

# 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 (pdf<sub>tex</sub>, dvips, dvipdfm, ...).
- ...

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

- First I experimented with package `attachfile`, adding driver support, fixing bugs, .... The result is currently named as `attachfile2`. It uses an external script to get file properties (size, date, checksum, ...).
- In order to avoid an external program for getting basic file properties I provided a patch “EscapeAndOther” for pdf<sub>TeX</sub> 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 pdf<sub>TeX</sub>.

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 pdf<sub>TeX</sub> 1.30. With a recent pdf<sub>TeX</sub> 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-<sub>TeX</sub>.
- 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 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   [2006/08/16 v2.2 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
15 \def\atfi@pdfstringdef#1#2{%
16   \pdfstringdef\atfi@temp@string{#2}%
17   \edef#1{\atfi@temp@string}%
18 }
19
20 % --- convert to hex ---
21
22 \def\atfi@hexdigit#1{%
23   \ifcase#1%
24     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7\or 8\or 9\or
25     a\or b\or c\or d\or e\or f%
26   \fi
27 }
28 % detour via \dimexpr to avoid eTeX's nasty expression rounding
29 \def\atfi@hexchar#1{%
30   \atfi@hexdigit{\numexpr\dimexpr.0625\dimexpr'#1sp\relax\relax\relax}%
31   \atfi@hexdigit{%
32     \numexpr'#1-16*\dimexpr.0625\dimexpr'#1sp\relax\relax\relax
33   }%
34 }
35 \def\atfi@tohex#1{%
36   \ifx\relax#1%
37   \else
38     \atfi@hexchar{#1}%
39     \expandafter\atfi@tohex
40   \fi
41 }
42
43 % --- convert to name ---
44
45 \def\atfi@converttoname#1#2{%
46   \edef#1{#2}%
47   \@onelevel@sanitize#1%
48   \edef#1{\expandafter\atfi@spacetooother#1 \relax}%
49   \edef#1{\expandafter\atfi@converttokens#1\relax}%
50 }
51
52 \edef\atfi@hash{\string#}%
53 \catcode'\ =12\relax%
54 \def\atfi@space{ }%
55 \catcode'\ =10\relax%
56
57 \def\atfi@spacetooother#1 #2\relax{%
58   #1%
59   \ifx\#2\%
60   \else
61     \atfi@space
62     \@ReturnAfterFi{%
63       \atfi@spacetooother #2\relax
64     }%
65   \fi
66 }
67 \long\def\@ReturnAfterFi#1\fi{\fi#1}
68
69 \def\atfi@converttokens#1{%
70   \ifx\relax#1%
71   \else

```

```

72 \ifnum'#1<33 %
73 \ifcase'#1%
74 % drop illegal zero
75 \else
76 \atfi@hash\atfi@hexchar#1%
77 \fi
78 \else
79 \ifnum'#1>126 %
80 \atfi@hash\atfi@hexchar#1%
81 \else
82 \ifnum'#1=40 % (
83 \atfi@hash 28%
84 \else\ifnum'#1=41 % )
85 \atfi@hash 29%
86 \else\ifnum'#1=60 % <
87 \atfi@hash 3c%
88 \else\ifnum'#1=62 % >
89 \atfi@hash 3e%
90 \else\ifnum'#1=91 % [
91 \atfi@hash 5b%
92 \else\ifnum'#1=93 % ]
93 \atfi@hash 5d%
94 \else\ifnum'#1=123 % {
95 \atfi@hash 7b%
96 \else\ifnum'#1=125 % }
97 \atfi@hash 7d%
98 \else\ifnum'#1=47 % /
99 \atfi@hash 2f%
100 \else\ifnum'#1=37 % %
101 \atfi@hash 25%
102 \else
103 #1%
104 \fi\fi\fi\fi\fi\fi\fi\fi\fi\fi
105 \fi
106 \fi
107 \expandafter\atfi@converttokens
108 \fi
109 }
110
111
112 % --- options ---
113
114 % options "draft" and "final"
115 \newif\ifatfi@draft
116 \let\atfi@finaltrue\atfi@draftfalse
117 \let\atfi@finalfalse\atfi@drafttrue
118 \define@key{AtFi}{final}[true]{%
119 \csname atfi@final#1\endcsname
120 }
121 \define@key{AtFi}{draft}[true]{%
122 \csname atfi@draft#1\endcsname
123 }
124
125 % option mimetype
126 \def\atfi@mimetype{}
127 \define@key{AtFi}{mimetype}{%
128 \atfi@converttoname\atfi@mimetype{#1}%
129 \edef\atfi@mimetype{/Subtype/\atfi@mimetype}%
130 }
131
132 % option icon
133 \define@key{AtFi}{icon}{%

```

```

134 \def\atfi@icon{/Name/#1}%
135 \def\atfi@icon@icon{#1}%
136 }
137 \setkeys{AtFi}{icon=PushPin}
138
139 % option color
140 \define@key{AtFi}{color}{%
141 \def\atfi@color{/C[#1]}%
142 \def\atfi@color@rgb{#1}%
143 }
144 \setkeys{AtFi}{color=1 0.9255 0.7765}
145
146 % time options timezone and date
147 \def\atfi@pad@ii#1{%
148 \ifnum#1>9
149 \number#1%
150 \else
151 0\number#1%
152 \fi%
153 }
154 \let\atfi@timezone\@empty
155 \define@key{AtFi}{timezone}{\def\atfi@timezone{#1}}
156 \edef\atfi@time{\the\time}
157 \def\atfi@hours{%
158 \numexpr\dimexpr0.01667\dimexpr\atfi@time sp\relax\relax\relax
159 }
160 \def\atfi@minutes{%
161 \numexpr\atfi@time-60*\atfi@hours\relax
162 }
163 \def\atfi@seconds{0}
164 \def\atfi@date{%
165 /M(D:\the\year
166 \atfi@pad@ii\month
167 \atfi@pad@ii\day
168 \atfi@pad@ii\atfi@hours
169 \atfi@pad@ii\atfi@minutes
170 \atfi@pad@ii\atfi@seconds
171 \atfi@timezone)%
172 }
173 \define@key{AtFi}{date}{%
174 \atfi@pdfstringdef\atfi@date{#1}%
175 \edef\atfi@date{/M(\atfi@date)}%
176 }
177
178 % name for annotation to be used in GoToE actions
179 \let\atfi@annotname\@empty
180 \define@key{AtFi}{annotname}{%
181 \atfi@pdfstringdef\atfi@annotname{#1}%
182 \edef\atfi@annotname{/NM(\atfi@annotname)}%
183 }
184
185 % text options author, description, and subject
186 \DeclareRobustCommand{\atfi@pdfstringdef}[2]{%
187 \pdfstringdef\atfi@temp@string{#2}%
188 \edef#1{\atfi@temp@string}%
189 }
190
191 % option author
192 \def\atfi@author{}
193 \define@key{AtFi}{author}{%
194 \atfi@pdfstringdef\atfi@author{#1}%
195 \edef\atfi@author{/T(\atfi@author)}%

```

