

# 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:  

$$c:\text{somewhere}\backslash\text{foobar.txt} \rightarrow /c/\text{somewhere}/\text{foobar.txt}$$
- Option `scale` for icons?
- Compatibility for plain- $\text{\TeX}$ .
- 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`.
- New option `ucfilespec` for file names with characters outside ASCII (PDF 1.7).

### 1.2.2 Option `color`

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

This package `attachfile2` extends the syntax. The usual color specifications of packages `color` or `xcolor` may be used. The latter one requires that package `xcolor` is loaded. Without package `xcolor` a limited range of explicit color specifications are supported, the color models `rgb` and `gray` (and `cmk` 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}{cmk}{.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   [2009/09/25 v2.5 attach files into PDF (H0)]%
5 \RequirePackage{ifpdf}
6 \RequirePackage{keyval}
7 \RequirePackage{color}
8 \RequirePackage{kvoptions}[2006/08/17]
9 \RequirePackage{pdfescape}[2007/11/11]
10
11 % --- hyperref ---
12
```

```

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

```

```

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

```

```

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

```

```

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

```



```

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

```

```

323
324 \def\atfi@acroGraph@data{%
325   \atfi@GSAVE
326   0.5 \atfi@SETGRAYFILL
327   1.1133 0 20.7202 18.2754 \atfi@RECTFILL
328   0 \atfi@SETFLAT
329   0.5 \atfi@SETLINEWIDTH
330   4 \atfi@SETMITERLIMIT
331   \atfi@RECTSTROKEFILL{%
332     1 \atfi@SETGRAYFILL
333   }{%
334     0 \atfi@SETGRAYSTROKE
335   }{%
336     0.25 1.6453 20.145 17.7715 %
337   }%
338   0 \atfi@SETGRAYFILL
339   2.7319 4.1367 3.9571 13.8867 \atfi@RECTFILL
340   8.7031 4.1367 3.9571 9.8867 \atfi@RECTFILL
341   14.7471 4.1367 3.9571 11.8867 \atfi@RECTFILL
342   \atfi@color@inline{FILL}%
343   1.689 3.0938 3.9571 13.8867 \atfi@RECTFILL
344   7.6602 3.0938 3.9571 9.8867 \atfi@RECTFILL
345   13.7041 3.0938 3.9571 11.8867 \atfi@RECTFILL
346   \atfi@GRESTORE
347 }
348 \def\atfi@acroGraph{%
349   \raisebox{-1.5bp}{\parbox[b][20bp]{22bp}{%
350     \rule{0pt}{0pt}\atfi@literal{\atfi@acroGraph@data}}}%
351   }%
352 }
353 \newcommand{\atfi@acroPaperclip@data}{%
354   \atfi@GSAVE
355   0.75 \atfi@SETGRAYSTROKE
356   0 \atfi@SETFLAT
357   2.5 \atfi@SETLINEWIDTH
358   1 \atfi@SETLINECAP
359   4 \atfi@SETMITERLIMIT
360   1.9619 11.7559 \atfi@MOVETO
361   1.9619 3.3037 1.9619 2.5059 \atfi@CURVETOY
362   1.9619 1.707 4.0947 1.25 \atfi@CURVETOY
363   7.4141 1.25 \atfi@LINETO
364   9.4292 1.8223 9.4292 3.3066 \atfi@CURVETOY
365   9.4292 4.79 9.4292 16.8945 \atfi@CURVETOY
366   9.7852 18.1514 8.481 18.1514 \atfi@CURVETOY
367   7.1768 18.1514 5.1616 18.1514 \atfi@CURVETOY
368   3.8574 17.9209 3.8574 16.8945 \atfi@CURVETOY
369   3.8574 15.8652 3.8574 6.6172 \atfi@CURVETOY
370   4.3325 5.418 5.1025 5.418 \atfi@CURVETOY
371   5.8726 5.418 6.5845 5.418 \atfi@CURVETOY
372   7.6812 5.6455 7.6812 6.4736 \atfi@CURVETOY
373   7.6812 7.3027 7.6812 11.5264 \atfi@CURVETOY
374   \atfi@STROKE
375   0 \atfi@SETGRAYSTROKE
376   1.2495 12.4404 \atfi@MOVETO
377   1.2495 3.9883 1.2495 3.1895 \atfi@CURVETOY
378   1.2495 2.3906 3.3833 1.9326 \atfi@CURVETOY
379   6.7026 1.9326 \atfi@LINETO
380   8.7178 2.5068 8.7178 3.9902 \atfi@CURVETOY
381   8.7178 5.4736 8.7178 17.5781 \atfi@CURVETOY
382   9.0732 18.834 7.769 18.834 \atfi@CURVETOY
383   6.4653 18.834 4.4497 18.834 \atfi@CURVETOY
384   3.146 18.6055 3.146 17.5781 \atfi@CURVETOY

```

