

# Hypertext marks in L<sup>A</sup>T<sub>E</sub>X

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<https://github.com/latex3/hyperref/issues>

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## 1 Documentation overview for hyperref

The documentation for package `hyperref` consists of several files:


**Manual** The **USER MANUAL** (also available as HTML).

**ChangeLog** This file records the version history.

**Bookmark talk, slides** Slides for the talk “PDF information and navigation elements with hyperref, pdfTeX and thumbpdf” at EuroT<sub>E</sub>X 1999.

**Bookmark talk, paper** The paper version of the talk.

Source code documentation:

 **hyperref.dtx** This is the source code documentation for hyperref (this file).

**backref.dtx** “Back referencing from bibliographical citations”

**nameref.dtx** “Section name references in L<sup>A</sup>T<sub>E</sub>X”

## 2 Contents

<b>1</b>	<b>Documentation overview for hyperref</b>	<b>1</b>
<b>2</b>	<b>Contents</b>	<b>2</b>
<b>3</b>	<b>File hycheck.tex</b>	<b>7</b>
<b>4</b>	<b>Package options and setup</b>	<b>11</b>
4.1	Save catcodes . . . . .	11
4.2	Disable patches . . . . .	12
4.3	Version check . . . . .	13
4.4	Checks with regular expressions . . . . .	14
4.5	Compatibility with format dumps . . . . .	15
4.6	Switches . . . . .	16
<b>5</b>	<b>Common help macros</b>	<b>18</b>
5.1	Macros for recursions . . . . .	18
5.2	Babel’s protection of shorthand characters . . . . .	18
5.3	Coordinate transformations . . . . .	18
<b>6</b>	<b>Dealing with PDF strings</b>	<b>19</b>
6.1	Description of PDF strings . . . . .	19
6.2	Definition of <code>\pdfstringdef</code> . . . . .	19
6.2.1	Preprocessing . . . . .	20
6.2.2	Expansion . . . . .	27
6.2.3	Postprocessing . . . . .	28
6.3	Encodings . . . . .	32
6.3.1	XeTeX . . . . .	32
6.3.2	Workaround for package linguex . . . . .	33
6.3.3	Catcodes saving and restoring for <code>.def</code> files . . . . .	33
6.3.4	PD1 encoding . . . . .	34
6.3.5	PU encoding . . . . .	34
6.4	Additional user commands . . . . .	35
6.4.1	<code>\texorpdfstring</code> . . . . .	35
6.4.2	Hooks for <code>\pdfstringdef</code> . . . . .	35
6.5	Help macros for expansion . . . . .	36
6.5.1	<code>\ignorespaces</code> . . . . .	36
6.5.2	Babel languages . . . . .	37
6.5.3	CJK patch . . . . .	37
6.5.4	CJK bookmarks . . . . .	38
6.5.5	CJK unicode . . . . .	39
6.5.6	<code>\@inmathwarn-Patch</code> . . . . .	44
6.5.7	Unexpandable spaces . . . . .	45
6.5.8	Marker for commands . . . . .	46
6.5.9	<code>\hspace fix</code> . . . . .	46
6.5.10	Fix for AMS classes . . . . .	46
6.5.11	Reference commands . . . . .	46
6.5.12	Redefining the defining commands . . . . .	49
6.5.13	<code>\ifnextchar</code> . . . . .	50

6.5.14	<code>\@protected@testoptifnextchar</code>	50
6.6	Help macros for postprocessing	51
6.6.1	Generic warning.	51
6.6.2	Protecting spaces	51
6.6.3	Remove grouping braces	52
6.6.4	Catcode check	53
6.6.5	Check for wrong glyphs	57
6.6.6	Replacing tokens	58
6.6.7	Support for package <code>xspace</code>	59
6.6.8	Converting to Unicode	59
6.6.9	Support for UTF-8 input encoding	62
6.6.10	Support for die faces (ifsym et. al.)	66
6.6.11	Support for moon phases of package <code>china2e</code>	66
6.6.12	Support for package <code>pifont</code>	67
<b>7</b>	<b>Support of other packages</b>	<b>68</b>
7.1	Package subfigure	68
7.2	Package <code>xr</code> and <code>xr-hyper</code>	69
<b>8</b>	<b>Help macros for links</b>	<b>69</b>
<b>9</b>	<b>Options</b>	<b>71</b>
9.1	Help macros	71
9.2	Defining the options	74
<b>10</b>	<b>Options for different drivers</b>	<b>79</b>
<b>11</b>	<b>Options to add extra features</b>	<b>84</b>
<b>12</b>	<b>Language options</b>	<b>85</b>
<b>13</b>	<b>Options to change appearance of links</b>	<b>95</b>
<b>14</b>	<b>Bookmarking</b>	<b>95</b>
<b>15</b>	<b>PDF-specific options</b>	<b>97</b>
15.1	Package <code>xspace</code> support	112
15.2	Option <code>draft</code>	112
15.3	PDF/A	113
15.4	Patch for babel's <code>\texttilde</code>	114
15.4.1	Driver loading	115
15.4.2	Bookmarks	119
<b>16</b>	<b>User hypertext macros</b>	<b>122</b>
16.1	Link box support for XeTeX and <code>dvipdfmx</code>	129
<b>17</b>	<b>Underlying basic hypertext macros</b>	<b>130</b>
<b>18</b>	<b>Option ‘<code>destlabel</code>’</b>	<b>135</b>

<b>19 Forms creation</b>	<b>137</b>
19.1 Field flags	137
19.1.1 Declarations of field flags	139
19.1.2 Set submit flags	141
19.1.3 Set annot flags in fields	142
19.1.4 Pushbutton field	142
19.1.5 Check box field	143
19.1.6 Radio button field	143
19.1.7 Text fields	143
19.1.8 Choice fields	144
19.2 Choice field	145
19.3 Forms	147
<b>20 Setup</b>	<b>155</b>
<b>21 Low-level utility macros</b>	<b>155</b>
<b>22 Localized nullifying of package</b>	<b>156</b>
<b>23 Package nohyperref</b>	<b>157</b>
<b>24 The Mangling Of Aux and Toc Files</b>	<b>158</b>
<b>25 Title strings</b>	<b>158</b>
<b>26 Page numbers</b>	<b>160</b>
<b>27 Every page</b>	<b>160</b>
27.1 PDF /PageLabels	160
27.1.1 pdfTeX and VTeX	164
27.1.2 xetex	166
27.1.3 pdfmarkbase, dvipdfm, xetex	167
<b>28 Automated L<sup>A</sup>T<sub>E</sub>X hypertext cross-references</b>	<b>168</b>
<b>29 Package ifthen support</b>	<b>174</b>
<b>30 Package varwidth support</b>	<b>174</b>
<b>31 Package titlesec and titletoc support</b>	<b>174</b>
<b>32 Package longtable support</b>	<b>175</b>
<b>33 Equations</b>	<b>176</b>
<b>34 Support for theorems</b>	<b>178</b>
<b>35 Footnotes</b>	<b>180</b>
<b>36 Float captions</b>	<b>185</b>

<b>37 Bibliographic references</b>	<b>188</b>
37.1 Package harvard . . . . .	191
37.2 Package chicago . . . . .	192
<b>38 Page numbers</b>	<b>193</b>
<b>39 Table of contents</b>	<b>195</b>
<b>40 New counters</b>	<b>200</b>
<b>41 AMSIAT<sub>E</sub>X compatibility</b>	<b>200</b>
41.1 \@addtoreset and \numberwithin patches . . . . .	201
<b>42 Included figures</b>	<b>202</b>
<b>43 hyperindex entries</b>	<b>202</b>
<b>44 Configuration files</b>	<b>211</b>
44.1 PS/PDF strings . . . . .	211
44.2 pdftex . . . . .	212
44.3 hypertex . . . . .	226
44.4 dviwindo . . . . .	228
44.5 dvipdfm/xetex dvi to PDF converter . . . . .	234
44.6 VTeX typesetting system . . . . .	244
44.7 Fix for Adobe bug number 466320 . . . . .	257
44.8 Direct pdfmark support . . . . .	258
44.9 Rokicki's dvips . . . . .	272
44.10 VTeX's vtexpdfmark driver . . . . .	275
44.11 Textures . . . . .	277
44.12 dvipsone . . . . .	281
44.13 TeX4ht . . . . .	285
<b>45 Driver-specific form support</b>	<b>288</b>
45.1 pdfmarks . . . . .	288
45.2 HyperTeX . . . . .	296
45.3 TeX4ht . . . . .	297
45.4 pdfTeX . . . . .	299
45.5 dvipdfm, xetex . . . . .	309
45.6 Common forms part . . . . .	317
<b>46 Bookmarks in the PDF file</b>	<b>324</b>
46.1 Bookmarks . . . . .	324
46.1.1 Rerun warning . . . . .	328
46.1.2 Driver stuff . . . . .	328
<b>47 Encoding definition files for encodings of PDF strings</b>	<b>334</b>
47.1 PD1 encoding . . . . .	334
47.2 PU encoding . . . . .	343
47.2.1 NFSS2 accents . . . . .	343
47.2.2 Basic Latin: U+0000 to U+007F . . . . .	346
47.2.3 Latin-1 Supplement: U+0080 to U+00FF . . . . .	348

47.2.4	Latin Extended-A: U+0080 to U+017F	352
47.2.5	Latin Extended-B: U+0180 to U+024F	357
47.2.6	IPA Extensions: U+0250 to U+02AF	362
47.2.7	Spacing Modifier Letters: U+02B0 to U+02FF	368
47.2.8	Combining Diacritical Marks: U+0300 to U+036F	369
47.2.9	Greek and Coptic: U+0370 to U+03FF	369
47.2.10	Cyrillic: U+0400 to U+04FF	369
47.2.11	Hebrew: U+0590 to U+05FF	380
47.2.12	Thai: U+0E00 to U+0E7F	381
47.2.13	Phonetic Extensions: U+1D00 to U+1D7F	382
47.2.14	Phonetic Extensions Supplement: U+1D80 to U+1DBF	382
47.2.15	Latin Extended Additional: U+1E00 to U+1EFF	383
47.2.16	General Punctuation: U+2000 to U+206F	389
47.2.17	Superscripts and Subscripts: U+2070 to U+209F	390
47.2.18	Currency Symbols: U+20A0 to U+20CF	392
47.2.19	Letterlike Symbols: U+2100 to U+214F	392
47.2.20	Number Forms: U+2150 to U+218F	393
47.2.21	Arrows: U+2190 to U+21FF	394
47.2.22	Mathematical Operators: U+2200 to U+22FF	398
47.2.23	Miscellaneous Technical: U+2300 to U+23FF	409
47.2.24	Control Pictures: U+2400 to U+243F	410
47.2.25	Optical Character Recognition: U+2440 to U+245F	410
47.2.26	Enclosed Alphanumerics: U+2460 to U+24FF	410
47.2.27	Box Drawing: U+2500 to U+257F	413
47.2.28	Geometric Shapes: U+25A0 to U+25FF	413
47.2.29	Miscellaneous Symbols: U+2600 to U+26FF	414
47.2.30	Dingbats: U+2700 to U+27BF	419
47.2.31	Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF	422
47.2.32	Supplemental Arrows-A: U+27F0 to U+27FF	422
47.2.33	Supplemental Arrows-B: U+2900 to U+297F	423
47.2.34	Miscellaneous Mathematical Symbols-B: U+2980 to U+29FF	425
47.2.35	Supplemental Mathematical Operators: U+2A00 to U+2AFF	425
47.2.36	Miscellaneous Symbols and Arrows: U+2B00 to U+2BFF	429
47.2.37	Latin Extended-C: U+2C60 to U+2C7F	429
47.2.38	Supplemental Punctuation: U+2E00 to U+2E7F	429
47.2.39	Modifier Tone Letters: U+A700 to U+A71F	429
47.2.40	Latin Extended-D: U+A720 to U+A7FF	429
47.2.41	Alphabetic Presentation Forms: U+FB00 to U+FB4F	429
47.2.42	Musical Symbols: U+1D100 to U+1D1FF	430
47.2.43	Miscellaneous Symbols and Pictographs: U+1F300 to U+1F5FF	430
47.2.44	Transport and Map Symbols: U+1F680 to U+1F6FF	430
47.2.45	Miscellaneous	431
47.2.46	Aliases	431
47.3	PU encoding, additions for VnTeX	431
47.4	PU encoding, additions for Arabi	434
<b>48</b>	<b>End of file hycheck.tex</b>	<b>459</b>
<b>49</b>	<b>Index</b>	<b>460</b>

### 3 File hycheck.tex

Many commands of L<sup>A</sup>T<sub>E</sub>X or other packages cannot be overloaded, but have to be redefined by hyperref directly. If these commands change in newer versions, these changes are not noticed by hyperref. With this test file this situation can be checked. It defines the command `\checkcommand` that is more powerful than L<sup>A</sup>T<sub>E</sub>X's `\CheckCommand`, because it takes `\DeclareRobustCommand` and optional parameters better into account.

```
1 <*check>
2 \documentclass{article}
3 \makeatletter
```

`\checklatex` Optional argument: release date of L<sup>A</sup>T<sub>E</sub>X.

```
4 \newcommand*{\checklatex}[1][]{%
5   \typeout{}}%
6   \typeout{* Format: `LaTeX2e' #1}%
7   \typeout{\space\space Loaded: `fmtname' \fmtversion}%
8 }%
```

`\checkpackage` The argument of `\checkpackage` is the package name without extension optionally followed by a release date.

```
9 \newcommand*{\checkpackage}[1]{%
10   \def\HyC@package{#1}%
11   \let\HyC@date\@empty
12   \@ifnextchar[\HyC@getDate\HyC@checkPackage
13 }
```

`\HyC@getDate` The release date is scanned.

```
14 \def\HyC@getDate[#1]{%
15   \def\HyC@date{#1}%
16   \HyC@checkPackage
17 }
```

`\HyC@checkPackage`

```
18 \def\HyC@checkPackage{%
19   \typeout{}}%
20   \begingroup
21   \edef\x{\endgroup
22     \noexpand\RequirePackage{\HyC@package}%
23     \ifx\HyC@date\@empty\relax\else\HyC@date\fi%
24   }%
25   \x
26   \typeout{}}%
27   \typeout{%
28     * Package `HyC@package'%
29     \ifx\HyC@date\@empty
30       \else
31         \space\HyC@date
32       \fi
33   }%
34   \@ifundefined{ver@\HyC@package.sty}{%
35     }{%
36     \typeout{%
```

```

37 \space\space Loaded: `\'HyC@package' %
38 \csname ver@\'HyC@package.sty\endcsname
39 }%
40 }%
41 }

```

`\checkcommand` The macro `\checkcommand` parses the next tokens as a L<sup>A</sup>T<sub>E</sub>X definition and compares this definition with the current meaning of that command.

```

42 \newcommand*{\checkcommand}[1]{%
43 \begingroup
44 \ifx\long#1\relax
45 \expandafter\'HyC@checklong
46 \else
47 \def\'HyC@defcmd{#1}%
48 \expandafter\let\expandafter\'HyC@next
49 \csname HyC@\expandafter\@gobble\string#1\endcsname
50 \expandafter\'HyC@checkcommand
51 \fi
52 }

```

`\HyC@checklong` The definition command `\def` or `\edef` is read.

```

53 \def\'HyC@checklong#1{%
54 \def\'HyC@defcmd{\long#1}%
55 \expandafter\let\expandafter\'HyC@next
56 \csname HyC@\expandafter\@gobble\string#1\endcsname
57 \'HyC@checkcommand
58 }

```

`\HyC@checkcommand` The optional star of L<sup>A</sup>T<sub>E</sub>X's definitions is parsed.

```

59 \def\'HyC@checkcommand{%
60 \ifx\'HyC@next\relax
61 \PackageError{hycheck}{%
62 Unknown command `\'expandafter\strip@prefix\meaning\'HyC@cmd'%
63 }{\@ehd
64 \expandafter\endinput
65 \fi
66 \@ifstar{%
67 \def\'HyC@star{*}%
68 \'HyC@check
69 }{%
70 \let\'HyC@star\@empty
71 \'HyC@check
72 }%
73 }

```

`\HyC@check` The macro `\HyC@check` reads the definition command.

```

74 \def\'HyC@check#1{%
75 \def\'HyC@cmd{#1}%
76 \let\'HyC@org@cmd#1%
77 \let#1\relax
78 \let\'HyC@param\@empty
79 \'HyC@Toks{}%
80 \let\'HyC@org@optcmd\'HyC@noValue
81 \let\'HyC@org@robustcmd\'HyC@noValue

```

```

82 \let\HyC@org@robustoptcmd\HyC@noValue
83 \HyC@next
84 }

```

`\HyC@noValue`

```

85 \def\HyC@noValue{NoValue}

```

`\HyC@newcommand` The code for `\newcommand`.

```

86 \def\HyC@newcommand{%
87 \let\HyC@@cmd\HyC@cmd
88 \@ifnextchar\HyC@nc@opt\HyC@nc@noopt
89 }

```

`\HyC@Toks` A register for storing the default value of an optional argument.

```

90 \newtoks\HyC@Toks

```

`\HyC@nc@noopt` This macro `\HyC@nc@noopt` is called, if the parser has reached the definition text.

```

91 \long\def\HyC@nc@noopt#1{%
92 \edef\x{%
93 \expandafter\noexpand\HyC@defcmd
94 \HyC@star
95 \expandafter\noexpand\HyC@cmd
96 \HyC@param\the\HyC@Toks
97 }%
98 \x{#1}%
99 \HyC@doCheck
100 }

```

`\HyC@nc@opt` This macro scans the first optional argument of a  $\text{\LaTeX}$  definition (number of arguments).

```

101 \def\HyC@nc@opt[#1]{%
102 \def\HyC@param{{#1}}}%
103 \@ifnextchar\HyC@nc@default\HyC@nc@noopt
104 }

```

`\HyC@nc@default` Macro `\HyC@nc@default` scans the default for an optional argument.

```

105 \def\HyC@nc@default[#1]{%
106 \HyC@Toks={{#1}}}%
107 \edef\HyC@optcmd{%
108 \expandafter\noexpand
109 \csname\expandafter\string\HyC@@cmd\endcsname
110 }%
111 \expandafter\let\expandafter\HyC@org@optcmd\HyC@optcmd
112 \HyC@nc@noopt
113 }

```

`\HyC@DeclareRobustCommand` `\DeclareRobustCommand{\cmd}` makes the command `\cmd` robust, that then calls `\cmd_` with an space at the end of the command name, defined by `\newcommand`. Therefore the further parsing is done by `\HyC@nc@opt` or `\HyC@nc@noopt` of the `\HyC@newcommand` chain.

```

114 \def\HyC@DeclareRobustCommand{%
115 \edef\HyC@robustcmd{%

```

```

116 \expandafter\noexpand
117 \csname\expandafter\expandafter\expandafter@gobble
118 \expandafter\string\HyC@cmd\space\endcsname
119 }%
120 \expandafter\let\expandafter\HyC@org@robustcmd\HyC@robustcmd
121 \expandafter\let\HyC@robustcmd\relax
122 \let\HyC@@@cmd\HyC@robustcmd
123 \@ifnextchar[\HyC@nc@opt\HyC@nc@noopt
124 }

\HyC@def The parameter text of \def or \edef is stored in the token register \HyC@Toks.
\HyC@edef 125 \def\HyC@def#1#{%
126 \HyC@Toks={#1}%
127 \HyC@nc@noopt
128 }
129 \let\HyC@edef\HyC@def

\HyC@doCheck This command performs the checks and prints the result.
130 \def\HyC@doCheck{%
131 \typeout{* Checking ` \HyC@string\HyC@cmd':}%
132 \HyC@checkItem{cmd}%
133 \HyC@checkItem{robustcmd}%
134 \HyC@checkItem{optcmd}%
135 \HyC@checkItem{robustoptcmd}%
136 \endgroup
137 }

\HyC@checkItem A single check.
138 \def\HyC@checkItem#1{%
139 \expandafter\ifx\csname HyC@org@#1\endcsname\HyC@noValue
140 \else
141 \expandafter\expandafter\expandafter\ifx
142 \csname HyC@#1\expandafter\endcsname
143 \csname HyC@org@#1\endcsname
144 \expandafter\HyC@checkOk\csname HyC@#1\endcsname
145 \else
146 \expandafter\HyC@checkFailed
147 \csname HyC@#1\expandafter\endcsname
148 \csname HyC@org@#1\endcsname
149 \fi
150 \fi
151 }

\HyC@string Some shorthands.
\HyC@meaning 152 \def\HyC@string#1{\expandafter\string#1}
153 \def\HyC@meaning#1{\expandafter\meaning#1}

\HyC@checkOk The result, if the check succeeds.
154 \def\HyC@checkOk#1{%
155 \typeout{\space\space` \HyC@string#1' ok.}%
156 }

\HyC@checkFailed The result, if the check fails.

```

```

157 \def\HyC@checkFailed#1#2{%
158   \typeout{\space\space`\HyC@string#1' failed.}%
159   \typeout{\space\space* original: \meaning#2}%
160   \typeout{\space\space* expected: \HyC@meaning#1}%
161 }

162 % *****
163 \</check>
164 \<package>

```

## 4 Package options and setup

### 4.1 Save catcodes

There are many packages that change the standard catcodes.

First we save the original meaning of ``` and `=` in the token register `\toks@`, because we need the two characters in the macros `\Hy@SetCatcodes` and `\Hy@RestoreCatcodes`.

```

165 \begingroup
166   \@makeother`\%
167   \@makeother\=%
168   \edef\x{%
169     \edef\noexpand\x{%
170       \endgroup
171       \noexpand\toks@{%
172         \catcode 96=noexpand\the\catcode`\noexpand`\relax
173         \catcode 61=noexpand\the\catcode`\noexpand\=\relax
174       }%
175     }%
176     \noexpand\x
177   }%
178   \x
179   \@makeother`\
180   \@makeother\=

```

`\Hy@SetCatcodes`

```

181 \def\Hy@SetCatcodes{%
182   \@makeother`\%
183   \@makeother\=%
184   \catcode`\$=3 %
185   \catcode`\&=4 %
186   \catcode`\^=7 %
187   \catcode`\_ =8 %
188   \@makeother\| %
189   \@makeother\:%
190   \@makeother\(%
191   \@makeother\)%
192   \@makeother\[ %
193   \@makeother\] %
194   \@makeother\/ %
195   \@makeother\! %
196   \@makeother\<%

```

```

197 \@makeother\>%
198 \@makeother\.%
199 \@makeother\;%
200 \@makeother\+%
201 \@makeother\-%
202 \@makeother\"%
203 \@makeother\'%
204 }

```

\Hy@RestoreCatcodes

```

205 \begingroup
206 \def\x#1{\catcode`\noexpand#1=\the\catcode`#1\relax}%
207 \xdef\Hy@RestoreCatcodes{%
208   \the\toks@
209   \x\$%
210   \x\&%
211   \x\^%
212   \x\_%
213   \x\|%
214   \x\:%
215   \x\( %
216   \x\) %
217   \x\[ %
218   \x\] %
219   \x\/%
220   \x\!%
221   \x\<%
222   \x\>%
223   \x\.%
224   \x\;%
225   \x\+%
226   \x\-%
227   \x\"%
228   \x\'%
229 }%
230 \endgroup

231 \Hy@SetCatcodes

```

## 4.2 Disable patches

If new latex interfaces are used with \DocumentMetadata various patches are unneeded or do harm, so we disable them. Not handled yet: \hyper@nopatch@ams-math@tag, \hyper@nopatch@mathenv

```

232 \IfFormatAtLeastT{2025-11-01}
233 {
234   \IfDocumentMetadataT
235   {
236     \def\hyper@nopatch@counter{} % disabled since 2024-11-01 anyway
237     \def\hyper@nopatch@bib{}
238     \def\hyper@nopatch@thm{}
239     \def\hyper@nopatch@caption{}
240     \def\hyper@nopatch@footnote{}
241     \def\hyper@nopatch@sectioning{}

```

```

242 \def\hyper@nopatch@toc{}
243 \def\hyper@nopatch@longtable{}
244 }
245 }

```

change 2020-07-24: require newer pdftexcmds and remove fallback code for version older than 2010. change 2021-08-14: require expl3 change 2023-11-26: no longer require pdftexcmds change 2023-11-26: no longer require expl3, we assume kernel is new enough. change 2024-05-23: load stringenc always (for pdfx)

```

246 \RequirePackage{iftex}[2019/10/24]
247 \RequirePackage{keyval}[1997/11/10]
248 \RequirePackage{kvsetkeys}[2007/09/29]
249 \RequirePackage{kvdefinekeys}[2011/04/07]
250 \RequirePackage{pdfescape}[2007/11/11]
251 \RequirePackage{hycolor}
252 \RequirePackage{nameref}[2012/07/28]
253 \RequirePackage{etoolbox}
254 \RequirePackage{stringenc}[2009/12/15]%
255 \def\Hy@Error{\PackageError{hyperref}}
256 \def\Hy@Warning{\PackageWarning{hyperref}}
257 \def\Hy@WarningNoLine{\PackageWarningNoLine{hyperref}}
258 \def\Hy@Info{\PackageInfo{hyperref}}
259 \def\Hy@InfoNoLine#1{\PackageInfo{hyperref}{#1\@gobble}}
260 \def\Hy@Message#1{%
261   \GenericWarning{%
262     (hyperref)\@spaces\@spaces\@spaces\@spaces
263   }{%
264     Package hyperref Message: #1\@gobble
265   }%
266 }

```

### 4.3 Version check

\Hy@VersionChecked

```

267 \chardef\Hy@VersionChecked=0 %

```

\Hy@VersionCheck

```

268 \def\Hy@VersionCheck#1{%
269   \begingroup
270   \@ifundefined{ver@hyperref.sty}{%
271     \Hy@Error{%
272       This should not happen!\MessageBreak
273       Missing hyperref version%
274     }\@ehd
275   }{%
276     \@ifundefined{ver@#1}{%
277       \Hy@Error{%
278         This should not happen!\MessageBreak
279         Missing version of `#1'%
280       }\@ehd
281     }{%
282       \def\x##1##2##3{%
283         \expandafter\expandafter\expandafter\Hy@@VersionCheck
284         \expandafter\expandafter\expandafter##2%

```

```

285     \csname ver@##3\endcsname##1##1\@nil
286 }%
287 \x{ } \y{hyperref.sty}%
288 \x{ } \z{#1}%
289 \ifx \y \z
290 \else
291   \edef \a{#1}%
292   \edef \b{\HyOpt@CustomDriver.def}%
293   \ifx \a \b
294     \Hy@WarningNoLine{%
295       Version mismatch (custom driver)!\MessageBreak
296       * \y: hyperref.sty\MessageBreak
297       * \z: \a
298     }%
299   \else
300     \Hy@Error{%
301       Version mismatch!\MessageBreak
302       * \y: hyperref.sty\MessageBreak
303       * \z: \a
304     } \@ehd
305   \fi
306 \fi
307 }%
308 }%
309 \endgroup
310 \chardef \Hy@VersionChecked=1 %
311 }

```

\Hy@@VersionCheck

```

312 \def \Hy@@VersionCheck #1#2 #3 #4 \@nil{%
313   \def #1{#2 #3}%
314 }

```

#### 4.4 Checks with regular expressions

```

315 \edef \Hy@leftbracechar{\string{ }
316 \edef \Hy@rightbracechar{\string} }
317 \@ifundefined{pdfmatch}{%
318   \def \Hy@Match#1#2#3#4#5{%
319     {%
320       \def \Hy@Match#1#2#3{%
321         \begingroup
322         \edef \^{\@backslashchar\string^}%
323         \edef \. {\@backslashchar.}%
324         \edef \[ {\@backslashchar[}%
325         \edef \$ {\@backslashchar$}%
326         \edef \({ \@backslashchar(%
327         \edef \) {\@backslashchar)%
328         \edef \| {\@backslashchar|}%
329         \edef \* {\@backslashchar*}%
330         \edef \+ {\@backslashchar+}%
331         \edef \? {\@backslashchar?}%
332         \edef \{ {\@backslashchar\Hy@leftbracechar}%
333         \edef \} {\Hy@rightbracechar}%

```

```

334 \edef\{\@backslashchar\@backslashchar}%
335 \let\ \Hy@space
336 \ifcase\pdfmatch#2{#3}{#1} %
337 \endgroup
338 \expandafter\@secondoftwo
339 \or
340 \endgroup
341 \expandafter\@firstoftwo
342 \else
343 \Hy@Warning{%
344   Internal error: Wrong pattern!\MessageBreak
345   --> #3 <--\MessageBreak
346   Pattern check ignored%
347 }%
348 \endgroup
349 \expandafter\@firstoftwo
350 \fi
351 }%
352 }

```

## 4.5 Compatibility with format dumps

`\AfterBeginDocument` For use with pre-compiled formats, created using the `ldump` package, there needs to be 2 hooks for adding material delayed until `\begin{document}`. These are called `\AfterBeginDocument` and `\AtBeginDocument`. If `ldump` is not loaded, then a single hook suffices for normal L<sup>A</sup>T<sub>E</sub>X processing.

The default definition of `\AfterBeginDocument` cannot be done by `\let` because of problems with `xypic`.

```

353 \@ifundefined{AfterBeginDocument}{%
354   \def\AfterBeginDocument{\AtBeginDocument}%
355 }{}%

```

`\Hy@AtBeginDocument` For the case that package ‘hyperref’ is loaded using `\AtBeginDocument`, we have to wrap the calls of `\AtBeginDocument`/`\AfterBeginDocument` in `\AtEndOfPackage`. However, packages must be loaded in `\AtEndOfPackage` *before* package ‘kvoptions’ has to perform its option cleanup. Therefore we use a hook.

```

356 \ExplSyntaxOn
357 \let\Hy@LocalAppendToMacro\tl_put_right:Nn
358 \let\Hy@GlobalAppendToMacro\tl_gput_right:Nn
359 \let\Hy@ifempty\tl_if_empty:nTF
360 \ExplSyntaxOff
361 \def\Hy@AtBeginDocument{%
362   \Hy@LocalAppendToMacro\Hy@AtBeginDocumentHook
363 }

```

`\Hy@AtEndOfPackage`

```

364 \def\Hy@AtEndOfPackage{%
365   \Hy@LocalAppendToMacro\Hy@AtEndOfPackageHook
366 }

```

`\Hy@AtBeginDocumentHook`

```

367 \let\Hy@AtBeginDocumentHook\@empty

```

`\Hy@AtEndOfPackageHook`

```
368 \let\Hy@AtEndOfPackageHook\@empty
```

Install the hook, before package ‘kvoptions’ is loaded.

```
369 \AtEndOfPackage{%
370   \Hy@AtEndOfPackageHook
371   \let\Hy@AtEndOfPackageHook\@undefined
372   \AfterBeginDocument{%
373     \Hy@AtBeginDocumentHook{}}%
374   \let\Hy@AtBeginDocumentHook\@undefined
375 }%
376 }
```

Package kvoptions is used for processing options that are given as key value pairs. The package provides `\ProcessKeyvalOptions`, formerly known as `\ProcessOptionsWithKV`.

```
377 \RequirePackage{kvoptions}[2009/07/21]
```

## 4.6 Switches

```
378 \newif\ifHy@stoppeadearly
379 \newif\ifHy@typexml
380 \newif\ifHy@activeanchor
381 \newif\ifHy@backref
382 \newif\ifHy@bookmarks
383 \newif\ifHy@bookmarksnumbered
384 \newif\ifHy@bookmarksopen
385 \newif\ifHy@breaklinks
386 \newif\ifHy@pdfcenterwindow
387 \newif\ifHy@CJKbookmarks
388 \newif\ifHy@colorlinks
389 \newif\ifHy@destlabel
390 \newif\ifHy@draft
391 \let\Hy@finaltrue\Hy@draftfalse
392 \let\Hy@finalfalse\Hy@drafttrue
393 \newif\ifHy@pdfescapeform
394 \newif\ifHy@hyperfigures
395 \newif\ifHy@pdffitwindow
396 \newif\ifHy@frenchlinks
397 \newif\ifHy@hyperfootnotes
398 \newif\ifHy@hyperindex
399 \newif\ifHy@hypertextnames
400 \newif\ifHy@implicit
401 \newif\ifHy@linktocpage
402 \newif\ifHy@localanchorname
403 \newif\ifHy@pdfmenubar
404 \newif\ifHy@naturalnames
405 \newif\ifHy@nesting
406 \newif\ifHy@pdfnewwindowset
407 \newif\ifHy@pdfnewwindow
408 \newif\ifHy@ocgcolorlinks
409 \newif\ifHy@pageanchor
410 \newif\ifHy@pdfpagelabels
411 \newif\ifHy@pdfstring
```

```

412 \newif\ifHy@plainpages
413 \newif\ifHy@psize
414 \newif\ifHy@raiselinks
415 \newif\ifHy@seminarslides
416 \newif\ifHy@setpagesize
417 \newif\ifHy@texht
418 \newif\ifHy@psdextra
419 \newif\ifHy@pdftoolbar
420 \newif\ifHy@unicode
421 \newif\ifHy@pdfusetitle
422 \newif\ifHy@verbose
423 \let\Hy@debugtrue\Hy@verbosetrue
424 \let\Hy@debugfalse\Hy@verbosefalse
425 \newif\ifHy@pdfwindowui
426 \newif\ifHy@pdfdisplaydoctitle
427 \newif\ifHy@pdfa

```

Defaults for the switches are now set.

```

428 \Hy@backreffalse
429 \Hy@bookmarksnumberedfalse
430 \Hy@bookmarksopenfalse
431 \Hy@bookmarkstrue
432 \Hy@breaklinksfalse
433 \Hy@pdfcenterwindowfalse
434 \Hy@CJKbookmarksfalse
435 \Hy@destlabelfalse
436 \Hy@pdfescapeformfalse
437 \Hy@hyperfiguresfalse
438 \Hy@pdfitwindowfalse
439 \Hy@hyperfootnotetrue
440 \Hy@hyperindextrue
441 \Hy@hypertextnamestrue
442 \Hy@implicittrue
443 \Hy@linktocpagefalse
444 \Hy@localanchornamefalse
445 \Hy@pdfmenubartrue
446 \Hy@naturalnamesfalse
447 \Hy@nestingfalse
448 \Hy@pdfnewwindowsetfalse
449 \Hy@pdfnewwindowfalse
450 \Hy@pageanchortrue
451 \Hy@pdfpagelabelstrue
452 \Hy@pdfstringfalse
453 \Hy@plainpagesfalse
454 \Hy@raiselinksfalse
455 \Hy@setpagesizetrue
456 \Hy@texhtfalse
457 \Hy@psdextrafalse
458 \Hy@pdftoolbartrue
459 \Hy@unicodetrue
460 \ifx\kanjiskip\@undefined
461 \else
462 \ifx\forcecjktoken\@undefined
463 \Hy@unicodefalse
464 \fi

```

```

465 \fi
466 \Hy@pdfusetitlefalse
467 \Hy@verbosefalse
468 \Hy@pdfwindowuitrue
469 \Hy@pdfdisplaydoctitlefalse
470 \Hy@pdfafalse

```

## 5 Common help macros

`\Hy@StepCount`

```

471 \def\Hy@StepCount#1{\advance#1 by 1 }%

```

`\Hy@GlobalStepCount`

```

472 \def\Hy@GlobalStepCount#1{\global\advance#1 by 1 }%

473 \newdimen\@linkdim
474 \let\Hy@driver\@empty
475 \let\MaybeStopEarly\relax
476 \newcount\Hy@linkcounter
477 \newcount\Hy@pagecounter
478 \Hy@linkcounter0
479 \Hy@pagecounter0
480 \def\Hy@space{ }

```

### 5.1 Macros for recursions

```

481 \let\Hy@ReturnEnd\@empty
482 \long\def\Hy@ReturnAfterFi#1\fi{\fi#1}
483 \long\def\Hy@ReturnAfterElseFi#1\else#2\fi{\fi#1}
484 \long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{\fi\fi#1}
485 \long\def\Hy@ReturnAfterElseFiFiEnd#1\else#2\Hy@ReturnEnd{\fi\fi#1}

```

### 5.2 Babel's protection of shorthand characters

`\Hy@safe@activetrue` Babel's switch setting commands cannot be used directly, because they can be undefined if babel is not loaded.

```

486 \def\Hy@safe@activetrue{\csname @safe@activetrue\endcsname}
487 \def\Hy@safe@activesfalse{\csname @safe@activesfalse\endcsname}

```

### 5.3 Coordinate transformations

At some places numbers in pdf units are expected (eg: FitBH, ...). The following macros perform the transformation from TeX units (pt) to PDF units (bp).

`\hypercalsbp` The user macro `\hypercalsbp` can be used, for example, inside option values:

```
pdfstartview={FitBH \hypercalsbp{\paperheight-\topmargin-1in}}
```

- It cannot be used inside `\usepackage`, because LaTeX expands the options before package hyperref is loaded and `\hypercalsbp` is defined.
- With the now required e-TeX extensions an expandable implementation is very easy; `\hypercalsbp` can be used everywhere and is expanded at use.

Example (T<sub>E</sub>X):

```
\usepackage[...]{hyperref}
\hypersetup{
  pdfstartview={FitBH \hypercalcbp{\paperheight-\topmargin-1in
    -\headheight-\headsep}}
}

\hypercalcbp
488 \def\hypercalcbp#1{%
489   \strip@pt\dimexpr 0.99626401\dimexpr(#1)\relax\relax
490 }%
491 \def\hypercalcbpdef{\def}%
```

## 6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

Naming convention: All internal commands that are only needed by `\pdfstringdef` are prefixed with `\HyPsd@`.

### 6.1 Description of PDF strings

The PDF specification defines several places to hold text strings (bookmark names, document information, text annotations, etc.). The PDF strings have following properties:

- They are surrounded by parentheses. The hexadecimal form is not supported.
- Like PostScript language strings they use the same escaping mechanism:
  - `\\` the backslash itself
  - `\), \((` unbalanced parentheses
  - `\n, \r, \t, \b, \f` special white space escape sequences
  - `\ddd` octal character code `ddd`
- Strings are stored either in `PDFDocEncoding`, which is a superset of ISO-Latin1 and is compatible with Unicode with character codes below 256, or in Unicode.

### 6.2 Definition of `\pdfstringdef`

The central macro for dealing with PDF strings is `\pdfstringdef`. It defines a command `#1` to be the result of the conversion from the string in `#2` to a legal `PDFDocEncoded` string. Currently the definition is global, but this can be changed in the future.

Important: In T<sub>E</sub>X's view PDF strings are written to a file and are expanded only in its mouth. Stomach commands that cannot be expanded further aren't executed, they are written verbatim. But the PDF reader that reads such a string isn't a T<sub>E</sub>X interpreter!

The macro `\pdfstringdef` consists of three main parts:

1. Preprocessing. Here the expansion is prepared. The encoding is set and many commands are redefined, so that they work appropriate.

2. Expansion. The  $\TeX$  string is expanded the first time to get a PDF string.
3. Postprocessing. The result of the expansion is checked and converted to the final form.

`\MakeUppercase` and `\MakeLowercase` do not work by expansion in legacy code but if the `expl3` code is available we can handle them. If a current babel or polyglossia is used we can also make use of the language.

```

ppercaseUnsupportedInPdfStrings
lowercaseUnsupportedInPdfStrings 492 \providecommand*\BCPdata[1]{}
493 \ExplSyntaxOn
494 \@ifundefined{text_uppercase:n}{}
495 {
496   \def\MakeUppercaseUnsupportedInPdfStrings#1
497     {\use:e
498       {\exp_args:Ne
499         \text_uppercase:nn{\BCPdata { casing }}{#1}
500       }
501     }
502   \def\MakeLowercaseUnsupportedInPdfStrings#1
503     {\use:e
504       {\exp_args:Ne
505         \text_lowercase:nn{\BCPdata { casing }}{#1}
506       }
507     }
508 }
509 \ExplSyntaxOff

```

```

\hyper@natlinkstart We provide the natbib hooks always, for better tagging support, see issue #406
\hyper@natlinkend   510 \def\hyper@natlinkstart#1{}
\hyper@natlinkbreak 511 \def\hyper@natlinkend{}
\hyper@natanchorstart 512 \def\hyper@natlinkbreak#1#2{#1}
\hyper@natanchorend  513 \def\hyper@natanchorstart#1{}
                    514 \def\hyper@natanchorend{}

```

`\pdfstringdef` `\pdfstringdef` works on the tokens in `#2` and converts them to a PDF string as far as possible:

- The result should obey the rules of the PDF specification for strings.
- The string can safely processed by  $\TeX$ , because the tokens have only cat-codes 10 until 12.

The result is stored in the command token given in `#1`.

```
515 \def\pdfstringdef#1#2{%
```

Many redefinitions are needed, so all the work is done in a group.

```
516   \begingroup
```

### 6.2.1 Preprocessing

**Octal escape sequences.** To avoid problems with eight bit or non printable characters, the octal escape notation is supported. So most glyphs in the encoding definitions for PD1 and PU produce these octal escape sequences. All three octal digits have to be used:

- Wrong results are avoided, if digits follow that are not part of the octal sequence.
- Macros rely on the fact that the octal sequences always consist of three digits (vtex driver, Unicode support).

The escape sequences start with a backslash. By `\string` it will be printed. Therefore it is ensured that the  $\TeX$  escape character indeed prints as a normal backslash. Eventually this line can be removed, because this is standard  $\LaTeX$  behaviour.

```
517 \escapechar`\\%
```

From the view of  $\TeX$  a octal sequence consists of the command tokens `\0` until `\3` and two digits. For saving tokens `\0`, `\1`, `\2`, and `\3` are directly used without a preceding `\string` in the glyph definitions. This is done here locally by defining the `\0` until `\3` commands. So the user can use octal escape sequences directly, the disadvantage is that a previous definition of this short commands does not apply.

```
518 \edef\0{\string\0}%
519 \edef\1{\string\1}%
520 \edef\2{\string\2}%
521 \edef\3{\string\3}%
```

**Setting font encoding.** The unicode encoding uses `\8` and `\9` as marker for the higher byte. `\8` is an abbreviation for the higher bytes 0 until 7 that can be expressed by one digit. `\8` will be converted to `\00`. However `\9` only marks the next three digits as higher byte and will be removed later.

The encoding is set by `\enc@update` for optimizing reasons.

```
522 \ifHy@unicode
523 \edef\8{\string\8}%
524 \edef\9{\string\9}%
525 \fontencoding{PU}%
526 \HyPsd@UTFviii
527 \def\ifpdfstringunicode###1##2{##1}%
528 \else
529 \fontencoding{PD1}%
530 \def\ifpdfstringunicode###1##2{##2}%
531 \fi
532 \let\utf@viii@undeferr\HyPsd@utf@viii@undeferr
533 \enc@update
```

**Internal encoding commands.** `\pdfstringdef` interprets text strings which are not allowed to contain mathematical stuff. The text glyph commands will produce a warning, if called in math mode. But this warning disturbs while expanding. Therefore we check for math mode here, before `\@inmathwarn` will be disabled (see below).

```
534 \@inmathwarn\pdfstringdef
```

If a glyph is used, that isn't in the PD1/PU encoding there will be an infinite error loop, because the NFSS encoding stuff have to be expanded unprotected (`\edef`), so that the assignments of `\@changed@cmd` don't take place. To patch this behaviour I only found `\@inmathwarn` as a usable hook. While an `\edef` a

warning message by `\@inmathwarn` or `\TextSymbolUnavailable` cannot be give out, so `\@inmathwarn` should be disabled. And with the help of it the assignments in `\@changed@cmd` can easily be caught (see below).

```
535 \let\@inmathwarn\HyPsd@inmathwarn
```

Unknown composite characters are built with `\add@accent`, so it is redefined to provide a warning.

```
536 \let\add@accent\HyPsd@add@accent
```

**Commands that don't use NFSS directly.** There are several commands that prints characters in the printable ASCII area that don't obey the NFSS, so they have to be redefined here. UF 29.09.2017: added a mapping for `\noboundary`, see issue #37 <https://github.com/latex3/hyperref/issues/37> No test for PU, if some definition for PD1 is added it will work too.

```
537 \let\{\textbraceleft
538 \let\}\textbraceright
539 \let\\\textbackslash
540 \let\#\textnumbersign
541 \let\$\textdollar
542 \let\%\textpercent
543 \let\&\textampersand
544 % \let~\textasciitilde
545 \let\_ \textunderscore
546 \let\textP\textparagraph
547 \let\ldots\textellipsis
548 \let\dots\textellipsis
549 \@ifundefined{textEncodingNoboundary}%
550 {\let\noboundary\textEncodingNoboundary}%
```

**Newline** `\newline` or `\\` do not work in bookmarks, in text annotations they should expand to `\r`. In pdf strings `\\` stands for a backslash. Therefore the commands are disabled now. The user can redefine them for a result what he want:

**backslash:** `\pdfstringdefDisableCommands{\let\\\textbackslash}`

**new line:** `\pdfstringdefDisableCommands{\let\\\textCR}`

**disabled:** `\pdfstringdefDisableCommands{\let\\\empty}`

At any case, however, the optional argument or the star cannot be scanned in a 100% sure manner.

```
551 \def\{\pdfstringdefWarn\}%
552 \def\newline{\pdfstringdefWarn\newline}%
```

**Logos.** Because the box shifting used in the T<sub>E</sub>X logo does not work while writing to a file, the standard T<sub>E</sub>X logos are redefined. We use the direct PU code to avoid problems if `\textepsilon` is not defined.

```
553 \def\TeX{\TeX}%
554 \def\LaTeX{\LaTeX}%
555 \def\LaTeXe{%
556 \LaTeX2%
```

```

557 \ifHy@unicode\83\265\else e\fi
558 }%
559 \def\TeX{%
560 \ifHy@unicode\83\265\else e\fi
561 -\TeX%
562 }%
563 \def\SliTeX{Sli\TeX}%
564 \def\MF{Metafont}%
565 \def\MP{Metapost}%

```

**Standard font commands.** Because font changes do not work, the standard font switching commands are disabled.

```

566 \let\fontencoding\@gobble
567 \let\fontfamily\@gobble
568 \let\fontseries\@gobble
569 \let\fontshape\@gobble
570 \let\fontsize\@gobbletwo
571 \let\selectfont\@empty
572 \let\usefont\@gobblefour
573 \let\emph\@firstofone
574 \let\textnormal\@firstofone
575 \let\textrm\@firstofone
576 \let\textsf\@firstofone
577 \let\texttt\@firstofone
578 \let\textbf\@firstofone
579 \let\textmd\@firstofone
580 \let\textit\@firstofone
581 \let\textsc\@firstofone
582 \let\textsl\@firstofone
583 \let\textup\@firstofone
584 \let\normalfont\@empty
585 \let\rmfamily\@empty
586 \let\sffamily\@empty
587 \let\ttfamily\@empty
588 \let\bfseries\@empty
589 \let\mdseries\@empty
590 \let\itshape\@empty
591 \let\scshape\@empty
592 \let\slshape\@empty
593 \let\upshape\@empty
594 \let\em\@empty
595 \let\rm\@empty
596 \let\Huge\@empty
597 \let\LARGE\@empty
598 \let\Large\@empty
599 \let\footnotesize\@empty
600 \let\huge\@empty
601 \let\large\@empty
602 \let\normalsize\@empty
603 \let\scriptsize\@empty
604 \let\small\@empty
605 \let\tiny\@empty
606 \let\mathversion\@gobble

```

```

607 \let\phantom\@gobble
608 \let\vphantom\@gobble
609 \let\hphantom\@gobble

```

### Package pifont.

```

610 \let\ding\HyPsd@ding
611 \let\Cube\HyPsd@DieFace
612 %* \HyPsd@DieFace -> \epsdice (epsdice)
613 %* \HyPsd@DieFace -> \fcdice (hhcount)

```

### Environments.

```

614 \def\begin##1{\csname##1\endcsname}%
615 \def\end##1{\csname end##1\endcsname}%

```

### Package color.

```

616 \def\textcolor##1##{\@secondoftwo}%

```

### Upper- and lowercase.

```

617 \def\MakeUppercase{\MakeUppercaseUnsupportedInPdfStrings}%
618 \def\MakeLowercase{\MakeLowercaseUnsupportedInPdfStrings}%

```

**TextOrMath** The `\TextOrMath` command is protected in a current  $\text{\LaTeX}$  and so can not be processed.

```

619 \def\TextOrMath{\ifmmode\expandafter\@secondoftwo\else\expandafter\@firstoftwo\fi}%

```

**Support of math commands without prefix text.** This is controlled by option “psdextra” and only activated with Unicode PDF strings.

```

620 \ifHy@psdextra
621 \ifHy@unicode
622 \csname psdmapshortnames\endcsname
623 \csname psdaliasnames\endcsname
624 \fi
625 \fi

```

**Package babel.** Wherever “naturalnames” is used, disable `\textlatin` (from Babel 3.6k). Thanks to Felix Neubauer (Email: [Felix.Neubauer@gmx.net](mailto:Felix.Neubauer@gmx.net)).

```

626 \let\foreignlanguage\@secondoftwo
627 \let\textlatin\@firstofone
628 \@ifundefined{language@group}{}{%
629 \let\bbl@info\@gobble
630 \csname HyPsd@babel@language@group\endcsname
631 }%

```

```

632 \let\@safe@activetrue\relax
633 \let\@safe@activesfalse\relax

```

Disable `\cyr`, used in `russianb.ldf`.

```

634 \let\cyr\relax

```

**Package german.**

```
635 \let\glqq\textglqq
636 \let\grqq\textgrqq
637 \let\glq\textglq
638 \let\grq\textgrq
639 \let\flqq\textflqq
640 \let\frqq\textfrqq
641 \let\flq\textflq
642 \let\frq\textfrq
```

**Package french.** The support is deferred, because it needs `\GenericError` to be disabled (see below).

**Package FrenchPro.** This package uses:

```
\if@mid@expandable{not fully expandable code}{fully expandable
code}

643 \let\if@mid@expandable\@firstoftwo
```

**AMS classes.**

```
644 \HyPsd@AMSclassfix
```

**Redefinition of `\hspace`** `\hspace` don't work in bookmarks, the following fix tries to set a space if the argument is a positive length.

```
645 \let\hspace\HyPsd@hspace
```

**Commands of referencing and indexing systems.** Some  $\text{\LaTeX}$  commands that are legal in `\section` commands have to be disabled here.

```
646 \let\label\@gobble
647 \let\index\@gobble
648 \let\glossary\@gobble
649 \let\href\HyPsd@href
650 \let\@mkboth\@gobbletwo
```

The `\ref` and `\pageref` is much more complicate because of their star form.

```
651 \let\ref\HyPsd@ref
652 \let\pageref\HyPsd@pageref
653 \let\nameref\HyPsd@nameref
654 \let\autoref\HyPsd@autoref
```

**Miscellaneous commands.**

```
655 \let\leavevmode\@empty
656 \let\mbox\@empty
```

`\halign` causes error messages because of the template character `#`.

```
657 \def\halign{\pdfstringdefWarn\halign\@gobble}%
658 \let\ignorespaces\HyPsd@ignorespaces
659 \let\Hy@SectionAnchorHref\@gobble
660 \let\ensuremath\@firstofone
```

### Patch for cjk bookmarks.

```
661 \HyPsd@CJKhook
```

**User hook.** The switch `\Hy@pdfstring` is turned on. So user commands can detect that they are processed not to be typesetted within  $\mathrm{T}_{\mathrm{E}}\mathrm{X}$ 's stomach, but to be expanded by the mouth to give a PDF string. At this place before interpreting the string in `#2` additional redefinitions can be added by the hook `\pdfstringdefPreHook`.

The position in the middle of the redefinitions is a compromise: The user should be able to provide his own (perhaps better) redefinitions, but some commands should have their original meaning, because they can be used in the hook (`\bgroup`, or `\@protected@testopt`, and `\@ifnextchar` for `\renewcommand`).

```
662 \Hy@pdfstringtrue
663 \pdfstringdefPreHook
```

**Spaces.** For checking the token of the string, spaces must be masked, because they cannot be caught by undelimited arguments.

```
664 \HyPsd@LetUnexpandableSpace\space
665 \HyPsd@LetUnexpandableSpace\ %
666 \HyPsd@LetUnexpandableSpace~%
667 \HyPsd@LetUnexpandableSpace\nobreakspace
```

### Package xspace.

```
668 \@ifundefined{@xspace}{%
669 \let\xspace\HyPsd@ITALCORR
670 }{%
671 \let\xspace\HyPsd@XSPACE
672 }%
673 \let\@HyPsd@ITALCORR
674 \let\bgroup\@
675 \let\egroup\@
```

**Redefinitions of miscellaneous commands.** Hyphenation does not make sense.

```
676 \let\discretionary\@gobbletwo
```

`\@ifstar` is defined in  $\mathrm{L}^{\mathrm{A}}\mathrm{T}_{\mathrm{E}}\mathrm{X}$  as follows:

```
\def\@ifstar#1{\@ifnextchar *{\@firstoftwo{#1}}}
```

`\@ifnextchar` doesn't work, because it uses stomach commands like `\let` and `\futurelet`. But it doesn't break. Whereas `\@firstoftwo{#1}` gives an error message because `\@firstoftwo` misses its second argument.

A mimicry of `\@ifnextchar` only with expandable commands would be very extensive and the result would be only an approximation. So here a cheaper solution follows in order to get rid of the error message at least:

```
677 \def\@ifnextchar{\HyPsd@ifnextchar\@ifnextchar}%
678 \def\kernel@ifnextchar{\HyPsd@ifnextchar\kernel@ifnextchar}%
679 \def\new@ifnextchar{\HyPsd@ifnextchar\new@ifnextchar}%
680 \let\@protected@testopt\HyPsd@protected@testopt
```

Support for package 'xargs':

```
681 \let\@protected@testopt@xargs\HyPsd@protected@testopt
```

### 6.2.2 Expansion

There are several possibilities to expand tokens within  $\LaTeX$ :

**\protected@edef:** The weakest form isn't usable, because it does not expand the font encoding commands. They are made robust and protect themselves.

**\csname:** First the string is expanded within a  $\csname$  and  $\endcsname$ . Then the command name is converted to characters with catcode 12 by  $\string$  and the first escape character removed by  $@gobble$ . This method has the great *advantage* that stomach tokens that aren't allowed in PDF strings are detected by  $\TeX$  and reported as errors in order to force the user to write correct things. So he get no wrong results by forgetting the proofreading of his text. But the *disadvantage* is that old wrong code cannot processed without errors. Mainly the error message is very cryptic and for the normal user hard to understand.  $\TeX$  provides no way to catch the error caused by  $\csname$  or allows to support the user with a descriptive error message. Therefore the experienced user had to enable this behaviour by an option **exactdef** in previous versions less or equal 6.50.

**\edef** This version uses this standard form for expansion. It is stronger than  $\LaTeX$ 's  $\protected@edef$ . So the font encoding mechanism works and the glyph commands are converted to the correct tokens for PDF strings with the definitions of the PD1 encoding. Because the protecting mechanism of  $\LaTeX$  doesn't work within an  $\edef$ , there are situations thinkable where code can break. For example, assignments and definitions aren't performed and so undefined command errors or argument parsing errors can occur. But this is only a compatibility problem with old texts. Now there are possibilities to write code that gives correct PDF strings (see  $\texorpdfstring$ ). In the most cases unexpandable commands and tokens (math shift, grouping characters) remains. They don't cause an error like with  $\csname$ . However a PDF reader isn't  $\TeX$ , so these tokens are viewed verbatim. So this version detects them now, and removes them with an descriptive warning for the user. As additional features xspace support is possible and grouping characters can be used without problems, because they are removed silently.

**Generic messages.** While expanding via  $\xdef$  the  $\Generic...$  messages don't work and causes problems (error messages, invalid .out file). So they are disabled while expanding and removed silently, because a user warning would be too expensive (memory and runtime,  $\pdfstringdef$  is slow enough).

```
682 \begingroup
683 \let\GenericError@gobblefour
684 \let\GenericWarning@gobbletwo
685 \let\GenericInfo@gobbletwo
```

**Package french.** This fix only works, if  $\GenericError$  is disabled.

```
686 \ifx\nofrenchguillemets\undefined
687 \else
688 \nofrenchguillemets
689 \fi
```

**Definition commands and expansion.** Redefining the defining commands (see sec. 6.5.12). The original meaning of `\xdef` is saved in `\Hy@temp`.

```
690 \let\Hy@temp\xdef
691 \let\def\HyPsd@DefCommand
692 \let\gdef\HyPsd@DefCommand
693 \let\edef\HyPsd@DefCommand
694 \let\xdef\HyPsd@DefCommand
695 \let\futurelet\HyPsd@LetCommand
696 \let\let\HyPsd@LetCommand
697 \Hy@temp#1{#2}%
698 \endgroup
```

### 6.2.3 Postprocessing

If the string is empty time can be saved by omitting the postprocessing process.

```
699 \ifx#1\@empty
700 \else
```

**Protecting spaces and removing grouping characters.** In order to check the tokens we must separate them. This will be done with `TEX`'s argument parsing. With this method we must take the following into account, that makes things a little more complicated:

- `TEX` does not accept a space as an undelimited argument, it cancels space tokens while looking for an undelimited argument. Therefore we must protect the spaces now.
- An argument can be a single token or a group of many tokens. And within curly braces tokens aren't found by `TEX`'s argument scanning process. Third curly braces as grouping characters cannot be expanded further, so they don't vanish by the string expansion above. So these characters with catcode 1 and 2 are removed in the following and replaced by an marker for the xspace support.
- `TEX` silently removes the outmost pair of braces of an argument. To prevent this on unwanted places, in the following the character `|` is appended to the string to make an outer brace to an inner one.

First the top level spaces are protected by replacing. Then the string is scanned to detect token groups. Each token group will now be space protected and again scanned for another token groups.

```
701 \HyPsd@ProtectSpaces#1%
702 \let\HyPsd@String\@empty
703 \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
704 \global\let#1\HyPsd@String
```

**Check tokens.** After removing the spaces and the grouping characters the string now should only consist of the following tokens/catcodes:

- 0 command names with start with an escape character.
- 3 math shift
- 4 alignment tabs
- 6 parameter, but this is unlikely.
- 7 superscript
- 8 subscript
- 11 letter
- 12 other
- 13 commands that are active characters.

After `\HyPsd@CheckCatcodes` the command `\HyPsd@RemoveMask` is reused to remove the group protection character `|`. This character is needed to ensure that the string at least consists of one token if `\HyPsd@CheckCatcodes` is called.

Because of internal local assignments and tabulars group braces are used.

```

705 \let\HyPsd@SPACEOPTI\relax
706 {%
707   \let\HyPsd@String\@empty
708   \expandafter\HyPsd@CheckCatcodes#1\HyPsd@end
709   \global\let#1\HyPsd@String
710 }%
711 \expandafter\HyPsd@RemoveMask\expandafter
712 |\expandafter\@empty#1\HyPsd@end#1%
```

`\HyPsd@CheckCatcodes` should no have removed the tokens with catcode 3, 4, 7, and 8. Because a parameter token (6) would cause to many errors before, there should now be only tokens with catcodes 11 or 12. So I think there is no need for a safety step like:

```
\xdef#1{\expandafter\strip@prefix\meaning#1}%
```

**Looking for wrong glyphs.** The case that glyphs aren't defined in the PD1 encoding is caught above in such a way, that the glyph name and a marker is inserted into the string. Now we can safely scan the string for this marker and provide a descriptive warning.

```

713 \expandafter
714 \HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
715 \let\HyPsd@String\@empty
716 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
717 \global\let#1\HyPsd@String
```

**Backslash.** The double backslash disturbs parsing octal sequences, for example in an string like `abc\\051` the sequence `\051` is detected although the second `\` belongs to the first backslash.

```
718 \HyPsd@StringSubst{\\}{\textbackslash}#1%
```

**Spaces.** All spaces have already the form `\040`. The last postprocessing step will be an optimizing of the spaces, so we already introduce already the necessary command `\HyPsd@SPACEOPTI`. But first it is defined to be `\relax` in order to prevent a too early expansion by an `\edef`. Secondly a `\relax` serves as a marker for a token that is detected by `\xspace`.

The code of `frenchb.ldf` can produce an additional space before `\guillemetright`, because `\lastskip` and `\unskip` do not work. Therefore it is removed here.

```

719 \ifHy@unicode
720 \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
721 \HyPsd@SPACEOPTI#1%
722 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
723 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
724 {\HyPsd@SPACEOPTI\80\273}#1%
725 \else
726 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
727 \expandafter\HyPsd@Subst\expandafter{%
728 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
729 \string\273}\HyPsd@SPACEOPTI\273}#1%
730 \fi

```

**Right parenthesis.** Also `\xspace` detects a right parenthesis. For the `\xspace` support and the following parenthesis check the different parenthesis notations `)`, `\)`, and `\051` are converted to one type `\)` and before `\HyPsd@empty` with the meaning of `\relax` is introduced for `\xspace`. By redefining to `\@empty` `\HyPsd@empty` can easily be removed later.

```

731 \ifHy@unicode
732 \HyPsd@StringSubst{\}){\80\051}#1%
733 \HyPsd@Subst){\80\051}#1%
734 \let\HyPsd@empty\relax
735 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
736 {\HyPsd@empty\80\051}#1%
737 \else
738 \HyPsd@StringSubst{\}){\051}#1%
739 \HyPsd@Subst){\051}#1%
740 \let\HyPsd@empty\relax
741 \HyPsd@StringSubst{\051}{\HyPsd@empty\string\})}#1%
742 \fi

```

**Support for package `xspace`.** `\xspace` looks for the next token and decides if it expands to a space or not. Following tokens prevent its transformation to a space: Beginning and end of group, handled above by replacing by an italic correction, several punctuation marks, a closing parentheses, and several spaces.

Without package `xspace` there are tokens with catcode 11 and 12, `\HyPsd@empty` and `\HyPsd@SPACEOPTI`. With package `xspace` marker for the italic correction `\/` and `\xspace` come with. In the package `xspace` case the two markers are replaced by commands and an `\edef` performs the `\xspace` processing.

In the opposite of the original `\xspace` `\HyPsd@xspace` uses an argument instead of a `\futurelet`, so we have to provide such an argument, if `\HyPsd@xspace` comes last. Because `\HyPsd@Subst` with several equal tokens (`--`) needs a safe last token, in both cases the string gets an additional `\HyPsd@empty`.

```

743 \expandafter\HyPsd@Subst\expandafter{\//}\HyPsd@empty#1%
744 \@ifundefined{@xspace}{%
745 }{%
746 \let\HyPsd@xspace\relax
747 \expandafter\HyPsd@Subst\expandafter
748 {\HyPsd@XSPACE}\HyPsd@xspace#1%
749 \let\HyPsd@xspace\HyPsd@doxspace
750 }%
751 \xdef#1{#1\HyPsd@empty}%

```

**Ligatures.** T<sub>E</sub>X forms ligatures in its stomach, but the PDF strings are treated only by T<sub>E</sub>X's mouth. The PDFDocEncoding contains some ligatures, but the current version 3 of the AcrobatReader lacks the fi and fl glyphs, and the Linux version lacks the emdash and endash glyphs. So the necessary code is provided here, but currently disabled, hoping that version 4 of the AcrobatReader is better. To break the ligatures the user can use an empty group, because it leads to an insertion of an \HyPsd@empty. If this ligature code will be enabled some day, then the italic correction should also break the ligatures. Currently this occurs only, if package xspace is loaded.

Since newer AcrobatReader versions now show the en- and emdash in a correct way (AR7/Linux, AR8/Linux), the substitution code for them is enabled starting with version 6.78l.

```

752 \HyPsd@Subst{---}\textemdash#1%
753 \HyPsd@Subst{--}\textendash#1%
754 % \HyPsd@Subst{fi}\textfi#1%
755 % \HyPsd@Subst{fl}\textfl#1%
756 \HyPsd@Subst{!}\textexclamdown#1%
757 \HyPsd@Subst{?}\textquestiondown#1%
```

With the next \edef we get rid of the token \HyPsd@empty.

```

758 \let\HyPsd@empty\@empty
```

**Left parentheses.** Left parentheses are now converted to safe forms to avoid problems with unmatched ones (\( with PDFDocEncoding, the octal sequence with Unicode.

An optimization is possible. Matched parentheses can be replaced by a () pair. But this code is removed to save T<sub>E</sub>X memory and time.

```

759 \ifHy@unicode
760 \HyPsd@StringSubst\(\textparenleft#1%
761 \HyPsd@Subst(\textparenleft#1%
762 \else
763 \HyPsd@StringSubst\({\050}#1%
764 \HyPsd@Subst({\050}#1%
765 \HyPsd@StringSubst{\050}\string\{ }#1%
766 \fi
```

**Optimizing spaces.** Spaces are often used, but they have a very long form \040. They are converted back to real spaces, but not all, so that no space follows after another. In the bookmark case several spaces are written to the .out file, but if the entries are read back, several spaces are merged to a single one.

With Unicode the spaces are replaced by their octal sequences.

```

767 \ifHy@unicode
768 \edef\HyPsd@SPACEOPTI{\80\040}%
769 \else
770 \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
771 \fi
772 \xdef#1{#1\@empty}%
773 \fi
```

**Converting to Unicode.** At last the eight bit letters have to be converted to Unicode, the masks \8 and \9 are removed and the Unicode marker is added.

```

774 \endgroup
775 \begingroup
776 \ifHy@unicode
777 \HyPsd@ConvertToUnicode#1%

```

#### Try conversion back to PDFDocEncoding.

```

778 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
779 \EdefUnescapeString\HyPsd@temp#1%
780 \iftutex
781 \let\HyPsd@UnescapedString\HyPsd@temp
782 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
783 {utf16be}{ascii-print}{%
784 \EdefEscapeString\HyPsd@temp\HyPsd@temp
785 \global\let#1\HyPsd@temp
786 \HyPsd@EscapeTeX#1%
787 \Hy@unicodetrue
788 }{%
789 \HyPsd@EscapeTeX#1%
790 }%
791 \else
792 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
793 {utf16be}{pdfdoc}{%
794 \EdefEscapeString\HyPsd@temp\HyPsd@temp
795 \global\let#1\HyPsd@temp
796 \HyPsd@EscapeTeX#1%
797 \Hy@unicodetrue
798 }{%
799 \fi
800 \fi
801 \fi

```

**User hook.** The hook `\pdfstringdefPostHook` can be used for the purpose to postprocess the string further.

```

802 \pdfstringdefPostHook#1%
803 \endgroup
804 }

```

`\Hy@pdfstringdef`

```

805 \def\Hy@pdfstringdef#1#2{%
806 \pdfstringdef\Hy@gtemp{#2}%
807 \let#1\Hy@gtemp
808 }

```

## 6.3 Encodings

### 6.3.1 XeTeX

change 2020-05-13: the special code for XeTeX big chars has been removed as no longer needed.

