18.834 \atfi@CURVETOY
377 6.4653 18.834 4.4497 18.834 \atfi@CURVETOY
378 3.146 18.6055 3.146 17.5781 \atfi@CURVETOY
379 3.146 16.5498 3.146 7.3018 \atfi@CURVETOY
380 3.6201 6.1016 4.3911 6.1016 \atfi@CURVETOY
381 5.1611 6.1016 5.873 6.1016 \atfi@CURVETOY
382 6.9692 6.3301 6.9692 7.1572 \atfi@CURVETOY
383 6.9692 7.9863 6.9692 12.21 \atfi@CURVETOY
384 \atfi@STROKE

```

```

385 \atfi@color@inline{STROKE}%
386 1 \atfi@SETLINEWIDTH
387 1.2495 12.4404 \atfi@MOVETO
388 1.2495 3.9883 1.2495 3.1895 \atfi@CURVETOY
389 1.2495 2.3906 3.3833 1.9326 \atfi@CURVETOY
390 6.7026 1.9326 \atfi@LINETO
391 8.7178 2.5068 8.7178 3.9902 \atfi@CURVETOY
392 8.7178 5.4736 8.7178 17.5781 \atfi@CURVETOY
393 9.0732 18.834 7.769 18.834 \atfi@CURVETOY
394 6.4653 18.834 4.4497 18.834 \atfi@CURVETOY
395 3.146 18.6055 3.146 17.5781 \atfi@CURVETOY
396 3.146 16.5498 3.146 7.3018 \atfi@CURVETOY
397 3.6201 6.1016 4.3911 6.1016 \atfi@CURVETOY
398 5.1611 6.1016 5.873 6.1016 \atfi@CURVETOY
399 6.9692 6.3301 6.9692 7.1572 \atfi@CURVETOY
400 6.9692 7.9863 6.9692 12.21 \atfi@CURVETOY
401 \atfi@STROKE
402 \atfi@GRESTORE
403 }
404 \def\atfi@acroPaperclip{%
405 \raisebox{-1.25bp}{\parbox[b][21bp]{12bp}{%
406 \rule{0pt}{0pt}\atfi@literal{\atfi@acroPaperclip@data}}}%
407 }%
408 }
409 \def\atfi@acroPushPin@data{%
410 \atfi@GSAVE
411 1 \atfi@SETLINEWIDTH
412 1 6 \atfi@MOVETO
413 11 6 \atfi@LINETO
414 11 13 \atfi@LINETO
415 12 13 \atfi@LINETO
416 14 11 \atfi@LINETO
417 21 11 \atfi@LINETO
418 22 12 \atfi@LINETO
419 23 12 \atfi@LINETO
420 23 2 \atfi@LINETO
421 22 2 \atfi@LINETO
422 21 3 \atfi@LINETO
423 14 3 \atfi@LINETO
424 12 1 \atfi@LINETO
425 11 1 \atfi@LINETO
426 11 6 \atfi@LINETO
427 \atfi@FILLSTROKE{%
428 \atfi@color@inline{FILL}%
429 }{%
430 0 \atfi@SETGRAYSTROKE
431 }%
432 0.5 \atfi@SETGRAYSTROKE
433 0 7 \atfi@MOVETO
434 10 7 \atfi@LINETO
435 10 8 \atfi@LINETO
436 1 8 \atfi@LINETO
437 \atfi@STROKE
438 1 \atfi@SETGRAYSTROKE
439 12 12 \atfi@MOVETO
440 14 10 \atfi@LINETO
441 22 10 \atfi@LINETO
442 22 11 \atfi@LINETO
443 \atfi@STROKE
444 \atfi@GRESTORE
445 }
446 \def\atfi@acroPushPin{%

```