```

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

```

```

447 22 10 \atfi@LINETO
448 22 11 \atfi@LINETO
449 \atfi@STROKE
450 \atfi@GRESTORE
451 }
452 \def\atfi@acroPushPin{%
453 \raisebox{-1.25bp}{\parbox[b][14bp]{24bp}{%
454 \rule{0pt}{0pt}\atfi@literal{\atfi@acroPushPin@data}}}%
455 }%
456 }
457 \def\atfi@acroTag@data{%
458 \atfi@GSAVE
459 0.5 \atfi@SETGRAYFILL
460 10.0542 14.9873 \atfi@MOVETO
461 24.27 14.9873 \atfi@LINETO
462 25.252 14.0059 \atfi@LINETO
463 25.252 1.1455 \atfi@LINETO
464 24.1064 0 \atfi@LINETO
465 9.9609 0 \atfi@LINETO
466 6.0327 6.0088 \atfi@LINETO
467 6.0327 9.002 \atfi@LINETO
468 10.0542 14.9873 \atfi@LINETO
469 9.3994 9.376 \atfi@MOVETO
470 8.5215 9.376 7.8096 8.5596 7.8096 7.5527 \atfi@CURVETO
471 7.8096 6.5449 8.5215 5.7285 9.3994 5.7285 \atfi@CURVETO
472 10.2778 5.7285 10.9897 6.5449 10.9897 7.5527 \atfi@CURVETO
473 10.9897 8.5596 10.2778 9.376 9.3994 9.376 \atfi@CURVETO
474 \atfi@CLOSEPATH
475 \atfi@FILL
476 0 \atfi@SETFLAT
477 0.5 \atfi@SETLINEWIDTH
478 4 \atfi@SETMITERLIMIT
479 1 \atfi@SETLINEJOIN
480 8.5107 16.5313 \atfi@MOVETO
481 22.7266 16.5313 \atfi@LINETO
482 23.7085 15.5488 \atfi@LINETO
483 23.7085 2.6895 \atfi@LINETO
484 22.563 1.543 \atfi@LINETO
485 8.4175 1.543 \atfi@LINETO
486 4.4893 7.5527 \atfi@LINETO
487 4.4893 10.5449 \atfi@LINETO
488 8.5107 16.5313 \atfi@LINETO
489 7.856 10.9199 \atfi@MOVETO
490 6.978 10.9199 6.2661 10.1035 6.2661 9.0957 \atfi@CURVETO
491 6.2661 8.0879 6.978 7.2715 7.856 7.2715 \atfi@CURVETO
492 8.7344 7.2715 9.4463 8.0879 9.4463 9.0957 \atfi@CURVETO
493 9.4463 10.1035 8.7344 10.9199 7.856 10.9199 \atfi@CURVETO
494 \atfi@CLOSEPATH
495 \atfi@FILLSTROKE{%
496 \atfi@color@inline{FILL}}%
497 }{%
498 0 \atfi@SETGRAYSTROKE
499 }%
500 1 \atfi@SETLINEWIDTH
501 12.3291 12.2656 \atfi@MOVETO
502 21.1206 12.2656 \atfi@LINETO
503 \atfi@STROKE
504 12.3291 9.1797 \atfi@MOVETO
505 21.1206 9.1797 \atfi@LINETO
506 \atfi@STROKE
507 12.3291 6.1875 \atfi@MOVETO
508 21.1206 6.1875 \atfi@LINETO

```

```

509 \atfi@STROKE
510 % 0 \atfi@SETGRAYSTROKE % redundant?
511 0.5 \atfi@SETLINEWIDTH
512 0 9.0488 \atfi@MOVETO
513 6.2661 9.0957 \atfi@LINETO
514 \atfi@STROKE
515 1.4028 5.2148 \atfi@MOVETO
516 1.4028 9.6094 \atfi@LINETO
517 1.6831 10.6387 2.4316 10.6387 \atfi@CURVETOV
518 3.6475 10.6387 3.5542 9.0488 \atfi@CURVETOY
519 \atfi@STROKE
520 \atfi@GRESTORE
521 }
522 \DeclareRobustCommand{\atfi@acroTag}{%
523 \raisebox{-1.6bp}{\parbox[b]{17bp}{25bp}{%
524 \rule{0pt}{0pt}\atfi@literal{\atfi@acroTag@data}}}%
525 }%
526 }
527
528 % --- .atfi file reading support ---
529
530 % commands used in \jobname.atfi:
531 % * \attachfile@timezone{<timezone in PDF format>}
532 % * \attachfile@file[
533 %     Size=<size>,
534 %     CreationDate=<date>, % <date> local time without "D:" and timezone
535 %     ModDate=<date>,
536 %     CheckSum=<checksum>
537 % ]{<filename as hex string>}
538 %
539 \def\attachfile@timezone#1{%
540 \ifx\#1\%
541 % no timezone information given
542 \else
543 \def\atfi@timezone{#1}%
544 \fi
545 }
546 \newcommand*{\attachfile@file}[2][{}]{%
547 \ifx\#2\%
548 \PackageError{attachfile2}{Empty file name}\@ehc
549 \else
550 \edef\atfi@restore{\uccode0=\the\uccode0 \relax}%
551 \let\atfi@filename\@empty
552 \atfi@getfilename#2\relax\relax
553 \atfi@restore
554 \namedef{atfi@file@\atfi@filename}{#1}%
555 \fi
556 }
557 % convert file name from hex string
558 \begingroup
559 \catcode0=12 %
560 \gdef\atfi@getfilename#1#2{%
561 \ifx\relax#1%
562 \else
563 \uccode0=\numexpr 16*\atfi@hexnum{#1} + \atfi@hexnum{#2}\relax
564 \uppercase{%
565 \edef\atfi@filename{%
566 \atfi@filename^^@%
567 }%
568 }%
569 \expandafter\atfi@getfilename
570 \fi

```