```

196 }
197
198 % option description
199 \def\atfi@description{}
200 \define@key{AtFi}{description}{%
201   \atfi@pdfstringdef\atfi@description{#1}%
202   \edef\atfi@description{/Contents(\atfi@description)}%
203 }
204
205 % option subject
206 \def\atfi@subject{}
207 \define@key{AtFi}{subject}{%
208   \atfi@pdfstringdef\atfi@subject{#1}%
209   \edef\atfi@subject{/Subj(\atfi@subject)}%
210 }
211
212 % option print
213 \newif\ifatfi@print
214 \atfi@printtrue
215 \define@key{AtFi}{print}[true]{\csname atfi@print#1\endcsname}
216
217 % option zoom
218 \newif\ifatfi@zoom
219 \atfi@zoomtrue
220 \define@key{AtFi}{zoom}[true]{\csname atfi@zoom#1\endcsname}
221
222 % option appearance
223 \newif\ifatfi@appearance
224 \atfi@appearancetrue
225 \define@key{AtFi}{appearance}[true]{%
226   \csname atfi@appearance#1\endcsname
227 }
228
229 % option scale
230 \def\atfi@scale{1}
231 \define@key{AtFi}{scale}[1]{%
232   \def\atfi@scale{#1}%
233 }
234
235 % option nofiles
236 \newif\ifatfi@nofiles
237 \atfi@nofilesfalse
238 \define@key{AtFi}{nofiles}[true]{%
239   \csname atfi@nofiles#1\endcsname
240 }
241
242 % driver options
243 \let\atfi@driver\@empty
244 \def\atfi@driver@pdftex{pdftex}
245 \def\atfi@driver@dvi{dvips}
246
247 \define@key{AtFi}{pdftex}[true]{%
248   \let\atfi@driver\atfi@driver@pdftex
249 }
250 \define@key{AtFi}{dvi}[true]{%
251   \let\atfi@driver\atfi@driver@dvi
252 }
253
254 \DeclareRobustCommand{\attachfilesetup}[1]{\setkeys{AtFi}{#1}}
255
256 % timezone setting, ...
257 \InputIfFileExists{attachfile.cfg}{}{}

```

```

258
259 \ProcessKeyvalOptions{AtFi}
260
261 % --- evaluate driver options ---
262
263 \ifpdf
264 % ignoring other driver options
265 \let\atfi@driver\atfi@driver@pdftex
266 \else
267 \ifx\atfi@driver\@empty
268 \PackageWarningNoLine{attachfile2}{%
269     Driver is not specified,\MessageBreak
270     enforce draft settings%
271 }%
272 \atfi@drafttrue
273 \fi
274 \fi
275
276 % --- evaluate draft/final options ---
277
278 \DeclareRobustCommand{\notextattachfile}[2][{}]{%
279     \begingroup
280     \setkeys{AtFi}{#1}%
281     \ifatfi@print
282     \def\atfi@textcolor{##1 ##2 ##3}##4{%
283         \textcolor{rgb}{##1,##2,##3}{##4}}%
284     \expandafter\atfi@textcolor\expandafter
285     (\atfi@color@rgb){#2\strut}%
286     \else
287     \setbox0=\hbox{#2\strut}%
288     \makebox[\wd0]{}%
289     \fi
290 \endgroup
291 }
292
293 \ifatfi@draft
294 \def\atfi@dummy@pushpin{%
295     \raisebox{-1.25bp}{\parbox[b][14bp]{24bp}{}}%
296 }
297 \DeclareRobustCommand{\textattachfile}[3][{}]{%
298     \notextattachfile[#1]{#3}%
299 }
300 \DeclareRobustCommand{\noattachfile}[1][{}]{%
301     \notextattachfile[#1]{\atfi@dummy@pushpin}%
302 }
303 \DeclareRobustCommand{\attachfile}[2][{}]{%
304     \noattachfile[#1]%
305 }
306 \expandafter\endinput
307 \fi
308
309 % --- load driver file ---
310
311 \input{atfi\atfi@driver.def}
312
313 % --- graphics ---
314
315 \def\atfi@acroGraph@data{%
316     \atfi@GSAVE
317     0.5 \atfi@SETGRAYFILL
318     1.1133 0 20.7202 18.2754 \atfi@RECTFILL
319     0 \atfi@SETFLAT

```



```

320 0.5 \atfi@SETLINEWIDTH
321 4 \atfi@SETMITERLIMIT
322 \atfi@RECTSTROKEFILL{%
323 1 \atfi@SETGRAYFILL
324 }{%
325 0 \atfi@SETGRAYSTROKE
326 }{%
327 0.25 1.6453 20.145 17.7715 %
328 }%
329 0 \atfi@SETGRAYFILL
330 2.7319 4.1367 3.9571 13.8867 \atfi@RECTFILL
331 8.7031 4.1367 3.9571 9.8867 \atfi@RECTFILL
332 14.7471 4.1367 3.9571 11.8867 \atfi@RECTFILL
333 \atfi@color@rgb\space \atfi@SETRGBCOLORFILL
334 1.689 3.0938 3.9571 13.8867 \atfi@RECTFILL
335 7.6602 3.0938 3.9571 9.8867 \atfi@RECTFILL
336 13.7041 3.0938 3.9571 11.8867 \atfi@RECTFILL
337 \atfi@GRESTORE
338 }
339 \def\atfi@acroGraph{%
340 \raisebox{-1.5bp}{\parbox[b][20bp]{22bp}{%
341 \rule{0pt}{0pt}\atfi@literal{\atfi@acroGraph@data}}}%
342 }%
343 }
344 \newcommand{\atfi@acroPaperclip@data}{%
345 \atfi@GSAVE
346 0.75 \atfi@SETGRAYSTROKE
347 0 \atfi@SETFLAT
348 2.5 \atfi@SETLINEWIDTH
349 1 \atfi@SETLINECAP
350 4 \atfi@SETMITERLIMIT
351 1.9619 11.7559 \atfi@MOVETO
352 1.9619 3.3037 1.9619 2.5059 \atfi@CURVETOY
353 1.9619 1.707 4.0947 1.25 \atfi@CURVETOY
354 7.4141 1.25 \atfi@LINETO
355 9.4292 1.8223 9.4292 3.3066 \atfi@CURVETOY
356 9.4292 4.79 9.4292 16.8945 \atfi@CURVETOY
357 9.7852 18.1514 8.481 18.1514 \atfi@CURVETOY
358 7.1768 18.1514 5.1616 18.1514 \atfi@CURVETOY
359 3.8574 17.9209 3.8574 16.8945 \atfi@CURVETOY
360 3.8574 15.8652 3.8574 6.6172 \atfi@CURVETOY
361 4.3325 5.418 5.1025 5.418 \atfi@CURVETOY
362 5.8726 5.418 6.5845 5.418 \atfi@CURVETOY
363 7.6812 5.6455 7.6812 6.4736 \atfi@CURVETOY
364 7.6812 7.3027 7.6812 11.5264 \atfi@CURVETOY
365 \atfi@STROKE
366 0 \atfi@SETGRAYSTROKE
367 1.2495 12.4404 \atfi@MOVETO
368 1.2495 3.9883 1.2495 3.1895 \atfi@CURVETOY
369 1.2495 2.3906 3.3833 1.9326 \atfi@CURVETOY
370 6.7026 1.9326 \atfi@LINETO
371 8.7178 2.5068 8.7178 3.9902 \atfi@CURVETOY
372 8.7178 5.4736 8.7178 17.5781 \atfi@CURVETOY
373 9.0732 18.834 7.769 18.834 \atfi@CURVETOY
374 6.4653 18.834 4.4497 18.834 \atfi@CURVETOY
375 3.146 18.6055 3.146 17.5781 \atfi@CURVETOY
376 3.146 16.5498 3.146 7.3018 \atfi@CURVETOY
377 3.6201 6.1016 4.3911 6.1016 \atfi@CURVETOY
378 5.1611 6.1016 5.873 6.1016 \atfi@CURVETOY
379 6.9692 6.3301 6.9692 7.1572 \atfi@CURVETOY
380 6.9692 7.9863 6.9692 12.21 \atfi@CURVETOY
381 \atfi@STROKE

```