### 6.3.2 Workaround for package linguex

```

809 \@ifpackageloaded{linguex}{%
810   \let\HyLinguex@OrgB\b
811   \let\HyLinguex@OrgC\c
812   \let\HyLinguex@OrgD\d
813   \def\HyLinguex@Restore{%
814     \let\b\HyLinguex@OrgB
815     \let\c\HyLinguex@OrgC
816     \let\d\HyLinguex@OrgD
817   }%
818   \Hy@AtEndOfPackage{%
819     \pdfstringdefDisableCommands{%
820       \@ifundefined{oldb}{-}{\let\b\oldb}%
821       \@ifundefined{oldc}{-}{\let\c\oldc}%
822       \@ifundefined{oldd}{-}{\let\d\oldd}%
823     }%
824   }%
825 }{%
826   \let\HyLinguex@Restore\relax
827 }%

```

### 6.3.3 Catcodes saving and restoring for .def files

\Hy@SaveCatcodeSettings

```

828 \def\Hy@SaveCatcodeSettings#1{%
829   \expandafter\edef\csname Hy@cat@#1\endcsname{%
830     \endlinechar=\the\endlinechar\relax
831     \catcode32 \the\catcode32\relax % (space)
832     \catcode34 \the\catcode34\relax % "
833     \catcode35 \the\catcode35\relax % #
834     \catcode37 \the\catcode37\relax % (percent)
835     \catcode40 \the\catcode40\relax % (
836     \catcode41 \the\catcode41\relax % )
837     \catcode42 \the\catcode42\relax % *
838     \catcode46 \the\catcode46\relax % .
839     \catcode58 \the\catcode58\relax % :
840     \catcode60 \the\catcode60\relax % <
841     \catcode61 \the\catcode61\relax % =
842     \catcode62 \the\catcode62\relax % >
843     \catcode64 \the\catcode64\relax % @
844     \catcode91 \the\catcode91\relax % [
845     \catcode92 \the\catcode92\relax % (backslash)
846     \catcode93 \the\catcode93\relax % ]
847     \catcode123 \the\catcode123\relax % {
848     \catcode124 \the\catcode124\relax % |
849     \catcode125 \the\catcode125\relax % }
850   }%
851   \endlinechar=-1 %
852   \catcode32 10 % (space)
853   \catcode34 12 % "
854   \catcode35 6 % #
855   \catcode37 14 % (percent)
856   \catcode40 12 % (
857   \catcode41 12 % )

```

```

858 \catcode42 12 % *
859 \catcode46 12 % .
860 \catcode58 12 % :
861 \catcode60 12 % <
862 \catcode61 12 % =
863 \catcode62 12 % >
864 \catcode91 12 % [
865 \catcode92 0 % (backslash)
866 \catcode93 12 % ]
867 \catcode123 1 % {
868 \catcode124 12 % |
869 \catcode125 2 % }
870 \makeatletter
871 }

```

`\Hy@RestoreCatcodeSettings`

```

872 \def\Hy@RestoreCatcodeSettings#1{%
873   \csname Hy@cat@#1\endcsname
874   \expandafter\let\csname Hy@cat@#1\endcsname\relax
875 }

```

#### 6.3.4 PD1 encoding

The PD1 encoding implements the PDFDocEncoding for use with L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>'s NFSS. Because the informational strings are not set by T<sub>E</sub>X's typesetting mechanism but for interpreting by the PDF reader, the glyphs of the PD1 encoding are implemented to be safely written to a file (PDF output file, .out file).

The PD1 encoding can be specified as an option of the 'fontenc' package or loaded here. It does not matter what font family is selected, as T<sub>E</sub>X does not process it anyway. So use CM.

```

876 \@ifundefined{T@PD1}{%
877   \Hy@SaveCatcodeSettings{pd1}%
878   \input{pd1enc.def}%
879   \Hy@RestoreCatcodeSettings{pd1}%
880   \HyLinguex@Restore
881 }{}
882 \DeclareFontFamily{PD1}{pdf}{}
883 \DeclareFontShape{PD1}{pdf}{m}{n}{<-> cmr10 }{}
884 \DeclareFontSubstitution{PD1}{pdf}{m}{n}

```

#### 6.3.5 PU encoding

The PU encoding implements the Unicode encoding for use with L<sup>A</sup>T<sub>E</sub>X's NFSS. Because of large memory requirements the encoding file for Unicode support is only loaded, if option `unicode` is specified as package option. change 2020-08-14: Starting with version v7.00f the file is always loaded and unicode is the default option.

`\HyPsd@LoadUnicode` Because the file `puenc.def` takes a lot of memory, the loading is defined in the macro `\HyPsd@LoadUnicode` called by the package option `unicode`.

```

885 \def\HyPsd@LoadUnicode{%
886   \@ifundefined{T@PU}{%
887     \Hy@SaveCatcodeSettings{pu}%

```

```

888 \input{puenc.def}%
889 \Hy@RestoreCatcodeSettings{pu}%
890 \HyLinguex@Restore
891 }{}%
892 \DeclareFontFamily{PU}{pdf}{}%
893 \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
894 \DeclareFontSubstitution{PU}{pdf}{m}{n}%
895 \HyPsd@LoadExtra
896 \let\HyPsd@LoadUnicode\relax
897 }

```

\HyPsd@LoadExtra

```

898 \def\Hy@iffileloaded#1{%
899 \ifundefined{ver@#1}\@secondoftwo\@firstoftwo
900 }
901 \def\HyPsd@LoadExtra{%
902 \ifHy@psdextra
903 \Hy@iffileloaded{puenc.def}{}%
904 \Hy@SaveCatcodeSettings{psdextra}%
905 \input{psdextra.def}%
906 \Hy@RestoreCatcodeSettings{psdextra}%
907 \let\HyPsd@LoadExtra\relax
908 }{}%
909 \fi
910 }

```

## 6.4 Additional user commands

### 6.4.1 \texorpdfstring

\texorpdfstring While expanding the string in \pdfstringdef the switch \ifHy@pdfstring is set. This is used by the full expandible macro \texorpdfstring. It expects two arguments, the first contains the string that will be set and processed by T<sub>E</sub>X's stomach, the second contains the replacement for PDF strings.

```

911 \def\texorpdfstring{%
912 \ifHy@pdfstring
913 \expandafter\@secondoftwo
914 \else
915 \expandafter\@firstoftwo
916 \fi
917 }

```

### 6.4.2 Hooks for \pdfstringdef

\pdfstringdefPreHook Default definition of the hooks for \pdfstringdef. The construct \@ifundefined \pdfstringdefPostHook with \let is a little bit faster than \providecommand.

```

918 \@ifundefined{pdfstringdefPreHook}{}%
919 \let\pdfstringdefPreHook\@empty
920 {}%
921 \@ifundefined{pdfstringdefPostHook}{}%
922 \let\pdfstringdefPostHook\@gobble
923 {}%

```

`\pdfstringdefDisableCommands` In `\pdfstringdefPreHook` the user can add code that is executed before the string, that have to be converted by `\pdfstringdef`, is expanded. So replacements for problematic macros can be given. The code in `\pdfstringdefPreHook` should not be replaced perhaps by an `\renewcommand`, because a previous meaning gets lost.

Macro `\pdfstringdefDisableCommands` avoids this, because it reuses the old meaning of the hook and appends the new code to `\pdfstringdefPreHook`, e.g.:

```
\pdfstringdefDisableCommands{%
  \let~\textasciitilde
  \def\url{\pdfstringdefWarn\url}%
  \let\textcolor\@gobble
}%
```

In the argument of `\pdfstringdefDisableCommands` the character @ can be used in command names. So it is easy to use useful L<sup>A</sup>T<sub>E</sub>X commands like `\@gobble` or `\@firstofone`.

```
924 \def\pdfstringdefDisableCommands{%
925   \begingroup
926     \makeatletter
927     \HyPsd@DisableCommands
928 }
```

`\HyPsd@DisableCommands`

```
929 \long\def\HyPsd@DisableCommands#1{%
930   \Hy@GlobalAppendToMacro\pdfstringdefPreHook{#1}%
931   \endgroup
932 }
```

`\pdfstringdefWarn` The purpose of `\pdfstringdefWarn` is to produce a warning message, so the user can see, that something can go wrong with the conversion to PDF strings.

The prefix `\<>` is added to the token. `\noexpand` protects the probably undefined one during the first expansion step. Then `\HyPsd@CheckCatcodes` can detect the not allowed token, `\HyPsd@CatcodeWarning` prints a warning message, after `\HyPsd@RemovePrefix` has removed the prefix.

`\pdfstringdefWarn` is intended for document authors or package writers, examples for use can be seen in the definition of `\HyPsd@ifnextchar` or `\HyPsd@protected@testopt`.

```
933 \def\pdfstringdefWarn#1{%
934   \expandafter\noexpand\csname<>-string#1\endcsname
935 }
```

## 6.5 Help macros for expansion

### 6.5.1 \ignorespaces

`\HyPsd@ignorespaces` With the help of a trick using `\romannumeral` the effect of `\ignorespaces` can be simulated a little, In a special case using an alphabetic constant `\romannumeral` eats an optional space. If the constant is zero, then the `\romannumeral` expression vanishes. The following macro uses this trick twice, thus `\HyPsd@ignorespaces` eats up to two following spaces.

```
936 \begingroup
```

```

937 \catcode0=12 %
938 \def\x{\endgroup
939 \def\HyPsd@ignorespaces{%
940 \romannumeral\expandafter`\expandafter^^@%
941 \romannumeral^^@%
942 }%
943 }%
944 \x

```

### 6.5.2 Babel languages

change 2020-10-10: moved language patches to its own file as a first step toward removing them completely.

```

945 \newif\ifHy@next
946 \</package>

```

Since version 2008/03/16 v3.8j babel used inside `\AtBeginDocument`:

```

\pdfstringdefDisableCommands{%
\languageshorthands{system}%
}

```

As consequence the shorthands were shown in the bookmarks, and required a hyperref patch. In version 3.48 babel removed this unneeded code and so the patch could be removed.

Nothing to do for english. change 2020/07/16: removed patch for french. No longer needed. change 2020/07/21: removed patches for german, ngerman. Will be done by the language package. <https://github.com/jspitz/babel-german/issues/4> change 2020/10/10: removed patches for danish, dutch, finnish, portugues, swedish, usorbian, slovene see <https://github.com/latex3/babel/issues/84> change 2020/10/10: removed patch for macedonian, ukrainian; maintainers notified. change 2020/10/11: removed patch for russian, has been merged into babel-russian see <https://github.com/kia999/babel-russian/pull/3> change 2021/02/04: removed patches for greek numerals, code is now in babel-greek. spanish: Nested quoting environments are not supported (<<, >>). change 2021/07/19: removed patches for spanish, code is now in babel-spanish.

```

947 \*package>

```

### 6.5.3 CJK patch

```

948 \RequirePackage{intcalc}[2007/09/27]

\HyPsd@CJKhook

949 \def\HyPsd@CJKhook{%
950 \ifpackageloaded{CJK}{%
951 \let\CJK@kern\relax
952 \let\CJKkern\relax
953 \let\CJK@CJK\relax
954 \ifHy@CJKbookmarks
955 \HyPsd@CJKhook@bookmarks
956 \fi
957 \HyPsd@CJKhook@unicode
958 }-}%
959 }

```

#### 6.5.4 CJK bookmarks

`\HyPsd@CJKhook` Some internal commands of package `cjk` are redefined to avoid error messages. For a rudimental support of CJK bookmarks the active characters are redefined so that they print themselves.

After preprocessing of Big5 encoded data the following string for a double-byte character is emitted:

```
^^7f<arg1>^^7f<arg2>^^7f
```

`<arg1>` is the first byte in the range (always  $> 0x80$ ); `<arg2>` is the second byte in decimal notation ( $\geq 0x40$ ).

```

960 \begingroup
961   \catcode"7F=\active
962   \toks@{%
963     \let\CJK@ignorespaces\empty
964     \def\CJK@char#1{\@gobbletwo}%
965     \let\CJK@charx\@gobblefour
966     \let\CJK@punctchar\@gobblefour
967     \def\CJK@punctcharx#1{\@gobblefour}%
968     \catcode"7F=\active
969     \def^^7f#1^^7f#2^^7f{%
970       \string #1\HyPsd@DecimalToOctal{#2}%
971     }%
972     % ... ?
973     \ifHy@unicode
974       \def\Hy@cjkpu{\80}%
975     \else
976       \let\Hy@cjkpu\@empty
977     \fi
978     \HyPsd@CJKActiveChars
979   }%
980   \count@=127 %
981   \@whilenum\count@<255 \do{%
982     \advance\count@ by 1 %
983     \lccode`\~=\count@
984     \lowercase{%
985       \toks@\expandafter{\the\toks@ ~}%
986     }%
987   }%
988   \toks@\expandafter{\the\toks@ !}%
989   \xdef\HyPsd@CJKhook@bookmarks{%
990     \the\toks@
991   }%
992 \endgroup
```

`\HyPsd@CJKActiveChars` The macro `\HyPsd@CJKActiveChars` is only defined to limit the memory consumption of `\HyPsd@CJKhook`.

```

993 \def\HyPsd@CJKActiveChars#1{%
994   \ifx#1!%
995     \let\HyPsd@CJKActiveChars\relax
996   \else
997     \edef#1{\noexpand\Hy@cjkpu\string#1}%
998   \fi
```

```

999 \HyPsd@CJKActiveChars
1000 }

```

\HyPsd@DecimalToOctal A character, given by the decimal number is converted to a PDF character.

```

1001 \def\HyPsd@DecimalToOctal#1{%
1002 \ifcase #1 %
1003 \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1004 \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1005 \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1006 \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1007 \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1008 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1009 \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1010 \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
1011 \or @\or A\or B\or C\or D\or E\or F\or G%
1012 \or H\or I\or J\or K\or L\or M\or N\or O%
1013 \or P\or Q\or R\or S\or T\or U\or V\or W%
1014 \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
1015 \or \140\or a\or b\or c\or d\or e\or f\or g%
1016 \or h\or i\or j\or k\or l\or m\or n\or o%
1017 \or p\or q\or r\or s\or t\or u\or v\or w%
1018 \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
1019 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1020 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1021 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1022 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1023 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1024 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1025 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1026 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1027 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1028 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1029 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1030 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1031 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1032 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1033 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1034 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1035 \fi
1036 }

```

### 6.5.5 CJK unicode

\HyPsd@CJKhook@unicode

```

1037 \def\HyPsd@CJKhook@unicode{%
1038 \let\Unicode\HyPsd@CJK@Unicode
1039 \let\CJKnumber\HyPsd@CJKnumber
1040 \let\CJKdigits\HyPsd@CJKdigits
1041 }

```

\HyPsd@CJK@Unicode

```

1042 \def\HyPsd@CJK@Unicode#1#2{%
1043 \ifnum#1<256 %
1044 \HyPsd@DecimalToOctalFirst{#1}%

```

```

1045 \HyPsd@DecimalToOctalSecond{#2}%
1046 \else
1047 \933%
1048 \expandafter\expandafter\expandafter\HyPsd@HighA
1049 \intcalcDiv{#1}{4}!%
1050 \933%
1051 \ifcase\intcalcMod{#1}{4} %
1052 4\or 5\or 6\or 7%
1053 \fi
1054 \HyPsd@DecimalToOctalSecond{#2}%
1055 \fi
1056 }

1057 \def\HyPsd@HighA#1!{%
1058 \expandafter\expandafter\expandafter\HyPsd@HighB
1059 \IntCalcDiv#1!64!!%
1060 \expandafter\expandafter\expandafter\HyPsd@HighD
1061 \IntCalcMod#1!64!!%
1062 }
1063 \def\HyPsd@HighB#1!{%
1064 \expandafter\expandafter\expandafter\HyPsd@HighC
1065 \IntCalcDec#1!!%
1066 }
1067 \def\HyPsd@HighC#1!{%
1068 \IntCalcDiv#1!4!%
1069 \@backslashchar
1070 \IntCalcMod#1!4!%
1071 }
1072 \def\HyPsd@HighD#1!{%
1073 \ifcase\IntCalcDiv#1!8! %
1074 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1075 \fi
1076 \ifcase\IntCalcMod#1!8! %
1077 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1078 \fi
1079 }
1080 \def\HyPsd@DecimalToOctalFirst#1{%
1081 \9%
1082 \ifcase#1 %
1083 000\or 001\or 002\or 003\or 004\or 005\or 006\or 007%
1084 \or 010\or 011\or 012\or 013\or 014\or 015\or 016\or 017%
1085 \or 020\or 021\or 022\or 023\or 024\or 025\or 026\or 027%
1086 \or 030\or 031\or 032\or 033\or 034\or 035\or 036\or 037%
1087 \or 040\or 041\or 042\or 043\or 044\or 045\or 046\or 047%
1088 \or 050\or 051\or 052\or 053\or 054\or 055\or 056\or 057%
1089 \or 060\or 061\or 062\or 063\or 064\or 065\or 066\or 067%
1090 \or 070\or 071\or 072\or 073\or 074\or 075\or 076\or 077%
1091 \or 100\or 101\or 102\or 103\or 104\or 105\or 106\or 107%
1092 \or 120\or 111\or 112\or 113\or 114\or 115\or 116\or 117%
1093 \or 120\or 121\or 122\or 123\or 124\or 125\or 126\or 127%
1094 \or 130\or 131\or 132\or 133\or 134\or 135\or 136\or 137%
1095 \or 140\or 141\or 142\or 143\or 144\or 145\or 146\or 147%
1096 \or 150\or 151\or 152\or 153\or 154\or 155\or 156\or 157%
1097 \or 160\or 161\or 162\or 163\or 164\or 165\or 166\or 167%

```

```

1098 \or 170\or 171\or 172\or 173\or 174\or 175\or 176\or 177%
1099 \or 200\or 201\or 202\or 203\or 204\or 205\or 206\or 207%
1100 \or 210\or 211\or 212\or 213\or 214\or 215\or 216\or 217%
1101 \or 220\or 221\or 222\or 223\or 224\or 225\or 226\or 227%
1102 \or 230\or 231\or 232\or 233\or 234\or 235\or 236\or 237%
1103 \or 240\or 241\or 242\or 243\or 244\or 245\or 246\or 247%
1104 \or 250\or 251\or 252\or 253\or 254\or 255\or 256\or 257%
1105 \or 260\or 261\or 262\or 263\or 264\or 265\or 266\or 267%
1106 \or 270\or 271\or 272\or 273\or 274\or 275\or 276\or 277%
1107 \or 300\or 301\or 302\or 303\or 304\or 305\or 306\or 307%
1108 \or 310\or 311\or 312\or 313\or 314\or 315\or 316\or 317%
1109 \or 320\or 321\or 322\or 323\or 324\or 325\or 326\or 327%
1110 \or 330\or 331\or 332\or 333\or 334\or 335\or 336\or 337%
1111 \or 340\or 341\or 342\or 343\or 344\or 345\or 346\or 347%
1112 \or 350\or 351\or 352\or 353\or 354\or 355\or 356\or 357%
1113 \or 360\or 361\or 362\or 363\or 364\or 365\or 366\or 367%
1114 \or 370\or 371\or 372\or 373\or 374\or 375\or 376\or 377%
1115 \fi
1116 }
1117 \def\HyPsd@DecimalToOctalSecond#1{%
1118 \ifcase #1 %
1119 \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1120 \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1121 \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1122 \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1123 \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1124 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1125 \or \060\or \061\or \062\or \063\or \064\or \065\or \066\or \067%
1126 \or \070\or \071\or \072\or \073\or \074\or \075\or \076\or \077%
1127 \or \100\or \101\or \102\or \103\or \104\or \105\or \106\or \107%
1128 \or \110\or \111\or \112\or \113\or \114\or \115\or \116\or \117%
1129 \or \120\or \121\or \122\or \123\or \124\or \125\or \126\or \127%
1130 \or \130\or \131\or \132\or \133\or \134\or \135\or \136\or \137%
1131 \or \140\or \141\or \142\or \143\or \144\or \145\or \146\or \147%
1132 \or \150\or \151\or \152\or \153\or \154\or \155\or \156\or \157%
1133 \or \160\or \161\or \162\or \163\or \164\or \165\or \166\or \167%
1134 \or \170\or \171\or \172\or \173\or \174\or \175\or \176\or \177%
1135 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1136 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1137 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1138 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1139 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1140 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1141 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1142 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1143 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1144 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1145 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1146 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1147 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1148 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1149 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1150 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1151 \fi

```

```

1152 }
1153 \def\HyPsd@CJKnumber#1{%
1154   \ifnum#1<\z@
1155     \CJK@minus
1156     \expandafter\HyPsd@@CJKnumber\expandafter{\number-\number#1}%
1157   \else
1158     \expandafter\HyPsd@@CJKnumber\expandafter{\number#1}%
1159   \fi
1160 }
1161 \def\HyPsd@@CJKnumber#1{%
1162   \ifcase#1 %
1163     \CJK@zero\or\CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1164     \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine\or
1165     \CJK@ten\or\CJK@ten\CJK@one\or\CJK@ten\CJK@two\or
1166     \CJK@ten\CJK@three\or\CJK@ten\CJK@four\or\CJK@ten\CJK@five\or
1167     \CJK@ten\CJK@six\or\CJK@ten\CJK@seven\or\CJK@ten\CJK@eight\or
1168     \CJK@ten\CJK@nine
1169   \else
1170     \ifnum#1<10000 %
1171       \HyPsd@CJKnumberFour#1!\@empty{20}%
1172       \@empty
1173     \else
1174       \ifnum#1<100000000 %
1175         \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1176         \IntCalcDiv#1!10000!%
1177         !\{20}%
1178         \CJK@tenthousand
1179         \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1180         \IntCalcMod#1!10000!%
1181         !\CJK@zero{10}%
1182         \@empty
1183       \else
1184         \expandafter\HyPsd@CJKnumberLarge
1185         \number\IntCalcDiv#1!100000000!\expandafter!%
1186         \number\IntCalcMod#1!100000000!!%
1187       \fi
1188     \fi
1189   \fi
1190 }
1191 \def\HyPsd@CJKnumberLarge#1!#2!{%
1192   \HyPsd@CJKnumberFour#1!\{20}%
1193   \CJK@hundredmillion
1194   \ifnum#2=\z@
1195   \else
1196     \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1197     \IntCalcDiv#2!10000!%
1198     !\CJK@zero{10}%
1199     \CJK@tenthousand
1200     \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1201     \IntCalcMod#2!10000!%
1202     !\CJK@zero{10}%
1203     \@empty
1204   \fi
1205 }

```

```

1206 \def\HyPsd@CJKnumberFour#1!#2#3{%
1207   \ifnum#1=\z@
1208     \expandafter\@gobble
1209   \else
1210     \ifnum#1<1000 %
1211       #2%
1212       \HyPsd@CJKnumberThree#1!#{#3}%
1213     \else
1214       \HyPsd@@@CJKnumber{\IntCalcDiv#1!1000!}%
1215       \CJK@thousand
1216       \expandafter\expandafter\expandafter\HyPsd@CJKnumberThree
1217       \IntCalcMod#1!1000!%
1218       !\CJK@zero{10}%
1219     \fi
1220   \fi
1221 }
1222 \def\HyPsd@CJKnumberThree#1!#2#3{%
1223   \ifnum#1=\z@
1224   \else
1225     \ifnum#1<100 %
1226       #2%
1227       \HyPsd@CJKnumberTwo#1!#{#3}%
1228     \else
1229       \HyPsd@@@CJKnumber{\IntCalcDiv#1!100!}%
1230       \CJK@hundred
1231       \expandafter\expandafter\expandafter\HyPsd@CJKnumberTwo
1232       \IntCalcMod#1!100!%
1233       !\CJK@zero{10}%
1234     \fi
1235   \fi
1236 }
1237 \def\HyPsd@CJKnumberTwo#1!#2#3{%
1238   \ifnum#1=\z@
1239   \else
1240     \ifnum#1<#3 %
1241       #2%
1242       \HyPsd@@@CJKnumber{#1}%
1243     \else
1244       \HyPsd@@@CJKnumber{\IntCalcDiv#1!10!}%
1245       \CJK@ten
1246       \ifnum\IntCalcMod#1!10!=\z@
1247       \else
1248         \HyPsd@@@CJKnumber{\IntCalcMod#1!10!}%
1249       \fi
1250     \fi
1251   \fi
1252 }
1253 \def\HyPsd@CJKdigits#1{%
1254   \ifx*#1\relax
1255     \expandafter\HyPsd@@@CJKdigits\expandafter\CJK@zero
1256   \else
1257     \HyPsd@@@CJKdigits\CJK@null{#1}%
1258   \fi
1259 }

```

```

1260 \def\HyPsd@@@CJKdigits#1#2{%
1261   \ifx\|#2\|
1262   \else
1263     \HyPsd@@@CJKdigits#1#2\@nil
1264   \fi
1265 }%
1266 \def\HyPsd@@@CJKdigits#1#2#3\@nil{%
1267   \HyPsd@CJKdigit#1{#2}%
1268   \ifx\|#3\|
1269     \expandafter\@gobble
1270   \else
1271     \expandafter\@firstofone
1272   \fi
1273   {%
1274     \HyPsd@@@CJKdigits#1#3\@nil
1275   }%
1276 }
1277 \def\HyPsd@CJKdigit#1#2{%
1278   \ifcase#2 %
1279     #1\or
1280     \CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1281     \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine
1282   \fi
1283 }

```

### 6.5.6 \@inmathwarn-Patch

`\HyPsd@inmathwarn` The patch of `\@inmathwarn` is needed to get rid of the infinite error loop with glyphs of other encodings (see the explanation above). Potentially the patch is dangerous, if the code in `ltoutenc.dtx` changes. Checked with  $\text{\LaTeX} 2_{\epsilon}$  versions [1998/06/01] and [1998/12/01]. I expect that versions below [1995/12/01] don't work.

To understand the patch easier, the original code of `\@current@cmd` and `\@changed@cmd` follows ( $\text{\LaTeX} 2_{\epsilon}$  release [1998/12/01]). In the normal case `\pdfstringdef` is executed in a context where `\protect` has the meaning of `\@typesetprotect` (`=\relax`).

```

\def\@current@cmd#1{%
  \ifx\protect\@typesetprotect
    \@inmathwarn#1%
  \else
    \noexpand#1\expandafter\@gobble
  \fi}
\def\@changed@cmd#1#2{%
  \ifx\protect\@typesetprotect
    \@inmathwarn#1%
    \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
      \expandafter\ifx\csname?\string#1\endcsname\relax
        \expandafter\def\csname?\string#1\endcsname{%
          \TextSymbolUnavailable#1%
        }%
      \fi
    \global\expandafter\let
      \csname\cf@encoding\string#1\endcsname

```

```

\csname ?\string#1\endcsname
\fi
\csname\cf@encoding\string#1%
\expandafter\endcsname
\else
\noexpand#1%
\fi}
\gdef\TextSymbolUnavailable#1{%
\@latex@error{%
Command \protect#1 unavailable in encoding \cf@encoding%
}\@eha}
\def\@inmathwarn#1{%
\ifmmode
\@latex@warning{Command \protect#1 invalid in math mode}%
\fi}

1284 \def\HyPsd@inmathwarn#1#2{%
1285 \ifx#2\expandafter
1286 \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
1287 \HyPsd@GLYPHERR
1288 \expandafter\@gobble\string#1%
1289 >%
1290 \expandafter\expandafter\expandafter\HyPsd@EndWithElse
1291 \else
1292 \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
1293 \fi
1294 \else
1295 \expandafter#2%
1296 \fi
1297 }
1298 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
1299 \def\HyPsd@EndWithElse#1\else\else{}

\HyPsd@add@accent

1300 \def\HyPsd@add@accent#1#2{%
1301 \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
1302 #2%
1303 }%

```

### 6.5.7 Unexpandable spaces

`\HyPsd@LetUnexpandableSpace` In `\HyPsd@@ProtectSpaces` the space tokens are replaced by not expandable commands, that work like spaces:

- So they can caught by undelimited arguments.
- And they work in number, dimen, and skip assignments.

These properties are used in `\HyPsd@CheckCatcodes`.

```

1304 \def\HyPsd@LetUnexpandableSpace#1{%
1305 \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
1306 }

```

`\HyPsd@UnexpandableSpace` `\HyPsd@UnexpandableSpace` is used in `\HyPsd@@ProtectSpaces`. In `\yPsd@@ProtectSpaces` the space tokens are replaced by unexpandable commands `\HyPsd@UnexpandableSpace`, but that have the effect of spaces.

```
1307 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace
```

### 6.5.8 Marker for commands

\HyPsd@XSPACE Some commands and information cannot be utilized before the string expansion \HyPsd@ITALCORR and the checking process. Command names are filtered out, so we need another \HyPsd@GLYPHERR way to transport the information: An unusual # with catcode 12 marks the beginning of the extra information.

```
1308 \edef\HyPsd@XSPACE{\string#\string X}
1309 \edef\HyPsd@ITALCORR{\string#\string I}
1310 \edef\HyPsd@GLYPHERR{\string#\string G}
```

### 6.5.9 \hspace fix

\HyPsd@hspace

```
1311 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*END}
```

\HyPsd@@hspace \HyPsd@@hspace checks whether \hspace is called in its star form.

```
1312 \def\HyPsd@@hspace#1*#2\END{%
1313   \ifx\#2\%
1314     \HyPsd@hspacetest{#1}%
1315   \else
1316     \expandafter\HyPsd@hspacetest
1317   \fi
1318 }
```

\HyPsd@hspacetest \HyPsd@hspacetest replaces the \hspace by a space, if the length is greater than zero.

```
1319 \def\HyPsd@hspacetest#1{\ifdim\dimexpr#1\relax>\z@\space\fi}
```

### 6.5.10 Fix for AMS classes

```
1320 \@ifundefined{tocsection}{%
1321   \let\HyPsd@AMSclassfix\relax
1322 }{%
1323   \def\HyPsd@AMSclassfix{%
1324     \let\tocpart\HyPsd@tocsection
1325     \let\tocchapter\HyPsd@tocsection
1326     \let\tocappendix\HyPsd@tocsection
1327     \let\tocsection\HyPsd@tocsection
1328     \let\tocsubsection\HyPsd@tocsection
1329     \let\tocsubsubsection\HyPsd@tocsection
1330     \let\tocparagraph\HyPsd@tocsection
1331   }%
1332   \def\HyPsd@tocsection#1#2#3{%
1333     \if @#2@ \else \if @#1@ \else #1 \fi #2. \fi
1334     #3%
1335   }%
1336 }
```

### 6.5.11 Reference commands

\HyPsd@href

```
1337 \def\HyPsd@href#1#{\@secondoftwo}
```

`\HyPsd@ref` Macro `\HyPsd@ref` calls the macro `\HyPsd@@@ref` for star checking. The same methods like in `\HyPsd@hspace` is used.

```
1338 \def\HyPsd@ref#1{\HyPsd@@@ref#1*\END}%
```

`\HyPsd@@@ref` Macro `\HyPsd@@@ref` checks if a star is present.

```
1339 \def\HyPsd@@@ref#1*#2\END{%
1340   \ifx\#2\%
1341     \HyPsd@@@ref{#1}%
1342   \else
1343     \expandafter\HyPsd@@@ref
1344   \fi
1345 }%
```

`\HyPsd@@@ref` `\HyPsd@@@ref` does the work and extracts the first argument.

```
1346 \def\HyPsd@@@ref#1{%
1347   \expandafter\ifx\csname r@#1\endcsname\relax
1348     ??%
1349   \else
1350     \expandafter\expandafter\expandafter
1351     \@car\csname r@#1\endcsname\@nil
1352   \fi
1353 }
```

`\HyPsd@pageref` Macro `\HyPsd@pageref` calls the macro `\HyPsd@@@pageref` for star checking. The same methods like in `\HyPsd@hspace` is used.

```
1354 \def\HyPsd@pageref#1{\HyPsd@@@pageref#1*\END}
```

`\HyPsd@@@pageref` Macro `\HyPsd@@@pageref` checks if a star is present.

```
1355 \def\HyPsd@@@pageref#1*#2\END{%
1356   \ifx\#2\%
1357     \HyPsd@@@pageref{#1}%
1358   \else
1359     \expandafter\HyPsd@@@pageref
1360   \fi
1361 }
```

`\HyPsd@@@pageref` `\HyPsd@@@pageref` does the work and extracts the second argument.

```
1362 \def\HyPsd@@@pageref#1{%
1363   \expandafter\ifx\csname r@#1\endcsname\relax
1364     ??%
1365   \else
1366     \expandafter\expandafter\expandafter\expandafter
1367     \expandafter\expandafter\expandafter\@car
1368     \expandafter\expandafter\expandafter\@gobble
1369     \csname r@#1\endcsname{}\@nil
1370   \fi
1371 }
```

`\HyPsd@nameref` Macro `\HyPsd@nameref` calls the macro `\HyPsd@@@nameref` for star checking. The same methods like in `\HyPsd@hspace` is used.

```
1372 \def\HyPsd@nameref#1{\HyPsd@@@nameref#1*\END}
```

`\HyPsd@@nameref` Macro `\HyPsd@@nameref` checks if a star is present.

```

1373 \def\HyPsd@@nameref#1*#2\END{%
1374   \ifx\|#2\|
1375     \HyPsd@@@nameref{#1}%
1376   \else
1377     \expandafter\HyPsd@@@nameref
1378   \fi
1379 }
```

`\HyPsd@@@nameref` `\HyPsd@@@nameref` does the work and extracts the third argument.

```

1380 \def\HyPsd@@@nameref#1{%
1381   \expandafter\ifx\csname r@#1\endcsname\relax
1382     ??%
1383   \else
1384     \expandafter\expandafter\expandafter\expandafter
1385     \expandafter\expandafter\expandafter\@car
1386     \expandafter\expandafter\expandafter\@gobbletwo
1387     \csname r@#1\endcsname{}\}\@nil
1388   \fi
1389 }
```

`\HyPsd@autoref` Macro `\HyPsd@autoref` calls the macro `\HyPsd@@autoref` for star checking. The same methods like in `\HyPsd@hspace` is used.

```

1390 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}
```

`\HyPsd@@autoref` Macro `\HyPsd@@autoref` checks if a star is present.

```

1391 \def\HyPsd@@autoref#1*#2\END{%
1392   \ifx\|#2\|
1393     \HyPsd@@@autoref{#1}%
1394   \else
1395     \expandafter\HyPsd@@@autoref
1396   \fi
1397 }
```

`\HyPsd@@@autoref` `\HyPsd@@@autoref` does the work and extracts the second argument.

```

1398 \def\HyPsd@@@autoref#1{%
1399   \expandafter\ifx\csname r@#1\endcsname\relax
1400     ??%
1401   \else
1402     \expandafter\expandafter\expandafter\HyPsd@autorefname
1403     \csname r@#1\endcsname{}\}\}\@nil
1404     \expandafter\expandafter\expandafter
1405     \@car\csname r@#1\endcsname\@nil
1406   \fi
1407 }
```

`\HyPsd@autorefname` At least a basic definition for getting the `\autoref` name.

```

1408 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1409   \ifx\|#4\|
1410     \else
1411     \HyPsd@@autorefname#4.\@nil
1412   \fi
1413 }
```

`\HyPsd@@autorefname`

```
1414 \def\HyPsd@@autorefname#1.#2\@nil{%
1415 \@ifundefined{#1autorefname}{%
1416 \@ifundefined{#1name}{%
1417 }{%
1418 \csname#1name\endcsname\space
1419 }%
1420 }{%
1421 \csname#1autorefname\endcsname\space
1422 }%
1423 }
```

### 6.5.12 Redefining the defining commands

Definitions aren't allowed, because they aren't executed in an only expanding context. So the command to be defined isn't defined and can perhaps be undefined. This would cause TeX to stop with an error message. With a deep trick it is possible to define commands in such a context: `\csname` does the job, it defines the command to be `\relax`, if it has no meaning.

Active characters cannot be defined with this trick. It is possible to define all undefined active characters (perhaps that they have the meaning of `\relax`). To avoid side effects this should be done in `\pdfstringdef` shortly before the `\xdef` job. But checking and defining all possible active characters of the full range (0 until 255) would take a while. `\pdfstringdef` is slow enough, so this isn't done.

`\HyPsd@DefCommand` and `\HyPsd@LetCommand` expands to the commands `\<def>-command` and `\<let>-command` with the meaning of `\def` and `\let`. So it is detected by `\HyPsd@CheckCatcodes` and the command name `\<def>-command` or `\<let>-command` should indicate a forbidden definition command.

The command to be defined is converted to a string and back to a command name with the help of `\csname`. If the command is already defined, `\noexpand` prevents a further expansion, even though the command would expand to legal stuff. If the command don't have the meaning of `\relax`, `\HyPsd@CheckCatcodes` will produce a warning. (The command itself can be legal, but the warning is legitimate because of the position after a defining command.)

The difference between `\HyPsd@DefCommand` and `\HyPsd@LetCommand` is that the first one also cancels this arguments, the parameter and definition text. The right side of the `\let` commands cannot be canceled with an undelimited parameter because of a possible space token after `\futurelet`.

To avoid unmatched `\if...` tokens, the cases `\let\if...\iftrue` and `\let\if...\iffalse` are checked and ignored.

`\HyPsd@DefCommand`

`\HyPsd@LetCommand`

```
1424 \begingroup
1425 \def\x#1#2{%
1426 \endgroup
1427 \let#1\def
1428 \def\HyPsd@DefCommand##1##2###{%
1429 #1%
1430 \expandafter\noexpand
1431 \csname\expandafter\@gobble\string##1\@empty\endcsname
1432 \@gobble
```

```

1433 }%
1434 \let#2\let
1435 \def\HyPsd@@LetCommand##1{%
1436   \expandafter\ifx\csname##1\expandafter\endcsname
1437     \csname iftrue\endcsname
1438     \pdfstringdefWarn\let
1439     \expandafter\@gobble
1440   \else
1441     \expandafter\ifx\csname##1\expandafter\endcsname
1442       \csname iffalse\endcsname
1443       \pdfstringdefWarn\let
1444       \expandafter\expandafter\expandafter\@gobble
1445     \else
1446       #2%
1447       \expandafter\noexpand
1448       \csname##1\expandafter\expandafter\expandafter\endcsname
1449     \fi
1450   \fi
1451 }%
1452 }%
1453 \expandafter\x\csname <def>-command\expandafter\endcsname
1454   \csname <let>-command\endcsname
1455 \def\HyPsd@LetCommand#1{%
1456   \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1457   \expandafter\expandafter\expandafter{%
1458     \expandafter\@gobble\string#1\@empty
1459   }%
1460 }

```

### 6.5.13 \ifnextchar

`\HyPsd@ifnextchar` In `\pdfstringdef \@ifnextchar` is disabled via a `\let` command to save time. First a warning message is given, then the three arguments are canceled. `\@ifnextchar` cannot work in a correct manner, because it uses `\futurelet`, but this is a stomach feature, that doesn't work in an expanding context. There are several variants of `\@ifnextchar`:

- `\@ifnextchar`
- `\kernel@ifnextchar`
- `\new@ifnextchar` from package `amsgen.sty` (bug report latex/3662).

```

1461 \def\HyPsd@ifnextchar#1{%
1462   \pdfstringdefWarn#1%
1463   \expandafter\@gobbletwo\@gobble
1464 }

```

### 6.5.14 \@protected@testoptifnextchar

`\HyPsd@protected@testopt` Macros with optional arguments doesn't work properly, because they call `\@ifnextchar` to detect the optional argument (see the explanation of `\HyPsd@ifnextchar`). But a warning, that `\@ifnextchar` doesn't work, doesn't help the user very

much. Therefore `\@protected@testopt` is also disabled, because its first argument is the problematic macro with the optional argument and it is called before `\@ifnextchar`.

```
1465 \def\HyPsd@protected@testopt#1{%
1466   \pdfstringdefWarn#1%
1467   \@gobbletwo
1468 }
```

## 6.6 Help macros for postprocessing

### 6.6.1 Generic warning.

`\HyPsd@Warning` For several reasons `\space` is masked and does not have its normal meaning. But it is used in warning messages, so it is redefined locally:

```
1469 \def\HyPsd@Warning#1{%
1470   \begingroup
1471   \let\space\Hy@space
1472   \Hy@Warning{#1}%
1473   \endgroup
1474 }
```

### 6.6.2 Protecting spaces

`\HyPsd@ProtectSpaces` `\HyPsd@ProtectSpaces` calls with the expanded string `\HyPsd@@ProtectSpacesFi`. The expanded string is protected by `|` at the beginning and end of the expanded string. Because of this there can be no group at the beginning or end of the string and grouping characters are not removed by the call of `\HyPsd@@ProtectSpacesFi`.

```
1475 \let\HyPsd@fi\fi
1476 \def\HyPsd@ProtectSpaces#1{%
1477   \xdef#1{%
1478     \iftrue
1479       \expandafter\HyPsd@@ProtectSpacesFi
1480       \expandafter|\expandafter\@empty#1| %
1481       \HyPsd@fi
1482     }%
1483     \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1484   }%
```

`\HyPsd@@ProtectSpacesFi` The string can contain command tokens, so it is better to use an `\def` instead of an `\edef`.

```
1485 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1486   \fi
1487   \unexpanded{#1}%
1488   \ifx\scrollmode#2\scrollmode
1489   \else
1490     \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1491   \HyPsd@fi
1492   }%
```

**Remove mask.**

`\HyPsd@RemoveMask` `\HyPsd@RemoveMask` removes the protecting |. It is used by `\HyPsd@@ProtectSpacesFi` and by the code in `\pdfstringdef` that removes the grouping characters.

```
1493 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1494   \xdef#2{\unexpanded\expandafter{#1}}%
1495 }%
```

### 6.6.3 Remove grouping braces

`\HyPsd@RemoveBraces` `#1` contains the expanded string, the result will be locally written in command `\HyPsd@String`.

```
1496 \def\HyPsd@RemoveBraces#1{%
1497   \ifx\scrollmode#1\scrollmode
1498   \else
1499     \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1500   \fi
1501 }
```

`\HyPsd@@RemoveBraces` `\HyPsd@@RemoveBraces` is called with the expanded string, the end marked by `\HyPsd@End`, the expanded string again, but enclosed in braces and the string command. The first expanded string is scanned by the parameter text `#1#2`. By a comparison with the original form in `#3` we can decide whether `#1` is a single token or a group. To avoid the case that `#2` is a group, the string is extended by a | before.

While removing the grouping braces an italic correction marker is inserted for supporting package `xspace` and letting ligatures broken.

Because the string is already expanded, the `\if` commands should disappeared. So we can move some parts out of the argument of `\Hy@ReturnAfterFi`.

```
1502 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1503   \fi
1504   \def\Hy@temp@A{#1#2}%
1505   \def\Hy@temp@B{#3}%
1506   \ifx\Hy@temp@A\Hy@temp@B
1507     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1508       \HyPsd@String#1%
1509     }%
1510     \ifx\scrollmode#2\scrollmode
1511     \else
1512       \Hy@ReturnAfterFiFiEnd{%
1513         \HyPsd@RemoveBraces{#2}%
1514       }%
1515     \fi
1516   \else
1517     \def\Hy@temp@A{#1}%
1518     \HyPsd@AppendItalcorr\HyPsd@String
1519     \ifx\Hy@temp@A\@empty
1520       \Hy@ReturnAfterElseFiFiEnd{%
1521         \HyPsd@RemoveBraces{#2}%
1522       }%
1523     \else
1524       \HyPsd@ProtectSpaces\Hy@temp@A
1525       \HyPsd@AppendItalcorr\Hy@temp@A
```

```

1526 \Hy@ReturnAfterFiFiEnd{%
1527 \expandafter\HyPsd@RemoveBraces\expandafter
1528 {\Hy@temp@A#2}%
1529 }%
1530 \fi
1531 \fi
1532 \Hy@ReturnEnd
1533 }

```

`\HyPsd@AppendItalcrr` The string can contain commands yet, so it is better to use `\def` instead of a shorter `\edef`. The two help macros limit the count of `\expandafter`.

```

1534 \def\HyPsd@AppendItalcrr#1{%
1535 \expandafter\HyPsd@@AppendItalcrr\expandafter{\/#1%
1536 }
1537 \def\HyPsd@@AppendItalcrr#1#2{%
1538 \expandafter\def\expandafter#2\expandafter{#2#1}%
1539 }

```

#### 6.6.4 Catcode check

**Workaround for LuaTeX.** `\HyPsd@CheckCatcodes` might trigger a bug of LuaTeX (0.60.2, 0.70.1, 0.70.2, ...) in the comparison with `\ifcat`, see <http://tracker.luatex.org/view.php?id=773>.

```

1540 \@ifundefined{directlua}{%
1541 }{%
1542 \expandafter\ifx\csname\endcsname\relax\fi
1543 }

```

#### Check catcodes.

`\HyPsd@CheckCatcodes` Because `\ifcat` expands its arguments, this is prevented by `\noexpand`. In case of command tokens and active characters `\ifcat` now sees a `\relax`. After protecting spaces and removing braces `#1` should be a single token, no group of several tokens, nor an empty group. (So the `\expandafter\relax` between `\ifcat` and `\noexpand` is only for safety and it should be possible to remove it.)

`\protect` and `\relax` should be removed silently. But it is too dangerous and breaks some code giving them the meaning of `\@empty`. So commands with the meaning of `\protect` are removed here. (`\protect` should have the meaning of `\@typeset@protect` that is equal to `\relax`).

For the comparison with active characters, `~` cannot be used because it has the meaning of a blank space here. And active characters need to be checked, if they have been defined using `\protected`.

```

1544 \begingroup
1545 \catcode`\Q=\active
1546 \let Q\@empty
1547 \gdef\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1548 \global\let\HyPsd@Rest\relax
1549 \ifcat\relax\noexpand#1\relax
1550 \ifx#1\protect
1551 \else
1552 \ifx#1\penalty
1553 \setbox\z@=\hbox{%

```

```

1554         \afterassignment\HyPsd@AfterCountRemove
1555         \count@=#2\HyPsd@End
1556     }%
1557 \else
1558     \ifx#1\kern
1559         \setbox\z@=\hbox{%
1560             \afterassignment\HyPsd@AfterDimenRemove
1561             \dimen@=#2\HyPsd@End
1562         }%
1563     \else
1564         \ifx#1\hskip
1565             \setbox\z@=\hbox{%
1566                 \afterassignment\HyPsd@AfterSkipRemove
1567                 \skip@=#2\HyPsd@End
1568             }%
1569         \else
1570             \HyPsd@CatcodeWarning{#1}%
1571         \fi
1572     \fi
1573 \fi
1574 \fi
1575 \else
1576     \ifcat\noexpand#1\noexpandQ% active character
1577         \expandafter\expandafter\expandafter\def
1578         \expandafter\expandafter\expandafter\HyPsd@String
1579         \expandafter\expandafter\expandafter{%
1580             \expandafter\HyPsd@String\string#1%
1581         }%
1582     \else
1583         \ifcat#1A% letter
1584             \expandafter\def\expandafter\HyPsd@String\expandafter{%
1585                 \HyPsd@String#1%
1586             }%
1587         \else
1588             \ifcat#1 % SPACE
1589                 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1590                     \HyPsd@String\HyPsd@SPACEOPTI
1591                 }%
1592             \else
1593                 \ifcat$#1%
1594                     \HyPsd@CatcodeWarning{math shift}%
1595                 \else
1596                     \ifcat&#1%
1597                         \HyPsd@CatcodeWarning{alignment tab}%
1598                     \else
1599                         \ifcat^#1%
1600                             \HyPsd@CatcodeWarning{superscript}%
1601                         \else
1602                             \ifcat_#1%
1603                                 \HyPsd@CatcodeWarning{subscript}%
1604                             \else
1605                                 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1606                                     \HyPsd@String#1%
1607                                 }%

```

```

1608         \fi
1609         \fi
1610         \fi
1611         \fi
1612         \fi
1613         \fi
1614         \fi
1615         \fi
1616         \ifx\HyPsd@Rest\relax
1617         \ifx\scrollmode#2\scrollmode
1618         \else
1619         \Hy@ReturnAfterFiFiEnd{%
1620         \HyPsd@CheckCatcodes#2\HyPsd@End
1621         }%
1622         \fi
1623         \else
1624         \ifx\HyPsd@Rest\@empty
1625         \else
1626         \Hy@ReturnAfterFiFiEnd{%
1627         \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1628         }%
1629         \fi
1630         \fi
1631         \Hy@ReturnEnd
1632     }%
1633 \endgroup

```

### Remove counts, dimens, skips.

`\HyPsd@AfterCountRemove` Counts like `\penalty` are removed silently.

```

1634 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1635   \gdef\HyPsd@Rest{#1}%
1636 }

```

`\HyPsd@AfterDimenRemove` If the value of the dimen (`\kern`) is zero, it can be removed silently. All other values are difficult to interpret. Negative values do not work in bookmarks. Should positive values be removed or should they be replaced by space(s)? The following code replaces positive values greater than `1ex` with a space and removes them else.

```

1637 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1638   \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@ \fi > 1ex %
1639   \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1640   \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1641   \else
1642   \ifdim\dimen@=\z@
1643   \else
1644   \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1645   \fi
1646   \gdef\HyPsd@Rest{#1}%
1647   \fi
1648 }

```

`\HyPsd@AfterSkipRemove` The glue part of skips do not work in PDF strings and are ignored. Skips (`\hskip`), that are not zero, have the same interpreting problems like dimens (see above).

```

1649 \def\HyPsd@AfterSkipRemove#1\HyPsd@end{%
1650   \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>\fi>lex %
1651   \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1652   \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1653   \else
1654     \ifdim\skip@=\z@
1655     \else
1656       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1657     \fi
1658     \gdef\HyPsd@Rest{#1}%
1659   \fi
1660 }

```

### Catcode warnings.

\HyPsd@CatcodeWarning \HyPsd@CatcodeWarning produces a warning for the user.

```

1661 \def\HyPsd@CatcodeWarning#1{%
1662   \HyPsd@Warning{%
1663     Token not allowed in a PDF string (%
1664     \ifHy@unicode
1665       Unicode%
1666     \else
1667       PDFDocEncoding%
1668     \fi
1669     ):%
1670     \MessageBreak removing `\'HyPsd@RemoveCmdPrefix#1'%
1671   }%
1672 }
1673 \begingroup
1674   \catcode`\|=0 %
1675   \catcode`\|=12 %
1676   \gdef\HyPsd@RemoveCmdPrefix#1{%
1677     \expandafter\HyPsd@@RemoveCmdPrefix
1678     \string#1\@empty\<>-|\@empty|\@empty
1679   }%
1680   \gdef\HyPsd@@RemoveCmdPrefix#1\<>-#2|\@empty#3|\@empty{#1#2}%
1681 \endgroup

```

\HyPsd@RemoveSpaceWarning

```

1682 \def\HyPsd@RemoveSpaceWarning#1{%
1683   \HyPsd@Warning{%
1684     Token not allowed in a PDF string (%
1685     \ifHy@unicode
1686       Unicode%
1687     \else
1688       PDFDocEncoding%
1689     \fi
1690     ):%
1691     \MessageBreak #1\MessageBreak
1692     removed%
1693   }%
1694 }

```

\HyPsd@ReplaceSpaceWarning

```

1695 \def\HyPsd@ReplaceSpaceWarning#1{%
1696   \HyPsd@Warning{%
1697     Token not allowed in a PDF string (%
1698     \ifHy@unicode
1699       Unicode%
1700     \else
1701       PDFDocEncoding%
1702     \fi
1703   ):%
1704   \MessageBreak #1\MessageBreak
1705   replaced by space%
1706 }%
1707 }

```

### 6.6.5 Check for wrong glyphs

A wrong glyph is marked with `\relax`, the glyph name follows, delimited by `>`. `\@empty` ends the string.

```

1708 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1709   \expandafter\def\expandafter\HyPsd@String\expandafter{%
1710     \HyPsd@String#1%
1711   }%
1712   \ifx\#2\%
1713   \else
1714     \Hy@ReturnAfterFi{%
1715       \HyPsd@GlyphProcessWarning#2\@empty
1716     }%
1717   \fi
1718 }
1719 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1720   \HyPsd@@GlyphProcessWarning#1++>%
1721   \HyPsd@GlyphProcess#2\@empty
1722 }
1723 \def\HyPsd@@GlyphProcessWarning#1+#2+#3>{%
1724   \ifx\#2\%
1725     \HyPsd@Warning{%
1726       Glyph not defined in %
1727       P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1728       removing \@backslashchar#1'%
1729     }%
1730   \else
1731     \HyPsd@Warning{%
1732       Composite letter \@backslashchar#1+#2'\MessageBreak
1733       not defined in P\ifHy@unicode U\else D1\fi\space encoding,%
1734       \MessageBreak
1735       removing \@backslashchar#1'%
1736     }%
1737   \fi
1738 }

```

### Spaces.

`\HyPsd@spaceopti` In the string the spaces are represented by `\HyPsd@spaceopti` tokens. Within an `\edef` it prints itself as a simple space and looks for its next argument. If another

space follows, so it replaces the next `\HyPsd@spaceopti` by an protected space `\040`.

```

1739 \def\HyPsd@spaceopti#1{ % first space
1740   \ifx\HyPsd@spaceopti#1%
1741     \040%
1742   \else
1743     #1%
1744   \fi
1745 }%
```

### 6.6.6 Replacing tokens

`\HyPsd@Subst` To save tokens `\HyPsd@StringSubst` is an wrapper for the command `\HyPsd@Subst` that does all the work: In string stored in command `#3` it replaces the tokens `#1` with `#2`.

`#1` Exact the tokens that should be replaced.  
`#2` The replacement (don't need to be expanded).  
`#3` Command with the string.

```

1746 \def\HyPsd@Subst#1#2#3{%
1747   \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
1748     \fi
1749     ##1%
1750     \ifx\scrollmode##2\scrollmode
1751     \else
1752       #2%
1753       \HyPsd@@ReplaceFi##2\END
1754     \fi
1755   }%
1756   \xdef#3{%
1757     \iftrue
1758       \expandafter\HyPsd@@ReplaceFi#3#1\END
1759     \fi
1760   }%
1761 }
```

`\HyPsd@StringSubst` To save tokens in `\pdfstringdef` `\HyPsd@StringSubst` is a wrapper, that expands argument `#1` before calling `\HyPsd@Subst`.

```

1762 \def\HyPsd@StringSubst#1{%
1763   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1764 }
```

`\HyPsd@EscapeTeX`

```

1765 \begingroup
1766   \lccode`\!=`\%%
1767   \lccode`\|=`\%%
1768   \lccode`\(=\`\{
1769   \lccode`\)=`\}%
1770   \lccode`0=\z@
1771   \lccode`1=\z@
1772   \lccode`3=\z@
1773   \lccode`4=\z@
1774   \lccode`5=\z@
1775   \lccode`7=\z@
```

```

1776 \lowercase{\endgroup
1777 \def\HyPsd@EscapeTeX#1{%
1778   \HyPsd@Subst!{|045}#1%
1779   \HyPsd@Subst({|173}#1%
1780   \HyPsd@Subst){|175}#1%
1781 }%
1782 }

```

### 6.6.7 Support for package `xspace`

`\HyPsd@doxspace` `\xspace` does not work, because it uses a `\futurelet` that cannot be executed in  $\TeX$ 's mouth. So this implementation uses an argument to examine the next token. In a previous version I reused `\@xspace`, but this version is shorter and easier to understand.

```

1783 \def\HyPsd@doxspace#1{%
1784   \ifx#1\relax\else
1785     \ifx#1.\else
1786       \ifx#1:\else
1787         \ifx#1,\else
1788           \ifx#1;\else
1789             \ifx#1!\else
1790               \ifx#1?\else
1791                 \ifx#1/\else
1792                   \ifx#1-\else
1793                     \ifx#1'\else
1794                       \HyPsd@SPACEOPTI
1795                     \fi
1796                   \fi
1797                 \fi
1798               \fi
1799             \fi
1800           \fi
1801         \fi
1802       \fi
1803     \fi
1804   \fi
1805   #1%
1806 }%

```

### 6.6.8 Converting to Unicode

Eight bit characters are converted to the sixteen bit ones, `\8` is replaced by `\00`, and `\9` is removed. The result should be a valid Unicode PDF string without the Unicode marker at the beginning.

```

1807 \begingroup
1808   \catcode`\|=0 %
1809   \catcode`\|=12 %

```

`\HyPsd@ConvertToUnicode`

```

1810 |gdef\HyPsd@ConvertToUnicode#1{%
1811   |xdef#1{%
1812     |expandafter\HyPsd@DoConvert#1|@empty|@empty|@empty
1813   }%

```

```

1814 |ifx#1|@empty
1815 |else
1816 |xdef#1{%
1817     \376\377%
1818     #1%
1819 }%
1820 |fi
1821 }%

```

\HyPsd@DoConvert

```

1822 |gdef|HyPsd@DoConvert#1{%
1823 |ifx#1|@empty
1824 |else
1825 |Hy@ReturnAfterFi{%
1826 |ifx#1\%%
1827     \%%
1828 |expandafter|HyPsd@DoEscape
1829 |else
1830 |HyPsd@Char{#1}%
1831 |expandafter|HyPsd@DoConvert
1832 |fi
1833 }%
1834 |fi
1835 }%

```

\HyPsd@DoEscape

```

1836 |gdef|HyPsd@DoEscape#1{%
1837 |ifx#19%
1838 |expandafter|HyPsd@GetTwoBytes
1839 |else
1840 |Hy@ReturnAfterFi{%
1841 |ifx#18%
1842     00%
1843 |expandafter|HyPsd@GetTwoBytes
1844 |else
1845     #1%
1846 |expandafter|HyPsd@GetOneByte
1847 |fi
1848 }%
1849 |fi
1850 }%

```

\HyPsd@GetTwoBytes

```

1851 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1852     #1\#2#3#4%
1853 |HyPsd@DoConvert
1854 }%

```

\HyPsd@GetOneByte

```

1855 |gdef|HyPsd@GetOneByte#1#2{%
1856     #1#2%
1857 |HyPsd@DoConvert
1858 }%
1859 |endgroup

```

`\HyPsd@@GetNextTwoTokens` T<sub>E</sub>X does only allow nine parameters, so we need another macro to get more arguments.

```
1860 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1861   \xdef#4{#4#1#2}%
1862   \HyPsd@@ConvertToUnicode#3\END#4%
1863 }
```

`\HyPsd@Char`

```
1864 \begingroup
1865   \catcode0=9 %
1866   \catcode`\^=7 %
1867   \catcode`\^^=12 %
1868   \def\x{~~~~0000}%
1869 \expandafter\endgroup
1870 \ifx\x\@empty
1871   \def\HyPsd@Char#1{%
1872     \ifnum`#1<128 %
1873       \@backslashchar 000#1%
1874     \else
1875       \ifnum`#1<65536 %
1876         \expandafter\HyPsd@CharTwoByte\number`#1!%
1877       \else
1878         \expandafter\expandafter\expandafter\HyPsd@CharSurrogate
1879         \intcalcSub{`#1}{65536}!%
1880       \fi
1881     \fi
1882   }%
1883   \def\HyPsd@CharTwoByte#1!{%
1884     \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1885     \IntCalcDiv#1!256!!%
1886     \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1887     \IntCalcMod#1!256!!%
1888   }%
1889   \def\HyPsd@CharOctByte#1!{%
1890     \@backslashchar
1891     \IntCalcDiv#1!64!%
1892     \intcalcDiv{\IntCalcMod#1!64!}{8}%
1893     \IntCalcMod#1!8!%
1894   }%
1895   \def\HyPsd@CharSurrogate#1!{%
1896     \@backslashchar 33%
1897     \IntCalcDiv#1!262144!%
1898     \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1899     \intcalcDiv{\IntCalcMod#1!262144!}{1024}!%
1900     \@backslashchar 33%
1901     \expandafter\expandafter\expandafter\IntCalcAdd
1902     \intcalcDiv{\IntCalcMod#1!1024!}{256}!4!%
1903     \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1904     \IntCalcMod#1!256!!%
1905   }%
1906 \else
1907   \def\HyPsd@Char#1{%
1908     \@backslashchar 000#1%
1909   }%
```

```

1910 \fi
change 2022-02-21 For the case that utf8 chars are protected we need to expand
them. This works only is \UTFviii@loop is not defined in a group, which will be
the case in the new latex code, so we test for it.
1911 \ifcsname UTFviii@loop\endcsname
1912 \def\HyPsd@expand@utfviii {%
1913   \count@"C2
1914   \@tempcnta"F5
1915   \def\UTFviii@tmp{\expandafter\def\expandafter~\expandafter{~}}%
1916   \UTFviii@loop
1917 }
1918 \else
1919 \def\HyPsd@expand@utfviii {}
1920 \fi

```

### 6.6.9 Support for UTF-8 input encoding

After `\usepackage[utf8]{inputenc}` there are macros that expect the UTF-8 octets as arguments. Therefore we can calculate the PDF octal sequences directly. Because the PDF format is limited to UCS-2, conversion macros are needed for UTF-8 sequences with two and three octets only.