```

447 \raisebox{-1.25bp}{\parbox[b][14bp]{24bp}{%
448 \rule{0pt}{0pt}\atfi@literal{\atfi@acroPushPin@data}}}%
449 }%
450 }
451 \def\atfi@acroTag@data{%
452 \atfi@GSAVE
453 0.5 \atfi@SETGRAYFILL
454 10.0542 14.9873 \atfi@MOVETO
455 24.27 14.9873 \atfi@LINETO
456 25.252 14.0059 \atfi@LINETO
457 25.252 1.1455 \atfi@LINETO
458 24.1064 0 \atfi@LINETO
459 9.9609 0 \atfi@LINETO
460 6.0327 6.0088 \atfi@LINETO
461 6.0327 9.002 \atfi@LINETO
462 10.0542 14.9873 \atfi@LINETO
463 9.3994 9.376 \atfi@MOVETO
464 8.5215 9.376 7.8096 8.5596 7.8096 7.5527 \atfi@CURVETO
465 7.8096 6.5449 8.5215 5.7285 9.3994 5.7285 \atfi@CURVETO
466 10.2778 5.7285 10.9897 6.5449 10.9897 7.5527 \atfi@CURVETO
467 10.9897 8.5596 10.2778 9.376 9.3994 9.376 \atfi@CURVETO
468 \atfi@CLOSEPATH
469 \atfi@FILL
470 0 \atfi@SETFLAT
471 0.5 \atfi@SETLINEWIDTH
472 4 \atfi@SETMITERLIMIT
473 1 \atfi@SETLINEJOIN
474 8.5107 16.5313 \atfi@MOVETO
475 22.7266 16.5313 \atfi@LINETO
476 23.7085 15.5488 \atfi@LINETO
477 23.7085 2.6895 \atfi@LINETO
478 22.563 1.543 \atfi@LINETO
479 8.4175 1.543 \atfi@LINETO
480 4.4893 7.5527 \atfi@LINETO
481 4.4893 10.5449 \atfi@LINETO
482 8.5107 16.5313 \atfi@LINETO
483 7.856 10.9199 \atfi@MOVETO
484 6.978 10.9199 6.2661 10.1035 6.2661 9.0957 \atfi@CURVETO
485 6.2661 8.0879 6.978 7.2715 7.856 7.2715 \atfi@CURVETO
486 8.7344 7.2715 9.4463 8.0879 9.4463 9.0957 \atfi@CURVETO
487 9.4463 10.1035 8.7344 10.9199 7.856 10.9199 \atfi@CURVETO
488 \atfi@CLOSEPATH
489 \atfi@FILLSTROKE{%
490 \atfi@color@inline{FILL}}%
491 }{%
492 0 \atfi@SETGRAYSTROKE
493 }%
494 1 \atfi@SETLINEWIDTH
495 12.3291 12.2656 \atfi@MOVETO
496 21.1206 12.2656 \atfi@LINETO
497 \atfi@STROKE
498 12.3291 9.1797 \atfi@MOVETO
499 21.1206 9.1797 \atfi@LINETO
500 \atfi@STROKE
501 12.3291 6.1875 \atfi@MOVETO
502 21.1206 6.1875 \atfi@LINETO
503 \atfi@STROKE
504 % 0 \atfi@SETGRAYSTROKE % redundant?
505 0.5 \atfi@SETLINEWIDTH
506 0 9.0488 \atfi@MOVETO
507 6.2661 9.0957 \atfi@LINETO
508 \atfi@STROKE

```

```

509 1.4028 5.2148 \atfi@MOVETO
510 1.4028 9.6094 \atfi@LINETO
511 1.6831 10.6387 2.4316 10.6387 \atfi@CURVETOY
512 3.6475 10.6387 3.5542 9.0488 \atfi@CURVETOY
513 \atfi@STROKE
514 \atfi@GRESTORE
515 }
516 \DeclareRobustCommand{\atfi@acroTag}{%
517   \raisebox{-1.6bp}{\parbox[b]{17bp}{25bp}{%
518     \rule{0pt}{0pt}\atfi@literal{\atfi@acroTag@data}}}%
519   }%
520 }
521
522 % --- .atfi file reading support ---
523
524 % commands used in \jobname.atfi:
525 % * \attachfile@timezone{<timezone in PDF format>}
526 % * \attachfile@file[
527 %   Size=<size>,
528 %   CreationDate=<date>, % <date> local time without "D:" and timezone
529 %   ModDate=<date>,
530 %   CheckSum=<checksum>
531 % ]{<filename as hex string>}
532 %
533 \def\attachfile@timezone#1{%
534   \ifx\#1\%
535     % no timezone information given
536   \else
537     \def\atfi@timezone{#1}%
538   \fi
539 }
540 \newcommand*{\attachfile@file}[2][{}]{%
541   \ifx\#2\%
542     \PackageError{attachfile2}{Empty file name}\@ehc
543   \else
544     \edef\atfi@restore{\uccode0=\the\uccode0 \relax}%
545     \let\atfi@filename\empty
546     \atfi@getfilename#2\relax\relax
547     \atfi@restore
548     \namedef{atfi@file@\atfi@filename}{#1}%
549   \fi
550 }
551 % convert file name from hex string
552 \begingroup
553   \catcode0=12 %
554   \gdef\atfi@getfilename#1#2{%
555     \ifx\relax#1%
556     \else
557       \uccode0=\numexpr 16*\atfi@hexnum{#1} + \atfi@hexnum{#2}\relax
558       \uppercase{%
559         \edef\atfi@filename{%
560           \atfi@filename^^%
561         }%
562       }%
563       \expandafter\atfi@getfilename
564     \fi
565   }%
566 \endgroup
567 \def\atfi@hexnum#1{%
568   \ifnum'#1<58 %
569     \numexpr '#1-48\relax
570   \else

```