```

571 }%
572 \endgroup
573 \def\atfi@hexnum#1{%
574   \ifnum'#1<58 %
575     \numexpr '#1-48\relax
576   \else
577     \numexpr '#1-87\relax
578   \fi
579 }
580
581 \InputIfFileExists{\jobname.atfi}{-}{-}%
582
583 \newif\ifatfi@checksum
584 \define@key{AtFi@file}{Checksum}{%
585   \atfi@checksumtrue
586   \edef\atfi@params{\atfi@params/Checksum<#1>}%
587 }
588 \newif\ifatfi@creationdate
589 \define@key{AtFi@file}{CreationDate}{%
590   \atfi@creationdatetrue
591   \edef\atfi@params{\atfi@params/CreationDate(D:#1\atfi@timezone)}%
592 }
593 \newif\ifatfi@moddate
594 \define@key{AtFi@file}{ModDate}{%
595   \atfi@moddatetrue
596   \edef\atfi@params{\atfi@params/ModDate(D:#1\atfi@timezone)}%
597 }
598
599 % --- .atfi file writing support ---
600
601 % respect \nofiles and option nofiles
602 % \nofiles has more weight than option nofiles
603 \if@files
604 \else
605   \atfi@nofilestrue
606 \fi
607 \ifatfi@nofiles
608   \PackageInfo{attachfile2}{%
609     File '\jobname.atfi' will not be written because of\MessageBreak
610     \string\nofiles\space or option 'nofiles'%
611   }%
612   \let\atfi@writefile\@gobble
613 \else
614   \newwrite\atfi@stream
615   \immediate\openout\atfi@stream=\jobname.atfi\relax
616   \immediate\write\atfi@stream{%
617     \string\attachfile@timezone{\atfi@timezone}%
618   }%
619   \def\atfi@writefile#1{%
620     \begingroup
621       \def\file{#1}%
622       \@onelevel@sanitize\file
623       \edef\file{\@firstofone{\expandafter\atfi@replace\file} \@nil}%
624       \edef\file{\expandafter\atfi@tohex\file\relax}%
625       \immediate\write\atfi@stream{%
626         \string\attachfile\file[%
627           \@ifundefined{atfi@file@#1}{-}{\@nameuse{atfi@file@#1}}%
628         ]{\file}%
629       }%
630     \endgroup
631   }%
632 \fi

```

```

633
634 \def\atfi@attachfile#1#2{%
635   \@ifundefined{atfi@fileobj@#2}{%
636     \atfi@writefile{#2}%
637   }{%
638     % don't need duplicates
639   }%
640   \setkeys{AtFi}{#1}%
641   \atfi@embedfile{#2}%
642   \atfi@set@appearance@icon
643   \atfi@flags@to@int
644   \atfi@insert@file@annot{#2}%
645   \endgroup
646 }
647
648 % convert to hex string
649
650 \def\atfi@replace#1 #2\@nil{%
651   #1%
652   \ifx\\#2\\%
653     \else
654       \atfi@space
655       \@ReturnAfterFi{%
656         \atfi@replace#2\@nil
657       }%
658     \fi
659 }%
660
661 \long\def\@ReturnAfterFi#1\fi{\fi#1}
662
663 % ---
664
665 \newlength{\atfi@appearancewidth}
666 \newlength{\atfi@appearanceheight}
667 \newlength{\atfi@appearancedepth}
668 \newsavebox{\atfi@appearancebox}
669
670 \def\atfi@set@appearance@icon{%
671   \@ifundefined{atfi@appobj@atfi@icon@icon}{%
672     \savebox{\atfi@appearancebox}{\@nameuse{atfi@acro\atfi@icon@icon}}%
673     \expandafter\xdef\csname atfi@appwidth@\atfi@icon@icon\endcsname{%
674       \the\wd\atfi@appearancebox
675     }%
676     \expandafter\xdef\csname atfi@appheight@\atfi@icon@icon\endcsname{%
677       \the\ht\atfi@appearancebox
678     }%
679     \expandafter\xdef\csname atfi@appdepth@\atfi@icon@icon\endcsname{%
680       \the\dp\atfi@appearancebox
681     }%
682     \atfi@xform@icon
683     \global\expandafter\let\csname atfi@appobj@\atfi@icon@icon\endcsname
684       \atfi@appearanceobj
685   }{%
686   }%
687   % optimization: \setlength dropped
688   \atfi@appearancewidth=\@nameuse{atfi@appwidth@\atfi@icon@icon}\relax
689   \atfi@appearanceheight=\@nameuse{atfi@appheight@\atfi@icon@icon}\relax
690   \atfi@appearancedepth=\@nameuse{atfi@appdepth@\atfi@icon@icon}\relax
691   \expandafter\let\expandafter\atfi@appearanceobj
692     \csname atfi@appobj@\atfi@icon@icon\endcsname
693 }
694

```

```

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

```



```

757     \else
758         \makebox[\atfi@appearancewidth]{}%
759     \fi
760 \endgroup
761 }

762 </package>

```

## 2.2 Drivers

### 2.2.1 pdfTeX

```

763 <*pdfTeX>
764 \NeedsTeXFormat{LaTeX2e}
765 \ProvidesFile{atfi.pdfTeX.def}%
766 [2009/09/25 v2.5 attachfile2 driver for pdfTeX (HO)]%