This calculation must be done in an expandable context, so we use `eTeX` here for performance reasons. Unhappily the results of divisions are rounded. Thus a circumvention via `\dimexpr` is used, e.g.:

`\numexpr 123/4\relax` is replaced by  
`\number\dimexpr.25\dimexpr 123sp\relax\relax`

```

1921 \begingroup
1922 \lccode`~=`^^f4\relax
1923 \lowercase{\endgroup
1924 \def\HyPsd@UTFviii{%
1925   \HyPsd@expand@utfviii
1926   \let\UTFviii@two@octets\HyPsd@UTFviii@two
1927   \let\UTFviii@three@octets\HyPsd@UTFviii@three
1928   \let\UTFviii@four@octets\HyPsd@UTFviii@four
1929   \ifx~\HyPsd@UTFviii@ccxliv@undef
1930     \let~\HyPsd@UTFviii@ccxliv@def
1931   \fi
1932   \let\unichar\HyPsd@unichar
1933 }%
1934 }%
1935 \def\HyPsd@UTFviii@ccxliv@undef{\@inpenc@undefined@{utf8}}%
1936 \edef\HyPsd@UTFviii@ccxliv@def{%
1937   \noexpand\UTFviii@four@octets\string ^^f4%
1938 }%

```

The two octet form of UTF-8 110aaabb (A) and 10cccd (B) must be converted into octal numbers 00a and bcd. The result is `\8a\bcd` (with a, b, c, d as octal numbers). The conversion equations.

$$a := A/4 - 48 \quad (1)$$

$$b := A - 4 * (A/4) \quad (2)$$

$$c := B/8 - 8 * ((8 * (B/8))/8) \quad (3)$$

$$d := B - 8 * (B/8) \quad (4)$$

$$(5)$$

```

1939 \def\HyPsd@UTFviii@two#1#2{%
1940 \expandafter\HyPsd@UTFviii@@two
1941 \number\dimexpr.25\dimexpr`#1sp\expandafter\relax\expandafter|
1942 \number`#1\expandafter|
1943 \number\dimexpr.125\dimexpr`#2sp\expandafter\relax\expandafter|
1944 \number`#2 \@nil
1945 }%
1946 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
1947 \expandafter\8
1948 \number\numexpr #1-48\expandafter\relax
1949 \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1950 \number\numexpr #3-8*%
1951 \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1952 \number\numexpr #4-8*#3\relax
1953 }%
```

Three octet form: 1110aabb (A), 10bccdd (B), and 10eefff (C). The result is \9abc\def (with a, ..., f as octal numbers). The conversion equations:

$$a := A/4 - 56 \quad (6)$$

$$b := 2 * (A - 4 * (A/4)) + ((B - 128 < 32)?0 : 1) \quad (7)$$

$$c := B/4 - 32 - ((B - 128 < 32)?0 : 8) \quad (8)$$

$$d := B - 4 * (B/4) \quad (9)$$

$$e := C/8 - 16 \quad (10)$$

$$f := C - 8 * (C/8) \quad (11)$$

$$(12)$$

```

1954 \def\HyPsd@UTFviii@three#1#2#3{%
1955 \expandafter\HyPsd@UTFviii@@three
1956 \number\dimexpr.25\dimexpr`#1sp\expandafter\relax\expandafter|
1957 \number`#1\expandafter|
1958 \number\ifnum\numexpr`#2-128\relax <32 0\else 1\fi\expandafter|
1959 \number\dimexpr.25\dimexpr`#2sp\expandafter\relax\expandafter|
1960 \number`#2\expandafter|
1961 \number\dimexpr.125\dimexpr`#3sp\expandafter\relax\expandafter|
1962 \number`#3 \@nil
1963 }%
1964 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1965 \expandafter\9
1966 \number\numexpr #1-56\expandafter\relax
1967 \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
1968 \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
1969 \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
1970 \number\numexpr #6-16\expandafter\relax
1971 \number\numexpr #7-8*#6\relax
1972 }%
```

Surrogates: 4 octets in UTF-8, a surrogate pair in UTF-16. High surrogate range: U+D800-U+DBFF, low surrogate range: U+DC00-U+DFFF.

```

UTF-8: 11110uuu 10uuzzzz 10yyyyyy 10xxxxxx
www = uuuu - 1
UTF-16: 110110ww wwzzzzyy 110111yy yyxxxxxx
octal: 011 011 0ww 0ww zzz zyy 011 011 1yy 0yy xxx xxx

```

```

1973 \def\HyPsd@UTFviii@four#1#2{%
1974 \expandafter\HyPsd@@UTFviii@four\number
1975 \numexpr-1+(\`#1-240)*4+\dimexpr.0625\dimexpr`#2sp-128sp%
1976 \expandafter|\number
1977 \numexpr`#2-16*\dimexpr.0625\dimexpr`#2sp| %
1978 }%
1979 \def\HyPsd@@UTFviii@four#1|#2|#3{%
1980 \933\number\dimexpr.25\dimexpr#1sp\relax\relax
1981 \csname\number\dimexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1982 \ifodd#2 %
1983 \number\dimexpr(#2-1)/2\relax
1984 \else
1985 \number\dimexpr#2/2\relax
1986 \fi
1987 \number\dimexpr\ifodd#2 4+\fi
1988 \dimexpr.0625\dimexpr`#3sp-128sp\relax\relax\relax
1989 \933%
1990 \expandafter\HyPsd@@@UTFviii@four\number
1991 \numexpr`#3-16*\dimexpr.0625\dimexpr`#3sp| %
1992 }%
1993 \def\HyPsd@@@UTFviii@four#1|#2{%
1994 \number\dimexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
1995 \csname\number\dimexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1996 \number\dimexpr.125\dimexpr`#2sp-128sp\relax\relax
1997 \number\dimexpr`#2-8*\dimexpr.125\dimexpr`#2sp\relax\relax\relax
1998 }%

```

Input encoding utf8x of package ucs uses macro \unichar. Values greater than "FFFF are not supported.

```

1999 \def\HyPsd@unichar#1{%
2000 \ifHy@unicode
2001 \ifnum#1>"10FFFF %
2002 \HyPsd@UnicodeReplacementCharacter % illegal
2003 \else
2004 \ifnum#1>"FFFF %

```

High-surrogate code point. ("D800 = 55296, \p@ = 1pt = 65536sp)

```

2005 \expandafter\HyPsd@unichar\expandafter{%
2006 \number\dimexpr 55296+%
2007 \dimexpr.0009765625\dimexpr\number#1sp-\p@
2008 \relax\relax\relax
2009 }%

```

Low-surrogate code point. ("DC00 = 56320, "DC00 - 65536 = -9216)

```

2010 \expandafter\HyPsd@unichar\expandafter{%
2011 \number\dimexpr#1-9216%
2012 -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
2013 \relax\relax\relax
2014 }%
2015 \else

```

```

2016 \ifnum#1>"7FF %
2017 \9%
2018 \expandafter\HyPsd@unichar@first@byte\expandafter{%
2019 \number
2020 \dimexpr.00390625\dimexpr\number#1sp\relax\relax
2021 }%
2022 \else
2023 \8%
2024 \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
2025 \fi
2026 \expandafter\HyPsd@unichar@second@byte\expandafter{%
2027 \number
2028 \numexpr#1-256*\number
2029 \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
2030 }%
2031 \fi
2032 \fi
2033 \else
2034 .% unsupported (Unicode -> PDF Doc Encoding)
2035 \fi
2036 }%
2037 \def\HyPsd@UnicodeReplacementCharacter{9377\375}%
2038 \def\HyPsd@unichar@first@byte#1{%
2039 \number\dimexpr.015625\dimexpr#1sp\relax\relax
2040 \expandafter\HyPsd@unichar@octtwo\expandafter{%
2041 \number
2042 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2043 \relax\relax\relax
2044 }%
2045 }%
2046 \def\HyPsd@unichar@second@byte#1{%
2047 \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
2048 \expandafter\HyPsd@unichar@octtwo\expandafter{%
2049 \number
2050 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2051 \relax\relax\relax
2052 }%
2053 }%
2054 \def\HyPsd@unichar@octtwo#1{%
2055 \number\dimexpr.125\dimexpr#1sp\relax\relax
2056 \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
2057 \relax\relax\relax
2058 }%

```

\HyPsd@utf@viii@undeferr \utf@viii@undeferr comes from file utf8x.def from package ucs.

```

2059 \def\HyPsd@utf@viii@undeferr#1#2#3#4#5#6{%
2060 \ifx\@gobble#1%
2061 \else
2062 [Please insert \textbackslash PrerenderUnicode%
2063 \textbraceleft#1\textbraceright\space
2064 into preamble]%
2065 \fi
2066 }%

```

### 6.6.10 Support for die faces (ifsym et. al.)

`\HyPsd@DieFace` Die faces are provided by

Package	Macro
ifsym	<code>\Cube</code>
epsdice	<code>\epsdice</code>
hhcount	<code>\fcdice</code>

`\Cube` and `\epsdice` restrict the range to the numbers one to six. `\fcdice` generates for larger numbers several dice faces with the sum matching the number. The implementation for the PDF strings follows `\fcdice`.

```

2067 \def\HyPsd@DieFace#1{%
2068   \ifHy@unicode
2069     \ifnum#1<1 %
2070       \HyPsd@UnicodeReplacementCharacter
2071     \else
2072       \ifnum#1>6 %
2073         \9046\205%
2074         \expandafter\expandafter\expandafter
2075         \HyPsd@DieFaceLarge\intcalcSub{#1}{6}!%
2076       \else
2077         \9046\20\intcalcDec{#1}%
2078       \fi
2079     \fi
2080   \else
2081     .% Die faces are not part of PDFDocEncoding
2082   \fi
2083 }
```

`\HyPsd@DieFaceLarge`

```

2084 \def\HyPsd@DieFaceLarge#1!{%
2085   \ifnum#1>6 %
2086     \expandafter\@firstoftwo
2087   \else
2088     \expandafter\@secondoftwo
2089   \fi
2090   {%
2091     \9046\205%
2092     \expandafter\expandafter\expandafter
2093     \HyPsd@DieFaceLarge\IntCalcSub#1!6!!%
2094   }{%
2095     \9046\20\IntCalcDec#1!%
2096   }%
2097 }
```

### 6.6.11 Support for moon phases of package china2e

```

2098 \def\HyPsd@MoonPha#1{%
2099   \ifcase\intcalcNum{#1} %
2100     \HyPsd@UnicodeReplacementCharacter
2101   \or % 1
2102   % U+1F31A NEW MOON WITH FACE; \MoonPha{1} (china2e)
2103   \9330\074\9337\032%
```

```

2104 \or % 2
2105 \HyPsd@UnicodeReplacementCharacter
2106 \or % 3
2107 % U+1F31D FULL MOON WITH FACE; \MoonPha{3} (china2e)
2108 \9330\074\9337\035%
2109 \or % 4
2110 % U+1F31C LAST QUARTER MOON WITH FACE; \MoonPha{4} (china2e)
2111 \9330\074\9337\034%
2112 \else
2113 \HyPsd@UnicodeReplacementCharacter
2114 \fi
2115 }
2116 %* \HyPsd@MoonPha -> \MoonPha

```

### 6.6.12 Support for package pifont

\HyPsd@ding

```

2117 \def\HyPsd@ding#1{%
2118 \ifHy@unicode
2119 \ifnum#1<32 %
2120 \HyPsd@UnicodeReplacementCharacter
2121 \else
2122 \ifnum#1>254 %
2123 \HyPsd@UnicodeReplacementCharacter
2124 \else
2125 \ifnum#1<127 %
2126 \expandafter\expandafter\expandafter
2127 \HyPsd@@@ding\intcalcNum{#1}!%
2128 \else
2129 \ifnum#1>160 %
2130 \expandafter\expandafter\expandafter
2131 \HyPsd@@@ding\intcalcNum{#1}!%
2132 \else
2133 \HyPsd@UnicodeReplacementCharacter
2134 \fi
2135 \fi
2136 \fi
2137 \fi
2138 \else
2139 .% Dingbats are not part of PDFDocEncoding
2140 \fi
2141 }

```

\HyPsd@@@ding

```

2142 \def\HyPsd@@@ding#1!{%
2143 \@ifundefined{HyPsd@ding@#1}{%
2144 \ifnum#1<127 %
2145 \9047%
2146 \HyPsd@DecimalToOctalSecond{\IntCalcSub#1!32!}%
2147 \else
2148 \ifnum#1<168 %
2149 \9047\14\IntCalcSub#1!160!%
2150 \else
2151 \ifnum#1>181 %
2152 \9047\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!64!}%

```

```

2153 \else
2154 % 172..181 -> U+2460..U+2469
2155 \9044\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!76!}%
2156 \fi
2157 \fi
2158 \fi
2159 }{%
2160 \csname HyPsd@ding@#1\endcsname
2161 }%
2162 }

2163 \@namedef{HyPsd@ding@32}{\space}
2164 % U+260E BLACK TELEPHONE
2165 \@namedef{HyPsd@ding@37}{\9046\016}% U+260E
2166 % U+261B BLACK RIGHT POINTING INDEX
2167 \@namedef{HyPsd@ding@42}{\9046\033}% U+261B
2168 % U+261E WHITE RIGHT POINTING INDEX
2169 \@namedef{HyPsd@ding@43}{\9046\036}% U+261E
2170 % U+2605 BLACK STAR
2171 \@namedef{HyPsd@ding@72}{\9046\005}% U+2605
2172 % U+25CF BLACK CIRCLE
2173 \@namedef{HyPsd@ding@108}{\9045\317}% U+25CF
2174 % U+25A0 BLACK SQUARE
2175 \@namedef{HyPsd@ding@110}{\9045\240}% U+25A0
2176 % U+25B2 BLACK UP-POINTING TRIANGLE
2177 \@namedef{HyPsd@ding@115}{\9045\262}% U+25B2
2178 % U+25BC BLACK DOWN-POINTING TRIANGLE
2179 \@namedef{HyPsd@ding@116}{\9045\274}% U+25BC
2180 % U+25C6 BLACK DIAMOND
2181 \@namedef{HyPsd@ding@117}{\9045\306}% U+25C6
2182 % U+25D7 RIGHT HALF BLACK CIRCLE
2183 \@namedef{HyPsd@ding@119}{\9045\327}% U+25D7
2184 \@namedef{HyPsd@ding@168}{\textclubsuitblack}%
2185 \@namedef{HyPsd@ding@169}{\textdiamondsuitblack}%
2186 \@namedef{HyPsd@ding@170}{\textheartsuitblack}%
2187 \@namedef{HyPsd@ding@171}{\textspadesuitblack}%
2188 \@namedef{HyPsd@ding@213}{\textrightarrow}%
2189 \@namedef{HyPsd@ding@214}{\textleftarrow}%
2190 \@namedef{HyPsd@ding@215}{\textupdownarrow}%
2191 \@namedef{HyPsd@ding@240}{\HyPsd@UnicodeReplacementCharacter}

```

## 7 Support of other packages

### 7.1 Package subfigure

Added fix for version 2.1. Here `\sub@label` is defined.

```

2192 \@ifpackageloaded{subfigure}{%
2193 \@ifundefined{sub@label}{%
2194 \Hy@hypertextnamesfalse
2195 }{%
2196 \renewcommand*{\sub@label}[1]{%
2197 \@bsphack
2198 \subfig@oldlabel{#1}%

```

```

2199 \if@filesw
2200 \begingroup
2201 \edef\@currentlabstr{%
2202 \expandafter\strip@prefix\meaning\@currentlabelname
2203 }%
2204 \protected@write\@auxout{}\@auxout{%
2205 \string\newlabel{sub@#1}{%
2206 {\@nameuse{@@thesub\@capttype}}%
2207 {\thepage}%
2208 }%
2209 \expandafter\strip@period\@currentlabstr
2210 \relax.\relax\@@@%
2211 }%
2212 {\@currentHref}%
2213 {}%
2214 }%
2215 }%
2216 \endgroup
2217 \fi
2218 \@esphack
2219 }%
2220 }%
2221 }{}

```

## 7.2 Package xr and xr-hyper

The beta version of xr that supports `\XR@addURL` is called **xr-hyper**. If reading external aux files check whether they have a non zero fourth field in `\newlabel` and if so, add the URL as the fifth field. Change 2023-05-14: xr-hyper adds the field.

```

2222 \def\Hy@true{true}
2223 \def\Hy@false{false}

    Providing dummy definitions.
2224 \let\literalps@out\@gobble
2225 \newcommand\pdfbookmark[3][]{ }
2226 \def\Acrobatmenu#1#2{\leavevmode#2}
2227 \def\Hy@writebookmark#1#2#3#4#5{}%

```

## 8 Help macros for links

Anchors get created on the baseline of where they occur. If an XYZ PDF view is set, this means that the link places the top of the screen *on the baseline* of the target. If this is an equation, for instance, it means that you cannot see anything. Some links, of course, are created at the start of environments, and so it works. To allow for this, anchors are raised, where possible, by some small amount. This defaults to `\baselineskip`, but users can set it to something else in two ways (thanks to Heiko Oberdiek for suggesting this):

1. Redefine `\HyperRaiseLinkDefault` to be eg the height of a `\strut`
2. Redefine `\HyperRaiseLinkHook` to do something complicated; it must give a value to `\HyperRaiseLinkLength`, which is what actually gets used

```

2228 \let\HyperRaiseLinkHook\@empty
2229 \def\HyperRaiseLinkDefault{\baselineskip}

\HyperRaiseLinkHook allows the user to reassign \HyperRaiseLinkLength.

2230 \newcount\Hy@SavedSpaceFactor
2231 \def\Hy@SaveSpaceFactor{%
2232   \global\Hy@SavedSpaceFactor=\ifhmode\spacefactor\else\z@\fi
2233 }
2234 \def\Hy@RestoreSpaceFactor{%
2235   \relax
2236   \ifhmode
2237     \ifnum\Hy@SavedSpaceFactor>\z@
2238       \spacefactor=\Hy@SavedSpaceFactor
2239     \fi
2240   \fi
2241 }
2242 \def\Hy@SaveSavedSpaceFactor{%
2243   \edef\Hy@RestoreSavedSpaceFactor{%
2244     \global\Hy@SavedSpaceFactor=\the\Hy@SavedSpaceFactor\relax
2245   }%
2246 }

```

Packages like `varwidth` need an option to change the handling in `vmode`. (Issue #204). With a new format we therefore insert a socket.

```

2247 \NewSocket{hyp/raisedlink}{1}
2248 \def\Hy@raisedlink#1{%
2249   \ifvmode
2250     \UseSocket{hyp/raisedlink}{#1}%
2251   \else
2252     \Hy@SaveSpaceFactor
2253     \penalty\@M
2254     \smash{%
2255       \begingroup
2256         \let\HyperRaiseLinkLength\@tempdima
2257         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
2258         \HyperRaiseLinkHook
2259       \expandafter\endgroup
2260       \expandafter\raise\the\HyperRaiseLinkLength\hbox{%
2261         \Hy@RestoreSpaceFactor
2262         #1%
2263       \Hy@SaveSpaceFactor
2264     }%
2265   }%
2266   \Hy@RestoreSpaceFactor
2267 \fi
2268 }

```

`\Hy@SaveLastskip` Inserting a `\special` command to set a destination destroys the `\lastskip` value.  
`\Hy@RestoreLastskip`

```

2269 \def\Hy@SaveLastskip{%
2270   \let\Hy@RestoreLastskip\relax
2271   \ifvmode
2272     \ifdim\lastskip=\z@
2273       \ifnum\lastnodetype=1 %
2274         \let\Hy@RestoreLastskip\relax

```

```

2275 \else
2276 \let\Hy@RestoreLastskip\nobreak
2277 \fi
2278 \else
2279 \begingroup
2280 \skip@=-\lastskip
2281 \edef\x{%
2282 \endgroup
2283 \def\noexpand\Hy@RestoreLastskip{%
2284 \noexpand\ifvmode
2285 \noexpand\nobreak
2286 \vskip\the\skip@
2287 \vskip\the\lastskip\relax
2288 \noexpand\fi
2289 }%
2290 }%
2291 \x
2292 \fi
2293 \else
2294 \ifhmode
2295 \ifdim\lastskip=\z@
2296 \let\Hy@RestoreLastskip\nobreak
2297 \else
2298 \begingroup
2299 \skip@=-\lastskip
2300 \edef\x{%
2301 \endgroup
2302 \def\noexpand\Hy@RestoreLastskip{%
2303 \noexpand\ifhmode
2304 \noexpand\nobreak
2305 \hskip\the\skip@
2306 \hskip\the\lastskip\relax
2307 \noexpand\fi
2308 }%
2309 }%
2310 \x
2311 \fi
2312 \fi
2313 \fi
2314 }%

```

## 9 Options

```

2315 \SetupKeyvalOptions{%
2316 family=Hyp,%
2317 prefix=HyOpt%
2318 }

```

### 9.1 Help macros

Package like hyperxmp want to retrieve the value of keys like `pdfauthor`. To avoid that we have two parallel interfaces we provide the interface from the `pdfmanagement/ltdocinit` if it doesn't exist.

```

\AddToDocumentProperties
\GetDocumentProperties 2319 \ExplSyntaxOn
2320 \@ifundefined{AddToDocumentProperties}
2321 {
2322   \prop_new:N \g__hyp_documentproperties_prop
2323   \NewDocumentCommand\AddToDocumentProperties{O{\currname}mm}
2324   {
2325     \exp_args:NNx
2326     \prop_gput:Nnn \g__hyp_documentproperties_prop
2327     {
2328       \tl_if_blank:eTF {#1}{top-level/}{#1/} #2
2329     }
2330     { #3}
2331   }
2332   \NewExpandableDocumentCommand\GetDocumentProperties{m}
2333   {
2334     \prop_item:Nn \g__hyp_documentproperties_prop {#1}
2335   }
2336 }{}
2337 \ExplSyntaxOff

\IfHyperBooleanExists

2338 \def\IfHyperBooleanExists#1{%
2339   \@ifundefined{Hy@#1false}\@secondoftwo{%
2340     \@ifundefined{KV@Hyp@#1@default}\@secondoftwo\@firstoftwo
2341   }%
2342 }

2343 \@namedef{KV@Hyp@stoppeearly@default}{}

\IfHyperBoolean

2344 \def\IfHyperBoolean#1{%
2345   \IfHyperBooleanExists{#1}{%
2346     \csname ifHy@#1\endcsname
2347     \expandafter\@firstoftwo
2348   \else
2349     \expandafter\@secondoftwo
2350   \fi
2351 }%\@secondoftwo
2352 }

\Hy@boolkey

2353 \def\Hy@boolkey#1#2{%
2354   \edef\Hy@tempa{#2}%
2355   \lowercase\expandafter{%
2356     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2357   }%
2358   \ifx\Hy@tempa\@empty
2359     \let\Hy@tempa\Hy@true
2360   \fi
2361   \ifx\Hy@tempa\Hy@true
2362   \else
2363     \ifx\Hy@tempa\Hy@false
2364     \else

```

```

2365 \let\Hy@tempa\relax
2366 \fi
2367 \fi
2368 \ifx\Hy@tempa\relax
2369 \Hy@WarnOptionValue{#2}{#1}{`true' or `false'}%
2370 \else
2371 \Hy@Info{Option `#1' set ``\Hy@tempa'}%
2372 \csname Hy@#1\Hy@tempa\endcsname
2373 \fi
2374 }

```

\Hy@WarnOptionValue

```

2375 \def\Hy@WarnOptionValue#1#2#3{%
2376 \Hy@Warning{%
2377 Unexpected value `#1'\MessageBreak
2378 of option `#2' instead of\MessageBreak
2379 #3%
2380 }%
2381 }

```

\Hy@DisableOption

```

2382 \def\Hy@DisableOption#1{%
2383 \@ifundefined{KV@Hyp@#1@default}{%
2384 \define@key{Hyp}{#1}%
2385 }{%
2386 \define@key{Hyp}{#1}[]%
2387 }%
2388 {\Hy@WarnOptionDisabled{#1}}%
2389 }
2390

```

\Hy@WarnOptionDisabled

```

2391 \def\Hy@WarnOptionDisabled#1{%
2392 \Hy@Warning{%
2393 Option `#1' has already been used,\MessageBreak
2394 setting the option has no effect%
2395 }%
2396 }

```

\Hy@CheckOptionValue Some options take a string value out of a limited set of values. Macro \Hy@CheckOptionValue checks whether the given value #1 for option #2 is a member of the value list #3.

```

2397 \def\Hy@CheckOptionValue#1#2#3{%
2398 \begingroup
2399 \edef\x{#1}%
2400 \@onelevel@sanitize\x
2401 \let\y=y%
2402 \def\do##1##2{%
2403 \def\z{##1}%
2404 \@onelevel@sanitize\z
2405 \ifx\x\z
2406 \let\y=n%
2407 \let\do\@gobbletwo

```

```

2408     \fi
2409   }%
2410   #3%
2411   \ifx\y y%
2412     \def\do##1##2{%
2413       * `##1'%
2414       \ifx\\##2\\\else\space(##2)\fi
2415       \MessageBreak
2416     }%
2417     \Hy@Warning{%
2418       Values of option `#2':\MessageBreak
2419       #3%
2420       * An empty value disables the option.\MessageBreak
2421       Unknown value `x'%
2422     }%
2423   \fi
2424 \endgroup
2425 }

```

`\Hy@DefNameKey` #1: option name  
 #2: \do list with known values, first argument of \do is value, second argument is a comment.

```

2426 \def\Hy@DefNameKey#1{%
2427   \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
2428 }

```

`\Hy@@DefNameKey` #1: macro for value storage  
 #2: option name  
 #3: \do list with known values.

```

2429 \def\Hy@@DefNameKey#1#2#3{%
2430   \define@key{Hyp}{#2}{%
2431     \edef#1{##1}%
2432     \ifx#1\@empty
2433       \else
2434         \Hy@CheckOptionValue{##1}{#2}{#3}%
2435       \fi
2436     }%
2437   \let#1\@empty
2438 }

```

`\Hy@UseNameKey`

```

2439 \def\Hy@UseNameKey#1#2{%
2440   \ifx#2\@empty
2441     \else
2442       /#1/#2%
2443     \fi
2444 }

```

## 9.2 Defining the options

```

2445 \define@key{Hyp}{implicit}[true]{%
2446   \Hy@boolkey{implicit}{#1}%
2447 }

```

```

2448 \define@key{Hyp}{draft}[true]{%
2449   \Hy@boolkey{draft}{#1}%
2450 }
2451 \define@key{Hyp}{final}[true]{%
2452   \Hy@boolkey{final}{#1}%
2453 }
2454 \let\KV@Hyp@nolinks\KV@Hyp@draft
2455 \def\Hy@ObsoletePaperOption#1{%
2456   \Hy@WarningNoLine{%
2457     Option `#1' is no longer used%
2458   }%
2459   \define@key{Hyp}{#1}[true]{}%
2460 }
2461 \def\Hy@temp#1{%
2462   \define@key{Hyp}{#1}[true]{%
2463     \Hy@ObsoletePaperOption{#1}%
2464   }%
2465 }
2466 \Hy@temp{a4paper}
2467 \Hy@temp{a5paper}
2468 \Hy@temp{b5paper}
2469 \Hy@temp{letterpaper}
2470 \Hy@temp{legalpaper}
2471 \Hy@temp{executivepaper}
2472 \define@key{Hyp}{setpagesize}[true]{%
2473   \Hy@boolkey{setpagesize}{#1}%
2474 }
2475 \define@key{Hyp}{debug}[true]{%
2476   \Hy@boolkey{debug}{#1}%
2477 }
2478 \define@key{Hyp}{linktocpage}[true]{%
2479   \Hy@boolkey{linktocpage}{#1}%
2480   \ifHy@linktocpage
2481     \let\Hy@linktoc\Hy@linktoc@page
2482   \else
2483     \let\Hy@linktoc\Hy@linktoc@section
2484   \fi
2485 }
2486 \chardef\Hy@linktoc@none=0 %
2487 \chardef\Hy@linktoc@section=1 %
2488 \chardef\Hy@linktoc@page=2 %
2489 \chardef\Hy@linktoc@all=3 %
2490 \ifHy@linktocpage
2491   \let\Hy@linktoc\Hy@linktoc@page
2492 \else
2493   \let\Hy@linktoc\Hy@linktoc@section
2494 \fi
2495 \define@key{Hyp}{linktoc}{%
2496   \@ifundefined{Hy@linktoc@#1}{%
2497     \Hy@Warning{%
2498       Unexpected value `#1' of\MessageBreak
2499       option `linktoc' instead of `none',\MessageBreak
2500       `section', `page' or `all'%

```

```

2501 }%
2502 }{%
2503 \expandafter\let\expandafter\Hy@linktoc
2504 \csname Hy@linktoc@#1\endcsname
2505 }%
2506 }
2507 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
2508 \let\XR@ext\relax
2509 \define@key{Hyp}{verbose}{true}{%
2510 \Hy@boolkey{verbose}{#1}%
2511 }

```

If we are going to PDF via HyperTeX \special commands, the dvips (-z option) processor does not know the *height* of a link, as it works solely on the position of the closing \special. If we use this option, the \special is raised up by the right amount, to fool the dvi processor.

```

2512 \define@key{Hyp}{raiselinks}{true}{%
2513 \Hy@boolkey{raiselinks}{#1}%
2514 }

```

Most PDF-creating drivers do not allow links to be broken

```

2515 \def\Hy@setbreaklinks#1{%
2516 \csname breaklinks#1\endcsname
2517 }
2518 \def\Hy@breaklinks@unsupported{%
2519 \ifx\Hy@setbreaklinks\@gobble
2520 \ifHy@breaklinks
2521 \Hy@WarningNoLine{%
2522 You have enabled option `breaklinks'.\MessageBreak
2523 But driver ``\Hy@driver.def' does not support this.\MessageBreak
2524 Expect trouble with the link areas of broken links%
2525 }%
2526 \fi
2527 \fi
2528 }
2529 \define@key{Hyp}{breaklinks}{true}{%
2530 \Hy@boolkey{breaklinks}{#1}%
2531 \let\Hy@setbreaklinks\@gobble
2532 }
2533 \define@key{Hyp}{localanchorname}{true}{%
2534 \Hy@WarningNoLine{%
2535 Option `localanchorname' is deprecated%
2536 }%
2537 \Hy@boolkey{localanchorname}{#1}%
2538 }

```

Determines whether an automatic anchor is put on each page

```

2539 \define@key{Hyp}{pageanchor}{true}{%
2540 \Hy@boolkey{pageanchor}{#1}%
2541 }

```

Are the page links done as plain arabic numbers, or do they follow the formatting of the package? The latter loses if you put in typesetting like \textbf or the like.

```

2542 \define@key{Hyp}{plainpages}{true}{%
2543 \Hy@boolkey{plainpages}{#1}%

```

2544 }

Are the names for anchors made as per the HyperTeX system, or do they simply use what L<sup>A</sup>T<sub>E</sub>X provides?

```
2545 \define@key{Hyp}{naturalnames}[true]{%
2546   \Hy@boolkey{naturalnames}{#1}%
2547 }
```

Completely ignore the names as per the HyperTeX system, and use unique counters.

```
2548 \define@key{Hyp}{hypertextnames}[true]{%
2549   \Hy@boolkey{hypertextnames}{#1}%
2550 }
```

Currently, dvips doesn't allow anchors nested within targets, so this option tries to stop that happening. Other processors may be able to cope.

```
2551 \define@key{Hyp}{nesting}[true]{%
2552   \Hy@boolkey{nesting}{#1}%
2553 }

2554 \define@key{Hyp}{destlabel}[true]{%
2555   \Hy@boolkey{destlabel}{#1}%
2556 }

2557 \define@key{Hyp}{unicode}[true]{%
2558   \Hy@boolkey{unicode}{#1}%
2559   \ifHy@unicode
2560     \def\HyPsd@pdfencoding{unicode}%
2561     \HyPsd@LoadUnicode
2562   \else
2563     \def\HyPsd@pdfencoding{pdfdoc}%
2564   \fi
2565 }

2566 \Hy@AtBeginDocument{%
2567   \ifx\HyPsd@LoadUnicode\relax
2568   \else
2569     \def\HyPsd@LoadUnicode{%
2570       \Hy@Error{%
2571         Unicode support for bookmarks is not available.\MessageBreak
2572         Activate unicode support by using one of the options\MessageBreak
2573         `unicode', `pdfencoding=unicode', `pdfencoding=auto'\MessageBreak
2574         in the preamble%
2575       } \@ehc
2576       \global\let\HyPsd@LoadUnicode\relax
2577       \global\Hy@unicodetrue
2578       \global\let\Hy@unicodetrue\Hy@unicodetrue
2579     }%
2580   \fi
2581 }

2582 \define@key{Hyp}{pdfencoding}{%
2583   \edef\HyPsd@temp{#1}%
2584   \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2585     \let\HyPsd@pdfencoding\HyPsd@temp
2586   \else
2587     \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2588       \z@
```

```

2590         \else
2591         \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2592         \z@
2593         \else
2594         \@ne
2595         \fi
2596     \fi
2597     \let\HyPsd@pdfencoding\HyPsd@temp
2598     \hypersetup{unicode}%
2599     \ifHy@unicode
2600     \def\HyPsd@pdfencoding{#1}%
2601     \else
2602     \Hy@Warning{Cannot switch to unicode bookmarks}%
2603     \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2604     \fi
2605     \else
2606     \@onelevel@sanitize\HyPsd@temp
2607     \Hy@Warning{%
2608     Values of option `pdfencoding':\MessageBreak
2609     `pdfdoc', `unicode', `auto'.\MessageBreak
2610     Ignoring unknown value `\HyPsd@temp'%
2611     }%
2612     \fi
2613     \fi
2614 }
2615 \def\HyPsd@pdfencoding@auto{auto}
2616 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2617 \def\HyPsd@pdfencoding@unicode{unicode}

```

change 2020-08-14, use unicode by default:

```

2618 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
2619 \HyPsd@LoadUnicode
2620 \define@key{Hyp}{psdextra}[true]{%
2621   \Hy@boolkey{psdextra}{#1}%
2622   \HyPsd@LoadExtra
2623 }
2624 \def\hypersetup{\kvsetkeys{Hyp}}
2625 \newif\ifHy@setpdfversion
2626 \define@key{Hyp}{pdfversion}{%
2627   \@ifundefined{Hy@pdfversion@#1}{%
2628     \PackageWarning{hyperref}{%
2629       Unsupported PDF version `#1'.\MessageBreak
2630       Valid values: 1.2-1.7, 2.0%
2631     }%
2632   }{%
2633     \Hy@setpdfversiontrue
2634     \@nameuse{Hy@pdfversion@#1}%
2635   }%
2636 }

```

\Hy@pdfminorversion already used elsewhere to denote \pdfminorversion or \pdfvariable majorversion} so introduce new names here.

```

2637 \@namedef{Hy@pdfversion@1.2}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
    norversion{2}}%

```

```

2638 \@namedef{Hy@pdfversion@1.3}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
norversion{3}}%
2639 \@namedef{Hy@pdfversion@1.4}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
norversion{4}}%
2640 \@namedef{Hy@pdfversion@1.5}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
norversion{5}}%
2641 \@namedef{Hy@pdfversion@1.6}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
norversion{6}}%
2642 \@namedef{Hy@pdfversion@1.7}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
norversion{7}}%
2643 \@namedef{Hy@pdfversion@2.0}{\def\Hy@pdf@majorversion{2}\def\Hy@pdf@mi-
norversion{0}}%
2644 \def\Hy@pdf@majorversion{1}\def\Hy@pdf@minorversion{7}

```

Legacy name, earlier releases assumed 1.x

```

2645 \let\Hy@pdfversion\Hy@pdf@minorversion
2646 \def\Hy@pdf@majorminor@version{\numexpr100*\Hy@pdf@majorversion+\Hy@pdf@mi-
norversion\relax}
2647 \def\Hy@pdfmajorminor@version{\numexpr100*\Hy@pdfmajorversion+\Hy@pdfmi-
norversion\relax}

```

if pdfminorversion is defined, make sure pdfmajorversion is too.

```

2648 \@ifundefined{pdfminorversion}{}{%
2649 \@ifundefined{pdfmajorversion}{}%
2650 \newcount\pdfmajorversion
2651 \pdfmajorversion=1
2652 }{}%
2653 }
2654 \ifx\pdfmajorversion\@undefined\else
2655 \def\Hy@pdfmajorversion{\pdfmajorversion}
2656 \fi

```

## 10 Options for different drivers

```

2657 \newif\ifHy@DviMode
2658 \let\Hy@DviErrMsg\@empty
2659 \ifpdf
2660 \def\Hy@DviErrMsg{pdfTeX or LuaTeX is running in PDF mode}%
2661 \else
2662 \ifxetex
2663 \def\Hy@DviErrMsg{XeTeX is running}%
2664 \else
2665 \ifvtex
2666 \ifnum\OpMode=\z@
2667 \Hy@DviModetrue
2668 \else
2669 \def\Hy@DviErrMsg{VTeX is running, but not in DVI mode}%
2670 \fi
2671 \else
2672 \Hy@DviModetrue
2673 \fi
2674 \fi
2675 \fi
2676 \def\HyOpt@CheckDvi#1{%
2677 \ifHy@DviMode
2678 \expandafter\@firstofone

```

```

2679 \else
2680 \Hy@Error{%
2681   Wrong DVI mode driver option `#1',\MessageBreak
2682   because \Hy@DviErrMsg
2683 }\@ehc
2684 \expandafter\@gobble
2685 \fi
2686 }

2687 \DeclareVoidOption{tex4ht}{%
2688 \Hy@texhttrue
2689 \kvsetkeys{Hyp}{colorlinks=true}%
2690 \def\BeforeTeXIVht{\RequirePackage{color}}%
2691 \def\Hy@driver{htex4ht}%
2692 \def\MaybeStopEarly{%
2693 \Hy@Message{Stopped early}%
2694 \Hy@AtBeginDocument{%
2695 \PDF@FinishDoc
2696 \gdef\PDF@FinishDoc{}}%
2697 }%
2698 \endinput
2699 }%
2700 }

2701 \DeclareVoidOption{pdftex}{%
2702 \ifpdf
2703 \def\Hy@driver{hpdftex}%
2704 \PassOptionsToPackage{pdftex}{color}%
2705 \else
2706 \Hy@Error{%
2707   Wrong driver option `pdftex',\MessageBreak
2708   because pdfTeX in PDF mode is not detected%
2709 }\@ehc
2710 \fi
2711 }

2712 \DeclareVoidOption{luatex}{%
2713 \ifpdf
2714 \ifx\pdfextension\@undefined
2715 \def\Hy@driver{hpdftex}%
2716 \PassOptionsToPackage{pdftex}{color}%
2717 \else
2718 \def\Hy@driver{hluatex}%
2719 \PassOptionsToPackage{luatex}{color}%
2720 \fi
2721 \else
2722 \Hy@Error{%
2723   Wrong driver option `luatex',\MessageBreak
2724   because luaTeX in PDF mode is not detected%
2725 }\@ehc
2726 \fi
2727 }

2728 \DeclareVoidOption{nativepdf}{%
2729 \HyOpt@CheckDvi{nativepdf}{%
2730 \def\Hy@driver{hdvips}%
2731 \PassOptionsToPackage{dvips}{color}%
2732 }%

```

```

2733 }
2734 \DeclareVoidOption{dvipdfm}{%
2735   \HyOpt@CheckDvi{dvipdfm}{%
2736     \def\Hy@driver{hdvipdfm}%
2737   }%
2738 }
2739 \DeclareVoidOption{dvipdfmx}{%
2740   \HyOpt@CheckDvi{dvipdfmx}{%
2741     \def\Hy@driver{hdvipdfm}%
2742     \PassOptionsToPackage{dvipdfmx}{color}%
2743   }%
2744 }
2745 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2746   \expandafter\ifx\csname if#1\expandafter\endcsname
2747     \csname iftrue\endcsname
2748     \chardef\SpecialDvipdfmxOutlineOpen\@ne
2749   \else
2750     \chardef\SpecialDvipdfmxOutlineOpen\z@
2751   \fi
2752 }
2753 \DeclareVoidOption{xetex}{%
2754   \ifxetex
2755     \def\Hy@driver{hxetex}%
2756   \else
2757     \Hy@Error{%
2758       Wrong driver option `xetex',\MessageBreak
2759       because XeTeX is not detected%
2760     }\@ehc
2761   \fi
2762 }
2763 \DeclareVoidOption{pdfmark}{%
2764   \HyOpt@CheckDvi{pdfmark}{%
2765     \def\Hy@driver{hdvips}%
2766   }%
2767 }
2768 \DeclareVoidOption{dvips}{%
2769   \HyOpt@CheckDvi{dvips}{%
2770     \def\Hy@driver{hdvips}%
2771     \PassOptionsToPackage{dvips}{color}%
2772   }%
2773 }
2774 \DeclareVoidOption{hypertex}{%
2775   \HyOpt@CheckDvi{hypertex}{%
2776     \def\Hy@driver{hypertex}%
2777   }%
2778 }
2779 \let\Hy@MaybeStopNow\relax
2780 \DeclareVoidOption{vtex}{%
2781   \ifvtex
2782     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2783     \def\Hy@driver{hvtex}%
2784   \else
2785     \ifnum\OpMode=10\relax
2786     \def\Hy@driver{hvtexhtm}%

```

```

2787 \def\MaybeStopEarly{%
2788 \Hy@Message{Stopped early}%
2789 \Hy@AtBeginDocument{%
2790 \PDF@FinishDoc
2791 \gdef\PDF@FinishDoc{%
2792 }%
2793 \endinput
2794 }%
2795 \else
2796 \Hy@Error{%
2797 Wrong driver option `vtex',\MessageBreak
2798 because of wrong OpMode (\the\OpMode)%
2799 }\@ehc
2800 \fi
2801 \fi
2802 \else
2803 \Hy@Error{%
2804 Wrong driver option `vtex',\MessageBreak
2805 because VTeX is not running%
2806 }\@ehc
2807 \fi
2808 }
2809 \DeclareVoidOption{vtexpdfmark}{%
2810 \ifvtex
2811 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2812 \def\Hy@driver{hvtexmrk}%
2813 \else
2814 \Hy@Error{%
2815 Wrong driver option `vtexpdfmark',\MessageBreak
2816 because of wrong OpMode (\the\OpMode)%
2817 }\@ehc
2818 \fi
2819 \else
2820 \Hy@Error{%
2821 Wrong driver option `vtexpdfmark',\MessageBreak
2822 because VTeX is not running%
2823 }\@ehc
2824 \fi
2825 }
2826 \DeclareVoidOption{dviwindo}{%
2827 \HyOpt@CheckDvi{dviwindo}{%
2828 \def\Hy@driver{hdviwind}%
2829 \kvsetkeys{Hyp}{colorlinks}%
2830 \PassOptionsToPackage{dviwindo}{color}%
2831 }%
2832 }
2833 \DeclareVoidOption{dvipsone}{%
2834 \HyOpt@CheckDvi{dvipsone}{%
2835 \def\Hy@driver{hdvipson}%
2836 \PassOptionsToPackage{dvipsone}{color}%
2837 }%
2838 }
2839 \DeclareVoidOption{textures}{%
2840 \HyOpt@CheckDvi{textures}{%

```

```

2841 \def\Hy@driver{htexture}%
2842 }%
2843 }
2844 \DeclareVoidOption{latex2html}{%
2845 \Hy@Warning{Option `latex2html` is obsolete. \MessageBreak
2846 A current html.sty will do all necessary (re)definitions%
2847 }%
2848 }
2849 \DeclareVoidOption{hitex}{%
2850 \ifhint
2851 \IfFileExists{hhitex.def}
2852 {\def\Hy@driver{hhitex}}}%
2853 {\Hy@Warning{%
2854 Missing driver file `hhitex.def',\MessageBreak
2855 ignoring hitex driver%
2856 }}%
2857 \else
2858 \Hy@Error{%
2859 Wrong driver option `hitex',\MessageBreak
2860 because HiTeX is not detected%
2861 }\@ehc
2862 \fi
2863 }

```

No more special treatment for ps2pdf. Let it sink or swim.

```

2864 \DeclareVoidOption{ps2pdf}{%
2865 \HyOpt@CheckDvi{ps2pdf}{%
2866 \def\Hy@driver{hdvips}%
2867 \PassOptionsToPackage{dvips}{color}%
2868 }%
2869 }
2870 \let\HyOpt@DriverFallback\@empty
2871 \define@key{Hyp}{driverfallback}{%
2872 \ifHy@DviMode
2873 \def\HyOpt@DriverFallback{#1}%
2874 \Hy@Match\HyOpt@DriverFallback}{%
2875 ~(|dvipdfm|dvipdfmx|dvips|dvipsone|dviwindo|hypertex|ps2pdf|
2876 latex2html|tex4ht)$%
2877 }{}{%
2878 \Hy@Warning{%
2879 Invalid driver `#1' for option\MessageBreak
2880 `driverfallback'%
2881 }%
2882 \let\HyOpt@DriverFallback\@empty
2883 }%
2884 \fi
2885 }
2886 \IfPDFManagementActiveTF
2887 {\def\HyOpt@CustomDriver{hgeneric-testphase}}
2888 {\let\HyOpt@CustomDriver\@empty}
2889
2890 \define@key{Hyp}{customdriver}{%
2891 \IfFileExists{#1.def}{%
2892 \def\HyOpt@CustomDriver{#1}%

```

```

2893 }{%
2894   \Hy@Warning{%
2895     Missing driver file `#1.def',\MessageBreak
2896     ignoring custom driver%
2897   }%
2898 }%
2899 }

```

## 11 Options to add extra features

Make included figures (assuming they use the standard graphics package) be hypertext links. Off by default. Needs more work.

```

2900 \define@key{Hyp}{hyperfigures}[true]{%
2901   \Hy@boolkey{hyperfigures}{#1}%
2902 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

2903 \define@key{Hyp}{hyperfootnotes}[true]{%
2904   \Hy@boolkey{hyperfootnotes}{#1}%
2905 }

```

Set up back-referencing to be hyper links, by page, slide or section number,

```

2906 \def\back@none{none}
2907 \def\back@section{section}
2908 \def\back@page{page}
2909 \def\back@slide{slide}
2910 \define@key{Hyp}{backref}[section]{%
2911   \lowercase{\def\Hy@tempa{#1}}%
2912   \ifx\Hy@tempa\@empty
2913     \let\Hy@tempa\back@section
2914   \fi
2915   \ifx\Hy@tempa\Hy@false
2916     \let\Hy@tempa\back@none
2917   \fi
2918   \ifx\Hy@tempa\back@slide
2919     \let\Hy@tempa\back@section
2920   \fi
2921   \ifx\Hy@tempa\back@page
2922     \PassOptionsToPackage{hyperpageref}{backref}%
2923     \Hy@backreftrue
2924   \else
2925     \ifx\Hy@tempa\back@section
2926       \PassOptionsToPackage{hyperref}{backref}%
2927       \Hy@backreftrue
2928     \else
2929       \ifx\Hy@tempa\back@none
2930         \Hy@backreffalse
2931       \else
2932         \Hy@WarnOptionValue{#1}{backref}{%
2933           `section', `slide', `page', `none',\MessageBreak
2934           or `false'}%
2935       \fi
2936     \fi
2937   \fi
2938 }

```

```

2939 \define@key{Hyp}{pagebackref}[true]{%
2940   \edef\Hy@tempa{#1}%
2941   \lowercase\expandafter{%
2942     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2943   }%
2944   \ifx\Hy@tempa\@empty
2945     \let\Hy@tempa\Hy@true
2946   \fi
2947   \ifx\Hy@tempa\Hy@true
2948     \PassOptionsToPackage{hyperpageref}{backref}%
2949     \Hy@backreftrue
2950   \else
2951     \ifx\Hy@tempa\Hy@false
2952       \Hy@backreffalse
2953     \else
2954       \Hy@WarnOptionValue{#1}{pagebackref}{`true' or `false'}%
2955     \fi
2956   \fi
2957 }

```

Make index entries be links back to the relevant pages. By default this is turned on, but may be stopped.

```

2958 \define@key{Hyp}{hyperindex}[true]{%
2959   \Hy@boolkey{hyperindex}{#1}%
2960 }

```

Configuration of encap char.

```

2961 \define@key{Hyp}{encap}[|]{%
2962   \def\HyInd@EncapChar{#1}%
2963 }

```

## 12 Language options

The `\autoref` feature depends on the language.

```

2964 \def\HyLang@afrikaans{%
2965   \def\equationautorefname{Vergelyking}%
2966   \def\footnoteautorefname{Voetnota}%
2967   \def\itemautorefname{Item}%
2968   \def\figureautorefname{Figuur}%
2969   \def\tableautorefname{Tabel}%
2970   \def\partautorefname{Deel}%
2971   \def\appendixautorefname{Bylae}%
2972   \def\chapterautorefname{Hoofstuk}%
2973   \def\sectionautorefname{Afdeling}%
2974   \def\subsectionautorefname{Subafdeling}%
2975   \def\subsubsectionautorefname{Subsubafdeling}%
2976   \def\paragraphautorefname{Paragraaf}%
2977   \def\subparagraphautorefname{Subparagraaf}%
2978   \def\FancyVerbLineautorefname{Lyn}%
2979   \def\theoremautorefname{Teorema}%
2980   \def\pageautorefname{Bladsy}%
2981 }
2982 \def\HyLang@english{%
2983   \def\equationautorefname{Equation}%

```

```

2984 \def\footnoteautorefname{footnote}%
2985 \def\itemautorefname{item}%
2986 \def\figureautorefname{Figure}%
2987 \def\tableautorefname{Table}%
2988 \def\partautorefname{Part}%
2989 \def\appendixautorefname{Appendix}%
2990 \def\chapterautorefname{chapter}%
2991 \def\sectionautorefname{section}%
2992 \def\subsectionautorefname{subsection}%
2993 \def\subsubsectionautorefname{subsubsection}%
2994 \def\paragraphautorefname{paragraph}%
2995 \def\subparagraphautorefname{subparagraph}%
2996 \def\FancyVerbLineautorefname{line}%
2997 \def\theoremautorefname{Theorem}%
2998 \def\pageautorefname{page}%
2999 }
3000 \def\HyLang@french{%
3001 \def\equationautorefname{'equation}%
3002 \def\footnoteautorefname{note}%
3003 \def\itemautorefname{item}%
3004 \def\figureautorefname{figure}%
3005 \def\tableautorefname{tableau}%
3006 \def\partautorefname{partie}%
3007 \def\appendixautorefname{annexe}%
3008 \def\chapterautorefname{chapitre}%
3009 \def\sectionautorefname{section}%
3010 \def\subsectionautorefname{sous-section}%
3011 \def\subsubsectionautorefname{sous-sous-section}%
3012 \def\paragraphautorefname{paragraphe}%
3013 \def\subparagraphautorefname{sous-paragraphe}%
3014 \def\FancyVerbLineautorefname{ligne}%
3015 \def\theoremautorefname{th'eor'eme}%
3016 \def\pageautorefname{page}%
3017 }
3018 \def\HyLang@german{%
3019 \def\equationautorefname{Gleichung}%
3020 \def\footnoteautorefname{Fu'ss note}%
3021 \def\itemautorefname{Punkt}%
3022 \def\figureautorefname{Abbildung}%
3023 \def\tableautorefname{Tabelle}%
3024 \def\partautorefname{Teil}%
3025 \def\appendixautorefname{Anhang}%
3026 \def\chapterautorefname{Kapitel}%
3027 \def\sectionautorefname{Abschnitt}%
3028 \def\subsectionautorefname{Unterabschnitt}%
3029 \def\subsubsectionautorefname{Unterunterabschnitt}%
3030 \def\paragraphautorefname{Absatz}%
3031 \def\subparagraphautorefname{Unterabsatz}%
3032 \def\FancyVerbLineautorefname{Zeile}%
3033 \def\theoremautorefname{Theorem}%
3034 \def\pageautorefname{Seite}%
3035 }
3036 \def\HyLang@italian{%
3037 \def\equationautorefname{Equazione}%

```

```

3038 \def\footnoteautorefname{nota}%
3039 \def\itemautorefname{punto}%
3040 \def\figureautorefname{Figura}%
3041 \def\tableautorefname{Tabella}%
3042 \def\partautorefname{Parte}%
3043 \def\appendixautorefname{Appendice}%
3044 \def\chapterautorefname{Capitolo}%
3045 \def\sectionautorefname{sezione}%
3046 \def\subsectionautorefname{sottosezione}%
3047 \def\subsubsectionautorefname{sottosottosezione}%
3048 \def\paragraphautorefname{paragrafo}%
3049 \def\subparagraphautorefname{sottoparagrafo}%
3050 \def\FancyVerbLineautorefname{linea}%
3051 \def\theoremautorefname{Teorema}%
3052 \def\pageautorefname{Pag.\@}%
3053 }
3054 \def\HyLang@magyar{%
3055 \def\equationautorefname{Egyenlet}%
3056 \def\footnoteautorefname{l\abjegyzet}%
3057 \def\itemautorefname{Elem}%
3058 \def\figureautorefname{\Abra}%
3059 \def\tableautorefname{T\abl\azat}%
3060 \def\partautorefname{R\esz}%
3061 \def\appendixautorefname{F\uggel\ek}%
3062 \def\chapterautorefname{fejezet}%
3063 \def\sectionautorefname{szakasz}%
3064 \def\subsectionautorefname{alszakasz}%
3065 \def\subsubsectionautorefname{alalszakasz}%
3066 \def\paragraphautorefname{bekezd\es}%
3067 \def\subparagraphautorefname{albekezd\es}%
3068 \def\FancyVerbLineautorefname{sor}%
3069 \def\theoremautorefname{T\etel}%
3070 \def\pageautorefname{oldal}%
3071 }
3072 \def\HyLang@portuges{%
3073 \def\equationautorefname{Equa\c c\~ao}%
3074 \def\footnoteautorefname{Nota de rodap\e}%
3075 \def\itemautorefname{Item}%
3076 \def\figureautorefname{Figura}%
3077 \def\tableautorefname{Tabela}%
3078 \def\partautorefname{Parte}%
3079 \def\appendixautorefname{Ap\~endice}%
3080 \def\chapterautorefname{Cap\itulo}%
3081 \def\sectionautorefname{Se\c c\~ao}%
3082 \def\subsectionautorefname{Subse\c c\~ao}%
3083 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
3084 \def\paragraphautorefname{par\agrafo}%
3085 \def\subparagraphautorefname{subpar\agrafo}%
3086 \def\FancyVerbLineautorefname{linha}%
3087 \def\theoremautorefname{Teorema}%
3088 \def\pageautorefname{P\agina}%
3089 }

```

Next commented section for Russian is provided by Olga Lapko.

Next follow the checked reference names with commented variants and expla-

nations. All they are abbreviated and they won't create a grammatical problems in the *middle* of sentences.

The most weak points in these abbreviations are the `\equationautorefname`, `\theoremautorefname` and the `\FancyVerbLineautorefname`. But those three, and also the `\footnoteautorefname` are not *too* often referenced. Another rather weak point is the `\appendixautorefname`.

```
3090 \def\HyLang@russian{%
```

The abbreviated reference to the equation: it is not for “the good face of the book”, but maybe it will be better to get the company for the `\theoremautorefname`?

```
3091 \def\equationautorefname{\cyr\cyrv\cyrry\cyrr.}%
```

The name of the equation reference has common form for both nominative and accusative but changes in other forms, like “of `\autoref{auto}`” etc. The full name must follow full name of the `\theoremautorefname`.

```
3092 % \def\equationautorefname{%
```

```
3093 %   \cyr\cyrv\cyrry\cyrr\cyra\cyrrh\cyre\cyrn\cyri\cyre
```

```
3094 % }%
```

The variant of footnote has abbreviation form of the synonym of the word “footnote”. This variant of abbreviated synonym has alternative status (maybe obsolete?).

```
3095 \def\footnoteautorefname{%
```

```
3096   \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr.\ \cyrp\cyrr\cyri\cyrm.%
```

```
3097 }%
```

Commented form of the full synonym for “footnote”. It has common form for both nominative and accusative but changes in other forms, like “of `\autoref{auto}`”

```
3098 % \def\footnoteautorefname{%
```

```
3099 %   \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr\cyro\cyrch\cyrn\cyro\cyre\ %
```

```
3100 %   \cyrp\cyrr\cyri\cyrm\cyre\cyrch\cyra\cyrn\cyri\cyre
```

```
3101 % }%
```

Commented forms of the “footnote”: have different forms, the same is for the nominative and accusative. (The others needed?)

```
3102 % \def\Nomfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyra}%
```

```
3103 % \def\Accfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyru}%
```

Name of the list item, can be confused with the paragraph reference name, but reader could understand meaning from context(?). Commented variant has common form for both nominative and accusative but changes in other forms, like “of `\autoref{auto}`” etc.

```
3104 \def\itemautorefname{\cyr\cyrp.}%
```

```
3105 % \def\itemautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
```

Names of the figure and table have stable (standard) abbreviation forms. No problem in the middle of sentence.

```
3106 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%
```

```
3107 \def\tableautorefname{\cyr\cyrt\cyra\cyrb\cyrl.}%
```

Names of the part, chapter, section(s) have stable (standard) abbreviation forms. No problem in the middle of sentence.

```
3108 \def\partautorefname{\cyr\cyrch.}%
```

```
3109 \def\chapterautorefname{\cyr\cyrg\cyrl.}%
```

```
3110 \def\sectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
```

Name of the appendix can use this abbreviation, but it is not standard for books, i.e, not for “the good face of the book”. Commented variant has common form for both nominative and accusative but changes in other forms, like “of \autoref{auto}” etc.

```
3111 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyr1.}%
3112 % \def\appendixautorefname{%
3113 % \cyr\cyrp\cyrr\cyri\cyr1\cyro\cyrzh\cyre\cyrn\cyri\cyre
3114 % }%
```

The sectioning command have stable (almost standard) and common abbreviation form for all levels (the meaning of these references visible from the section number). No problem.

```
3115 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
3116 \def\subsubsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
```

The names of references to paragraphs also have stable (almost standard) and common abbreviation form for all levels (the meaning of these references is visible from the section number). No problem in the middle of sentence.

```
3117 \def\paragraphautorefname{\cyr\cyrp.}%
3118 \def\subparagraphautorefname{\cyr\cyrp.}%
```

Commented variant can be used in books but since it has common form for both nominative and accusative but it changes in other forms, like “of \autoref{auto}” etc.

```
3119 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyr1.}%
3120 % \def\subparagraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyr1.}%
```

The name of verbatim line. Here could be a standard of the abbreviation (used very rare). But the author preprint publications (which have not any editor or corrector) can use this abbreviation for the page reference. So the meaning of the line reference can be read as reference to the page.

```
3121 \def\FancyVerbLineautorefname{\cyr\cyrs\cyr1\cyr1.}%
```

Commented names of the “verbatim line”: have different forms, also the nominative and accusative.

```
3122 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyr1\cyr1\cyro\cyrk\cyra}%
3123 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyr1\cyr1\cyro\cyrk\cyru}%
```

The alternative, ve-e-e-ery professional abbreviation, was used in typography markup for typesetters.

```
3124 % \def\FancyVerbLineautorefname{\cyr\cyrs\cyr1\cyr1\cyrk.}%
```

The names of theorem: if we want have “the good face of the book”, so the theorem reference must have the full name (like equation reference). But ...

```
3125 \def\theoremautorefname{\cyr\cyr1\cyre\cyro\cyr1.}%
```

Commented forms of the “theorem”: have different forms, also the nominative and accusative.

```
3126 % \def\Nomtheoremautorefname{\cyr\cyr1\cyre\cyro\cyr1\cyr1\cyra}%
3127 % \def\Acctheoremautorefname{\cyr\cyr1\cyre\cyro\cyr1\cyr1\cyru}%
```

Name of the page stable (standard) abbreviation form. No problem.

```
3128 \def\pageautorefname{\cyr\cyrs.}%
3129 }
```

```

3130 \def\HyLang@spanish{%
3131   \def\equationautorefname{Ecuaci\on}%
3132   \def\footnoteautorefname{Nota a pie de p\agina}%
3133   \def\itemautorefname{Elemento}%
3134   \def\figureautorefname{Figura}%
3135   \def\tableautorefname{Tabla}%
3136   \def\partautorefname{Parte}%
3137   \def\appendixautorefname{Ap\endice}%
3138   \def\chapterautorefname{Cap\itulo}%
3139   \def\sectionautorefname{Secci\on}%
3140   \def\subsectionautorefname{Subsecci\on}%
3141   \def\subsubsectionautorefname{Subsubsecci\on}%
3142   \def\paragraphautorefname{P\arrafo}%
3143   \def\subparagraphautorefname{Subp\arrafo}%
3144   \def\FancyVerbLineautorefname{L\inea}%
3145   \def\theoremautorefname{Teorema}%
3146   \def\pageautorefname{P\agina}%
3147 }

3148 \def\HyLang@catalan{%
3149   \def\equationautorefname{Equaci\o}%
3150   \def\footnoteautorefname{Nota al peu de p\agina}%
3151   \def\itemautorefname{Element}%
3152   \def\figureautorefname{Figura}%
3153   \def\tableautorefname{Taula}%
3154   \def\partautorefname{Part}%
3155   \def\appendixautorefname{Ap\`endix}%
3156   \def\chapterautorefname{Cap\itol}%
3157   \def\sectionautorefname{Secci\o}%
3158   \def\subsectionautorefname{Subsecci\o}%
3159   \def\subsubsectionautorefname{Subsubsecci\o}%
3160   \def\paragraphautorefname{Par\`agraf}%
3161   \def\subparagraphautorefname{Subpar\`agraf}%
3162   \def\FancyVerbLineautorefname{L\`inia}%
3163   \def\theoremautorefname{Teorema}%
3164   \def\pageautorefname{P\`agina}%
3165 }

3166 \def\HyLang@vietnamese{%
3167   \def\equationautorefname{Ph\uhorn{}\ohorn{}ng tr\`inh}%
3168   \def\footnoteautorefname{Ch\`u th\`ich}%
3169   \def\itemautorefname{m\du{c}}%
3170   \def\figureautorefname{H\`inh}%
3171   \def\tableautorefname{B\h{a}ng}%
3172   \def\partautorefname{Ph\`acircumflex{}n}%
3173   \def\appendixautorefname{Ph\du{l}\du{c}}%
3174   \def\chapterautorefname{ch\uhorn{}\ohorn{}ng}%
3175   \def\sectionautorefname{m\du{c}}%
3176   \def\subsectionautorefname{m\du{c}}%
3177   \def\subsubsectionautorefname{m\du{c}}%
3178   \def\paragraphautorefname{\dj{}o\du{a}n}%
3179   \def\subparagraphautorefname{\dj{}o\du{a}n}%
3180   \def\FancyVerbLineautorefname{d\`ong}%
3181   \def\theoremautorefname{DJ{}\di{nh}l\`y}%
3182   \def\pageautorefname{Trang}%

```



```

3219 }
3220 \def\HyLang@norsk{%
3221   \def\equationautorefname{Ligning}%
3222   \def\footnoteautorefname{fotnote}%
3223   \def\itemautorefname{element}%
3224   \def\figureautorefname{Figur}%
3225   \def\tableautorefname{Tabell}%
3226   \def\partautorefname{Del}%
3227   \def\appendixautorefname{Tillegg}%
3228   \def\chapterautorefname{kapittel}%
3229   \def\sectionautorefname{seksjon}%
3230   \def\subsectionautorefname{underseksjon}%
3231   \def\subsubsectionautorefname{under-underseksjon}%
3232   \def\paragraphautorefname{avsnitt}%
3233   \def\subparagraphautorefname{underavsnitt}%
3234   \def\FancyVerbLineautorefname{Linje}%
3235   \def\theoremautorefname{Teorem}%
3236   \def\pageautorefname{side}%
3237 }
3238 \def\HyLang@danish{%
3239   \def\equationautorefname{Ligning}%
3240   \def\footnoteautorefname{fodnote}%
3241   \def\itemautorefname{element}%
3242   \def\figureautorefname{Figur}%
3243   \def\tableautorefname{Tabel}%
3244   \def\partautorefname{Del}%
3245   \def\appendixautorefname{Bilag}%
3246   \def\chapterautorefname{kapitel}%
3247   \def\sectionautorefname{sektion}%
3248   \def\subsectionautorefname{under-sektion}%
3249   \def\subsubsectionautorefname{under-under-sektion}%
3250   \def\paragraphautorefname{afsnit}%
3251   \def\subparagraphautorefname{underafsnit}%
3252   \def\FancyVerbLineautorefname{linje}%
3253   \def\theoremautorefname{Teorem}%
3254   \def\pageautorefname{side}%
3255 }
3256 \def\HyLang@swedish{%
3257   \def\equationautorefname{Ekvation}%
3258   \def\footnoteautorefname{fotnot}%
3259   \def\itemautorefname{punkt}%
3260   \def\figureautorefname{Figur}%
3261   \def\tableautorefname{Tabell}%
3262   \def\partautorefname{Del}%
3263   \def\appendixautorefname{Bilaga}%
3264   \def\chapterautorefname{kapitel}%
3265   \def\sectionautorefname{avsnitt}%
3266   \def\subsectionautorefname{underavsnitt}%
3267   \def\subsubsectionautorefname{under-underavsnitt}%
3268   \def\paragraphautorefname{paragraf}%
3269   \def\subparagraphautorefname{underparagraf}%
3270   \def\FancyVerbLineautorefname{linje}%
3271   \def\theoremautorefname{Teorem}%
3272   \def\pageautorefname{sida}%

```

3273 }

Instead of package babel's definition of `\addto` the implementation of package `varioref` is used. Additionally argument `#1` is checked for `\relax`.

```

3274 \def\HyLang@addto#1#2{%
3275   #2%
3276   \@temptokena{#2}%
3277   \ifx#1\relax
3278     \let#1\@empty
3279   \fi
3280   \ifx#1\@undefined
3281     \edef#1{\the\@temptokena}%
3282   \else
3283     \toks@\expandafter{#1}%
3284     \edef#1{\the\toks@\the\@temptokena}%
3285   \fi
3286   \@temptokena{}\toks@\@temptokena
3287 }

3288 \def\HyLang@DeclareLang#1#2#3{%
3289   \ifcsname extras#1\endcsname
3290     \expandafter\HyLang@addto
3291       \csname extras#1\expandafter\endcsname
3292       \csname HyLang@#2\endcsname
3293   \begingroup
3294     \edef\x{\endgroup
3295       #3%
3296     }%
3297     \x
3298     \@namedef{HyLang@#1@done}{}%
3299   \fi
3300   \begingroup
3301     \edef\x##1##2{%
3302       \noexpand\ifx##2\relax
3303         \errmessage{No definitions for language #2' found!}%
3304       \noexpand\fi
3305     \endgroup
3306     \noexpand\define@key{Hyp}{#1}[]{%
3307       \noexpand\@ifundefined{HyLang@#1@done}{%
3308         \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
3309         #3%
3310         \noexpand\@namedef{HyLang@#1@done}{}%
3311       }{}%
3312     }%
3313   }%
3314   \expandafter\x\csname extras#1\expandafter\endcsname
3315     \csname HyLang@#2\endcsname
3316 }

3317 \HyLang@DeclareLang{english}{english}{}
3318 \HyLang@DeclareLang{UKenglish}{english}{}
3319 \HyLang@DeclareLang{british}{english}{}
3320 \HyLang@DeclareLang{USenglish}{english}{}
3321 \HyLang@DeclareLang{american}{english}{}
3322 \HyLang@DeclareLang{german}{german}{}
3323 \HyLang@DeclareLang{austrian}{german}{}

```

```

3324 \HyLang@DeclareLang{ngerman}{german}{}
3325 \HyLang@DeclareLang{naustrian}{german}{}
3326 \HyLang@DeclareLang{nswissgerman}{german}{}
3327 \HyLang@DeclareLang{swissgerman}{german}{}
3328 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
3329 \HyLang@DeclareLang{brazil}{portuges}{}
3330 \HyLang@DeclareLang{brazilian}{portuges}{}
3331 \HyLang@DeclareLang{portuguese}{portuges}{}
3332 \HyLang@DeclareLang{spanish}{spanish}{}
3333 \HyLang@DeclareLang{catalan}{catalan}{}
3334 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
3335 \HyLang@DeclareLang{french}{french}{}
3336 \HyLang@DeclareLang{frenchb}{french}{}
3337 \HyLang@DeclareLang{français}{french}{}
3338 \HyLang@DeclareLang{acadian}{french}{}
3339 \HyLang@DeclareLang{canadien}{french}{}
3340 \HyLang@DeclareLang{italian}{italian}{}
3341 \HyLang@DeclareLang{magyar}{magyar}{}
3342 \HyLang@DeclareLang{hungarian}{magyar}{}
3343 \HyLang@DeclareLang{greek}{greek}{}
3344 \HyLang@DeclareLang{dutch}{dutch}{}
3345 \HyLang@DeclareLang{norsk}{norsk}{}
3346 \HyLang@DeclareLang{norwegian}{norsk}{}
3347 \HyLang@DeclareLang{danish}{danish}{}
3348 \HyLang@DeclareLang{swedish}{swedish}{}

```

More work is needed in case of options `vietnamese` and `vietnam`.

```

3349 \DeclareVoidOption{vietnamese}{%
3350   \HyLang@addto\extrasvietnamese\HyLang@vietnamese
3351   \Hy@AtEndOfPackage{%
3352     \@ifundefined{T@PU}{}{}%
3353     \input{puvnenc.def}%
3354   }%
3355 }%
3356 }
3357 \DeclareVoidOption{vietnam}{%
3358   \HyLang@addto\extrasvietnam\HyLang@vietnamese
3359   \Hy@AtEndOfPackage{%
3360     \@ifundefined{T@PU}{}{}%
3361     \input{puvnenc.def}%
3362   }%
3363 }%
3364 }

```

Similar for option `arabic` that just loads the additions to PU encoding for Arabi.

```

3365 \DeclareVoidOption{arabic}{%
3366   \Hy@AtEndOfPackage{%
3367     \@ifundefined{T@PU}{}{}%
3368     \input{puarenc.def}%
3369   }%
3370 }%
3371 }

```

## 13 Options to change appearance of links

Colouring links at the L<sup>A</sup>T<sub>E</sub>X level is useful for debugging, perhaps.

```
3372 \define@key{Hyp}{colorlinks}[true]{%
3373   \Hy@boolkey{colorlinks}{#1}%
3374 }
3375 \DeclareVoidOption{hidelinks}{%
3376   \Hy@colorlinksfalse
3377   \Hy@ocgcolorlinksfalse
3378   \Hy@frenchlinksfalse
3379   \def\Hy@colorlink##1{\begingroup}%
3380   \def\Hy@endcolorlink{\endgroup}%
3381   \def\@pdfborder{0 0 0}%
3382   \let\@pdfborderstyle\@empty
3383 }
3384 \define@key{Hyp}{ocgcolorlinks}[true]{%
3385   \Hy@boolkey{ocgcolorlinks}{#1}%
3386 }
3387 \Hy@AtBeginDocument{%
3388   \begingroup
3389   \@ifundefined{OBJ@OCG@view}{%
3390     \ifHy@ocgcolorlinks
3391       \Hy@Warning{%
3392         Driver does not support `ocgcolorlinks',\MessageBreak
3393         using `colorlinks' instead%
3394       }%
3395     \fi
3396   }{}%
3397   \endgroup
3398 }
3399 \define@key{Hyp}{frenchlinks}[true]{%
3400   \Hy@boolkey{frenchlinks}{#1}%
3401 }
```

## 14 Bookmarking

```
3402 \begingroup\expandafter\expandafter\expandafter\endgroup
3403 \expandafter\ifx\csname chapter\endcsname\relax
3404   \def\toclevel@part{0}%
3405   \else
3406     \def\toclevel@part{-1}%
3407   \fi
3408   \def\toclevel@chapter{0}
3409   \def\toclevel@section{1}
3410   \def\toclevel@subsection{2}
3411   \def\toclevel@subsubsection{3}
3412   \def\toclevel@paragraph{4}
3413   \def\toclevel@subparagraph{5}
3414   \def\toclevel@figure{0}
3415   \def\toclevel@table{0}
3416 \define@key{Hyp}{bookmarks}[true]{%
3417   \Hy@boolkey{bookmarks}{#1}%
3418 }
```

```

3419 \define@key{Hyp}{bookmarksopen}[true]{%
3420   \Hy@boolkey{bookmarksopen}{#1}%
3421 }

```

The depth of the outlines is controlled by option `bookmarksdepth`. The option acts globally and distinguishes three cases:

- `bookmarksdepth`: Without value `hyperref` uses counter `tocdepth` (compatible behaviour and default).
- `bookmarksdepth=<number>`: the depth is set to `<number>`.
- `bookmarksdepth=<name>`: The `<name>` must not start with a number or minus sign. It is a document division name (part, chapter, section, ...). Internally the value of macro `\toclevel@<name>` is used.

```

3422 \let\Hy@bookmarksdepth\c@tocdepth
3423 \define@key{Hyp}{bookmarksdepth}[]{%
3424   \begingroup
3425     \edef\x{#1}%
3426     \ifx\x\empty
3427       \global\let\Hy@bookmarksdepth\c@tocdepth
3428     \else
3429       \ifundefined{toclevel@\x}{%
3430         \@onelevel@sanitize\x
3431         \edef\y{\expandafter\@car\x\@nil}%
3432         \ifcase 0\expandafter\ifx\y-1\fi
3433           \expandafter\ifnum\expandafter`\y>47 %
3434             \expandafter\ifnum\expandafter`\y<58 1\fi\fi relax
3435         \Hy@Warning{Unknown document division name (\x)}%
3436       \else
3437         \setbox\z@=\hbox{%
3438           \count@=\x
3439           \xdef\Hy@bookmarksdepth{\the\count@}%
3440         }%
3441       \fi
3442     }{%
3443       \setbox\z@=\hbox{%
3444         \count@=\csname toclevel@\x\endcsname
3445         \xdef\Hy@bookmarksdepth{\the\count@}%
3446       }%
3447     }%
3448   \fi
3449 \endgroup
3450 }

```

‘bookmarksopenlevel’ to specify the open level. From Heiko Oberdiek.

```

3451 \define@key{Hyp}{bookmarksopenlevel}{%
3452   \def\@bookmarksopenlevel{#1}%
3453 }
3454 \def\@bookmarksopenlevel{\maxdimen}
3455 % `bookmarkstype' to specify which `toc' file to mimic
3456 \define@key{Hyp}{bookmarkstype}{%
3457   \def\Hy@bookmarkstype{#1}%
3458 }
3459 \def\Hy@bookmarkstype{toc}

```

Richard Curnow <richard@curnow.demon.co.uk> suggested this functionality. It adds section numbers etc to bookmarks.

```

3460 \define@key{Hyp}{bookmarksnumbered}[true]{%
3461   \Hy@boolkey{bookmarksnumbered}{#1}%
3462 }

Option CJKbookmarks enables the patch for CJK bookmarks.
3463 \define@key{Hyp}{CJKbookmarks}[true]{%
3464   \Hy@boolkey{CJKbookmarks}{#1}%
3465 }

3466 \def\Hy@temp#1{%
3467   \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
3468 }
3469 \def\Hy@@temp#1#2#3{%
3470   \define@key{Hyp}{#2color}{%
3471     \HyColor@HyperrefColor{##1}#1%
3472   }%
3473   \def#1{#3}%
3474 }
3475 \Hy@temp{link}{red}
3476 \Hy@temp{anchor}{black}
3477 \Hy@temp{cite}{green}
3478 \Hy@temp{file}{cyan}
3479 \Hy@temp{url}{magenta}
3480 \Hy@temp{menu}{red}
3481 \Hy@temp{run}{\@filecolor}
3482 \define@key{Hyp}{pagecolor}{%
3483   \Hy@WarningPageColor
3484 }
3485 \def\Hy@WarningPageColor{%
3486   \Hy@WarningNoLine{Option `pagecolor' is not available anymore}%
3487   \global\let\Hy@WarningPageColor\relax
3488 }
3489 \define@key{Hyp}{allcolors}{%
3490   \HyColor@HyperrefColor{#1}\@linkcolor
3491   \HyColor@HyperrefColor{#1}\@anchorcolor
3492   \HyColor@HyperrefColor{#1}\@citecolor
3493   \HyColor@HyperrefColor{#1}\@filecolor
3494   \HyColor@HyperrefColor{#1}\@urlcolor
3495   \HyColor@HyperrefColor{#1}\@menucolor
3496   \HyColor@HyperrefColor{#1}\@runcolor
3497 }

3498 \def\hyperbaseurl#1{\def\@baseurl{#1}}
3499 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
3500 \let\@baseurl\@empty
3501 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
3502 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
3503 \hyperlinkfileprefix{file:}

```

## 15 PDF-specific options

`\pdfpagetransition` The value of option `pdfpagetransition` is stored in `\pdfpagetransition`. Its initial value is set to `\relax` in order to be able to differentiate between a not used option

and an option with an empty value.

```

3504 \let\@pdfpagetransition\relax
3505 \define@key{Hyp}{pdfpagetransition}{%
3506   \def\@pdfpagetransition{#1}%
3507 }

```

`\@pdfpageduration` The value of option `pdfpageduration` is stored in `\@pdfpageduration`. Its initial value is set to `\relax` in order to be able to differentiate between a not used option and an option with an empty value.

```

3508 \let\@pdfpageduration\relax
3509 \define@key{Hyp}{pdfpageduration}{%
3510   \def\@pdfpageduration{#1}%
3511   \Hy@Match\@pdfpageduration}{%
3512     ^(|[0-9]+\.[0-9]*|[0-9]*\.[0-9]+)$%
3513   }{%
3514     \Hy@Warning{%
3515       Invalid value '\@pdfpageduration'\MessageBreak
3516       of option 'pdfpageduration'\MessageBreak
3517       is replaced by an empty value%
3518     }%
3519     \let\@pdfpageduration\@empty
3520   }%
3521 }

```

The value of the `bordercolor` options are not processed by the color package. Therefore the value consists of space separated rgb numbers in the range 0 until 1.

