

The pdfrender package

Heiko Oberdiek*

2018/11/01 v1.5

Abstract

The PDF format has some graphics parameter like line width or text rendering mode. This package provides an interface for setting these parameters.

Contents

1	Documentation	2
1.1	Usage	2
1.2	Macros	2
1.3	Parameters	2
1.3.1	Details	3
1.4	Color stack	4
2	Implementation	4
2.1	Look for pdfTeX, its mode and features	6
2.2	Enable color support of L ^A T _E X	8
2.3	Hook into \normalcolor	8
2.4	Declare and setup parameters	14
2.5	Fill and stroke color support	15
3	Test	19
3.1	Catcode checks for loading	19
3.2	Simple test file	21
3.3	Further tests	21
3.4	Compatibility with plain T _E X	23
4	Installation	24
4.1	Download	24
4.2	Bundle installation	24
4.3	Package installation	24
4.4	Refresh file name databases	24
4.5	Some details for the interested	25
5	Acknowledgement	25
6	References	25

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

7 History	26
[2010/01/26 v1.0]	26
[2010/01/27 v1.1]	26
[2010/01/28 v1.2]	26
[2016/05/14 v1.3]	26
[2016/05/17 v1.4]	26
[2018/11/01 v1.5]	26

1 Documentation

This package `pdfrender` defines an interface for PDF specific parameters that affects the rendering of graphics or text. The interface and its implementation uses the same technique as package `color` for color settings. Therefore this package is loaded to enable L^AT_EX's color interface.

At different places L^AT_EX uses `\normalcolor` to avoid that header, footer or floats are print in the current color of the main text. `\setgroup@color` is used to start a save box with the color that is set at box saving time. Package `pdfrender` extends these macros to add its own hooks of its parameters. Therefore L^AT_EX3 should generalize L^AT_EX 2_ε's color interface.

1.1 Usage

In L^AT_EX the package is loaded as normal package. Options are not defined for this package.

```
\usepackage{pdfrender}
```

This package can also be used in plain T_EX and even iniT_EX:

```
input pdfrender.sty
```

1.2 Macros

`\pdfrender {⟨key value list⟩}`

The first parameter *⟨key value list⟩* contains a list of parameter settings. The key entry is the parameter name. The macro works like `\color` (without optional argument) for color setting.

`\textpdfrender {⟨key value list⟩} {⟨text⟩}`

In the same way as `\pdfrender` the first argument specifies the parameters that should be set. This parameter setting affects *⟨text⟩* only. Basically it works the same way as `\textcolor` (without optional argument).

1.3 Parameters

The following table shows an overview for the supported parameters and values:

Parameter	Value	Alias
TextRenderingMode	0	Fill
	1	Stroke
	2	FillStroke
	3	Invisible
	4	FillClip
	5	StrokeClip
	6	FillStrokeClip
	7	Clip
LineWidth	<i>positive number, unit is bp</i>	<i>TeX dimen</i>
LineCapStyle	0	Butt
	1	Round
	2	ProjectingSquare
LineJoinStyle	0	Miter
	1	Round
	2	Bevel
MiterLimit	<i>positive number</i>	
Flatness	<i>number between 0 and 100</i>	
LineDashPattern	<i>numbers in square brackets, followed by number, units are bp</i>	
RenderingIntent	AbsoluteColorimetric	
	RelativeColorimetric	
	Saturation	
	Perceptual	
FillColor		<i>color specification</i>
StrokeColor		<i>color specification</i>

1.3.1 Details

The description and specification of these parameters are available in the PDF specification [1]. Therefore they are not repeated here.

Value: The values in the second column lists or describe the values that are specified by the PDF specification.

Alias: Instead of magic numbers the package also defines some aliases that can be given as value. Example: `LineCapStyle=Round` has the same effect as `LineCapStyle=1`.

Number: The term *number* means an integer or real number. The real number is given as plain decimal number without exponent. The decimal separator is a period. At least one digit must be present.

LineWidth: As alias a TeX dimen specification can be given. This includes explicit specifications with number and unit, e.g. `LineWidth=0.5pt`. Also L^AT_EX length registers may be used. If ε -T_EX's `\dimexpr` is available, then it is automatically added. However package `calc` is not supported.

FillColor, StrokeColor: Package `color` or `xcolor` must be loaded before these options can be used (since version 1.2). L^AT_EX's color support sets both colors at the same time to the same value. However parameter `TextRenderingMode` offers the value `FillStroke` that makes only sense, if the two color types can be set separately. If one of the options `FillColor` or `StrokeColor` is specified, then also the color is set. For compatibility with the L^AT_EX color packages (`color` or `xcolor`), always both colors must be set. Thus if one of them is not specified, it is taken from the current color.

Both options `FillColor` and `StrokeColor` expect a L^AT_EX color specification as value. Also the optional color model argument is supported. Example:

```
FillColor=yellow,
StrokeColor=[cmyk]{1,.5,0,0}
```

1.4 Color stack

If the pdfT_EX version provides color stacks, then each parameter is assigned a page based color stack. The assignment of a stack takes place, when its parameter is set the first time. This avoids the use of color stacks that are not needed.

2 Implementation

```
1 <*package>
Reload check, especially if the package is not used with LATEX.
2 \begingroup\catcode61\catcode48\catcode32=10\relax%
3 \catcode13=5 % ^~M
4 \endlinechar=13 %
5 \catcode35=6 % #
6 \catcode39=12 % '
7 \catcode44=12 % ,
8 \catcode45=12 % -
9 \catcode46=12 % .
10 \catcode58=12 % :
11 \catcode64=11 % @
12 \catcode123=1 % {
13 \catcode125=2 % }
14 \expandafter\let\expandafter\x\csname ver@pdfrender.sty\endcsname
15 \ifx\x\relax % plain-TEX, first loading
16 \else
17 \def\empty{}%
18 \ifx\x\empty % LATEX, first loading,
19 % variable is initialized, but \ProvidesPackage not yet seen
20 \else
21 \expandafter\ifx\csname PackageInfo\endcsname\relax
22 \def\x#1#2{%
23 \immediate\write-1{Package #1 Info: #2.}%
24 }%
25 \else
26 \def\x#1#2{\PackageInfo{#1}{#2, stopped}}%
27 \fi
28 \x{pdfrender}{The package is already loaded}%
29 \aftergroup\endinput
30 \fi
31 \fi
```

```

32 \endgroup%
Package identification:
33 \begingroup\catcode61\catcode48\catcode32=10\relax%
34 \catcode13=5 % ^~M
35 \endlinechar=13 %
36 \catcode35=6 % #
37 \catcode39=12 % '
38 \catcode40=12 % (
39 \catcode41=12 % )
40 \catcode44=12 % ,
41 \catcode45=12 % -
42 \catcode46=12 % .
43 \catcode47=12 % /
44 \catcode58=12 % :
45 \catcode64=11 % @
46 \catcode91=12 % [
47 \catcode93=12 % ]
48 \catcode123=1 % {
49 \catcode125=2 % }
50 \expandafter\ifx\csname ProvidesPackage\endcsname\relax
51 \def\x#1#2#3[#4]{\endgroup
52 \immediate\write-1{Package: #3 #4}%
53 \xdef#1[#4}%
54 }%
55 \else
56 \def\x#1#2[#3]{\endgroup
57 #2[#3]}%
58 \ifx#1\@undefined
59 \xdef#1[#3}%
60 \fi
61 \ifx#1\relax
62 \xdef#1[#3}%
63 \fi
64 }%
65 \fi
66 \expandafter\x\csname ver@pdfrender.sty\endcsname
67 \ProvidesPackage{pdfrender}%
68 [2018/11/01 v1.5 Access to some PDF graphics parameters (H0)]%
69 \begingroup\catcode61\catcode48\catcode32=10\relax%
70 \catcode13=5 % ^~M
71 \endlinechar=13 %
72 \catcode123=1 % {
73 \catcode125=2 % }
74 \catcode64=11 % @
75 \def\x{\endgroup
76 \expandafter\edef\csname PdfRender@AtEnd\endcsname{%
77 \endlinechar=\the\endlinechar\relax
78 \catcode13=\the\catcode13\relax
79 \catcode32=\the\catcode32\relax
80 \catcode35=\the\catcode35\relax
81 \catcode61=\the\catcode61\relax
82 \catcode64=\the\catcode64\relax
83 \catcode123=\the\catcode123\relax
84 \catcode125=\the\catcode125\relax
85 }%
86 }%
87 \x\catcode61\catcode48\catcode32=10\relax%
88 \catcode13=5 % ^~M