```

571     \numexpr '#1-87\relax
572 \fi
573 }
574
575 \InputIfFileExists{\jobname.atfi}{\relax}{\relax}%
576
577 \newif\ifatfi@checksum
578 \define@key{AtFi@file}{Checksum}{%
579   \atfi@checksumtrue
580   \edef\atfi@params{\atfi@params/Checksum<#1>}%
581 }
582 \newif\ifatfi@creationdate
583 \define@key{AtFi@file}{CreationDate}{%
584   \atfi@creationdatetrue
585   \edef\atfi@params{\atfi@params/CreationDate(D:#1\atfi@timezone)}%
586 }
587 \newif\ifatfi@moddate
588 \define@key{AtFi@file}{ModDate}{%
589   \atfi@moddatetrue
590   \edef\atfi@params{\atfi@params/ModDate(D:#1\atfi@timezone)}%
591 }
592
593 % --- .atfi file writing support ---
594
595 % respect \nofiles and option nofiles
596 % \nofiles has more weight than option nofiles
597 \if@files
598 \else
599   \atfi@nofilestrue
600 \fi
601 \ifatfi@nofiles
602   \PackageInfo{attachfile2}{%
603     File '\jobname.atfi' will not be written because of\MessageBreak
604     \string\nofiles\space or option 'nofiles'%
605   }%
606   \let\atfi@writefile\@gobble
607 \else
608   \newwrite\atfi@stream
609   \immediate\openout\atfi@stream=\jobname.atfi\relax
610   \immediate\write\atfi@stream{%
611     \string\attachfile@timezone{\atfi@timezone}%
612   }%
613   \def\atfi@writefile#1{%
614     \begingroup
615       \def\file{#1}%
616       \@onelevel@sanitize\file
617       \edef\file{\@firstofone{\expandafter\atfi@replace\file} \@nil}%
618       \edef\file{\expandafter\atfi@tohex\file\relax}%
619       \immediate\write\atfi@stream{%
620         \string\attachfile@file[%
621           \@ifundefined{atfi@file@#1}{\@nameuse{atfi@file@#1}}%
622         ]{\file}%
623       }%
624     \endgroup
625   }%
626 \fi
627
628 \def\atfi@attachfile#1#2{%
629   \@ifundefined{atfi@fileobj@#2}{%
630     \atfi@writefile{#2}%
631   }{%
632     % don't need duplicates

```

```

633 }%
634 \setkeys{AtFi}{#1}%
635 \atfi@embedfile{#2}%
636 \atfi@set@appearance@icon
637 \atfi@flags@to@int
638 \atfi@insert@file@annot{#2}%
639 \endgroup
640 }
641
642 % convert to hex string
643
644 \def\atfi@replace#1 #2\@nil{%
645   #1%
646   \ifx\#2\%
647   \else
648     \atfi@space
649     \@ReturnAfterFi{%
650       \atfi@replace#2\@nil
651     }%
652   \fi
653 }%
654
655 \long\def\@ReturnAfterFi#1\fi{\fi#1}
656
657 % ---
658
659 \newlength{\atfi@appearancewidth}
660 \newlength{\atfi@appearanceheight}
661 \newlength{\atfi@appearancedepth}
662 \newsavebox{\atfi@appearancebox}
663
664 \def\atfi@set@appearance@icon{%
665   \@ifundefined{atfi@appobj@atfi@icon@icon}{%
666     \savebox{\atfi@appearancebox}{\@nameuse{atfi@acro\atfi@icon@icon}}%
667     \expandafter\xdef\csname atfi@appwidth@\atfi@icon@icon\endcsname{%
668       \the\wd\atfi@appearancebox
669     }%
670     \expandafter\xdef\csname atfi@appheight@\atfi@icon@icon\endcsname{%
671       \the\ht\atfi@appearancebox
672     }%
673     \expandafter\xdef\csname atfi@appdepth@\atfi@icon@icon\endcsname{%
674       \the\dp\atfi@appearancebox
675     }%
676     \atfi@xform@icon
677     \global\expandafter\let\csname atfi@appobj@\atfi@icon@icon\endcsname
678       \atfi@appearanceobj
679   }{%
680   }%
681   % optimization: \setlength dropped
682   \atfi@appearancewidth=\@nameuse{atfi@appwidth@\atfi@icon@icon}\relax
683   \atfi@appearanceheight=\@nameuse{atfi@appheight@\atfi@icon@icon}\relax
684   \atfi@appearancedepth=\@nameuse{atfi@appdepth@\atfi@icon@icon}\relax
685   \expandafter\let\expandafter\atfi@appearanceobj
686     \csname atfi@appobj@\atfi@icon@icon\endcsname
687 }
688
689 \def\atfi@set@appearance#1{%
690   \savebox{\atfi@appearancebox}{#1}%
691   \atfi@appearancewidth=\wd\atfi@appearancebox
692   \atfi@appearanceheight=\ht\atfi@appearancebox
693   \atfi@appearancedepth=\dp\atfi@appearancebox
694   \atfi@xform

```

```

695 }
696
697 \newcounter{atfi@flags}
698 \DeclareRobustCommand{\atfi@flags@to@int}{%
699   \setcounter{atfi@flags}{0}%
700   \ifatfi@print
701     \addtocounter{atfi@flags}{4}%
702   \fi%
703   \ifatfi@zoom
704   \else
705     \addtocounter{atfi@flags}{8}%
706   \fi%
707 }
708
709 \def\atfi@textattachfile#1#2{%
710   \endgroup
711   \atfi@textattachfile@i{#1}{#2}%
712 }
713 \def\atfi@textattachfile@i#1#2#3{%
714   \setkeys{AtFi}{#1}%
715   \atfi@embedfile{#2}%
716   \atfi@set@appearance{%
717     \leavevmode
718     \beginingroup
719       \HyColor@UseColor\atfi@color@tex
720       #3\strut
721     \endgroup
722   }%
723   \atfi@flags@to@int
724   \atfi@insert@file@annot{#2}%
725 \endgroup
726 }
727
728 \DeclareRobustCommand{\attachfile}[1] [] {%
729   \beginingroup
730     \let\do\@makeoother
731     \dospecials
732     \catcode'\{=1\relax
733     \catcode'\}=2\relax
734     \atfi@attachfile{#1}%
735 }
736 \DeclareRobustCommand{\textattachfile}[1] [] {%
737   \beginingroup
738     \beginingroup
739       \let\do\@makeoother
740       \dospecials
741       \catcode'\{=1\relax
742       \catcode'\}=2\relax
743       \atfi@textattachfile{#1}%
744 }
745 \DeclareRobustCommand{\noattachfile}[1] [] {%
746   \beginingroup
747     \setkeys{AtFi}{#1}%
748     \atfi@set@appearance@icon
749     \ifatfi@print
750       \expandafter\atfi@refxform\csname atfi@appobj@\atfi@icon@icon\endcsname
751     \else
752       \makebox[\atfi@appearancewidth]{}%
753     \fi
754   \endgroup
755 }
756 </package>

```



## 2.2 Drivers

### 2.2.1 pdfTeX