Package `xcolor` provides `\XC@bordercolor` since version 1.1. If the two spaces in the color specification are missing, then the value is processed as color specification from package `xcolor` by using `\XC@bordercolor` (since `xcolor` 2004/05/09 v1.11, versions 2005/03/24 v2.02 until 2006/11/28 v2.10 do not work because of a bug that is fixed in 2007/01/21 v2.11).

```

3522 \def\Hy@ColorList{cite,file,link,menu,run,url}
3523 \@for\Hy@temp:=\Hy@ColorList\do{%
3524   \edef\Hy@temp{%
3525     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
3526       \noexpand\HyColor@HyperrefBorderColor
3527       {##1}%
3528       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
3529       {hyperref}%
3530       {\Hy@temp bordercolor}%
3531     }%
3532   }%
3533   \Hy@temp
3534 }
3535 \define@key{Hyp}{pagebordercolor}{%
3536   \Hy@WarningPageBorderColor
3537 }
3538 \def\Hy@WarningPageBorderColor{%
3539   \Hy@WarningNoLine{Option 'pagebordercolor' is not available anymore}%
3540   \global\let\Hy@WarningPageBorderColor\relax
3541 }
3542 \define@key{Hyp}{allbordercolors}{%

```

```

3543 \def\Hy@temp##1##2{%
3544   \HyColor@HyperrefBorderColor{#1}##1{hyperref}{##2bordercolor}%
3545 }%
3546 \Hy@temp\@citebordercolor{cite}%
3547 \Hy@temp\@filebordercolor{file}%
3548 \Hy@temp\@linkbordercolor{link}%
3549 \Hy@temp\@menubordercolor{menu}%
3550 \Hy@temp\@runbordercolor{run}%
3551 \Hy@temp\@urlbordercolor{url}%
3552 }

3553 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
3554 \Hy@DefNameKey{pdfhighlight}{%
3555   \do{/I}{Invert}%
3556   \do{/N}{None}%
3557   \do{/O}{Outline}%
3558   \do{/P}{Push}%
3559 }
3560 \def\Hy@setpdfhighlight{%
3561   \ifx\@pdfhighlight\@empty
3562   \else
3563     /H\@pdfhighlight
3564   \fi
3565 }
3566 \define@key{Hyp}{pdfborder}{%
3567   \let\Hy@temp\@pdfborder
3568   \def\@pdfborder{#1}%
3569   \Hy@Match\@pdfborder{}{%
3570     ^\HyPat@NonNegativeReal/ %
3571     \HyPat@NonNegativeReal/ %
3572     \HyPat@NonNegativeReal/%
3573     ( ?\[\HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)*\])?%$%
3574   }{}{%
3575     \Hy@Warning{%
3576       Invalid value ` \@pdfborder'\MessageBreak
3577       for option `pdfborder'.\MessageBreak
3578       Option setting is ignored%
3579     }%
3580     \let\@pdfborder\Hy@temp
3581   }%
3582 }
3583 \define@key{Hyp}{pdfborderstyle}{%
3584   \let\Hy@temp\@pdfborderstyle
3585   \def\@pdfborderstyle{#1}%
3586   \Hy@Match\@pdfborderstyle{}{%
3587     ^%
3588     ( */Type */Border%
3589     | */W +\HyPat@NonNegativeReal/%
3590     | */S */[SDBIU]%
3591     | */D *[ \HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)?]?%
3592     )* *$%
3593   }{}{%
3594     \Hy@Warning{%
3595       Invalid value ` \@pdfborderstyle'\MessageBreak
3596       for option `pdfborderstyle'.\MessageBreak

```

```

3597     Option setting is ignored%
3598 }%
3599 \let\@pdfborderstyle\Hy@temp
3600 }%
3601 }
3602 \def\Hy@setpdfborder{%
3603 \ifx\@pdfborder\@empty
3604 \else
3605 /Border[\@pdfborder]%
3606 \fi
3607 \ifx\@pdfborderstyle\@empty
3608 \else
3609 /BS<<\@pdfborderstyle>>%
3610 \fi
3611 }
3612 \Hy@DefNameKey{pdfpagemode}{%
3613 \do{UseNone}{}%
3614 \do{UseOutlines}{}%
3615 \do{UseThumbs}{}%
3616 \do{FullScreen}{}%
3617 \do{UseOC}{PDF 1.5}%
3618 \do{UseAttachments}{PDF 1.6}%
3619 }
3620 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
3621 \do{UseNone}{}%
3622 \do{UseOutlines}{}%
3623 \do{UseThumbs}{}%
3624 \do{FullScreen}{}%
3625 \do{UseOC}{PDF 1.5}%
3626 \do{UseAttachments}{PDF 1.6}%
3627 }
3628 \Hy@DefNameKey{pdfdirection}{%
3629 \do{L2R}{Left to right}%
3630 \do{R2L}{Right to left}%
3631 }
3632 \Hy@DefNameKey{pdfviewarea}{%
3633 \do{MediaBox}{}%
3634 \do{CropBox}{}%
3635 \do{BleedBox}{}%
3636 \do{TrimBox}{}%
3637 \do{ArtBox}{}%
3638 }
3639 \Hy@DefNameKey{pdfviewclip}{%
3640 \do{MediaBox}{}%
3641 \do{CropBox}{}%
3642 \do{BleedBox}{}%
3643 \do{TrimBox}{}%
3644 \do{ArtBox}{}%
3645 }
3646 \Hy@DefNameKey{pdfprintarea}{%
3647 \do{MediaBox}{}%
3648 \do{CropBox}{}%
3649 \do{BleedBox}{}%
3650 \do{TrimBox}{}%

```

```

3651 \do{ArtBox}{}%
3652 }
3653 \Hy@DefNameKey{pdfprintclip}{%
3654 \do{MediaBox}{}%
3655 \do{CropBox}{}%
3656 \do{BleedBox}{}%
3657 \do{TrimBox}{}%
3658 \do{ArtBox}{}%
3659 }
3660 \Hy@DefNameKey{pdfprintscaling}{%
3661 \do{AppDefault}{}%
3662 \do{None}{}%
3663 }
3664 \Hy@DefNameKey{pdfduplex}{%
3665 \do{Simplex}{}%
3666 \do{DuplexFlipShortEdge}{}%
3667 \do{DuplexFlipLongEdge}{}%
3668 }
3669 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
3670 \do{true}{}%
3671 \do{false}{}%
3672 }
3673 \define@key{Hyp}{pdfprintpagerange}{%
3674 \def\@pdfprintpagerange{#1}%
3675 }
3676 \Hy@DefNameKey{pdfnumcopies}{%
3677 \do{2}{two copies}%
3678 \do{3}{three copies}%
3679 \do{4}{four copies}%
3680 \do{5}{five copies}%
3681 }
3682 \define@key{Hyp}{pdfusetitle}[true]{%
3683 \Hy@boolkey{pdfusetitle}{#1}%
3684 }
3685 \def\HyXeTeX@CheckUnicode{%
3686 \ifxetex
3687 \ifHy@unicode
3688 \else
3689 \Hy@WarningNoLine{%
3690 XeTeX driver only supports unicode.\MessageBreak
3691 Enabling option `unicode'%
3692 }%
3693 \kvsetkeys{Hyp}{unicode}%
3694 \fi
3695 \else
3696 \let\HyXeTeX@CheckUnicode\relax
3697 \fi
3698 }
3699 \def\HyPsd@PrerenderUnicode#1{%
3700 \begingroup
3701 \expandafter\ifx\csname PrerenderUnicode\endcsname\relax
3702 \else
3703 \sbox0{%
3704 \let\GenericInfo\@gobbletwo

```

```

3705     \let\GenericWarning\@gobbletwo
3706     \let\GenericError\@gobblefour
3707     \PrerenderUnicode{#1}%
3708 }%
3709 \fi
3710 \endgroup
3711 }
3712 \define@key{Hyp}{pdftitle}{%
3713   \AddToDocumentProperties[hyperref]{pdftitle}{#1}%
3714   \HyXeTeX@CheckUnicode
3715   \HyPsd@PrerenderUnicode{#1}%
3716   \pdfstringdef\@pdftitle{#1}%
3717 }
3718 \define@key{Hyp}{pdfauthor}{%
3719   \AddToDocumentProperties[hyperref]{pdfauthor}{#1}%
3720   \HyXeTeX@CheckUnicode
3721   \HyPsd@PrerenderUnicode{#1}%
3722   \pdfstringdef\@pdfauthor{#1}%
3723 }
3724 \define@key{Hyp}{pdfproducer}{%
3725   \AddToDocumentProperties[hyperref]{pdfproducer}{#1}%
3726   \HyXeTeX@CheckUnicode
3727   \HyPsd@PrerenderUnicode{#1}%
3728   \pdfstringdef\@pdfproducer{#1}%
3729 }
3730 \define@key{Hyp}{pdfcreator}{%
3731   \AddToDocumentProperties[hyperref]{pdfcreator}{#1}%
3732   \HyXeTeX@CheckUnicode
3733   \HyPsd@PrerenderUnicode{#1}%
3734   \pdfstringdef\@pdfcreator{#1}%
3735 }
3736 \define@key{Hyp}{addtopdfcreator}{%
3737   \HyXeTeX@CheckUnicode
3738   \HyPsd@PrerenderUnicode{#1}%
3739   \pdfstringdef\@pdfcreator{\@pdfcreator, #1}%
3740 }
3741 \define@key{Hyp}{pdfcreationdate}{%
3742   \begingroup
3743     \Hy@unicodedefalse
3744     \pdfstringdef\@pdfcreationdate{#1}%
3745   \endgroup
3746 }
3747 \define@key{Hyp}{pdfmoddate}{%
3748   \begingroup
3749     \Hy@unicodedefalse
3750     \pdfstringdef\@pdfmoddate{#1}%
3751   \endgroup
3752 }
3753 \define@key{Hyp}{pdfsubject}{%
3754   \AddToDocumentProperties[hyperref]{pdfsubject}{#1}%
3755   \HyXeTeX@CheckUnicode
3756   \HyPsd@PrerenderUnicode{#1}%
3757   \pdfstringdef\@pdfsubject{#1}%
3758 }

```

```

3759 \define@key{Hyp}{pdfkeywords}{%
3760 \AddToDocumentProperties[hyperref]{pdfkeywords}{#1}%
3761 \HyXeTeX@CheckUnicode
3762 \HyPsd@PrerenderUnicode{#1}%
3763 \pdfstringdef\@pdfkeywords{#1}%
3764 }
3765 \define@key{Hyp}{pdftrapped}{%
3766 \lowercase{\edef\Hy@temp{#1}}%
3767 \ifx\Hy@temp\HyInfo@trapped@true
3768 \def\@pdftrapped{True}%
3769 \else
3770 \ifx\Hy@temp\HyInfo@trapped@false
3771 \def\@pdftrapped{False}%
3772 \else
3773 \ifx\Hy@temp\HyInfo@trapped@unknown
3774 \def\@pdftrapped{Unknown}%
3775 \else
3776 \ifx\Hy@temp\@empty
3777 \else
3778 \Hy@Warning{%
3779 Unsupported value `#1'\MessageBreak
3780 for option `pdftrapped'%
3781 }%
3782 \fi
3783 \def\@pdftrapped{}%
3784 \fi
3785 \fi
3786 \fi
3787 }
3788 \def\HyInfo@trapped@true{true}
3789 \def\HyInfo@trapped@false{false}
3790 \def\HyInfo@trapped@unknown{unknown}
3791 \def\HyInfo@TrappedUnsupported{%
3792 \ifx\@pdftrapped\@empty
3793 \else
3794 \Hy@WarningNoLine{`pdftrapped' is not supported by this driver}%
3795 \gdef\HyInfo@TrappedUnsupported{}%
3796 \fi
3797 }
3798 \define@key{Hyp}{pdfinfo}{%
3799 \kvsetkeys{pdfinfo}{#1}%
3800 }
3801 \def\Hy@temp#1{%
3802 \lowercase{\Hy@temp@A{#1}}{#1}%
3803 }
3804 \def\Hy@temp@A#1#2{%
3805 \define@key{pdfinfo}{#2}{%
3806 \hypersetup{pdf#1={##1}}%
3807 }%
3808 }
3809 \Hy@temp{Title}
3810 \Hy@temp{Author}
3811 \Hy@temp{Keywords}
3812 \Hy@temp{Subject}

```

```

3813 \Hy@temp{Creator}
3814 \Hy@temp{Producer}
3815 \Hy@temp{CreationDate}
3816 \Hy@temp{ModDate}
3817 \Hy@temp{Trapped}
3818 \newif\ifHyInfo@AddonUnsupported
3819 \kv@set@family@handler{pdfinfo}{%
3820   \HyInfo@AddonHandler{#1}{#2}%
3821 }
3822 \let\HyInfo@do\relax
3823 \def\HyInfo@AddonHandler#1#2{%
3824   \ifx\kv@value\relax
3825     \Hy@Warning{%
3826       Option `pdfinfo': ignoring key `\'kv@key' without value%
3827     }%
3828   \else
3829     \EdefEscapeName\HyInfo@KeyEscaped{\'kv@key}%
3830     \EdefUnescapeName\HyInfo@Key{\HyInfo@KeyEscaped}%
3831     \expandafter\ifx\csname KV@pdfinfo@\HyInfo@Key\endcsname\relax
3832     \ifHyInfo@AddonUnsupported
3833       \Hy@Warning{%
3834         This driver does not support additional\MessageBreak
3835         information entries, therefore\MessageBreak
3836         `\'kv@key' is ignored%
3837       }%
3838     \else
3839       \def\HyInfo@tmp##1{%
3840         \kv@define@key{pdfinfo}{##1}{%
3841           \HyXeTeX@CheckUnicode
3842           \HyPsd@PrerenderUnicode{####1}%
3843           \pdfstringdef\HyInfo@Value{####1}%
3844           \global\expandafter
3845           \let\csname HyInfo@Value@##1\endcsname
3846             \HyInfo@Value
3847         }%
3848       }%
3849       \expandafter\HyInfo@tmp\expandafter{\HyInfo@Key}%
3850       \global\expandafter
3851       \let\csname KV@pdfinfo@\HyInfo@Key\expandafter\endcsname
3852       \csname KV@pdfinfo@\HyInfo@Key\endcsname
3853       \xdef\HyInfo@AddonList{%
3854         \HyInfo@AddonList
3855         \HyInfo@do{\HyInfo@Key}%
3856       }%
3857       \expandafter\kv@parse@normalized\expandafter{%
3858         \HyInfo@Key={#2}%
3859       }{%
3860         \kv@processor@default{pdfinfo}%
3861       }%
3862     \fi
3863   \else
3864     \expandafter\kv@parse@normalized\expandafter{%
3865       \HyInfo@Key={#2}%
3866     }{%

```

```

3867     \kv@processor@default{pdfinfo}%
3868   }%
3869   \fi
3870 \fi
3871 }
3872 \def\HyInfo@GenerateAddons{%
3873   \ifHyInfo@AddonUnsupported
3874     \def\HyInfo@Addons{}%
3875   \else
3876     \begingroup
3877     \toks@{}%
3878     \def\HyInfo@do##1{%
3879       \edefEscapeName\HyInfo@Key{##1}%
3880       \edef\x{%
3881         \toks@{%
3882           \the\toks@
3883           /\HyInfo@Key(\csname HyInfo@Value@##1\endcsname)%
3884         }%
3885       }%
3886       \x
3887     }%
3888     \HyInfo@AddonList
3889     \edef\x{\endgroup
3890       \def\noexpand\HyInfo@Addons{\the\toks@}%
3891     }%
3892     \x
3893   \fi
3894 }
3895 \global\let\HyInfo@AddonList\@empty
3896 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \}
3897 \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
3898 \let\setpdflinkmargin\@gobble
3899 \def\calculate@pdfview#1 #2\{%
3900   \def\@pdfview{#1}%
3901   \ifx\#2\%
3902     \def\@pdfviewparams{-32768}%
3903   \else
3904     \def\@pdfviewparams{#2}%
3905   \fi
3906 }
3907 \def\Hy@number#1{%
3908   \the\numexpr#1\relax
3909 }%
3910 \define@key{Hyp}{pdfstartpage}{%
3911   \ifx\#1\%
3912     \let\@pdfstartpage\@empty
3913   \else
3914     \edef\@pdfstartpage{\Hy@number{#1}}%
3915   \fi
3916 }%
3917 \define@key{Hyp}{pdfstartview}{%
3918   \ifx\#1\%
3919     \let\@pdfstartview\@empty
3920   \else

```

```

3921 \def\@pdfstartview{/#1}%
3922 \fi
3923 }
3924 \def\HyPat@NonNegativeReal/{%
3925 \ *([0-9]+\.[0-9]*|0-9)*\.[0-9]+) *%
3926 }
3927 \define@key{Hyp}{pdfremotestartview}{%
3928 \ifx\#1\%
3929 \def\@pdfremotestartview{/Fit}%
3930 \else
3931 \edef\@pdfremotestartview{#1}%
3932 \Hy@Match\@pdfremotestartview{%
3933 ^{XYZ(%
3934 ()| %
3935 (null|-\HyPat@NonNegativeReal/) %
3936 (null|-\HyPat@NonNegativeReal/) %
3937 (null|\HyPat@NonNegativeReal/)%
3938 )| % end of "XYZ"
3939 Fit(%
3940 ()| %
3941 B| %
3942 (H|V|BH|BV)(%
3943 ()| %
3944 (null|\HyPat@NonNegativeReal/)%
3945 )| %
3946 R %
3947 \HyPat@NonNegativeReal/ %
3948 \HyPat@NonNegativeReal/ %
3949 \HyPat@NonNegativeReal/ %
3950 \HyPat@NonNegativeReal/%
3951 ) % end of "Fit"
3952 )$%
3953 }{%
3954 \Hy@Warning{%
3955 Invalid value \@pdfremotestartview'\MessageBreak
3956 of `pdfremotestartview'\MessageBreak
3957 is replaced by `Fit'%
3958 }%
3959 \let\@pdfremotestartview\@empty
3960 }%
3961 \ifx\@pdfremotestartview\@empty
3962 \def\@pdfremotestartview{/Fit}%
3963 \else
3964 \edef\@pdfremotestartview{/ \@pdfremotestartview}%
3965 \fi
3966 \fi
3967 }
3968 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
3969 \define@key{Hyp}{pdftoolbar}[true]{%
3970 \Hy@boolkey{pdftoolbar}{#1}%
3971 }
3972 \define@key{Hyp}{pdfmenubar}[true]{%
3973 \Hy@boolkey{pdfmenubar}{#1}%
3974 }

```

```

3975 \define@key{Hyp}{pdfwindowui}[true]{%
3976   \Hy@boolkey{pdfwindowui}{#1}%
3977 }
3978 \define@key{Hyp}{pdffitwindow}[true]{%
3979   \Hy@boolkey{pdffitwindow}{#1}%
3980 }
3981 \define@key{Hyp}{pdfcenterwindow}[true]{%
3982   \Hy@boolkey{pdfcenterwindow}{#1}%
3983 }
3984 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
3985   \Hy@boolkey{pdfdisplaydoctitle}{#1}%
3986 }
3987 \define@key{Hyp}{pdfa}[true]{%
3988   \IfDocumentMetadataTF
3989   {
3990     \PackageWarning{hyperref}{%
3991       \string\DocumentMetadata\space detected.\MessageBreak
3992       The 'pdfa' key will be ignored.\MessageBreak
3993       Please set the PDF/A standard in \string\DocumentMetadata\MessageBreak
3994       with the 'pdfstandard' key.}
3995   }
3996   {\Hy@boolkey{pdfa}{#1}}%
3997 }
3998
3999 \define@key{Hyp}{pdfnewwindow}[true]{%
4000   \def\Hy@temp{#1}%
4001   \ifx\Hy@temp\@empty
4002     \Hy@pdfnewwindowsetfalse
4003   \else
4004     \Hy@pdfnewwindowsettrue
4005     \Hy@boolkey{pdfnewwindow}{#1}%
4006   \fi
4007 }
4008 \def\Hy@SetNewWindow{%
4009   \ifHy@pdfnewwindowset
4010     /NewWindow %
4011   \ifHy@pdfnewwindow true\else false\fi
4012 \fi
4013 }
4014 \Hy@DefNameKey{pdfpagelayout}{%
4015   \do{SinglePage}{}%
4016   \do{OneColumn}{}%
4017   \do{TwoColumnLeft}{}%
4018   \do{TwoColumnRight}{}%
4019   \do{TwoPageLeft}{PDF 1.5}%
4020   \do{TwoPageRight}{PDF 1.5}%
4021 }
4022 \define@key{Hyp}{pdflang}{%
4023   \edef\@pdflang{#1}%
4024   \def\Hy@temp{\relax}%
4025   \ifx\@pdflang\Hy@temp
4026     \let\@pdflang\relax
4027   \fi
4028   \ifx\@pdflang\relax

```

```

4029 \else
4030 \ifx\@pdflang\@empty
4031 \else

```

Test according to ABNF of RFC 3066.

```

4032 \Hy@Match\@pdflang{icase}{%
4033 ~%
4034 [a-z]{1,8}%
4035 (-[a-z0-9]{1,8})*%
4036 $%
4037 }{%

```

Test according to ABNF of RFC 5646.

```

4038 \Hy@Match\@pdflang{icase}{%
4039 ~%
4040 (%
4041 % langtag
4042 (% language
4043 [a-z]{2,3}%
4044 ([a-z]{3}(-[a-z]{3}){0,2})?% extlang
4045 |[a-z]{4}% reserved for future use
4046 |[a-z]{5,8}% registered language subtag
4047 )%
4048 (-[a-z]{4})?% script
4049 (-([a-z]{2}|[0-9]{3}))?% region
4050 (-([a-z]{5,8}|[0-9][a-z0-9]{3}))?% variant
4051 (-[0-9a-wyz](-[a-z0-9]{2,8})+)% extension
4052 (-x(-[a-z0-9]{1,8})+)?% privateuse
4053 % privateuse
4054 |x(-[a-z0-9]{1,8})+
4055 % grandfathered/irregular
4056 |en-GB-oed%
4057 |i-(ami|bnn|default|enochian|hak|klinton|lux|
4058 mingo|navajo|pwn|tao|tay|tsu)%
4059 |sgn-(BE-FR|BE-NL|CH-DE)%
4060 % grandfathered/regular
4061 |art-lojban%
4062 |cel-gaulish%
4063 |no-(bok|nyn)%
4064 |zh-(guoyu|hakka|min|min-nan|xiang)%
4065 )%
4066 $%
4067 }{%

```

Test for unique extensions.

```

4068 \Hy@Match{-\@pdflang}{icase}{-[a-wyz0-9]-}{%
4069 \Hy@Match\@pdflang{icase}{~x-}{%
4070 % remove privateuse
4071 \edef\Hy@temp{-\@pdflang}%
4072 \Hy@Match\Hy@temp{icase}{%
4073 ~%
4074 (%
4075 (-[a-wyz0-9]|-[a-z0-9]{2,8})*%
4076 )%
4077 -x-%

```

```

4078     }{%
4079         \edef\Hy@temp{%
4080             \expandafter\strip@prefix\pdfastmatch1%
4081         }%
4082     }{%}%
4083     \Hy@Match\Hy@temp{icase}{%
4084         (-[a-wyz0-9]-).*\@backslashchar1%
4085     }{%%
4086         \Hy@Warning{%
4087             Invalid language identifier `#1'\MessageBreak
4088             for option `pdfang', because it violates\MessageBreak
4089             well-formedness defined in RFC 4646\MessageBreak
4090             by duplicate singleton subtags%
4091         }%
4092         \let\@pdfang\relax
4093     }{%}%
4094 }%
4095 }{%}%

```

User-assigned country codes are forbidden in language tags (RFC 3066).

```

4096     \ifx\@pdfang\relax
4097     \else
4098         \Hy@Match\@pdfang{icase}{%
4099             ~%
4100             [a-zA-Z]{2}-%
4101             (%
4102                 aa|AA|%
4103                 [qQ][m-zA-Z]|%
4104                 [xX][a-zA-Z]|%
4105                 zz|ZZ%
4106             )%
4107             (-|%)%
4108         }{%%
4109             \Hy@Warning{%
4110                 Invalid language identifier `#1'\MessageBreak
4111                 for option `pdfang' because of invalid country code%
4112                 \MessageBreak
4113                 in second subtag (RFC 3066)%
4114             }%
4115             \let\@pdfang\relax
4116         }{%}%
4117     \fi
4118 }{%%
4119     \Hy@Warning{%
4120         Invalid language identifier `#1'\MessageBreak
4121         for option `pdfang', because it violates\MessageBreak
4122         well-formedness defined in RFC 5646%
4123     }%
4124     \let\@pdfang\relax
4125 }%
4126 }{%%
4127     \Hy@Warning{%
4128         Invalid language identifier `#1'\MessageBreak
4129         for option `pdfang' (RFC 3066)%
4130     }%

```

```

4131 \let\@pdflang\relax
4132 }%
4133 \fi
4134 \fi
4135 }
4136 \define@key{Hyp}{pdfpagelabels}[true]{%
4137 \Hy@boolkey{pdfpagelabels}{#1}%
4138 }
4139 \define@key{Hyp}{pdfescapeform}[true]{%
4140 \Hy@boolkey{pdfescapeform}{#1}%
4141 }
Default values:
4142 \def\@linkbordercolor{1 0 0}
4143 \def\@urlbordercolor{0 1 1}
4144 \def\@menubordercolor{1 0 0}
4145 \def\@filebordercolor{0 .5 .5}
4146 \def\@runbordercolor{0 .7 .7}
4147 \def\@citebordercolor{0 1 0}
4148 \def\@pdfhighlight{/I}
4149 \let\@pdftitle\@empty
4150 \let\@pdfauthor\@empty
4151 \let\@pdfproducer\relax
4152 \def\@pdfcreator{LaTeX with hyperref}
4153 \let\@pdfcreationdate\@empty
4154 \let\@pdfmoddate\@empty
4155 \let\@pdfsubject\@empty
4156 \let\@pdfkeywords\@empty
4157 \let\@pdftrapped\@empty
4158 \let\@pdfpagescrop\@empty
4159 \def\@pdfstartview{/Fit}
4160 \def\@pdfremotestartview{/Fit}
4161 \def\@pdfstartpage{1}
4162 \let\@pdfprintpagerange\@empty
4163 \let\@pdflang\relax
4164 \let\PDF@SetupDoc\@empty
4165 \let\PDF@FinishDoc\@empty
4166 \let\phantomsection\@empty
4167 \let\special@paper\@empty
4168 \def\HyperDestNameFilter#1{#1}
4169 \Hy@AtBeginDocument{%
4170 \begingroup
4171 \edef\x{\ifdim\stockheight>\z@ \stockheight\else\paperheight\fi}%
4172 \dimen@=\x\relax
4173 \ifdim\dimen@>\z@
4174 \else
4175 \dimen@=11in\relax
4176 \Hy@WarningNoLine{%
4177 Height of page (\expandafter\string\x) %
4178 is invalid (\the\x),\MessageBreak
4179 using 11in%
4180 }%
4181 \fi
4182 \dimen@=0.99626401\dimen@
4183 \xdef\Hy@pageheight{\strip@pt\dimen@}%

```

```

4184 \endgroup
4185 }
4186 \def\HyInd@EncapChar{\|}

```

Allow the user to use `\ExecuteOptions` in the `cfg` file even though this package does not use the normal option mechanism. Use `\hyper@normalise` as a scratch macro, since it is going to be defined in a couple of lines anyway.

```

4187 \let\hyper@normalise\ExecuteOptions
4188 \let\ExecuteOptions\hypersetup
4189 \Hy@RestoreCatcodes
4190 \InputIfFileExists{hyperref.cfg}{}{}
4191 \Hy@SetCatcodes
4192 \let\ExecuteOptions\hyper@normalise
4193 \ifx\Hy@MaybeStopNow\relax
4194 \else
4195 \Hy@stoppedearlytrue
4196 \expandafter\Hy@MaybeStopNow
4197 \fi
4198 \Hy@stoppedearlyfalse

```

To add flexibility, we will not use the ordinary processing of package options, but put them through the *keyval* package. This section was written by David Carlisle.

```

4199 \SetupKeyvalOptions{family=Hyp}
4200 \DeclareLocalOptions{%
4201   a4paper,a5paper,b5paper,letterpaper,legalpaper,executivepaper%
4202 }

```

Add option `tex4ht` if package `tex4ht` is loaded.

```

4203 \@ifpackagewith{hyperref}{tex4ht}{%
4204 }{%
4205   \@ifpackageloaded{tex4ht}{%
4206     \PassOptionsToPackage{tex4ht}{hyperref}%
4207   }{%
4208     \@ifundefined{HCode}{%
4209     }{%
4210       \begingroup
4211       \def\Hy@pkg{tex4ht}%
4212       \def\Hy@temp@A#1\RequirePackage[#2]#3#4\Hy@NIL{%
4213         \def\Hy@param{#2#3}%
4214         \ifx\Hy@param\@empty
4215           \expandafter\@gobble
4216         \else
4217           \def\Hy@param{#3}%
4218           \ifx\Hy@param\Hy@pkg
4219             \PassOptionsToPackage{#2}{tex4ht}%
4220             \expandafter\expandafter\expandafter\@gobble
4221           \else
4222             \expandafter\expandafter\expandafter\@firstofone
4223           \fi
4224         \fi
4225         {\Hy@temp@A#4\Hy@NIL}%
4226       }%
4227       \expandafter
4228       \Hy@temp@A\@documentclasshook\RequirePackage[]{}\Hy@NIL
4229     \endgroup

```

```

4230 \PassOptionsToPackage{tex4ht}{hyperref}%
4231 }%
4232 }%
4233 }

4234 \let\ReadBookmarks\relax
4235 \ProcessKeyvalOptions{Hyp}

```

After processing options.

## 15.1 Package xspace support

```

4236 \def\Hy@xspace@end{}
4237 \@ifundefined{xspaceaddexceptions}{%
4238 \Hy@AtBeginDocument{%
4239 \@ifundefined{xspaceaddexceptions}{%
4240 }{%
4241 \def\Hy@xspace@end{%
4242 \@gobble{end for xspace}%
4243 }%
4244 \xspaceaddexceptions{%
4245 \Hy@xspace@end,\hyper@linkend,\hyper@anchorend
4246 }%
4247 }%
4248 }%
4249 }{%
4250 \def\Hy@xspace@end{%
4251 \@gobble{end for xspace}%
4252 }%
4253 \xspaceaddexceptions{\Hy@xspace@end,\hyper@linkend,\hyper@anchorend}%
4254 }

```

## 15.2 Option draft

```

4255 \Hy@AtBeginDocument{%
4256 \ifHy@draft
4257 \let\hyper@@anchor@gobble
4258 \gdef\hyper@link#1#2#3{#3\Hy@xspace@end}%
4259 \def\hyper@anchorstart#1#2{#2\Hy@xspace@end}%
4260 \def\hyper@anchorend{\Hy@xspace@end}%
4261 \let\hyper@linkstart@gobbletwo
4262 \def\hyper@linkend{\Hy@xspace@end}%
4263 \def\hyper@linkurl#1#2{#1\Hy@xspace@end}%
4264 \def\hyper@linkfile#1#2#3{#1\Hy@xspace@end}%
4265 \def\hyper@link@[#1]#2#3#4{#4\Hy@xspace@end}%
4266 \def\Acrobatmenu#1#2{\leavevmode#2\Hy@xspace@end}%
4267 \let\PDF@SetupDoc\@empty
4268 \let\PDF@FinishDoc\@empty
4269 \let\ReadBookmarks\relax
4270 \let\WriteBookmarks\relax
4271 \Hy@WarningNoLine{Draft mode on}%
4272 \fi
4273 \Hy@DisableOption{draft}%
4274 \Hy@DisableOption{nolinks}%
4275 \Hy@DisableOption{final}%
4276 }

```

### 15.3 PDF/A

If an A-standard has been set in `\DocumentMetadata` `hyperref` should set the `pdfa` key too.

```
4277 \ExplSyntaxOn
4278 \IfDocumentMetadataT
4279 {
4280   \tl_if_empty:eTF{\GetDocumentProperties{document/pdfstandard}}
4281   {
4282     \Hy@pdfafalse
4283   }
4284   {
4285     \Hy@pdfatrue
4286   }
4287 }
4288 \ExplSyntaxOff
4289 \Hy@DisableOption{pdfa}
4290 \ifHy@pdfa
4291   \ifnum \Hy@pdf@major@minor@version < 104
4292     \kvsetkeys{Hyp}{pdfversion=1.4}%
4293   \fi
4294   \Hy@DisableOption{pdfversion}%
4295   \def\Hy@Acrobatmenu#1#2{%
4296     \leavevmode
4297     \begingroup
4298     \edef\x{#1}%
4299     \@onelevel@sanitize\x
4300     \ifx\x\Hy@NextPage
4301       \let\y=Y%
4302     \else
4303       \ifx\x\Hy@PrevPage
4304         \let\y=Y%
4305       \else
4306         \ifx\x\Hy@FirstPage
4307           \let\y=Y%
4308         \else
4309           \ifx\x\Hy@LastPage
4310             \let\y=Y%
4311           \else
4312             \let\y=N%
4313           \fi
4314         \fi
4315       \fi
4316     \fi
4317     \expandafter\endgroup
4318     \ifx\y Y%
4319     \else
4320       \Hy@Error{%
4321         PDF/A: Named action `#1' is not permitted%
4322       }\@ehc
4323       {#2}%
4324     \expandafter\@gobble
4325   \fi
4326 }%
```

```

4327 \def\Hy@temp#1{%
4328   \expandafter\def\csname Hy@#1\endcsname{#1}%
4329   \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
4330 }%
4331 \Hy@temp{NextPage}%
4332 \Hy@temp{PrevPage}%
4333 \Hy@temp{FirstPage}%
4334 \Hy@temp{LastPage}%
4335 \else
4336 \def\Hy@Acrobatmenu#1#2{\leavevmode}%
4337 \fi

```

## 15.4 Patch for babel's \texttilde

Babel does not define `\texttilde` in NFSS2 manner, so the NFSS2 definitions of PD1 or PU encoding is not compatible. To fix this, `\texttilde` is defined in babel manner.

change 2020-10-10: no trace of `\texttilde` can be found in the three languages spanish, galician and estonian so the patch has been removed as outdated.

```

4338 \def\Hy@wrapper@babel#1#2{%
4339   \begingroup
4340   \Hy@safe@activestrue
4341   \set@display@protect
4342   \edef\x{#2}%
4343   \@onelevel@sanitize\x
4344   \toks@{#1}%
4345   \edef\x{\endgroup\the\toks@{\x}}%
4346   \x
4347 }
4348 \def\Hy@WrapperDef#1{%
4349   \begingroup
4350   \escapechar=\m@ne
4351   \xdef\Hy@gtemp{%
4352     \expandafter\noexpand\csname HyWrap@string#1\endcsname
4353   }%
4354   \endgroup
4355   \edef#1{%
4356     \noexpand\Hy@wrapper@babel
4357     \expandafter\noexpand\Hy@gtemp
4358   }%
4359   \expandafter\def\Hy@gtemp
4360 }
4361 \ifHy@hyperfigures
4362   \Hy@Info{Hyper figures ON}%
4363 \else
4364   \Hy@Info{Hyper figures OFF}%
4365 \fi
4366 \ifHy@nesting
4367   \Hy@Info{Link nesting ON}%
4368 \else
4369   \Hy@Info{Link nesting OFF}%
4370 \fi
4371 \ifHy@hyperindex

```

```

4372 \Hy@Info{Hyper index ON}%
4373 \else
4374 \Hy@Info{Hyper index OFF}%
4375 \fi
4376 \ifHy@plainpages
4377 \Hy@Info{Plain pages ON}%
4378 \else
4379 \Hy@Info{Plain pages OFF}%
4380 \fi
4381 \ifHy@backref
4382 \Hy@Info{Backreferencing ON}%
4383 \else
4384 \Hy@Info{Backreferencing OFF}%
4385 \fi
4386 \ifHy@implicit
4387 \Hy@InfoNoLine{Implicit mode ON; LaTeX internals redefined}%
4388 \else
4389 \Hy@InfoNoLine{Implicit mode OFF; no redefinition of LaTeX internals}%
4390 \def\MaybeStopEarly{%
4391   \Hy@Message{Stopped early}%
4392   \Hy@AtBeginDocument{%
4393     \PDF@FinishDoc
4394     \gdef\PDF@FinishDoc{}}%
4395   }%
4396   \endinput
4397   }%
4398   \Hy@AtBeginDocument{%
4399     \let\autoref\ref
4400     \let\autopageref\pageref
4401     \ifx\@pdfpagemode\@empty
4402       \gdef\@pdfpagemode{UseNone}%
4403     \fi
4404     \global\Hy@backreffalse
4405   }%
4406   \Hy@AtEndOfPackage{%
4407     \global\let\ReadBookmarks\relax
4408     \global\let\WriteBookmarks\relax
4409   }%
4410 \fi
4411 \Hy@DisableOption{implicit}

```

#### 15.4.1 Driver loading

Ensure that `\stockwidth` and `\stockheight` are defined

```

4412 \@ifundefined{stockwidth}{\newdimen\stockwidth}{}
4413 \@ifundefined{stockheight}{\newdimen\stockheight}{}
4414 \Hy@AtEndOfPackage{%
4415   \@ifpackageloaded{tex4ht}{%
4416     \def\Hy@driver{htex4ht}%
4417     \Hy@texhttrue
4418   }{}%

```

Some drivers can be detected. Check for these drivers, whether the given driver option is ok. Otherwise force the right driver or use the default driver.

```

4419 \ifx\Hy@driver\@empty
4420 \else
4421   \ifx\pdfextension\@undefined
4422     \def\Hy@temp{hpdfTeX}%
4423   \else
4424     \def\Hy@temp{hluatex}%
4425   \fi
4426 \ifpdf
4427   \ifx\Hy@driver\Hy@temp
4428   \else
4429     \Hy@WarningNoLine{%
4430       Wrong driver ``\Hy@driver.def';\MessageBreak
4431       pdfTeX is running in PDF mode.\MessageBreak
4432       Forcing driver ``\Hy@temp.def'%
4433     }%
4434     \let\Hy@driver\Hy@temp
4435   \fi
4436 \else
4437   \ifx\Hy@driver\Hy@temp
4438     \Hy@WarningNoLine{%
4439       Wrong driver ``\Hy@driver.def';\MessageBreak
4440       pdfTeX is not running in PDF mode.\MessageBreak
4441       Using default driver%
4442     }%
4443     \let\Hy@driver\@empty
4444   \fi
4445 \fi
4446 \fi
4447 \ifHy@texht
4448 \else
4449   \ifx\Hy@driver\@empty
4450   \else
4451     \def\Hy@temp{hxetex}%
4452   \ifxetex
4453     \ifx\Hy@driver\Hy@temp
4454     \else
4455       \Hy@WarningNoLine{%
4456         Wrong driver ``\Hy@driver.def';\MessageBreak
4457         XeTeX is running.\MessageBreak
4458         Forcing driver ``\Hy@temp.def' for XeTeX%
4459       }%
4460       \let\Hy@driver\Hy@temp
4461     \fi
4462   \fi
4463 \fi
4464 \fi
4465 \ifx\Hy@driver\@empty
4466 \else
4467   \def\Hy@temp{hhitex}%
4468 \ifhint
4469   \ifx\Hy@driver\Hy@temp
4470   \else
4471     \Hy@WarningNoLine{%
4472       Wrong driver ``\Hy@driver.def';\MessageBreak

```

```

4473      hitex is running.\MessageBreak
4474      Forcing driver ``\Hy@temp.def'%
4475    }%
4476    \let\Hy@driver\Hy@temp
4477  \fi
4478 \fi
4479 \fi
4480 \ifx\Hy@driver\@empty
4481 \else
4482   \def\Hy@temp{hvtexhtm}%
4483   \ifnum\ifvtex\OpMode\else\m@ne\fi=10 %
4484     \ifx\Hy@driver\Hy@temp
4485       \else
4486         \Hy@WarningNoLine{%
4487           Wrong driver ``\Hy@driver.def';\MessageBreak
4488           VTeX is running in HTML mode.\MessageBreak
4489           Forcing driver ``\Hy@temp.def'%
4490         }%
4491         \let\Hy@driver\Hy@temp
4492       \fi
4493     \else
4494       \ifx\Hy@driver\Hy@temp
4495         \Hy@WarningNoLine{%
4496           Wrong driver ``\Hy@driver.def';\MessageBreak
4497           VTeX is not running in HTML mode.\MessageBreak
4498           Using default driver%
4499         }%
4500         \let\Hy@driver\@empty
4501       \fi
4502     \fi
4503   \fi

```

If the driver is not given, find the right driver or use the default driver.

```

4504 \let\HyOpt@DriverType\@empty
4505 \ifx\HyOpt@CustomDriver\@empty
4506   \ifx\Hy@driver\@empty
4507     \def\HyOpt@DriverType{ (autodetected)}%
4508     \providecommand*{\Hy@defaultdriver}{hdvips}%
4509     \ifpdf
4510       \ifx\pdfextension\@undefined
4511         \def\Hy@driver{hpdftex}%
4512       \else
4513         \def\Hy@driver{hluatex}%
4514       \fi
4515     \else
4516       \ifxetex
4517         \def\Hy@driver{hxetex}%
4518       \else
4519         \ifnum\ifvtex\OpMode\else\m@ne\fi=10 %
4520           \def\Hy@driver{hvtexhtm}%
4521           \def\MaybeStopEarly{%
4522             \Hy@Message{Stopped early}%
4523             \Hy@AtBeginDocument{%
4524               \PDF@FinishDoc
4525               \gdef\PDF@FinishDoc{}}%

```

```

4526     }%
4527     \endinput
4528     }%
4529     \else
4530     \ifhint
4531     \def\Hy@driver{hhitex}
4532     \else
4533     \ifnum\ifvtex\OpMode\else\m@ne\fi=\@ne
4534     \def\Hy@driver{hvtex}%
4535     \else
4536     \ifnum\ifvtex\OpMode\else\m@ne\fi=\tw@
4537     \def\Hy@driver{hvtex}%
4538     \else
4539     \ifx\HyOpt@DriverFallback\@empty
4540     \let\Hy@driver\Hy@defaultdriver
4541     \def\HyOpt@DriverType{ (default)}%
4542     \else
4543     \begingroup
4544     \toks@\expandafter{\HyOpt@DriverFallback}%
4545     \edef\x{\endgroup
4546     \noexpand\kvsetkeys{Hyp}{\the\toks@}}%
4547     }%
4548     \x
4549     \ifx\Hy@driver\@empty
4550     \let\Hy@driver\Hy@defaultdriver
4551     \def\HyOpt@DriverType{ (default)}%
4552     \else
4553     \def\HyOpt@DriverType{ (fallback)}%
4554     \fi
4555     \fi
4556     \fi
4557     \fi
4558     \fi
4559     \fi
4560     \fi
4561     \fi
4562     \ifx\Hy@driver\Hy@defaultdriver
4563     \def\Hy@temp{hdwind}%
4564     \ifx\Hy@temp\Hy@driver
4565     \kvsetkeys{Hyp}{colorlinks}%
4566     \PassOptionsToPackage{dviwindo}{color}%
4567     \fi
4568     \fi
4569     \fi
4570     \else
4571     \def\HyOpt@DriverType{ (custom)}%
4572     \let\Hy@driver\HyOpt@CustomDriver
4573     \fi
4574     \Hy@InfoNoLine{Driver\HyOpt@DriverType: \Hy@driver}%
4575     \chardef\Hy@VersionChecked=0 %
4576     \input{\Hy@driver.def}%
4577     \ifcase\Hy@VersionChecked
4578     \Hy@VersionCheck{\Hy@driver.def}%
4579     \fi

```

```

4580 \let\@unprocessedoptions\relax
4581 \Hy@RestoreCatcodes
4582 \Hy@DisableOption{tex4ht}%
4583 \Hy@DisableOption{pdftex}%
4584 \Hy@DisableOption{nativepdf}%
4585 \Hy@DisableOption{dvipdfm}%
4586 \Hy@DisableOption{dvipdfmx}%
4587 \Hy@DisableOption{dvipdfmx-outline-open}%
4588 \Hy@DisableOption{pdfmark}%
4589 \Hy@DisableOption{dvips}%
4590 \Hy@DisableOption{hypertex}%
4591 \Hy@DisableOption{vtex}%
4592 \Hy@DisableOption{vtexpdfmark}%
4593 \Hy@DisableOption{dviwindo}%
4594 \Hy@DisableOption{dvipsone}%
4595 \Hy@DisableOption{textures}%
4596 \Hy@DisableOption{latex2html}%
4597 \Hy@DisableOption{ps2pdf}%
4598 \Hy@DisableOption{xetex}%
4599 \Hy@DisableOption{driverfallback}%
4600 \Hy@DisableOption{customdriver}%
4601 \Hy@DisableOption{pdfversion}%
4602 }

```

Support for open outlines is enabled for XeTeX  $\geq 0.9995$ . I don't know, if older versions also support this. AFAIK older dvipdfmx versions will break, thus the switch cannot be turned on by default.

```

4603 \newif\ifHy@DvipdfmxOutlineOpen
4604 \ifxetex
4605   \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
4606   \else
4607     \chardef\SpecialDvipdfmxOutlineOpen\@ne
4608     \Hy@DvipdfmxOutlineOpenttrue
4609   \fi
4610 \fi
4611 \begingroup\expandafter\expandafter\expandafter\endgroup
4612 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
4613 \else
4614   \ifnum\SpecialDvipdfmxOutlineOpen>\z@
4615     \Hy@DvipdfmxOutlineOpenttrue
4616   \fi
4617 \fi

```

### 15.4.2 Bookmarks

```

4618 \def\WriteBookmarks{0}
4619 \def\@bookmarkopenstatus#1{%
4620   \ifHy@bookmarksopen

```

The purpose of the \@firstofone-number-space-construct is that no \relax will be inserted by TeX before the \else:

```

4621   \ifnum#1<\expandafter\@firstofone\expandafter
4622     {\number\@bookmarkopenlevel} % explicit space
4623   \else
4624     -%

```

```

4625 \fi
4626 \else
4627 -%
4628 \fi
4629 }
4630 \ifHy@bookmarks
4631 \Hy@Info{Bookmarks ON}%
4632 \ifx\@pdfpagemode\@empty
4633 \def\@pdfpagemode{UseOutlines}%
4634 \fi
4635 \else
4636 \let\@bookmarkopenstatus\@gobble
4637 \Hy@Info{Bookmarks OFF}%
4638 \Hy@AtEndOfPackage{%
4639 \global\let\ReadBookmarks\relax
4640 \global\let\WriteBookmarks\relax
4641 }%
4642 \ifx\@pdfpagemode\@empty
4643 \def\@pdfpagemode{UseNone}%
4644 \fi
4645 \fi
4646 \Hy@DisableOption{bookmarks}

Add wrapper for setting standard catcodes (babel's shorthands).
4647 \def\Hy@CatcodeWrapper#1{%
4648 \let\Hy@endWrap\@empty
4649 \def\TMP@EnsureCode##1##2{%
4650 \edef\Hy@endWrap{%
4651 \Hy@endWrap
4652 \catcode##1 \the\catcode##1\relax
4653 }%
4654 \catcode##1 ##2\relax
4655 }%
4656 \TMP@EnsureCode{10}{12}% ^^J
4657 \TMP@EnsureCode{33}{12}% !
4658 \TMP@EnsureCode{34}{12}% "
4659 \TMP@EnsureCode{36}{3}% $ (math)
4660 \TMP@EnsureCode{38}{4}% & (alignment)
4661 \TMP@EnsureCode{39}{12}% '
4662 \TMP@EnsureCode{40}{12}% (
4663 \TMP@EnsureCode{41}{12}% )
4664 \TMP@EnsureCode{42}{12}% *
4665 \TMP@EnsureCode{43}{12}% +
4666 \TMP@EnsureCode{44}{12}% ,
4667 \TMP@EnsureCode{45}{12}% -
4668 \TMP@EnsureCode{46}{12}% .
4669 \TMP@EnsureCode{47}{12}% /
4670 \TMP@EnsureCode{58}{12}% :
4671 \TMP@EnsureCode{59}{12}% ;
4672 \TMP@EnsureCode{60}{12}% <
4673 \TMP@EnsureCode{61}{12}% =
4674 \TMP@EnsureCode{62}{12}% >
4675 \TMP@EnsureCode{63}{12}% ?
4676 \TMP@EnsureCode{91}{12}% [
4677 \TMP@EnsureCode{93}{12}% ]

```

```

4678 \TMP@EnsureCode{94}{7}% ^ (superscript)
4679 \TMP@EnsureCode{95}{8}% _ (subscript)
4680 \TMP@EnsureCode{96}{12}% `
4681 \TMP@EnsureCode{124}{12}% |
4682 \TMP@EnsureCode{126}{13}% ~ (active)
4683 #1\relax
4684 \Hy@EndWrap
4685 }

```

\HyColor@UseColor expects a macro as argument. It contains the color specification.

```

4686 \Hy@AtBeginDocument{%
4687   \ifHy@ocgcolorlinks
4688     \kvsetkeys{Hyp}{colorlinks}%
4689     \ifHy@pdfa
4690       \Hy@Warning{%
4691         PDF/A: Optional Content Groups are prohibited,\MessageBreak
4692         using `colorlinks' instead of `ocgcolorlinks'%
4693       }%
4694       \Hy@ocgcolorlinksfalse
4695     \fi
4696   \fi
4697   \ifHy@ocgcolorlinks
4698   \else
4699     \Hy@DisableOption{ocgcolorlinks}%
4700   \fi
4701   \ifHy@colorlinks
4702     \def\@pdfborder{0 0 0}%
4703     \let\@pdfborderstyle\@empty
4704     \Hy@CatcodeWrapper{%
4705       \RequirePackage{color}%
4706     }%
4707     \def\Hy@colorlink#1{%
4708       \begingroup
4709       \HyColor@UseColor#1%
4710     }%
4711     \def\Hy@endcolorlink{\endgroup}%
4712     \Hy@Info{Link coloring ON}%
4713   \else
4714     \ifHy@frenchlinks
4715       \def\Hy@colorlink#1{\begingroup\fontshape{\scdefault}\selectfont}%
4716       \def\Hy@endcolorlink{\endgroup}%
4717       \Hy@Info{French linking ON}%
4718     \else

```

for grouping consistency:

```

4719       \def\Hy@colorlink#1{\begingroup}%
4720       \def\Hy@endcolorlink{\endgroup}%
4721       \Hy@Info{Link coloring OFF}%
4722     \fi
4723   \fi
4724   \Hy@DisableOption{colorlinks}%
4725   \Hy@DisableOption{frenchlinks}%
4726   \ifHy@texht
4727   \else

```

With active links we have to redefine the starred versions to avoid that they get links from the include \@setref:

```

4728 \ifHy@implicit
4729 \let \T@Ref\HyRef@Ref
4730 \def \@refstar#1{%
4731 \NR@ref@showkeys{#1}%
4732 \HyRef@StarSetRef{#1}\@firstoffive
4733 }
4734 \def \@pagerefstar#1{%
4735 \NR@ref@showkeys{#1}%
4736 \HyRef@StarSetRef{#1}\@secondoffive
4737 }
4738 \def \@namerefstar#1{%
4739 \NR@ref@showkeys{#1}%
4740 \HyRef@StarSetRef{#1}\@thirdoffive
4741 }
4742 \def \@Refstar#1{%
4743 \NR@ref@showkeys{#1}%
4744 \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
4745 }%
4746 \else
4747 \fi
4748 \fi
4749 }
4750 \Hy@AtBeginDocument{%
4751 \ifx\ReadBookmarks\relax
4752 \else
4753 \Hy@CatcodeWrapper\ReadBookmarks
4754 \fi
4755 }
4756 \ifHy@backref
4757 \RequirePackage{backref}%
4758 \else
4759 \let\Hy@backout\@gobble
4760 \fi
4761 \Hy@DisableOption{backref}
4762 \Hy@DisableOption{pagebackref}
4763 \Hy@activeanchorfalse

```

## 16 User hypertext macros

We need to normalise all user commands taking a URL argument; Within the argument the following special definitions apply: \#, \%, ~ produce #, %, ~ respectively. for consistency \~ produces ~ as well. At the *top level only* ie not within the argument of another command, you can use # and % unescaped, to produce themselves. even if, say, # is entered as # it will be converted to \# so it does not die if written to an aux file etc. \# will write as # locally while making \specials. The catcode : is set to other to avoid problems with expl3 syntax.

```

4764 \begingroup
4765 \endlinechar=-1 %
4766 \catcode`\^^A=14 %
4767 \catcode`\^^M\active
4768 \catcode`\%\active

```

```

4769 \catcode`\#\active
4770 \catcode`\_\active
4771 \catcode`\$\active
4772 \catcode`\&\active
4773 \gdef\hyper@normalise{^^A
4774 \begingroup
4775 \@makeother{:}^^A
4776 \catcode`\^M\active
4777 \def^^M{ }^^A
4778 \catcode`\%\active
4779 \let%\@percentchar
4780 \let%\@percentchar
4781 \catcode`\#\active
4782 \def#{\hyper@hash}^^A
4783 \def#{\hyper@hash}^^A
4784 \@makeother\&^^A
4785 \edef&{\string&}^^A
4786 \edef&{\string&}^^A
4787 \edef\textunderscore{\string_}^^A
4788 \let_\textunderscore
4789 \catcode`\_\active
4790 \let_\textunderscore
4791 \let~\hyper@tilde
4792 \let~\hyper@tilde
4793 \let\textasciitilde\hyper@tilde
4794 \let\\\@backslashchar
4795 \edef${\string$}^^A
4796 \Hy@safe@activetrue
4797 \hyper@n@rmalise
4798 }^^A
4799 \catcode`\#=6 ^^A
4800 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
4801 \gdef\hyper@n@rmalise#1#2{^^A
4802 \def\Hy@tempa{#2}^^A
4803 \ifx\Hy@tempa\Hy@ActiveCarriageReturn
4804 \Hy@ReturnAfterElseFi{^^A
4805 \hyper@@normalise{#1}^^A
4806 }^^A
4807 \else
4808 \Hy@ReturnAfterFi{^^A
4809 \hyper@@normalise{#1}{#2}^^A
4810 }^^A
4811 \fi
4812 }^^A
4813 \gdef\hyper@@normalise#1#2{^^A
4814 \edef\Hy@tempa{^^A
4815 \endgroup
4816 \noexpand#1{\Hy@RemovePercentCr#2%\@nil}^^A
4817 }^^A
4818 \Hy@tempa
4819 }^^A
4820 \gdef\Hy@RemovePercentCr#1%\@nil{^^A
4821 #1^^A
4822 \ifx\limits#2\limits

```

```

4823 \else
4824 \Hy@ReturnAfterFi{^^A
4825 \Hy@RemovePercentCr #2\@nil
4826 }^^A
4827 \fi
4828 }^^A
4829 \endgroup
4830 \providecommand*\hyper@chars{%
4831 \let\#\hyper@hash
4832 \let\%\@percentchar
4833 \Hy@safe@activetrue
4834 }

4835 \def\hyperlink#1#2{%
4836 \hyper@@link\{#\1\}{#2}%
4837 }

4838 \def\Hy@VerboseLinkStart#1#2{%
4839 \ifHy@verbose
4840 \begingroup
4841 \Hy@safe@activetrue
4842 \xdef\Hy@VerboseGlobalTemp{(#1) `#2'}%
4843 \Hy@Info{Reference \Hy@VerboseGlobalTemp}%
4844 \xdef\Hy@VerboseGlobalTemp{%
4845 \Hy@VerboseGlobalTemp, %
4846 line \the\inputlineno
4847 }%
4848 \endgroup
4849 \let\Hy@VerboseLinkInfo\Hy@VerboseGlobalTemp
4850 \@onelevel@sanitize\Hy@VerboseLinkInfo
4851 \fi
4852 }

4853 \def\Hy@VerboseLinkInfo{<VerboseLinkInfo>}
4854 \def\Hy@VerboseLinkStop{%
4855 \ifHy@verbose
4856 \begingroup
4857 \edef\x{\endgroup
4858 \write\m@ne{%
4859 Package `hyperref' Info: %
4860 End of reference \Hy@VerboseLinkInfo.%
4861 }%
4862 }%
4863 \x
4864 \fi
4865 }

4866 \def\Hy@VerboseAnchor#1{%
4867 \ifHy@verbose
4868 \begingroup
4869 \Hy@safe@activetrue
4870 \Hy@Info{Anchor `HyperDestNameFilter{#1}'}%
4871 \endgroup
4872 \fi
4873 }

4874 \def\Hy@AllowHyphens{%

```

```

4875 \relax
4876 \ifhmode
4877 \penalty\@M
4878 \hskip\z@skip
4879 \fi
4880 }

4881 \DeclareRobustCommand*\href[1][]{%
4882 \begingroup
4883 \setkeys{href}{#1}%
4884 \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
4885 }
4886 \def\Hy@href#{%
4887 \hyper@normalise\href@
4888 }
4889 \begingroup
4890 \catcode`\$=6 %
4891 \catcode`\#=12 %
4892 \gdef\href$1{\expandafter\href@split$1##\}%
4893 \gdef\href@split$1#\$2#\$3\\$4{%
4894 \hyper@@link{$1}{$2}{$3}\\$4}%
4895 \endgroup
4896 }%
4897 \endgroup

```

Option ‘page’.

```

4898 \define@key{href}{page}{%
4899 \def\Hy@href@page{#1}%
4900 }
4901 \let\Hy@href@page\@empty
4902 \newcount\c@Hy@tempcnt
4903 \def\theHy@tempcnt{\the\c@Hy@tempcnt}
4904 \def\Hy@MakeRemoteAction{%
4905 \ifx\Hy@href@page\@empty
4906 \def\Hy@href@page{0}%
4907 \else
4908 \setcounter{Hy@tempcnt}{\Hy@href@page}%
4909 \ifnum\c@Hy@tempcnt<\@ne
4910 \Hy@Warning{%
4911 Invalid page number (\theHy@tempcnt)\MessageBreak
4912 for remote PDF file.\MessageBreak
4913 Using page 1%
4914 }%
4915 \def\Hy@href@page{0}%
4916 \else
4917 \global\advance\c@Hy@tempcnt\m@ne
4918 \edef\Hy@href@page{\theHy@tempcnt}%
4919 \fi
4920 \fi

```

If a next action is set, then also a new window should be opened. Otherwise AR reclaims that it closes the current file with discarding the next actions.

```

4921 \ifx\Hy@href@nextactionraw\@empty
4922 \else
4923 \Hy@pdfnewwindowsettrue

```

```

4924 \Hy@pdfnewwindowtrue
4925 \fi
4926 }

```

Option ‘pdfremotestartview’.

```

4927 \define@key{href}{pdfremotestartview}{%
4928 \setkeys{Hyp}{pdfremotestartview={#1}}}%
4929 }

```

Option ‘pdfnewwindow’.

```

4930 \let\KV@href@pdfnewwindow\KV@Hyp@pdfnewwindow
4931 \let\KV@href@pdfnewwindow@default\KV@Hyp@pdfnewwindow@default

```

Option ‘ismap’.

```

4932 \newif\ifHy@href@ismap
4933 \define@key{href}{ismap}[true]{%
4934 \@ifundefined{Hy@href@ismap#1}{%
4935 \Hy@Error{%
4936 Invalid value (#1) for key `ismap'.\MessageBreak
4937 Permitted values are `true' or `false'.\MessageBreak
4938 Ignoring `ismap'%
4939 }\@ehc
4940 }{%
4941 \csname Hy@href@ismap#1\endcsname
4942 }%
4943 }

```

Option ‘nextactionraw’.

```

4944 \let\Hy@href@nextactionraw\@empty
4945 \define@key{href}{nextactionraw}{%
4946 \edef\Hy@href@nextactionraw{#1}%
4947 \ifx\Hy@href@nextactionraw\@empty
4948 \else
4949 \Hy@Match\Hy@href@nextactionraw{%
4950 ~(\HyPat@ObjRef/|<<.*[/|/|.++>>|
4951 \[( ?\HyPat@ObjRef/|<<.*[/|/|.++>>)+ ?)]$%
4952 }{%
4953 \Hy@Warning{Invalid value for `nextactionraw':\MessageBreak
4954 \Hy@href@nextactionraw\MessageBreak
4955 The action is discarded%
4956 }%
4957 }%
4958 \ifx\Hy@href@nextactionraw\@empty
4959 \else
4960 \edef\Hy@href@nextactionraw{/Next \Hy@href@nextactionraw}%
4961 \fi
4962 \fi
4963 }
4964 \def\HyPat@ObjRef/{.+.}

```

Load package url.sty and save the meaning of the original \url in \HyOrg@url.

```

4965 \RequirePackage{url}
4966 \let\HyOrg@url\url
4967 \def\Hurl{\begingroup \Url}
4968 \DeclareRobustCommand*{\nolinkurl}{\hyper@normalise\nolinkurl@}
4969 \def\nolinkurl@#1{\Hurl{#1}}

```

```

4970 \DeclareRobustCommand*\url{\hyper@normalise\url@}
4971 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

4972 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
4973 \providecommand\hyper@image[2]{#2}

4974 \def\hypertarget#1#2{%
4975   \ifHy@nesting
4976     \hyper@@anchor{#1}{#2}%
4977   \else
4978     \hyper@@anchor{#1}{\relax}#2%
4979   \fi
4980 }

```

`\hyperref` is more complicated, as it includes the concept of a category of link, used to make the name. This is not really used in this package. `\hyperdef` sets up an anchor in the same way. They each have three parameters of category, linkname, and marked text, and `\hyperref` also has a first parameter of URL. If there is an optional first parameter to `\hyperdef`, it is the name of a  $\text{\LaTeX}$  label which can be used in a short form of `\hyperref` later, to avoid remembering the name and category.

```

4981 \DeclareRobustCommand*\hyperref{%
4982   \@ifnextchar{\Hy@babelnormalise\label@hyperref}\@hyperref
4983 }
4984 \def\Hy@babelnormalise#1[#2]{%
4985   \begingroup
4986     \Hy@safe@activestru
4987     \let\protect\@unexpandable@protect
4988     \edef\Hy@tempa{%
4989       \endgroup
4990       \noexpand#1[#2]}%
4991   }%
4992   \Hy@tempa
4993 }
4994 \def\@hyperref{\hyper@normalise\@hyperref}
4995 \def\@hyperref#1#2#3{%
4996   \edef\ref@one{\ifx\\#2\\ \else#2.\fi#3}%
4997   \expandafter\tryhyper@link\ref@one\{#1}%
4998 }
4999 \def\tryhyper@link#1\\#2{%
5000   \hyper@@link{#2}{#1}%
5001 }

5002 \def\hyperdef{\@ifnextchar{\label@hyperdef}\@hyperdef}
5003 \def\@hyperdef#1#2#3{%, category, name, text
5004   \ifx\\#1\\%
5005     \def\Hy@AnchorName{#2}%
5006   \else
5007     \def\Hy@AnchorName{#1.#2}%
5008   \fi
5009   \ifHy@nesting
5010     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
5011   \else
5012     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#3%
5013   \fi
5014 }