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

```

```

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

```

```

877 \endgroup
878 }{%
879 }%
880 \pdfannot width \atfi@scale\atfi@appearancewidth
881           height \atfi@scale\atfi@appearanceheight
882           depth \atfi@scale\atfi@appearancedepth {%
883 /Subtype/FileAttachment%
884 \atfi@icon
885 \atfi@color@annot
886 \atfi@author
887 \atfi@date
888 \atfi@annotname
889 \atfi@description
890 \atfi@subject
891 \atfi@appearance@dict
892 /F \theatfi@flags
893 /FS \@nameuse{atfi@fsobj@#1} 0 R%
894 }%
895 \rule{0pt}{\atfi@appearanceheight}%
896 \rule[-\atfi@appearancedepth]{0pt}{\atfi@appearancedepth}%
897 \rule{\atfi@appearancewidth}{0pt}%
898 }
899 </pdftex>

```

### 2.2.2 dvips

```

900 <*dvips>
901 \NeedsTeXFormat{LaTeX2e}
902 \ProvidesFile{atfipdftex.def}%
903 [2009/09/25 v2.5 attachfile2 driver for dvips (H0)]%
904 \def\atfi@literal#1{%
905   \special{ps:atfi_dict begin{#1}atfi_?pdfmark end}%
906 }
907
908 \def\atfi@header#1{%
909   \special{! #1}%
910 }
911
912 % --- macros for graphics data ---
913
914 \atfi@header{%
915   userdict begin 20 dict dup /atfi_dict exch def end begin%
916     /atfi_?pdfmark systemdict %
917     dup/pdfmark known%
918     {%
919       /exec get def%
920     }{%
921       /pop get def%
922     } ifelse%
923     {%
924       %
925       % x y width height atfi_re ->
926       languagelevel 2 ge {%
927         /atfi_rectfill { rectfill } bind def%
928         /atfi_rectstroke { rectstroke } bind def%
929       }{%
930         /atfi_rect {%
931           /atfi_height exch def%
932           /atfi_width exch def%
933           /atfi_x exch def%
934           /atfi_y exch def %
935           newpath %
936           atfi_x atfi_y moveto %

```

```

937         atfi_x atfi_width add atfi_y lineto %
938         atfi_x atfi_width add atfi_y atfi_height add lineto %
939         atfi_x atfi_y atfi_height add lineto %
940         closepath%
941     } bind def%
942 /atfi_rectfill {%
943     atfi_rect fill%
944 } bind def%
945 /atfi_rectstroke {%
946     atfi_rect stroke%
947 } bind def%
948 } ifelse%
949 /atfi_curveto_v {%
950     currentpoint 6 2 roll curveto%
951 } bind def%
952 /atfi_curveto_y {%
953     2 copy curveto%
954 } bind def%
955 %
956 % help macro for atfi_convert_date
957 /atfi_two {%
958     dup 10 lt%
959     {%
960         1 string cvs %
961         exch 1 add exch%
962     }{%
963         2 string cvs%
964     } ifelse %
965     putinterval%
966 } bind def%
967 %
968 % <seconds since 1970-01-01> atfi_convert_date -> (D:...Z)
969 /atfi_convert_date {%
970     dup%
971     /atfi_days exch 3600 idiv 24 idiv def%
972     % calc date part
973     /atfi_year 1970 def%
974     {%
975         atfi_year 400 mod 0 eq %
976         atfi_year 100 mod 0 ne %
977         atfi_year 4 mod 0 eq %
978         and or%
979         {366} {365} ifelse %
980         dup atfi_days lt%
981         {%
982             atfi_days exch sub /atfi_days exch def%
983             /atfi_year atfi_year 1 add def%
984         }{%
985             exit%
986         } ifelse%
987     } loop%
988     /atfi_month 1 def%
989     /atfi_days atfi_days 1 add def %
990     31 atfi_days lt%
991     {%
992         atfi_days 31 sub /atfi_days exch def%
993         /atfi_month atfi_month 1 add def %
994         366 eq {29} {28} ifelse dup atfi_days lt%
995         {%
996             atfi_days exch 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      31 atfi_days lt%
1019      {%
1020      atfi_days 31 sub /atfi_days exch def%
1021      /atfi_month atfi_month 1 add def %
1022      30 atfi_days lt%
1023      {%
1024      atfi_days 30 sub /atfi_days exch def%
1025      /atfi_month atfi_month 1 add def %
1026      31 atfi_days lt%
1027      {%
1028      atfi_days 31 sub /atfi_days exch def%
1029      /atfi_month atfi_month 1 add def %
1030      30 atfi_days lt%
1031      {%
1032      atfi_days 30 sub /atfi_days exch def%
1033      /atfi_month atfi_month 1 add def %
1034      31 atfi_days lt%
1035      {%
1036      atfi_days 31 sub /atfi_days exch def%
1037      /atfi_month atfi_month 1 add def%
1038      } if%
1039      } if%
1040      } if%
1041      } if%
1042      } if%
1043      } if%
1044      } if%
1045      } if%
1046      } if%
1047      } if%
1048      } { pop } ifelse%
1049      }{ pop } ifelse %
1050      % calc time part
1051      3600 24 mul mod %
1052      dup 3600 idiv dup /atfi_hour exch def %
1053      3600 mul sub %
1054      dup 60 idiv dup /atfi_min exch def %
1055      60 mul sub %
1056      /atfi_sec exch def%
1057      (D:19700101000000Z)%
1058      dup 2 atfi_year 4 string cvs putinterval %
1059      dup 6 atfi_month atfi_two %
1060      dup 8 atfi_days atfi_two %

```