```

382 \atfi@color@rgb\space \atfi@SETRGBCOLORSTROKE
383 1 \atfi@SETLINEWIDTH
384 1.2495 12.4404 \atfi@MOVETO
385 1.2495 3.9883 1.2495 3.1895 \atfi@CURVETOY
386 1.2495 2.3906 3.3833 1.9326 \atfi@CURVETOY
387 6.7026 1.9326 \atfi@LINETO
388 8.7178 2.5068 8.7178 3.9902 \atfi@CURVETOY
389 8.7178 5.4736 8.7178 17.5781 \atfi@CURVETOY
390 9.0732 18.834 7.769 18.834 \atfi@CURVETOY
391 6.4653 18.834 4.4497 18.834 \atfi@CURVETOY
392 3.146 18.6055 3.146 17.5781 \atfi@CURVETOY
393 3.146 16.5498 3.146 7.3018 \atfi@CURVETOY
394 3.6201 6.1016 4.3911 6.1016 \atfi@CURVETOY
395 5.1611 6.1016 5.873 6.1016 \atfi@CURVETOY
396 6.9692 6.3301 6.9692 7.1572 \atfi@CURVETOY
397 6.9692 7.9863 6.9692 12.21 \atfi@CURVETOY
398 \atfi@STROKE
399 \atfi@GRESTORE
400 }
401 \def\atfi@acroPaperclip{%
402 \raisebox{-1.25bp}{\parbox[b][21bp]{12bp}{%
403 \rule{0pt}{0pt}\atfi@literal{\atfi@acroPaperclip@data}}}%
404 }%
405 }
406 \def\atfi@acroPushPin@data{%
407 \atfi@GSAVE
408 1 \atfi@SETLINEWIDTH
409 1 6 \atfi@MOVETO
410 11 6 \atfi@LINETO
411 11 13 \atfi@LINETO
412 12 13 \atfi@LINETO
413 14 11 \atfi@LINETO
414 21 11 \atfi@LINETO
415 22 12 \atfi@LINETO
416 23 12 \atfi@LINETO
417 23 2 \atfi@LINETO
418 22 2 \atfi@LINETO
419 21 3 \atfi@LINETO
420 14 3 \atfi@LINETO
421 12 1 \atfi@LINETO
422 11 1 \atfi@LINETO
423 11 6 \atfi@LINETO
424 \atfi@FILLSTROKE{%
425 \atfi@color@rgb\space\atfi@SETRGBCOLORFILL
426 }{%
427 0 \atfi@SETGRAYSTROKE
428 }%
429 0.5 \atfi@SETGRAYSTROKE
430 0 7 \atfi@MOVETO
431 10 7 \atfi@LINETO
432 10 8 \atfi@LINETO
433 1 8 \atfi@LINETO
434 \atfi@STROKE
435 1 \atfi@SETGRAYSTROKE
436 12 12 \atfi@MOVETO
437 14 10 \atfi@LINETO
438 22 10 \atfi@LINETO
439 22 11 \atfi@LINETO
440 \atfi@STROKE
441 \atfi@GRESTORE
442 }
443 \def\atfi@acroPushPin{%

```

```

444 \raisebox{-1.25bp}{\parbox[b][14bp]{24bp}{%
445 \rule{0pt}{0pt}\atfi@literal{\atfi@acroPushPin@data}}}%
446 }%
447 }
448 \def\atfi@acroTag@data{%
449 \atfi@GSAVE
450 0.5 \atfi@SETGRAYFILL
451 10.0542 14.9873 \atfi@MOVETO
452 24.27 14.9873 \atfi@LINETO
453 25.252 14.0059 \atfi@LINETO
454 25.252 1.1455 \atfi@LINETO
455 24.1064 0 \atfi@LINETO
456 9.9609 0 \atfi@LINETO
457 6.0327 6.0088 \atfi@LINETO
458 6.0327 9.002 \atfi@LINETO
459 10.0542 14.9873 \atfi@LINETO
460 9.3994 9.376 \atfi@MOVETO
461 8.5215 9.376 7.8096 8.5596 7.8096 7.5527 \atfi@CURVETO
462 7.8096 6.5449 8.5215 5.7285 9.3994 5.7285 \atfi@CURVETO
463 10.2778 5.7285 10.9897 6.5449 10.9897 7.5527 \atfi@CURVETO
464 10.9897 8.5596 10.2778 9.376 9.3994 9.376 \atfi@CURVETO
465 \atfi@CLOSEPATH
466 \atfi@FILL
467 0 \atfi@SETFLAT
468 0.5 \atfi@SETLINEWIDTH
469 4 \atfi@SETMITERLIMIT
470 1 \atfi@SETLINEJOIN
471 8.5107 16.5313 \atfi@MOVETO
472 22.7266 16.5313 \atfi@LINETO
473 23.7085 15.5488 \atfi@LINETO
474 23.7085 2.6895 \atfi@LINETO
475 22.563 1.543 \atfi@LINETO
476 8.4175 1.543 \atfi@LINETO
477 4.4893 7.5527 \atfi@LINETO
478 4.4893 10.5449 \atfi@LINETO
479 8.5107 16.5313 \atfi@LINETO
480 7.856 10.9199 \atfi@MOVETO
481 6.978 10.9199 6.2661 10.1035 6.2661 9.0957 \atfi@CURVETO
482 6.2661 8.0879 6.978 7.2715 7.856 7.2715 \atfi@CURVETO
483 8.7344 7.2715 9.4463 8.0879 9.4463 9.0957 \atfi@CURVETO
484 9.4463 10.1035 8.7344 10.9199 7.856 10.9199 \atfi@CURVETO
485 \atfi@CLOSEPATH
486 \atfi@FILLSTROKE{%
487 \atfi@color@rgb\space\atfi@SETRGBCOLORFILL
488 }{%
489 0 \atfi@SETGRAYSTROKE
490 }%
491 1 \atfi@SETLINEWIDTH
492 12.3291 12.2656 \atfi@MOVETO
493 21.1206 12.2656 \atfi@LINETO
494 \atfi@STROKE
495 12.3291 9.1797 \atfi@MOVETO
496 21.1206 9.1797 \atfi@LINETO
497 \atfi@STROKE
498 12.3291 6.1875 \atfi@MOVETO
499 21.1206 6.1875 \atfi@LINETO
500 \atfi@STROKE
501 % 0 \atfi@SETGRAYSTROKE % redundant?
502 0.5 \atfi@SETLINEWIDTH
503 0 9.0488 \atfi@MOVETO
504 6.2661 9.0957 \atfi@LINETO
505 \atfi@STROKE

```

```

506 1.4028 5.2148 \atfi@MOVETO
507 1.4028 9.6094 \atfi@LINETO
508 1.6831 10.6387 2.4316 10.6387 \atfi@CURVETOY
509 3.6475 10.6387 3.5542 9.0488 \atfi@CURVETOY
510 \atfi@STROKE
511 \atfi@GRESTORE
512 }
513 \DeclareRobustCommand{\atfi@acroTag}{%
514   \raisebox{-1.6bp}{\parbox[b]{17bp}{25bp}{%
515     \rule{0pt}{0pt}\atfi@literal{\atfi@acroTag@data}}}%
516   }%
517 }
518
519 % --- .atfi file reading support ---
520
521 % commands used in \jobname.atfi:
522 % * \attachfile@timezone{<timezone in PDF format>}
523 % * \attachfile@file[
524 %   Size=<size>,
525 %   CreationDate=<date>, % <date> local time without "D:" and timezone
526 %   ModDate=<date>,
527 %   CheckSum=<checksum>
528 % ]{<filename as hex string>}
529 %
530 \def\attachfile@timezone#1{%
531   \ifx\#1\%
532     % no timezone information given
533   \else
534     \def\atfi@timezone{#1}%
535   \fi
536 }
537 \newcommand*{\attachfile@file}[2][{}]{%
538   \ifx\#2\%
539     \PackageError{attachfile2}{Empty file name}\@ehc
540   \else
541     \edef\atfi@restore{\uccode0=\the\uccode0 \relax}%
542     \let\atfi@filename\empty
543     \atfi@getfilename#2\relax\relax
544     \atfi@restore
545     \@namedef{atfi@file@\atfi@filename}{#1}%
546   \fi
547 }
548 % convert file name from hex string
549 \begingroup
550   \catcode0=12 %
551   \gdef\atfi@getfilename#1#2{%
552     \ifx\relax#1%
553     \else
554       \uccode0=\numexpr 16*\atfi@hexnum{#1} + \atfi@hexnum{#2}\relax
555       \uppercase{%
556         \edef\atfi@filename{%
557           \atfi@filename^^@%
558         }%
559       }%
560       \expandafter\atfi@getfilename
561     \fi
562   }%
563 \endgroup
564 \def\atfi@hexnum#1{%
565   \ifnum'#1<58 %
566     \numexpr '#1-48\relax
567   \else

```