```
757 <*pdftex>
758 \NeedsTeXFormat{LaTeX2e}
759 \ProvidesFile{atfipdftex.def}%
760 [2008/07/29 v2.4 attachfile2 driver for pdfTeX (HO)]%

761 \let\atfi@literal\pdfliteral
762
763 % --- macros for graphics data ---
764
765 \def\atfi@GSAVE{q }
766 \def\atfi@GRESTORE{Q }
767 \def\atfi@SETLINEWIDTH{w }
768 \def\atfi@LINETO{l }
769 \def\atfi@MOVETO{m }
770 \def\atfi@STROKE{S }
771 \def\atfi@FILL{f }
772 % \atfi@FILLSTROKE{<fill color>}{<stroke color>}
773 \def\atfi@FILLSTROKE#1#2{#1#2B }
774 % color: uppercase are stroke colors, lowercase non-stroke (fill) colors
775 % PS, however, does not different between stroke and not-stroke colors
776 \def\atfi@SETRGBCOLORSTROKE{RG }
777 \def\atfi@SETRGBCOLORFILL{rg }
778 \def\atfi@SETGRAYSTROKE{G }
779 \def\atfi@SETGRAYFILL{g }
780 \def\atfi@SETCMYKCOLORSTROKE{K }
781 \def\atfi@SETCMYKCOLORFILL{k }
782 \def\atfi@RECTFILL{re f }
783 \def\atfi@RECTSTROKEFILL#1#2#3{#1#2#3re B }
784 \def\atfi@SETMITERLIMIT{M }
785 \def\atfi@SETFLAT{i }
786 \def\atfi@SETLINECAP{J }
787 \def\atfi@CURVETO{c }
788 \def\atfi@CURVETOv{v }
789 \def\atfi@CURVETOY{y }
790 \def\atfi@CLOSEPATH{h }
791 \def\atfi@SETLINEJOIN{j }
792
793 % ---
794
795 \define@key{AtFi@file}{Size}{%
796   \edef\atfi@params{\atfi@params/Size #1}%
797 }
798
799 \def\atfi@embedfile#1{%
800   \ifundefined{atfi@fileobj@#1}{%
801     \begingroup
802       \let\atfi@params\@empty
803       \ifundefined{atfi@file@#1}{%
804         \edef\x{\noexpand\setkeys{AtFi@file}{\@nameuse{atfi@file@#1}}}%
805         \x
806       }%
807       \ifx\atfi@params\@empty
808         \else
809           \edef\atfi@params{/Params<<\atfi@params>>}%
810         \fi
811       \immediate\pdfobj stream attr {%
812         /Type/EmbeddedFile%
813         \atfi@mimetype
814         \atfi@params
815       } file {#1}%
816     \endgroup
817   }%
818 }
```

```

816     \expandafter\xdef\csname atfi@fileobj@#1\endcsname{\the\pdflastobj}%
817   \endgroup
818 }{%
819   % file already embedded
820 }%
821 }
822
823 % ---
824
825 % input: \atfi@appearancebox, output: \atfi@appearanceobj
826 \def\atfi@xform{%
827   \immediate\pdfxform\atfi@appearancebox
828   \edef\atfi@appearanceobj{\the\pdflastxform}%
829 }
830 \let\atfi@xform@icon\atfi@xform
831
832 \def\atfi@refxform#1{%
833   \pdfrefxform#1\relax
834 }
835
836 % ---
837
838 \def\atfi@insert@file@annot#1{%
839   \rule{0pt}{0pt}%
840   \ifatfi@appearance
841     \def\atfi@appearance@dict{%
842       /AP<<%
843         /N \atfi@appearanceobj\space 0 R%
844         /R \atfi@appearanceobj\space 0 R%
845         /D \atfi@appearanceobj\space 0 R%
846       >>%
847     }%
848   \else
849     \let\atfi@appearance@dict\@empty
850   \fi
851   \@ifundefined{atfi@fsobj@#1}{%
852     \atfi@pdfstringdef\atfi@file{#1}%
853     \immediate\pdfobj{%
854       <<%
855         /Type/Filespec%
856         /F(\atfi@file)%
857         /EF<<%
858         /F \@nameuse{atfi@fileobj@#1} 0 R%
859       >>%
860     >>%
861   }%
862   \expandafter\xdef\csname atfi@fsobj@#1\endcsname{%
863     \the\pdflastobj
864   }%
865 }{%
866 }%
867 \pdfannot width \atfi@scale\atfi@appearancewidth
868           height \atfi@scale\atfi@appearanceheight
869           depth \atfi@scale\atfi@appearancedepth {%
870   /Subtype/FileAttachment%
871   \atfi@icon
872   \atfi@color@annot
873   \atfi@author
874   \atfi@date
875   \atfi@annotname
876   \atfi@description
877   \atfi@subject

```