```

1061      dup 10 atfi_hour   atfi_two %
1062      dup 12 atfi_min    atfi_two %
1063      dup 14 atfi_sec    atfi_two%
1064  } bind def %
1065  %
1066  % <filename> atfi_calc_checksum -> /Checksum <checksum>
1067  % or returns nothing, if MD5Encode is not given
1068  false %
1069  languagelevel 2 ge {%
1070    (MD5Encode)%
1071    { pop true or }%
1072    (MD5Encode) length string%
1073    /Filter %
1074    resourceforall%
1075  } if%
1076  {%
1077    /atfi_calc_checksum {%
1078      /atfi_checksum 16 string def%
1079      /atfi_file exch (r) file def%
1080      /atfi_md5sum atfi_checksum /MD5Encode filter def %
1081      % not too efficient to read and write byte by byte,
1082      % using a buffer is probably faster
1083      atfi_size {%
1084        atfi_file read%
1085        {%
1086          atfi_md5sum exch write%
1087        } if%
1088      } repeat %
1089      atfi_md5sum closefile %
1090      atfi_file closefile%
1091      /Checksum atfi_checksum%
1092    } bind def%
1093  }{%
1094    /atfi_calc_checksum { pop } bind def%
1095  } ifelse%
1096  %
1097  /atfi_pttobp { 72.27 div 72 mul } bind def%
1098  /atfi_pdftodvipsx { 72.27 div Resolution mul } bind def%
1099  /atfi_pdftodvipsy { 72.27 div VResolution mul } bind def%
1100  %
1101  } atfi_?pdfmark %
1102  end%
1103 }
1104
1105 \def\atfi@GSAVE{gsave }
1106 \def\atfi@GRESTORE{grestore }
1107 \def\atfi@SETLINEWIDTH{setlinewidth }
1108 \def\atfi@LINETO{lineto }
1109 \def\atfi@MOVETO{moveto }
1110 \def\atfi@STROKE{stroke }
1111 \def\atfi@FILL{fill }
1112 \def\atfi@FILLSTROKE#1#2{gsave #1 fill grestore #2 stroke }
1113 \def\atfi@SETRGBCOLORSTROKE{setrgbcolor }
1114 \def\atfi@SETRGBCOLORFILL{setrgbcolor }
1115 \def\atfi@SETGRAYSTROKE{setgray }
1116 \def\atfi@SETGRAYFILL{setgray }
1117 \def\atfi@SETCMYKCOLORSTROKE{setcmykcolor }
1118 \def\atfi@SETCMYKCOLORFILL{setcmykcolor }
1119 \def\atfi@RECTFILL{atfi_rectfill }
1120 \def\atfi@RECTSTROKEFILL#1#2#3{%
1121   #3%
1122   #1%

```

```

1123 gsave atfi_rectfill grestore %
1124 #2%
1125 #3%
1126 atfi_rectstroke %
1127 #1%
1128 }
1129 \def\atfi@SETMITERLIMIT{setmiterlimit }
1130 \def\atfi@SETFLAT{setflat }
1131 \def\atfi@SETLINECAP{setlinecap }
1132 \def\atfi@CURVETO{curveto }
1133 \def\atfi@CURVETOY{atfi_curveto_v }
1134 \def\atfi@CURVETOY{atfi_curveto_y }
1135 \def\atfi@CLOSEPATH{closepath }
1136 \def\atfi@SETLINEJOIN{setlinejoin }
1137
1138 % ---
1139
1140 \newcounter{atfi@obj}
1141 \renewcommand*{\theatfi@obj}{%
1142   {atfi_obj\_number\c@atfi@obj}%
1143 }
1144
1145
1146 % most values for Params dictionary found in the .atfi file have
1147 % priority:
1148 % * Recalculation (md5sum, ...) is avoided.
1149 % * An external script has more possibilities than programming
1150 %   at PostScript level (operating system, getting the date and
1151 %   time values of the file with correct interpretation.
1152 % * Exception: status is called to test file existence, thus
1153 %   we get the value of size for free
1154
1155 \define@key{AtFi@file}{Size}{%
1156
1157 \def\atfi@embedfile#1{%
1158   \@ifundefined{atfi@fileobj@#1}{%
1159     \atfi@pdfstringdef\atfi@psfilename{#1}%
1160     \stepcounter{atfi@obj}%
1161     \expandafter\xdef\csname atfi@fileobj@#1\endcsname{\theatfi@obj}%
1162     \begingroup
1163       \let\atfi@params\@empty
1164       \@ifundefined{atfi@file@#1}{%
1165         \edef\x{\noexpand\setkeys{AtFi@file}{\@nameuse{atfi@file@#1}}}%
1166         \x
1167       }%
1168       \atfi@literal{%
1169         /atfi_filename(\atfi@psfilename)def %
1170         atfi_filename status%
1171         {%
1172           % ok: file found
1173           % save parameters of status command
1174           /atfi_created exch def%
1175           /atfi_referenced exch def%
1176           /atfi_size exch def %
1177           pop % drop parameter "pages" (storage space), never needed
1178           % ghostscript:
1179           %   created:      stat.st_ctime
1180           %   referenced:   stat.st_mtime
1181           %   stat.st_ctime: interpretation depends on operating system:
1182           %                   * unix: inode change time (not interesting)
1183           %                   * win32: probably creation time
1184           %                   --> /CreationDate

```