```

568     \numexpr '#1-87\relax
569   \fi
570 }
571
572 \InputIfFileExists{\jobname.atfi}{\relax}{\relax}%
573
574 \newif\ifatfi@checksum
575 \define@key{AtFi@file}{Checksum}{%
576   \atfi@checksumtrue
577   \edef\atfi@params{\atfi@params/Checksum<#1>}%
578 }
579 \newif\ifatfi@creationdate
580 \define@key{AtFi@file}{CreationDate}{%
581   \atfi@creationdatetrue
582   \edef\atfi@params{\atfi@params/CreationDate(D:#1\atfi@timezone)}%
583 }
584 \newif\ifatfi@moddate
585 \define@key{AtFi@file}{ModDate}{%
586   \atfi@moddatetrue
587   \edef\atfi@params{\atfi@params/ModDate(D:#1\atfi@timezone)}%
588 }
589
590 % --- .atfi file writing support ---
591
592 % respect \nofiles and option nofiles
593 % \nofiles has more weight than option nofiles
594 \if@filesw
595 \else
596   \atfi@nofilestrue
597 \fi
598 \ifatfi@nofiles
599   \PackageInfo{attachfile2}{%
600     File '\jobname.atfi' will not be written because of\MessageBreak
601     \string\nofiles\space or option 'nofiles'%
602   }%
603   \let\atfi@writefile\@gobble
604 \else
605   \newwrite\atfi@stream
606   \immediate\openout\atfi@stream=\jobname.atfi
607   \immediate\write\atfi@stream{%
608     \string\attachfile@timezone{\atfi@timezone}%
609   }%
610   \def\atfi@writefile#1{%
611     \begingroup
612       \def\file{#1}%
613       \@onelevel@sanitize\file
614       \edef\file{\@firstofone{\expandafter\atfi@replace\file} \@nil}%
615       \edef\file{\expandafter\atfi@tohex\file\relax}%
616       \immediate\write\atfi@stream{%
617         \string\attachfile@file[%
618           \@ifundefined{atfi@file@#1}{\@nameuse{atfi@file@#1}}%
619         ]{\file}%
620       }%
621     \endgroup
622   }%
623 \fi
624
625 \def\atfi@attachfile#1#2{%
626   \@ifundefined{atfi@fileobj@#2}{%
627     \atfi@writefile{#2}%
628   }{%
629     % don't need duplicates

```

```

630 }%
631 \setkeys{AtFi}{#1}%
632 \atfi@embedfile{#2}%
633 \atfi@set@appearance@icon
634 \atfi@flags@to@int
635 \atfi@insert@file@annot{#2}%
636 \endgroup
637 }
638
639 % convert to hex string
640
641 \def\atfi@replace#1 #2\@nil{%
642   #1%
643   \ifx\#2\%
644   \else
645     \atfi@space
646     \@ReturnAfterFi{%
647       \atfi@replace#2\@nil
648     }%
649   \fi
650 }%
651
652 \long\def\@ReturnAfterFi#1\fi{\fi#1}
653
654 % ---
655
656 \newlength{\atfi@appearancewidth}
657 \newlength{\atfi@appearanceheight}
658 \newlength{\atfi@appearancedepth}
659 \newsavebox{\atfi@appearancebox}
660
661 \def\atfi@set@appearance@icon{%
662   \@ifundefined{atfi@appobj@\atfi@icon@icon}{%
663     \savebox{\atfi@appearancebox}{\@nameuse{atfi@acro\atfi@icon@icon}}%
664     \expandafter\xdef\csname atfi@appwidth@\atfi@icon@icon\endcsname{%
665       \the\wd\atfi@appearancebox
666     }%
667     \expandafter\xdef\csname atfi@appheight@\atfi@icon@icon\endcsname{%
668       \the\ht\atfi@appearancebox
669     }%
670     \expandafter\xdef\csname atfi@appdepth@\atfi@icon@icon\endcsname{%
671       \the\dp\atfi@appearancebox
672     }%
673     \atfi@xform@icon
674     \global\expandafter\let\csname atfi@appobj@\atfi@icon@icon\endcsname
675       \atfi@appearanceobj
676   }{%
677   }%
678   % optimization: \setlength dropped
679   \atfi@appearancewidth=\@nameuse{atfi@appwidth@\atfi@icon@icon}\relax
680   \atfi@appearanceheight=\@nameuse{atfi@appheight@\atfi@icon@icon}\relax
681   \atfi@appearancedepth=\@nameuse{atfi@appdepth@\atfi@icon@icon}\relax
682   \expandafter\let\expandafter\atfi@appearanceobj
683     \csname atfi@appobj@\atfi@icon@icon\endcsname
684 }
685
686 \def\atfi@set@appearance#1{%
687   \savebox{\atfi@appearancebox}{#1}%
688   \atfi@appearancewidth=\wd\atfi@appearancebox
689   \atfi@appearanceheight=\ht\atfi@appearancebox
690   \atfi@appearancedepth=\dp\atfi@appearancebox
691   \atfi@xform

```

```

692 }
693
694 \newcounter{atfi@flags}
695 \DeclareRobustCommand{\atfi@flags@to@int}{%
696   \setcounter{atfi@flags}{0}%
697   \ifatfi@print
698     \addtocounter{atfi@flags}{4}%
699   \fi%
700   \ifatfi@zoom
701   \else
702     \addtocounter{atfi@flags}{8}%
703   \fi%
704 }
705
706 \def\atfi@textattachfile#1#2{%
707   \endgroup
708   \atfi@textattachfile@i{#1}{#2}%
709 }
710 \def\atfi@textattachfile@i#1#2#3{%
711   \setkeys{AtFi}{#1}%
712   \atfi@embedfile{#2}%
713   \def\atfi@textcolor(##1 ##2 ##3)##4{%
714     \textcolor[rgb]{##1,##2,##3}{##4}}%
715   \atfi@set@appearance{%
716     \expandafter\atfi@textcolor\expandafter
717     (\atfi@color@rgb){#3\strut}}%
718   \atfi@flags@to@int
719   \atfi@insert@file@annot{#2}%
720   \endgroup
721 }
722
723 \DeclareRobustCommand{\attachfile}[1][]{%
724   \begingroup
725   \let\do\@makeother
726   \dospecials
727   \catcode'\{=1\relax
728   \catcode'\}=2\relax
729   \atfi@attachfile{#1}%
730 }
731 \DeclareRobustCommand{\textattachfile}[1][]{%
732   \begingroup
733   \begingroup
734   \let\do\@makeother
735   \dospecials
736   \catcode'\{=1\relax
737   \catcode'\}=2\relax
738   \atfi@textattachfile{#1}%
739 }
740 \DeclareRobustCommand{\noattachfile}[1][]{%
741   \begingroup
742   \setkeys{AtFi}{#1}%
743   \atfi@set@appearance@icon
744   \ifatfi@print
745     \expandafter\atfi@refxform\csname atfi@appobj@\atfi@icon@icon\endcsname
746   \else
747     \makebox[\atfi@appearancewidth]{}%
748   \fi
749   \endgroup
750 }
751 \</package>

```

## 2.2 Drivers

### 2.2.1 pdfTeX

```
752 <*pdfTeX>
753 \NeedsTeXFormat{LaTeX2e}
754 \ProvidesFile{atfi.pdfTeX.def}%
755 [2006/08/16 v2.2 attachfile2 driver for pdfTeX (HO)]