```

We also have a need to give a L<sup>A</sup>T<sub>E</sub>X *label* to a hyper reference, to ease the pain of referring to it later. `\hyperrefundefinedlink` may be redefined by a user to add colour or other formatting.

```

5015 \let\hyperrefundefinedlink\@firstofone
5016 \def\label@hyperref[#1]{%
5017   \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
5018 }%
5019 \def\label@@hyperref#1#2#3{%
5020   \ifx#1\relax
5021     \protect\G@refundefinedtrue
5022     \@latex@warning{%
5023       Hyper reference `#2' on page \thepage \space undefined%
5024     }%
5025     \begingroup
5026       \hyperrefundefinedlink{#3}%
5027     \endgroup
5028   \else
5029     \hyper@@link{\expandafter\@fifthoffive#1}%
5030     {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
5031   \fi
5032 }
5033 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
5034                               % anchor text
5035   \@bsphack
5036   \ifx\#2\%
5037     \def\Hy@AnchorName{#3}%
5038   \else
5039     \def\Hy@AnchorName{#2.#3}%
5040   \fi
5041   \if@filesw
5042     \protected@write\@auxout{}{%
5043       \string\newlabel{#1}{\{ }\}{\{ }\Hy@AnchorName}{ }\}%
5044     }%
5045   \fi
5046   \@esphack
5047   \ifHy@nesting
5048     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
5049   \else
5050     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}{#4}%
5051   \fi
5052 }

```

`\hyperget` To create manually bookmarks one need the destination name. If there is a label, the name can be retrieved with commands from `refcount`. Such a destination name must take `\HyperDestNameFilter` into account

```
\HyperDestNameFilter{\getrefbykeydefault{label}{anchor}{Doc-Start}}
```

To make this easier, we define `\hyperget`

```

5053 \ExplSyntaxOn
5054 \cs_new:Npn \hyperget #1 #2
5055 {
5056   \use:c { __hyp_get_#1:n } { #2}

```

```

5057 }
5058
5059 \cs_new:Npn \__hyp_get_anchor:n #1
5060 {
5061   \HyperDestNameFilter
5062   {
5063     \cs_if_exist:cTF {r@#1}
5064     {
5065       \tl_item:cn {r@#1}{4}
5066     }
5067     {
5068       Doc-Start
5069     }
5070   }
5071 }
5072 \cs_new:Npn \__hyp_get_pageanchor:n #1
5073 {
5074   \HyperDestNameFilter
5075   {
5076     \cs_if_exist:cTF {r@#1}
5077     {
5078       page. \tl_item:cn {r@#1}{2}
5079     }
5080     {
5081       Doc-Start
5082     }
5083   }
5084 }
5085 \cs_new:Npn \__hyp_get_currentanchor:n #1
5086 {
5087   \HyperDestNameFilter { \@currentHref }
5088 }
5089 \ExplSyntaxOff

```

## 16.1 Link box support for XeTeX and dvipdfmx

```

5090 \newdimen\XeTeXLinkMargin
5091 \setlength{\XeTeXLinkMargin}{2pt}
5092 \newcommand\XeTeXLinkBox[1]{}
5093 \newcommand*{\XeTeXLink@space}{}
5094
5095 \newcommand\Hy@setup@XeTeXLinkBox@dvipdfmx
5096 {\font\XeTeXLink@font=pzdr at 1sp\relax
5097 \renewcommand*{\XeTeXLink@space}{%
5098   \begingroup
5099     \XeTeXLink@font
5100     \@xxxii
5101   \endgroup
5102 }%
5103 \renewcommand{\XeTeXLinkBox}[1]{%
5104   \begingroup
5105     \leavevmode
5106     \sbox\z@{##1}%
5107   \begingroup

```

```

5108 \dimen@=\dp\z@
5109 \advance\dimen@\XeTeXLinkMargin
5110 \setbox\tw@=\llap{%
5111 \hb@xt@\XeTeXLinkMargin{%
5112 \lower\dimen@\hbox{\XeTeXLink@space}%
5113 \hss
5114 }%
5115 }%
5116 \dp\tw@=\dp\z@
5117 \ht\tw@=\ht\z@
5118 \copy\tw@
5119 \endgroup
5120 \copy\z@
5121 \dimen@=\ht\z@
5122 \advance\dimen@\XeTeXLinkMargin
5123 \setbox\tw@=\rlap{%
5124 \hb@xt@\XeTeXLinkMargin{%
5125 \hss
5126 \raise\dimen@\hbox{\XeTeXLink@space}%
5127 }%
5128 }%
5129 \dp\tw@=\dp\z@
5130 \ht\tw@=\ht\z@
5131 \copy\tw@
5132 \endgroup
5133 }}
5134
5135 \newcommand\Hy@setup@XeTeXLinkBox@default{%
5136 \renewcommand*{\XeTeXLinkBox}[1]{%
5137 \begingroup
5138 \leavevmode
5139 \sbox\z@{##1}%
5140 \copy\z@
5141 \endgroup
5142 }}
5143 \ExplSyntaxOn
5144 \AddToHook{begindocument}{%
5145 \bool_lazy_or:nnTF{\sys_if_engine_xetex_p:}{\str_if_eq_p:on{\c_sys_back-
end_str}{dvipdfmx}}
5146 {\Hy@setup@XeTeXLinkBox@dvipdfmx}
5147 {\Hy@setup@XeTeXLinkBox@default}}
5148 \ExplSyntaxOff

```

## 17 Underlying basic hypertext macros

Links have an optional type, a filename (possibly a URL), an internal name, and some marked text. (Caution: the internal name may contain babel shorthand characters.) If the second parameter is empty, its an internal link, otherwise we need to open another file or a URL. A link start has a type, and a URL.

```

5149 \def\hyper@@link{\let\Hy@reserved@a\relax
5150 \@ifnextchar{\hyper@link@}{\hyper@link@[link]}%
5151 }
5152 % #1: type
5153 % #2: URL

```

```

5154 % #3: destination name
5155 % #4: text
5156 \def\hyper@link@[#1]#2#3#4{%
5157   \Hy@ifempty{#4}{% link text
5158     \Hy@Warning{Suppressing empty link}%
5159   }{%
5160     \begingroup
5161       \protected@edef\Hy@tempa{#2}%
5162       \edef\Hy@tempb{#3}%
5163       \ifx\Hy@tempa\@empty
5164         \ifx\Hy@tempb\@empty
5165           \Hy@Warning{Suppressing link with empty target}%
5166         \toks@{%
5167           \endgroup
5168           \@secondoftwo
5169         }%
5170       \else
5171         \toks@{%
5172           \endgroup
5173           \hyper@link{#1}%
5174         }%
5175       \fi
5176     \else
5177       \toks@{%
5178         \endgroup
5179         \expandafter\hyper@readexternallink#2\{#1}%
5180       }%
5181     \fi
5182     \Hy@safe@activesfalse
5183     \toks@\expandafter{%
5184       \the\expandafter\toks@
5185       \expandafter{\Hy@tempb}{#4}%
5186     }%
5187     \the\toks@
5188   }%
5189 }

```

The problem here is that the first (URL) parameter may be a local file: reference (in which case some browsers treat it differently) or a genuine URL, in which case we'll have to activate a real Web browser. Note that a simple name is also a URL, as that is interpreted as a relative file name. We have to worry about # signs in a local file as well.

```

5190 \def\hyper@readexternallink#1\{#2#3#4{%
5191   \begingroup
5192     \let\\\relax
5193     \expandafter\endgroup
5194     \expandafter\@hyper@@readexternallink#1\{#2}{#3}{#4}%
5195 }
5196 \def\@hyper@@readexternallink#1\{#2#3#4{%

```

Parameters are:

1. The URL or file name
2. The type

3. The internal name

4. The link string

We need to get the 1st parameter properly expanded, so we delimit the arguments rather than passing it inside a group.

```
5197 \@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%  
5198 }
```

Now (potentially), we are passed: 1) The link type 2) The internal name, 3) the link string, 4) the URL type (http, mailto, file etc), 5) the URL details 6) anything after a real : in the URL 7) the whole URL again

```
5199 \def\@pdftempwordfile{file}%  
5200 \def\@pdftempwordrun{run}%  
5201 \def\@hyper@readexternallink#1#2#3#4:#5:#6\\\#7{%
```

If there are no colons at all (#6 is blank), its a local file; if the URL type (#4) is blank, its probably a Mac filename, so treat it like a file: URL. The only flaw is if its a relative Mac path, with several colon-separated elements — then we lose. Such names must be prefixed with an explicit dvi:

```
5202 \ifx\\\#6\\\%  
5203 \@hyper@linkfile file:#7\\\{#3}{#2}{#7}%  
5204 \else  
5205 \ifx\\\#4\\\%  
5206 \@hyper@linkfile file:#7\\\{#3}{#2}{#7}%  
5207 \else
```

If the URL type is ‘file’, pass it for local opening

```
5208 \def\@pdftempa{#4}%  
5209 \ifx\@pdftempa\@pdftempwordfile  
5210 \@hyper@linkfile#7\\\{#3}{#2}{#7}%  
5211 \else
```

if it starts ‘run:’, its to launch an application.

```
5212 \ifx\@pdftempa\@pdftempwordrun  
5213 \ifHy@pdfa  
5214 \Hy@Error{%  
5215 PDF/A: Launch action is prohibited%  
5216 }\@ehc  
5217 \begingroup  
5218 \leavevmode  
5219 #2%  
5220 \endgroup  
5221 \else  
5222 \@hyper@launch#7\\\{#3}{#2}%  
5223 \fi  
5224 \else
```

otherwise its a URL

```
5225 \hyper@linkurl{#3}{#7\ifx\\\#2\\\else\hyper@hash#2\fi}%  
5226 \fi  
5227 \fi  
5228 \fi  
5229 \fi  
5230 }
```

By default, turn run: into file:

```

5231 \def\@hyper@launch run:#1\|#2#3{% filename, anchor text, linkname
5232 \hyper@linkurl{#2}{%
5233 \Hy@linkfileprefix
5234 #1%
5235 \ifx\|#3\|%
5236 \else
5237 \hyper@hash
5238 #3%
5239 \fi
5240 }%
5241 }

```

D P Story <story@uakron.edu> pointed out that relative paths starting .. fell over. Switched to using \filename@parse to solve this.

```

5242 \def\@hyper@linkfile file:#1\|#2#3#4{%
5243 %file url,link string, name, original uri
5244 \filename@parse{#1}%
5245 \ifx\filename@ext\relax
5246 \edef\filename@ext{\XR@ext}%
5247 \fi
5248 \def\use@file{\filename@area\filename@base.\filename@ext}%
5249 \Hy@IfStringEndsWith\filename@ext\XR@ext{%
5250 \hyper@linkfile{#2}{\use@file}{#3}%
5251 }{%
5252 \ifx\@baseurl\@empty
5253 \hyper@linkurl{#2}{%
5254 #4\ifx\|#3\|\else\hyper@hash#3\fi
5255 }%
5256 \else
5257 \hyper@linkurl{#2}{\use@file\ifx\|#3\|\else\hyper@hash#3\fi}%
5258 \fi
5259 }%
5260 }

5261 \def\Hy@IfStringEndsWith#1#2{%
5262 \begingroup
5263 \edef\x{#1}%
5264 \@onelevel@sanitize\x
5265 \edef\x{.\x}%
5266 \edef\y{#2}%
5267 \@onelevel@sanitize\y
5268 \edef\y{.\y}%
5269 \expandafter\def\expandafter\z\expandafter##\expandafter1\y##2\@nil{%
5270 \endgroup
5271 \ifx\relax##2\relax
5272 \expandafter\@secondoftwo
5273 \else
5274 \expandafter\@firstoftwo
5275 \fi
5276 }%
5277 \expandafter\expandafter\expandafter\z\expandafter\x\y\@nil
5278 }

5279 \def\Hy@StringLocalhost{localhost}

```

```

5280 \@onelevel@sanitize\Hy@StringLocalhost
5281 \def\Hy@CleanupFile#1{%
5282   \edef#1{#1}%
5283   \expandafter\Hy@@CleanupFile#1\hbox{///\hbox\@nil{#1}}%
5284 }
5285 \def\Hy@@CleanupFile#1//#2/#3\hbox#4\@nil#5{%
5286   \begingroup
5287   \toks@{\endgroup}%
5288   \def\x{#1}%
5289   \ifx\x\@empty
5290     \def\x{#2}%
5291     \ifx\x\@empty
5292       \toks@{\endgroup\def#5{/#3}}%
5293     \else
5294       \@onelevel@sanitize\x
5295       \ifx\x\Hy@StringLocalhost
5296         \toks@{\endgroup\def#5{/#3}}%
5297       \fi
5298     \fi
5299   \fi
5300   \the\toks@
5301 }

```

Anchors have a name, and marked text. We have to be careful with the marked text, as if we break off part of something to put a `\special` around it, all hell breaks loose. Therefore, we check the category code of the first token, and only proceed if its safe. Tanmoy sorted this out.

A curious case arises if the original parameter was in braces. That means that `#2` comes here a multiple letters, and the `noexpand` just looks at the first one, putting the rest in the output. Yuck.

```

5302 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
5303 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
5304   \ifx\#1\%
5305     #2\Hy@Warning{Ignoring empty anchor}%
5306   \else
5307     \def\anchor@spot{#2#3}%
5308     \let\put@me@back\@empty
5309     \ifx\relax#2\relax
5310     \else
5311       \ifHy@nesting
5312       \else
5313         \ifcat a\relax#2\relax
5314         \else
5315           \ifcat 0\relax#2 \relax
5316           \else
5317             \typeout{Anchor start is not alphanumeric %
5318             on input line\the\inputlineno%
5319             }%
5320             \let\anchor@spot\@empty
5321             \def\put@me@back{#2#3}%
5322           \fi
5323         \fi
5324       \fi
5325     \fi

```

```

5326 \ifHy@activeanchor
5327 \anchor@spot
5328 \else
5329 \hyper@anchor{#1}%
5330 \fi
5331 \expandafter\put@me@back
5332 \fi
5333 \let\anchor@spot\@empty
5334 }
5335 \let\anchor@spot\@empty

```

## 18 Option ‘destlabel’

```

5336 \ifHy@destlabel

\hyper@newdestlabel

5337 \def\hyper@newdestlabel#1#2{%
5338 \begingroup
5339 \Hy@safe@activetrue
5340 \edef\x{\endgroup
5341 \noexpand\@newl@bel{HyDL}{#1}{#2}%
5342 }%
5343 \x
5344 }%

\hyper@destlabel@hook

5345 \providecommand*\hyper@destlabel@hook{}%

\Hy@DestRename

5346 \newcommand*\Hy@DestRename[2]{%
5347 \@ifundefined{HyDL!#1}{%
5348 \begingroup
5349 \Hy@safe@activetrue
5350 \edef\dest@name{#1}%
5351 \edef\label@name{#2}%
5352 \hyper@destlabel@hook
5353 \Hy@IsNotEmpty{dest@name}{%
5354 \Hy@IsNotEmpty{label@name}{%
5355 \global\expandafter
5356 \let\csname HyDL!#1\endcsname\@empty
5357 \if@files
5358 \protected@write\@auxout{}{%
5359 \string\hyper@newdestlabel
5360 {#1}%
5361 {\label@name}%
5362 }%
5363 \fi
5364 }%
5365 }%
5366 \endgroup
5367 }{}%
5368 }%

```

\HyperDestRename

```
5369 \newcommand*{\HyperDestRename}[2]{%
5370   \AtBeginDocument{%
5371     \Hy@DestRename{#1}{#2}%
5372   }%
5373 }%
5374 \AtBeginDocument{%
5375   \let\HyperDestRename\Hy@DestRename
5376 }%
```

\Hy@IsNotEmpty

```
5377 \def\Hy@IsNotEmpty#1{%
5378   \ifundefined{#1}\@gobble{%
5379     \expandafter\ifx\csname#1\endcsname\@empty
5380     \expandafter\@gobble
5381   \else
5382     \expandafter\@firstofone
5383   \fi
5384 }%
5385 }%

5386 \Hy@GlobalAppendToMacro\label@hook{%
5387   \HyperDestRename\@currentHref\label@name
5388 }%
```

\HyperDestLabelReplace

```
5389 \def\HyperDestLabelReplace#1{%
5390   \@ifundefined{HyDL@#1}{%
5391     #1%
5392   }{%
5393     \csname HyDL@#1\endcsname
5394   }%
5395 }%
```

\HyperDestNameFilter

```
5396 \let\HyperDestNameFilter\HyperDestLabelReplace

5397 \else
```

\hyper@newdestlabel

```
5398 \let\hyper@newdestlabel\@gobbletwo
```

\HyperDestLabelReplace

```
5399 \let\HyperDestLabelReplace\@firstofone
```

\HyperDestRename

```
5400 \let\HyperDestRename\@gobbletwo

5401 \fi

5402 \Hy@DisableOption{destlabel}
```

Provide a dummy default definition of `\hyper@newdestlabel` inside the .aux files.

```
5403 \AddToHook{include/before}
5404 {\immediate\write\@partaux{\string\providecommand\string\hyper@newdest-
    label[2]{}}
5405 \AddToHook{begindocument}
5406 {\immediate\write\@mainaux{\string\providecommand\string\hyper@newdest-
    label[2]{}}}
```

## 19 Forms creation

Allow for creation of PDF or HTML forms. The effects here are limited somewhat by the need to support both output formats, so it may not be as clever as something which only wants to make PDF forms.

I (Sebastian) could not have started this without the encouragement of T V Raman.

### 19.1 Field flags

The field flags are organized in a bit set.

```
5407 \RequirePackage{bitset}
```

Each flag has a option name, an `\if` switch, and a bit position. The default is always ‘false’, the flag is clear. This is also the default of the switch created by `\newif`.

The names of the flags in the PDF specification (1.7) are used as lowercase option names.

`\HyField@NewFlag` #1: type: F annot flags, Ff field flags

#2: PDF name

#3: PDF position

```
5408 \def\HyField@NewFlag#1#2{%
5409   \lowercase{\HyField@NewOption{#2}}%
5410   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5411 }
```

`\HyField@NewFlagOnly`

```
5412 \def\HyField@NewFlagOnly#1#2{%
5413   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5414 }
```

`\HyField@NewOption` #1: option name

```
5415 \def\HyField@NewOption#1{%
5416   \expandafter\newif\csname ifFld@#1\endcsname
5417   \define@key{Field}{#1}[true]{%
5418     \lowercase{\Field@boolkey{##1}}{#1}%
5419   }%
5420 }
```

`\HyField@NewBitsetFlag` Package ‘bitset’ uses zero based positions, the PDF specification starts with one.

#1: option

#2: PDF name

#3: type: F annot flags, Ff field flags

#4: PDF position

```
5421 \def\HyField@NewBitsetFlag#1#2#3#4{%
5422   \begingroup
5423   \count@=#4\relax
5424   \advance\count@\m@ne
5425   \def\x##1{%
5426     \endgroup
5427     \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
5428     \expandafter\ifx\csname HyField@#3@#1\endcsname\relax
5429       \expandafter\edef\csname HyField@#3@#1\endcsname{%
5430         (\number#4) #2%
5431       }%
5432     \else
5433       \expandafter\edef\csname HyField@#3@#1\endcsname{%
5434         \csname HyField@#3@#1\endcsname
5435         /#2%
5436       }%
5437     \fi
5438   }%
5439   \expandafter\x\expandafter{\the\count@}%
5440 }
```

\HyField@UseFlag The bit set is HyField@#1

```
5441 \def\HyField@UseFlag#1#2{%
5442   \lowercase{\HyField@@UseFlag{#2}}{#1}%
5443 }
```

\HyField@@UseFlag

```
5444 \def\HyField@@UseFlag#1#2{%
5445   \bitsetSetValue{HyField@#2}{%
5446     \csname HyField@#2@#1\endcsname
5447   }{%
5448     \csname ifFld@#1\endcsname 1\else 0\fi
5449   }%
5450 }
```

\HyField@SetFlag The bit set is HyField@#1

```
5451 \def\HyField@SetFlag#1#2{%
5452   \lowercase{\HyField@@SetFlag{#2}}{#1}%
5453 }
```

\HyField@@SetFlag

```
5454 \def\HyField@@SetFlag#1#2{%
5455   \bitsetSetValue{HyField@#2}{%
5456     \csname HyField@#2@#1\endcsname
5457   }{1}%
5458 }
```

\HyField@PrintFlags

```
5459 \def\HyField@PrintFlags#1#2{%
5460   \ifHy@verbose
5461     \begingroup
```

```

5462 \let\Hy@temp\@empty
5463 \let\MessageBreak\relax
5464 \expandafter\@for\expandafter\x\expandafter:\expandafter=%
5465 \bitsetGetSetBitList{HyField@#1}\do{%
5466 \edef\Hy@temp{%
5467 \Hy@temp
5468 \csname HyField@#1@\x\endcsname\MessageBreak
5469 }%
5470 }%
5471 \edef\x{\endgroup
5472 \noexpand\Hy@Info{%
5473 Field flags: %
5474 \expandafter\ifx\@car#1\@nil S\else/\fi
5475 #1 %
5476 \bitsetGetDec{HyField@#1} %
5477 (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
5478 \Hy@temp
5479 for #2%
5480 }%
5481 }\x
5482 \fi
5483 }

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

5484 \HyField@NewFlag{Ff}{ReadOnly}{1}
5485 \HyField@NewFlag{Ff}{Required}{2}
5486 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

5487 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
5488 \HyField@NewFlag{Ff}{Radio}{16}
5489 \HyField@NewFlag{Ff}{Pushbutton}{17}
5490 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

5491 \HyField@NewFlag{Ff}{Multiline}{13}
5492 \HyField@NewFlag{Ff}{Password}{14}
5493 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
5494 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5495 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
5496 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
5497 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

5498 \HyField@NewFlag{Ff}{Combo}{18}
5499 \HyField@NewFlag{Ff}{Edit}{19}
5500 \HyField@NewFlag{Ff}{Sort}{20}
5501 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
5502 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5503 \HyField@NewFlag{Ff}{CommitOnSelChange}{27}% PDF 1.5

```

Signature fields are not supported.

Until 6.76i hyperref uses field option ‘combo’ to set three flags ‘Combo’, ‘Edit’, and ‘Sort’. Option ‘popdown’ sets flag ‘Combo’ only.

```
5504 \newif\ifFld@popdown
5505 \define@key{Field}{popdown}[true]{%
5506   \lowercase{\Field@boolkey{#1}}{popdown}%
5507 }
```

Annotation flags. The form objects are widget annotations. There are two flags for readonly settings, the one in the annotation flags is ignored, instead the other in the field flags is used.

Flag `Print` is not much useful, because hyperref do not use the appearance entry of the annotations for most fields.

```
5508 \HyField@NewFlag{F}{Invisible}{1}
5509 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
5510 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
5511 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
5512 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
5513 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
5514 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
5515 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
5516 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

5517 \ifHy@pdfa
5518   \def\HyField@PDFAFflagWarning#1#2{%
5519     \Hy@Warning{%
5520       PDF/A: Annotation flag `#1' must\MessageBreak
5521       be set to `#2'%
5522     }%
5523   }%
5524   \Fld@invisiblefalse
5525   \def\Fld@invisibletrue{%
5526     \HyField@PDFAFflagWarning{invisible}{false}%
5527   }%
5528   \Fld@hiddenfalse
5529   \def\Fld@hiddentrue{%
5530     \HyField@PDFAFflagWarning{hidden}{false}%
5531   }%
5532   \Fld@printtrue
5533   \def\Fld@printfalse{%
5534     \HyField@PDFAFflagWarning{print}{true}%
5535   }%
5536   \Fld@nozoomtrue
5537   \def\Fld@nozoomfalse{%
5538     \HyField@PDFAFflagWarning{nozoom}{true}%
5539   }%
5540   \Fld@norotatetrue
5541   \def\Fld@norotatefalse{%
5542     \HyField@PDFAFflagWarning{norotate}{true}%
5543   }%
5544   \Fld@noviewfalse
5545   \def\Fld@noviewtrue{%
5546     \HyField@PDFAFflagWarning{noview}{false}%
5547   }%
5548 \fi
```

Submit flags. Flag 1 Include/Exclude is not supported, use option noexport instead.

```

5549 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
5550 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
5551 \HyField@NewFlag{Submit}{GetMethod}{4}
5552 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
5553 \HyField@NewFlagOnly{Submit}{XFDF}{6}
5554 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
5555 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
5556 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
5557 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
5558 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
5559 \HyField@NewFlag{Submit}{ExclFKey}{12}
5560 \HyField@NewFlag{Submit}{EmbedForm}{14}

5561 \define@key{Field}{export}{%
5562   \lowercase{\def\Hy@temp{#1}}%
5563   \@ifundefined{Fld@export@\Hy@temp}{%
5564     \@onelevel@sanitize\Hy@temp
5565     \Hy@Error{%
5566       Unknown export format `'\Hy@temp'.\MessageBreak
5567       Known formats are `FDF', `HTML', `XFDF', and `PDF'%
5568     }\@ehc
5569   }{%
5570     \let\Fld@export\Hy@temp
5571   }%
5572 }
5573 \def\Fld@export{fdf}
5574 \@namedef{Fld@export@fdf}{0}%
5575 \@namedef{Fld@export@html}{1}%
5576 \@namedef{Fld@export@xfdf}{2}%
5577 \@namedef{Fld@export@pdf}{3}%

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

5578 \def\HyField@FlagsSubmit{%
5579   \bitsetReset{HyField@Submit}%
5580   \ifcase\@nameuse{Fld@export@\Fld@export} %
5581     % FDF
5582     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5583     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5584     \HyField@UseFlag{Submit}{IncludeAppendSaves}%
5585     \HyField@UseFlag{Submit}{IncludeAnnotations}%
5586     \HyField@UseFlag{Submit}{CanonicalFormat}%
5587     \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
5588     \HyField@UseFlag{Submit}{ExclFKey}%
5589     \HyField@UseFlag{Submit}{EmbedForm}%
5590   \or % HTML
5591     \HyField@SetFlag{Submit}{ExportFormat}%
5592     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5593     \HyField@UseFlag{Submit}{GetMethod}%
5594     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5595     \HyField@UseFlag{Submit}{CanonicalFormat}%

```

```

5596 \or % XFDF
5597   \HyField@SetFlag{Submit}{XFDF}%
5598   \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5599   \HyField@UseFlag{Submit}{SubmitCoordinates}%
5600   \HyField@UseFlag{Submit}{CanonicalFormat}%
5601 \or % PDF
5602   \HyField@SetFlag{Submit}{SubmitPDF}%
5603   \HyField@UseFlag{Submit}{GetMethod}%
5604 \fi
5605 \HyField@PrintFlags{Submit}{submit button field}%
5606 \bitsetIsEmpty{HyField@Submit}{%
5607   \let\Fld@submitflags\@empty
5608 }{%
5609   \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
5610 }%
5611 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

5612 \def\HyField@FlagsAnnot#1{%
5613   \bitsetReset{HyField@F}%
5614   \HyField@UseFlag{F}{Invisible}%
5615   \HyField@UseFlag{F}{Hidden}%
5616   \HyField@UseFlag{F}{Print}%
5617   \HyField@UseFlag{F}{NoZoom}%
5618   \HyField@UseFlag{F}{NoRotate}%
5619   \HyField@UseFlag{F}{NoView}%
5620   \HyField@UseFlag{F}{Locked}%
5621   \HyField@UseFlag{F}{ToggleNoView}%
5622   \HyField@UseFlag{F}{LockedContents}%
5623   \HyField@PrintFlags{F}{#1}%
5624   \bitsetIsEmpty{HyField@F}{%
5625     \let\Fld@annotflags\@empty
5626   }{%
5627     \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
5628   }%
5629 }

```

### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

5630 \def\HyField@FlagsPushButton{%
5631   \HyField@FlagsAnnot{push button field}%
5632   \bitsetReset{HyField@Ff}%
5633   \HyField@UseFlag{Ff}{ReadOnly}%
5634   \HyField@UseFlag{Ff}{Required}%
5635   \HyField@UseFlag{Ff}{NoExport}%
5636   \HyField@SetFlag{Ff}{Pushbutton}%
5637   \HyField@PrintFlags{Ff}{push button field}%
5638   \bitsetIsEmpty{HyField@Ff}{%
5639     \let\Fld@flags\@empty
5640   }{%

```

```

5641 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
5642 }%
5643 }

```

### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

5644 \def\HyField@FlagsCheckBox{%
5645 \HyField@FlagsAnnot{check box field}%
5646 \bitsetReset{HyField@Ff}%
5647 \HyField@UseFlag{Ff}{ReadOnly}%
5648 \HyField@UseFlag{Ff}{Required}%
5649 \HyField@UseFlag{Ff}{NoExport}%
5650 \HyField@PrintFlags{Ff}{check box field}%
5651 \bitsetIsEmpty{HyField@Ff}{}%
5652 \let\Fld@flags\@empty
5653 }{%
5654 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
5655 }%
5656 }

```

### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

5657 \def\HyField@FlagsRadioButton{%
5658 \HyField@FlagsAnnot{radio button field}%
5659 \bitsetReset{HyField@Ff}%
5660 \HyField@UseFlag{Ff}{ReadOnly}%
5661 \HyField@UseFlag{Ff}{Required}%
5662 \HyField@UseFlag{Ff}{NoExport}%
5663 \HyField@UseFlag{Ff}{NoToggleToOff}%
5664 \HyField@SetFlag{Ff}{Radio}%
5665 \HyField@UseFlag{Ff}{RadiosInUnison}%
5666 \HyField@PrintFlags{Ff}{radio button field}%
5667 \bitsetIsEmpty{HyField@Ff}{}%
5668 \let\Fld@flags\@empty
5669 }{%
5670 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}}%
5671 }%
5672 }

```

### 19.1.7 Text fields

\HyField@FlagsText

```

5673 \def\HyField@FlagsText{%
5674 \HyField@FlagsAnnot{text field}%
5675 \bitsetReset{HyField@Ff}%
5676 \HyField@UseFlag{Ff}{ReadOnly}%
5677 \HyField@UseFlag{Ff}{Required}%
5678 \HyField@UseFlag{Ff}{NoExport}%
5679 \HyField@UseFlag{Ff}{Multiline}%
5680 \HyField@UseFlag{Ff}{Password}%
5681 \HyField@UseFlag{Ff}{FileSelect}%

```

```

5682 \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5683 \HyField@UseFlag{Ff}{DoNotScroll}%
5684 \ifFld@comb
5685   \ifcase0\ifFld@multiline
5686     \else\ifFld@password
5687     \else\ifFld@fileselect
5688     \else 1\fi\fi\fi\relax
5689   \Hy@Error{%
5690     Field option `comb' cannot used together with\MessageBreak
5691     `multiline', `password', or `fileselect'%
5692   }\@ehc
5693 \else
5694   \HyField@UseFlag{Ff}{Comb}%
5695 \fi
5696 \fi
5697 \HyField@UseFlag{Ff}{RichText}%
5698 \HyField@PrintFlags{Ff}{text field}%
5699 \bitsetIsEmpty{HyField@Ff}{%
5700   \let\Fld@flags\@empty
5701 }{%
5702   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5703 }%
5704 }

```

#### 19.1.8 Choice fields

\HyField@FlagsChoice

```

5705 \def\HyField@FlagsChoice{%
5706   \HyField@FlagsAnnot{choice field}%
5707   \bitsetReset{HyField@Ff}%
5708   \HyField@UseFlag{Ff}{ReadOnly}%
5709   \HyField@UseFlag{Ff}{Required}%
5710   \HyField@UseFlag{Ff}{NoExport}%
5711   \HyField@UseFlag{Ff}{Combo}%
5712   \ifFld@combo
5713     \HyField@UseFlag{Ff}{Edit}%
5714   \fi
5715   \HyField@UseFlag{Ff}{Sort}%
5716   \HyField@UseFlag{Ff}{MultiSelect}%
5717   \ifFld@combo
5718     \ifFld@edit
5719       \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5720     \fi
5721   \fi
5722   \HyField@UseFlag{Ff}{CommitOnSelChange}%
5723   \HyField@PrintFlags{Ff}{choice field}%
5724   \bitsetIsEmpty{HyField@Ff}{%
5725     \let\Fld@flags\@empty
5726   }{%
5727     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5728   }%
5729 }

```

## 19.2 Choice field

`\HyField@PDFChoices` #1: list of choices in key value syntax, key = exported name, value = displayed text.

Input: `\Fld@default`, `\Fld@value`, `\ifFld@multiselect`

Result: `\Fld@choices` with entries: `/Opt`, `/DV`, `/V`, `/I`.

```

5730 \def\HyField@PDFChoices#1{%
5731   \begingroup
5732   \global\let\Fld@choices\@empty
5733   \let\HyTmp@optlist\@empty
5734   \let\HyTmp@optitem\relax
5735   \count@=0 %
5736   \kv@parse{#1}{%
5737     \Hy@pdfstringdef\kv@key\kv@key
5738     \ifx\kv@value\relax
5739       \ifnum\Hy@pdf@majorminor@version<103 % implementation note 122, PDF spec 1.7
5740         \xdef\Fld@choices{\Fld@choices(\kv@key)(\kv@key)}%
5741       \else
5742         \xdef\Fld@choices{\Fld@choices(\kv@key)}%
5743       \fi
5744     \else
5745       \Hy@pdfstringdef\kv@value\kv@value
5746       \xdef\Fld@choices{\Fld@choices(\kv@value)(\kv@key)}%
5747     \fi
5748     \edef\HyTmp@optlist{%
5749       \HyTmp@optlist
5750       \HyTmp@optitem{\the\count@}{\kv@key}0%
5751     }%
5752     \advance\count@ by 1 %
5753     \@gobbletwo
5754   }%
5755   \xdef\Fld@choices{/Opt{\Fld@choices}}%
5756   \ifFld@multiselect
5757     \HyField@@PDFChoices{DV}\Fld@default
5758     \HyField@@PDFChoices{V}\Fld@value
5759   \else
5760     \ifx\Fld@default\relax
5761     \else
5762       \xdef\Fld@choices{\Fld@choices/DV(\Fld@default)}%
5763     \fi
5764     \ifx\Fld@value\relax
5765     \else
5766       \xdef\Fld@choices{\Fld@choices/V(\Fld@value)}%
5767     \fi
5768   \fi
5769 \endgroup
5770 }
```

`\HyField@@PDFChoices`

```

5771 \def\HyField@@PDFChoices#1#2{%
5772   \ifx#2\relax
5773   \else
5774     \count@=0 %
5775     \def\HyTmp@optitem##1##2##3{%
```

```

5776 \def\HyTmp@key{##2}%
5777 \ifx\HyTmp@key\Hy@gtemp
5778 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5779 \HyTmp@optlist
5780 \HyTmp@optitem{##1}{##2}1%
5781 }%
5782 \let\HyTmp@found=Y%
5783 \else
5784 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5785 \HyTmp@optlist
5786 \HyTmp@optitem{##1}{##2}##3%
5787 }%
5788 \fi
5789 }%
5790 \expandafter\comma@parse\expandafter{#2}{%
5791 \pdfstringdef\Hy@gtemp\comma@entry
5792 \let\HyTmp@found=N %
5793 \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
5794 \HyTmp@optlist
5795 \ifx\HyTmp@found Y%
5796 \advance\count@ by 1 %
5797 \else
5798 \@onelevel@sanitize\comma@entry
5799 \PackageWarning{hyperref}{%
5800 \string\ChoiceBox: Ignoring value `\'comma@entry',%
5801 \MessageBreak
5802 it cannot be found in the choices%
5803 }%
5804 \fi
5805 \@gobble
5806 }%
5807 \def\HyTmp@optitem##1##2##3{%
5808 \ifnum##3=1 %
5809 (##2)%
5810 \fi
5811 }%
5812 \ifcase\count@
5813 \or
5814 \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
5815 \else
5816 \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
5817 \ifx#1V%
5818 \def\HyTmp@optitem##1##2##3{%
5819 \ifnum##3=1 %
5820 \@firstofone{ ##1}%
5821 \fi
5822 }%
5823 \edef\HyTmp@optlist{\HyTmp@optlist}%
5824 \xdef\Fld@choices{%
5825 \Fld@choices
5826 /I\expandafter\@firstofone\HyTmp@optlist}%
5827 }%
5828 \fi
5829 \fi

```

```

5830 \fi
5831 }

```

## 19.3 Forms

\HyField@SetKeys

```

5832 \def\HyField@SetKeys{%
5833   \kvsetkeys{Field}%
5834 }

5835 \newif\ifFld@checked
5836 \newif\ifFld@disabled
5837 \Fld@checkedfalse
5838 \Fld@disabledfalse
5839 \newcount\Fld@menulength
5840 \newdimen\Fld@Width
5841 \newdimen\Fld@charsize
5842 \Fld@charsize=10\p@
5843 \def\Fld@maxlen{0}
5844 \def\Fld@align{0}
5845 \def\Fld@color{0 0 0 rg}
5846 \def\Fld@bcolor{1 1 1}
5847 \def\Fld@bordercolor{1 0 0}
5848 \def\Fld@bordersep{1\p@}
5849 \def\Fld@borderwidth{1}
5850 \def\Fld@borderstyle{S}
5851 \def\Fld@cbsymbol{4}
5852 \def\Fld@radiosymbol{H}
5853 \def\Fld@rotation{0}
5854 \def\Form{\@ifnextchar{\@Form}{\@Form[]}}
5855 \def\endForm{\@endForm}
5856 \newif\ifForm@html
5857 \Form@htmlfalse
5858 \def\Form@boolkey#1#2{%
5859   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5860 }
5861 \define@key{Form}{action}{%
5862   \hyper@normalise\Hy@DefFormAction{#1}%
5863 }
5864 \def\Hy@DefFormAction{\def\Form@action}
5865 \def\enc@html{html}
5866 \define@key{Form}{encoding}{%
5867   \def\Hy@tempa{#1}%
5868   \ifx\Hy@tempa\enc@html
5869     \Form@htmltrue
5870     \def\Fld@export{html}%
5871   \else
5872     \Hy@Warning{%
5873       Form `encoding' key with \MessageBreak
5874       unknown value `#1'%
5875     }%
5876     \Form@htmlfalse
5877   \fi
5878 }

```

```

5879 \define@key{Form}{method}{%
5880 \lowercase{\def\Hy@temp{#1}}}%
5881 \@ifundefined{Form@method@\Hy@temp}{%
5882 \@onelevel@sanitize\Hy@temp
5883 \Hy@Error{%
5884   Unknown method `\'Hy@temp'.\MessageBreak
5885   Known values are `post' and `get'%
5886 } \@ehc
5887 }{%
5888 \let\Form@method\Hy@temp
5889 \ifcase\@nameuse{Form@method@\Hy@temp} %
5890 \Fld@getmethodfalse
5891 \else
5892 \Fld@getmethodtrue
5893 \fi
5894 }%
5895 }
5896 \def\Form@method{}
5897 \@namedef{Form@method@post}{0}
5898 \@namedef{Form@method@get}{1}

5899 \newif\ifHyField@NeedAppearances
5900 \def\HyField@NeedAppearancesfalse{%
5901 \global\let\ifHyField@NeedAppearances\iffalse
5902 }
5903 \def\HyField@NeedAppearancetrue{%
5904 \global\let\ifHyField@NeedAppearances\iftrue
5905 }
5906 \HyField@NeedAppearancetrue
5907 \define@key{Form}{NeedAppearances}[true]{%
5908 \edef\Hy@tempa{#1}%
5909 \ifx\Hy@tempa\Hy@true
5910 \HyField@NeedAppearancetrue
5911 \else
5912 \ifx\Hy@tempa\Hy@false
5913 \HyField@NeedAppearancesfalse
5914 \else
5915 \Hy@Error{%
5916   Unexpected value `\'Hy@tempa'.\MessageBreak
5917   of option `NeedAppearances' instead of\MessageBreak
5918   `true' or `false'%
5919 } \@ehc
5920 \fi
5921 \fi
5922 }
5923 \def\Fld@boolkey#1#2{%
5924 \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5925 }
5926 \ifHy@texht
5927 \newtoks\Fld@toks
5928 \Fld@toks={ }%
5929 \def\Fld@addtoks#1#2{%
5930 \edef\@processme{\Fld@toks{\the\Fld@toks\space #1="#2"}}%
5931 \@processme
5932 }%

```

```

5933 \else
5934 \def\Hy@WarnHTMLFieldOption#1{%
5935   \Hy@Warning{%
5936     HTML field option `#1'\MessageBreak
5937     is ignored%
5938   }%
5939 }%
5940 \fi
5941 \def\Fld@checkequals#1=#2=#3\\{%
5942 \def\@currDisplay{#1}%
5943 \ifx\\#2\\%
5944   \def\@currValue{#1}%
5945 \else
5946   \def\@currValue{#2}%
5947 \fi
5948 \expandafter\Hy@pdfstringdef\expandafter\@currValue\expandafter{\@currValue}%
5949 }
5950 \define@key{Field}{loc}{%
5951 \def\Fld@loc{#1}%
5952 }
5953 \define@key{Field}{checked}[true]{%
5954 \lowercase{\Field@boolkey{#1}}{checked}%
5955 }
5956 \define@key{Field}{disabled}[true]{%
5957 \lowercase{\Field@boolkey{#1}}{disabled}%
5958 }
5959 \ifHy@texht
5960 \define@key{Field}{accesskey}{%
5961 \Field@addtoks{accesskey}{#1}%
5962 }%
5963 \define@key{Field}{tabkey}{%
5964 \Field@addtoks{tabkey}{#1}%
5965 }%
5966 \else
5967 \define@key{Field}{accesskey}{%
5968 \Hy@WarnHTMLFieldOption{accesskey}%
5969 }%
5970 \define@key{Field}{tabkey}{%
5971 \Hy@WarnHTMLFieldOption{tabkey}%
5972 }%
5973 \fi
5974 \define@key{Field}{name}{%
5975 \def\Fld@name{#1}%
5976 }
5977 \let\Fld@altname\relax
5978 \define@key{Field}{altname}{%
5979 \def\Fld@altname{#1}%
5980 }
5981 \let\Fld@mappingname\relax
5982 \define@key{Field}{mappingname}{%
5983 \def\Fld@mappingname{#1}%
5984 }
5985 \define@key{Field}{width}{%
5986 \def\Fld@width{#1}%

```

```

5987 \Field@Width#1\setbox0=\hbox{m}%
5988 }
5989 \define@key{Field}{maxlen}{%
5990 \def\Fld@maxlen{#1}%
5991 }
5992 \define@key{Field}{menulength}{%
5993 \Fld@menulength=#1\relax
5994 }
5995 \define@key{Field}{height}{%
5996 \def\Fld@height{#1}%
5997 }
5998 \define@key{Field}{charsize}{%
5999 \setlength{\Fld@charsize}{#1}%
6000 }
6001 \define@key{Field}{borderwidth}{%
6002 \Hy@defaultbp\Fld@borderwidth{#1}%
6003 }
6004 \def\Hy@defaultbp#1#2{%
6005 \begingroup
6006 \afterassignment\Hy@defaultbpAux
6007 \dimen@=#2bp\relax{#1}{#2}%
6008 }
6009 \def\Hy@defaultbpAux#1\relax#2#3{%
6010 \ifx!#1!%
6011 \endgroup
6012 \def#2{#3}%
6013 \else
6014 \edef\x{\endgroup
6015 \def\noexpand#2{%
6016 \strip@pt\dimexpr\dimen@*800/803\relax
6017 }%
6018 }\x
6019 \fi
6020 }%
6021 \define@key{Field}{borderstyle}{%
6022 \let\Hy@temp\Fld@borderstyle
6023 \def\Fld@borderstyle{#1}%
6024 \Hy@Match\Fld@borderstyle{}{%
6025 ~[SDBIU]$%
6026 }{}{%
6027 \Hy@Warning{%
6028 Invalid value `~\pdfborderstyle'\MessageBreak
6029 for option `pdfborderstyle'. Valid values:\MessageBreak
6030 \space\space S (Solid), D (Dashed), B (Beveled),\MessageBreak
6031 \space\space I (Inset), U (Underline)\MessageBreak
6032 Option setting is ignored%
6033 }%
6034 \let\Fld@borderstyle\Hy@temp
6035 }%
6036 }
6037 \define@key{Field}{bordersep}{%
6038 \def\Fld@bordersep{#1}%
6039 }
6040 \define@key{Field}{default}{%

```

```

6041 \Hy@pdfstringdef\Fld@default{#1}%
6042 }
6043 \define@key{Field}{align}{%
6044 \def\Fld@align{#1}%
6045 }
6046 \define@key{Field}{value}{%
6047 \Hy@pdfstringdef\Fld@value{#1}%
6048 }
6049 \define@key{Field}{checkboxsymbol}{%
6050 \Fld@DingDef\Fld@cbsymbol{#1}%
6051 }
6052 \define@key{Field}{radiosymbol}{%
6053 \Fld@DingDef\Fld@radiosymbol{#1}%
6054 }
6055 \def\Fld@DingDef#1#2{%
6056 \let\Fld@temp\@empty
6057 \Fld@@DingDef#2\ding{ }\@nil
6058 \let#1\Fld@temp
6059 }
6060 \def\Fld@@DingDef#1\ding#2#3\@nil{%
6061 \expandafter\def\expandafter\Fld@temp\expandafter{%
6062 \Fld@temp
6063 #1%
6064 }%
6065 \ifx\\#3\\%
6066 \expandafter\@gobble
6067 \else
6068 \begingroup
6069 \lccode`0=#2\relax
6070 \lowercase{\endgroup
6071 \expandafter\def\expandafter\Fld@temp\expandafter{%
6072 \Fld@temp
6073 0%
6074 }%
6075 }%
6076 \expandafter\@firstofone
6077 \fi
6078 {%
6079 \Fld@@DingDef#3\@nil
6080 }%
6081 }

6082 \define@key{Field}{rotation}{%
6083 \def\Fld@rotation{#1}%
6084 }

6085 \define@key{Field}{backgroundcolor}{%
6086 \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
6087 }
6088 \define@key{Field}{bordercolor}{%
6089 \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
6090 }
6091 \define@key{Field}{color}{%
6092 \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
6093 }

```

```

6094 \let\Fld@onclick@code\@empty
6095 \let\Fld@format@code\@empty
6096 \let\Fld@validate@code\@empty
6097 \let\Fld@calculate@code\@empty
6098 \let\Fld@keystroke@code\@empty
6099 \let\Fld@onfocus@code\@empty
6100 \let\Fld@onblur@code\@empty
6101 \let\Fld@onmousedown@code\@empty
6102 \let\Fld@onmouseup@code\@empty
6103 \let\Fld@onenter@code\@empty
6104 \let\Fld@onexit@code\@empty
6105 \def\Hy@temp#1{%
6106   \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
6107 }
6108 \def\Hy@@temp#1#2{%
6109   \ifHy@pdfa
6110     \define@key{Field}{#2}{%
6111       \Hy@Error{%
6112         PDF/A: Additional action `#2' is prohibited%
6113       }\@ehc
6114     }%
6115   \else
6116     \define@key{Field}{#2}{%
6117       \def#1{##1}%
6118     }%
6119   \fi
6120 }
6121 \Hy@temp{keystroke}
6122 \Hy@temp{format}
6123 \Hy@temp{validate}
6124 \Hy@temp{calculate}
6125 \Hy@temp{onfocus}
6126 \Hy@temp{onblur}
6127 \Hy@temp{onmousedown}
6128 \Hy@temp{onmouseup}
6129 \Hy@temp{onenter}
6130 \Hy@temp{onexit}

6131 \let\Fld@calculate@sortkey\@empty
6132 \define@key{Field}{calculatesortkey}[1]{%
6133   \def\Fld@calculate@sortkey{#1}%
6134 }

6135 \ifHy@texht
6136   \def\Hy@temp#1{%
6137     \define@key{Field}{#1}{%
6138       \Field@addtoks{#1}{##1}%
6139     }%
6140   }%
6141 \else
6142   \def\Hy@temp#1{%
6143     \define@key{Field}{#1}{%
6144       \Hy@WarnHTMLFieldOption{#1}%
6145     }%
6146   }%

```

```

6147 \fi
6148 \Hy@temp{ondblclick}
6149 \Hy@temp{onmouseover}
6150 \Hy@temp{onmousemove}
6151 \Hy@temp{onmouseout}
6152 \Hy@temp{onkeydown}
6153 \Hy@temp{onkeyup}
6154 \Hy@temp{onselect}
6155 \Hy@temp{onchange}
6156 \Hy@temp{onkeypress}
6157 \ifHy@texht
6158   \define@key{Field}{onclick}{%
6159     \Field@addtoks{onclick}{#1}%
6160   }%
6161 \else
6162   \ifHy@pdfa
6163     \define@key{Field}{onclick}{%
6164       \Hy@Error{%
6165         PDF/A: Action `onclick' is prohibited%
6166       } \@ehc
6167     }%
6168   \else
6169     \define@key{Field}{onclick}{%
6170       \def\Fld@onclick@code{#1}%
6171     }%
6172   \fi
6173 \fi

6174 \DeclareRobustCommand\TextField{%
6175   \@ifnextchar[{\@TextField}{\@TextField[]}%
6176 }
6177 \DeclareRobustCommand\ChoiceMenu{%
6178   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
6179 }
6180 \DeclareRobustCommand\CheckBox{%
6181   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
6182 }
6183 \DeclareRobustCommand\PushButton{%
6184   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
6185 }
6186 \DeclareRobustCommand\Gauge{%
6187   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
6188 }
6189 \DeclareRobustCommand\Submit{%
6190   \@ifnextchar[{\@Submit}{\@Submit[]}%
6191 }
6192 \DeclareRobustCommand\Reset{%
6193   \@ifnextchar[{\@Reset}{\@Reset[]}%
6194 }
6195 \def\LayoutTextField#1#2{% label, field
6196   \def\Hy@temp{#1}%
6197   \ifx\Hy@temp@empty
6198     #2%
6199   \else
6200     #1 #2%

```

```

6201 \fi
6202 }
6203 \def\LayoutChoiceField#1#2{% label, field
6204 \def\Hy@temp{#1}%
6205 \ifx\Hy@temp\@empty
6206 #2%
6207 \else
6208 #1 #2%
6209 \fi
6210 }
6211 \def\LayoutCheckField#1#2{% label, field
6212 \def\Hy@temp{#1}%
6213 \ifx\Hy@temp\@empty
6214 #2%
6215 \else
6216 #1 #2%
6217 \fi
6218 }
6219 \def\LayoutPushButtonField#1{% button
6220 #1%
6221 }
6222 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6223 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6224 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6225 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6226 \def\MakeButtonField#1{%
6227 \sbox0{%
6228 \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
6229 }%
6230 \@tempdima\ht0 %
6231 \advance\@tempdima by \Fld@borderwidth bp %
6232 \advance\@tempdima by \Fld@borderwidth bp %
6233 \ht0\@tempdima
6234 \@tempdima\dp0 %
6235 \advance\@tempdima by \Fld@borderwidth bp %
6236 \advance\@tempdima by \Fld@borderwidth bp %
6237 \dp0\@tempdima
6238 \box0\relax
6239 }
6240 \def\DefaultHeightofSubmit{14pt}
6241 \def\DefaultWidthofSubmit{2cm}
6242 \def\DefaultHeightofReset{14pt}
6243 \def\DefaultWidthofReset{2cm}
6244 \def\DefaultHeightofCheckBox{\normalbaselineskip}
6245 \def\DefaultWidthofCheckBox{\normalbaselineskip}
6246 \def\DefaultHeightofChoiceMenu{\normalbaselineskip}
6247 \def\DefaultWidthofChoiceMenu{\normalbaselineskip}
6248 \def\DefaultHeightofText{\normalbaselineskip}
6249 \def\DefaultHeightofTextMultiline{4\normalbaselineskip}
6250 \def\DefaultWidthofText{3cm}
6251 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
6252 \def\DefaultOptionsofReset{print,name=Reset,noexport}
6253 \def\DefaultOptionsofPushButton{print}
6254 \def\DefaultOptionsofCheckBox{print}

```

```
6255 \def\DefaultOptionsofText{print}
```

Default options for the types of \ChoiceMenu.

```
6256 \def\DefaultOptionsofListBox{print}
```

```
6257 \def\DefaultOptionsofComboBox{print,edit,sort}
```

```
6258 \def\DefaultOptionsofPopdownBox{print}
```

```
6259 \def\DefaultOptionsofRadio{print,notoggetooff}
```

## 20 Setup

```
6260 \ifHy@hyperfigures
```

```
6261 \Hy@Info{Hyper figures ON}%
```

```
6262 \else
```

```
6263 \Hy@Info{Hyper figures OFF}%
```

```
6264 \fi
```

```
6265 \ifHy@nesting
```

```
6266 \Hy@Info{Link nesting ON}%
```

```
6267 \else
```

```
6268 \Hy@Info{Link nesting OFF}%
```

```
6269 \fi
```

```
6270 \ifHy@hyperindex
```

```
6271 \Hy@Info{Hyper index ON}%
```

```
6272 \else
```

```
6273 \Hy@Info{Hyper index OFF}%
```

```
6274 \fi
```

```
6275 \ifHy@backref
```

```
6276 \Hy@Info{backreferencing ON}%
```

```
6277 \else
```

```
6278 \Hy@Info{backreferencing OFF}%
```

```
6279 \fi
```

```
6280 \ifHy@colorlinks
```

```
6281 \Hy@Info{Link coloring ON}%
```

```
6282 \else
```

```
6283 \Hy@Info{Link coloring OFF}%
```

```
6284 \fi
```

```
6285 \ifHy@ocgcolorlinks
```

```
6286 \Hy@Info{Link coloring with OCG ON}%
```

```
6287 \else
```

```
6288 \Hy@Info{Link coloring with OCG OFF}%
```

```
6289 \fi
```

```
6290 \ifHy@pdfa
```

```
6291 \Hy@Info{PDF/A mode ON}%
```

```
6292 \else
```

```
6293 \Hy@Info{PDF/A mode OFF}%
```

```
6294 \fi
```

## 21 Low-level utility macros

We need unrestricted access to the #, ~ and " characters, so make them nice macros.

```
6295 \edef\hyper@hash{\string#}
```

```
6296 \edef\hyper@tilde{\string~}
```

```
6297 \edef\hyper@quote{\string"}
```

Support \label before \begin{document}.

```
6298 \def\@currentHref{Doc-Start}
6299 \let\Hy@footnote@currentHref\@empty
```

We give the start of document a special label; this is used in backreferencing-by-section, to allow for cites before any sectioning commands. Set up PDF info.

```
6300 \Hy@AtBeginDocument{%
6301   \Hy@pdfstringtrue
6302   \PDF@SetupDoc
6303   \let\PDF@SetupDoc\@empty
6304   \Hy@DisableOption{pdfpagescrop}%
6305   \Hy@DisableOption{pdfpagemode}%
6306   \Hy@DisableOption{pdfnonfullscreenpagemode}%
6307   \Hy@DisableOption{pdfdirection}%
6308   \Hy@DisableOption{pdfviewarea}%
6309   \Hy@DisableOption{pdfviewclip}%
6310   \Hy@DisableOption{pdfprintarea}%
6311   \Hy@DisableOption{pdfprintclip}%
6312   \Hy@DisableOption{pdfprintscaling}%
6313   \Hy@DisableOption{pdfduplex}%
6314   \Hy@DisableOption{pdfpicktraybypdftype}%
6315   \Hy@DisableOption{pdfprintpagerange}%
6316   \Hy@DisableOption{pdfnumcopies}%
6317   \Hy@DisableOption{pdfstartview}%
6318   \Hy@DisableOption{pdfstartpage}%
6319   \Hy@DisableOption{pdftoolbar}%
6320   \Hy@DisableOption{pdfmenubar}%
6321   \Hy@DisableOption{pdfwindowui}%
6322   \Hy@DisableOption{pdfwindow}%
6323   \Hy@DisableOption{pdfcenterwindow}%
6324   \Hy@DisableOption{pdfdisplaydoctitle}%
6325   \Hy@DisableOption{pdfpagelayout}%
6326   \Hy@DisableOption{pdflang}%
6327   \Hy@DisableOption{baseurl}%
6328   \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
6329   \Hy@pdfstringfalse
6330 }
```

## 22 Localized nullifying of package

Sometimes we just don't want the wretched package interfering with us. Define an environment we can put in manually, or include in a style file, which stops the hypertext functions doing anything. This is used, for instance, in the Elsevier classes, to stop hyperref playing havoc in the front matter.

```
6331 \def\NoHyper{%
6332   \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6333   \def\hyper@anchor##1##2{##2\Hy@xspace@end}%
6334   \global\let\hyper@livelink\hyper@link
6335   \gdef\hyper@link##1##2##3{##3\Hy@xspace@end}%
6336   \let\hyper@anchor\@gobble
6337   \let\hyper@anchorstart\@gobble
6338   \def\hyper@anchorend{\Hy@xspace@end}%
6339   \let\hyper@linkstart\@gobbletwo
```

```

6340 \def\hyper@linkend{\Hy@xspace@end}%
6341 \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6342 \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6343 \let\Hy@backout\@gobble
6344 }
6345 \def\stop@hyper{%
6346 \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6347 \let\Hy@backout\@gobble
6348 \let\hyper@@anchor\@gobble
6349 \def\hyper@link##1##2##3{##3\Hy@xspace@end}%
6350 \let\hyper@anchor\@gobble
6351 \let\hyper@anchorstart\@gobble
6352 \def\hyper@anchorend{\Hy@xspace@end}%
6353 \let\hyper@linkstart\@gobbletwo
6354 \def\hyper@linkend{\Hy@xspace@end}%
6355 \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6356 \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6357 }
6358 \def\endNoHyper{%
6359 \global\let\hyper@link\hyper@livelink
6360 }
6361 \end{package}

```

## 23 Package nohyperref

This package is introduced by Sebastian Rahtz.

Package nohyperref is a dummy package that defines some low level and some top-level commands. It is done for jadetex, which calls hyperref low-level commands, but it would also be useful with people using normal hyperref, who really do not want the package loaded at all.

Some low-level commands:

```

6362 \def\*nohyperref
6363 \let\hyper@@anchor\@gobble
6364 \def\hyper@link#1#2#3{#3}%
6365 \let\hyper@anchorstart\@gobble
6366 \let\hyper@anchorend\@empty
6367 \let\hyper@linkstart\@gobbletwo
6368 \let\hyper@linkend\@empty
6369 \def\hyper@linkurl#1#2{#1}%
6370 \def\hyper@linkfile#1#2#3{#1}%
6371 \def\hyper@link@[#1]#2#3{#1}%
6372 \let\PDF@SetupDoc\@empty
6373 \let\PDF@FinishDoc\@empty
6374 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

6375 \def\Acrobatmenu#1#2{\leavevmode#2}
6376 \let\pdfstringdefDisableCommands\@gobbletwo
6377 \let\texorpdfstring\@firstoftwo
6378 \let\pdfbookmark\@undefined
6379 \newcommand\pdfbookmark[3]{}
6380 \let\phantomsection\@empty
6381 \let\hypersetup\@gobble

```

```

6382 \let\hyperbaseurl\@gobble
6383 \newcommand*{\href}[3][\#3]{
6384 \let\hyperdef\@gobbletwo
6385 \let\hyperlink\@gobble
6386 \let\hypertarget\@gobble
6387 \protected\def\hyperref{%
6388 \@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
6389 }
6390 \long\def\@gobbleopt[#1]{%
6391 \let\hyperpage\@empty
6392 </nohyperref>

```

## 24 The Mangling Of Aux and Toc Files

Some extra tests so that the hyperref package may be removed or added to a document without having to remove .aux and .toc files (this section is by David Carlisle) All the code is delayed to `\begin{document}` change 2026-02-22: removed code for different `\newlabel` definitions.

## 25 Title strings

If options `pdftitle` and `pdfauthor` are not used, these data for the pdf information dictionary can be extracted by the `\title` and `\author`.

```

6393 <{*package}
6394 \ifHy@pdfusetitle
6395 \let\HyOrg@title\title
6396 \let\HyOrg@author\author
6397 \def\title{\@ifnextchar[{\Hy@scanopttitle}{\Hy@scantitle}}%
6398 \def\Hy@scanopttitle[#1]{%
6399 \gdef\Hy@title{#1}%
6400 \HyOrg@title{#1}%
6401 }%
6402 \def\Hy@scantitle#1{%
6403 \gdef\Hy@title{#1}%
6404 \HyOrg@title{#1}%
6405 }%
6406 \def\author{\@ifnextchar[{\Hy@scanoptauthor}{\Hy@scanauthor}}%
6407 \def\Hy@scanoptauthor[#1]{%
6408 \gdef\Hy@author{#1}%
6409 \HyOrg@author{#1}%
6410 }%
6411 \def\Hy@scanauthor#1{%
6412 \gdef\Hy@author{#1}%
6413 \HyOrg@author{#1}%
6414 }%

```

The case, that `\title`, or `\author` are given before `hyperref` is loaded, is much more complicate, because LaTeX initializes the macros `\@title` and `\@author` with LaTeX error and warning messages.

```

6415 \begingroup
6416 \def\process@me#1\@nil#2{%

```

```

6417 \expandafter\let\expandafter\x\csname @#2\endcsname
6418 \edef\y{\expandafter\strip@prefix\meaning\x}%
6419 \def\c##1##1##2\@nil{%
6420 \ifx\\##1\\%
6421 \else
6422 \expandafter\gdef\csname Hy@#2\expandafter\endcsname
6423 \expandafter{\x}%
6424 \fi
6425 }%
6426 \expandafter\c\y\relax#1\@nil
6427 }%
6428 \expandafter\process@me\string\@latex@\@nil{title}%
6429 \expandafter\process@me\string\@latex@\@nil{author}%
6430 \endgroup
6431 \fi
6432 \Hy@DisableOption{pdfusetitle}

```

Macro `\Hy@UseMaketitleInfos` is used in the driver files, before the information entries are used.

The newline macro `\newline` or `\\` is much more complicate. In the title a good replacement can be a space, but can be already a space after `\\` in the title string. So this space is removed by scanning for the next non-empty argument.

In the macro `\author` the newline can perhaps separate the different authors, so the newline expands here to a comma with space.

The possible arguments such as space or the optional argument after the newline macros are not detected.

A possible <sup>1</sup> removes its argument.

```

6433 \def\Hy@UseMaketitleString#1{%
6434 \@ifundefined{Hy@#1}{\}%
6435 \begingroup
6436 \let\Hy@saved@hook\pdfstringdefPreHook
6437 \pdfstringdefDisableCommands{%
6438 \expandafter\let\expandafter\\\csname Hy@newline@#1\endcsname
6439 \let\newline\\%
6440 \def\and{; }%
6441 \let\thanks\@gobble%
6442 }%
6443 \expandafter\ifx\csname @pdf#1\endcsname\@empty
6444 \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
6445 \csname Hy@#1\endcsname\@empty
6446 }%
6447 \fi
6448 \global\let\pdfstringdefPreHook\Hy@saved@hook
6449 \endgroup
6450 }%
6451 }
6452 \def\Hy@newline@title#1{ #1}
6453 \def\Hy@newline@author#1{, #1}
6454 \def\Hy@UseMaketitleInfos{%
6455 \Hy@UseMaketitleString{title}%
6456 \Hy@UseMaketitleString{author}%
6457 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```
6458 \let\Hy@EveryPageHook\@empty
6459 \let\Hy@EveryPageBoxHook\@empty
6460 \let\Hy@FirstPageHook\@empty
6461 \AddToHook{shipout/before}{%
6462   \Hy@EveryPageHook
6463   \ifx\Hy@EveryPageBoxHook\@empty
6464     \else
6465       \setbox\ShipoutBox=\vbox{%
6466         \offinterlineskip
6467         \Hy@EveryPageBoxHook
6468         \box\ShipoutBox
6469       }%
6470   \fi
6471 }
6472 \Hy@iffileloaded{hpdftex.def}{%
6473   \AddToHook{shipout/before}{%
6474     \Hy@FirstPageHook
6475     \global\let\Hy@FirstPageHook\@empty
6476   }%
6477 }{%
6478   \AddToHook{shipout/firstpage}{%
6479     \Hy@FirstPageHook
6480   }%
6481 }
6482 \g@addto@macro\Hy@FirstPageHook{%
6483   \PDF@FinishDoc
6484   \global\let\PDF@FinishDoc\@empty
6485 }
```

### 27.1 PDF /PageLabels

Internal macros of this module are marked with \HyPL@.

```
6486 \ifHy@pdfpagelabels
6487   \begingroup\expandafter\expandafter\expandafter\endgroup
6488   \expandafter\ifx\csname thepage\endcsname\relax
6489     \Hy@pdfpagelabelsfalse
6490     \Hy@WarningNoLine{%
6491       Option `pdfpagelabels' is turned off\MessageBreak
6492       because \string\thepage\space is undefined%
6493     }%
6494     \csname fi\endcsname
6495     \csname iffalse\expandafter\endcsname
6496   \fi
```

\thispdfpagelabel The command \thispdfpagelabel allows to label a special page without the redefinition of \thepage for the page.

```
6497 \def\thispdfpagelabel#1{%
```

```

6498 \gdef\HyPL@thisLabel{#1}%
6499 }%
6500 \global\let\HyPL@thisLabel\relax

```

`\HyPL@Labels` The page labels are collected in `\HyPL@Labels` and set at the end of the document.

```

6501 \let\HyPL@Labels\@empty

```

`\Hy@abspage` We have to know the the absolute page number and introduce a new counter for that.

```

6502 \newcount\Hy@abspage
6503 \Hy@abspage=0 %

```

For comparisons with the values of the previous page, some variables are needed:

```

6504 \def\HyPL@LastType{init}%
6505 \def\HyPL@LastNumber{0}%
6506 \let\HyPL@LastPrefix\@empty

```

Definitions for the PDF names of the L<sup>A</sup>T<sub>E</sub>X pendants.

```

6507 \def\HyPL@arabic{D}%
6508 \def\HyPL@Roman{R}%
6509 \def\HyPL@roman{r}%
6510 \def\HyPL@Alph{A}%
6511 \def\HyPL@alph{a}%

6512 \let\HyPL@SlidesSetPage\@empty
6513 \@ifclassloaded{slides}{%
6514   \def\HyPL@SlidesSetPage{%
6515     \advance\c@page\@ne
6516     \ifnum\value{page}>\@ne
6517       \protected@edef\HyPL@SlidesOptionalPage{%
6518         \Hy@SlidesFormatOptionalPage{thepage}%
6519       }%
6520     \else
6521       \let\HyPL@SlidesOptionalPage\@empty
6522     \fi
6523     \advance\c@page-\@ne
6524     \def\HyPL@page{%
6525       \csname the\Hy@SlidesPage\endcsname
6526       \HyPL@SlidesOptionalPage
6527     }%
6528   }%
6529 }{}%

```

`\HyPL@EveryPage` If a page is shipout and the page number is known, `\HyPL@EveryPage` has to be called. It stores the current page label.