```

```

89 \endlinechar=13 %
90 \catcode35=6 % #
91 \catcode64=11 % @
92 \catcode123=1 % {
93 \catcode125=2 % }
94 \def\TMP@EnsureCode#1#2{%
95   \edef\PdfRender@AtEnd{%
96     \PdfRender@AtEnd
97     \catcode#1=\the\catcode#1\relax
98   }%
99   \catcode#1=#2\relax
100 }
101 \TMP@EnsureCode{10}{12}% ^^J
102 \TMP@EnsureCode{36}{3}% $
103 \TMP@EnsureCode{39}{12}% '
104 \TMP@EnsureCode{40}{12}% (
105 \TMP@EnsureCode{41}{12}% )
106 \TMP@EnsureCode{42}{12}% *
107 \TMP@EnsureCode{43}{12}% +
108 \TMP@EnsureCode{44}{12}% ,
109 \TMP@EnsureCode{45}{12}% -
110 \TMP@EnsureCode{46}{12}% .
111 \TMP@EnsureCode{47}{12}% /
112 \TMP@EnsureCode{58}{12}% :
113 \TMP@EnsureCode{59}{12}% ;
114 \TMP@EnsureCode{60}{12}% <
115 \TMP@EnsureCode{62}{12}% >
116 \TMP@EnsureCode{63}{12}% ?
117 \TMP@EnsureCode{91}{12}% [
118 \TMP@EnsureCode{93}{12}% ]
119 \TMP@EnsureCode{94}{7}% ^ (superscript)
120 \TMP@EnsureCode{96}{12}% `
121 \TMP@EnsureCode{124}{12}% |

122 \def\PdfRender@AtEndHook{}
123 \expandafter\def\expandafter\PdfRender@AtEnd\expandafter{%
124   \expandafter\PdfRender@AtEndHook
125   \PdfRender@AtEnd
126   \endinput
127 }

```

2.1 Look for pdfT_EX, its mode and features

\PdfRender@newif

```

128 \def\PdfRender@newif#1{%
129   \expandafter\edef\csname PdfRender@#1true\endcsname{%
130     \let
131     \expandafter\noexpand\csname ifPdfRender@#1\endcsname
132     \noexpand\iftrue
133   }%
134   \expandafter\edef\csname PdfRender@#1false\endcsname{%
135     \let
136     \expandafter\noexpand\csname ifPdfRender@#1\endcsname
137     \noexpand\iffalse
138   }%
139   \csname PdfRender@#1false\endcsname
140 }

```

\ifPdfRender@Stack

```

141 \PdfRender@newif{Stack}

\ifPdfRender@Match
142 \PdfRender@newif{Match}

\PdfRender@RequirePackage
143 \begingroup\expandafter\expandafter\expandafter\endgroup
144 \expandafter\ifx\csname RequirePackage\endcsname\relax
145   \def\PdfRender@RequirePackage#1[#2]{%
146     \expandafter\def\expandafter\PdfRender@AtEndHook\expandafter{%
147       \PdfRender@AtEndHook
148       \ltx@ifpackagelater{#1}{#2}{-}{%
149         \@PackageWarningNoLine{pdfrender}{%
150           You have requested version\MessageBreak
151           `#2' of package `#1',\MessageBreak
152           but only version\MessageBreak
153           \csname ver@#1.\ltx@pkgextension\endcsname'\MessageBreak
154           is available%
155         }%
156       }%
157     }%
158     \input #1.sty\relax
159   }%
160 \else
161   \let\PdfRender@RequirePackage\RequirePackage
162 \fi

```

Luatex compatibility

```

163 \ifx\pdfextension\@undefined\else
164   \def\pdfcolorstackinit {\pdffeedback colorstackinit}
165   \protected\def\pdfcolorstack    {\pdfextension colorstack}
166   \protected\def\pdfliteral      {\pdfextension literal}
167 \fi

168 \PdfRender@RequirePackage{ifpdf}[2010/01/28]
169 \PdfRender@RequirePackage{infwarerr}[2007/09/09]
170 \PdfRender@RequirePackage{ltxcmds}[2010/01/28]

171 \ifpdf
172   \ltx@ifundefined{pdfcolorstackinit}{%
173     \@PackageWarning{pdfrender}{%
174       Missing \string\pdfcolorstackinit
175     }%
176   }{%
177     \PdfRender@Stacktrue
178   }%
179   \ltx@ifundefined{pdfmatch}{%
180     \@PackageInfoNoLine{pdfrender}{%
181       \string\pdfmatch\ltx@space not found. %
182       Therefore the values\MessageBreak
183       of some parameters are not validated%
184     }%
185   }{%
186     \PdfRender@Matchtrue
187   }%
188 \else
189   \@PackageWarning{pdfrender}{%
190     Missing pdfTeX in PDF mode%
191   }%

```

```

192 \ltx@ifundefined{newcommand}{%
\pdfrender
193 \def\pdfrender#1{%
\textpdfrender
194 \long\def\textpdfrender#1#2{#2}%
195 }%
\pdfrender
196 \newcommand*\pdfrender[1]{%
\textpdfrender
197 \newcommand\textpdfrender[2]{#2}%
198 }%
199 \expandafter\PdfRender@AtEnd
200 \fi%

```

2.2 Enable color support of L^AT_EX

```

201 \ltx@ifpackageloaded{color}{%
202 \def\color@setgroup{\begingroup\set@color}%
203 \let\color@begingroup\begingroup
204 \def\color@endgroup{\endgraf\endgroup}%
205 \def\color@hbox{\hbox\bgroup\color@begingroup}%
206 \def\color@vbox{\vbox\bgroup\color@begingroup}%
207 \def\color@endbox{\color@endgroup\egroup}%
208 \ltx@ifundefined{bgroup}{%
209 \let\bgroup=\let\egroup=%
210 }{%
211 \ltx@ifundefined{endgraf}{%
212 \let\endgraf=\par
213 }{%
214 }

```

2.3 Hook into \normalcolor

The problem is that packages `color` and `xcolor` each overwrite `\normalcolor`. For example, after the package loading order `color`, `pdfrender` and `xcolor` the patched version of `\normalcolor` is overwritten by package `xcolor`. Also using `\AtBeginDocument` for patching is not enough. If package `hyperref` is loaded later, it might load package `color` using `\AtBeginDocument`.

```

\PdfRender@NormalColorHook
215 \def\PdfRender@NormalColorHook{}
\PdfRender@ColorSetGroupHook
216 \def\PdfRender@ColorSetGroupHook{}
\PdfRender@TestBox
217 \def\PdfRender@TestBox#1{%
218 \setbox0=\color@hbox#1\color@endbox
219 }

```


\PdfRender@PatchNormalColor

```
220 \def\PdfRender@PatchNormalColor{%
221   \ltx@ifundefined{normalcolor}{%
222     \gdef\normalcolor{\PdfRender@NormalColorHook}%
223   }{%
224     \begingroup
225       \def\PdfRender@NormalColorHook{\let\PdfRender@temp=Y}%
226       \PdfRender@TestBox{%
227         \let\set@color\relax
228         \normalcolor
229         \ifx\PdfRender@temp Y%
230           \else
231             \ltx@GlobalAppendToMacro\normalcolor{%
232               \PdfRender@NormalColorHook
233             }%
234           \fi
235         }%
236       \endgroup
237     }%
238     \ifx\@nodocument\relax
239       \global\let\PdfRender@PatchNormalColor\relax
240     \fi
241   }%
```