756 \let\atfi@literal\pdfliteral
757
758 % --- macros for graphics data ---
759
760 \def\atfi@GSAVE{q }
761 \def\atfi@GRESTORE{Q }
762 \def\atfi@SETLINEWIDTH{w }
763 \def\atfi@LINETO{l }
764 \def\atfi@MOVETO{m }
765 \def\atfi@STROKE{S }
766 \def\atfi@FILL{f }
767 % \atfi@FILLSTROKE{<fill color>}{<stroke color>}
768 \def\atfi@FILLSTROKE#1#2{#1#2B }
769 % color: uppercase are stroke colors, lowercase non-stroke (fill) colors
770 % PS, however, does not different between stroke and not-stroke colors
771 \def\atfi@SETRGBCOLORSTROKE{RG }
772 \def\atfi@SETRGBCOLORFILL{rg }
773 \def\atfi@SETGRAYSTROKE{G }
774 \def\atfi@SETGRAYFILL{g }
775 \def\atfi@RECTFILL{re f }
776 \def\atfi@RECTSTROKEFILL#1#2#3{#1#2#3re B }
777 \def\atfi@SETMITERLIMIT{M }
778 \def\atfi@SETFLAT{i }
779 \def\atfi@SETLINECAP{J }
780 \def\atfi@CURVETO{c }
781 \def\atfi@CURVETO{v }
782 \def\atfi@CURVETOY{y }
783 \def\atfi@CLOSEPATH{h }
784 \def\atfi@SETLINEJOIN{j }
785
786 % ---
787
788 \define@key{AtFi@file}{Size}{%
789   \edef\atfi@params{\atfi@params/Size #1}%
790 }
791
792 \def\atfi@embedfile#1{%
793   \ifundefined{atfi@fileobj@#1}{%
794     \begingroup
795       \let\atfi@params@empty
796       \ifundefined{atfi@file@#1}{%
797         \edef\x{\noexpand\setkeys{AtFi@file}{\@nameuse{atfi@file@#1}}}%
798         \x
799       }%
800       \ifx\atfi@params\@empty
801       \else
802         \edef\atfi@params{/Params<<\atfi@params>>}%
803       \fi
804       \immediate\pdfobj stream attr {%
805         /Type/EmbeddedFile%
806         \atfi@mimetype
807         \atfi@params
808       } file {#1}%
809       \expandafter\xdef\csname atfi@fileobj@#1\endcsname{\the\pdfobj}%
810     \endgroup
```



```

811 }{%
812   % file already embedded
813 }%
814 }
815
816 % ---
817
818 % input: \atfi@appearancebox, output: \atfi@appearanceobj
819 \def\atfi@xform{%
820   \immediate\pdfxform\atfi@appearancebox
821   \edef\atfi@appearanceobj{\the\pdflastxform}%
822 }
823 \let\atfi@xform@icon\atfi@xform
824
825 \def\atfi@refxform#1{%
826   \pdfrefxform#1\relax
827 }
828
829 % ---
830
831 \def\atfi@insert@file@annot#1{%
832   \rule{0pt}{0pt}%
833   \ifatfi@appearance
834     \def\atfi@appearance@dict{%
835       /AP<<%
836         /N \atfi@appearanceobj\space 0 R%
837         /R \atfi@appearanceobj\space 0 R%
838         /D \atfi@appearanceobj\space 0 R%
839       >>%
840     }%
841   \else
842     \let\atfi@appearance@dict\@empty
843   \fi
844   \@ifundefined{atfi@fsobj@#1}{%
845     \atfi@pdfstringdef\atfi@file{#1}%
846     \immediate\pdfobj{%
847       <<%
848         /Type/Filespec%
849         /F(\atfi@file)%
850         /EF<<%
851         /F \@nameuse{atfi@fileobj@#1} 0 R%
852       >>%
853     >>%
854   }%
855   \expandafter\xdef\csname atfi@fsobj@#1\endcsname{%
856     \the\pdflastobj
857   }%
858 }{%
859 }%
860 \pdfannot width \atfi@scale\atfi@appearancewidth
861           height \atfi@scale\atfi@appearanceheight
862           depth \atfi@scale\atfi@appearancedepth {%
863   /Subtype/FileAttachment%
864   \atfi@icon
865   \atfi@color
866   \atfi@author
867   \atfi@date
868   \atfi@annotname
869   \atfi@description
870   \atfi@subject
871   \atfi@appearance@dict
872   /F \theatfi@flags

```

```

873 /FS \@nameuse{atfi@fsobj@#1} 0 R%
874 }%
875 \rule{0pt}{\atfi@appearanceheight}%
876 \rule[-\atfi@appearancedepth]{0pt}{\atfi@appearancedepth}%
877 \rule{\atfi@appearancelwidth}{0pt}%
878 }
879 </pdfTeX>

```

## 2.2.2 dvips

```

880 <*dvips>
881 \NeedsTeXFormat{LaTeX2e}
882 \ProvidesFile{atfipdfTeX.def}%
883 [2006/08/16 v2.2 attachfile2 driver for dvips (H0)]
884 \def\atfi@literal#1{%
885 \special{ps:atfi_dict begin{#1}atfi_?pdfmark end}%
886 }
887
888 \def\atfi@header#1{%
889 \special{! #1}%
890 }
891
892 % --- macros for graphics data ---
893
894 \atfi@header{%
895 userdict begin 20 dict dup /atfi_dict exch def end begin
896 /atfi_?pdfmark systemdict
897 dup /pdfmark known
898 {
899 /exec get def
900 }{
901 /pop get def
902 } ifelse
903 {
904 %
905 % x y width height atfi_re ->
906 languagelevel 2 ge {
907 /atfi_rectfill { rectfill } bind def
908 /atfi_rectstroke { rectstroke } bind def
909 }{%
910 /atfi_rect {
911 /atfi_height exch def
912 /atfi_width exch def
913 /atfi_x exch def
914 /atfi_y exch def
915 newpath
916 atfi_x atfi_y moveto
917 atfi_x atfi_width add atfi_y lineto
918 atfi_x atfi_width add atfi_y atfi_height add lineto
919 atfi_x atfi_y atfi_height add lineto
920 closepath
921 } bind def
922 /atfi_rectfill {
923 atfi_rect fill
924 } bind def
925 /atfi_rectstroke {
926 atfi_rect stroke
927 } bind def
928 } ifelse
929 /atfi_curveto_v {
930 currentpoint 6 2 roll curveto
931 } bind def
932 /atfi_curveto_y {

```

```

933     2 copy curveto
934 } bind def
935 %
936 % help macro for atfi_convert_date
937 /atfi_two {
938     dup 10 lt
939     {
940         1 string cvs
941         exch 1 add exch
942     }{
943         2 string cvs
944     } ifelse
945 putinterval
946 } bind def
947 %
948 % <seconds since 1970-01-01> atfi_convert_date -> (D:...Z)
949 /atfi_convert_date {
950     dup
951     /atfi_days exch 3600 idiv 24 idiv def
952     % calc date part
953     /atfi_year 1970 def
954     {
955         atfi_year 400 mod 0 eq
956         atfi_year 100 mod 0 ne
957         atfi_year 4 mod 0 eq
958         and or
959         { 366 } { 365 } ifelse
960         dup atfi_days lt
961         {
962             atfi_days exch sub /atfi_days exch def
963             /atfi_year atfi_year 1 add def
964         }{
965             exit
966         } ifelse
967     } loop
968     /atfi_month 1 def
969     /atfi_days atfi_days 1 add def
970     31 atfi_days lt
971     {
972         atfi_days 31 sub /atfi_days exch def
973         /atfi_month atfi_month 1 add def
974         366 eq { 29 } { 28 } ifelse dup atfi_days lt
975         {
976             atfi_days exch sub /atfi_days exch def
977             /atfi_month atfi_month 1 add def
978             31 atfi_days lt
979             {
980                 atfi_days 31 sub /atfi_days exch def
981                 /atfi_month atfi_month 1 add def
982                 30 atfi_days lt
983                 {
984                     atfi_days 30 sub /atfi_days exch def
985                     /atfi_month atfi_month 1 add def
986                     31 atfi_days lt
987                     {
988                         atfi_days 31 sub /atfi_days exch def
989                         /atfi_month atfi_month 1 add def
990                         30 atfi_days lt
991                         {
992                             atfi_days 30 sub /atfi_days exch def
993                             /atfi_month atfi_month 1 add def
994                             31 atfi_days lt

```