```

6530 \def\HyPL@EveryPage{%
6531   \begingroup
6532   \ifx\HyPL@thisLabel\relax
6533     \let\HyPL@page\thepage
6534     \HyPL@SlidesSetPage
6535   \else
6536     \let\HyPL@page\HyPL@thisLabel
6537     \global\let\HyPL@thisLabel\relax
6538   \fi

```

```

6539 \let\HyPL@Type\relax
6540 \ifnum\c@page>0 %
6541   \ifx\HyPL@SlidesSetPage\@empty
6542     \expandafter\HyPL@CheckThePage\HyPL@page\@nil
6543   \fi
6544 \fi
6545 \let\Hy@temp Y%
6546 \ifx\HyPL@Type\HyPL@LastType
6547   \else
6548     \let\Hy@temp N%
6549   \fi
6550 \ifx\HyPL@Type\relax
6551   \pdfstringdef\HyPL@Prefix{\HyPL@page}%
6552 \else
6553   \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6554 \fi
6555 \ifx\HyPL@Prefix\HyPL@LastPrefix
6556   \else
6557     \let\Hy@temp N%
6558   \fi
6559 \if Y\Hy@temp
6560   \advance\c@page by -1 %
6561   \ifnum\HyPL@LastNumber=\the\c@page\relax
6562   \else
6563     \let\Hy@temp N%
6564   \fi
6565   \Hy@StepCount\c@page
6566 \fi
6567 \if N\Hy@temp
6568   \ifx\HyPL@Type\relax
6569     \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
6570   \else
6571     \HyPL@StorePageLabel{%
6572       \ifx\HyPL@Prefix\@empty
6573       \else
6574         /P(\HyPL@Prefix)%
6575       \fi
6576       /S/\csname HyPL\HyPL@Type\endcsname
6577       \ifnum\the\c@page=1 %
6578       \else
6579         \space/St \the\c@page
6580       \fi
6581     }%
6582   \fi
6583 \fi
6584 \xdef\HyPL@LastNumber{\the\c@page}%
6585 \global\let\HyPL@LastType\HyPL@Type
6586 \global\let\HyPL@LastPrefix\HyPL@Prefix
6587 \endgroup
6588 \Hy@GlobalStepCount\Hy@abspage
6589 }%

```

\HyPL@CheckThePage Macro \HyPL@CheckThePage calls \HyPL@@@CheckThePage that does the job.

```

6590 \def\HyPL@CheckThePage#1\@nil{%

```

```

6591 \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6592 }%

```

`\HyPL@@CheckThePage` The first check is, is `\thepage` is defined such as in L<sup>A</sup>T<sub>E</sub>X, e. g.: `\csname @arabic\endcsname\c@page`. In the current implementation the check fails, if there is another `\csname` before.

The second check tries to detect `\arabic{page}` at the end of the definition text of `\thepage`.

```

6593 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6594   \def\Hy@tempa{#4}%
6595   \def\Hy@tempb{\csname\endcsname\c@page}%
6596   \ifx\Hy@tempa\Hy@tempb
6597     \expandafter\ifx\csname HyPL#3\endcsname\relax
6598     \else
6599       \def\HyPL@Type{#3}%
6600       \def\HyPL@Prefix{#2}%
6601       \fi
6602     \else
6603       \begingroup
6604         \let\Hy@next\endgroup
6605         \let\HyPL@found\@undefined
6606         \def\arabic{\HyPL@Format{arabic}}%
6607         \def\Roman{\HyPL@Format{Roman}}%
6608         \def\roman{\HyPL@Format{roman}}%
6609         \def\Alph{\HyPL@Format{Alph}}%
6610         \def\alph{\HyPL@Format{alph}}%
6611         \protected@edef\Hy@temp{#1}%
6612         \ifx\HyPL@found\relax
6613           \toks@{\expandafter{\Hy@temp}}%
6614           \edef\Hy@next{\endgroup
6615             \noexpand\HyPL@@@CheckThePage\the\toks@
6616             \noexpand\HyPL@found\relax\noexpand\@nil
6617           }%
6618         \fi
6619         \Hy@next
6620       \fi
6621     }%

```

`\HyPL@Format` The help macro `\HyPL@Format` is executed while a `\protected@edef` in the second check method of `\HyPL@@CheckPage`. The first occurrences of, for example, `\arabic{page}` is marked by `\HyPL@found` that is also defined by `\csname`.

```

6622 \def\HyPL@Format#1#2{%
6623   \ifx\HyPL@found\@undefined
6624     \expandafter\ifx\csname c@#2\endcsname\c@page
6625       \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
6626     \else
6627       \expandafter\noexpand\csname#1\endcsname{#2}%
6628     \fi
6629   \else
6630     \expandafter\noexpand\csname#1\endcsname{#2}%
6631   \fi
6632 }%

```

`\HyPL@@@CheckThePage` If the second check method is successful, `\HyPL@@@CheckThePage` scans the result of `\HyPL@Format` and stores the found values.

```

6633 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6634   \def\Hy@tempa{#3}%
6635   \def\Hy@tempb{\HyPL@found\relax}%
6636   \ifx\Hy@tempa\Hy@tempb
6637     \def\HyPL@Type{#2}%
6638     \def\HyPL@Prefix{#1}%
6639   \fi
6640 }%

```

`\HyPL@StorePageLabel` Dummy for drivers that does not support `/PageLabel`.

```

6641 \providecommand*\HyPL@StorePageLabel}[1]{}%

```

`\HyPL@Useless` The `/PageLabels` entry does not make sense, if the absolute page numbers and the page labels are the same. Then `\HyPL@Labels` has the meaning of `\HyPL@Useless`.

```

6642 \def\HyPL@Useless{0<</S/D>>}%
6643 \@onelevel@sanitize\HyPL@Useless

```

`\HyPL@SetPageLabels` The page labels are written to the PDF catalogue. The command `\Hy@PutCatalog` is defined in the driver files.

```

6644 \def\HyPL@SetPageLabels{%
6645   \@onelevel@sanitize\HyPL@Labels
6646   \ifx\HyPL@Labels\@empty
6647     \else
6648       \ifx\HyPL@Labels\HyPL@Useless
6649       \else
6650         \Hy@PutCatalog{/PageLabels<</Nums\HyPL@Labels>>>}%
6651       \fi
6652     \fi
6653 }%

```

```

6654 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6655 \fi

```

Option ‘pdfpagelabels’ has been used and is now disabled.

```

6656 \Hy@DisableOption{pdfpagelabels}
6657 </package>

```

### 27.1.1 pdfTeX and VTeX

Because of pdfTeX’s `\pdfcatalog` command the `/PageLabels` entry can set at end of document in the first run.

`\Hy@PutCatalog`

```

6658 <*\pdfTeX>
6659 \pdf@ifdraftmode{%
6660   \let\Hy@PutCatalog\@gobble
6661 }{%
6662   \let\Hy@PutCatalog\pdfcatalog
6663 }
6664 </pdfTeX>

```

The code for VTeX is more complicate, because it does not allow the direct access to the /Catalog object. The command scans its argument and looks for a /PageLabels entry.

VTeX 6.59g is the first version, that implements \special{!pdfpagelabels...}. For this version \VTeXversion reports 660.

```

6665 <*vtex>
6666 \providecommand*\XR@ext}{pdf}
6667 \edef\Hy@VTeXversion{%
6668   \ifx\VTeXversion\@undefined
6669     \z@
6670   \else
6671     \ifx\VTeXversion\relax
6672       \z@
6673     \else
6674       \VTeXversion
6675     \fi
6676   \fi
6677 }
6678 \begingroup
6679   \ifnum\Hy@VTeXversion<660 %
6680     \gdef\Hy@PutCatalog#1{%
6681       \Hy@WarningNoLine{%
6682         VTeX 6.59g or above required for pdfpagelabels%
6683       }%
6684     }%
6685   \else
6686     \gdef\Hy@PutCatalog#1{%
6687       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6688     }%
6689     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
6690       \ifx\#2\%
6691         \else
6692           \immediate\special{!pdfpagelabels #2}%
6693         \fi
6694       }%
6695     \fi
6696 \endgroup
6697 </vtex>

6698 <*pdftex | vtex>

```

\HyPL@StorePageLabel This macro adds the entry #1 to \HyPL@Labels.

```

6699 \ifHy@pdfpagelabels
6700   \def\HyPL@StorePageLabel#1{%
6701     \toks@\expandafter{\HyPL@Labels}%
6702     \xdef\HyPL@Labels{%
6703       \the\toks@
6704       \the\Hy@abspage<<#1>>%
6705     }%
6706   }%

```

The enddocument/afteraux hook is used to get behind the final \clearpage and to avoid a \clearpage in \AtEndDocument. Then the PDF catalog entry for \PageLabels is set.

```

6707 \AddToHook{enddocument/afteraux}{%
6708   \HyPL@SetPageLabels
6709 }%

6710 \fi
6711 </pdfTeX | vTeX>

```

### 27.1.2 xetex

```

6712 <*xetex>
6713 \HyPsd@LoadUnicode
6714 \Hy@unicodetrue
6715 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
6716 \else
6717   \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6718 \fi
6719 \define@key{Hyp}{unicode}[true]{%
6720   \Hy@boolkey{unicode}{#1}%
6721   \ifHy@unicode
6722     \else
6723       \Hy@Warning{%
6724         XeTeX driver only supports `unicode=true'. Ignoring\MessageBreak
6725         option setting `unicode=false'%
6726       }%
6727       \Hy@unicodetrue
6728     \fi
6729 }
6730 \define@key{Hyp}{pdfencoding}{%
6731   \edef\HyPsd@temp{#1}%
6732   \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6733     \let\HyPsd@pdfencoding\HyPsd@temp
6734   \else
6735     \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6736       \let\HyPsd@pdfencoding\HyPsd@temp
6737     \else
6738       \Hy@Warning{%
6739         XeTeX driver only supports\MessageBreak
6740         `pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6741         setting `pdfencoding=\HyPsd@temp'%
6742       }%
6743     \fi
6744   \fi
6745 }
6746 \let\HyXeTeX@CheckUnicode\relax

```

Since 2016 (x)dvipdfmx has a special to control the spacing of annotation borders.

So let's make use of it:

```

6747 \def\setpdfinkmargin#1{%
6748   \begingroup
6749     \setlength{\dimen@}{#1}%
6750     \special{dvipdfmx:config g \strip@pt\dimen@}%
6751   \endgroup}
6752 </xetex>

```

set the pdf version

```

6753 <*dvipdfm | xetex>

```

```

6754 \special{pdf:majorversion \Hy@pdf@majorversion}
6755 \special{pdf:minorversion \Hy@pdf@minorversion}
6756 </dviptfm | xetex>

```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```

6757 <*pdfmarkbase>
6758 \beginngroup
6759 \ifundefined{headerps@out}{%}{%
6760 \toks@ \expandafter{\Hy@FirstPageHook}%
6761 \xdef\Hy@FirstPageHook{%
6762 \noexpand\headerps@out{%
6763 systemdict /pdfmark known%
6764 {%
6765 userdict /?pdfmark systemdict /exec get put%
6766 }{%
6767 userdict /?pdfmark systemdict /pop get put %
6768 userdict /pdfmark systemdict /cleartomark get put%
6769 }%
6770 ifelse%
6771 }%
6772 \the\toks@
6773 }%
6774 }%
6775 \endgroup
6776 </pdfmarkbase>

```

\Hy@PutCatalog

```

6777 <dvipdfm | xetex>\def\Hy@PutCatalog#1{\@pdfm@mark{docview <<#1>>}}
6778 <*pdfmarkbase>
6779 \def\Hy@PutCatalog#1{%
6780 \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} <<#1>>}}%
6781 }
6782 </pdfmarkbase>

6783 <*pdfmarkbase | dvipdfm | xetex>
6784 \ifHy@pdfpagelabels

```

\HyPL@StorePageLabel This macro writes a string to the .aux file.

```

6785 \def\HyPL@StorePageLabel#1{%
6786 \if@filesw
6787 \beginngroup
6788 \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6789 \immediate\write\@mainaux{%
6790 \string\HyPL@Entry{\Hy@tempa}%
6791 }%
6792 \endgroup
6793 \fi
6794 }%

```

Write a dummy definition of \HyPL@Entry for the case, that the next run is done without hyperref. A marker for the rerun warning is set and the /PageLabels is written.

```

6795 \Hy@AtBeginDocument{%
6796 \if@filesw

```

```

6797 \immediate\write\@mainaux{%
6798 \string\providecommand\string*\string\HyPL@Entry[1]{}%
6799 }%
6800 \fi
6801 \ifx\HyPL@Labels\@empty
6802 \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6803 \else
6804 \HyPL@SetPageLabels
6805 \fi
6806 \let\HyPL@Entry\@gobble
6807 }%

\HyPL@Entry
6808 \def\HyPL@Entry#1{%
6809 \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6810 \HyPL@Labels
6811 #1%
6812 }%
6813 }%

6814 \fi
6815 </pdfmarkbase | dvipdfm | xetex>
6816 <*\packageEnd>

6817 \ifx\MaybeStopEarly\relax
6818 \else
6819 \Hy@stoppedearlytrue
6820 \expandafter\MaybeStopEarly
6821 \fi
6822 \Hy@stoppedearlyfalse

```

## 28 Automated L<sup>A</sup>T<sub>E</sub>X hypertext cross-references

Anything which can be referenced advances some counter; we overload this to put in a hypertext starting point (with no visible anchor), and make a note of that for later use in `\label`. This will fail badly if `\theH<name>` does not expand to a sensible reference. This means that classes or package which introduce new elements need to define an equivalent `\theH<name>` for every `\the<name>`. We do make a trap to make `\theH<name>` be the same as `\arabic{<name>}`, if `\theH<name>` is not defined, but this is not necessarily a good idea. Alternatively, the ‘natural-names’ option uses whatever L<sup>A</sup>T<sub>E</sub>X provides, which may be usable. But then its up to you to make sure these are legal PDF and HTML names. The ‘hypertext-names=false’ option just makes up arbitrary names.

All the shenanigans is to make sure section numbers etc are always arabic, separated by dots. Who knows how people will set up `\@currentlabel`? If they put spaces in, or brackets (quite legal) then the hypertext processors will get upset.

But this is flaky, and open to abuse. Styles like `subeqn` will mess it up, for starters. Appendices are an issue, too. We just hope to cover most situations. We can at least cope with the standard sectioning structure, allowing for `\part` and `\chapter`.

Start with a fallback for equations

```

6823 \def\Hy@CounterExists#1{%

```

```

6824 \begingroup\expandafter\expandafter\expandafter\endgroup
6825 \expandafter\ifx\csname c@#1\endcsname\relax
6826 \expandafter\@gobble
6827 \else
6828 \begingroup\expandafter\expandafter\expandafter\endgroup
6829 \expandafter\ifx\csname the#1\endcsname\relax
6830 \expandafter\expandafter\expandafter\@gobble
6831 \else
6832 \expandafter\expandafter\expandafter\@firstofone
6833 \fi
6834 \fi
6835 }

```

change 2026-02-22: removed definitions provided for format before 2024-11-01

Thanks to Greta Meyer (gbd@pop.cwru.edu) for making me realize that enumeration starts at 0 for every list! But `\item` occurs inside `\trivlist`, so check if its a real `\item` before incrementing counters.

```

6836 \let\H@item\item
6837 \newcounter{Item}
6838 \def\item{%
6839 \@hyper@itemfalse
6840 \if@nmbrlist\@hyper@itemtrue\fi
6841 \H@item
6842 }

```

Tanmoy asked for this default handling of undefined `\theH<name>` situations. It really isn't clear what would be ideal, whether to turn off hyperizing of unknown elements, to pick up the textual definition of the counter, or to default it to something like `\arabic{name}`. We take the latter course, slightly worriedly.

```

6843 \let\H@refstepcounter\@kernel@refstepcounter
6844 \edef\name@of@eq{equation}%

```

We do not want the handler for `\refstepcounter` to cut in during the processing of `\item` (we handle that separately), so we provide a bypass conditional. change 2022-04-22: removed test for the slide counter and for the equation name. change 2022-05-02: added the new boolean set by `\LinkTargetOn/\LinkTargetOff`

```

6845 \newif\if@hyper@item
6846 \newif\if@skiphyperref
6847 \@hyper@itemfalse
6848 \@skiphyperreffalse
6849 \ExplSyntaxOn
6850 \NewSocketPlug{refstepcounter}{hyperref}{\ifHy@pdfstring\else#1\fi}
6851 \AssignSocketPlug{refstepcounter}{hyperref}

```

change 2024-11-05: `cleveref` relies on `refstepcounter` to update its data.

```

6852 \AddToHook{package/cleveref/after}
6853 {
6854 \@ifpackagelater{cleveref}{2018/03/28}{
6855 {
6856 \NewSocketPlug{refstepcounter}{hyperref/fixcleveref}
6857 {\ifHy@pdfstring\else
6858 #1%
6859 {\firstaid@cref@updatelabeldata{\@currentcounter}}}%
6860 \fi}
6861 \AssignSocketPlug{refstepcounter}{hyperref/fixcleveref}

```

```

6862 }
6863 }
6864 \NewSocketPlug{refstepcounter/target}{hyperref}
6865 {
6866   \bool_lazy_and:nnT
6867   { \l__hyp_target_create_bool }
6868   { ! \legacy_if_p:n{@skiphyperref} }
6869   {
6870     \legacy_if:nTF {@hyper@item}
6871     {
6872       \stepcounter{Item}%
6873       \hyper@refstepcounter{Item}%
6874       \@hyper@itemfalse
6875     }
6876     {
6877       \hyper@refstepcounter{\@currentcounter}%
6878     }
6879   }
6880 }
6881 \AssignSocketPlug{refstepcounter/target}{hyperref}
6882 \ExplSyntaxOff
6883 \let\Hy@saved@refstepcounter\refstepcounter

```

AMSTeX processes all equations twice; we want to make sure that the hyper stuff is not executed twice, so we use the AMS `\ifmeasuring@`, initialized if AMS math is not used. change 2025-06-20: test if the switch already exist, see tagging-project issue 920.

```

6884 \ifcsname ifmeasuring@\endcsname
6885 \else
6886   \expandafter\newif\csname ifmeasuring@\endcsname\measuring@false
6887 \fi
6888 \newcommand\Hy@ifnotmeasuring[1]{#1}
6889 \AddToHook{package/amsmath/after}
6890 {
6891   \renewcommand\Hy@ifnotmeasuring[1]
6892   {\ifmeasuring@ \else #1\fi}
6893 }

```

`\hyper@refstepcounter` changed 2026-02-22 to use `\MakeLinkTarget`

```

6894 \def\hyper@refstepcounter#1{\ifHy@hypertextnames\MakeLinkTarget{#1}\else\Make-
LinkTarget{#1}\fi}

```

`\Hy@ProvideTheHCounter` `\theH<counter>` is not set for counters that are defined before ‘hyperref’ is loaded. In `\cl@@ckpt`, the clear counter list of the artificial counter `@ckpt`, L<sup>A</sup>T<sub>E</sub>X remembers the defined counters (needed for `\include`). We check the clear counter lists, whether our counter is present. If we found it, then we add the parent counter value to `\theH<counter>`. The `\@elt` list is used in sanitized form for the comparison, because the list might contain other stuff than `\@elts`. Also it simplifies the implementation, because L<sup>A</sup>T<sub>E</sub>X’, substring search `\in@` can be used.

```

6895 \def\HyCnt@ProvideTheHCounter#1{%
6896   \@ifundefined{theH#1}{%
6897     \expandafter\def\csname theH#1\endcsname{}%
6898     \def\Hy@temp{\@elt{#1}}%
6899     \@onelevel@sanitize\Hy@temp

```

```

6900 \let\HyOrg@elt\@elt
6901 \edef\@elt{%
6902   \noexpand\HyCnt@LookForParentCounter
6903   \expandafter\noexpand\csname theH#1\endcsname
6904 }%
6905 \cl@@ckpt
6906 \let\@elt\HyOrg@elt
6907 \expandafter
6908 \Hy@LocalAppendToMacro\csname theH#1\expandafter\endcsname
6909 \expandafter{%
6910   \expandafter\@arabic\csname c@#1\endcsname
6911 }%
6912 }{}%
6913 }

```

\Hy@LookForParentCounter

```

6914 \def\HyCnt@LookForParentCounter#1#2{%
6915   \expandafter\let\expandafter\Hy@temp@A\csname cl@#2\endcsname
6916   \@ifundefined{cl@#2}{%
6917   }{%
6918     \@onelevel@sanitize\Hy@temp@A
6919     \edef\Hy@temp@A{%
6920       \noexpand\in@{\Hy@temp}{\Hy@temp@A}%
6921     }\Hy@temp@A
6922     \ifin@
6923       \@ifundefined{theH#2}{%
6924         \expandafter\Hy@LocalAppendToMacro\expandafter#1%
6925         \expandafter{%
6926           \expandafter\@arabic\csname c@#2\endcsname.%
6927         }%
6928       }{%
6929         \expandafter\Hy@LocalAppendToMacro\expandafter#1%
6930         \expandafter{%
6931           \csname theH#2\endcsname.%
6932         }%
6933       }%
6934     \fi
6935   }%
6936 }

```

After \appendix “chapter” (or “section” for classes without chapter) should be replaced by “appendix” to get \autoref work. Macro \Hy@chapapp contains the current valid name like \@chapapp, which cannot be used, because this string depends on the current language.

The “french” package defines counter \thechapter by \newcounterchapter, if \@ifundefinedchapter.

```

6937 \begingroup\expandafter\expandafter\expandafter\endgroup
6938 \expandafter\ifx\csname chapter\endcsname\relax
6939   \def\Hy@chapterstring{section}%
6940 \else
6941   \def\Hy@chapterstring{chapter}%
6942 \fi
6943 \def\Hy@appendixstring{appendix}
6944 \def\Hy@chapapp{\Hy@chapterstring}

```

```

6945 \@ifundefined{appendix}{%
6946 }{%
6947 \let\HyOrg@appendix\appendix
6948 \def\Hy@AlphNoErr#1{%
6949 \ifnum\value{#1}>26 %
6950 Alph\number\value{#1}%
6951 \else
6952 \ifnum\value{#1}<1 %
6953 Alph\number\value{#1}%
6954 \else
6955 \Alph{#1}%
6956 \fi
6957 \fi
6958 }%
6959 \def\appendix{%
6960 \@ifundefined{chapter}{%
6961 \gdef\theHsection{\Hy@AlphNoErr{section}}%
6962 }{%
6963 \gdef\theHchapter{\Hy@AlphNoErr{chapter}}%
6964 }%
6965 \xdef\Hy@chapapp{\Hy@appendixstring}%
6966 \HyOrg@appendix
6967 }%
6968 }

```

\Hy@Test@Alph

```

6969 \def\Hy@Test@Alph#1{%
6970 \ifcase#1\or
6971 a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
6972 k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
6973 u\or v\or w\or x\or y\or z%
6974 \else
6975 \@ctrerr
6976 \fi
6977 }

```

\Hy@Test@Alph

```

6978 \def\Hy@Test@Alph#1{%
6979 \ifcase#1\or
6980 A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
6981 K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
6982 U\or V\or W\or X\or Y\or Z%
6983 \else
6984 \@ctrerr
6985 \fi
6986 }

```

We define a hook to allow to overwrite the next destination name.

```

6987 \NewHook{__hyp/target/setname }
6988 \define@key{Hyp}{next-anchor}{%
6989 \AddToHookNext{__hyp/target/setname}%
6990 {\Hy@MakeCurrentHref{#1}}%
6991 }

```

`\hyper@makecurrent` Because of Babel mucking around, nullify `\textlatin` when making names. And `\@number` because of babel's `lrbabel.def`. change 2021-08-15: For new formats we add a hook which allows to overwrite the name of the next destination.

```

6992 \def\hyper@makecurrent#1{%
6993   \begingroup
6994     \Hy@safe@activetrue
6995     \edef\Hy@param{#1}%
6996     \ifx\Hy@param\Hy@chapterstring
6997       \let\Hy@param\Hy@chapapp
6998     \fi
6999     \ifHy@hypertextnames
7000       \let\@number\@firstofone
7001       \def\@fnsymbol##1{fnsymbol\number##1}%
7002       \def\@arabic##1{\number##1}%
7003       \ifx\@alph\Hy@Test@alph
7004       \else
7005         \def\@alph{alph\number}%
7006       \fi
7007       \ifx\@Alph\Hy@Test@Alph
7008       \else
7009         \def\@Alph{Alph\number}%
7010       \fi
7011       \ifHy@naturalnames
7012         \let\textlatin\@firstofone
7013         \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
7014       \else
7015         \xdef\HyperGlobalCurrentHref{%
7016           \csname
7017             the%
7018             \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
7019             #1%
7020           \endcsname
7021         }%
7022       \fi
7023       \xdef\HyperGlobalCurrentHref{%
7024         \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
7025       }%
7026     \else
7027       \Hy@GlobalStepCount\Hy@linkcounter
7028       \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
7029     \fi
7030   \endgroup
7031   \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7032   \ifHy@localanchorname
7033     \let\@currentHref\HyperLocalCurrentHref
7034   \else
7035     \global\let\@currentHref\HyperGlobalCurrentHref
7036   \fi
7037   \UseHook{__hyp/target/setname}%
7038 }

```

`\Hy@MakeCurrentHref`

```

7039 \def\Hy@MakeCurrentHref#1{%
7040   \edef\HyperLocalCurrentHref{#1}%

```

```

7041 \@onelevel@sanitize\HyperLocalCurrentHref
7042 \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
7043 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7044 \ifHy@localanchorname
7045   \let\@currentHref\HyperLocalCurrentHref
7046 \else
7047   \global\let\@currentHref\HyperGlobalCurrentHref
7048 \fi
7049 }

```

`\Hy@MakeCurrentHrefAuto` This command is e.g. used to create destinations for unnumbered sections and chapters. For new formats we add a hook which allows to overwrite the name of the next destination.

```

7050 \def\Hy@MakeCurrentHrefAuto#1{%
7051   \Hy@GlobalStepCount\Hy@linkcounter
7052   \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
7053   \UseHook{__hyp/target/setname}}

```

`\@currentHlabel` `\@currentHlabel` is only defined for compatibility with package ‘hydvips’.

```

7054 \def\@currentHlabel{\@currentHref}

```

## 29 Package ifthen support

Since version 6.75a this is done in package `nameref`.

For compatibility `\hypergetref` and `\hypergetpageref` are still provided. But they do not generate warnings, if the reference is undefined.

```

7055 \def\hypergetref#1{\getrefbykeydefault{#1}{}}
7056 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}

```

## 30 Package varwidth support

2023-11-07: `varwidth` needs a special configuration point to insert its handler. We use a socket for this.

```

7057 \AddToHook{package/varwidth/after}
7058 {
7059   \NewSocketPlug{hyp/raisedlink}{varwidth}{\@vwid@wrap{#1}}
7060   \appto\@vwid@setup{\AssignSocketPlug{hyp/raisedlink}{varwidth}}
7061 }

```

## 31 Package titlesec and titletoc support

This code is contributed by Javier Bezos (Email: [jbezos@arrakis.es](mailto:jbezos@arrakis.es)).

Package `titlesec` support:

```

7062 \@ifpackageloaded{titlesec}{%
7063   \def\ttl@Hy@steplink#1{%
7064     \Hy@MakeCurrentHrefAuto{#1*}%
7065     \edef\ttl@Hy@saveanchor{%
7066       \noexpand\Hy@raisedlink{%
7067         \noexpand\hyper@anchorstart{\@currentHref}%

```

```

7068 \noexpand\hyper@anchorend
7069 \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
7070 \noexpand\ttl@Hy@PatchSaveWrite
7071 }%
7072 }%
7073 }%
7074 \def\ttl@Hy@PatchSaveWrite{%
7075 \begingroup
7076 \toks@\expandafter{\ttl@savewrite}%
7077 \edef\x{\endgroup
7078 \def\noexpand\ttl@savewrite{%
7079 \let\noexpand\@currentHref
7080 \noexpand\ttl@Hy@SavedCurrentHref
7081 \the\toks@
7082 }%
7083 }%
7084 \x
7085 }%
7086 \def\ttl@Hy@refstepcounter#1{%
7087 \let\ttl@b\Hy@raisedlink
7088 \def\Hy@raisedlink##1{%
7089 \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
7090 }%
7091 \refstepcounter{#1}%
7092 \let\Hy@raisedlink\ttl@b
7093 }%
7094 }{}

```

## 32 Package longtable support

Sometimes the anchor of the longtable goes to the previous page. Thus the following patch separates the anchor setting and counter incrementation by hyperref's `\refstepcounter` and the anchor setting is moved after `\vskip\LTpre`.

Patch of `\LT@array`: replace `\refstepcounter` by the original `\H@refstepcounter` without anchor generation

```

7095 \@ifpackageloaded{longtable}{%
7096 \@ifundefined{hyper@nopatch@longtable}{%
7097 \begingroup
7098 \def\y{\LT@array}%
7099 \@ifundefined{scr@LT@array}{%
7100 \@ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}%
7101 }{\def\y{\scr@LT@array}}%
7102 \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
7103 \expandafter\endgroup
7104 \expandafter\def\y[##1]##2{%
7105 \H@refstepcounter{#1}%
7106 \hyper@makecurrent{table}%
7107 \let\Hy@LT@currentHref\@currentHref
7108 #2\@sharp###4%
7109 }%
7110 }%
7111 \expandafter\expandafter\expandafter\x\y[{#1}]{#2}\@nil

```

Patch of `\LT@start`: add anchor before first line after `\vskip\LTpre`

```

7112 \begingroup
7113 \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
7114 \endgroup
7115 \def\LT@start{%
7116 #1%
7117 \ifvoid\LT@foot#2\fi
7118 \let\@currentHref\Hy@LT@currentHref
7119 \Hy@raisedlink{%
7120 \hyper@anchorstart{\@currentHref}\hyper@anchorend
7121 }%
7122 #3%
7123 }%
7124 }%
7125 \expandafter\x\LT@start\@nil
7126 }{}
7127 }{}

```

### 33 Equations

We want to make the whole equation a target anchor. Overload `equation`, temporarily reverting to original `\refstepcounter`. If, however, it is in AMS math, we do not do anything, as the tag mechanism is used there (see section 41). change 2023-06-14: previously `hyperref` contained code that moved the equation incrementation inside the `math` environment to avoid specials outside and a wrong vertical spacing of equation environments. Since 2021/08/24 this code is now in `amsmath` directly and so has been removed here.

This and more math related patches can be suppressed with `\hyper@nopatch@mathenv`

```

7128 \let\new@refstepcounter\refstepcounter
7129 \let\H@equation\equation
7130 \let\H@endequation\endequation
7131 \@ifundefined{hyper@nopatch@mathenv}{%

```

If `amsmath` was loaded before the following does nothing. If `amsmath` is loaded later it will overwrite the definition again, which is what is wanted here. If it is not loaded the new definition of `equation` will be used.

```

7132 \@ifpackageloaded{amsmath}{}{%
7133 \def\equation{%
7134 \let\refstepcounter\H@refstepcounter
7135 \H@equation
7136 \hyper@makecurrent{equation}%

```

`\mathopen` is needed in case the equation starts with an unary minus, for example.

```

7137 \mathopen{%
7138 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
7139 }%
7140 \let\refstepcounter\new@refstepcounter
7141 }%
7142 \def\endequation{%
7143 \ifx\Hy@raisedlink\@empty
7144 \hyper@anchorend
7145 \else

```

```

7146     \mathclose{\Hy@raisedlink{\hyper@anchorend}}}%
7147     \fi
7148     \H@endeqnarray
7149 }%
7150 }
7151 }{}

```

My goodness, why can't L<sup>A</sup>T<sub>E</sub>X be consistent? Why is `\eqnarray` set up differently from other objects?

People (you know who you are, Thomas Beuth) sometimes make an `eqnarray` where *all* the lines end with `\notag`, so there is no suitable anchor at all. In this case, pass by on the other side.

```

7152 \newif\if@eqnstar
7153 \@eqnstarfalse
7154 \let\H@eqnarray\eqnarray
7155 \let\H@endeqnarray\endeqnarray
7156 \@ifundefined{hyper@nopatch@mathenv}{%
7157   \def\eqnarray{%
7158     \let\Hy@reserved@a\relax
7159     \def\@currentHref{}%
7160     \H@eqnarray
7161     \if@eqnstar
7162     \else
7163       \ifx\\\@currentHref\\%
7164       \else
7165         \hyper@makecurrent{equation}%
7166         \mathopen{%
7167           \Hy@raisedlink{%
7168             \hyper@anchorstart{\@currentHref}\hyper@anchorend
7169           }%
7170         }%
7171       \fi
7172     \fi
7173   }
7174   \def\endeqnarray{%
7175     \H@endeqnarray
7176   }
7177 }{}

```

This is quite heavy-handed, but it works for now. If its an `eqnarray*` we need to disable the hyperref actions. There may well be a cleaner way to trap this. Bill Moss found this.

```

7178 \@namedef{eqnarray*}{%
7179   \protected\def\@eqnocr{\nonumber\@seqnocr}\@eqnstarttrue\eqnarray
7180 }
7181 \@namedef{endeqnarray*}{%
7182   \nonumber\endeqnarray\@eqnstarfalse
7183 }

```

Then again, we have the *subeqnarray* package. Tanmoy provided some code for this:

```

7184 \@ifundefined{subeqnarray}{}{%
7185   \let\H@subeqnarray\subeqnarray
7186   \let\H@endsubeqnarray\endsubeqnarray
7187   \def\subeqnarray{%

```

```

7188 \let\Hy@reserved@a\relax
7189 \H@subeqnarray
7190 \hyper@makecurrent{equation}%
7191 \hyper@anchorstart{\@currentHref}{\hyper@anchorend
7192 }%
7193 \def\endsubeqnarray{%
7194   \H@endsubeqnarray
7195 }%
7196 \providecommand\theHsubequation{\theHequation\alph{subequation}}%
7197 }

```

The aim of this macro is to produce a sanitized version of its argument, to make it a safe label.

```

7198 \def\make@stripped@name#1{%
7199   \begingroup
7200   \escapechar\m@ne
7201   \global\let\newname\@empty
7202   \protected@edef\Hy@tempa{#1}%
7203   \edef\@tempb{%
7204     \noexpand\@tfor\noexpand\Hy@tempa:=%
7205     \expandafter\strip@prefix\meaning\Hy@tempa
7206   }%
7207   \@tempb\do{%
7208     \if{\Hy@tempa\else
7209     \if}\Hy@tempa\else
7210     \xdef\newname{\newname\Hy@tempa}%
7211     \fi
7212     \fi
7213   }%
7214   \endgroup
7215 }

```

Support for amsmath's subequations: change 2023-06-14: we use hooks to no longer depend on amsmath being loaded before hyperref. Once amsmath sets the theH-representation itself this can go completely.

```

7216 \AddToHook{cmd/subequations/before}
7217 {%
7218   \stepcounter{equation}%
7219   \protected@edef\theHparentequation{\theHequation}%
7220   \addtocounter{equation}{-1}%
7221 }
7222
7223 \AddToHook{cmd/subequations/after}
7224 {%
7225   \def\theHequation{\theHparentequation\alph{equation}}%
7226   \ignorespaces
7227 }

```

## 34 Support for theorems

Hyperlink support in theorems has to resolve typically three problems:

- The `\refstepcounter` can be issued too early. The target it produces can be separated from the theorem and then the link is wrong (see testfiles thm-

005-xx). It can also affect spacing. This means that it is better if this `\refstepcounter` doesn't produce a target.

- The natural place for the target (before the theorem label) is normally not printed directly but delayed to the next paragraph begin (through the `\item` code or by other means). and `\label` commands used directly at the begin of the environment are perhaps processed *before* the target is created and so do not know the correct `\@currentHref` value. That means that if `\refstepcounter` does not produce a target, it should nevertheless update the target name.
- The target should be placed (in horizontal mode) before the theorem label to avoid side effects on spacing. For this a suitable place must be found depending on the actual theorem definition.

Theorems typically issue the `\refstepcounter` in `\@thm`. The first two points can therefore be resolved by patching this command and replacing the `\refstepcounter`.

The last point is the most complicated. Simply moving at the point `\refstepcounter` is encountered into the next para hook doesn't work, as this can be in a header if there is page break. The next item hook doesn't work for the same reason, also not every theorem environment actually use `\item` (e.g. `amsthm` and `ams-classes`). Patching (or using a hook) `\@begintheorem` doesn't work either as `ntheorem` redefines this on the fly.

For now we move the target creation into the item hook. This is not perfect, as it can end up in header or be too much to the right, but there is not really a better place.

The patch will not apply to `cleveref`, this means that with `cleveref` there can be a page break between target and theorem but beside this it hopefully it does the right thing. `\@currentHref` is updated directly for labels set before the actual start of the paragraph. The target can be behind a target created from a following list, so we restore `\@currentHref` just in case. Later we could use sockets here (or hope that the packages take this over).

```

7228 \newcommand\Hy@theorem@refstepcounter[1]
7229 {%
7230   \H@refstepcounter{#1}%
7231   \hyper@makecurrent{#1}%
7232   \global\let\Hy@dth@currentHref\@currentHref
7233   \Hy@theorem@makelinktarget{\Hy@dth@currentHref}%
7234 }
7235 \newcommand\Hy@theorem@makelinktarget[1]
7236 {
7237   \AddToHookNext{cmd/item/before}
7238   {\AddToHookNext{para/begin}
7239     {\let\Hy@tempa\@currentHref
7240       \MakeLinkTarget*{#1}% \Hy@dth@currentHref
7241       \global\let\@currentHref\Hy@tempa
7242     }%
7243   }%
7244 }
```

`amsthm` doesn't issue an item in the theorem, we delay the target into `\deferred@thm@head` and hope that it always begins a paragraph.

```

7245 \AddToHook{begindocument}
7246 {%
7247 \@ifundefined{deferred@thm@head}{}
7248 {%
7249 \let\Hy@deferred@thm@head\deferred@thm@head
7250 \def\deferred@thm@head#1{\Hy@deferred@thm@head{#1}}%
7251 \renewcommand\Hy@theorem@makelinktarget[1]
7252 {%
7253 \AddToHookNext{cmd/deferred@thm@head/before}
7254 {\AddToHookNext{para/begin}
7255 {\let\Hy@tempa\@currentHref
7256 \MakeLinkTarget*{#1}%
7257 \global\let\@currentHref\Hy@tempa
7258 }%
7259 }%
7260 }%
7261 }%
7262 }
7263 \@ifundefined{hyper@nopatch@thm}{%
7264 \AtBeginDocument{%
7265 \@ifpackageloaded{cleveref}
7266 {\AddToHook{cmd/@thm/before}{\ifhmode\unskip\fi}}
7267 {%
7268 \ifpatchable\@thm{\refstepcounter}
7269 {\patchcmd\@thm{\refstepcounter}{\Hy@theorem@refstepcounter}{}{}}
7270 {}%
7271 }}}{}

```

## 35 Footnotes

The footnote mark is a hypertext link, and the text is a target. We separately number the footnotes sequentially through the text, separately from whatever labels the text assigns. Too hard to keep track of markers otherwise. If the raw forms `\footnotemark` and `\footnotetext` are used, force them to use un-hyper original. If `\hyper@nopatch@footnote` is defined we don't patch but assume that addings links to footnotes is handled elsewhere.

```

7272 \@ifundefined{hyper@nopatch@footnote}{%
7273 \ifHy@hyperfootnotes
7274 \@ifundefined{theHfootnote}
7275 {\newcounter{Hfootnote}}
7276 {\let\H@@theHfootnote\theHfootnote
7277 \let\theHfootnote\undefined
7278 \newcounter{Hfootnote}
7279 \let\theHfootnote\H@@theHfootnote
7280 }%

```

where is this used?

```

7281 \@ifundefined{theHHmpfootnote}{%
7282 \let\theHHmpfootnote\theHHfootnote
7283 }{}
7284 \let\H@@@footnotetext\@footnotetext
7285 \let\H@@@footnotemark\@footnotemark
7286 \def\@xfootnotenext[#1]{%

```

```

7287 \begingroup
7288 \csname c@\@mpfn\endcsname #1\relax
7289 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7290 \endgroup
7291 \ifx\@footnotetext\@mpfootnotetext
7292 \expandafter\H@\@mpfootnotetext
7293 \else
7294 \expandafter\H@\@footnotetext
7295 \fi
7296 }%
7297 \def\@xfootnotemark[#1]{%
7298 \begingroup
7299 \c@footnote #1\relax
7300 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7301 \endgroup
7302 \H@\@footnotemark
7303 }%
7304 \let\H@\@mpfootnotetext\@mpfootnotetext
7305 \long\def\@mpfootnotetext#1{%
7306 \H@\@mpfootnotetext{%
7307 \ifHy@nesting
7308 \expandafter\@firstoftwo
7309 \else
7310 \expandafter\@secondoftwo
7311 \fi
7312 {%
7313 \expandafter\hyper@@anchor\expandafter{%
7314 \Hy@footnote@currentHref
7315 }\ignorespaces #1}%
7316 }{%
7317 \Hy@raisedlink{%
7318 \expandafter\hyper@@anchor\expandafter{%
7319 \Hy@footnote@currentHref
7320 }\relax}%
7321 }%

```

Change 2025-09-29: set \@currentHref and \@currentlabelname for issue 402.

```

7322 \let\@currentHref\Hy@footnote@currentHref
7323 \let\@currentlabelname\@empty
7324 \ignorespaces #1%
7325 }%
7326 }%
7327 }%
7328 \long\def\@footnotetext#1{%
7329 \H@\@footnotetext{%
7330 \ifHy@nesting
7331 \expandafter\@firstoftwo
7332 \else
7333 \expandafter\@secondoftwo
7334 \fi
7335 {%
7336 \expandafter\hyper@@anchor\expandafter{%
7337 \Hy@footnote@currentHref
7338 }\ignorespaces #1}%
7339 }{%

```

```

7340 \Hy@raisedlink{%
7341 \expandafter\hyper@@anchor\expandafter{%
7342 \Hy@footnote@currentHref
7343 }{\relax}%
7344 }%
7345 \let\@currentHref\Hy@footnote@currentHref
7346 \let\@currentlabelname\@empty
7347 \ignorespaces #1%
7348 }%
7349 }%
7350 }%

```

Redefine `\@footnotemark`, borrowing its code (at the cost of getting out of sync with `latex.ltx`), to take advantage of its white space and hyphenation fudges. If we just overload it, we can get variant documents (the word before the footnote is treated differently). Thanks to David Carlisle and Brian Ripley for confusing and helping me on this.

```

7351 \def\@footnotemark{%
7352 \leavevmode
7353 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7354 \stepcounter{Hfootnote}%
7355 \global\let\Hy@saved@currentHref\@currentHref
7356 \hyper@makecurrent{Hfootnote}%
7357 \global\let\Hy@footnote@currentHref\@currentHref
7358 \global\let\@currentHref\Hy@saved@currentHref
7359 \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7360 \@makefnmark
7361 \hyper@linkend
7362 \ifhmode\spacefactor\@x@sf\fi
7363 \relax
7364 }%

```

`Tabularx` causes footnote problems, disable the linking if that is loaded. Since v6.82i footnotes are only disabled inside the environment ‘`tabularx`’.

```

7365 \@ifpackageloaded{tabularx}{%
7366 \let\HyOrg@TX@endtabularx\TX@endtabularx
7367 \def\Hy@tabularx@hook{%
7368 \let\@footnotetext\H@@footnotetext
7369 \let\@footnotemark\H@@footnotemark
7370 \let\@mpfootnotetext\H@@mpfootnotetext
7371 }%
7372 \begingroup
7373 \toks@\expandafter{\TX@endtabularx}%
7374 \xdef\Hy@gtemp{%
7375 \noexpand\Hy@tabularx@hook
7376 \the\toks@
7377 }%
7378 \endgroup
7379 \let\TX@endtabularx\Hy@gtemp
7380 }-}%

```

Support for footnotes in `p` columns of `longtable`. Here `\footnote` commands are split into `\footnotemark` and a call of `\footnotetext` with the optional argument, that is not supported by `hyperref`. The result is a link by `\footnotemark` without valid anchor

```

7381 \@ifpackageloaded{longtable}{%
7382   \CheckCommand{\LT@p@ftntext}[1]{%
7383     \edef\@tempa{%
7384       \the\LT@p@ftn
7385       \noexpand\footnotetext[\the\c@footnote]%
7386     }%
7387     \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7388   }%
7389   \long\def\LT@p@ftntext#1{%
7390     \edef\@tempa{%
7391       \the\LT@p@ftn
7392       \begingroup
7393         \noexpand\c@footnote=\the\c@footnote\relax
7394         \noexpand\protected@xdef\noexpand\@thefnmark{%
7395           \noexpand\thempfn
7396         }%
7397         \noexpand\Hy@LT@footnotetext{%
7398           \Hy@footnote@currentHref
7399         }%
7400       }%
7401       \global\LT@p@ftn\expandafter{%
7402         \@tempa{#1}%
7403       \endgroup
7404     }%
7405   }%
7406   \long\def\Hy@LT@footnotetext#1#2{%
7407     \H@@@footnotetext{%
7408       \ifHy@nesting
7409         \hyper@@anchor{#1}{#2}%
7410       \else
7411         \Hy@raisedlink{%
7412           \hyper@@anchor{#1}{\relax}%
7413         }%
7414         \def\@currentHref{#1}%
7415         \let\@currentlabelname\@empty
7416         #2%
7417       \fi
7418     }%
7419   }%
7420 }{}%

```

Footnotes for fancyvrb (Fix by Manuel Pégourié-Gonnard).

```

7421 \@ifpackageloaded{fancyvrb}{%
7422   \def\V@@@footnotetext{%
7423     \insert\footins\bgroup
7424     \csname reset@font\endcsname
7425     \footnotesize
7426     \interlinepenalty\interfootnotelinepenalty
7427     \splittopskip\footnotesep
7428     \splitmaxdepth\dp\strutbox
7429     \floatingpenalty \@MM
7430     \hsize\columnwidth
7431     \@parboxrestore
7432     \def\@currentcounter{footnote}%
7433     \protected@edef\@currentlabel{\csname p@footnote\endcsname\@thefn-

```

```

mark}%
7434 \makefnfntext{}%
7435 \rule{\z@}{\footnotesep}%
7436 \bgroup
7437 \aftergroup\V@@@footnotetext
7438 \Hy@raisedlink{%
7439 \expandafter\hyper@@anchor\expandafter{%
7440 \Hy@footnote@currentHref
7441 }\relax}%
7442 }%
7443 \let\@currentHref\Hy@footnote@currentHref
7444 \let\@currentlabelname\@empty
7445 \ignorespaces
7446 }%
7447 }{}%

```

KOMA-Script or newer LaTeX defines `\footref` that uses both `\ref` and `\@footnotemark` resulting in two links, one of them wrong.

```

7448 \def\Hy@temp#1{%
7449 \begingroup
7450 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7451 \endgroup
7452 \@footnotemark
7453 }%
7454 \ifx\Hy@temp\footref
7455 \def\footref#1{%
7456 \begingroup
7457 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7458 \endgroup
7459 \H@@@footnotemark
7460 }%
7461 \fi

```

But the special footnotes in `\maketitle` are much too hard to deal with properly. Let them revert to plain behaviour. The koma classes add an optional argument.

```

7462 \let\HyOrg@maketitle\maketitle
7463 \def\maketitle{%
7464 \let\Hy@saved@footnotemark\@footnotemark
7465 \let\Hy@saved@footnotetext\@footnotetext
7466 \let\@footnotemark\H@@@footnotemark
7467 \let\@footnotetext\H@@@footnotetext
7468 \@ifnextchar[\Hy@maketitle@optarg{% ]
7469 \HyOrg@maketitle
7470 \Hy@maketitle@end
7471 }%
7472 }%
7473 \def\Hy@maketitle@optarg[#1]{%
7474 \HyOrg@maketitle[#1]}%
7475 \Hy@maketitle@end
7476 }%
7477 \def\Hy@maketitle@end{%
7478 \ifx\@footnotemark\H@@@footnotemark
7479 \let\@footnotemark\Hy@saved@footnotemark
7480 \fi

```

```

7481 \ifx\@footnotetext\H@@footnotetext
7482 \let\@footnotetext\Hy@saved@footnotetext
7483 \fi
7484 }%

```

`\realfootnote` Does anyone remember the function and purpose of `\realfootnote`?

```

7485 \def\realfootnote{%
7486 \@ifnextchar[\@xfootnote%
7487 {\stepcounter{\@mpfn}%
7488 \protected@xdef\@thefnmark{\thempfn}%
7489 \H@@footnotemark\H@@footnotetext
7490 }%
7491 }%

7492 \fi
7493 }{}
7494 \Hy@DisableOption{hyperfootnotes}

7495 \</packageEnd>
7496 \< *check>
7497 \checklatex
7498 \checkcommand\def\@xfootnotenext[#1]{%
7499 \begingroup
7500 \csname c@\@mpfn\endcsname #1\relax
7501 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7502 \endgroup
7503 \@footnotetext
7504 }
7505 \checkcommand\def\@xfootnotemark[#1]{%
7506 \begingroup
7507 \c@footnote #1\relax
7508 \unrestored@protected@xdef\@thefnmark{\thefnmark}%
7509 \endgroup
7510 \@footnotemark
7511 }
7512 \checkcommand\def\@footnotemark{%
7513 \leavevmode
7514 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7515 \@makefnmark
7516 \ifhmode\spacefactor\@x@sf\fi
7517 \relax
7518 }
7519 \</check>
7520 \< *packageEnd>

```

## 36 Float captions

Make the float caption the hypertext anchor; curiously enough, we can't just copy the definition of `\@caption`. Its all to do with expansion. It screws up. Sigh.

```

7521 \ifundefined{hyper@nopath@caption}{%
7522 \def\caption{%
7523 \ifx\@capttype\@undefined
7524 \<@latex@error{\noexpand\caption outside float}\@ehd

```

```

7525 \expandafter\@gobble
7526 \else
7527 \H@refstepcounter\@captype
7528 \let\Hy@tempa\@caption
7529 \@ifundefined{float@caption}{%
7530 }{%
7531 \expandafter\ifx\csname @float@c@\@captype\endcsname
7532 \float@caption
7533 \let\Hy@tempa\Hy@float@caption
7534 \fi
7535 }%
7536 \expandafter\@firstofone
7537 \fi
7538 {\@dblarg{\Hy@tempa\@captype}}%
7539 }
7540 \long\def\@caption#1[#2]#3{%
7541 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7542 \csname iftrue\endcsname
7543 \global\let\@currentHref\hc@currentHref
7544 \else
7545 \hyper@makecurrent{\@captype}%
7546 \fi
7547 \@ifundefined{NR@gettitle}{%
7548 \def\@currentlabelname{#2}%
7549 }{%
7550 \NR@gettitle{#2}%
7551 }%
7552 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7553 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7554 }%
7555 \begingroup
7556 \@parboxrestore
7557 \if@minipage
7558 \@setminipage
7559 \fi
7560 \normalsize
7561 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7562 \csname iftrue\endcsname
7563 \global\@capstartfalse
7564 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7565 \else
7566 \@makecaption{\csname fnum@#1\endcsname}{%
7567 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7568 \ifHy@nesting
7569 \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7570 \else
7571 \Hy@raisedlink{%
7572 \expandafter\hyper@@anchor\expandafter{%
7573 \@currentHref
7574 }{\relax}%
7575 }%
7576 #3%
7577 \fi

```

as the anchor are set manually here, we have to update the tagging info.

```

7578     \UseTaggingSocket{recordtarget}%
7579   }%
7580   \fi
7581   \par
7582 \endgroup
7583 }}-{}%end no patch

```

Compatibility with float.sty: anchor setting at the top of the float, if the float is controlled by float.sty. Several `\caption` commands inside one float are not supported.

`\HyNew@float@makebox` is introduced as feature request of Axel Sommerfeldt to make the life easier for his package ‘caption’.

```

7584 \let\Hy@float@caption\@caption
7585 \newcommand{\HyNew@float@makebox}[1]{%
7586   \HyOrg@float@makebox{%
7587     #1\relax
7588     \ifx\Hy@float@currentHref\@undefined
7589     \else
7590       \expandafter\hyper@@anchor\expandafter{%
7591         \Hy@float@currentHref
7592       }\relax}%
7593     \global\let\Hy@float@currentHref\@undefined
7594   \fi
7595 }%
7596 }%
7597 \@ifpackageloaded{float}{%
7598   \def\Hy@float@caption{%
7599     \ifx\Hy@float@currentHref\@undefined
7600       \hyper@makecurrent{\@capttype}%
7601       \global\let\Hy@float@currentHref\@currentHref
7602     \else
7603       \let\@currentHref\Hy@float@currentHref
7604     \fi
7605     \float@caption
7606   }%
7607   \let\HyOrg@float@makebox\float@makebox
7608   \let\float@makebox\HyNew@float@makebox
7609 }-{}
7610 \</packageEnd>
7611 \<{*check>
7612 \checklatex[1999/06/01 - 2000/06/01]
7613 \checkcommand\def\caption{%
7614   \ifx\@capttype\@undefined
7615     \@latex@error{\noexpand\caption outside float}\@ehd
7616     \expandafter\@gobble
7617   \else
7618     \refstepcounter\@capttype
7619     \expandafter\@firstofone
7620   \fi
7621   {\@dblarg{\@caption\@capttype}}}%
7622 }
7623 \checkcommand\long\def\@caption#1[#2]#3{%
7624   \par

```

```

7625 \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7626   \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7627 }%
7628 \begingroup
7629   \@parboxrestore
7630   \if@minipage
7631     \@setminipage
7632   \fi
7633   \normalsize
7634   \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7635 \endgroup
7636 }
7637 </check>
7638 <*packageEnd>

```

## 37 Bibliographic references

This is not very robust, since many styles redefine these things. The package used to redefine `\@citex` and the like; then we tried adding the `hyperref` call explicitly into the `.aux` file. Now we redefine `\bibcite`; this still breaks some citation packages so we have to work around them. But this remains extremely dangerous. Any or all of *achemso* and *drftcite* may break.

However, lets make an attempt to get *natbib* right, because that's a powerful, important package. Patrick Daly ([daly@linmpi.mpg.de](mailto:daly@linmpi.mpg.de)) has provided hooks for us, so all we need to do is activate them.

Change 2026-02-06: use a generic hook to allow the tagging code to add its code without patching `hyperref`.

```

7639 \AddToHookWithArguments{cmd/hyper@natlinkstart/before}
7640 {%
7641   \Hy@backout{#1}%

```

*natbib* passes the `\@extra@b@citeb` in the argument, and *biblatex* the `refsection`, so we only need to add the prefix `cite..`

```

7642   \hyper@linkstart{cite}{cite.#1}%
7643   \def\hyper@nat@current{#1}%
7644 }
7645 \AddToHook{cmd/hyper@natlinkend/after}
7646 {\hyper@linkend}
7647 \def\hyper@natlinkbreak#1#2{%
7648   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7649 }
7650 \def\hyper@natanchorstart#1{%
7651   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7652 }
7653 \def\hyper@natanchorend{\hyper@anchorend}

```

Do not play games if we have *natbib* support. Macro `extra@binfo` added for *chapterbib* support. *Chapterbib* also wants `\@extra@binfo` in the hyper-link, but since the link tag is not expanded immediately, we use `\@extra@b@citeb`, so cites in a chapter will link to the bibliography in that chapter.

```

7654 \@ifundefined{hyper@nopatch@bib}

```

```

7655 {%
7656 \ifundefined{NAT@parse}{%
7657 \providecommand*\@extra@binfo{%
7658 \providecommand*\@extra@b@citeb{%
7659 \def\bibcite#1#2{%
7660 \@newl@bel{b}{#1\@extra@binfo}{%
7661 \hyper@@link[cite]{cite.#1\@extra@b@citeb}{#2}%
7662 }%
7663 }%
7664 \gdef\@extra@binfo{%

```

Package **babel** redefines `\bibcite` with macro `\bbl@cite@choice`. It needs to be overwritten to avoid the warning “Label(s) may have changed.”.

```

7665 \let\Hy@bibcite\bibcite
7666 \begingroup
7667 \ifundefined{bbl@cite@choice}{%
7668 \g@addto@macro\bbl@cite@choice{%
7669 \let\bibcite\Hy@bibcite
7670 }%
7671 }%
7672 \endgroup

```

`\@BIBLABEL` is working around a ‘feature’ of RevTeX.

```

7673 \providecommand*\@BIBLABEL{\@biblabel}%
7674 \def\@bibitem[#1]#2{%
7675 \@skiphyperreftrue
7676 \H@item{%
7677 \ifx\Hy@raisedlink\@empty
7678 \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7679 \@BIBLABEL{#1}%
7680 \hyper@anchorend
7681 \else
7682 \Hy@raisedlink{%
7683 \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7684 }%
7685 \@BIBLABEL{#1}%
7686 \fi
7687 \hfill
7688 }%
7689 \@skiphyperreffalse
7690 \if@filesw
7691 \begingroup
7692 \let\protect\noexpand
7693 \immediate\write\@auxout{%
7694 \string\bibcite{#2}{#1}%
7695 }%
7696 \endgroup
7697 \fi
7698 \ignorespaces
7699 }%

```

Since `\bibitem` is doing its own labelling, call the raw version of `\item`, to avoid extra spurious labels

```

7700 \def\@bibitem#1{%
7701 \@skiphyperreftrue\H@item\@skiphyperreffalse

```

```

7702 \Hy@raisedlink{%
7703 \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7704 }%
7705 \if@filesw
7706 \begingroup
7707 \let\protect\noexpand
7708 \immediate\write\@auxout{%
7709 \string\bibcite{#1}{\the\value{\@listctr}}}%
7710 }%
7711 \endgroup
7712 \fi
7713 \ignorespaces
7714 }%
7715 }{}%
7716 }{}

```

If `\DocumentMetadata` is used `hyperref` can use the `bibcite` hooks.

```

7717 \IfDocumentMetadataT
7718 {
7719 \AddToHook{package/hyperref/after}[latex-lab-testphase-bib]{}
7720 \RemoveFromHook{package/hyperref/after}[latex-lab-testphase-bib]
7721 \AddToHookWithArguments{bibcite/before}
7722 {%
7723 \hyper@linkstart{cite}{cite.#1\@extra@b@citeb}%
7724 }
7725 \AddToHookWithArguments{bibcite/after}{\hyper@linkend}
7726 }

7727 \</packageEnd>
7728 \<*check>
7729 \checklatex
7730 \checkcommand\def\@bibitem[#1]#2{%
7731 \item[\@biblabel{#1}]{\hfill}%
7732 \if@filesw
7733 {%
7734 \let\protect\noexpand
7735 \immediate\write\@auxout{%
7736 \string\bibcite{#2}{#1}%
7737 }%
7738 }%
7739 \fi
7740 \ignorespaces
7741 }
7742 \checkcommand\def\@bibitem#1{%
7743 \item
7744 \if@filesw
7745 \immediate\write\@auxout{%
7746 \string\bibcite{#1}{\the\value{\@listctr}}}%
7747 }%
7748 \fi
7749 \ignorespaces
7750 }
7751 \</check>
7752 \<*packageEnd>

```

## 37.1 Package harvard

Override Peter Williams' Harvard package; we have to a) make each of the citation types into a link; b) make each citation write a backref entry, and c) kick off a backreference section for each bibliography entry.

The redefinitions have to be deferred to `\begin{document}`, because if `harvard.sty` is loaded and `html.sty` is present and detects `pdfTeX`, then `hyperref` is already loaded at the begin of `harvard.sty`, and the `\newcommand` macros causes error messages.

```

7753 \ifpackageloaded{harvard}{%
7754   \Hy@AtBeginDocument{%
7755     \Hy@Info{*** compatibility with harvard **** }%
7756     \Hy@raiselinksfalse
7757     \def\harvardcite#1#2#3#4{%
7758       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{}{cite.#1}{#2}}%
7759       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{}{cite.#1}{#3}}%
7760       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{}{cite.#1}{#4}}%
7761       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7762     }%
7763     \def\HAR@citetoaux#1{%
7764       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7765       \ifHy@backref
7766         \ifx\@empty\@currentlabel
7767         \else
7768           \@bsphack
7769           \if@filesw
7770             \protected@write\@auxout{}{%
7771               \string\writefile{brf}{%
7772                 \string\backcite{#1}{%
7773                   {thepage}{\@currentlabel}{\@currentHref}%
7774                 }%
7775               }%
7776             }%
7777           \fi
7778           \@esphack
7779         \fi
7780       \fi
7781     }%
7782     \def\harvarditem{%
7783       \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
7784     }%
7785     \def\@harvarditem[#1]#2#3#4#5\par{%
7786       \item[]%
7787       \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7788       \if@filesw
7789         \begingroup
7790           \def\protect##1{\string ##1\space}%
7791           \ifthenelse{\equal{#1}{\null}}{%
7792             {\def\next{{#4}{#2}{#2}{#3}}}%
7793             {\def\next{{#4}{#2}{#1}{#3}}}%
7794           \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7795         \endgroup
7796       \fi
7797       \protect\hspace*{-\labelwidth}%

```

```

7798 \protect\hspace*{-\labelsep}%
7799 \ignorespaces
7800 #5%
7801 \ifHy@backref
7802 \newblock
7803 \backref{\csname br@#4\endcsname}%
7804 \fi
7805 \par
7806 }%

```

`\HAR@checkcitations` Package hyperref has added `\hyper@@link`, so the original test `\HAR@checkcitations` will fail every time and always will appear the “Changed labels” warning. So we have to redefine `\Har@checkcitations`:

```

7807 \long\def\HAR@checkcitations#1#2#3#4{%
7808 \def\HAR@tempa{\hyper@@link[cite]{#1}{#2}}%
7809 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7810 \def\HAR@tempa{\hyper@@link[cite]{#1}{#3}}%
7811 \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7812 \def\HAR@tempa{\hyper@@link[cite]{#1}{#4}}%
7813 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7814 \else
7815 \@tempswatruue
7816 \fi
7817 \else
7818 \@tempswatruue
7819 \fi
7820 \else
7821 \@tempswatruue
7822 \fi
7823 }%
7824 }%
7825 }{}

```

## 37.2 Package chicago

The links by `\citeN` and `\shortciteN` should include the closing parentheses.

```

7826 \@ifpackageloaded{chicago}{%

```

`\citeN`

```

7827 \def\citeN{%
7828 \def\@citeseppen{-1000}%
7829 \def\@cite##1##2{##1}%
7830 \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
7831 \@citedata@opt
7832 }%

```

`\shortciteN`

```

7833 \def\shortciteN{%
7834 \def\@citeseppen{-1000}%
7835 \def\@cite##1##2{##1}%
7836 \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
7837 \@citedata@opt
7838 }%

```

\@citedata@opt

```

7839 \def\@citedata@opt{%
7840 \let\@cite@opt\@empty
7841 \@ifnextchar [{%
7842 \@tempswatrue
7843 \@citedatax@opt
7844 }{%
7845 \@tempswafalse
7846 \@citedatax[]%
7847 }%
7848 }%

```

\@citedatax@opt

```

7849 \def\@citedatax@opt[#1]{%
7850 \def\@cite@opt{, #1}%
7851 \@citedatax[{#1}]%
7852 }%

7853 }{}

```

## 38 Page numbers

The last page should not contain a /Dur key, because there is no page after the last page. Therefore at the last page there should be a command `\hypersetup{pdfpageduration={}}`. This can be set with `\AtEndDocument`, but it can be too late, if the last page is already finished, or too early, if lots of float pages will follow. Therefore currently nothing is done by hyperref.

This where we supply a destination for each page.