\PdfRender@PatchColorSetGroup

```
242 \def\PdfRender@PatchColorSetGroup{%
243   \begingroup
244     \def\PdfRender@ColorSetGroupHook{\let\PdfRender@temp=Y}%
245     \PdfRender@TestBox{%
246       \let\set@color\relax
247       \color@setgroup\color@endgroup
248       \ifx\PdfRender@temp Y%
249         \else
250           \ltx@GlobalAppendToMacro\color@setgroup{%
251             \PdfRender@ColorSetGroupHook
252           }%
253         \fi
254       }%
255     \endgroup
256     \ifx\@nodocument\relax
257       \global\let\PdfRender@PatchColorSetGroup\relax
258     \fi
259   }%
```

\PdfRender@PatchColor

```
260 \def\PdfRender@PatchColor{%
261   \PdfRender@PatchNormalColor
262   \PdfRender@PatchColorSetGroup
263 }

264 \PdfRender@PatchColor
265 \ltx@ifundefined{AtBeginDocument}{}{%
266   \AtBeginDocument{\PdfRender@PatchColor}%
267 }
```

\AfterPackage is provided by package scrfile.

```
268 \ltx@ifundefined{AfterPackage}{%
269 }{%
```

```

270 \AfterPackage{color}{\PdfRender@PatchColor}%
271 \AfterPackage{xcolor}{\PdfRender@PatchColor}%
272 \AfterPackage{etoolbox}{%
273   \AfterEndPreamble{\PdfRender@PatchColor}%
274 }%
275 }%

\AfterEndPreamble is provided by package etoolbox.
276 \ltx@ifundefined{AfterEndPreamble}{%
277 }{%
278   \AfterEndPreamble{\PdfRender@PatchColor}%
279 }%

280 \PdfRender@RequirePackage{kvsetkeys}[2010/01/28]

\PdfRender@texorpdfstring
281 \def\PdfRender@texorpdfstring{%
282   \ltx@ifundefined{texorpdfstring}\ltx@firstoftwo\texorpdfstring
283 }

\pdfrender
284 \ltx@ifundefined{DeclareRobustCommand}%
285 \ltx@firstoftwo\ltx@secondoftwo
286 {%
287   \def\pdfrender#1%
288 }{%
289   \newcommand{\pdfrender}{}%
290   \DeclareRobustCommand*\pdfrender[1]%
291 }%
292 {%
293   \PdfRender@texorpdfstring{%
294     \PdfRender@PatchNormalColor
295     \global\let\PdfRender@FillColor\ltx@empty
296     \global\let\PdfRender@StrokeColor\ltx@empty
297     \kvsetkeys{PDFRENDER}{#1}%
298     \PdfRender@SetColor
299   }{%
300 }

\textpdfrender
301 \ltx@ifundefined{DeclareRobustCommand}%
302 \ltx@firstoftwo\ltx@secondoftwo
303 {%
304   \long\def\textpdfrender#1#2%
305 }{%
306   \newcommand{\textpdfrender}{}%
307   \DeclareRobustCommand{\textpdfrender}[2]%
308 }%
309 {%
310   \PdfRender@texorpdfstring{%
311     \begingroup
312       \pdfrender{#1}%
313       #2%
314     \endgroup
315   }{#2}%
316 }

\ifPdfRender@Values
317 \PdfRender@newif{Values}

```

\PdfRender@NewClassValues

```
318 \def\PdfRender@NewClassValues#1#2#3#4{%  
319   \PdfRender@Valuestrue  
320   \PdfRender@NewClass{#1}{#2}{#3}{#4}{}%  
321 }
```

\PdfRender@NewClass

```
322 \def\PdfRender@NewClass#1#2#3#4#5{%  
323   \PdfRender@newif{Active#1}%  
324   \expandafter\def\csname PdfRender@Default#1\endcsname{#2}%  
325   \expandafter\let\csname PdfRender@Current#1\endcsname  
326     \csname PdfRender@Default#1\endcsname  
327   \ifPdfRender@Stack  
328     \expandafter\edef\csname PdfRender@Init#1\endcsname{%  
329       \global\chardef  
330       \expandafter\noexpand\csname PdfRender@Stack#1\endcsname=  
331         \noexpand\pdfcolorstackinit page direct{%  
332           \noexpand#3%  
333           \expandafter\noexpand\csname PdfRender@Default#1\endcsname  
334         }\relax  
335       \noexpand\@PackageInfo{pdfrender}{%  
336         New color stack `#1' = \noexpand\number  
337         \expandafter\noexpand\csname PdfRender@Stack#1\endcsname  
338       }%  
339       \gdef\expandafter\noexpand\csname PdfRender@Init#1\endcsname{%  
340       }%  
341       \expandafter\edef\csname PdfRender@Set#1\endcsname{%  
342         \expandafter\noexpand\csname PdfRender@Init#1\endcsname  
343         \noexpand\pdfcolorstack  
344         \expandafter\noexpand\csname PdfRender@Stack#1\endcsname  
345         push{%  
346           #3{\expandafter\noexpand\csname PdfRender@Current#1\endcsname}%  
347         }%  
348         \noexpand\aftergroup  
349         \expandafter\noexpand\csname PdfRender@Reset#1\endcsname  
350       }%  
351       \expandafter\edef\csname PdfRender@Reset#1\endcsname{%  
352         \expandafter\noexpand\csname PdfRender@Init#1\endcsname  
353         \noexpand\pdfcolorstack  
354         \expandafter\noexpand\csname PdfRender@Stack#1\endcsname  
355         pop\relax  
356       }%  
357     \else  
358       \expandafter\edef\csname PdfRender@Set#1\endcsname{%  
359         \noexpand\pdfliteral direct{%  
360           #3{\expandafter\noexpand\csname PdfRender@Current#1\endcsname}%  
361         }%  
362         \noexpand\aftergroup  
363         \expandafter\noexpand\csname PdfRender@Reset#1\endcsname  
364       }%  
365       \expandafter\edef\csname PdfRender@Reset#1\endcsname{%  
366         \noexpand\pdfliteral direct{%  
367           #3{\expandafter\noexpand\csname PdfRender@Current#1\endcsname}%  
368         }%  
369       }%  
370     \fi  
371   \expandafter\edef\csname PdfRender@Normal#1\endcsname{%  
372     \let
```

```

373 \expandafter\noexpand\csname PdfRender@Current#1\endcsname
374 \expandafter\noexpand\csname PdfRender@Default#1\endcsname
375 \noexpand\PdfRender@Set{#1}%
376 }%
377 \expandafter\ltx@GlobalAppendToMacro\expandafter\PdfRender@NormalColorHook
378 \expandafter{%
379 \csname PdfRender@Normal#1\endcsname
380 }%
381 \ltx@GlobalAppendToMacro\PdfRender@ColorSetGroupHook{%
382 \PdfRender@Set{#1}%
383 }%
384 \ifPdfRender@Values
385 \kv@parse@normalized{#4}{%
386 \expandafter\let\csname PdfRender@#1@\kv@key\endcsname\kv@key
387 \ifx\kv@value\relax
388 \else
389 \expandafter\let\csname PdfRender@#1@\kv@value\endcsname\kv@key
390 \fi
391 \ltx@gobbletwo
392 }%
393 \PdfRender@define@key{PDFRENDER}{#1}{%
394 \global\csname PdfRender@Active#1true\endcsname
395 \def\PdfRender@Current{##1}%
396 \PdfRender@SetValidateValues{#1}%
397 }%
398 \PdfRender@Valuesfalse
399 \else
400 \PdfRender@define@key{PDFRENDER}{#1}{%
401 \global\csname PdfRender@Active#1true\endcsname
402 \expandafter\def\csname PdfRender@Current#1\endcsname{##1}%
403 \ltx@ifundefined{PdfRender@PostProcess#1}{%
404 }{%
405 \csname PdfRender@PostProcess#1\endcsname
406 }%
407 \PdfRender@SetValidate{#1}{#4}{#5}%
408 }%
409 \fi
410 }%

```

\PdfRender@define@key

```

411 \ltx@ifundefined{define@key}{%
412 \def\PdfRender@define@key#1#2{%
413 \expandafter\def\csname KV@#1@#2\endcsname##1%
414 }%
415 }{%
416 \let\PdfRender@define@key\define@key
417 }

```

\PdfRender@Set

```

418 \def\PdfRender@Set#1{%
419 \csname ifPdfRender@Active#1\endcsname
420 \csname PdfRender@Set#1\expandafter\endcsname
421 \fi
422 }

