

The pdfrender package

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Abstract

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

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

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>T_EX dimen</i>

Parameter	Value	Alias
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 \LaTeX length registers may be used. If $\varepsilon\text{-}\TeX$'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). \LaTeX '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 \LaTeX 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 \LaTeX 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 pdfTeX 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 L^AT_EX.

```
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 [2019/12/29 v1.6 Access to some PDF graphics parameters (HO)]%
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 pdfTeX, 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{iftex}[2019/11/07]
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\expandafter\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]*|\string\.[0-9]*|\string\.[0-9]+%
527 }{}%
528 \PdfRender@NewClass{LineDashPattern}{[]}{\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 \begingroup
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 \endgroup
562 }
563 \PdfRender@define@key{PDFRENDER}{StrokeColor}{%
564 \begingroup
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 \endgroup
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{#1}{#2}%
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 \end{package}
```

3 Installation

3.1 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.

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
```

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 pdfrender.dtx
```

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

```
pdfrender.sty → tex/generic/oberdiek/pdfrender.sty
pdfrender.pdf → doc/latex/oberdiek/pdfrender.pdf
pdfrender.dtx → source/latex/oberdiek/pdfrender.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 (\TeX Live, MiK \TeX , ...) relies on file name databases, you must refresh these. For example, \TeX Live users run `texhash` or `mktexlsr`.

¹[CTAN:pkg/pdfrender](#)

3.5 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
```

4 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].

5 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>.

6 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

[2019/12/29 v1.6]

- `iftex` package.

7 Index

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