```

1185 % stat.st_mtime: modification time --> /ModDate
1186 % time values are seconds since 1970-01-01, GMT
1187 % TODO: ghostscript offers "getenv" for getting the value
1188 % of an environment variable. That could be used to
1189 % to detect windows and setting the /CreationDate entry.
1190 % TODO: how are these values interpreted by other distiller
1191 % programs?
1192 %
1193 [%
1194   /_objdef \theatfi@obj
1195   /type/stream%
1196 /OBJ pdfmark%
1197 [%
1198   \theatfi@obj
1199   <<%
1200     /Type/EmbeddedFile%
1201     \atfi@mimetype
1202     /Params%
1203     <<%
1204       \atfi@params
1205       %
1206       /Size atfi_size%
1207       %
1208       /product where%
1209       {%
1210         pop %
1211         % check for ghostscript
1212         product (Ghostscript) search%
1213         {%
1214           pop pop pop %
1215           % ghostscript is running
1216           %
1217           \ifatfi@creationdate
1218           \else
1219             false % TODO: test for windows
1220             {%
1221               /CreationDate atfi_created atfi_convert_date%
1222             } if%
1223           \fi
1224           \ifatfi@moddate
1225           \else
1226             /ModDate atfi_referenced atfi_convert_date%
1227           \fi
1228         } if%
1229         %
1230         % look for MD5Encode filter and calculate CheckSum
1231       } if %
1232       \ifatfi@checksum
1233       \else
1234         atfi_filename atfi_calc_checksum%
1235       \fi
1236     >>%
1237   >>%
1238 /PUT pdfmark%
1239 [%
1240   \theatfi@obj
1241   atfi_filename (r) file%
1242 /PUT pdfmark%
1243 [%
1244   \theatfi@obj
1245 /CLOSE pdfmark%
1246 ]-[%

```



```

1247         % error: file not found
1248         % currently nothing is done
1249     } ifelse%
1250 }%
1251 \endgroup
1252 }{%
1253     % file already embedded
1254 }%
1255 }
1256
1257 % ---
1258
1259 % output: \atfi@appearanceobj
1260 % input: \atfi@appearancebox, \atfi@icon@icon
1261 \def\atfi@xform@icon{%
1262     \stepcounter{atfi@obj}%
1263     \edef\atfi@appearanceobj{\theatfi@obj}%
1264     \atfi@literal{%
1265         [%
1266         /_objdef \atfi@appearanceobj
1267         /BBox[%
1268             0 %
1269             0 %
1270             \strip@pt\wd\atfi@appearancebox\space atfi_pttobp %
1271             \strip@pt\dimexpr\dp\atfi@appearancebox
1272             +\ht\atfi@appearancebox\relax\space atfi_pttobp%
1273         ]%
1274         /BP pdfmark %
1275         \csname atfi@acro\atfi@icon@icon @data\endcsname
1276         [%
1277         /EP pdfmark%
1278     }%
1279 }
1280 % output: \atfi@appearanceobj
1281 % input: \atfi@appearancebox
1282 \def\atfi@xform{%
1283     \stepcounter{atfi@obj}%
1284     \edef\atfi@appearanceobj{\theatfi@obj}%
1285     \begin{group}
1286         \setbox0=\hbox{%
1287             \atfi@literal{%
1288                 [%
1289                 /_objdef \atfi@appearanceobj
1290                 /BBox[%
1291                     currentpoint %
1292                     \strip@pt\dp\atfi@appearancebox\space sub %
1293                     currentpoint %
1294                     exch \strip@pt\wd\atfi@appearancebox\space add %
1295                     exch \strip@pt\ht\atfi@appearancebox\space add%
1296                 ]%
1297                 /BP pdfmark %
1298                 gsave %
1299                 currentpoint %
1300                 2 copy translate %
1301                 72.27 Resolution div 72.27 VResolution div neg scale %
1302                 exch neg exch neg translate%
1303             }%
1304             \usebox{\atfi@appearancebox}%
1305             \atfi@literal{%
1306                 grestore%
1307                 [%
1308                 /EP pdfmark%

```