```

\PdfRender@Reset

```

423 \def\PdfRender@Reset#1{%
424 \csname ifPdfRender@Active#1\endcsname

```

```

425     \csname PdfRender@Reset#1\expandafter\endcsname
426 \fi
427 }

\PdfRender@ErrorInvalidValue

428 \def\PdfRender@ErrorInvalidValue#1{%
429   \PackageError{pdfrender}{%
430     Ignoring parameter setting for `#1'\MessageBreak
431     because of invalid value %
432     ~\csname PdfRender@Current#1\endcsname'%
433   }{@ehc
434   \expandafter\let\csname PdfRender@Current#1\endcsname\ltx@empty
435 }%

\PdfRender@SetValidate

436 \ifPdfRender@Match
437   \def\PdfRender@SetValidate#1#2#3{%
438     \ifnum\pdfmatch{^(#2)$}\csname PdfRender@Current#1\endcsname}=1 %
439     \csname PdfRender@Set#1\expandafter\endcsname
440   \else
441     \PdfRender@ErrorInvalidValue{#1}%
442   \fi
443 }%
444 \else
445   \def\PdfRender@SetValidate#1#2#3{%
446     \expandafter\let\expandafter\PdfRender@Current
447     \csname PdfRender@Current#1\endcsname
448     #3%
449     \ifx\PdfRender@Current\@empty
450       \PdfRender@ErrorInvalidValue{#1}%
451     \else
452       \csname PdfRender@Set#1\expandafter\endcsname
453     \fi
454   }%
455 \fi

\PdfRender@SetValidateValues

456 \def\PdfRender@SetValidateValues#1{%
457   \ltx@ifundefined{PdfRender@#1@\PdfRender@Current}{%
458     \expandafter\let\csname PdfRender@Current#1\endcsname
459       \PdfRender@Current
460     \PdfRender@ErrorInvalidValue{#1}%
461   }{%
462     \expandafter\edef\csname PdfRender@Current#1\endcsname{%
463       \csname PdfRender@#1@\PdfRender@Current\endcsname
464     }%
465     \csname PdfRender@Set#1\endcsname
466   }%
467 }

\PdfRender@OpValue

468 \def\PdfRender@OpValue#1#2{#2\ltx@space#1}%

\PdfRender@OpName

469 \def\PdfRender@OpName#1#2{/#2\ltx@space#1}%

```

2.4 Declare and setup parameters

```

470 \PdfRender@NewClassValues{TextRenderingMode}%
471         {0}%
472         {\PdfRender@OpValue{Tr}}{%
473   0=Fill,%
474   1=Stroke,%
475   2=FillStroke,%
476   3=Invisible,%
477   4=FillClip,%
478   5=StrokeClip,%
479   6=FillStrokeClip,%
480   7=Clip,%
481 }%
482 \PdfRender@NewClass{LineWidth}{1}{\PdfRender@OpValue{w}}{%
483   [0-9]+\string\.[0-9]*|\string\.[0-9]+%
484 }{%
485   \ltx@ifundefined{dimexpr}{%
486     \def\PdfRender@dimexpr{%
487   }{%
488     \let\PdfRender@dimexpr\dimexpr
489   }
490   \def\PdfRender@PostProcessLineWidth{%
491     \begingroup
492     \afterassignment\PdfRender@PostProcessLineWidth
493     \dimen0=\PdfRender@dimexpr\PdfRender@CurrentLineWidth bp %
494     \PdfRender@let\PdfRender@relax\PdfRender@relax
495   }
496   \let\PdfRender@let\let
497   \let\PdfRender@relax\relax
498   \def\PdfRender@PostProcessLineWidth#1\PdfRender@let{%
499     \ifx\#1\%
500       \endgroup
501     \else
502       \dimen0=.996264\dimen0 % 72/72.27
503       \edef\x{\endgroup
504         \def\noexpand\PdfRender@CurrentLineWidth{%
505           \strip@pt\dimen0%
506         }%
507       }%
508       \expandafter\x
509     \fi
510   }
511 \PdfRender@NewClassValues{LineCapStyle}{0}{\PdfRender@OpValue{J}}{%
512   0=Butt,%
513   1=Round,%
514   2=ProjectingSquare,%
515 }%
516 \PdfRender@NewClassValues{LineJoinStyle}{0}{\PdfRender@OpValue{j}}{%
517   0=Miter,%
518   1=Round,%
519   2=Bevel,%
520 }%
521 \PdfRender@NewClass{MiterLimit}{10}{\PdfRender@OpValue{M}}{%
522   [0-9]*[1-9][0-9]*\string\.[0-9]*|
523   [0-9]*\string\.[0-9]*[1-9][0-9]*%
524 }{%
525 \PdfRender@NewClass{Flatness}{0}{\PdfRender@OpValue{i}}{%
526   100(\string\.[0-9]*|[0-9][0-9](\string\.[0-9]*)?|\string\.[0-9]+%

```

```

527 }{}%
528 \PdfRender@NewClass{LineDashPattern}{[]0}{\PdfRender@OpValue{d}}{%
529   \string\[%
530   ( ?([0-9]+\string\.[0-9]*|\string\.[0-9]+) ?)*%
531   \string\] ?%
532   ([0-9]+\string\.[0-9]*|\string\.[0-9]+)%
533 }{}%
534 \PdfRender@NewClassValues{RenderingIntent}%
535                               {RelativeColorimetric}%
536                               {\PdfRender@OpName{ri}}{%
537   AbsoluteColorimetric,%
538   RelativeColorimetric,%
539   Saturation,%
540   Perceptual,%
541 }%

```

2.5 Fill and stroke color support

```

542 \PdfRender@define@key{PDFRENDER}{FillColor}{%
543   \begin{group}
544     \def\PdfRender@Color{#1}%
545     \ifx\PdfRender@Color\ltx@empty
546       \global\let\PdfRender@FillColor\ltx@empty
547     \else
548       \PdfRender@ColorAvailable{%
549         \PdfRender@TestBox{%
550           \expandafter\PdfRender@TryColor\PdfRender@Color\ltx@empty
551           \PdfRender@GetFillColor
552           \ifx\PdfRender@FillColor\ltx@empty
553             \@PackageWarning{pdfrender}{%
554               Cannot extract fill color\MessageBreak
555               from value `#1'%
556             }%
557           \fi
558         }%
559       }%
560     \fi
561   \end{group}
562 }
563 \PdfRender@define@key{PDFRENDER}{StrokeColor}{%
564   \begin{group}
565     \def\PdfRender@Color{#1}%
566     \ifx\PdfRender@Color\ltx@empty
567       \global\let\PdfRender@StrokeColor\ltx@empty
568     \else
569       \PdfRender@ColorAvailable{%
570         \PdfRender@TestBox{%
571           \expandafter\PdfRender@TryColor\PdfRender@Color\ltx@empty
572           \PdfRender@GetStrokeColor
573           \ifx\PdfRender@StrokeColor\ltx@empty
574             \@PackageWarning{pdfrender}{%
575               Cannot extract stroke color\MessageBreak
576               from value `#1'%
577             }%
578           \fi
579         }%
580       }%
581     \fi
582   \end{group}