The name of destination is stored in the global command `\@currentHpage`, this allows it to retrieve it with an extended reference system like zref or the new property code from L<sup>A</sup>T<sub>E</sub>X 2023-11-01.

```

7854 \def\@currentHpage{Doc-Start}

7855 \@ifclassloaded{slides}{%
7856 \def\Hy@SlidesFormatOptionalPage#1{(#1)}%
7857 \def\Hy@PageAnchorSlidesPlain{%
7858 \advance\c@page\@ne
7859 \xdef\@currentHpage{page.\the\c@slide.\the\c@overlay.\the\c@note%
7860 \ifnum\c@page=\@ne
7861 \else
7862 .\the\c@page
7863 \fi}%
7864 \edef\Hy@TempPageAnchor{%
7865 \noexpand\hyper@@anchor{%
7866 \@currentHpage
7867 }%
7868 }%
7869 \advance\c@page-\@ne
7870 }%
7871 \def\Hy@PageAnchorSlide{%
7872 \advance\c@page\@ne
7873 \ifnum\c@page>\@ne
7874 \@ifundefined{theHpage}{%

```

Experimental!

```

7875     \protected@edef\Hy@TheSlideOptionalPage{%
7876     \Hy@SlidesFormatOptionalPage{\thepage}%
7877     }%
7878   }{%
7879     \protected@edef\Hy@TheSlideOptionalPage{%
7880     \Hy@SlidesFormatOptionalPage{\theHpage}%
7881     }%
7882   }%
7883   \else
7884     \def\Hy@TheSlideOptionalPage{}%
7885   \fi
7886   \advance\c@page-\@ne
7887   \pdfstringdef\@the@H@page{%
7888     \csname
7889       the%
7890       \@ifundefined{theH\Hy@SlidesPage}{H}%
7891       \Hy@SlidesPage
7892     \endcsname
7893     \Hy@TheSlideOptionalPage
7894   }%
7895   \@gobblethree
7896 }%
7897 \def\Hy@SlidesPage{slide}%
7898 \g@addto@macro\slide{%
7899   \def\Hy@SlidesPage{slide}%
7900 }%
7901 \g@addto@macro\overlay{%
7902   \def\Hy@SlidesPage{overlay}%
7903 }%
7904 \g@addto@macro\note{%
7905   \def\Hy@SlidesPage{note}%
7906 }%
7907 }{%
7908   \def\Hy@PageAnchorSlidesPlain{}%
7909   \def\Hy@PageAnchorSlide{}%
7910 }
7911 \def\Hy@EveryPageAnchor{%
7912   \Hy@DistillerDestFix
7913   \ifHy@pageanchor
7914     \ifHy@hypertextnames
7915       \ifHy@plainpages
7916         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
7917         \xdef\@currentHpage{page.\the\c@page}%
7918         \Hy@PageAnchorSlidesPlain
7919       \else
7920         \begingroup
7921           \let\@number\@firstofone
7922           \Hy@unicodedefalse
7923           \Hy@PageAnchorSlide
7924           \pdfstringdef\@the@H@page{\thepage}%
7925         \endgroup
7926         \EdefUnescapeString\@the@H@page{\@the@H@page}%
7927         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
7928         \xdef\@currentHpage{page.\@the@H@page}%

```

```

7929 \fi
7930 \else
7931 \Hy@GlobalStepCount\Hy@pagecounter
7932 \def\Hy@TempPageAnchor{%
7933 \hyper@{anchor{page.\the\Hy@pagecounter}}%
7934 }%
7935 \xdef\@currentHpage{page.\the\Hy@pagecounter}%
7936 \fi
7937 \vbox to 0pt{%
7938 \kern\voffset
7939 \kern\topmargin
7940 \kern-1bp\relax
7941 \hbox to 0pt{%
7942 \kern\hoffset
7943 \kern\ifodd\value{page}%
7944 \oddsidemargin
7945 \else
7946 \evensidemargin
7947 \fi
7948 \kern-1bp\relax
7949 \Hy@TempPageAnchor\relax
7950 \hss
7951 }%
7952 \vss
7953 }%
7954 \fi
7955 }
7956 \g@addto@macro\Hy@EveryPageBoxHook{%
7957 \Hy@EveryPageAnchor
7958 }

```

## 39 Table of contents

TV Raman noticed that people who add arbitrary material into the TOC generate a bad or null link. We avoid that by checking if the current destination is empty. But if ‘the most recent destination’ is not what you expect, you will be in trouble. In newer L<sup>A</sup>T<sub>E</sub>X releases this is defined to put a % at the end of the line in the tocfile.

```

7959 \providecommand\protected@file@percent{}

```

Change 2026-02-06: Add support for `\DocumentMetadata`. We externalize the command to allow bookmark to be set without explicit toc-entry.

```

7960 \def\Hy@addcontentsline@addbookmark#1#2#3%#1 toc type, #2 level, #3 con-
tent
7961 {%
7962 \ifHy@bookmarks
7963 \ifx\@currentHref\@empty
7964 \Hy@Warning{%
7965 No destination for bookmark of \string\addcontentsline,%
7966 \MessageBreak destination is added%
7967 }%
7968 \phantomsection
7969 \fi

```

```

7970 \begingroup
7971 \let\label\@gobble@om
7972 \let\index\@gobble@som
7973 \let\glossary\@gobble@om
7974 \expandafter\ifx\csname toplevel@#2\endcsname\relax
7975 \begingroup
7976 \def\Hy@tempa{#1}%
7977 \ifx\Hy@tempa\Hy@bookmarkstype
7978 \Hy@WarningNoLine{%
7979 bookmark level for unknown #2 defaults to 0%
7980 }%
7981 \else
7982 \Hy@Info{bookmark level for unknown #2 defaults to 0}%
7983 \fi
7984 \endgroup
7985 \expandafter\gdef\csname toplevel@#2\endcsname{0}%
7986 \fi
7987 \edef\Hy@toclevel{\csname toplevel@#2\endcsname}%
7988 \Hy@writebookmark{\csname the#2\endcsname}%
7989 {#3}%
7990 {\@currentHref}%
7991 {\Hy@toclevel}%
7992 {#1}%
7993 \ifHy@verbose
7994 \begingroup
7995 \def\Hy@tempa{#3}%
7996 \@onelevel@sanitize\Hy@tempa
7997 \let\temp@online\on@line
7998 \let\on@line\@empty
7999 \Hy@Info{%
8000 bookmark\temp@online:\MessageBreak
8001 thecounter {\csname the#2\endcsname}\MessageBreak
8002 text {\Hy@tempa}\MessageBreak
8003 reference {\@currentHref}\MessageBreak
8004 toplevel {\Hy@toclevel}\MessageBreak
8005 type {#1}%
8006 }%
8007 \endgroup
8008 \fi
8009 \endgroup
8010 \fi
8011 }

```

If the new sec template code is used, we map the command to the new interface:

```

8012 \@ifundefined{addcontentslinebookmark}{-
8013 {
8014 \RenewCommandCopy\addcontentslinebookmark\Hy@addcontentsline@addbook-
8015 mark
8016 {
8017 \renewcommand\addcontentslinebookmarkOff
8018 {
8019 \ifHy@bookmarks
8020 \let\addcontentslinebookmarkReset\Hy@bookmarkstrue
8021 \else
8022 \let\addcontentslinebookmarkReset\relax
8023 \fi

```

```

8022 \Hy@bookmarksfalse
8023 }
8024 }

```

If `\DocumentMetadata` is not used, we must redefine `\addcontentsline` as in the latex-lab code to ensure that the target is written:

```

8025 \@ifundefined{hyper@nopatch@toc}{%
8026 \def\addcontentsline#1#2#3{% #1=toc extension, #2= heading type, tag
8027 \addtocontents{#1}{%
8028 \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}\protected@file@per-
cent
8029 }}}{}

```

Then this addition works also if `\DocumentMetadata` is used.

```

8030 \AddToHookWithArguments{cmd/addcontentsline/before}[hyp]
8031 {%
8032 \Hy@addcontentsline@addbookmark
8033 {#1}
8034 {#2}
8035 {#3}%
8036 }

```

`\contentsline` The page number might be empty. In this case the link for the page number is suppressed to avoid little link boxes.

change 2022-11-13: To avoid problems if `MakeUppercase` is used around the entry we use special protected commands:

```

8037 \protected\def\Hy@toclinkstart{\hyper@linkstart{link}{\Hy@tocdestname}}
8038 \protected\def\Hy@toclinkend{\hyper@linkend}
8039
8040 \@ifundefined{hyper@nopatch@toc}{%
8041 \def\contentsline#1#2#3#4{%
8042 \begingroup
8043 \Hy@safe@activetrue
8044 \edef\x{\endgroup
8045 \def\noexpand\Hy@tocdestname{#4}%
8046 }\x
8047 \ifx\Hy@tocdestname\@empty
8048 \csname l@#1\endcsname{#2}{#3}%
8049 \else
8050 \ifcase\Hy@linktoc % none
8051 \csname l@#1\endcsname{#2}{#3}%
8052 \or % section
8053 \csname l@#1\endcsname{%
8054 \Hy@toclinkstart{#2}\Hy@toclinkend
8055 }{#3}%
8056 \or % page
8057 \def\Hy@temp{#3}%
8058 \ifx\Hy@temp\@empty
8059 \csname l@#1\endcsname{#2}{#3}%
8060 \else
8061 \csname l@#1\endcsname{#{#2}}{#3}%
8062 \Hy@toclinkstart{#3}\Hy@toclinkend
8063 }%
8064 \fi

```

```

8065 \else % all
8066 \def\Hy@temp{#3}%
8067 \ifx\Hy@temp\@empty
8068 \csname l@#1\endcsname{%
8069 \Hy@toclinkstart{#2}\Hy@toclinkend
8070 }{}%
8071 \else
8072 \csname l@#1\endcsname{%
8073 \Hy@toclinkstart{#2}\Hy@toclinkend
8074 }{%
8075 \Hy@toclinkstart{#3}\Hy@toclinkend
8076 }%
8077 \fi
8078 \fi
8079 \fi
8080 }
8081 {}

```

If \DocumentMetadata is used we make use of the \contentsline-hooks to add links:

```

8082 \ExplSyntaxOn
8083 \IfDocumentMetadataT
8084 {
8085 \AddToHookWithArguments{contentsline/text/before}[hyp]
8086 {
8087 \tl_if_blank:nF {#2}%text
8088 {
8089 \tl_if_blank:nF {#4}%destination
8090 {
8091 \int_case:nnF {\Hy@linktoc}
8092 {
8093 {0}{} %none
8094 {1}{\hyper@linkstart{link}{#4}} %section
8095 {2}{} %page
8096 }
8097 {\hyper@linkstart{link}{#4}} %all
8098 }
8099 }
8100 }
8101 \AddToHookWithArguments{contentsline/text/after}[hyp]
8102 {
8103 \tl_if_blank:nF {#2}
8104 {
8105 \tl_if_blank:nF {#4}
8106 {
8107 \int_case:nnF {\Hy@linktoc}
8108 {
8109 {0}{} %none
8110 {1}{\hyper@linkend} %section
8111 {2}{} %page
8112 }
8113 {\hyper@linkend} %all
8114 } % none
8115 }

```

```

8116     }
8117
8118     \AddToHookWithArguments{contentsline/page/before}[hyp]
8119     {
8120         \tl_if_blank:nF {#3}
8121         {
8122             \tl_if_blank:nF {#4} %
8123             {
8124                 \int_case:nnF {\Hy@linktoc}
8125                 {
8126                     {0}{} %none
8127                     {1}{} %section
8128                     {2}{\hyper@linkstart{link}{#4}} %page
8129                 }
8130                 {\hyper@linkstart{link}{#4}} %all
8131             } % none
8132         }
8133     }
8134     \AddToHookWithArguments{contentsline/page/after}[hyp]
8135     {
8136         \tl_if_blank:nF {#3}
8137         {
8138             \tl_if_blank:nF {#4}
8139             {
8140                 \int_case:nnF {\Hy@linktoc}
8141                 {
8142                     {0}{} %none
8143                     {1}{} %section
8144                     {2}{\hyper@linkend} %page
8145                 }
8146                 {\hyper@linkend} %all
8147             } % none
8148         }
8149     }

```

Until the latex-lab file is cleaned up, we need to remove the hook code

```

8150     \AddToHook{package/hyperref/after}[latex-lab-testphase-toc]{}
8151     \RemoveFromHook{package/hyperref/after}[latex-lab-testphase-toc]
8152 }
8153 \ExplSyntaxOff
8154 </packageEnd>
8155 <*check>
8156 \checklatex
8157 \checkcommand\def\addcontentsline#1#2#3{%
8158     \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
8159 }
8160 \checkcommand\def\contentsline#1{\curname l@#1\endcsname}
8161 </check>
8162 <*packageEnd>

```

## 40 New counters

The whole theorem business makes up new counters on the fly; we are going to intercept this. Sigh. Do it at the level where new counters are defined. change 2024-02-14: use a csname to handle counter names with commands, see issue #330 change 2024-10-13: disable patches in new format 2024-11-01. change 2026-02-22: removed patches fully.

## 41 AMS $\text{\LaTeX}$ compatibility

Oh, no, they don't use anything as simple as `\refstepcounter` in the AMS! We need to intercept some low-level operations of theirs. Damned if we are going to try and work out what they get up to. Just stick a label of 'AMS' on the front, and use the label *they* worked out. If that produces something invalid, I give up. They'll change all the code again anyway, I expect (SR).

Version 6.77p uses a patch by Ross Moore.

If `\hyper@nopatch@amsmath@tag` is defined we don't patch but assume that kernel code adds anchors to equations. change 2023-06-14: use a hook to make it independent of loading order.

```

8163 \ifundefined{hyper@nopatch@amsmath@tag}
8164 {%
8165   \AddToHook{package/amsmath/after}{%
8166     \def\Hy@make@anchor{%
8167       \Hy@MakeCurrentHrefAuto{AMS}%
8168       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
8169     }%
8170     \def\Hy@make@df@tag@@#1{%
8171       \gdef\df@tag{%
8172         \maketag@@@{\Hy@make@anchor#1}%
8173         \def\@currentlabel{#1}%
8174       }%
8175     }%
8176     \def\Hy@make@df@tag@@@#1{%
8177       \gdef\df@tag{%
8178         \tagform@{\Hy@make@anchor#1}%
8179         \toks@{\xp{\p@equation{#1}}}%
8180         \edef\@currentlabel{\the\toks@}%
8181       }%
8182     }%
8183     \let\HyOrg@make@df@tag@@\make@df@tag@@
8184     \let\HyOrg@make@df@tag@@@ \make@df@tag@@@
8185     \let\make@df@tag@@\Hy@make@df@tag@@
8186     \let\make@df@tag@@@ \Hy@make@df@tag@@@
8187   }{}
8188 }{}

```

This code I simply cannot remember what I was trying to achieve. The final result seems to do nothing anyway.

```

\let\H@tagform@\tagform@
\def\tagform@#1{%
\maketag@@@{\hyper@@anchor{\@currentHref}%
{(\ignorespaces#1\unskip)}}%

```

```
}
\def\eqref#1{\textup{\H@tagform@{\ref{#1}}}}
```

## 41.1 \@addtoreset and \numberwithin patches

\@addtoreset puts a counter to the reset list of another counter. After a reset the counter starts again with perhaps already used values. Therefore the hyperref version of the counter print command \theHcounter is redefined in order to add the parent counter. change 2024-07-10: define \HyOrg@addtoreset always for cleveref compability with tagging code, see <https://github.com/latex3/tagging-project/issues/2>

```
8189 \def\HyOrg@addtoreset#1#2{\expandafter\@cons\csname cl@#2\endcsname {\{#1\}}
8190 \@ifundefined{hyper@nopatch@counter}
8191 {
8192   \let\HyOrg@addtoreset\@addtoreset
8193   \def\@addtoreset#1#2{%
8194     \HyOrg@addtoreset{#1}{#2}%
8195     \expandafter\xdef\csname theH#1\endcsname{%
8196       \expandafter\noexpand
8197         \csname the\@ifundefined{theH#2}{H#2\endcsname
8198       .\noexpand\the\noexpand\value{#1}%
8199     }%
8200   }
8201   }{}
```

\numberwithin A appropriate definition of hyperref's companion counter (\theH...) is added for correct link names.

```
8202 \</packageEnd>
8203 \<check>
8204 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
8205 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
8206   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8207     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8208       \@addtoreset{#2}{#3}%
8209       \@xp\xdef\csname the#2\endcsname{%
8210         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8211       }%
8212     }%
8213   }%
8214 }%
8215 \</check>
```

change 2023-06-14: use hook to make independent of loading order

```
8216 \<packageEnd>
8217 \@ifundefined{hyper@nopatch@counter}
8218 {
8219   \AddToHook{package/amsmath/after}{%
8220     \renewcommand*\numberwithin[3][\arabic]{%
8221       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8222         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8223           \HyOrg@addtoreset{#2}{#3}%
8224           \@xp\xdef\csname the#2\endcsname{%
8225             \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8226           }%
8227         }%
8228       }%
8229     }%
8230   }
```

```

8226      }%
8227      \@xp\xdef\csname theH#2\endcsname{%
8228        \@xp\@nx
8229        \csname the\@ifundefined{theH#3}{}H#3\endcsname
8230        .\@nx#1{#2}%
8231      }%
8232    }%
8233  }%
8234 }%
8235 }{}
8236 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

8237 \ifHy@hyperfigures
8238   \let\Hy@Gin@setfile\Gin@setfile
8239   \def\Gin@setfile#1#2#3{%
8240     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
8241   }%
8242 \fi
8243 \Hy@DisableOption{hyperfigures}

```

## 43 hyperindex entries

Internal command names are prefixed with `\HyInd@`.

Hyper-indexing works crudely, by forcing code onto the end of the index entry with the `|` feature; this puts a hyperlink around the printed page numbers. It will not proceed if the author has already used the `|` specifier for something like boldening entries. That would make `Makeindex` fail (cannot have two `|` specifiers). The solution is for the author to use generic coding, and put in the requisite `\hyperpage` in his/her own macros along with the boldness.

This section is poor stuff; it's open to all sorts of abuse. Sensible large projects will design their own indexing macros any bypass this.

```

8244 \ifHy@hyperindex
8245   \def\HyInd@ParenLeft{({}%
8246   \def\HyInd@ParenRight{)}}%
8247   \def\hyperxindexformat#1#2{%
8248     \let\HyOrg@hyperpage\hyperpage
8249     \let\hyperpage\@firstofone
8250     #1{\HyOrg@hyperpage{#2}}%
8251     \let\hyperpage\HyOrg@hyperpage
8252   }%

```

keep the old name for compability.

```

8253   \let\hyperindexformat\hyperxindexformat
8254   \Hy@nextfalse
8255   \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
8256   \@ifpackageloaded{index}{\Hy@nexttrue}{}%
8257   \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
8258   \begingroup

```

```

8259 \lccode`\|=\expandafter`\HyInd@EncapChar\relax
8260 \lccode`\/=``\relax
8261 \lowercase{\endgroup
8262 \ifHy@next
8263 \let\HyInd@org@wrindex\@wrindex
8264 \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2||\}%
8265 \def\HyInd@@wrindex#1#2|#3|#4\{\%
8266 \ifx\|#3\%
8267 \HyInd@org@wrindex{#1}{#2|hyperpage}%
8268 \else
8269 \HyInd@@@wrindex{#1}{#2}#3\%
8270 \fi
8271 }%
8272 \def\HyInd@@@wrindex#1#2#3#4\{\%
8273 \def\Hy@temp@A{#3}%
8274 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8275 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8276 \relax
8277 \HyInd@org@wrindex{#1}{%
8278 #2|hyperxindexformat{/#3#4}%
8279 }%
8280 \else
8281 \ifx\|#4\%
8282 \ifx\Hy@temp@A\HyInd@ParenRight
8283 \HyInd@org@wrindex{#1}{#2|#3}%
8284 \else
8285 \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
8286 \fi
8287 \else
8288 \HyInd@org@wrindex{#1}{%
8289 #2|#3hyperxindexformat{/#4}%
8290 }%
8291 \fi
8292 \fi
8293 }%
8294 \else
8295 \def\@wrindex#1{\@@wrindex#1||\}%
8296 \def\@@wrindex#1|#2|#3\{\%
8297 \if@filesw
8298 \ifx\|#2\%
8299 \protected@write\@indexfile{\%
8300 \string\indexentry{#1|hyperpage}{\thepage}%
8301 }%
8302 \else
8303 \HyInd@@@wrindex{#1}#2\%
8304 \fi
8305 \fi
8306 \endgroup
8307 \@esphack
8308 }%
8309 \def\HyInd@@@wrindex#1#2#3\{\%
8310 \def\Hy@temp@A{#2}%
8311 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8312 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi

```

```

8313         \relax
8314     \protected@write\@indexfile{}\{%
8315         \string\indexentry{%
8316             #1|hyperxindexformat{/#2#3}%
8317         }\thepage}%
8318     }%
8319 \else
8320 \ifx\#3\%
8321     \ifx\Hy@temp@A\HyInd@ParenRight
8322         \HyInd@DefKey{#1}%
8323         \@ifundefined{HyInd@(\HyInd@key)}{%
8324             \let\Hy@temp@empty
8325         }{%
8326             \expandafter\let\expandafter\Hy@temp
8327                 \csname HyInd@(\HyInd@key)\endcsname
8328         }%
8329         \protected@write\@indexfile{}\{%
8330             \string\indexentry{#1|#2\Hy@temp}\thepage}%
8331         }%
8332     \else
8333         \protected@write\@indexfile{}\{%
8334             \string\indexentry{#1|#2hyperpage}\thepage}%
8335         }%
8336         \HyInd@DefKey{#1}%
8337         \expandafter
8338         \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8339             hyperpage%
8340         }%
8341     \fi
8342 \else
8343     \protected@write\@indexfile{}\{%
8344         \string\indexentry{%
8345             #1|#2hyperxindexformat{/#3}%
8346         }\thepage}%
8347     }%
8348     \ifx\Hy@temp@A\HyInd@ParenLeft
8349         \HyInd@DefKey{#1}%
8350         \expandafter
8351         \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8352             hyperxindexformat{/#3}%
8353         }%
8354     \fi
8355 \fi
8356 \fi
8357 }%
8358 \def\HyInd@DefKey#1{%
8359     \begingroup
8360     \let\protect\@unexpandable@protect
8361     \edef\Hy@temp{#1}%
8362     \@onelevel@sanitize\Hy@temp
8363     \global\let\HyInd@key\Hy@temp
8364 \endgroup
8365 }%
8366 \fi

```

```

8367 }%
8368 \fi
8369 \Hy@DisableOption{hyperindex}
8370 \Hy@DisableOption{encap}

```

`\nohyperpage` The definition of `\nohyperpage` is just a precaution. It is used to mark code that does not belong to a page number, but `\nohyperpage` is never executed.

```

8371 \def\nohyperpage#1{#1}

```

This again is quite flaky, but allow for the common situation of a page range separated by en-rule. We split this into two different hyperlinked pages.

```

8372 \def\hyperpage#1{%
8373   \HyInd@hyperpage#1\nohyperpage{}\@nil
8374 }
8375 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
8376   \HyInd@@hyperpage{#1}%
8377   #2%
8378   \def\Hy@temp{#3}%
8379   \ifx\Hy@temp@empty
8380     \else
8381       \Hy@ReturnAfterFi{%
8382         \HyInd@hyperpage#3\@nil
8383       }%
8384     \fi
8385 }
8386 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
8387 \def\@hyperpage#1--#2--#3\{\{%
8388   \ifx\#2\%
8389     \@commahyperpage{#1}%
8390   \else
8391     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
8392   \fi
8393 }
8394 \def\@commahyperpage#1{\@commahyperpage#1, \}
8395 \def\@@commahyperpage#1, #2, #3\{\{%
8396   \ifx\#2\%
8397     \HyInd@pagelink{#1}%
8398   \else
8399     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
8400   \fi
8401 }

```

The argument of `\hyperpage` can be empty. And the line breaking algorithm of `Makeindex` can introduce spaces. So we have to remove them.

```

8402 \def\HyInd@pagelink#1{%
8403   \begingroup
8404   \toks@={}%
8405   \HyInd@removespaces#1 \@nil
8406   \endgroup
8407 }
8408 \def\HyInd@removespaces#1 #2\@nil{%
8409   \toks@=\expandafter{\the\toks@#1}%
8410   \ifx\#2\%
8411     \edef\x{\the\toks@}%

```

```

8412 \ifx\x\@empty
8413 \else
8414 \hyperlink{page.\the\toks@}{\the\toks@}%
8415 \fi
8416 \else
8417 \Hy@ReturnAfterFi{%
8418 \HyInd@removespaces#2\@nil
8419 }%
8420 \fi
8421 }

```

This breaks TeX4ht, so leave it to last. Emend `\@setref` to put out a hypertext link as well as its normal text (which is used as an anchor). (`\endinput` have to be on the same line like `\fi`, or you have to use `\expandafter` before.)

change 2022-11-13: added an `\@empty` for issue#261.

```

8422 \ifHy@texht
8423 \expandafter\endinput
8424 \fi
8425 \let\real@setref\@setref
8426 \def\@setref#1#2#3{% csname, extract group, refname
8427 \ifx#1\relax
8428 \protect\G@refundefinedtrue
8429 \nfss@text{\reset@font\bfseries ??}%
8430 \@latex@warning{%
8431 Reference `#3' on page \thepage \space undefined%
8432 }%
8433 \else
8434 \expandafter\Hy@setref@link#1\@empty\@empty\@empty\@nil{#2}%
8435 \fi
8436 }

```

`\Hy@setref@link` extracts the reference information entries, because `\hyper@@link` does not expand arguments for the automatic link type detection.

```

8437 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8438 \begingroup
8439 \toks0={\hyper@@link{#5}{#4}}%
8440 \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8441 \edef\x{\endgroup
8442 \the\toks0 {\the\toks1 }%
8443 }%
8444 \x
8445 }
8446 \def\@pagesetref#1#2#3{% csname, extract macro, ref
8447 \ifx#1\relax
8448 \protect\G@refundefinedtrue
8449 \nfss@text{\reset@font\bfseries ??}%
8450 \@latex@warning{%
8451 Reference `#3' on page \thepage \space undefined%
8452 }%
8453 \else
8454 \protect\hyper@@link
8455 {\expandafter\@fifthoffive#1}%
8456 {page.\expandafter\@secondoffive#1}%
8457 {\expandafter\@secondoffive#1}%
8458 \fi

```

```

8459 }
8460 </packageEnd>
8461 <*check>
8462 \checklatex
8463 \checkcommand\def\@setref#1#2#3{%
8464   \ifx#1\relax
8465     \protect\G@refundefinedtrue
8466     \nfss@text{\reset@font\bfseries ??}%
8467     \@latex@warning{%
8468       Reference `#3' on page \thepage\space undefined%
8469     }%
8470   \else
8471     \expandafter#2#1\null
8472   \fi
8473 }
8474 </check>
8475 <*packageEnd>

```

Now some extended referencing. `\ref*` and `\pageref*` are not linked, and `\autoref` prefixes with a tag based on the type.

```

8476 \def\HyRef@StarSetRef#1{%
8477   \begingroup
8478   \Hy@safe@activertrue
8479   \let\protect\@unexpandable@protect
8480   \edef\x{#1}%
8481   \@onelevel@sanitize\x
8482   \edef\x{\endgroup
8483     \noexpand\HyRef@@StarSetRef
8484     \expandafter\noexpand\csname r@\x\endcsname{\x}%
8485   }%
8486   \x
8487 }
8488 \def\HyRef@@StarSetRef#1#2#3{%
8489   \ifx#1\@undefined
8490     \let#1\relax
8491   \fi
8492   \real@setref#1#3{#2}%
8493 }
8494 \def\@refstar#1{%
8495   \HyRef@StarSetRef{#1}\@firstoffive
8496 }
8497 \def\@pagerefstar#1{%
8498   \HyRef@StarSetRef{#1}\@secondoffive
8499 }
8500 \def\@namerefstar#1{%
8501   \HyRef@StarSetRef{#1}\@thirdoffive
8502 }
8503 \def\@Refstar#1{%
8504   \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8505 }%
8506 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8507   \MakeUppercase#1%
8508 }%
8509 \def\HyRef@Ref#1{%

```

```

8510 \hyperref[#1]{\Ref*{#1}}%
8511 }%
8512 \Hy@AtBeginDocument{%
8513 \@ifpackageloaded{varioref}{%

```

This are the patches for a varioref newer after 2019-09 Older versions are no longer supported. If `\hyper@nopatch@varioref` is defined we don't patch but assume that varioref handles the hyperlinks.

```

8514 \@ifundefined{hyper@nopatch@varioref}
8515 {
8516 \renewcommand\Vref@star[2][]{%
8517 \begingroup
8518 \let\T@pageref\@pagerefstar
8519 \Ref*{#2}
8520 \vpageref[#1]{#2}%
8521 \endgroup
8522 }%
8523 \renewcommand\Vr@f[2][]{%
8524 \begingroup
8525 \let\T@pageref\@pagerefstar
8526 \hyperref[{#2}]{%
8527 \Ref*{#2}
8528 \vpageref[#1]{#2}%
8529 }%
8530 \endgroup
8531 }%
8532 \renewcommand\vr@f[2][]{%
8533 \begingroup
8534 \let\T@pageref\@pagerefstar
8535 \hyperref[{#2}]{%
8536 \ref*{#2}
8537 \vpageref[#1]{#2}%
8538 }%
8539 \endgroup
8540 }%
8541 \renewcommand\vref@star[2][]{%
8542 \begingroup
8543 \let\T@pageref\@pagerefstar
8544 \ref*{#2}
8545 \vpageref[#1]{#2}%
8546 \endgroup
8547 }%
8548 }{}%
8549 }{}%
8550 }

8551 \DeclareRobustCommand*\autopageref{%
8552 \ifstar{%
8553 \HyRef@autopagerefname\pageref*%
8554 }\HyRef@autopageref
8555 }
8556 \def\HyRef@autopageref#1{%
8557 \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
8558 }
8559 \def\HyRef@autopagerefname{%

```

```

8560 \@ifundefined{pageautorefname}{%
8561   \@ifundefined{pagename}{%
8562     \Hy@Warning{No autoref name for `page'}%
8563   }{%
8564     \pagename\nobreakspace
8565   }%
8566 }{%
8567   \pageautorefname\nobreakspace
8568 }%
8569 }

```

\leavevmode is added to make package wrapfigure happy, if \autoref starts a paragraph.

```

8570 \NewDocumentCommand\autoref{s}
8571 {
8572   \leavevmode
8573   \IfBooleanTF{#1}{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@@link}}
8574 \def\HyRef@autoref#1#2{%
8575   \begingroup
8576   \Hy@safe@activestrue
8577   \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
8578 }
8579 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
8580   \HyRef@ShowKeysRef{#2}%
8581   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref\undefined 1\fi\relax
8582   \edef\HyRef@thisref{%
8583     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8584   }%
8585   \expandafter\HyRef@testreftype\HyRef@thisref.\.%
8586   \Hy@safe@activesfalse
8587   #3{%
8588     \expandafter\@fifthoffive#1\@empty\@empty\@empty
8589   }{%
8590     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8591   }{%
8592     \HyRef@currentHtag
8593     \expandafter\@firstoffive#1\@empty\@empty\@empty
8594     \null
8595   }%
8596   \else
8597     \protect\G@refundefinedtrue
8598     \nfss@text{\reset@font\bfseries ??}%
8599     \@latex@warning{%
8600       Reference `#2' on page \thepage\space undefined%
8601     }%
8602   \fi
8603 }
8604 \def\HyRef@testreftype#1.#2\.{%
8605   \@ifundefined{#1autorefname}{%
8606     \@ifundefined{#1name}{%
8607       \HyRef@StripStar#1\*\@nil{#1}%
8608     \@ifundefined{\HyRef@name autorefname}{%
8609       \@ifundefined{\HyRef@name name}{%
8610         \def\HyRef@currentHtag{}%

```

```

8611 \Hy@Warning{No autoref name for `#1'}%
8612 }{%
8613 \edef\HyRef@currentHtag{%
8614 \expandafter\noexpand\csname\HyRef@name name\endcsname
8615 \noexpand~%
8616 }%
8617 }%
8618 }{%
8619 \edef\HyRef@currentHtag{%
8620 \expandafter\noexpand
8621 \csname\HyRef@name autorefname\endcsname
8622 \noexpand~%
8623 }%
8624 }%
8625 }{%
8626 \edef\HyRef@currentHtag{%
8627 \expandafter\noexpand\csname#1name\endcsname
8628 \noexpand~%
8629 }%
8630 }%
8631 }{%
8632 \edef\HyRef@currentHtag{%
8633 \expandafter\noexpand\csname#1autorefname\endcsname
8634 \noexpand~%
8635 }%
8636 }%
8637 }
8638 \def\HyRef@StripStar#1*\#2\@nil#3{%
8639 \def\HyRef@name{#2}%
8640 \ifx\HyRef@name\HyRef@CaseStar
8641 \def\HyRef@name{#1}%
8642 \else
8643 \def\HyRef@name{#3}%
8644 \fi
8645 }
8646 \def\HyRef@CaseStar{*\\}
8647 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

8648 \let\HyRef@ShowKeysRef\@gobble
8649 \def\HyRef@ShowKeysInit{%
8650 \@ifundefined{SK@@label}{-}{
8651 {
8652 \ifx\SK@ref\@empty
8653 \else
8654 \def\HyRef@ShowKeysRef{%
8655 \SK@\SK@@ref
8656 }%
8657 \fi
8658 }%
8659 }
8660 \AddToHook{package/showkeys/after}{\HyRef@ShowKeysInit}

```

Defaults for the names that `\autoref` uses.

```

8661 \providecommand*\AMSautorefname{\equationautorefname}
8662 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8663 \providecommand*\Itemautorefname{\itemautorefname}
8664 \providecommand*\itemautorefname{item}
8665 \providecommand*\equationautorefname{Equation}
8666 \providecommand*\footnoteautorefname{footnote}
8667 \providecommand*\itemautorefname{item}
8668 \providecommand*\figureautorefname{Figure}
8669 \providecommand*\tableautorefname{Table}
8670 \providecommand*\partautorefname{Part}
8671 \providecommand*\appendixautorefname{Appendix}
8672 \providecommand*\chapterautorefname{chapter}
8673 \providecommand*\sectionautorefname{section}
8674 \providecommand*\subsectionautorefname{subsection}
8675 \providecommand*\subsubsectionautorefname{subsubsection}
8676 \providecommand*\paragraphautorefname{paragraph}
8677 \providecommand*\subparagraphautorefname{subparagraph}
8678 \providecommand*\FancyVerbLineautorefname{line}
8679 \providecommand*\theoremautorefname{Theorem}
8680 \providecommand*\pageautorefname{page}
8681 \</packageEnd>

```

## 44 Configuration files

### 44.1 PS/PDF strings

Some drivers write PS or PDF strings. These strings are delimited by parentheses, therefore a lonely unmatched parenthesis must be avoided to avoid PS or PDF syntax errors. Also the backslash character itself has to be protected.

`\Hy@pstringdef` Therefore such strings should be passed through `\Hy@pstringdef`. The first argument holds a macro for the result, the second argument is the string that needs protecting. Since version 1.30.0 pdf<sub>T</sub><sub>E</sub>X offers `\pdfescapestring`.

```

8682 (*pdfTEX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo)
8683 \begingroup\expandafter\expandafter\expandafter\endgroup
8684 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8685   \begingroup
8686     \catcode`\|=0 %
8687     \@makeother\| %
8688     |@firstofone{|endgroup
8689     |def|Hy@pstringdef#1#2{%
8690       |begingroup
8691         |edef~{|string~}%
8692         |xdef|Hy@gtemp{#2}%
8693       |endgroup
8694       |let#1|Hy@gtemp
8695       |@onelevel@sanitize#1%
8696       |edef#1{|expandafter|Hy@ExchangeBackslash#1|@nil}%
8697       |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1|@nil}%
8698       |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1|@nil}%
8699     }%

```

```

8700 |def|Hy@ExchangeBackslash#1\#2|@nil{%
8701 #1%
8702 |ifx|\#2|\%%
8703 |else
8704 \\\%
8705 |Hy@ReturnAfterFi{%
8706 |Hy@ExchangeBackslash#2|@nil
8707 }%
8708 |fi
8709 }%
8710 }%
8711 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8712 #1%
8713 \ifx\#2\%%
8714 \else
8715 \@backslashchar(%
8716 \Hy@ReturnAfterFi{%
8717 \Hy@ExchangeLeftParenthesis#2\@nil
8718 }%
8719 \fi
8720 }%
8721 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8722 #1%
8723 \ifx\#2\%%
8724 \else
8725 \@backslashchar)%
8726 \Hy@ReturnAfterFi{%
8727 \Hy@ExchangeRightParenthesis#2\@nil
8728 }%
8729 \fi
8730 }%
8731 \else
8732 \def\Hy@pstringdef#1#2{%
8733 \begingroup
8734 \edef~{\string~}%
8735 \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8736 \endgroup
8737 \let#1\Hy@gtemp
8738 }%
8739 \fi
8740 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

## 44.2 pdfTeX

```

8741 <*pdfTeX>
8742 \providecommand*\XR@ext}{pdf}
8743 \Hy@setbreaklinks{true}
8744 \def\HyPat@ObjRef{%
8745 [0-9]*[1-9][0-9]* 0 R%
8746 }

```

This driver is for Han The Thanh's T<sub>E</sub>X variant which produces PDF directly. This has new primitives to do PDF things, which usually translate almost directly to PDF code, so there is a lot of flexibility which we do not at present harness.

Set PDF version if requested by option pdfversion.

- pdfT<sub>E</sub>X 1.10a, 2003-01-16: \pdfoptionpdfminorversion

- pdfT<sub>E</sub>X 1.30, 2005-08-081: \pdfminorversion

```
8747 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8748 \def\Hy@pdfminorversion{\pdfminorversion}%
8749 \ifHy@ocgcolorlinks
8750 \ifnum\Hy@pdfmajorminor@version<105 %
8751 \kvsetkeys{Hyp}{pdfversion=1.5}%
8752 \fi
8753 \fi
8754 \ifHy@setpdfversion
8755 \ifnum\Hy@pdf@majorminor@version<105 %
8756 \@ifundefined{pdfobjcompresslevel}{%
8757 }{%
8758 \ifHy@verbose
8759 \Hy@InfoNoLine{%
8760 PDF object streams are disabled, because they are%
8761 \MessageBreak
8762 not supported in requested PDF version %
8763 \Hy@pdf@majorversion.\Hy@pdf@minorversion
8764 }%
8765 \fi
8766 \pdfobjcompresslevel=\z@
8767 }%
8768 \fi
8769 \ifnum\Hy@pdfmajorminor@version=\Hy@pdf@majorminor@version\relax
8770 \else
8771 \let\Hy@temp\@empty
8772 \def\Hy@temp@A#1#2{%
8773 \ifnum#1>\z@
8774 \edef\Hy@temp{%
8775 \Hy@temp
8776 \space\space
8777 \the#1\space #2%
8778 \ifnum#1=\@ne\else s\fi
8779 \MessageBreak
8780 }%
8781 \fi
8782 }%
8783 \Hy@temp@A\pdflastobj{PDF object}%
8784 \Hy@temp@A\pdflastxform{form XObject}%
8785 \Hy@temp@A\pdflastximage{image XObject}%
8786 \Hy@temp@A\pdflastannot{annotation}%
8787 \@ifundefined{pdflastlink}{%
8788 }{%
8789 \Hy@temp@A\pdflastlink{link}%
8790 }%
8791 \ifx\Hy@temp\@empty
8792 \Hy@pdfmajorversion=\Hy@pdf@majorversion\relax
8793 \Hy@pdfminorversion=\Hy@pdf@minorversion\relax
8794 \else
8795 \let\Hy@temp@A\@empty
8796 \ifnum\Hy@pdf@majorminor@version=104 %
```

```

8797 \IfFileExists{pdf14.sty}{%
8798 \def\Hy@temp@A{%
8799 \MessageBreak
8800 Or \string\RequirePackage{pdf14} can be used%
8801 \MessageBreak
8802 before \string\documentclass\space as shortcut%
8803 }%
8804 }{}%
8805 \fi
8806 \Hy@WarningNoLine{%
8807 The PDF version number could not be set,\MessageBreak
8808 because some PDF objects are already written:%
8809 \MessageBreak
8810 \Hy@temp
8811 The version should be set as early as possible:%
8812 \MessageBreak
8813 \space\space
8814 \expandafter\string\Hy@pdfmajorversion=\Hy@pdf@majorversion, %
8815 \expandafter\string\Hy@pdfminorversion=\Hy@pdf@minorversion
8816 \string\relax
8817 \ifnum\Hy@pdf@majorminor@version<105 %
8818 \@ifundefined{pdfobjcompresslevel}{%
8819 }{%
8820 \MessageBreak
8821 \space\space
8822 \string\pdfobjcompresslevel=0\string\relax
8823 }%
8824 \fi
8825 \Hy@temp@A
8826 }%
8827 \fi
8828 \fi
8829 \PackageInfo{hyperref}{%
8830 \expandafter\string\Hy@pdfmajorversion.%
8831 \expandafter\string\Hy@pdfminorversion
8832 :=\number\Hy@pdf@majorversion.\number\Hy@pdf@minorversion\space
8833 }%
8834 \fi
8835 \edef\Hy@pdf@majorversion{\number\Hy@pdfmajorversion}%
8836 \edef\Hy@pdf@minorversion{\number\Hy@pdfminorversion}%
8837 \Hy@DisableOption{pdfversion}%

8838 \ifHy@ocgcolorlinks
8839 \pdf@ifdraftmode{}{%
8840 \immediate\pdfobj{%
8841 <<%
8842 /Type/OCG%
8843 /Name(View)%
8844 /Usage<<%
8845 /Print<<%
8846 /PrintState/OFF%
8847 >>%
8848 /View<<%
8849 /ViewState/ON%
8850 >>%

```

```

8851     >>%
8852     >>%
8853 }%
8854 \edef\OBJ@OCG@view{\the\pdfflastobj\space 0 R}%
8855 \immediate\pdfobj{%
8856     <<%
8857     /Type/OCG%
8858     /Name(Print)%
8859     /Usage<<%
8860     /Print<<%
8861     /PrintState/ON%
8862     >>%
8863     /View<<%
8864     /ViewState/OFF%
8865     >>%
8866     >>%
8867     >>%
8868 }%
8869 \edef\OBJ@OCG@print{\the\pdfflastobj\space 0 R}%
8870 \immediate\pdfobj{%
8871     [%
8872     \OBJ@OCG@view\space\OBJ@OCG@print
8873     ]%
8874 }%
8875 \edef\OBJ@OCGs{\the\pdfflastobj\space 0 R}%
8876 \pdfcatalog{%
8877     /OCProperties<<%
8878     /OCGs \OBJ@OCGs
8879     /D<<%
8880     /OFF[\OBJ@OCG@print]%
8881     /AS[%
8882     <<%
8883     /Event/View%
8884     /OCGs \OBJ@OCGs
8885     /Category[/View]%
8886     >>%
8887     <<%
8888     /Event/Print%
8889     /OCGs \OBJ@OCGs
8890     /Category[/Print]%
8891     >>%
8892     <<%
8893     /Event/Export%
8894     /OCGs \OBJ@OCGs
8895     /Category[/Print]%
8896     >>%
8897     ]%
8898     >>%
8899     >>%
8900 }%
8901 \begingroup
8902 \edef\x{\endgroup
8903 \pdfpageresources{%
8904     \the\pdfpageresources

```

```

8905      /Properties<<%
8906      /OCView \OBJ@OCG@view
8907      /OCPrint \OBJ@OCG@print
8908      >>%
8909    }%
8910  }%
8911  \x
8912 }%
8913 \Hy@AtBeginDocument{%
8914   \def\Hy@colorlink#1{%
8915     \begingroup
8916     \ifHy@ocgcolorlinks
8917       \def\Hy@ocgcolor{#1}%
8918       \setbox0=\hbox\bgroup\color@begingroup
8919     \else
8920       \HyColor@UseColor#1%
8921     \fi
8922   }%
8923   \def\Hy@endcolorlink{%
8924     \ifHy@ocgcolorlinks
8925       \color@endgroup\egroup
8926     \mbox{%
8927       \pdfliteral page{/OC/OCPrint BDC}%
8928       \rlap{\copy0}%
8929       \pdfliteral page{EMC/OC/OCView BDC}%
8930     \begingroup
8931       \expandafter\HyColor@UseColor\Hy@ocgcolor
8932       \box0 %
8933     \endgroup
8934     \pdfliteral page{EMC}%
8935   }%
8936   \fi
8937 \endgroup
8938 }%
8939 }%
8940 \else
8941   \Hy@DisableOption{ocgcolorlinks}%
8942 \fi

```

First, allow for some changes and additions to pdftex syntax:

```

8943 \def\setpdfinkmargin#1{%
8944   \begingroup
8945   \setlength{\dimen@}{#1}%
8946   \expandafter\endgroup
8947   \expandafter\pdfinkmargin\the\dimen@\relax
8948 }
8949 \pdfinkmargin1pt %

```

First set up the default linking

```

8950 \providecommand*\@pdfview{XYZ}

```

First define the anchors:

```

8951 \Hy@WrapperDef\new@pdfink#1{%
8952   \ifhmode
8953     \@savsf\spacefactor

```

```

8954 \fi
8955 \Hy@SaveLastskip
8956 \Hy@VerboseAnchor{#1}%
8957 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8958 \Hy@DestName\Hy@pstringDest\@pdfview
8959 \Hy@RestoreLastskip
8960 \ifhmode
8961 \spacefactor\@savs
8962 \fi
8963 }
8964 \let\pdf@endanchor\@empty

```

\Hy@DestName Wrap the call of \pdfdest name in \Hy@DestName. Then it can easier be caught by package hypdestopt.

```

8965 \def\Hy@DestName#1#2{%
8966 \pdfdest name{#1}#2\relax
8967 }

```

Now the links; the interesting part here is the set of attributes which define how the link looks. We probably want to add a border and color it, but there are other choices. This directly translates to PDF code, so consult the manual for how to change this. We will add an interface at some point.

```

8968 \providecommand*\@pdfborder{0 0 1}
8969 \providecommand*\@pdfborderstyle{}
8970 \def\Hy@undefinedname{UNDEFINED}
8971 \def\find@pdflink#1#2{%
8972 \leavevmode
8973 \protected@edef\Hy@testname{#2}%
8974 \ifx\Hy@testname\@empty
8975 \Hy@Warning{%
8976 Empty destination name,\MessageBreak
8977 using '\Hy@undefinedname'%
8978 }%
8979 \let\Hy@testname\Hy@undefinedname
8980 \else
8981 \Hy@pstringdef\Hy@testname{%
8982 \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8983 }%
8984 \fi
8985 \Hy@StartlinkName{%
8986 \ifHy@pdfa /F 4\fi
8987 \Hy@setpdfborder
8988 \Hy@setpdfhighlight
8989 \ifx\CurrentBorderColor\relax
8990 \else
8991 /C[\CurrentBorderColor]%
8992 \fi
8993 }\Hy@testname
8994 \expandafter\Hy@colorlink\csname @#1color\endcsname
8995 }
8996 \def\Hy@StartlinkName#1#2{%
8997 \pdfstartlink attr{#1}goto name{#2}\relax
8998 }
8999 \def\close@pdflink{%

```

```

9000 \Hy@endcolorlink
9001 \Hy@VerboseLinkStop
9002 \pdfendlink
9003 }
9004 \def\hyper@anchor#1{%
9005 \new@pdfink{#1}\anchor@spot\pdf@endanchor
9006 }
9007 \def\hyper@anchorstart#1{%
9008 \new@pdfink{#1}%
9009 \Hy@activeanchortrue
9010 }
9011 \def\hyper@anchorend{%
9012 \pdf@endanchor
9013 \Hy@activeanchorfalse
9014 }
9015 \def\hyper@linkstart#1#2{%
9016 \Hy@VerboseLinkStart{#1}{#2}%
9017 \@ifundefined{@#1bordercolor}{%
9018 \let\CurrentBorderColor\relax
9019 }{%
9020 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
9021 }%
9022 \find@pdfink{#1}{#2}%
9023 }
9024 \def\hyper@linkend{\close@pdfink}
9025 \def\hyper@link#1#2#3{%
9026 \Hy@VerboseLinkStart{#1}{#2}%
9027 \@ifundefined{@#1bordercolor}{%
9028 \let\CurrentBorderColor\relax
9029 }{%
9030 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
9031 }%
9032 \find@pdfink{#1}{#2}#3\Hy@xspace@end
9033 \close@pdfink
9034 }
9035 \let\CurrentBorderColor\@linkbordercolor
9036 \def\hyper@linkurl#1#2{%
9037 \begingroup
9038 \Hy@pstringdef\Hy@pstringURI{#2}%
9039 \hyper@chars
9040 \leavevmode
9041 \pdfstartlink
9042 attr{%
9043 \Hy@setpdfborder
9044 \Hy@setpdfhighlight
9045 \ifx\@urlbordercolor\relax
9046 \else
9047 /C[\@urlbordercolor]%
9048 \fi
9049 }%
9050 user{%
9051 /Subtype/Link%
9052 \ifHy@pdfa /F 4\fi
9053 /A<<%

```

```

9054      /Type/Action%
9055      /S/URI%
9056      /URI(\Hy@pstringURI)%
9057      \ifHy@href@ismap
9058        /IsMap true%
9059      \fi
9060      \Hy@href@nextactionraw
9061    >>%
9062  }%
9063  \relax
9064  \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9065  \close@pdfink
9066  \endgroup
9067 }
9068 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
9069  \begingroup
9070  \def\Hy@pstringF{#2}%
9071  \Hy@CleanupFile\Hy@pstringF
9072  \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9073  \Hy@pstringdef\Hy@pstringD{#3}%
9074  \Hy@MakeRemoteAction
9075  \leavevmode
9076  \pdfstartlink
9077  attr{%
9078    \Hy@setpdfborder
9079    \Hy@setpdfhighlight
9080    \ifx\@filebordercolor\relax
9081      \else
9082        /C[\@filebordercolor]%
9083      \fi
9084    }%
9085  user {%
9086    /Subtype/Link%
9087    \ifHy@pdfa /F 4\fi
9088    /A<<%
9089    /F(\Hy@pstringF)%
9090    /S/GoToR%
9091    \Hy@SetNewWindow

```

If #3 is empty, page 0; if its a number, Page number, otherwise a named destination.

```
\afterassignment\xxx\count@=0\foo!
```

```

\def\xxx#1!{%
  \ifx\xxx#1\xxx
    foo was an integer
  \else
    it wasnt
  \fi}

```

```

9092      \ifx\#3\%
9093        /D[\Hy@href@page\@pdfremotestartview]%
9094      \else
9095        /D(\Hy@pstringD)%

```

```

9096      \fi
9097      \Hy@href@nextactionraw
9098      >>%
9099      }%
9100      \relax
9101      \Hy@colorlink\@filecolor#1\Hy@xspace@end
9102      \close@pdflink
9103      \endgroup
9104      }
9105      \def\@hyper@launch run:#1\|#2#3{% filename, anchor text linkname
9106      \begingroup
9107      \Hy@pstringdef\Hy@pstringF{#1}%
9108      \Hy@pstringdef\Hy@pstringP{#3}%
9109      \leavevmode
9110      \pdfstartlink
9111      attr{%
9112      \Hy@setpdfborder
9113      \Hy@setpdfhighlight
9114      \ifx\@runbordercolor\relax
9115      \else
9116      /C[\@runbordercolor]%
9117      \fi
9118      }%
9119      user {%
9120      /Subtype/Link%
9121      \ifHy@pdfa /F 4\fi
9122      /A<<%
9123      /F(\Hy@pstringF)%
9124      /S/Launch%
9125      \Hy@SetNewWindow
9126      \ifx\|#3\|
9127      \else
9128      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9129      \fi
9130      \Hy@href@nextactionraw
9131      >>%
9132      }%
9133      \relax
9134      \Hy@colorlink\@runcolor#2\Hy@xspace@end
9135      \close@pdflink
9136      \endgroup
9137      }

```

\PDF@SetupDox

```

9138 \def\PDF@SetupDoc{%
9139 \ifx\@pdfpagescrop\@empty
9140 \else
9141 \edef\process@me{%
9142 \pdfpagesattr={%
9143 /CropBox[\@pdfpagescrop]%
9144 \expandafter\ifx\expandafter\|the\pdfpagesattr\|
9145 \else
9146 ~^J\the\pdfpagesattr
9147 \fi

```

```

9148     }%
9149 }%
9150 \process@me
9151 \fi
9152 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9153 \pdfcatalog{%
9154   /PageMode/\@pdfpagemode
9155   \ifx\@baseurl\@empty
9156     \else
9157       /URI<</Base(\Hy@pstringB)>>%
9158     \fi
9159 }%
9160 \ifx\@pdfstartpage\@empty
9161 \else
9162   \ifx\@pdfstartview\@empty
9163   \else
9164     openaction goto page\@pdfstartpage{\@pdfstartview}%
9165   \fi
9166 \fi
9167 \edef\Hy@temp{%
9168   \ifHy@pdftoolbar\else /HideToolbar true\fi
9169   \ifHy@pdfmenubar\else /HideMenubar true\fi
9170   \ifHy@pdfwindowui\else /HideWindowUI true\fi
9171   \ifHy@pdffitwindow /FitWindow true\fi
9172   \ifHy@pdfcenterwindow /CenterWindow true\fi
9173   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9174   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9175   \Hy@UseNameKey{Direction}\@pdfdirection
9176   \Hy@UseNameKey{ViewArea}\@pdfviewarea
9177   \Hy@UseNameKey{ViewClip}\@pdfviewclip
9178   \Hy@UseNameKey{PrintArea}\@pdfprintarea
9179   \Hy@UseNameKey{PrintClip}\@pdfprintclip
9180   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9181   \Hy@UseNameKey{Duplex}\@pdfduplex
9182   \ifx\@pdfpicktraybypdfsize\@empty
9183   \else
9184     /PickTrayByPDFSize \@pdfpicktraybypdfsize
9185   \fi
9186   \ifx\@pdfprintpagerange\@empty
9187   \else
9188     /PrintPageRange[\@pdfprintpagerange]%
9189   \fi
9190   \ifx\@pdfnumcopies\@empty
9191   \else
9192     /NumCopies \@pdfnumcopies
9193   \fi
9194 }%
9195 \pdfcatalog{%
9196   \ifx\Hy@temp\@empty
9197   \else
9198     /ViewerPreferences<<\Hy@temp>>%
9199   \fi
9200   \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9201   \ifx\@pdflang\relax

```

```

9202 \else
9203 /Lang(\@pdflang)%
9204 \fi
9205 }%
9206 }

\PDF@FinishDoc

9207 \def\PDF@FinishDoc{%
9208 \pdf@ifdraftmode{}{%
9209 \Hy@UseMaketitleInfos
9210 \HyInfo@GenerateAddons
9211 \pdfinfo{%
9212 /Author(\@pdfauthor)%
9213 /Title(\@pdftitle)%
9214 /Subject(\@pdfsubject)%
9215 /Creator(\@pdfcreator)%
9216 \ifx\@pdfcreationdate\@empty
9217 \else
9218 /CreationDate(\@pdfcreationdate)%
9219 \fi
9220 \ifx\@pdfmoddate\@empty
9221 \else
9222 /ModDate(\@pdfmoddate)%
9223 \fi
9224 \ifx\@pdfproducer\relax
9225 \else
9226 /Producer(\@pdfproducer)%
9227 \fi
9228 /Keywords(\@pdfkeywords)%
9229 \ifx\@pdftrapped\@empty
9230 \else
9231 /Trapped/\@pdftrapped
9232 \fi
9233 \HyInfo@Addons
9234 }%
9235 }%
9236 \Hy@DisableOption{pdfauthor}%
9237 \Hy@DisableOption{pdftitle}%
9238 \Hy@DisableOption{pdfsubject}%
9239 \Hy@DisableOption{pdfcreator}%
9240 \Hy@DisableOption{addtopdfcreator}%
9241 \Hy@DisableOption{pdfcreationdate}%
9242 \Hy@DisableOption{pdfmoddate}%
9243 \Hy@DisableOption{pdfproducer}%
9244 \Hy@DisableOption{pdfkeywords}%
9245 \Hy@DisableOption{pdftrapped}%
9246 \Hy@DisableOption{pdfinfo}%
9247 }

```

`\hyper@pagetransition` `\@pdfpagetransition` is initialized with `\relax`. So it indicates, if option `pdfpagetransition` is used. First previous `/Trans` entries are removed. If a new `/Trans` key exists, it is appended to `\pdfpageattr`.

```

9248 \def\hyper@pagetransition{%
9249 \ifx\@pdfpagetransition\relax

```

```

9250 \else
9251 \expandafter\Hy@RemoveTransPageAttr
9252 \the\pdfpageattr^^J/Trans{}}>>\END
9253 \ifx\@pdfpagetransition\@empty
9254 \else
9255 \edef\@processme{%
9256 \global\pdfpageattr{%
9257 \the\pdfpageattr
9258 ^^J/Trans << /S /\@pdfpagetransition\space >>%
9259 }%
9260 }%
9261 \@processme
9262 \fi
9263 \fi
9264 }

```

`\Hy@RemoveTransPageAttr` Macro `\Hy@RemoveTransPageAttr` removes a `/Trans` entry from `\pdfpageattr`. It is called with the end marker `^^J/Trans{}}>>\END`. The trick is the empty group that does not appear in legal `\pdfpageattr` code. It appears in argument `#2` and shows, whether the parameter text catches a really `/Trans` object or the end marker.

```

9265 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
9266 \ifx\#2\%
9267 \global\pdfpageattr{#1}%
9268 \else
9269 \Hy@RemoveTransPageAttr#1#4\END
9270 \fi
9271 }

```

`\hyper@pageduration` `\@pdfpageduration` is initialized with `\relax`. So it indicates, if option `pdfpage-duration` is used. First previous `/Dur` entries are removed. If a new `/Dur` key exists, it is appended to `\pdfpageattr`.

```

9272 \def\hyper@pageduration{%
9273 \ifx\@pdfpageduration\relax
9274 \else
9275 \expandafter
9276 \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{}} \END
9277 \ifx\@pdfpageduration\@empty
9278 \else
9279 \edef\@processme{%
9280 \global\pdfpageattr{%
9281 \the\pdfpageattr
9282 ^^J/Dur \@pdfpageduration\space
9283 }%
9284 }%
9285 \@processme
9286 \fi
9287 \fi
9288 }

```

`\Hy@RemoveDurPageAttr` Macro `\Hy@RemoveDurPageAttr` removes a `/Dur` entry from `\pdfpageattr`. It is called with the end marker `^^J/Dur{}} \END`. The trick is the empty group

that does not appear in legal `\pdfpageattr` code. It appears in argument `#2` and shows, whether the parameter text catches a really `/Dur` object or the end marker.

```

9289 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
9290   \ifx\|#2\|
9291     \global\pdfpageattr{#1}%
9292   \else
9293     \Hy@RemoveDurPageAttr#1#4\END
9294   \fi
9295 }

9296 \pdf@ifdraftmode{}{%
9297   \g@addto@macro\Hy@EveryPageHook{%
9298     \hyper@pagetransition
9299     \hyper@pageduration
9300   }%
9301 }

```

Also XeTeX support `\pdfpagewidth` and `\pdfpageheight`, but it does not provide `\pdfhorigin` and `\pdfvorigin`.

```

9302 </pdfTeX>
9303 <*pdfTeX | xetex>
9304 \Hy@AtBeginDocument{%
9305   \ifHy@setpagesize
9306     \expandafter\@firstofone
9307   \else
9308     \expandafter\@gobble
9309   \fi
9310 }%
9311 \@ifclassloaded{seminar}{%
9312 <*pdfTeX>
9313   \setlength{\pdfhorigin}{1truein}%
9314   \setlength{\pdfvorigin}{1truein}%
9315 </pdfTeX>
9316   \ifportrait
9317     \ifdim\paperwidth=\z@
9318     \else
9319       \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9320     \fi
9321     \ifdim\paperheight=\z@
9322     \else
9323       \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9324     \fi
9325   \else
9326     \ifdim\paperheight=\z@
9327     \else
9328       \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9329     \fi
9330     \ifdim\paperwidth=\z@
9331     \else
9332       \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9333     \fi
9334   \fi
9335 }{%
9336   \ifnum\mag=\@m

```

```

9337 \ifdim\stockwidth>\z@
9338 \ifdim\stockheight>\z@
9339 \setlength{\pdfpagewidth}{\stockwidth}%
9340 \setlength{\pdfpageheight}{\stockheight}%
9341 \else
9342 \ifdim\paperwidth>\z@
9343 \ifdim\paperheight>\z@
9344 \setlength{\pdfpagewidth}{\paperwidth}%
9345 \setlength{\pdfpageheight}{\paperheight}%
9346 \fi
9347 \fi
9348 \fi
9349 \else
9350 \ifdim\stockwidth=\z@
9351 \ifdim\paperwidth>\z@
9352 \ifdim\paperheight>\z@
9353 \setlength{\pdfpagewidth}{\paperwidth}%
9354 \setlength{\pdfpageheight}{\paperheight}%
9355 \fi
9356 \fi
9357 \fi
9358 \fi
9359 \fi
9360 }%
9361 }%
9362 \Hy@DisableOption{setpagesize}%
9363 }
9364 </pdfTeX | xetex>
9365 <*pdfTeX>
9366 \def\Acrobatmenu#1#2{%
9367 \Hy@Acrobatmenu{#1}{#2}{%
9368 \leavevmode
9369 \EdefEscapeName\Hy@temp@menu{#1}%
9370 \pdfstartlink
9371 attr{%
9372 \Hy@setpdfborder
9373 \Hy@setpdfhighlight
9374 \ifx\@menubordercolor\relax
9375 \else
9376 /C[\@menubordercolor]%
9377 \fi
9378 }%
9379 user{%
9380 /Subtype/Link%
9381 \ifHy@pdfa /F 4\fi
9382 /A<<%
9383 /S/Named%
9384 /N/\Hy@temp@menu
9385 \Hy@href@nextactionraw
9386 >>%
9387 }%
9388 \relax
9389 \Hy@colorlink\@menucolor#2%
9390 \close@pdflink

```

```

9391 }%
9392 }
9393 </pdfTeX>

```

### 44.3 hypertex

The HyperTeX specification (this is borrowed from an article by Arthur Smith) says that conformant viewers/translators must recognize the following set of \special commands:

**href:** html:<a href = "href\_string">

**name:** html:<a name = "name\_string">

**end:** html:</a>

**image:** html:<img src = "href\_string">

**base\_name:** html:<base href = "href\_string">

The *href*, *name* and *end* commands are used to do the basic hypertext operations of establishing links between sections of documents. The *image* command is intended (as with current html viewers) to place an image of arbitrary graphical format on the page in the current location. The *base\_name* command is used to communicate to the *dvi* viewer the full (URL) location of the current document so that files specified by relative URL's may be retrieved correctly.

The *href* and *name* commands must be paired with an *end* command later in the TeX file — the TeX commands between the two ends of a pair form an *anchor* in the document. In the case of an *href* command, the *anchor* is to be highlighted in the *dvi* viewer, and when clicked on will cause the scene to shift to the destination specified by *href\_string*. The *anchor* associated with a name command represents a possible location to which other hypertext links may refer, either as local references (of the form href="#name\_string" with the *name\_string* identical to the one in the name command) or as part of a URL (of the form URL#name\_string). Here *href\_string* is a valid URL or local identifier, while name\_string could be any string at all: the only caveat is that ‘’ characters should be escaped with a backslash (\), and if it looks like a URL name it may cause problems.

```

9394 <*hypertex>
9395 \providecommand*{\XR@ext}{dvi}
9396 \let\PDF@FinishDoc\@empty
9397 \def\PDF@SetupDoc{%
9398   \ifx\@baseurl\@empty
9399   \else
9400     \special{html:<base href="\@baseurl">}%
9401   \fi
9402 }
9403 \Hy@WrapperDef\hyper@anchor#1{%
9404   \Hy@SaveLastskip
9405   \Hy@VerboseAnchor{#1}%
9406   \begingroup
9407     \let\protect=\string
9408     \hyper@chars

```

```

9409 \special{html:<a name=%
9410 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}}%
9411 \endgroup
9412 \Hy@activeanchortrue
9413 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9414 \special{html:</a>}}%
9415 \Hy@activeanchorfalse
9416 \Hy@RestoreLastskip
9417 }
9418 \Hy@WrapperDef\hyper@anchorstart#1{%
9419 \Hy@SaveLastskip
9420 \Hy@VerboseAnchor{#1}%
9421 \begingroup
9422 \hyper@chars
9423 \special{html:<a name=%
9424 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}}%
9425 \endgroup
9426 \Hy@activeanchortrue
9427 }
9428 \def\hyper@anchorend{%
9429 \special{html:</a>}}%
9430 \Hy@activeanchorfalse
9431 \Hy@RestoreLastskip
9432 }
9433 \def\@urltype{url}
9434 \def\hyper@linkstart#1#2{%
9435 \Hy@VerboseLinkStart{#1}{#2}%
9436 \expandafter\Hy@colorlink\csname @#1color\endcsname
9437 \def\Hy@tempa{#1}%
9438 \ifx\Hy@tempa\@urltype
9439 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9440 \else
9441 \begingroup
9442 \hyper@chars
9443 \special{html:<a href=%
9444 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}}%
9445 \endgroup
9446 \fi
9447 }
9448 \def\hyper@linkend{%
9449 \special{html:</a>}}%
9450 \Hy@endcolorlink
9451 }
9452 \def\hyper@linkfile#1#2#3{%
9453 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
9454 }
9455 \def\hyper@linkurl#1#2{%

```

If we want to raise up the final link `\special`, we need to get its height; ask me why  $\text{\LaTeX}$  constructs make this totally foul up, and make us revert to basic  $\text{\TeX}$ . I do not know.

```

9456 \leavevmode
9457 \ifHy@raiselinks
9458 \Hy@SaveSpaceFactor

```

```

9459 \Hy@SaveSavedSpaceFactor
9460 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9461 \Hy@RestoreSavedSpaceFactor
9462 \@linkdim\dp\@tempboxa
9463 \lower\@linkdim\hbox{%
9464   \hyper@chars
9465   \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9466 }%
9467 \Hy@colorlink\@urlcolor
9468 \Hy@RestoreSpaceFactor
9469 #1%
9470 \Hy@SaveSpaceFactor
9471 \@linkdim\ht\@tempboxa

```

Because of the interaction with the dvilhs processor, we have to subtract a little from the height. This is not clean, or checked. Check with Mark Doyle about what gives here. It may not be needed with the new dvips (Jan 1997).

```

9472 \advance\@linkdim by -6.5\p@
9473 \raise\@linkdim\hbox{\special{html:</a>}}%
9474 \Hy@endcolorlink
9475 \Hy@RestoreSpaceFactor
9476 \else
9477 \begingroup
9478   \hyper@chars
9479   \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9480   \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9481   \special{html:</a>}}%
9482   \Hy@endcolorlink
9483 \endgroup
9484 \fi
9485 }

```

Very poor implementation of `\hyper@link` without considering `#1`.

```

9486 \def\hyper@link#1#2#3{%
9487   \Hy@VerboseLinkStart{#1}{#2}%
9488   \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}%
9489 }

9490 \def\hyper@image#1#2{%
9491   \begingroup
9492     \hyper@chars
9493     \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
9494   \endgroup
9495 }
9496 </hypertex>
9497 < *dviwindo>

```

## 44.4 dviwindo

[This was developed by David Carlisle]. Within a file `dviwindo` hyperlinking is used, for external URL's a call to `\wwwbrowser` is made. (You can define this command before or after loading the `hyperref` package if the default `c:/netscape/netscape` is not suitable) `Dviwindo` could in fact handle external links to dvi files on the same machine without calling a web browser, but that would mean parsing the URL to recognise such, and this is currently not done.

This was more or less blindly copied from the hypertext cfg. For dviwindo, L<sup>A</sup>T<sub>E</sub>X must specify the size of the active area for links. For some hooks this information is available but for some, the start and end of the link are specified separately in which case a fixed size area of 10000000sp wide by \baselineskip high is used.