```

1309     }%
1310 }%
1311 % do not allocate any space for xobject definition
1312 \dp0=\z@
1313 \ht0=\z@
1314 \wd0=\z@
1315 \mbox{\usebox0}%
1316 \endgroup
1317 }
1318
1319 \def\atfi@refxform#1{%
1320   \raisebox{-\atfi@appearancedepth}{%
1321     \atfi@literal{%
1322       gsave %
1323         currentpoint translate %
1324         Resolution 72 div VResolution neg 72 div scale%
1325         [#1 /SP pdfmark % hash-ok
1326       grestore%
1327     }%
1328     \makebox[\atfi@appearancewidth]{}%
1329   }%
1330   \rule{0pt}{\atfi@appearanceheight}%
1331 }
1332
1333 % ---
1334
1335 \def\atfi@insert@file@annot#1{%
1336   \rule{0pt}{0pt}%
1337   \ifatfi@appearance
1338     \def\atfi@appearance@dict{%
1339       /AP<<%
1340       /N \atfi@appearanceobj
1341       /R \atfi@appearanceobj
1342       /D \atfi@appearanceobj
1343     >>%
1344   }%
1345   \else
1346     \let\atfi@appearance@dict\@empty
1347   \fi
1348   \@ifundefined{atfi@fsobj@#1}{%
1349     \stepcounter{atfi@obj}%
1350     \expandafter\xdef\csname atfi@fsobj@#1\endcsname{\theatfi@obj}%
1351     \begingroup
1352     \hypersetup{unicode=false}%
1353     \atfi@pdfstringdef\atfi@file{#1}%
1354     \atfi@literal{%
1355       [%
1356         /_objdef \theatfi@obj
1357         /type/dict%
1358         /OBJ pdfmark%
1359       [%
1360         \theatfi@obj
1361       <<%
1362         /Type/Filespec%
1363         /F(\atfi@file)%
1364         \ifx\atfi@ucfilespec\@empty
1365         \else
1366           /UF(\atfi@ucfilespec)%
1367         \fi
1368         /EF<<%
1369         /F \csname atfi@fileobj@#1\endcsname
1370       >>%

```

```

1371         >>%
1372         /PUT pdfmark%
1373     }%
1374 \endgroup
1375 }{%
1376 }%
1377 \atfi@literal{%
1378     [%
1379     /Subtype/FileAttachment%
1380     \atfi@icon
1381     \atfi@color@annot
1382     \atfi@author
1383     \atfi@date
1384     \atfi@annotname
1385     \atfi@description
1386     \atfi@subject
1387     \atfi@appearance@dict
1388     /F \theatfi@flags
1389     /FS \csname atfi@fsobj@#1\endcsname
1390     /Rect[%
1391         currentpoint %
1392         \strip@pt\dimexpr\atfi@scale\atfi@appearancedepth\relax
1393         \space atfi_pdftodvipsy add %
1394         currentpoint %
1395         exch \strip@pt\dimexpr\atfi@scale\atfi@appearancewidth\relax
1396         \space atfi_pdftodvipsx add %
1397         exch \strip@pt\dimexpr\atfi@scale\atfi@appearanceheight\relax
1398         \space atfi_pdftodvipsy sub %
1399     ]%
1400     /ANN pdfmark%
1401 }%
1402 \rule{0pt}{\atfi@appearanceheight}%
1403 \rule[-\atfi@appearancedepth]{0pt}{\atfi@appearancedepth}%
1404 \rule{\atfi@appearancewidth}{0pt}%
1405 }
1406 </dvips>

```

## 2.3 Perl script pdfatfi.pl

```

1407 <(*pdfatfi)
1408 eval '(exit $?0)' && eval 'exec perl -S $0 ${1+"$@"}' && eval 'exec perl -S $0 $argv:q'
1409 if 0;
1410 use strict;
1411 $^W=1; # turn warning on
1412 #
1413 # pdfatfi.pl
1414 #
1415 # Copyright (C) 2005, 2006 Heiko Oberdiek.
1416 #
1417 # This work may be distributed and/or modified under the
1418 # conditions of the LaTeX Project Public License, either version 1.3
1419 # of this license or (at your option) any later version.
1420 # The latest version of this license is in
1421 # http://www.latex-project.org/lppl.txt
1422 # and version 1.3 or later is part of all distributions of LaTeX
1423 # version 2005/12/01 or later.
1424 #
1425 # This work has the LPPL maintenance status "maintained".
1426 #
1427 # This Current Maintainer of this work is Heiko Oberdiek.
1428 #
1429 # See file "attachfile2.pdf" for a list of files that belong to this project.
1430 #

```

```

1431 # This file "pdfatfi.pl" may be renamed to "pdfatfi"
1432 # for installation purposes.
1433 #
1434 my $file      = "pdfatfi.pl";
1435 my $program    = uc($&) if $file =~ /\w+/;
1436 my $version    = "2.5";
1437 my $date      = "2009/09/25";
1438 my $author    = "Heiko Oberdiek";
1439 my $copyright = "Copyright (c) 2005, 2006 by $author.";
1440 #
1441 # History:
1442 #   2005/05/21 v1.0: First release.
1443 #   2006/08/16 v2.2: Included in DTX file of attachfile2.dtx.
1444 #
1445
1446 use POSIX qw(strftime); # %z is used (GNU)
1447 use Digest::MD5;
1448
1449 ### program identification
1450 my $title = "$program $version, $date - $copyright\n";
1451
1452 ### error strings
1453 my $Error = "!!! Error: "; # error prefix
1454
1455 ### variables
1456 my $atffile;
1457
1458 ### option variables
1459 my @bool = ("false", "true");
1460 $::opt_help      = 0;
1461 $::opt_quiet     = 0;
1462 $::opt_debug     = 0;
1463 $::opt_verbose   = 0;
1464
1465 my $usage = <<"END_OF_USAGE";
1466 ${title}Syntax:  \L$program\E [options] <file[.atfi]>
1467 Function: Help program for LaTeX package "attachfile2".
1468 Options:                                     (defaults:)
1469 --help          print usage
1470 --(no)quiet     suppress messages             ($bool[$::opt_quiet])
1471 --(no)verbose   verbose printing             ($bool[$::opt_verbose])
1472 --(no)debug     debug informations           ($bool[$::opt_debug])
1473 END_OF_USAGE
1474
1475 ### process options
1476 my @OrgArgv = @ARGV;
1477 use Getopt::Long;
1478 GetOptions(
1479   "help!",
1480   "quiet!",
1481   "debug!",
1482   "verbose!",
1483 ) or die $usage;
1484 !$::opt_help or die $usage;
1485 @ARGV == 1 or die "$usage$Error Missing jobname!\n";
1486
1487 $::opt_quiet = 0 if $::opt_verbose;
1488
1489 print $title unless $::opt_quiet;
1490
1491 ### get jobname
1492 $atffile = $ARGV[0];

```