```

```

583 }

\PdfRender@ColorAvailable

584 \def\PdfRender@ColorAvailable{%
585   \@ifundefined{set@color}{%
586     \@PackageError{pdfrender}{%
587       Ignoring color options, because neither\MessageBreak
588       package `color' nor package `xcolor' is loaded%
589     }\@ehc
590     \global\let\PdfRender@ColorAvailable\ltx@gobble
591   }{%
592     \global\let\PdfRender@ColorAvailable\ltx@firstofone
593   }%
594   \PdfRender@ColorAvailable
595 }

\PdfRender@TryColor

596 \def\PdfRender@TryColor{%
597   \@ifnextchar[\color\PdfRender@@TryColor
598 }

\PdfRender@@TryColor

599 \def\PdfRender@@TryColor#1\ltx@empty{%
600   \expandafter\color\expandafter{\PdfRender@Color}%
601 }

\PdfRender@SetColor

602 \def\PdfRender@SetColor{%
603   \chardef\PdfRender@NeedsCurrentColor=0 %
604   \ifx\PdfRender@FillColor\ltx@empty
605     \ifx\PdfRender@StrokeColor\ltx@empty
606       \else
607         \edef\PdfRender@CurrentColor{%
608           \noexpand\PdfRender@FillColor\ltx@space\PdfRender@StrokeColor
609         }%
610         \chardef\PdfRender@NeedsCurrentColor=1 %
611       \fi
612     \else
613       \ifx\PdfRender@StrokeColor\ltx@empty
614         \edef\PdfRender@CurrentColor{%
615           \PdfRender@FillColor\ltx@space\noexpand\PdfRender@StrokeColor
616         }%
617         \chardef\PdfRender@NeedsCurrentColor=2 %
618       \else
619         \edef\current@color{%
620           \PdfRender@FillColor\ltx@space\PdfRender@StrokeColor
621         }%
622         \set@color
623       \fi
624     \fi
625     \ifnum\PdfRender@NeedsCurrentColor=1 %
626       \PdfRender@GetFillColor
627       \ifx\PdfRender@FillColor\ltx@empty
628         \@PackageWarning{pdfrender}{%
629           Cannot extract current fill color%
630         }%
631       \else
632         \edef\current@color{\PdfRender@CurrentColor}%

```



```

633     \set@color
634     \fi
635   \else
636     \ifnum\PdfRender@NeedsCurrentColor=2 %
637       \PdfRender@GetStrokeColor
638       \ifx\PdfRender@StrokeColor\ltx@empty
639         \@PackageWarning{pdfrender}{%
640           Cannot extract current stroke color%
641         }%
642       \else
643         \edef\current@color{\PdfRender@CurrentColor}%
644         \set@color
645       \fi
646     \fi
647   \fi
648 }

```

\PdfRender@PatternFillColor

```

649 \edef\PdfRender@PatternFillColor{ % space
650   (%)
651   [0-9\string\.] + g|%
652   [0-9\string\.] + [0-9\string\.] + [0-9\string\.] + rg|%
653   [0-9\string\.] + [0-9\string\.] + %
654   [0-9\string\.] + [0-9\string\.] + k%
655   ) % space
656   (.*)$%
657 }

```

\PdfRender@PatternStrokeColor

```

658 \edef\PdfRender@PatternStrokeColor{ % space
659   (%)
660   [0-9\string\.] + G|%
661   [0-9\string\.] + [0-9\string\.] + [0-9\string\.] + RG|%
662   [0-9\string\.] + [0-9\string\.] + %
663   [0-9\string\.] + [0-9\string\.] + K%
664   ) % space
665   (.*)$%
666 }

```

\PdfRender@MatchPattern

```

667 \def\PdfRender@MatchPattern#1{%
668   \ifnum\pdfmatch{\PdfRender@Pattern}{\PdfRender@String}=1 %
669     \xdef#1{%
670       \expandafter\strip@prefix\pdflastmatch 1%
671     }%
672     \edef\PdfRender@String{%
673       \expandafter\strip@prefix\pdflastmatch 2%
674     }%
675     \ifx\PdfRender@String\ltx@empty
676     \else
677       \expandafter\expandafter\expandafter\PdfRender@MatchPattern
678       \expandafter\expandafter\expandafter#1%
679     \fi
680   \fi
681 }

```

\PdfRender@GetFillColor

```

682 \def\PdfRender@GetFillColor{%

```

```

683 \global\let\PdfRender@FillColor\ltx@empty
684 \begingroup
685   \ifPdfRender@Match
686     \let\PdfRender@Pattern\PdfRender@PatternFillColor
687     \edef\PdfRender@String{\ltx@space\current@color\ltx@space}%
688     \PdfRender@MatchPattern\PdfRender@FillColor
689   \else
690     \edef\current@color{\current@color\ltx@space}%
691     \let\PdfRender@OP\relax
692     \PdfRender@FindOp{g}0%
693     \PdfRender@FindOp{G}1%
694     \PdfRender@FindOp{rg}0%
695     \PdfRender@FindOp{RG}1%
696     \PdfRender@FindOp{k}0%
697     \PdfRender@FindOp{K}1%
698     \PdfRender@FilterOp 0\PdfRender@FillColor
699   \fi
700 \endgroup
701 }

```

\PdfRender@GetStrokeColor

```

702 \def\PdfRender@GetStrokeColor{%
703   \global\let\PdfRender@StrokeColor\ltx@empty
704   \begingroup
705     \ifPdfRender@Match
706       \let\PdfRender@Pattern\PdfRender@PatternStrokeColor
707       \edef\PdfRender@String{\ltx@space\current@color\ltx@space}%
708       \PdfRender@MatchPattern\PdfRender@StrokeColor
709     \else
710       \edef\current@color{\current@color\ltx@space}%
711       \let\PdfRender@OP\relax
712       \PdfRender@FindOp{g}0%
713       \PdfRender@FindOp{G}1%
714       \PdfRender@FindOp{rg}0%
715       \PdfRender@FindOp{RG}1%
716       \PdfRender@FindOp{k}0%
717       \PdfRender@FindOp{K}1%
718       \PdfRender@FilterOp 1\PdfRender@StrokeColor
719     \fi
720   \endgroup
721 }

722 \ifPdfRender@Match
723   \expandafter\PdfRender@AtEnd
724 \fi%

```

\PdfRender@FindOp

```

725 \def\PdfRender@FindOp#1#2{%
726   \def\PdfRender@temp##1 #1 ##2\@nil{%
727     ##1%
728     \ifx\##2\%
729       \expandafter\@gobble
730     \else
731       \PdfRender@OP{#1}#2%
732       \expandafter\@firstofone
733     \fi
734     {%
735       \PdfRender@temp##2\@nil

```

```

736 }%
737 }%
738 \edef\current@color{%
739   \@firstofone{\expandafter\PdfRender@temp\current@color} #1 \@nil
740 }%
741 }

```

\PdfRender@FilterOp

```

742 \def\PdfRender@FilterOp#1#2{%
743   \expandafter\PdfRender@@FilterOp\expandafter#1\expandafter#2%
744   \current@color\PdfRender@OP{ }{}%
745 }

```

\PdfRender@@FilterOp

```

746 \def\PdfRender@@FilterOp#1#2#3\PdfRender@OP#4#5{%
747   \ifx\#4#5\%
748   \else
749     \ifnum#1=#5 %
750       \xdef#2{#3 #4}%
751     \fi
752     \expandafter\PdfRender@@FilterOp\expandafter#1\expandafter#2%
753   \fi
754 }

755 \PdfRender@AtEnd%
756 \</package>

```

3 Test

3.1 Catcode checks for loading

```

757 \<test1>

758 \catcode`\{=1 %
759 \catcode`\}=2 %
760 \catcode`\#=6 %
761 \catcode`\@=11 %
762 \expandafter\ifx\csname count@\endcsname\relax
763   \countdef\count@=255 %
764 \fi
765 \expandafter\ifx\csname @gobble\endcsname\relax
766   \long\def\@gobble#1{}%
767 \fi
768 \expandafter\ifx\csname @firstofone\endcsname\relax
769   \long\def\@firstofone#1{#1}%
770 \fi
771 \expandafter\ifx\csname loop\endcsname\relax
772   \expandafter\@firstofone
773 \else
774   \expandafter\@gobble
775 \fi
776 {%
777   \def\loop#1\repeat{%
778     \def\body{#1}%
779     \iterate
780   }%
781   \def\iterate{%
782     \body