```

995         {
996             atfi_days 31 sub /atfi_days exch def
997             /atfi_month atfi_month 1 add def
998             31 atfi_days lt
999         {
1000             atfi_days 31 sub /atfi_days exch def
1001             /atfi_month atfi_month 1 add def
1002             30 atfi_days lt
1003         {
1004             atfi_days 30 sub /atfi_days exch def
1005             /atfi_month atfi_month 1 add def
1006             31 atfi_days lt
1007         {
1008             atfi_days 31 sub /atfi_days exch def
1009             /atfi_month atfi_month 1 add def
1010             30 atfi_days lt
1011         {
1012             atfi_days 30 sub /atfi_days exch def
1013             /atfi_month atfi_month 1 add def
1014             31 atfi_days lt
1015         {
1016             atfi_days 31 sub /atfi_days exch def
1017             /atfi_month atfi_month 1 add def
1018         } if
1019         } if
1020         } if
1021         } if
1022         } if
1023         } if
1024         } if
1025         } if
1026         } if
1027         } if
1028     } { pop } ifelse
1029 }{ pop } ifelse
1030 % calc time part
1031 3600 24 mul mod
1032 dup 3600 idiv dup /atfi_hour exch def
1033 3600 mul sub
1034 dup 60 idiv dup /atfi_min exch def
1035 60 mul sub
1036 /atfi_sec exch def
1037 (D:19700101000000Z)
1038 dup 2 atfi_year 4 string cvs putinterval
1039 dup 6 atfi_month atfi_two
1040 dup 8 atfi_days atfi_two
1041 dup 10 atfi_hour atfi_two
1042 dup 12 atfi_min atfi_two
1043 dup 14 atfi_sec atfi_two
1044 } bind def
1045 %
1046 % <filename> atfi_calc_checksum -> /Checksum <checksum>
1047 % or returns nothing, if MD5Encode is not given
1048 false
1049 languagelevel 2 ge {
1050     (MD5Encode)
1051     { pop true or }
1052     (MD5Encode) length string
1053     /Filter
1054     resourceforall
1055 } if
1056 {

```

```

1057     /atfi_calc_checksum {
1058     /atfi_checksum 16 string def
1059     /atfi_file exch (r) file def
1060     /atfi_md5sum atfi_checksum /MD5Encode filter def
1061     % not too efficient to read and write byte by byte,
1062     % using a buffer is probably faster
1063     atfi_size {
1064         atfi_file read
1065         {
1066             atfi_md5sum exch write
1067         } if
1068     } repeat
1069     atfi_md5sum closefile
1070     atfi_file closefile
1071     /Checksum atfi_checksum
1072 } bind def
1073 }{
1074 /atfi_calc_checksum { pop } bind def
1075 } ifelse
1076 %
1077 /atfi_pttobp { 72.27 div 72 mul } bind def
1078 /atfi_pdftodvipsx { 72.27 div Resolution mul } bind def
1079 /atfi_pdftodvipsy { 72.27 div VResolution mul } bind def
1080 %
1081 } atfi_?pdfmark
1082 end
1083 }
1084
1085 \def\atfi@GSAVE{gsave }
1086 \def\atfi@GRESTORE{grestore }
1087 \def\atfi@SETLINEWIDTH{setlinewidth }
1088 \def\atfi@LINETO{lineto }
1089 \def\atfi@MOVETO{moveto }
1090 \def\atfi@STROKE{stroke }
1091 \def\atfi@FILL{fill }
1092 \def\atfi@FILLSTROKE#1#2{gsave #1 fill grestore #2 stroke }
1093 \def\atfi@SETRGBCOLORSTROKE{setrgbcolor }
1094 \def\atfi@SETRGBCOLORFILL{setrgbcolor }
1095 \def\atfi@SETGRAYSTROKE{setgray }
1096 \def\atfi@SETGRAYFILL{setgray }
1097 \def\atfi@RECTFILL{atfi_rectfill }
1098 \def\atfi@RECTSTROKEFILL#1#2#3{%
1099     #3%
1100     #1%
1101     gsave atfi_rectfill grestore
1102     #2%
1103     #3%
1104     atfi_rectstroke
1105     #1%
1106 }
1107 \def\atfi@SETMITERLIMIT{setmiterlimit }
1108 \def\atfi@SETFLAT{setflat }
1109 \def\atfi@SETLINECAP{setlinecap }
1110 \def\atfi@CURVETO{curveto }
1111 \def\atfi@CURVETOX{atfi_curveto_x }
1112 \def\atfi@CURVETOY{atfi_curveto_y }
1113 \def\atfi@CLOSEPATH{closepath }
1114 \def\atfi@SETLINEJOIN{setlinejoin }
1115
1116 % ---
1117
1118 \newcounter{atfi@obj}

```

```

1119 \renewcommand*{\theatfi@obj}{%
1120   {atfi_obj_number\c@atfi@obj}}%
1121 }
1122
1123
1124 % most values for Params dictionary found in the .atfi file have
1125 % priority:
1126 % * Recalculation (md5sum, ...) is avoided.
1127 % * An external script has more possibilities than programming
1128 %   at PostScript level (operating system, getting the date and
1129 %   time values of the file with correct interpretation.
1130 % * Exception: status is called to test file existence, thus
1131 %   we get the value of size for free
1132
1133 \define@key{AtFi@file}{Size}{%
1134
1135 \def\atfi@embedfile#1{%
1136   \@ifundefined{atfi@fileobj@#1}{%
1137     \atfi@pdfstringdef\atfi@psfilename{#1}%
1138     \stepcounter{atfi@obj}%
1139     \expandafter\xdef\csname atfi@fileobj@#1\endcsname{\theatfi@obj}%
1140     \begingroup
1141       \let\atfi@params\empty
1142       \@ifundefined{atfi@file@#1}{%
1143         \edef\x{\noexpand\setkeys{AtFi@file}{\@nameuse{atfi@file@#1}}}%
1144         \x
1145       }%
1146       \atfi@literal{%
1147         /atfi_filename (\atfi@psfilename) def
1148         atfi_filename status
1149         {
1150           % ok: file found
1151           % save parameters of status command
1152           /atfi_created exch def
1153           /atfi_referenced exch def
1154           /atfi_size exch def
1155           pop % drop parameter "pages" (storage space), never needed
1156           % ghostscript:
1157           %   created:      stat.st_ctime
1158           %   referenced:   stat.st_mtime
1159           %   stat.st_ctime: interpretation depends on operating system:
1160           %                   * unix: inode change time (not interesting)
1161           %                   * win32: probably creation time
1162           %                   --> /CreationDate
1163           %   stat.st_mtime: modification time --> /ModDate
1164           %   time values are seconds since 1970-01-01, GMT
1165           % TODO: ghostscript offers "getenv" for getting the value
1166           %       of an environment variable. That could be used to
1167           %       to detect windows and setting the /CreationDate entry.
1168           % TODO: how are these values interpreted by other distiller
1169           %       programs?
1170           %
1171           [
1172             /_objdef \theatfi@obj
1173             /type /stream
1174             /OBJ pdfmark
1175             [
1176               \theatfi@obj
1177               <<
1178                 /Type /EmbeddedFile
1179                 \atfi@mimetype
1180                 /Params

```