```

1493 if (!-f $atffile && -f "$atffile.atfi") {
1494     $atffile .= ".atfi";
1495 }
1496 -f $atffile or die "$Error File '$atffile' not found!\n";
1497
1498 print "* job file      = $atffile\n" if $::opt_verbose;
1499
1500 if ($::opt_debug) {
1501     print <<"END_DEB";
1502     * OSNAME: $^O
1503     * PERL_VERSION: $]
1504     * ARGV: @OrgArgv
1505     END_DEB
1506 }
1507
1508 my $tmpfile = $atffile . ".tmp";
1509
1510 my $timezone = strftime "%z", localtime;
1511 $timezone =~ s/^( [+ - ] \d \d ) ( \d \d ) $ / $1 '$2' /;
1512
1513 open(IN, $atffile) or die "$Error Cannot open '$atffile'!\n";
1514 open(OUT, ">$tmpfile") or die "$Error Cannot write '$tmpfile'!\n";
1515
1516 while(<IN>) {
1517     # timezone
1518     if (s/^(\\attachfile\\@timezone\\{).*\\})$/$1$timezone$2/) {
1519         print "* timezone      = $timezone\n" if $::opt_verbose;
1520     }
1521
1522     # file entry
1523     if (/^(\\attachfile\\@file\\[ [^\\ ] * \\ ) \\{ (.* ) \\} $/) {
1524         my $hexfile = $1;
1525         my $file = pack('H*', $hexfile);
1526         my @s = stat($file);
1527         if (@s == 0) {
1528             print "!!! Warning: File '$file' not found!\n";
1529         }
1530         else {
1531             my $size = @s[7];
1532             my $mtime = @s[9];
1533             my $ctime = @s[10]; # inode change time
1534
1535             my ($sec, $min, $hour, $mday, $mon, $year) = localtime($mtime);
1536             my $moddate = sprintf("%04d%02d%02d%02d%02d",
1537                                   $year + 1900, $mon + 1, $mday,
1538                                   $hour, $min, $sec);
1539
1540             # Manual page "perlport" says that "ctime" is creation
1541             # time instead of inode change time for "Win32" and
1542             # "Mac OS", but it is unsupported for "Mac OS X".
1543             my $creationdate = "";
1544             if ($^O eq 'MSWin32') { # cygwin?
1545                 ($sec, $min, $hour, $mday, $mon, $year) = localtime($ctime);
1546                 $creationdate = sprintf("%04d%02d%02d%02d%02d",
1547                                           $year + 1900, $mon + 1, $mday,
1548                                           $hour, $min, $sec);
1549             }
1550
1551             # md5 checksum
1552             my $checksum = "";
1553             my $ctx = Digest::MD5->new;
1554             if (open(FILE, $file)) {

```

```

1555         $ctx->addfile(*FILE);
1556         $checksum = $ctx->hexdigest;
1557         close(FILE);
1558     }
1559     else {
1560         print "!!! Warning: File '$file' cannot be read,"
1561             . " dropping checksum!\n";
1562     }
1563
1564     $_ = "\\attachfile\\@file["
1565         . "ModDate=$moddate,Size=$size"
1566         . (($checksum) ? ",Checksum=$checksum" : "")
1567         . (($creationdate) ? ",CreationDate=$creationdate" : "")
1568         . "]{ $hexfile}\\n";
1569     if ($::opt_verbose) {
1570         print "* file entry    = $file\n";
1571         print "  size          = $size\n";
1572         print "  moddate         = $moddate\n";
1573         print "  creationdate    = $creationdate\n" if $creationdate;
1574         print "  checksum        = $checksum\n" if $checksum;
1575     }
1576 }
1577 }
1578
1579 print OUT $_;
1580 }
1581
1582 close(IN);
1583 close(OUT);
1584
1585 unlink($atffile) or die "$Error Cannot delete old '$atffile'!\n";
1586 rename $tmpfile, $atffile
1587     or die "$Error Cannot move '$tmpfile' to '$atffile'!\n";
1588
1589 print "*** ready. ***\n" unless $::opt_quiet;
1590
1591 __END__
1592 </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 T<sub>E</sub>X Files” ([CTAN:tds/tds.pdf](#)). Directories with `texmf` in their name are usually organized this way.

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

### 3.2 Bundle installation

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

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

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

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

### 3.3 Package installation

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

```
tex attachfile2.dtx
```

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

```
attachfile2.sty → tex/latex/oberdiek/attachfile2.sty
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`, mi`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.

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

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

## 6 Index

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