```

```

783     \let\next\iterate
784     \else
785     \let\next\relax
786     \fi
787     \next
788 }%
789 \let\repeat=\fi
790 }%
791 \def\RestoreCatcodes{}
792 \count@=0 %
793 \loop
794   \edef\RestoreCatcodes{%
795     \RestoreCatcodes
796     \catcode\the\count@=\the\catcode\count@\relax
797   }%
798 \ifnum\count@<255 %
799   \advance\count@ 1 %
800 \repeat
801
802 \def\RangeCatcodeInvalid#1#2{%
803   \count@=#1\relax
804   \loop
805     \catcode\count@=15 %
806     \ifnum\count@<#2\relax
807       \advance\count@ 1 %
808     \repeat
809 }
810 \def\RangeCatcodeCheck#1#2#3{%
811   \count@=#1\relax
812   \loop
813     \ifnum#3=\catcode\count@
814     \else
815       \errmessage{%
816         Character \the\count@\space
817         with wrong catcode \the\catcode\count@\space
818         instead of \number#3%
819       }%
820     \fi
821     \ifnum\count@<#2\relax
822       \advance\count@ 1 %
823     \repeat
824 }
825 \def\space{ }
826 \expandafter\ifx\csname LoadCommand\endcsname\relax
827   \def\LoadCommand{\input pdfrender.sty\relax}%
828 \fi
829 \def\Test{%
830   \RangeCatcodeInvalid{0}{47}%
831   \RangeCatcodeInvalid{58}{64}%
832   \RangeCatcodeInvalid{91}{96}%
833   \RangeCatcodeInvalid{123}{255}%
834   \catcode`\@=12 %
835   \catcode`\=0 %
836   \catcode`\%=14 %
837   \LoadCommand
838   \RangeCatcodeCheck{0}{36}{15}%
839   \RangeCatcodeCheck{37}{37}{14}%
840   \RangeCatcodeCheck{38}{47}{15}%

```

```

841 \RangeCatcodeCheck{48}{57}{12}%
842 \RangeCatcodeCheck{58}{63}{15}%
843 \RangeCatcodeCheck{64}{64}{12}%
844 \RangeCatcodeCheck{65}{90}{11}%
845 \RangeCatcodeCheck{91}{91}{15}%
846 \RangeCatcodeCheck{92}{92}{0}%
847 \RangeCatcodeCheck{93}{96}{15}%
848 \RangeCatcodeCheck{97}{122}{11}%
849 \RangeCatcodeCheck{123}{255}{15}%
850 \RestoreCatcodes
851 }
852 \Test
853 \csname @@end\endcsname
854 \end
855 </test1>

```

3.2 Simple test file

```

856 (*test2)
857 \NeedsTeXFormat{LaTeX2e}
858 \ProvidesFile{pdfrender-test2.tex}[2018/11/01]
859 \documentclass{article}
860 \usepackage{color}
861 \usepackage{pdfrender}[2018/11/01]
862 \begin{document}
863 Hello World
864 \newpage
865 Start
866 \textpdfrender{%
867   TextRenderingMode=1,%
868   LineWidth=.1,%
869   LineCapStyle=2,%
870   LineJoinStyle=1,%
871   MiterLimit=1.2,%
872   LineDashPattern=[2 2]0,%
873   RenderingIntent=Saturation,%
874 }{Hello\newpage World}
875 Stop
876 \par
877 \newlength{\LineWidth}
878 \setlength{\LineWidth}{.5pt}
879 Start
880 \textpdfrender{%
881   FillColor=yellow,%
882   StrokeColor=[cmyk]{1,.5,0,0},%
883   TextRenderingMode=FillStroke,%
884   LineWidth=.5\LineWidth,%
885   LineCapStyle=Round,%
886   LineJoinStyle=Bevel,%
887 }{Out-\par\newpage line}
888 Stop
889 \end{document}
890 </test2>

```

3.3 Further tests

Robustness and bookmarks.

```

891 (*test3)
892 \NeedsTeXFormat{LaTeX2e}

```

```

893 \ProvidesFile{pdfrender-test3.tex}[2018/11/01]
894 \documentclass{article}
895 \usepackage{pdfrender}[2018/11/01]
896 \usepackage{hyperref}
897 \usepackage{bookmark}
898 \begin{document}
899 \tableofcontents
900 \section{%
901   \textpdfrender{%
902     TextRenderingMode=1,%
903     LineCapStyle=2,%
904     LineJoinStyle=1,%
905     MiterLimit=1.2,%
906     LineDashPattern=[2 2]0,%
907     RenderingIntent=Saturation,%
908   }{Hello World}%
909 }
910 \end{document}
911 \test3)

Color algorithm if \pdfmatch is not available.

912 (*test4)
913 \NeedsTeXFormat{LaTeX2e}
914 \ProvidesFile{pdfrender-test4.tex}[2018/11/01]
915 \documentclass[12pt]{article}
916 \usepackage{pdfrender}[2018/11/01]
917 \usepackage{color}
918 \usepackage{qstest}
919 \IncludeTests{*}
920 \LogTests{log}{*}{*}
921 \makeatletter
922 \newcommand*{\CheckColor}[1]{%
923   \Expect{#1}*{\current@color}%
924 }
925 \makeatother
926 \begin{document}
927   \begin{qstest}{color}{color}%
928     \CheckColor{0 g 0 G}%
929     \Huge\bfseries
930     \noindent
931     \textpdfrender{%
932       TextRenderingMode=2,%
933       LineWidth=.5,%
934       FillColor=yellow,%
935       StrokeColor=blue,%
936     }{%
937       \CheckColor{0 0 1 0 k 0 0 1 RG}%
938       Blue(Yellow)\%
939       \textpdfrender{%
940         FillColor=green,%
941       }{%
942         \CheckColor{0 1 0 rg 0 0 1 RG}%
943         Blue(Green)%
944       }\%
945       \CheckColor{0 0 1 0 k 0 0 1 RG}%
946       Blue(Yellow)\%
947       \textpdfrender{%
948         StrokeColor=red,%
949       }{%

```

```

950      \CheckColor{0 0 1 0 k 1 0 0 RG}%
951      Red(Yellow)%
952    }\\%
953      \CheckColor{0 0 1 0 k 0 0 1 RG}%
954      Blue(Yellow) %
955    }%
956  \end{qstest}%
957  \begin{qstest}{colorlast}{colorlast}%
958    \makeatletter
959    \def\Test#1#2#3{%
960      \begingroup
961        \def\current@color{#1}%
962        \textpdfrender{#2}{%
963          \CheckColor{#3}%
964        }%
965      \endgroup
966    }%
967    \Test{1 g 0 0 1 RG 0 0 1 0 k 0.5 G}%
968      {StrokeColor=green}%
969      {0 0 1 0 k 0 1 0 RG}%
970    \Test{1 g 0 0 1 RG 0 0 1 0 k 0.5 G}%
971      {FillColor=red}%
972      {1 0 0 rg 0.5 G}%
973  \end{qstest}%
974 \end{document}
975 \test4

```

3.4 Compatibility with plain T_EX

```

976 (*test5)
977 \input luatex85.sty
978 \pdfoutput=1 %
979 \hsize=6.5in
980 \vsize=8.9in
981 \pdfpagewidth=\hsize
982 \pdfpageheight=\vsize
983 \parfillskip=0pt plus 1fil\relax
984 \input pdfrender.sty\relax
985 \catcode`\{=1 %
986 \catcode`\}=2 %
987 \let\OrgMakeFootLine\makefootline
988 \def\makefootline{%
989   \begingroup\normalcolor\OrgMakeFootLine\endgroup
990 }
991 \font\f=ec-lmr10 scaled 3000\relax
992 \f
993 Before %
994 \textpdfrender{%
995   TextRenderingMode=1,%
996   LineWidth=.1,%
997 }{Hello\par\vfill\penalty-10000 World} %
998 After %
999 \par
1000 \vfill
1001 \penalty-10000 %
1002 \csname @@end\endcsname\end
1003 \test5

```

4 Installation

4.1 Download

Package. This package is available on CTAN¹:

[CTAN:macros/latex/contrib/oberdiek/pdfrender.dtx](#) The source file.

[CTAN:macros/latex/contrib/oberdiek/pdfrender.pdf](#) Documentation.

Bundle. All the packages of the bundle ‘oberdiek’ are also available in a TDS compliant ZIP archive. There the packages are already unpacked and the documentation files are generated. The files and directories obey the TDS standard.

[CTAN:install/macros/latex/contrib/oberdiek.tds.zip](#)

TDS refers to the standard “A Directory Structure for \TeX Files” ([CTAN:pkg/tds](#)). Directories with `texmf` in their name are usually organized this way.