```

1181         <<
1182         \atfi@params
1183         %
1184         /Size atfi_size
1185         %
1186         /product where
1187         {
1188             pop
1189             % check for ghostscript
1190             product (Ghostscript) search
1191             {
1192                 pop pop pop
1193                 % ghostscript is running
1194                 %
1195                 \ifatfi@creationdate
1196                 \else
1197                     false % TODO: test for windows
1198                     {
1199                         /CreationDate atfi_created atfi_convert_date
1200                     } if
1201                 \fi
1202                 \ifatfi@moddate
1203                 \else
1204                     /ModDate atfi_referenced atfi_convert_date
1205                 \fi
1206             } if
1207             %
1208             % look for MD5Encode filter and calculate CheckSum
1209         } if
1210         \ifatfi@checksum
1211         \else
1212             atfi_filename atfi_calc_checksum
1213         \fi
1214     >>
1215 >>
1216 /PUT pdfmark
1217 [
1218     \theatfi@obj
1219     atfi_filename (r) file
1220 /PUT pdfmark
1221 [
1222     \theatfi@obj
1223 /CLOSE pdfmark
1224 ]{
1225     % error: file not found
1226     % currently nothing is done
1227 } ifelse
1228 }%
1229 \endgroup
1230 }{%
1231     % file already embedded
1232 }%
1233 }
1234
1235 % ---
1236
1237 % output: \atfi@appearanceobj
1238 % input: \atfi@appearancebox, \atfi@icon@icon
1239 \def\atfi@xform@icon{%
1240     \stepcounter{atfi@obj}%
1241     \edef\atfi@appearanceobj{\theatfi@obj}%
1242     \atfi@literal{%

```

```

1243 [
1244   /_objdef \atfi@appearanceobj
1245   /BBox [
1246     0
1247     0
1248     \strip@pt\wd\atfi@appearancebox\space atfi_pttobp
1249     \strip@pt\dimexpr\dp\atfi@appearancebox
1250     +\ht\atfi@appearancebox\relax\space atfi_pttobp
1251   ]
1252   /BP pdfmark
1253   \csname atfi@acro\atfi@icon@icon @data\endcsname
1254   [
1255   /EP pdfmark
1256   }%
1257 }
1258 % output: \atfi@appearanceobj
1259 % input: \atfi@appearancebox
1260 \def\atfi@xform{%
1261   \stepcounter{atfi@obj}%
1262   \edef\atfi@appearanceobj{\theatfi@obj}%
1263   \begingroup
1264     \setbox0=\hbox{%
1265       \atfi@literal{%
1266         [
1267           /_objdef \atfi@appearanceobj
1268           /BBox [
1269             currentpoint
1270             \strip@pt\dp\atfi@appearancebox\space sub
1271             currentpoint
1272             exch \strip@pt\wd\atfi@appearancebox\space add
1273             exch \strip@pt\ht\atfi@appearancebox\space add
1274           ]
1275           /BP pdfmark
1276           gsave
1277           currentpoint
1278           2 copy translate
1279           72.27 Resolution div 72.27 VResolution div neg scale
1280           exch neg exch neg translate
1281         }%
1282         \usebox{\atfi@appearancebox}%
1283         \atfi@literal{%
1284           grestore
1285           [
1286             /EP pdfmark
1287           ]%
1288         }%
1289         % do not allocate any space for xobject definition
1290         \dp0=\z@
1291         \ht0=\z@
1292         \wd0=\z@
1293         \mbox{\usebox0}%
1294       \endgroup
1295     }
1296   \def\atfi@refxform#1{%
1297     \raisebox{-\atfi@appearancedepth}{%
1298       \atfi@literal{%
1299         gsave
1300         currentpoint translate
1301         Resolution 72 div VResolution neg 72 div scale
1302         [ #1 /SP pdfmark
1303         grestore

```



```

1305     }%
1306     \makebox[\atfi@appearancewidth]{}%
1307 }%
1308 \rule{0pt}{\atfi@appearanceheight}%
1309 }
1310
1311 % ---
1312
1313 \def\atfi@insert@file@annot#1{%
1314     \rule{0pt}{0pt}%
1315     \ifatfi@appearance
1316         \def\atfi@appearance@dict{%
1317             /AP<<%
1318             /N \atfi@appearanceobj
1319             /R \atfi@appearanceobj
1320             /D \atfi@appearanceobj
1321             >>%
1322         }%
1323     \else
1324         \let\atfi@appearance@dict\@empty
1325     \fi
1326     \@ifundefined{atfi@fsobj@#1}{%
1327         \stepcounter{atfi@obj}%
1328         \expandafter\xdef\csname atfi@fsobj@#1\endcsname{\theatfi@obj}%
1329         \atfi@pdfstringdef\atfi@file{#1}%
1330         \atfi@literal{%
1331             [
1332                 /_objdef \theatfi@obj
1333                 /type /dict
1334                 /OBJ pdfmark
1335                 [
1336                     \theatfi@obj
1337                     <<
1338                     /Type /Filespec
1339                     /F (\atfi@file)
1340                     /EF <<
1341                     /F \csname atfi@fileobj@#1\endcsname
1342                     >>
1343                     >>
1344                 /PUT pdfmark
1345             ]%
1346         }{%
1347     }%
1348     \atfi@literal{%
1349     [
1350         /Subtype/FileAttachment%
1351         \atfi@icon
1352         \atfi@color
1353         \atfi@author
1354         \atfi@date
1355         \atfi@annotname
1356         \atfi@description
1357         \atfi@subject
1358         \atfi@appearance@dict
1359         /F \theatfi@flags
1360         /FS \csname atfi@fsobj@#1\endcsname
1361         /Rect [
1362             currentpoint
1363             \strip@pt\dimexpr\atfi@scale\atfi@appearancedepth\relax
1364             \space atfi_pdftodvipsy add
1365             currentpoint
1366             exch \strip@pt\dimexpr\atfi@scale\atfi@appearancewidth\relax

```

```

1367         \space atfi_pdftodvipsx add
1368         exch \strip@pt\dimexpr\atfi@scale\atfi@appearanceheight\relax
1369         \space atfi_pdftodvipsy sub
1370     ]
1371     /ANN pdfmark
1372 }%
1373 \rule{0pt}{\atfi@appearanceheight}%
1374 \rule[-\atfi@appearancedepth]{0pt}{\atfi@appearancedepth}%
1375 \rule{\atfi@appearancewidth}{0pt}%
1376 }
1377 </dvips>

```

## 2.3 Perl script pdfatfi.pl

```

1378 <*pdfatfi>
1379 eval '(exit $?0)' && eval 'exec perl -S $0 ${1+"$@"}' && eval 'exec perl -S $0 $argv:q'
1380 if 0;
1381 use strict;
1382 $^W=1; # turn warning on
1383 #
1384 # pdfatfi.pl
1385 #
1386 # Copyright (C) 2005, 2006 Heiko Oberdiek.
1387 #
1388 # This work may be distributed and/or modified under the
1389 # conditions of the LaTeX Project Public License, either version 1.3
1390 # of this license or (at your option) any later version.
1391 # The latest version of this license is in
1392 # http://www.latex-project.org/lppl.txt
1393 # and version 1.3 or later is part of all distributions of LaTeX
1394 # version 2005/12/01 or later.
1395 #
1396 # This work has the LPPL maintenance status "maintained".
1397 #
1398 # This Current Maintainer of this work is Heiko Oberdiek.
1399 #
1400 # See file "attachfile2.pdf" for a list of files that belong to this project.
1401 #
1402 # This file "pdfatfi.pl" may be renamed to "pdfatfi"
1403 # for installation purposes.
1404 #
1405 my $file      = "pdfatfi.pl";
1406 my $program    = uc($&) if $file =~ /\^w+\/;
1407 my $version    = "2.2";
1408 my $date       = "2006/08/16";
1409 my $author     = "Heiko Oberdiek";
1410 my $copyright  = "Copyright (c) 2005, 2006 by $author.";
1411 #
1412 # History:
1413 #   2005/05/21 v1.0: First release.
1414 #   2006/08/16 v2.2: Included in DTX file of attachfile2.dtx.
1415 #
1416
1417 use POSIX qw(strftime); # %z is used (GNU)
1418 use Digest::MD5;
1419
1420 ### program identification
1421 my $title = "$program $version, $date - $copyright\n";
1422
1423 ### error strings
1424 my $Error = "!!! Error:"; # error prefix
1425
1426 ### variables

```