```

878 \atfi@appearance@dict
879 /F \theatfi@flags
880 /FS \@nameuse{atfi@fsobj@#1} 0 R%
881 }%
882 \rule{0pt}{\atfi@appearanceheight}%
883 \rule[-\atfi@appearancedepth]{0pt}{\atfi@appearancedepth}%
884 \rule{\atfi@appearancewidth}{0pt}%
885 }
886 </pdfTex>

```

### 2.2.2 dvips

```

887 <*dvips>
888 \NeedsTeXFormat{LaTeX2e}
889 \ProvidesFile{atfipdfTex.def}%
890 [2008/07/29 v2.4 attachfile2 driver for dvips (HO)]%
891 \def\atfi@literal#1{%
892 \special{ps:atfi_dict begin{#1}atfi_?pdfmark end}%
893 }
894
895 \def\atfi@header#1{%
896 \special{! #1}%
897 }
898
899 % --- macros for graphics data ---
900
901 \atfi@header{%
902 userdict begin 20 dict dup /atfi_dict exch def end begin%
903 /atfi_?pdfmark systemdict %
904 dup/pdfmark known%
905 {%
906 /exec get def%
907 }{%
908 /pop get def%
909 } ifelse%
910 {%
911 %
912 % x y width height atfi_re ->
913 languagelevel 2 ge {%
914 /atfi_rectfill { rectfill } bind def%
915 /atfi_rectstroke { rectstroke } bind def%
916 }{%
917 /atfi_rect {%
918 /atfi_height exch def%
919 /atfi_width exch def%
920 /atfi_x exch def%
921 /atfi_y exch def %
922 newpath %
923 atfi_x atfi_y moveto %
924 atfi_x atfi_width add atfi_y lineto %
925 atfi_x atfi_width add atfi_y atfi_height add lineto %
926 atfi_x atfi_y atfi_height add lineto %
927 closepath%
928 } bind def%
929 /atfi_rectfill {%
930 atfi_rect fill%
931 } bind def%
932 /atfi_rectstroke {%
933 atfi_rect stroke%
934 } bind def%
935 } ifelse%
936 /atfi_curveto_v {%
937 currentpoint 6 2 roll curveto%

```

```

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

```

```

1000         /atfi_month atfi_month 1 add def %
1001     31 atfi_days lt%
1002     {%
1003         atfi_days 31 sub /atfi_days exch def%
1004         /atfi_month atfi_month 1 add def %
1005     31 atfi_days lt%
1006     {%
1007         atfi_days 31 sub /atfi_days exch def%
1008         /atfi_month atfi_month 1 add def %
1009     30 atfi_days lt%
1010     {%
1011         atfi_days 30 sub /atfi_days exch def%
1012         /atfi_month atfi_month 1 add def %
1013     31 atfi_days lt%
1014     {%
1015         atfi_days 31 sub /atfi_days exch def%
1016         /atfi_month atfi_month 1 add def %
1017     30 atfi_days lt%
1018     {%
1019         atfi_days 30 sub /atfi_days exch def%
1020         /atfi_month atfi_month 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     } if%
1026     } if%
1027     } if%
1028     } if%
1029     } if%
1030     } if%
1031     } if%
1032     } if%
1033     } if%
1034     } if%
1035     } { pop } ifelse%
1036 }{ pop } ifelse %
1037 % calc time part
1038 3600 24 mul mod %
1039 dup 3600 idiv dup /atfi_hour exch def %
1040 3600 mul sub %
1041 dup 60 idiv dup /atfi_min exch def %
1042 60 mul sub %
1043 /atfi_sec exch def%
1044 (D:19700101000000Z)%
1045 dup 2 atfi_year 4 string cvs putinterval %
1046 dup 6 atfi_month atfi_two %
1047 dup 8 atfi_days atfi_two %
1048 dup 10 atfi_hour atfi_two %
1049 dup 12 atfi_min atfi_two %
1050 dup 14 atfi_sec atfi_two%
1051 } bind def %
1052 %
1053 % <filename> atfi_calc_checksum -> /Checksum <checksum>
1054 % or returns nothing, if MD5Encode is not given
1055 false %
1056 languagelevel 2 ge {%
1057     (MD5Encode)%
1058     { pop true or }%
1059     (MD5Encode) length string%
1060     /Filter %
1061     resourceforall%

```