4.2 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
```

4.3 Package installation

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

```
tex pdfrender.dtx
```

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

<code>pdfrender.sty</code>	\rightarrow <code>tex/generic/oberdiek/pdfrender.sty</code>
<code>pdfrender.pdf</code>	\rightarrow <code>doc/latex/oberdiek/pdfrender.pdf</code>
<code>test/pdfrender-test1.tex</code>	\rightarrow <code>doc/latex/oberdiek/test/pdfrender-test1.tex</code>
<code>test/pdfrender-test2.tex</code>	\rightarrow <code>doc/latex/oberdiek/test/pdfrender-test2.tex</code>
<code>test/pdfrender-test3.tex</code>	\rightarrow <code>doc/latex/oberdiek/test/pdfrender-test3.tex</code>
<code>test/pdfrender-test4.tex</code>	\rightarrow <code>doc/latex/oberdiek/test/pdfrender-test4.tex</code>
<code>test/pdfrender-test5.tex</code>	\rightarrow <code>doc/latex/oberdiek/test/pdfrender-test5.tex</code>
<code>pdfrender.dtx</code>	\rightarrow <code>source/latex/oberdiek/pdfrender.dtx</code>

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`.

4.4 Refresh file name databases

If your \TeX distribution (\TeX Live, `mik \TeX` , ...) relies on file name databases, you must refresh these. For example, \TeX Live users run `texhash` or `mktextlsr`.

¹[CTAN:pkg/pdfrender](#)

4.5 Some details for the interested

Unpacking with L^AT_EX. The `.dtx` chooses its action depending on the format:

plain T_EX: Run `docstrip` and extract the files.

L^AT_EX: Generate the documentation.

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

```
latex \let\install=y\input{pdfrender.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^AT_EX:

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

5 Acknowledgement

Friedrich Vosberg asked in the newsgroup `de.comp.text.tex` for the font outline feature [2].

Gaius Pupus proposed the basic method using `\pdfliteral` in this thread [3].

Rolf Niepraschk added color support [4].

6 References

- [1] Adobe Systems Incorporated. *PDF Reference – Adobe Portable Document format – Version 1.7*. 6th ed. 2006. URL: http://www.adobe.com/devnet/acrobat/pdfs/pdf_reference_1-7.pdf.
- [2] Friedrich Vosberg, *Text in Buchstabenumrissen*, `de.comp.text.tex`, 2010-01-22. URL: <https://groups.google.com/group/de.comp.text.tex/msg/f442310ac8b2d506>.
- [3] Gaius Pupus, *Re: Text in Buchstabenumrissen*, `de.comp.text.tex`, 2010-01-23. URL: <https://groups.google.com/group/de.comp.text.tex/msg/95d890d77ac47eb1>.
- [4] Rolf Niepraschk, *Re: Text in Buchstabenumrissen*, `de.comp.text.tex`, 2010-01-24. URL: <https://groups.google.com/group/de.comp.text.tex/msg/4eb61a5879db54db>.

7 History

[2010/01/26 v1.0]

- The first version.

[2010/01/27 v1.1]

- Macros `\pdfrender` and `\textpdfrender` are made robust.
- Color extraction rewritten for the case that `\pdfmatch` is not available. This fixes wrong color assignments in case of nesting.
- Color extraction of case `\pdfmatch` is fixed for the case that the color string contains several fill or several stroke operations.

[2010/01/28 v1.2]

- Dependency from package `color` is removed.
- Compatibility for plain `TEX` and even `iniTEX` added.

[2016/05/14 v1.3]

- Use package `luatex85` for compatibility with new `LuaTEX`.

[2016/05/17 v1.4]

- Documentation updates.
- adjust `luatex85` reference so that it works in plain `TeX`.

[2018/11/01 v1.5]

- Remove `luatex85` dependency

8 Index

Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; plain numbers refer to the code lines where the entry is used.

Symbols		
<code>\#</code>	760	<code>\@firstofone</code> 732, 739, 769, 772
<code>\%</code>	836	<code>\@gobble</code> 729, 766, 774
<code>\.</code> 483, 522, 523, 526, 530, 532, 651, 652, 653, 654, 660, 661, 662, 663		<code>\@ifnextchar</code> 597
<code>\@</code>	761, 834	<code>\@ifundefined</code> 585
<code>\@PackageError</code>	586	<code>\@nil</code> 726, 735, 739
<code>\@PackageInfo</code>	335	<code>\@nodocument</code> 238, 256
<code>\@PackageInfoNoLine</code>	180	<code>\@undefined</code> 58, 163
<code>\@PackageWarning</code>		<code>\[</code> 529
..... 173, 189, 553, 574, 628, 639		<code>\]</code> 499, 728, 747, 835, 938, 944, 946, 952
<code>\@PackageWarningNoLine</code>	149	<code>\{</code> 758, 985
<code>\@ehc</code>	433, 589	<code>\}</code> 759, 986
<code>\@empty</code>	449	<code>\]</code> 531
		A
		<code>\advance</code> 799, 807, 822

<code>\afterassignment</code>	492	<code>\endcsname</code>	14, 21, 50, 66, 76, 129, 131, 134, 136, 139, 144, 153, 324, 325, 326, 328, 330, 333, 337, 339, 341, 342, 344, 346, 349, 351, 352, 354, 358, 360, 363, 365, 367, 371, 373, 374, 379, 386, 389, 394, 401, 402, 405, 413, 419, 420, 424, 425, 432, 434, 438, 439, 447, 452, 458, 462, 463, 465, 762, 765, 768, 771, 826, 853, 1002
<code>\AfterEndPreamble</code>	273, 278	<code>\endgraf</code>	204, 212
<code>\aftergroup</code>	29, 348, 362	<code>\endinput</code>	29, 126
<code>\AfterPackage</code>	270, 271, 272	<code>\endlinechar</code>	4, 35, 71, 77, 89
<code>\AtBeginDocument</code>	266	<code>\errmessage</code>	815
B		<code>\Expect</code>	923
<code>\begin</code>	862, 898, 926, 927, 957	F	
<code>\bfseries</code>	929	<code>\f</code>	991, 992
<code>\body</code>	778, 782	<code>\font</code>	991
C		G	
<code>\catcode</code> 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 69, 70, 72, 73, 74, 78, 79, 80, 81, 82, 83, 84, 87, 88, 90, 91, 92, 93, 97, 99, 758, 759, 760, 761, 796, 805, 813, 817, 834, 835, 836, 985, 986		<code>\gdef</code>	222, 339
<code>\chardef</code>	329, 603, 610, 617	H	
<code>\CheckColor</code>	922, 928, 937, 942, 945, 950, 953, 963	<code>\hbox</code>	205
<code>\color</code>	597, 600	<code>\hsize</code>	979, 981
<code>\color@begingroup</code>	203, 205, 206	<code>\Huge</code>	929
<code>\color@endbox</code>	207, 218	I	
<code>\color@endgroup</code>	204, 207, 247	<code>\iffalse</code>	137
<code>\color@hbox</code>	205, 218	<code>\ifnum</code>	438, 625, 636, 668, 749, 798, 806, 813, 821
<code>\color@setgroup</code>	202, 247, 250	<code>\ifpdf</code>	171
<code>\color@vbox</code>	206	<code>\ifPdfRender@Match</code>	142, 436, 685, 705, 722
<code>\count@</code>	763, 792, 796, 798, 799, 803, 805, 806, 807, 811, 813, 816, 817, 821, 822	<code>\ifPdfRender@Stack</code>	141, 327
<code>\countdef</code>	763	<code>\ifPdfRender@Values</code>	317, 384
<code>\csname</code>	14, 21, 50, 66, 76, 129, 131, 134, 136, 139, 144, 153, 324, 325, 326, 328, 330, 333, 337, 339, 341, 342, 344, 346, 349, 351, 352, 354, 358, 360, 363, 365, 367, 371, 373, 374, 379, 386, 389, 394, 401, 402, 405, 413, 419, 420, 424, 425, 432, 434, 438, 439, 447, 452, 458, 462, 463, 465, 762, 765, 768, 771, 826, 853, 1002	<code>\iftrue</code>	132
<code>\current@color</code>	619, 632, 643, 687, 690, 707, 710, 738, 739, 744, 923, 961	<code>\ifx</code> ...	15, 18, 21, 50, 58, 61, 144, 163, 229, 238, 248, 256, 387, 449, 499, 545, 552, 566, 573, 604, 605, 613, 627, 638, 675, 728, 747, 762, 765, 768, 771, 826
D		<code>\immediate</code>	23, 52
<code>\DeclareRobustCommand</code>	290, 307	<code>\IncludeTests</code>	919
<code>\define@key</code>	416	<code>\input</code>	158, 827, 977, 984
<code>\dimen</code>	493, 502, 505	<code>\iterate</code>	779, 781, 783
<code>\dimexpr</code>	488	K	
<code>\documentclass</code>	859, 894, 915	<code>\kv@key</code>	386, 389
E		<code>\kv@parse@normalized</code>	385
<code>\empty</code>	17, 18	<code>\kv@value</code>	387, 389
<code>\end</code> ..	854, 889, 910, 956, 973, 974, 1002	<code>\kvsetkeys</code>	297
L		L	
		<code>\LineWidth</code>	877, 878, 884
		<code>\LoadCommand</code>	827, 837
		<code>\LogTests</code>	920