```

1427 my $atffile;
1428
1429 ### option variables
1430 my @bool = ("false", "true");
1431 $::opt_help      = 0;
1432 $::opt_quiet     = 0;
1433 $::opt_debug     = 0;
1434 $::opt_verbose   = 0;
1435
1436 my $usage = <<"END_OF_USAGE";
1437 ${title}Syntax:  \L$program\E [options] <file[.atfi]>
1438 Function: Help program for LaTeX package "attachfile2".
1439 Options:                                     (defaults:)
1440 --help          print usage
1441 --(no)quiet     suppress messages             ($bool[$::opt_quiet])
1442 --(no)verbose   verbose printing             ($bool[$::opt_verbose])
1443 --(no)debug     debug informations           ($bool[$::opt_debug])
1444 END_OF_USAGE
1445
1446 ### process options
1447 my @OrgArgv = @ARGV;
1448 use Getopt::Long;
1449 GetOptions(
1450   "help!",
1451   "quiet!",
1452   "debug!",
1453   "verbose!",
1454 ) or die $usage;
1455 !$::opt_help or die $usage;
1456 @ARGV == 1 or die "$usage$Error Missing jobname!\n";
1457
1458 $::opt_quiet = 0 if $::opt_verbose;
1459
1460 print $title unless $::opt_quiet;
1461
1462 ### get jobname
1463 $atffile = $ARGV[0];
1464 if (!-f $atffile && -f "$atffile.atfi") {
1465   $atffile .= ".atfi";
1466 }
1467 -f $atffile or die "$Error File '$atffile' not found!\n";
1468
1469 print "* job file      = $atffile\n" if $::opt_verbose;
1470
1471 if ($::opt_debug) {
1472   print <<"END_DEB";
1473   * OSNAME: $^O
1474   * PERL_VERSION: $]
1475   * ARGV: @OrgArgv
1476 END_DEB
1477 }
1478
1479 my $tmpfile = $atffile . ".tmp";
1480
1481 my $timezone = strftime "%z", localtime;
1482 $timezone =~ s/^(+|-)\d\d(\d\d)$/$1'$2'/;
1483
1484 open(IN, $atffile) or die "$Error Cannot open '$atffile'!\n";
1485 open(OUT, ">$tmpfile") or die "$Error Cannot write '$tmpfile'!\n";
1486
1487 while(<IN>) {
1488   # timezone

```

```

1489     if (s/^(\\attachfile\\@timezone\\{).*\\})$/$1$timezone$2/) {
1490         print "* timezone      = $timezone\n" if $::opt_verbose;
1491     }
1492
1493     # file entry
1494     if (/^(\\attachfile\\@file\\[[^\\]]*\\)\\{(.*)\\}$/) {
1495         my $hexfile = $1;
1496         my $file = pack('H*', $hexfile);
1497         my @s = stat($file);
1498         if (@s == 0) {
1499             print "!!! Warning: File '$file' not found!\n";
1500         }
1501         else {
1502             my $size = @s[7];
1503             my $mtime = @s[9];
1504             my $ctime = @s[10]; # inode change time
1505
1506             my ($sec, $min, $hour, $mday, $mon, $year) = localtime($mtime);
1507             my $moddate = sprintf("%04d%02d%02d%02d%02d",
1508                                   $year + 1900, $mon + 1, $mday,
1509                                   $hour, $min, $sec);
1510
1511             # Manual page "perlport" says that "ctime" is creation
1512             # time instead of inode change time for "Win32" and
1513             # "Mac OS", but it is unsupported for "Mac OS X".
1514             my $creationdate = "";
1515             if ($^O eq 'MSWin32') { # cygwin?
1516                 ($sec, $min, $hour, $mday, $mon, $year) = localtime($ctime);
1517                 $creationdate = sprintf("%04d%02d%02d%02d%02d",
1518                                         $year + 1900, $mon + 1, $mday,
1519                                         $hour, $min, $sec);
1520             }
1521
1522             # md5 checksum
1523             my $checksum = "";
1524             my $ctx = Digest::MD5->new;
1525             if (open(FILE, $file)) {
1526                 $ctx->addfile(*FILE);
1527                 $checksum = $ctx->hexdigest;
1528                 close(FILE);
1529             }
1530             else {
1531                 print "!!! Warning: File '$file' cannot be read,"
1532                     . " dropping checksum!\n";
1533             }
1534
1535             $_ = "\\attachfile\\@file["
1536                 . "ModDate=$moddate,Size=$size"
1537                 . (($checksum) ? ",Checksum=$checksum" : "")
1538                 . (($creationdate) ? ",CreationDate=$creationdate" : "")
1539                 . "]{ $hexfile }\n";
1540             if ($::opt_verbose) {
1541                 print "* file entry      = $file\n";
1542                 print "   size              = $size\n";
1543                 print "   moddate           = $moddate\n";
1544                 print "   creationdate      = $creationdate\n" if $creationdate;
1545                 print "   checksum          = $checksum\n" if $checksum;
1546             }
1547         }
1548     }
1549
1550     print OUT $_;

```

```

1551 }
1552
1553 close(IN);
1554 close(OUT);
1555
1556 unlink($atffile) or die "$Error Cannot delete old '$atffile'!\n";
1557 rename $tmpfile, $atffile
1558         or die "$Error Cannot move '$tmpfile' to '$atffile'!\n";
1559
1560 print "*** ready. ***\n" unless $::opt_quiet;
1561
1562 __END__
1563 </pdfatfi>

```

### 3 Installation

**CTAN.** 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.

[CTAN:macros/latex/contrib/oberdiek/pdfatfi.pl](#) Script.

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

```
tex attachfile2.dtx
```

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

```

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

```

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.

**Refresh file databases.** If your TeX distribution (teTeX, mikTeX, ...) rely on file databases, you must refresh these. For example, teTeX users run `texhash` or `mktextlsr`.

**Script install.** 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

```

#### 3.1 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 .
```

---

<sup>1</sup>[ftp://ftp.ctan.org/tex-archive/](http://ftp.ctan.org/tex-archive/)

**Unpacking with L<sup>A</sup>T<sub>E</sub>X.** The `.dtx` chooses its action depending on the format:  
**plain-T<sub>E</sub>X:** Run `docstrip` and extract the files.

**L<sup>A</sup>T<sub>E</sub>X:** Generate the documentation.

If you insist on using L<sup>A</sup>T<sub>E</sub>X for `docstrip` (really, `docstrip` does not need L<sup>A</sup>T<sub>E</sub>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 pdfL<sup>A</sup>T<sub>E</sub>X:

```
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.org/macros/latex/contrib/attachfile/).
- [2] Heiko Oberdiek: *The embedfile package*; 2006/08/16 v1.0; [CTAN:macros/latex/contrib/oberdiek/embedfile.pdf](http://ctan.org/macros/latex/contrib/oberdiek/embedfile.pdf).
- [3] Adobe Systems Incorporated: *PDF Reference, Fifth Edition, Version 1.6*, November 2004; <http://partners.adobe.com/public/developer/pdf/index-reference.html>.
- [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.
- $\epsilon$ -T<sub>E</sub>X (`\numexpr`, `\dimexpr`) used.
- New auxiliary file `\jobname.atfi` to get data unavailable by (pdf)T<sub>E</sub>X, 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.

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