```

1062     } if%
1063     {%
1064         /atfi_calc_checksum {%
1065             /atfi_checksum 16 string def%
1066             /atfi_file exch (r) file def%
1067             /atfi_md5sum atfi_checksum /MD5Encode filter def %
1068             % not too efficient to read and write byte by byte,
1069             % using a buffer is probably faster
1070             atfi_size {%
1071                 atfi_file read%
1072                 {%
1073                     atfi_md5sum exch write%
1074                 } if%
1075             } repeat %
1076             atfi_md5sum closefile %
1077             atfi_file closefile%
1078             /Checksum atfi_checksum%
1079         } bind def%
1080     }{%
1081         /atfi_calc_checksum { pop } bind def%
1082     } ifelse%
1083     %
1084     /atfi_pttobp { 72.27 div 72 mul } bind def%
1085     /atfi_pdftodvipsx { 72.27 div Resolution mul } bind def%
1086     /atfi_pdftodvipsy { 72.27 div VResolution mul } bind def%
1087     %
1088     } atfi_?pdfmark %
1089 end%
1090 }
1091
1092 \def\atfi@GSAVE{gsave }
1093 \def\atfi@GRESTORE{grestore }
1094 \def\atfi@SETLINEWIDTH{setlinewidth }
1095 \def\atfi@LINETO{lineto }
1096 \def\atfi@MOVETO{moveto }
1097 \def\atfi@STROKE{stroke }
1098 \def\atfi@FILL{fill }
1099 \def\atfi@FILLSTROKE#1#2{gsave #1 fill grestore #2 stroke }
1100 \def\atfi@SETRGBCOLORSTROKE{setrgbcolor }
1101 \def\atfi@SETRGBCOLORFILL{setrgbcolor }
1102 \def\atfi@SETGRAYSTROKE{setgray }
1103 \def\atfi@SETGRAYFILL{setgray }
1104 \def\atfi@SETCMYKCOLORSTROKE{setcmykcolor }
1105 \def\atfi@SETCMYKCOLORFILL{setcmykcolor }
1106 \def\atfi@RECTFILL{atfi_rectfill }
1107 \def\atfi@RECTSTROKEFILL#1#2#3{%
1108     #3%
1109     #1%
1110     gsave atfi_rectfill grestore %
1111     #2%
1112     #3%
1113     atfi_rectstroke %
1114     #1%
1115 }
1116 \def\atfi@SETMITERLIMIT{setmiterlimit }
1117 \def\atfi@SETFLAT{setflat }
1118 \def\atfi@SETLINECAP{setlinecap }
1119 \def\atfi@CURVETO{curveto }
1120 \def\atfi@CURVETOv{atfi_curveto_v }
1121 \def\atfi@CURVETOy{atfi_curveto_y }
1122 \def\atfi@CLOSEPATH{closepath }
1123 \def\atfi@SETLINEJOIN{setlinejoin }

```

```

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

```

```

1186      <<%
1187      /Type/EmbeddedFile%
1188      \atfi@mimetype
1189      /Params%
1190      <<%
1191      \atfi@params
1192      %
1193      /Size atfi_size%
1194      %
1195      /product where%
1196      {%
1197      pop %
1198      % check for ghostscript
1199      product (Ghostscript) search%
1200      {%
1201      pop pop pop %
1202      % ghostscript is running
1203      %
1204      \ifatfi@creationdate
1205      \else
1206      false % TODO: test for windows
1207      {%
1208      /CreationDate atfi_created atfi_convert_date%
1209      } if%
1210      \fi
1211      \ifatfi@moddate
1212      \else
1213      /ModDate atfi_referenced atfi_convert_date%
1214      \fi
1215      } if%
1216      %
1217      % look for MD5Encode filter and calculate CheckSum
1218      } if %
1219      \ifatfi@checksum
1220      \else
1221      atfi_filename atfi_calc_checksum%
1222      \fi
1223      >>%
1224      >>%
1225      /PUT pdfmark%
1226      [%
1227      \theatfi@obj
1228      atfi_filename (r) file%
1229      /PUT pdfmark%
1230      [%
1231      \theatfi@obj
1232      /CLOSE pdfmark%
1233      }{%
1234      % error: file not found
1235      % currently nothing is done
1236      } ifelse%
1237      }%
1238      \endgroup
1239      }{%
1240      % file already embedded
1241      }%
1242      }
1243
1244      % ---
1245
1246      % output: \atfi@appearanceobj
1247      % input: \atfi@appearancebox, \atfi@icon@icon

```



```

1248 \def\atfi@xform@icon{%
1249   \stepcounter{atfi@obj}%
1250   \edef\atfi@appearanceobj{\theatfi@obj}%
1251   \atfi@literal{%
1252     [%
1253       /_objdef \atfi@appearanceobj
1254       /BBox[%
1255         0 %
1256         0 %
1257         \strip@pt\wd\atfi@appearancebox\space atfi_pttobp %
1258         \strip@pt\dimexpr\dp\atfi@appearancebox
1259         +\ht\atfi@appearancebox\relax\space atfi_pttobp%
1260       ]%
1261       /BP pdfmark %
1262       \csname atfi@acro\atfi@icon@icon @data\endcsname
1263       [%
1264       /EP pdfmark%
1265     }%
1266   }
1267 % output: \atfi@appearanceobj
1268 % input: \atfi@appearancebox
1269 \def\atfi@xform{%
1270   \stepcounter{atfi@obj}%
1271   \edef\atfi@appearanceobj{\theatfi@obj}%
1272   \begingroup
1273     \setbox0=\hbox{%
1274       \atfi@literal{%
1275         [%
1276           /_objdef \atfi@appearanceobj
1277           /BBox[%
1278             currentpoint %
1279             \strip@pt\dp\atfi@appearancebox\space sub %
1280             currentpoint %
1281             exch \strip@pt\wd\atfi@appearancebox\space add %
1282             exch \strip@pt\ht\atfi@appearancebox\space add%
1283           ]%
1284           /BP pdfmark %
1285           gsave %
1286           currentpoint %
1287           2 copy translate %
1288           72.27 Resolution div 72.27 VResolution div neg scale %
1289           exch neg exch neg translate%
1290         }%
1291         \usebox{\atfi@appearancebox}%
1292         \atfi@literal{%
1293           grestore%
1294           [%
1295           /EP pdfmark%
1296         }%
1297       }%
1298       % do not allocate any space for xobject definition
1299       \dp0=\z@
1300       \ht0=\z@
1301       \wd0=\z@
1302       \mbox{\usebox0}%
1303     \endgroup
1304   }
1305
1306 \def\atfi@refxform#1{%
1307   \raisebox{-\atfi@appearancedepth}{%
1308     \atfi@literal{%
1309       gsave %

```