\loop	777, 793, 804, 812	\PdfRender@@PostProcessLineWidth	492, 498
\ltx@empty	295, 296, 434, 545, 546, 550, 552, 566, 567, 571, 573, 599, 604, 605, 613, 627, 638, 675, 683, 703	\PdfRender@@TryColor	597, 599
\ltx@firstofone	592	\PdfRender@AtEnd	95, 96, 123, 125, 199, 723, 755
\ltx@firstoftwo	282, 285, 302	\PdfRender@AtEndHook	122, 124, 146, 147
\ltx@GlobalAppendToMacro	231, 250, 377, 381	\PdfRender@Color	544, 545, 550, 565, 566, 571, 600
\ltx@gobble	590	\PdfRender@ColorAvailable	548, 569, 584
\ltx@gobbletwo	391	\PdfRender@ColorSetGroupHook	216, 244, 251, 381
\ltx@ifpackagelater	148	\PdfRender@Current	395, 446, 449, 457, 459, 463
\ltx@ifpackageloaded	201	\PdfRender@CurrentColor	607, 614, 632, 643
\ltx@ifUndefined	172, 179, 192, 265, 268, 276, 282, 284, 301, 403, 411, 457, 485	\PdfRender@CurrentLineWidth	493, 504
\ltx@ifundefined	208, 211, 221	\PdfRender@define@key	393, 400, 411, 542, 563
\ltx@pkgextension	153	\PdfRender@dimexpr	486, 488, 493
\ltx@secondoftwo	285, 302	\PdfRender@ErrorInvalidValue	428, 441, 450, 460
\ltx@space	608, 615, 620, 687, 690, 707, 710	\PdfRender@FillColor	295, 546, 552, 604, 608, 615, 620, 627, 683, 688, 698
M		\PdfRender@FilterOp	698, 718, 742
\makeatletter	921, 958	\PdfRender@FindOp	692, 693, 694, 695, 696, 697, 712, 713, 714, 715, 716, 717, 725
\makeatother	925	\PdfRender@GetFillColor	551, 626, 682
\makefootline	987, 988	\PdfRender@GetStrokeColor	572, 637, 702
\MessageBreak	150, 151, 152, 153, 182, 430, 554, 575, 587	\PdfRender@let	494, 496, 498
N		\PdfRender@MatchPattern	667, 688, 708
\NeedsTeXFormat	857, 892, 913	\PdfRender@Matchtrue	186
\newcommand ...	196, 197, 289, 306, 922	\PdfRender@NeedsCurrentColor	603, 610, 617, 625, 636
\newlength	877	\PdfRender@NewClass	320, 322, 482, 521, 525, 528
\newpage	864, 874, 887	\PdfRender@NewClassValues	318, 470, 511, 516, 534
\next	783, 785, 787	\PdfRender@newif	128, 141, 142, 317, 323
\noindent	930	\PdfRender@NormalColorHook	215, 222, 225, 232, 377
\normalcolor	222, 228, 231, 989	\PdfRender@OP	691, 711, 731, 744, 746
\number	336, 818	\PdfRender@OpName	469, 536
O		\PdfRender@OpValue	468, 472, 482, 511, 516, 521, 525, 528
\OrgMakeFootLine	987, 989	\PdfRender@PatchColor	260, 264, 266, 270, 271, 273, 278
P		\PdfRender@PatchColorSetGroup	242, 262
\PackageError	429	\PdfRender@PatchNormalColor	220, 261, 294
\PackageInfo	26	\PdfRender@Pattern	668, 686, 706
\par	212, 876, 887, 997, 999	\PdfRender@PatternFillColor	649, 686
\parfillskip	983	\PdfRender@PatternStrokeColor	658, 706
\pdfcolorstack	165, 343, 353		
\pdfcolorstackinit	164, 174, 331		
\pdfextension	163, 165, 166		
\pdffeedback	164		
\pdflastmatch	670, 673		
\pdfliteral	166, 359, 366		
\pdfmatch	181, 438, 668		
\pdfoutput	978		
\pdfpageheight	982		
\pdfpagewidth	981		
\pdfrender	2, 193, 196, 284, 312		
\PdfRender@@FilterOp	743, 746		

<code>\PdfRender@PostProcessLineWidth</code>	490		
<code>\PdfRender@relax</code>	494, 497		
<code>\PdfRender@RequirePackage</code>	143, 168, 169, 170, 280		
<code>\PdfRender@Reset</code>	423		
<code>\PdfRender@Set</code>	375, 382, 418		
<code>\PdfRender@SetColor</code>	298, 602		
<code>\PdfRender@SetValidate</code>	407, 436		
<code>\PdfRender@SetValidateValues</code>	396, 456		
<code>\PdfRender@Stacktrue</code>	177		
<code>\PdfRender@String</code>	668, 672, 675, 687, 707		
<code>\PdfRender@StrokeColor</code>	296, 567, 573, 605, 608, 613, 615, 620, 638, 703, 708, 718		
<code>\PdfRender@temp</code>	225, 229, 244, 248, 726, 735, 739		
<code>\PdfRender@TestBox</code>	217, 226, 245, 549, 570		
<code>\PdfRender@texorpdfstring</code>	281, 293, 310		
<code>\PdfRender@TryColor</code>	550, 571, 596		
<code>\PdfRender@Valuesfalse</code>	398		
<code>\PdfRender@Valuetrue</code>	319		
<code>\penalty</code>	997, 1001		
<code>\protected</code>	165, 166		
<code>\ProvidesFile</code>	858, 893, 914		
<code>\ProvidesPackage</code>	19, 67		
R			
<code>\RangeCatcodeCheck</code>	810, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849		
<code>\RangeCatcodeInvalid</code>	802, 830, 831, 832, 833		
<code>\repeat</code>	777, 789, 800, 808, 823		
<code>\RequirePackage</code>	161		
<code>\RestoreCatcodes</code>	791, 794, 795, 850		
S			
<code>\section</code>	900		
<code>\set@color</code>	202, 227, 246, 622, 633, 644		
<code>\setbox</code>	218		
<code>\setlength</code>	878		
<code>\space</code>	816, 817, 825		
<code>\strip@prefix</code>	670, 673		
<code>\strip@pt</code>	505		
T			
<code>\tableofcontents</code>	899		
<code>\Test</code>	829, 852, 959, 967, 970		
<code>\texorpdfstring</code>	282		
<code>\textpdfrender</code>	2, 194, 197, 301, 866, 880, 901, 931, 939, 947, 962, 994		
<code>\the</code>	77, 78, 79, 80, 81, 82, 83, 84, 97, 796, 816, 817		
<code>\TMP@EnsureCode</code>	94, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121		
U			
<code>\usepackage</code>	860, 861, 895, 896, 897, 916, 917, 918		
V			
<code>\vbox</code>	206		
<code>\vfill</code>	997, 1000		
<code>\vsize</code>	980, 982		
W			
<code>\write</code>	23, 52		
X			
<code>\x</code>	14, 15, 18, 22, 26, 28, 51, 56, 66, 75, 87, 503, 508		