```

1310         currentpoint translate %
1311         Resolution 72 div VResolution neg 72 div scale%
1312         [#1 /SP pdfmark % hash-ok
1313         grestore%
1314     }%
1315     \makebox[\atfi@appearancewidth]{}%
1316 }%
1317 \rule{0pt}{\atfi@appearanceheight}%
1318 }
1319
1320 % ---
1321
1322 \def\atfi@insert@file@annot#1{%
1323     \rule{0pt}{0pt}%
1324     \ifatfi@appearance
1325         \def\atfi@appearance@dict{%
1326             /AP<<%
1327             /N \atfi@appearanceobj
1328             /R \atfi@appearanceobj
1329             /D \atfi@appearanceobj
1330             >>%
1331         }%
1332     \else
1333         \let\atfi@appearance@dict\@empty
1334     \fi
1335     \@ifundefined{atfi@fsobj@#1}{%
1336         \stepcounter{atfi@obj}%
1337         \expandafter\xdef\csname atfi@fsobj@#1\endcsname{\theatfi@obj}%
1338         \atfi@pdfstringdef\atfi@file{#1}%
1339         \atfi@literal{%
1340             [%
1341             /_objdef \theatfi@obj
1342             /type/dict%
1343             /OBJ pdfmark%
1344             [%
1345             \theatfi@obj
1346             <<%
1347             /Type/Filespec%
1348             /F(\atfi@file)%
1349             /EF<<%
1350             /F \csname atfi@fileobj@#1\endcsname
1351             >>%
1352             >>%
1353             /PUT pdfmark%
1354         ]%
1355     }{%
1356 }%
1357 \atfi@literal{%
1358     [%
1359     /Subtype/FileAttachment%
1360     \atfi@icon
1361     \atfi@color@annot
1362     \atfi@author
1363     \atfi@date
1364     \atfi@annotname
1365     \atfi@description
1366     \atfi@subject
1367     \atfi@appearance@dict
1368     /F \theatfi@flags
1369     /FS \csname atfi@fsobj@#1\endcsname
1370     /Rect[%
1371         currentpoint %

```

```

1372      \strip@pt\dimexpr\atfi@scale\atfi@appearancedepth\relax
1373      \space atfi_pdftodvipsy add %
1374      currentpoint %
1375      exch \strip@pt\dimexpr\atfi@scale\atfi@appearancewidth\relax
1376      \space atfi_pdftodvipsx add %
1377      exch \strip@pt\dimexpr\atfi@scale\atfi@appearanceheight\relax
1378      \space atfi_pdftodvipsy sub %
1379    ]%
1380    /ANN pdfmark%
1381  }%
1382  \rule{0pt}{\atfi@appearanceheight}%
1383  \rule[-\atfi@appearancedepth]{0pt}{\atfi@appearancedepth}%
1384  \rule{\atfi@appearancewidth}{0pt}%
1385 }
1386 </dvips>

```

## 2.3 Perl script pdfatfi.pl

```

1387 < *pdfatfi>
1388 eval '(exit $?0)' && eval 'exec perl -S $0 ${1+"$@"}' && eval 'exec perl -S $0 $argv:q'
1389 if 0;
1390 use strict;
1391 $^W=1; # turn warning on
1392 #
1393 # pdfatfi.pl
1394 #
1395 # Copyright (C) 2005, 2006 Heiko Oberdiek.
1396 #
1397 # This work may be distributed and/or modified under the
1398 # conditions of the LaTeX Project Public License, either version 1.3
1399 # of this license or (at your option) any later version.
1400 # The latest version of this license is in
1401 # http://www.latex-project.org/lppl.txt
1402 # and version 1.3 or later is part of all distributions of LaTeX
1403 # version 2005/12/01 or later.
1404 #
1405 # This work has the LPPL maintenance status "maintained".
1406 #
1407 # This Current Maintainer of this work is Heiko Oberdiek.
1408 #
1409 # See file "attachfile2.pdf" for a list of files that belong to this project.
1410 #
1411 # This file "pdfatfi.pl" may be renamed to "pdfatfi"
1412 # for installation purposes.
1413 #
1414 my $file      = "pdfatfi.pl";
1415 my $program    = uc($&) if $file =~ /\w+/;
1416 my $version    = "2.4";
1417 my $date      = "2008/07/29";
1418 my $author    = "Heiko Oberdiek";
1419 my $copyright  = "Copyright (c) 2005, 2006 by $author.";
1420 #
1421 # History:
1422 #   2005/05/21 v1.0: First release.
1423 #   2006/08/16 v2.2: Included in DTX file of attachfile2.dtx.
1424 #
1425
1426 use POSIX qw(strftime); # %z is used (GNU)
1427 use Digest::MD5;
1428
1429 ### program identification
1430 my $title = "$program $version, $date - $copyright\n";
1431

```

```

1432 ### error strings
1433 my $Error = "!!! Error:"; # error prefix
1434
1435 ### variables
1436 my $atffile;
1437
1438 ### option variables
1439 my @bool = ("false", "true");
1440 $::opt_help      = 0;
1441 $::opt_quiet     = 0;
1442 $::opt_debug     = 0;
1443 $::opt_verbose   = 0;
1444
1445 my $usage = <<"END_OF_USAGE";
1446 ${title}Syntax:  \L$program\E [options] <file[.atfi]>
1447 Function: Help program for LaTeX package "attachfile2".
1448 Options:                                     (defaults:)
1449 --help          print usage
1450 --(no)quiet     suppress messages             ($bool[$::opt_quiet])
1451 --(no)verbose   verbose printing              ($bool[$::opt_verbose])
1452 --(no)debug     debug informations           ($bool[$::opt_debug])
1453 END_OF_USAGE
1454
1455 ### process options
1456 my @OrgArgv = @ARGV;
1457 use Getopt::Long;
1458 GetOptions(
1459   "help!",
1460   "quiet!",
1461   "debug!",
1462   "verbose!",
1463 ) or die $usage;
1464 !$::opt_help or die $usage;
1465 @ARGV == 1 or die "$usage$Error Missing jobname!\n";
1466
1467 $::opt_quiet = 0 if $::opt_verbose;
1468
1469 print $title unless $::opt_quiet;
1470
1471 ### get jobname
1472 $atffile = $ARGV[0];
1473 if (!-f $atffile && -f "$atffile.atfi") {
1474   $atffile .= ".atfi";
1475 }
1476 -f $atffile or die "$Error File '$atffile' not found!\n";
1477
1478 print "* job file      = $atffile\n" if $::opt_verbose;
1479
1480 if ($::opt_debug) {
1481   print <<"END_DEB";
1482   * OSNAME: $^O
1483   * PERL_VERSION: $]
1484   * ARGV: @OrgArgv
1485 END_DEB
1486 }
1487
1488 my $tmpfile = $atffile . ".tmp";
1489
1490 my $timezone = strftime "%z", localtime;
1491 $timezone =~ s/^[+|-]\d\d(\d\d)$/$1'$2'/;
1492
1493 open(IN, $atffile) or die "$Error Cannot open '$atffile'!\n";

```

```

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

```

```

1556     }
1557 }
1558
1559 print OUT $_;
1560 }
1561
1562 close(IN);
1563 close(OUT);
1564
1565 unlink($atffile) or die "$Error Cannot delete old '$atffile'!\n";
1566 rename $tmpfile, $atffile
1567     or die "$Error Cannot move '$tmpfile' to '$atffile'!\n";
1568
1569 print "*** ready. ***\n" unless $::opt_quiet;
1570
1571 __END__
1572 </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  $\text{\TeX}$  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- $\text{\TeX}$ :

```
tex attachfile2.dtx
```

---

<sup>1</sup><http://ftp.ctan.org/tex-archive/>

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

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

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

### 3.4 Refresh file name databases

If your  $\TeX$  distribution (`te $\TeX$` , `mik $\TeX$` , ...) relies on file name databases, you must refresh these. For example, `te $\TeX$`  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  $\LaTeX$ .** The `.dtx` chooses its action depending on the format:

**plain- $\TeX$ :** Run `docstrip` and extract the files.

**$\LaTeX$ :** Generate the documentation.

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

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

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

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

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

An example follows how to generate the documentation with `pdf $\LaTeX$` :

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

## 4 References

- [1] Scott Pakin: *The attachfile package*; 2005/02/20 v1.2; [CTAN:macros/latex/contrib/attachfile/](http://CTAN:macros/latex/contrib/attachfile/).
- [2] Heiko Oberdiek: *The embedfile package*; 2006/08/16 v1.0; [CTAN:macros/latex/contrib/oberdiek/embedfile.pdf](http://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](http://partners.adobe.com/public/developer/pdf/index_reference.html).
- [4] Network Working Group: RFC 2046, *Multipurpose Internet Mail Extensions (MIME) Part Two: Media Types*, November 1996; <http://www.rfc-editor.org/>.
- [5] IANA (Internet Assigned Numbers Authority): *MIME Media Types*, May 2006; <http://www.iana.org/assignments/media-types/>.

## 5 History

### [2005/02/23 v2.0]

- New options: draft/final.
- New option scale for scaling the annotation rectangle.
- Supported driver options: pdftex, dvips.
- Configuration file ‘attachfile.cfg’ supported.
- Dependency of package calc dropped.
- $\varepsilon$ -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.



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