```

9498 \providecommand*\XR@ext}{dvi}
9499 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9500 \Hy@WrapperDef\hyper@anchor#1{%
9501   \Hy@SaveLastskip
9502   \Hy@VerboseAnchor{#1}%
9503   \begingroup
9504     \let\protect=\string
9505     \special{mark: #1}%
9506   \endgroup
9507   \Hy@activeanchortrue
9508   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9509   \Hy@activeanchorfalse
9510   \Hy@RestoreLastskip
9511 }
9512 \Hy@WrapperDef\hyper@anchorstart#1{%
9513   \Hy@SaveLastskip
9514   \Hy@VerboseAnchor{#1}%
9515   \special{mark: #1}%
9516   \Hy@activeanchortrue
9517 }
9518 \def\hyper@anchorend{%
9519   \Hy@activeanchorfalse
9520   \Hy@RestoreLastskip
9521 }
9522 \def\hyper@linkstart#1#2{%
9523   \Hy@VerboseLinkStart{#1}{#2}%
9524   \expandafter\Hy@colorlink\csname @#1color\endcsname
9525   \special{button: %
9526     10000000 %
9527     \number\baselineskip\space
9528     #2%
9529   }%
9530 }
9531 \def\hyper@linkend{%
9532   \Hy@endcolorlink
9533 }
9534 \def\hyper@link#1#2#3{%
9535   \Hy@VerboseLinkStart{#1}{#2}%
9536   \leavevmode
9537   \ifHy@raiselinks
9538     \Hy@SaveSpaceFactor
9539     \Hy@SaveSavedSpaceFactor
9540     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9541     \Hy@RestoreSavedSpaceFactor
9542     \@linkdim\dp\@tempboxa
9543     \lower\@linkdim\hbox{%
9544       \special{button: %
9545         \number\wd\@tempboxa\space

```

```

9546     \number\ht\@tempboxa\space
9547     #2%
9548 }%
9549 \expandafter\Hy@colorlink\csname @#1color\endcsname
9550 \Hy@RestoreSpaceFactor
9551 #3\Hy@xspace@end
9552 \Hy@SaveSpaceFactor
9553 \Hy@endcolorlink
9554 }%
9555 \@linkdim\ht\@tempboxa
9556 \advance\@linkdim by -6.5\p@
9557 \raise\@linkdim\hbox{}%
9558 \Hy@RestoreSpaceFactor
9559 \else
9560 \special{button: %
9561     \number\wd\@tempboxa\space
9562     \number\ht\@tempboxa\space
9563     #2%
9564 }%
9565 \expandafter\Hy@colorlink\csname @#1color\endcsname
9566 #3\Hy@xspace@end
9567 \Hy@endcolorlink
9568 \fi
9569 }
9570 \def\hyper@linkurl#1#2{%
9571 \begingroup
9572 \hyper@chars
9573 \leavevmode
9574 \ifHy@raiselinks
9575 \Hy@SaveSpaceFactor
9576 \Hy@SaveSavedSpaceFactor
9577 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9578 \Hy@RestoreSavedSpaceFactor
9579 \@linkdim\dp\@tempboxa
9580 \lower\@linkdim\hbox{%
9581     \special{button: %
9582         \number\wd\@tempboxa\space
9583         \number\ht\@tempboxa\space
9584         launch: \wwwbrowser\space
9585         #2%
9586     }%
9587     \Hy@colorlink\@urlcolor
9588     \Hy@RestoreSpaceFactor
9589     #1\Hy@xspace@end
9590     \Hy@SaveSpaceFactor
9591     \Hy@endcolorlink
9592 }%
9593 \@linkdim\ht\@tempboxa
9594 \advance\@linkdim by -6.5\p@
9595 \raise\@linkdim\hbox{}%
9596 \Hy@RestoreSpaceFactor
9597 \else
9598 \special{button: %
9599     \number\wd\@tempboxa\space

```

```

9600     \number\ht\@tempboxa\space
9601     launch: \wwwbrowser\space
9602     #2%
9603 }%
9604     \Hy@colorlink\@urlcolor
9605     #1\Hy@xspace@end
9606     \Hy@endcolorlink
9607 \fi
9608 \endgroup
9609 }
9610 \def\hyper@linkfile#1#2#3{%
9611 \begingroup
9612 \hyper@chars
9613 \leavevmode
9614 \ifHy@raiselinks
9615     \Hy@SaveSpaceFactor
9616     \Hy@SaveSavedSpaceFactor
9617     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9618     \Hy@RestoreSavedSpaceFactor
9619     \@linkdim\dp\@tempboxa
9620     \lower\@linkdim\hbox{%
9621         \special{button: %
9622             \number\wd\@tempboxa\space
9623             \number\ht\@tempboxa\space
9624             #3,%
9625             file: #2%
9626         }%
9627         \Hy@colorlink\@filecolor
9628         \Hy@RestoreSpaceFactor
9629         #1\Hy@xspace@end
9630         \Hy@SaveSpaceFactor
9631         \Hy@endcolorlink
9632     }%
9633     \@linkdim\ht\@tempboxa
9634     \advance\@linkdim by -6.5\p@
9635     \raise\@linkdim\hbox{}%
9636     \Hy@RestoreSpaceFactor
9637 \else
9638     \special{button: %
9639         \number\wd\@tempboxa\space
9640         \number\ht\@tempboxa\space
9641         #3,%
9642         file: #2%
9643     }%
9644     \Hy@colorlink\@filecolor
9645     #1\Hy@xspace@end
9646     \Hy@endcolorlink
9647 \fi
9648 \endgroup
9649 }
9650 \HyInfo@AddonUnsupportedtrue
9651 \def\PDF@FinishDoc{%
9652     \Hy@UseMaketitleInfos
9653     \HyInfo@TrappedUnsupported

```

```

9654 \special{PDF: Keywords \@pdfkeywords}%
9655 \special{PDF: Title \@pdftitle}%
9656 \special{PDF: Creator \@pdfcreator}%
9657 \ifx\@pdfcreationdate\@empty
9658 \else
9659 \special{PDF: CreationDate \@pdfcreationdate}%
9660 \fi
9661 \ifx\@pdfmoddate\@empty
9662 \else
9663 \special{PDF: ModDate \@pdfmoddate}%
9664 \fi
9665 \special{PDF: Author \@pdfauthor}%
9666 \ifx\@pdfproducer\relax
9667 \else
9668 \special{PDF: Producer \@pdfproducer}%
9669 \fi
9670 \special{PDF: Subject \@pdfsubject}%
9671 \Hy@DisableOption{pdfauthor}%
9672 \Hy@DisableOption{pdftitle}%
9673 \Hy@DisableOption{pdfsubject}%
9674 \Hy@DisableOption{pdfcreator}%
9675 \Hy@DisableOption{addtopdfcreator}%
9676 \Hy@DisableOption{pdfcreationdate}%
9677 \Hy@DisableOption{pdfcreationdate}%
9678 \Hy@DisableOption{pdfmoddate}%
9679 \Hy@DisableOption{pdfproducer}%
9680 \Hy@DisableOption{pdfkeywords}%
9681 \Hy@DisableOption{pdftrapped}%
9682 \Hy@DisableOption{pdfinfo}%
9683 }
9684 \def\PDF@SetupDoc{%
9685 \ifx\@baseurl\@empty
9686 \else
9687 \special{PDF: Base \@baseurl}%
9688 \fi
9689 \ifx\@pdfpagescrop\@empty\else
9690 \special{PDF: BBox \@pdfpagescrop}%
9691 \fi
9692 \def\Hy@temp{}%
9693 \ifx\@pdfstartpage\@empty
9694 \else
9695 \ifx\@pdfstartview\@empty
9696 \else
9697 \edef\Hy@temp{%
9698 ,Page=\@pdfstartpage
9699 ,View=\@pdfstartview
9700 }%
9701 \fi
9702 \fi
9703 \edef\Hy@temp{%
9704 \noexpand\pdfmark{%
9705 pdfmark=/DOCVIEW,%
9706 PageMode=/\@pdfpagemode
9707 \Hy@temp

```

```

9708 }%
9709 }%
9710 \Hy@temp
9711 \ifx\@pdfpagescrop\@empty
9712 \else
9713 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9714 \fi
9715 \edef\Hy@temp{%
9716 \ifHy@pdftoolbar\else /HideToolbar true\fi
9717 \ifHy@pdfmenubar\else /HideMenubar true\fi
9718 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9719 \ifHy@pdffitwindow /FitWindow true\fi
9720 \ifHy@pdfcenterwindow /CenterWindow true\fi
9721 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9722 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9723 \Hy@UseNameKey{Direction}\@pdfdirection
9724 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9725 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9726 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9727 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9728 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9729 \Hy@UseNameKey{Duplex}\@pdfduplex
9730 \ifx\@pdfpicktraybypdfsize\@empty
9731 \else
9732 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9733 \fi
9734 \ifx\@pdfprintpagerange\@empty
9735 \else
9736 /PrintPageRange[\@pdfprintpagerange]%
9737 \fi
9738 \ifx\@pdfnumcopies\@empty
9739 \else
9740 /NumCopies \@pdfnumcopies
9741 \fi
9742 }%
9743 \pdfmark{pdfmark=/PUT,%
9744 Raw={%
9745 \string{Catalog}\string}<<%
9746 \ifx\Hy@temp\@empty
9747 \else
9748 /ViewerPreferences<<\Hy@temp>>%
9749 \fi
9750 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9751 \ifx\@pdflang\relax
9752 \else
9753 /Lang(\@pdflang)%
9754 \fi
9755 >>%
9756 }%
9757 }%
9758 }
9759 </dviwindo>
9760 (*dvipdfm | xetex)

```

## 44.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

(x)dvipdfmx replaces destination names by numbers. This makes it impossible to link from an external document with xr-hyper, so from version 7.00j on this is suppressed with a config special.

```
9761 \special{dvipdfmx:config C 0x0010}
9762 \providecommand*\XR@ext}{pdf}
9763 \Hy@setbreaklinks{true}
9764 \def\HyPat@ObjRef{%
9765   @[\ ]+}%
9766 }
9767 \newsavebox{\pdfm@box}
9768 \def\@pdfm@mark#1{\special{pdf:#1}}
9769 \Hy@WrapperDef\@pdfm@dest#1{%
9770   \Hy@SaveLastskip
9771   \Hy@VerboseAnchor{#1}%
9772   \begingroup
9773     \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9774     \def\x{XYZ}%
9775     \ifx\x\@pdfview
9776       \def\x{XYZ @xpos @ypos null}%
9777     \else
9778       \def\x{FitH}%
9779       \ifx\x\@pdfview
9780         \def\x{FitH @ypos}%
9781       \else
9782         \def\x{FitBH}%
9783         \ifx\x\@pdfview
9784           \def\x{FitBH @ypos}%
9785         \else
9786           \def\x{FitV}%
9787           \ifx\x\@pdfview
9788             \def\x{FitV @xpos}%
9789           \else
9790             \def\x{FitBV}%
9791             \ifx\x\@pdfview
9792               \def\x{FitBV @xpos}%
9793             \else
9794               \def\x{Fit}%
9795               \ifx\x\@pdfview
9796                 \let\x\@pdfview
9797               \else
9798                 \def\x{FitB}%
9799                 \ifx\x\@pdfview
9800                   \let\x\@pdfview
9801                 \else
9802                   \def\x{FitR}%
9803                   \ifx\x\@pdfview
9804                     \Hy@Warning{'pdfview=FitR' is not supported}%
9805                     \def\x{XYZ @xpos @ypos null}%
9806                   \else
9807                     \@onelevel@sanitize\@pdfview
9808                     \Hy@Warning{%
```

```

9809             Unknown value ` \@pdfview' for pdfview%
9810         }%
9811         \def\x{XYZ @xpos @ypos null}%
9812     \fi
9813 \fi
9814 \fi
9815 \fi
9816 \fi
9817 \fi
9818 \fi
9819 \fi
9820 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
9821 \endgroup
9822 \Hy@RestoreLastskip
9823 }
9824 \providecommand*\@pdfview{XYZ}
9825 \providecommand*\@pdfborder{0 0 1}
9826 \providecommand*\@pdfborderstyle{}
9827 \def\hyper@anchor#1{%
9828     \@pdfm@dest{#1}%
9829 }
9830 \def\hyper@anchorstart#1{%
9831     \Hy@activeanchortrue
9832     \@pdfm@dest{#1}%
9833 }
9834 \def\hyper@anchorend{%
9835     \Hy@activeanchorfalse
9836 }
9837 \newcounter{Hy@AnnotLevel}
9838 \ifHy@ocgcolorlinks
9839     \def\OBJ@OCG@view{@OCG@view}%
9840     \@pdfm@mark{%
9841         obj \OBJ@OCG@view <<%
9842         /Type/OCG%
9843         /Name(View)%
9844         /Usage<<%
9845         /Print<<%
9846         /PrintState/OFF%
9847         >>%
9848         /View<<%
9849         /ViewState/ON%
9850         >>%
9851         >>%
9852         >>%
9853     }%
9854     \@pdfm@mark{close \OBJ@OCG@view}%
9855     \def\OBJ@OCG@print{@OCG@print}%
9856     \@pdfm@mark{%
9857         obj \OBJ@OCG@print <<%
9858         /Type/OCG%
9859         /Name(Print)%
9860         /Usage<<%
9861         /Print<<%

```

```

9862      /PrintState/ON%
9863      >>%
9864      /View<<%
9865      /ViewState/OFF%
9866      >>%
9867      >>%
9868      >>%
9869  }%
9870  \@pdfm@mark{close \OBJ@OCG@print}%
9871  \def\OBJ@OCGs{\@OCGs}%
9872  \@pdfm@mark{%
9873    obj \OBJ@OCGs [%
9874      \OBJ@OCG@view\space\OBJ@OCG@print
9875    ]%
9876  }%
9877  \@pdfm@mark{close \OBJ@OCGs}%
9878  \@pdfm@mark{%
9879    put @catalog <<%
9880      /OCProperties<<%
9881      /OCGs \OBJ@OCGs
9882      /D<<%
9883      /OFF[\OBJ@OCG@print]%
9884      /AS[%
9885        <<%
9886          /Event/View%
9887          /OCGs \OBJ@OCGs
9888          /Category[/View]%
9889        >>%
9890        <<%
9891          /Event/Print%
9892          /OCGs \OBJ@OCGs
9893          /Category[/Print]%
9894        >>%
9895        <<%
9896          /Event/Export%
9897          /OCGs \OBJ@OCGs
9898          /Category[/Print]%
9899        >>%
9900      ]%
9901    >>%
9902    >>%
9903    >>%
9904  }%
9905  \AddToHook{shipout/before}{%
9906    \setbox\ShipoutBox=\hbox{%
9907      \copy\ShipoutBox
9908      \@pdfm@mark{%
9909        put @resources <<%
9910          /Properties<<%
9911          /OCView \OBJ@OCG@view
9912          /OCPrint \OBJ@OCG@print
9913        >>%
9914        >>%
9915      }%

```

```

9916 }%
9917 }%
9918 \Hy@AtBeginDocument{%
9919   \def\Hy@colorlink#1{%
9920     \begingroup
9921     \ifHy@ocgcolorlinks
9922       \def\Hy@ocgcolor{#1}%
9923       \setbox0=\hbox\bgroup\color@begingroup
9924     \else
9925       \HyColor@UseColor#1%
9926     \fi
9927   }%
9928   \def\Hy@endcolorlink{%
9929     \ifHy@ocgcolorlinks
9930       \color@endgroup\egroup
9931     \mbox{%
9932       \@pdfm@mark{content /OC/OCPrint BDC}%
9933       \rlap{\copy0}%
9934       \@pdfm@mark{content EMC/OC/OCView BDC}%
9935     \begingroup
9936       \expandafter\HyColor@UseColor\Hy@ocgcolor
9937       \box0 %
9938     \endgroup
9939     \@pdfm@mark{content EMC}%
9940   }%
9941   \fi
9942 \endgroup
9943 }%
9944 }%
9945 \else
9946 \Hy@DisableOption{ocgcolorlinks}%
9947 \fi

```

Use primitive counter arithmetic here to avoid amsmath redefining \stepcounter (github issue/13)

```

9948 \def\Hy@BeginAnnot#1{%
9949   \global\advance\c@Hy@AnnotLevel\@ne
9950   \ifnum\c@Hy@AnnotLevel=\@ne
9951     #1%
9952   \fi
9953 }
9954 \def\Hy@endAnnot{%
9955   \ifnum\value{Hy@AnnotLevel}=\@ne
9956     \Hy@endcolorlink
9957     \@pdfm@mark{eann}%
9958   \fi
9959   \global\advance\c@Hy@AnnotLevel\m@ne
9960 }

9961 \def\Hy@undefinedname{UNDEFINED}
9962 \def\hyper@linkstart#1#2{%
9963   \Hy@VerboseLinkStart{#1}{#2}%
9964   \leavevmode
9965   \Hy@BeginAnnot{%
9966     \protected@edef\Hy@testname{#2}%

```

```

9967 \ifx\Hy@testname\@empty
9968 \Hy@Warning{%
9969     Empty destination name,\MessageBreak
9970     using ``\Hy@undefinedname'%
9971 }%
9972 \let\Hy@testname\Hy@undefinedname
9973 \else
9974 \Hy@pstringdef\Hy@testname{%
9975     \expandafter\HyperDestNameFilter\expandafter{%
9976         \Hy@testname
9977     }%
9978 }%
9979 \fi
9980 \@pdfm@mark{%
9981     bann<<%
9982     /Type/Annot%
9983     /Subtype/Link%
9984     \ifHy@pdfa /F 4\fi
9985     \Hy@setpdfborder
9986     \Hy@setpdfhighlight
9987     \expandafter\ifx\csname @#1bordercolor\endcsname\relax
9988     \else
9989         /C[\csname @#1bordercolor\endcsname]%
9990     \fi
9991     /A<<%
9992     /S/GoTo%
9993     /D(\Hy@testname)%
9994     \Hy@href@nextactionraw
9995     >>%
9996     >>%
9997 }%
9998 \expandafter\Hy@colorlink\csname @#1color\endcsname
9999 }%
10000 }
10001 \def\hyper@linkend{\Hy@EndAnnot}%
10002 \def\hyper@link#1#2#3{%
10003     \hyper@linkstart{#1}{#2}#3\Hy@xspace@end\hyper@linkend
10004 }

```

2025-05-20 added a group for issue #380

```

10005 \def\hyper@linkfile#1#2#3{%
10006     \leavevmode
10007     \begingroup
10008     \Hy@BeginAnnot{%
10009         \def\Hy@pstringF{#2}%
10010         \Hy@CleanupFile\Hy@pstringF
10011         \Hy@pstringdef\Hy@pstringF\Hy@pstringF
10012         \Hy@pstringdef\Hy@pstringD{#3}%
10013         \Hy@MakeRemoteAction
10014         \@pdfm@mark{%
10015             bann<<%
10016             /Type/Annot%
10017             /Subtype/Link%
10018             \ifHy@pdfa /F 4\fi

```

```

10019 \Hy@setpdfborder
10020 \Hy@setpdfhighlight
10021 \ifx\@filebordercolor\relax
10022 \else
10023 /C[\@filebordercolor]%
10024 \fi
10025 /A<<%
10026 /S/GoToR%
10027 /F(\Hy@pstringF)%
10028 /D%
10029 \ifx\#3\%
10030 [\Hy@href@page\@pdfremotestartview]%
10031 \else
10032 (\Hy@pstringD)%
10033 \fi
10034 \Hy@SetNewWindow
10035 \Hy@href@nextactionraw
10036 >>%
10037 >>%
10038 }%
10039 \Hy@colorlink\@filecolor
10040 }%
10041 #1\Hy@xspace@end
10042 \Hy@endAnnot
10043 \endgroup
10044 }
10045 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
10046 \leavevmode
10047 \Hy@BeginAnnot{%
10048 \Hy@pstringdef\Hy@pstringF{#1}%
10049 \Hy@pstringdef\Hy@pstringP{#3}%
10050 \@pdfm@mark{%
10051 bann<<%
10052 /Type/Annot%
10053 /Subtype/Link%
10054 \ifHy@pdfa /F 4\fi
10055 \Hy@setpdfborder
10056 \Hy@setpdfhighlight
10057 \ifx\@runbordercolor\relax
10058 \else
10059 /C[\@runbordercolor]%
10060 \fi
10061 /A<<%
10062 /F(\Hy@pstringF)%
10063 /S/Launch%
10064 \Hy@SetNewWindow
10065 \ifx\#3\%
10066 \else
10067 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
10068 \fi
10069 \Hy@href@nextactionraw
10070 >>%
10071 >>%
10072 }%

```

```

10073 \Hy@colorlink\@runcolor
10074 }%
10075 #2\Hy@xspace@end
10076 \Hy@EndAnnot
10077 }
10078 \def\hyper@linkurl#1#2{%
10079 \leavevmode
10080 \Hy@BeginAnnot{%
10081 \Hy@pstringdef\Hy@pstringURI{#2}%
10082 \@pdfm@mark{%
10083 bann<<%
10084 /Type/Annot%
10085 /Subtype/Link%
10086 \ifHy@pdfa /F 4\fi
10087 \Hy@setpdfborder
10088 \Hy@setpdfhighlight
10089 \ifx\@urlbordercolor\relax
10090 \else
10091 /C[\@urlbordercolor]%
10092 \fi
10093 /A<<%
10094 /S/URI%
10095 /URI(\Hy@pstringURI)%
10096 \ifHy@href@ismap
10097 /IsMap true%
10098 \fi
10099 \Hy@href@nextactionraw
10100 >>%
10101 >>%
10102 }%
10103 \Hy@colorlink\@urlcolor
10104 }%
10105 #1\Hy@xspace@end
10106 \Hy@EndAnnot
10107 }
10108 \def\Acrobatmenu#1#2{%
10109 \Hy@Acrobatmenu{#1}{#2}{%
10110 \Hy@BeginAnnot{%
10111 \EdefEscapeName\Hy@temp@menu{#1}%
10112 \@pdfm@mark{%
10113 bann<<%
10114 /Type/Annot%
10115 /Subtype/Link%
10116 \ifHy@pdfa /F 4\fi
10117 \Hy@setpdfborder
10118 \Hy@setpdfhighlight
10119 \ifx\@menubordercolor\relax
10120 \else
10121 /C[\@menubordercolor]%
10122 \fi
10123 /A<<%
10124 /S/Named%
10125 /N/\Hy@temp@menu
10126 \Hy@href@nextactionraw

```

```

10127         >>%
10128     >>%
10129 }%
10130     \Hy@colorlink\@menucolor
10131 }%
10132     #2\Hy@xspace@end
10133     \Hy@endAnnot
10134 }%
10135 }
10136
10137 \def\PDF@FinishDoc{%
10138     \Hy@UseMaketitleInfos
10139     \HyInfo@GenerateAddons
10140     \@pdfm@mark{%
10141         docinfo<<%
10142             /Title(\@pdftitle)%
10143             /Subject(\@pdfsubject)%
10144             /Creator(\@pdfcreator)%
10145             \ifx\@pdfcreationdate\@empty
10146             \else
10147                 /CreationDate(\@pdfcreationdate)%
10148             \fi
10149             \ifx\@pdfmoddate\@empty
10150             \else
10151                 /ModDate(\@pdfmoddate)%
10152             \fi
10153             /Author(\@pdfauthor)%
10154             \ifx\@pdfproducer\relax
10155             \else
10156                 /Producer(\@pdfproducer)%
10157             \fi
10158             /Keywords(\@pdfkeywords)%
10159             \ifx\@pdftrapped\@empty
10160             \else
10161                 /Trapped/\@pdftrapped
10162             \fi
10163             \HyInfo@Addons
10164         >>%
10165     }%
10166     \Hy@DisableOption{pdfauthor}%
10167     \Hy@DisableOption{pdftitle}%
10168     \Hy@DisableOption{pdfsubject}%
10169     \Hy@DisableOption{pdfcreator}%
10170     \Hy@DisableOption{addtopdfcreator}%
10171     \Hy@DisableOption{pdfcreationdate}%
10172     \Hy@DisableOption{pdfcreationdate}%
10173     \Hy@DisableOption{pdfmoddate}%
10174     \Hy@DisableOption{pdfproducer}%
10175     \Hy@DisableOption{pdfkeywords}%
10176     \Hy@DisableOption{pdftrapped}%
10177     \Hy@DisableOption{pdfinfo}%
10178 }
10179 \def\PDF@SetupDoc{%
10180     \edef\Hy@temp{%

```

```

10181 \ifHy@pdftoolbar\else /HideToolbar true\fi
10182 \ifHy@pdfmenubar\else /HideMenubar true\fi
10183 \ifHy@pdfwindowui\else /HideWindowUI true\fi
10184 \ifHy@pdfwindow /FitWindow true\fi
10185 \ifHy@pdfcenterwindow /CenterWindow true\fi
10186 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10187 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10188 \Hy@UseNameKey{Direction}\@pdfdirection
10189 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10190 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10191 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10192 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10193 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10194 \Hy@UseNameKey{Duplex}\@pdfduplex
10195 \ifx\@pdfpicktraybypdfsize\@empty
10196 \else
10197 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10198 \fi
10199 \ifx\@pdfprintpagerange\@empty
10200 \else
10201 /PrintPageRange[\@pdfprintpagerange]%
10202 \fi
10203 \ifx\@pdfnumcopies\@empty
10204 \else
10205 /NumCopies \@pdfnumcopies
10206 \fi
10207 }%
10208 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10209 \@pdfm@mark{%
10210 docview<<%
10211 \ifx\@pdfstartpage\@empty
10212 \else
10213 \ifx\@pdfstartview\@empty
10214 \else
10215 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
10216 \fi
10217 \fi
10218 \ifx\@baseurl\@empty
10219 \else
10220 /URI<</Base(\Hy@pstringB)>>%
10221 \fi
10222 /PageMode/\@pdfpagemode
10223 \ifx\Hy@temp\@empty
10224 \else
10225 /ViewerPreferences<<\Hy@temp>>%
10226 \fi
10227 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10228 \ifx\@pdflang\relax
10229 \else
10230 /Lang(\@pdflang)%
10231 \fi
10232 >>%
10233 }%
10234 \ifx\@pdfpagescrop\@empty

```

```

10235 \else
10236 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}}%
10237 \fi
10238 }
10239 </dvipdfm | xetex>
10240 < *dvipdfm | xetex>

```

\hyper@pagetransition

```

10241 \def\hyper@pagetransition{%
10242 \ifx\@pdfpagetransition\relax
10243 \else
10244 \ifx\@pdfpagetransition\@empty
10245 \else
10246 \special{pdf:put @thispage %
10247 <</Trans<</S/\@pdfpagetransition>>>>%
10248 }%
10249 \fi
10250 \fi
10251 }

```

\hyper@pageduration

```

10252 \def\hyper@pageduration{%
10253 \ifx\@pdfpageduration\relax
10254 \else
10255 \ifx\@pdfpageduration\@empty
10256 \else
10257 \special{pdf:put @thispage %
10258 <</Dur \@pdfpageduration>>>%
10259 }%
10260 \fi
10261 \fi
10262 }

10263 \g@addto@macro\Hy@EveryPageBoxHook{%
10264 \hyper@pagetransition
10265 \hyper@pageduration
10266 }

10267 </dvipdfm | xetex>

```

XeTeX uses pdfTeX's method \pdfpagewidth and \pdfpageheight for setting the paper size.

```

10268 < *dvipdfm>
10269 \AddToHook{shipout/firstpage}{%
10270 \ifHy@setpagesize
10271 \begingroup
10272 \ifnum\mag=\@m
10273 \ifdim\stockwidth>\z@
10274 \ifdim\stockheight>\z@
10275 \special{papersize=\the\stockwidth,\the\stockheight}%
10276 \else
10277 \ifdim\paperwidth>\z@
10278 \ifdim\paperheight>\z@
10279 \special{papersize=\the\paperwidth,\the\paperheight}%

```

```

10280         \fi
10281     \fi
10282 \fi
10283 \else
10284     \ifdim\stockwidth=\z@
10285     \ifdim\paperwidth>\z@
10286     \ifdim\paperheight>\z@
10287     \special{papersize=\the\paperwidth,\the\paperheight}%
10288     \fi
10289 \fi
10290 \fi
10291 \fi
10292 \fi
10293 \endgroup
10294 \fi
10295 \Hy@DisableOption{setpagesize}%
10296 }
10297 </dvipdfm>

```

## 44.6 VTeX typesetting system

Provided by MicroPress, May 1998. They require VTeX version 6.02 or newer; see <http://www.micropress-inc.com/> for details.

```

10298 (*vtexhtml)
10299 \providecommand*{\XR@ext}{htm}
10300 \RequirePackage{vtexhtml}
10301 \newif\if@Localurl
10302 \let\PDF@FinishDoc\@empty
10303 \def\PDF@SetupDoc{%
10304     \ifx\@baseurl\@empty
10305     \else
10306     \special{!direct <base href="\@baseurl">}%
10307 \fi
10308 }
10309 \def\@urltype{url}
10310 \def\hyper@link#1#2#3{%
10311     \Hy@VerboseLinkStart{#1}{#2}%
10312     \leavevmode
10313     \special{!direct <a href=%
10314         \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
10315     #3\Hy@xspace@end
10316     \special{!direct </a>}%
10317 }
10318 \def\hyper@linkurl#1#2{%
10319     \begingroup
10320     \hyper@chars
10321     \leavevmode
10322     \MathBSuppress=1\relax
10323     \special{!direct <a href=%
10324         \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
10325     #1\Hy@xspace@end
10326     \MathBSuppress=0\relax
10327     \special{!direct </a>}%
10328 \endgroup

```

```

10329 }
10330 \def\hyper@linkfile#1#2#3{%
10331   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
10332 }
10333 \def\hyper@linkstart#1#2{%
10334   \Hy@VerboseLinkStart{#1}{#2}%
10335   \def\Hy@tempa{#1}\ifx\Hy@tempa \@urltype
10336     \@Localurltrue
10337     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
10338   \else
10339     \@Localurlfalse
10340     \begingroup
10341       \hyper@chars
10342       \special{!aref \HyperDestNameFilter{#2}}%
10343     \endgroup
10344   \fi
10345 }
10346 \def\hyper@linkend{%
10347   \if@Localurl
10348     \special{!endaref}%
10349   \else
10350     \special{!direct </a>}%
10351   \fi
10352 }
10353 \Hy@WrapperDef\hyper@anchorstart#1{%
10354   \Hy@SaveLastskip
10355   \Hy@VerboseAnchor{#1}%
10356   \begingroup
10357     \hyper@chars
10358     \special{!aname #1}%
10359     \special{!direct <a name=%
10360       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10361   \endgroup
10362   \Hy@activeanchortrue
10363 }
10364 \def\hyper@anchorend{%
10365   \special{!direct </a>}%
10366   \Hy@activeanchorfalse
10367   \Hy@RestoreLastskip
10368 }
10369 \Hy@WrapperDef\hyper@anchor#1{%
10370   \Hy@SaveLastskip
10371   \Hy@VerboseAnchor{#1}%
10372   \begingroup
10373     \let\protect=\string
10374     \hyper@chars
10375     \leavevmode
10376     \special{!aname #1}%
10377     \special{!direct <a name=%
10378       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10379   \endgroup
10380   \Hy@activeanchortrue
10381   \bgroup\anchor@spot\egroup
10382   \special{!direct </a>}%

```

```

10383 \Hy@activeanchorfalse
10384 \Hy@RestoreLastskip
10385 }
10386 \def\@Form[#1]{%
10387 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10388 }
10389 \let\@endForm\@empty
10390 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10391 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10392 }
10393 \def\@TextField[#1]#2{% parameters, label
10394 \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10395 }
10396 \def\@CheckBox[#1]#2{% parameters, label
10397 \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10398 }
10399 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10400 \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10401 }
10402 \def\@PushButton[#1]#2{% parameters, label
10403 \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10404 }
10405 \def\@Reset[#1]#2{%
10406 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10407 }
10408 \def\@Submit[#1]#2{%
10409 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10410 }
10411 \</vtexhtml>
10412 \<vtex>

```

VTeX version 6.68 supports `\mediawidth` and `\mediaheight`. The `\ifx` construct is better than a `\csname`, because it avoids the definition and the hash table entry of a previous undefined macro.

```

10413 \ifcsname mediaheight\endcsname
10414 \ifHy@setpagesize
10415 \providecommand*\VTeXInitMediaSize{%
10416 \ifnum\mag=\@m
10417 \ifdim\stockwidth>\z@
10418 \ifdim\stockheight>\z@
10419 \setlength\mediaheight\stockheight
10420 \setlength\mediawidth\stockwidth
10421 \else
10422 \ifdim\paperwidth>\z@
10423 \ifdim\paperheight>\z@
10424 \setlength\mediaheight\paperheight
10425 \setlength\mediawidth\paperwidth
10426 \fi
10427 \fi
10428 \fi
10429 \else
10430 \ifdim\stockwidth=\z@
10431 \ifdim\paperwidth>\z@
10432 \ifdim\paperheight>\z@

```

```

10433         \setlength\mediaheight\paperheight
10434         \setlength\mediawidth\paperwidth
10435     \fi
10436 \fi
10437 \fi
10438 \fi
10439 \fi
10440 }%
10441 \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10442 \fi
10443 \Hy@DisableOption{setpagesize}%
10444 \fi

```

Older versions of VTeX require xyz in lower case.

```

10445 \providecommand*\@pdfview{xyz}
10446 \providecommand*\@pdfborder{0 0 1}
10447 \providecommand*\@pdfborderstyle{}
10448 \let\CurrentBorderColor\@linkbordercolor
10449 \Hy@WrapperDef\hyper@anchor#1{%
10450     \Hy@SaveLastskip
10451     \Hy@VerboseAnchor{#1}%
10452     \begingroup
10453     \let\protect=\string
10454     \hyper@chars
10455     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10456 \endgroup
10457 \Hy@activeanchortrue
10458 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10459 \Hy@activeanchorfalse
10460 \Hy@RestoreLastskip
10461 }
10462 \Hy@WrapperDef\hyper@anchorstart#1{%
10463     \Hy@SaveLastskip
10464     \Hy@VerboseAnchor{#1}%
10465     \begingroup
10466     \hyper@chars
10467     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10468 \endgroup
10469 \Hy@activeanchortrue
10470 }
10471 \def\hyper@anchorend{%
10472     \Hy@activeanchorfalse
10473     \Hy@RestoreLastskip
10474 }
10475 \def\@urltype{url}
10476 \def\Hy@undefinedname{UNDEFINED}
10477 \def\hyper@linkstart#1#2{%
10478     \Hy@VerboseLinkStart{#1}{#2}%
10479     \Hy@pstringdef\Hy@pstringURI{#2}%
10480     \expandafter\Hy@colorlink\csname @#1color\endcsname
10481     \ifundefined{#1bordercolor}{%
10482         \let\CurrentBorderColor\relax
10483     }{%
10484         \edef\CurrentBorderColor{%
10485             \csname @#1bordercolor\endcsname

```

```

10486 }%
10487 }%
10488 \def\Hy@tempa{#1}%
10489 \ifx\Hy@tempa\@urltype
10490 \special{!%
10491   aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10492   \ifHy@href@ismap
10493     /IsMap true%
10494   \fi
10495   \Hy@href@nextactionraw
10496   >%
10497   a=<%
10498   \ifHy@pdfa /F 4\fi
10499   \Hy@setpdfborder
10500   \ifx\CurrentBorderColor\relax
10501   \else
10502     /C [\CurrentBorderColor]%
10503   \fi
10504   >%
10505   }%
10506 \else
10507 \protected@edef\Hy@testname{#2}%
10508 \ifx\Hy@testname\@empty
10509 \Hy@Warning{%
10510   Empty destination name,\MessageBreak
10511   using ``\Hy@undefinedname'%
10512   }%
10513 \let\Hy@testname\Hy@undefinedname
10514 \fi
10515 \special{!%
10516   aref \expandafter\HyperDestNameFilter
10517   \expandafter{\Hy@testname};%
10518   a=<%
10519   \ifHy@pdfa /F 4\fi
10520   \Hy@setpdfborder
10521   \ifx\CurrentBorderColor\relax
10522   \else
10523     /C [\CurrentBorderColor]%
10524   \fi
10525   >%
10526   }%
10527 \fi
10528 }
10529 \def\hyper@linkend{%
10530 \special{!endaref}%
10531 \Hy@endcolorlink
10532 }
10533 \def\hyper@linkfile#1#2#3{%
10534 \leavevmode
10535 \def\Hy@pstringF{#2}%
10536 \Hy@CleanupFile\Hy@pstringF
10537 \special{!%
10538   aref <%
10539   \ifnum\Hy@VTeXversion>753 \ifHy@pdfnewwindow n\fi\fi

```

```

10540 f=\Hy@pstringF>#3;%
10541 a=<%
10542   \ifHy@pdfa /F 4\fi
10543   \Hy@setpdfborder
10544   \ifx\@filebordercolor\relax
10545   \else
10546     /C [\@filebordercolor]%
10547   \fi
10548 >%
10549 }%
10550 \Hy@colorlink\@filecolor
10551 #1\Hy@xspace@end
10552 \Hy@endcolorlink
10553 \special{!endaref}%
10554 }
10555 \def\hyper@linkurl#1#2{%
10556   \begingroup
10557   \Hy@pstringdef\Hy@pstringURI{#2}%
10558   \hyper@chars
10559   \leavevmode
10560   \special{!%
10561     aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10562     \ifHy@href@ismap
10563     /IsMap true%
10564     \fi
10565     \Hy@href@nextactionraw
10566     >;%
10567     a=<%
10568     \ifHy@pdfa /F 4\fi
10569     \Hy@setpdfborder
10570     \ifx\@urlbordercolor\relax
10571     \else
10572       /C [\@urlbordercolor]%
10573     \fi
10574     >%
10575   }%
10576   \Hy@colorlink\@urlcolor
10577   #1\Hy@xspace@end
10578   \Hy@endcolorlink
10579   \special{!endaref}%
10580 \endgroup
10581 }
10582 \def\hyper@link#1#2#3{%
10583   \Hy@VerboseLinkStart{#1}{#2}%
10584   \@ifundefined{@#1bordercolor}{%
10585     \let\CurrentBordercolor\relax
10586   }{%
10587     \edef\CurrentBordercolor{\csname @#1bordercolor\endcsname}%
10588   }%
10589   \leavevmode
10590   \protected@edef\Hy@testname{#2}%
10591   \ifx\Hy@testname\@empty
10592     \Hy@Warning{%
10593       Empty destination name,\MessageBreak

```

```

10594     using ` \Hy@undefinedname'%
10595 }%
10596 \let \Hy@testname \Hy@undefinedname
10597 \fi
10598 \special{!%
10599   aref \expandafter \HyperDestNameFilter
10600     \expandafter{ \Hy@testname};%
10601   a=<%
10602     \ifHy@pdfa /F 4 \fi
10603     \Hy@setpdfborder
10604     \ifx \CurrentBorderColor \relax
10605     \else
10606       /C [ \CurrentBorderColor]%
10607     \fi
10608   >%
10609 }%
10610 \expandafter
10611 \Hy@colorlink \csmame @#1color \endcsname
10612   #3 \Hy@xspace@end
10613 \Hy@endcolorlink
10614 \special{!endaref}%
10615 }
10616 \def \hyper@image#1#2{%
10617   \hyper@linkurl{#2}{#1}%
10618 }
10619 \def \@hyper@launch run:#1\ \#2#3{%
10620   \Hy@pstringdef \Hy@pstringF{#1}%
10621   \Hy@pstringdef \Hy@pstringP{#3}%
10622   \leavevmode
10623   \special{!aref %
10624     <u=%
10625       /Type /Action%
10626       /S /Launch%
10627       /F ( \Hy@pstringF)%
10628       \Hy@SetNewWindow
10629       \ifx \#3 \ \
10630       \else
10631         /Win << /F ( \Hy@pstringF) /P ( \Hy@pstringP) >>%
10632       \fi
10633       \Hy@href@nextactionraw
10634     >,%
10635     a=<%
10636       \ifHy@pdfa /F 4 \fi
10637       \Hy@setpdfborder
10638       \ifx \@runbordercolor \relax
10639       \else
10640         /C [ \@runbordercolor]%
10641       \fi
10642     >%
10643   }%
10644   \Hy@colorlink \@runcolor
10645   #2 \Hy@xspace@end
10646 \Hy@endcolorlink
10647 \special{!endaref}%

```

```

10648 }
10649 \def\Acrobatmenu#1#2{%
10650   \EdefEscapeName\Hy@temp@menu{#1}%
10651   \Hy@Acrobatmenu{#1}{#2}{%
10652     \special{!%
10653       aref <u=/S /Named /N /\Hy@temp@menu>;%
10654       a=<%
10655         \ifHy@pdfa /F 4\fi
10656         \Hy@setpdfborder
10657         \ifx\@menubordercolor\relax
10658         \else
10659           /C[\@menubordercolor]%
10660         \fi
10661       >%
10662     }%
10663     \Hy@colorlink\@menucolor
10664     #2\Hy@xspace@end
10665     \Hy@endcolorlink
10666     \special{!endaref}%
10667   }%
10668 }

```

The following code (transition effects) is made by Alex Kostin.

The code below makes sense for V<sub>T</sub>E<sub>X</sub> 7.02 or later.

Please never use \@ifundefined{V<sub>T</sub>E<sub>X</sub>version}{..}{..} *globally*.

```

10669 \ifnum\Hy@VTeXversion<702 %
10670 \else
10671   \def\hyper@pagetransition{%
10672     \ifx\@pdfpagetransition\relax
10673     \else
10674       \ifx\@pdfpagetransition\@empty

```

Standard incantation.

1. Does an old entry have to be deleted? 2. If 1=yes, how to delete?

```

10675   \else
10676     \hvtex@parse@trans\@pdfpagetransition
10677   \fi
10678 \fi
10679 }%

```

I have to write an “honest” parser to convert raw PDF code into V<sub>T</sub>E<sub>X</sub> \special.  
(AVK)

Syntax of V<sub>T</sub>E<sub>X</sub> \special{!trans <transition\_effect>}:

```

<transition_effect> ::= <transition_style>[,<transition_duration>]
<transition_style> ::= <Blinds_effect> | <Box_effect> |
                      <Dissolve_effect> | <Glitter_effect> |
                      <Split_effect> | <Wipe_effect>
<Blinds_effect> ::= B[<effect_dimension>]
<Box_effect> ::= X[<effect_motion>]
<Dissolve_effect> ::= D
<Glitter_effect> ::= G[<effect_direction>]
<Split_effect> ::= S[<effect_motion>][<effect_dimension>]
<Wipe_effect> ::= W[<effect_direction>]
<Replace_effect> ::= R

```

```

<effect_direction> ::= <number>
<effect_dimension> ::= H | V
<effect_motion> ::= I | O
<transition_duration> ::= <number>

```

Transition codes:

```

10680 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10681 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10682 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10683 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10684 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10685 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10686 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

10687 \def\hvtex@par@dimension{/Dm}%
10688 \def\hvtex@par@direction{/Di}%
10689 \def\hvtex@par@duration{/D}%
10690 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

10691 \def\hvtex@gettoken{%
10692   \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10693 }%

```

Notice that tokens in the input buffer must be space delimited.

```

10694 \def\hvtex@gettoken@#1 #2\@nil{%
10695   \edef\hvtex@token{#1}%
10696   \edef\hvtex@buffer{#2}%
10697 }%
10698 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

10699 \let\hvtex@trans@code\@empty
10700 \let\hvtex@param@dimension\@empty
10701 \let\hvtex@param@direction\@empty
10702 \let\hvtex@param@duration\@empty
10703 \let\hvtex@param@motion\@empty
10704 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

10705 \hvtex@gettoken
10706 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

10707   \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

10708   \else
10709     \hvtex@gettoken
10710   \fi
10711 \fi
10712 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

10713 \hvtex@trans@params
10714 }%

```

Reentrant macro to parse optional parameters.

```

10715 \def\hvtex@trans@params{%
10716   \ifx\hvtex@buffer\@empty
10717   \else
10718     \hvtex@gettoken
10719     \let\hvtex@trans@par\hvtex@token
10720     \ifx\hvtex@buffer\@empty
10721     \else
10722       \hvtex@gettoken
10723       \ifx\hvtex@trans@par\hvtex@par@duration
/D is the effect duration in seconds. VTEX special takes it in milliseconds.
10724       \let\hvtex@param@duration\hvtex@token
10725       \else \ifx\hvtex@trans@par\hvtex@par@motion
/M can be either /I or /O
10726       \expandafter\edef\expandafter\hvtex@param@motion
10727       \expandafter{\expandafter\@gobble\hvtex@token}%
10728       \else \ifx\hvtex@trans@par\hvtex@par@dimension
/Dm can be either /H or /V
10729       \expandafter\edef\expandafter\hvtex@param@dimension
10730       \expandafter{\expandafter\@gobble\hvtex@token}%
10731       \else \ifx\hvtex@trans@par\hvtex@par@direction

```

Valid values for /Di are 0, 270, 315 (the Glitter effect) or 0, 90, 180, 270 (the Wipe effect).

```

10732       \let\hvtex@param@direction\hvtex@token
10733       \fi\fi\fi\fi
10734       \fi
10735       \fi
10736       \ifx\hvtex@buffer\@empty
10737       \let\next\hvtex@produce@trans
10738       \else
10739       \let\next\hvtex@trans@params
10740       \fi
10741       \next
10742   }%

```

Merge <transition\_effect> and issue the special when possible. Too lazy to validate optional parameters.

```

10743 \def\hvtex@produce@trans{%
10744   \let\vtex@trans@special\@empty
10745   \if S\hvtex@trans@code
10746     \edef\vtex@trans@special{\hvtex@trans@code
10747       \hvtex@param@dimension\hvtex@param@motion}%
10748   \else\if B\hvtex@trans@code
10749     \edef\vtex@trans@special{%
10750       \hvtex@trans@code\hvtex@param@dimension
10751     }%
10752   \else\if X\hvtex@trans@code
10753     \edef\vtex@trans@special{%
10754       \hvtex@trans@code\hvtex@param@motion
10755     }%
10756   \else\if W\hvtex@trans@code
10757     \edef\vtex@trans@special{%

```

```

10758     \hvtex@trans@code\hvtex@param@direction
10759   }%
10760   \else\if D\hvtex@trans@code
10761     \let\vtex@trans@special\hvtex@trans@code
10762   \else\if R\hvtex@trans@code
10763     \let\vtex@trans@special\hvtex@trans@code
10764   \else\if G\hvtex@trans@code
10765     \edef\vtex@trans@special{%
10766       \hvtex@trans@code\hvtex@param@direction
10767     }%
10768   \fi\fi\fi\fi\fi\fi
10769   \ifx\vtex@trans@special\@empty
10770   \else
10771     \ifx\hvtex@param@duration\@empty
10772     \else
10773       \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

10774     \multiply\dimen@\@m
10775     \edef\vtex@trans@special{%
10776       \vtex@trans@special,\strip@pt\dimen@
10777     }%
10778   \fi

```

And all the mess is just for this.

```

10779     \special{!trans \vtex@trans@special}%
10780   \fi
10781 }%
10782 \def\hyper@pageduration{%
10783   \ifx\@pdfpageduration\relax
10784   \else
10785     \ifx\@pdfpageduration\@empty
10786       \special{!duration-}%
10787     \else
10788       \special{!duration \@pdfpageduration}%
10789     \fi
10790   \fi
10791 }%
10792 \g@addto@macro\Hy@EveryPageBoxHook{%
10793   \hyper@pagetransition
10794   \hyper@pageduration
10795 }%
10796 \fi

```

Caution: In opposite to the other drivers, the argument of `\special{!onopen #1}` is a reference name. The VTeX's postscript mode will work with a version higher than 7.0x.

The command `\VTeXOS` is defined since version 7.45. Magic values encode the operating system:

- 1: WinTel
- 2: Linux
- 3: OS/2
- 4: MacOS
- 5: MacOS/X

```

10797 \ifx\@pdfproducer\relax
10798 \def\@pdfproducer{VTeX}%
10799 \ifnum\Hy@VTeXversion>\z@
10800 \count@\VTeXversion
10801 \divide\count@ 100 %
10802 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10803 \multiply\count@ -100 %
10804 \advance\count@\VTeXversion
10805 \edef\@pdfproducer{%
10806 \@pdfproducer
10807 .\ifnum\count@<10 0\fi\the\count@
10808 \ifx\VTeXOS\@undefined\else
10809 \ifnum\VTeXOS>0 %
10810 \ifnum\VTeXOS<6 %
10811 \space(
10812 \ifcase\VTeXOS
10813 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10814 \fi
10815 )%
10816 \fi
10817 \fi
10818 \fi
10819 ,\space
10820 \ifnum\OpMode=\@ne PDF\else PS\fi
10821 \space backend%
10822 \ifx\gexmode\@undefined\else
10823 \ifnum\gexmode>\z@\space with GeX\fi
10824 \fi
10825 }%
10826 \fi
10827 \fi

```

Current `!pdfinfo` key syntax:

Key	Field	Type
<b>a</b>	<b>A</b> uthor	String
<b>b</b>	<b>C</b> rop <b>B</b> ox	String
<b>c</b>	<b>C</b> reator	String
<b>k</b>	<b>K</b> eywords	String
<b>l</b>	<b>P</b> age <b>L</b> ayout	PS
<b>p</b>	<b>P</b> age <b>M</b> ode	PS
<b>r</b>	<b>P</b> roducer	String
<b>s</b>	<b>S</b> ubject	String
<b>t</b>	<b>T</b> itle	String
<b>u</b>	<b>U</b> RI	PS
<b>v</b>	<b>V</b> iew <b>P</b> references	PS

Note: PS objects that are dicts are in `<<..>>` (yuck; no choice).

```

10828 \def\PDF@SetupDoc{%
10829 \ifx\@pdfpagescrop\@empty
10830 \else
10831 \special{!pdfinfo b=<\@pdfpagescrop>}%
10832 \fi
10833 \ifx\@pdfstartpage\@empty
10834 \else

```

```

10835 \ifx\@pdfstartview\@empty
10836 \else
10837 \special{!onopen Page\@pdfstartpage}%
10838 \fi
10839 \fi
10840 \special{!pdffinfo p=</\@pdfpagemode>}%
10841 \ifx\@baseurl\@empty
10842 \else
10843 \special{!pdffinfo u=<<</Base (\@baseurl)>>>}%
10844 \fi
10845 \special{!pdffinfo v=<<<%
10846 \ifHy@pdftoolbar\else /HideToolbar true\fi
10847 \ifHy@pdfmenubar\else /HideMenubar true\fi
10848 \ifHy@pdfwindowui\else /HideWindowUI true\fi
10849 \ifHy@pdfwindow /FitWindow true\fi
10850 \ifHy@pdfcenterwindow /CenterWindow true\fi
10851 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10852 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10853 \Hy@UseNameKey{Direction}\@pdfdirection
10854 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10855 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10856 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10857 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10858 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10859 \Hy@UseNameKey{Duplex}\@pdfduplex
10860 \ifx\@pdfpicktraybypdfsize\@empty
10861 \else
10862 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10863 \fi
10864 \ifx\@pdfprintpagerange\@empty
10865 \else
10866 /PrintPageRange[\@pdfprintpagerange]%
10867 \fi
10868 \ifx\@pdfnumcopies\@empty
10869 \else
10870 /NumCopies \@pdfnumcopies
10871 \fi
10872 >>>}%
10873 \ifx\@pdfpagelayout\@empty
10874 \else
10875 \special{!pdffinfo l=</\@pdfpagelayout\space>}%
10876 \fi
10877 }%
10878 \HyInfo@AddonUnsupportedtrue
10879 \define@key{Hyp}{pdfcreationdate}{%
10880 \Hy@Warning{%
10881 VTeX does not support pdfcreationdate.\MessageBreak
10882 Therefore its setting is ignored%
10883 }%
10884 }
10885 \define@key{Hyp}{pdfmoddate}{%
10886 \Hy@Warning{%
10887 VTeX does not support pdfmoddate.\MessageBreak
10888 Therefore its setting is ignored%

```

```

10889 }%
10890 }
10891 \def\PDF@FinishDoc{%
10892   \Hy@UseMaketitleInfos
10893   \HyInfo@TrappedUnsupported
10894   \special{!pdfinfo a=<\@pdfauthor>}%
10895   \special{!pdfinfo t=<\@pdftitle>}%
10896   \special{!pdfinfo s=<\@pdfsubject>}%
10897   \special{!pdfinfo c=<\@pdfcreator>}%
10898   \ifx\@pdfproducer\relax
10899   \else
10900     \special{!pdfinfo r=<\@pdfproducer>}%
10901   \fi
10902   \special{!pdfinfo k=<\@pdfkeywords>}%
10903   \Hy@DisableOption{pdfauthor}%
10904   \Hy@DisableOption{pdftitle}%
10905   \Hy@DisableOption{pdfsubject}%
10906   \Hy@DisableOption{pdfcreator}%
10907   \Hy@DisableOption{addtopdfcreator}%
10908   \Hy@DisableOption{pdfcreationdate}%
10909   \Hy@DisableOption{pdfcreationdate}%
10910   \Hy@DisableOption{pdfmoddate}%
10911   \Hy@DisableOption{pdfproducer}%
10912   \Hy@DisableOption{pdfkeywords}%
10913   \Hy@DisableOption{pdftrapped}%
10914   \Hy@DisableOption{pdfinfo}%
10915 }
10916 </vtx>

```

## 44.7 Fix for Adobe bug number 466320

If a destination occurs at the very begin of a page, the destination is moved to the previous page by Adobe Distiller 5. As workaround Adobe suggests:

```

/showpage {
  //showpage
  clippath stroke erasepage
} bind def

```

But unfortunately this fix generates an empty page at the end of the document. Therefore another fix is used by writing some clipped text.

```

10917 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
10918 <packageEnd>\providecommand*{\Hy@DistillerDestFix}{%
10919 <*pdfmark | dviwindo>
10920 \def\Hy@DistillerDestFix{%
10921   \begingroup
10922     \let\x\literalps@out

```

The fix has to be passed unchanged through GeX, if VTeX in PostScript mode with GeX is used.

```

10923   \ifnum \@ifundefined{OpMode}{0}{%
10924     \@ifundefined{gexmode}{0}{%
10925       \ifnum\gexmode>0 \OpMode\else 0\fi
10926     }>1 %

```

```

10927 \def\x##1{%
10928 \immediate\special{!=##1}%
10929 }%
10930 \fi
10931 \x{%
10932 /product where{%
10933 pop %
10934 product(Distiller)search{%
10935 pop pop pop %
10936 version(.)search{%
10937 exch pop exch pop%
10938 (3011)eq{%
10939 gsave %
10940 newpath 0 0 moveto closepath clip%
10941 /Courier findfont 10 scalefont setfont %
10942 72 72 moveto(.)show %
10943 grestore%
10944 }if%
10945 }{pop}ifelse%
10946 }{pop}ifelse%
10947 }if%
10948 }%
10949 \endgroup
10950 }
10951 \pdfmark | dviwindo)

```

## 44.8 Direct pdfmark support

Drivers that load `pdfmark.def` have to provide the correct macro definitions of

```

\pdfproducer for document information
\literalps@out PostScript output
\headerps@out PostScript output that goes in the header area

```

and the correct definitions of the following PostScript procedures:

```

H.S      start of anchor, link or rect
#1 H.A   end of anchor, argument=baselineskip in pt
#1 H.L   end of link, argument=baselineskip in pt
H.R      end of rect
H.B      raw rect code

```

```

10952 (*pdfmark)
10953 \Hy@breaklinks@unsupported
10954 \def\HyPat@ObjRef{%
10955 \[~{}]+\}%
10956 }
10957 \Hy@WrapperDef\hyper@anchor#1{%
10958 \Hy@SaveLastskip
10959 \Hy@VerboseAnchor{#1}%
10960 \begingroup
10961 \pdfmark[\anchor@spot]{%
10962 pdfmark=/DEST,%
10963 linktype=anchor,%
10964 View=/\@pdfview \@pdfviewparams,%

```

```

10965     DestAnchor={#1}%
10966   }%
10967 \endgroup
10968 \Hy@RestoreLastskip
10969 }
10970 \@ifundefined{hyper@anchorstart}{\endinput}
10971 \Hy@WrapperDef\hyper@anchorstart#1{%
10972   \Hy@SaveLastskip
10973   \Hy@VerboseAnchor{#1}%
10974   \literalps@out{H.S}%
10975   \Hy@AllowHyphens
10976   \xdef\hyper@currentanchor{#1}%
10977   \Hy@activeanchortrue
10978 }
10979 \def\hyper@anchorend{%
10980   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10981   \pdfmark{%
10982     pdfmark=/DEST,%
10983     linktype=anchor,%
10984     View=/\@pdfview \@pdfviewparams,%
10985     DestAnchor=\hyper@currentanchor,%
10986   }%
10987   \Hy@activeanchorfalse
10988   \Hy@RestoreLastskip
10989 }
10990 \def\hyper@linkstart#1#2{%
10991   \Hy@VerboseLinkStart{#1}{#2}%
10992   \ifHy@breaklinks
10993   \else
10994     \leavevmode
10995     \ifmmode
10996       \def\Hy@LinkMath{$}%
10997     \else
10998       \let\Hy@LinkMath\@empty
10999     \fi
11000     \Hy@SaveSpaceFactor
11001     \hbox\bgroup
11002     \Hy@RestoreSpaceFactor
11003     \Hy@LinkMath
11004   \fi
11005   \expandafter\Hy@colorlink\csname @#1color\endcsname
11006   \literalps@out{H.S}%
11007   \Hy@AllowHyphens
11008   \xdef\hyper@currentanchor{#2}%
11009   \gdef\hyper@currentlinktype{#1}%
11010 }
11011 \def\hyper@linkend{%
11012   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
11013   \@ifundefined{@\hyper@currentlinktype bordercolor}{%
11014     \let\Hy@tempcolor\relax
11015   }{%
11016     \edef\Hy@tempcolor{%
11017       \csname @\hyper@currentlinktype bordercolor\endcsname
11018     }%

```

```

11019 }%
11020 \pdfmark{%
11021   pdfmark=/ANN,%
11022   linktype=link,%
11023   Subtype=/Link,%
11024   PDFAFlags=4,%
11025   Dest=\hyper@currentanchor,%
11026   AcroHighlight=\@pdfhighlight,%
11027   Border=\@pdfborder,%
11028   BorderStyle=\@pdfborderstyle,%
11029   Color=\Hy@tempcolor,%
11030   Raw=H.B%
11031 }%
11032 \Hy@endcolorlink
11033 \ifHy@breaklinks
11034 \else
11035   \Hy@LinkMath
11036   \Hy@SaveSpaceFactor
11037 \egroup
11038 \Hy@RestoreSpaceFactor
11039 \fi
11040 }

```

We have to allow for `\baselineskip` having an optional stretch and shrink (you meet this in slide packages, for instance), so we need to strip off the junk. David Carlisle, of course, wrote this bit of code.

```

11041 \beginingroup
11042 \catcode`P=12 %
11043 \catcode`T=12 %
11044 \lowercase{\endgroup
11045 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
11046 }
11047 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

`\hyper@pagetransition`

```

11048 \def\hyper@pagetransition{%
11049   \ifx\@pdfpagetransition\relax
11050   \else
11051     \ifx\@pdfpagetransition\@empty
11052       % 1. Does an old entry have to be deleted?
11053       % 2. If 1=yes, how to delete?
11054     \else
11055       \pdfmark{%
11056         pdfmark=/PUT,%
11057         Raw={%
11058           \string{ThisPage\string}%
11059           <</Trans << /S /\@pdfpagetransition\space >> >>%
11060         }%
11061       }%
11062     \fi
11063   \fi
11064 }

```

`\hyper@pageduration`

```

11065 \def\hyper@pageduration{%
11066 \ifx\@pdfpageduration\relax
11067 \else
11068 \ifx\@pdfpageduration\@empty
11069 % 1. Does an old entry have to be deleted?
11070 % 2. If 1=yes, how to delete?
11071 \else
11072 \pdfmark{%
11073 pdfmark=/PUT,%
11074 Raw={%
11075 \string{ThisPage\string}%
11076 <</Dur \@pdfpageduration>>%
11077 }%
11078 }%
11079 \fi
11080 \fi
11081 }

11082 \g@addto@macro\Hy@EveryPageBoxHook{%
11083 \hyper@pagetransition
11084 \hyper@pageduration
11085 }

11086 \def\hyper@image#1#2{%
11087 \hyper@linkurl{#2}{#1}%
11088 }
11089 \def\Hy@undefinedname{UNDEFINED}
11090 \def\hyper@link#1#2#3{%
11091 \Hy@VerboseLinkStart{#1}{#2}%
11092 \@ifundefined{@#1bordercolor}{%
11093 \let\Hy@tempcolor\relax
11094 }{%
11095 \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
11096 }%
11097 \begingroup
11098 \protected@edef\Hy@testname{#2}%
11099 \ifx\Hy@testname\@empty
11100 \Hy@Warning{%
11101 Empty destination name,\MessageBreak
11102 using '\Hy@undefinedname'%
11103 }%
11104 \let\Hy@testname\Hy@undefinedname
11105 \fi
11106 \pdfmark[{#3}{%
11107 Color=\Hy@tempcolor,%
11108 linktype={#1},%
11109 AcroHighlight=\@pdfhighlight,%
11110 Border=\@pdfborder,%
11111 BorderStyle=\@pdfborderstyle,%
11112 pdfmark=/ANN,%
11113 Subtype=/Link,%
11114 PDFAFlags=4,%
11115 Dest=\Hy@testname
11116 }%
11117 \endgroup

```

```

11118 }
11119 \newtoks\pdf@docset
11120 \def\PDF@FinishDoc{%
11121   \Hy@UseMaketitleInfos
11122   \HyInfo@GenerateAddons
11123   \let\Hy@temp\@empty
11124   \ifx\@pdfcreationdate\@empty
11125   \else
11126     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
11127   \fi
11128   \ifx\@pdfmoddate\@empty
11129   \else
11130     \expandafter\def\expandafter\Hy@temp\expandafter{%
11131       \Hy@temp
11132       ModDate=\@pdfmoddate,%
11133     }%
11134   \fi
11135   \ifx\@pdfproducer\relax
11136   \else
11137     \expandafter\def\expandafter\Hy@temp\expandafter{%
11138       \Hy@temp
11139       Producer=\@pdfproducer,%
11140     }%
11141   \fi
11142   \expandafter
11143   \pdfmark\expandafter{%
11144     \Hy@temp
11145     pdfmark=/DOCINFO,%
11146     Title=\@pdftitle,%
11147     Subject=\@pdfsubject,%
11148     Creator=\@pdfcreator,%
11149     Author=\@pdfauthor,%
11150     Keywords=\@pdfkeywords,%
11151     Trapped=\@pdftrapped
11152   }%
11153   \ifx\HyInfo@Addons\@empty
11154   \else
11155     \pdfmark{%
11156       pdfmark=/DOCINFO,%
11157       Raw={\HyInfo@Addons}%
11158     }%
11159   \fi
11160   \Hy@DisableOption{pdfauthor}%
11161   \Hy@DisableOption{pdftitle}%
11162   \Hy@DisableOption{pdfsubject}%
11163   \Hy@DisableOption{pdfcreator}%
11164   \Hy@DisableOption{addtopdfcreator}%
11165   \Hy@DisableOption{pdfcreationdate}%
11166   \Hy@DisableOption{pdfcreationdate}%
11167   \Hy@DisableOption{pdfmoddate}%
11168   \Hy@DisableOption{pdfproducer}%
11169   \Hy@DisableOption{pdfkeywords}%
11170   \Hy@DisableOption{pdftrapped}%
11171   \Hy@DisableOption{pdfinfo}%

```

```

11172 }
11173 \def\PDF@SetupDoc{%
11174   \def\Hy@temp{}%
11175   \ifx\@pdfstartpage\@empty
11176   \else
11177     \ifx\@pdfstartview\@empty
11178     \else
11179       \edef\Hy@temp{%
11180         ,Page=\@pdfstartpage
11181         ,View=\@pdfstartview
11182       }%
11183     \fi
11184   \fi
11185   \edef\Hy@temp{%
11186     \noexpand\pdfmark{%
11187       pdfmark=/DOCVIEW,%
11188       PageMode=/\@pdfpagemode
11189     }\Hy@temp
11190   }%
11191 }%
11192 \Hy@temp
11193 \ifx\@pdfpagescrop\@empty
11194 \else
11195   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11196 \fi
11197 \edef\Hy@temp{%
11198   \ifHy@pdftoolbar\else /HideToolbar true\fi
11199   \ifHy@pdfmenubar\else /HideMenubar true\fi
11200   \ifHy@pdfwindowui\else /HideWindowUI true\fi
11201   \ifHy@pdfwindow /FitWindow true\fi
11202   \ifHy@pdfcenterwindow /CenterWindow true\fi
11203   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
11204   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11205   \Hy@UseNameKey{Direction}\@pdfdirection
11206   \Hy@UseNameKey{ViewArea}\@pdfviewarea
11207   \Hy@UseNameKey{ViewClip}\@pdfviewclip
11208   \Hy@UseNameKey{PrintArea}\@pdfprintarea
11209   \Hy@UseNameKey{PrintClip}\@pdfprintclip
11210   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11211   \Hy@UseNameKey{Duplex}\@pdfduplex
11212   \ifx\@pdfpicktraybypdfsize\@empty
11213   \else
11214     /PickTrayByPDFSize \@pdfpicktraybypdfsize
11215   \fi
11216   \ifx\@pdfprintpagerange\@empty
11217   \else
11218     /PrintPageRange[\@pdfprintpagerange]%
11219   \fi
11220   \ifx\@pdfnumcopies\@empty
11221   \else
11222     /NumCopies \@pdfnumcopies
11223   \fi
11224 }%
11225 \Hy@pstringdef\Hy@pstringB{\@baseurl}%

```

```

11226 \pdfmark{%
11227   pdfmark=/PUT,%
11228   Raw={%
11229     \string{Catalog\string}<<%
11230     \ifx\Hy@temp\@empty
11231     \else
11232       /ViewerPreferences<<\Hy@temp>>%
11233     \fi
11234     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11235     \ifx\@pdflang\relax
11236     \else
11237       /Lang(\@pdflang)%
11238     \fi
11239     \ifx\@baseurl\@empty
11240     \else
11241       /URI<</Base(\Hy@pstringB)>>%
11242     \fi
11243   >>%
11244 }%
11245 }%
11246 }
11247 \</pdfmark>
11248 \*pdfmarkbase)

```

We define a single macro, pdfmark, which uses the ‘keyval’ system to define the various allowable keys; these are *exactly* as listed in the pdfmark reference for Acrobat 3.0. The only addition is pdfmark which specifies the type of pdfmark to create (like ANN, LINK etc). The surrounding round and square brackets in the pdfmark commands are supplied, but you have to put in / characters as needed for the values.

```

11249 \newif\ifHy@pdfmarkerror
11250 \def\pdfmark{\@ifnextchar{\pdfmark@}{\pdfmark@[]}}
11251 \def\pdfmark@[#1]#2{%
11252   \Hy@pdfmarkerrorfalse
11253   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
11254   \@processme
11255   \let\pdf@type\relax
11256   \let\pdf@objdef\@empty
11257   \kvsetkeys{PDF}{#2}%
11258   \ifHy@pdfmarkerror
11259   \else
11260     \ifx\pdf@type\relax
11261       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
11262       \ifx\\#1\\%
11263       \else
11264         \pdf@rect{#1}%
11265       \fi
11266     \else
11267       \ifx\\#1\\%
11268         \literalps@out{%
11269           [%
11270           \ifx\pdf@objdef\@empty
11271           \else
11272             /_objdef\string{\pdf@objdef\string}%

```

```

11273     \fi
11274     \the\pdf@toks\space\pdf@type\space pdfmark%
11275   }%
11276 \else
11277   \@ifundefined{@\pdf@linktype color}{%
11278     \Hy@colorlink\@linkcolor
11279   }{%
11280     \expandafter\Hy@colorlink
11281       \csname @\pdf@linktype color\endcsname
11282   }%
11283   \pdf@rect{#1}%
11284   \literalps@out{%
11285     [%
11286     \ifx\pdf@objdef\@empty
11287     \else
11288       /_objdef\string{\pdf@objdef\string}%
11289     \fi
11290     \the\pdf@toks\space\pdf@type\space pdfmark%
11291   }%
11292   \Hy@endcolorlink
11293 \fi
11294 \fi
11295 \fi
11296 }

```

The complicated bit is working out the right enclosing rectangle of some piece of  $\text{\TeX}$  text, needed by the `/Rect` key. This solution originates with Toby Thain ([toby@netspace.net.au](mailto:toby@netspace.net.au)).

For the case `breaklinks` is enabled, I have added two hooks, the first one for package `setouterhbox`, it provides a hopefully better method without setting the text twice.

```
\usepackage[hyperref]{setouterhbox}
```

With the second hook, also you can set the text twice, e.g.:

```

\long\def\Hy@setouterhbox#1#2{\long\def\my@temp{#2}}
\def\Hy@breaklinksunhbox#1{\my@temp}

```

```

11297 \newsavebox{\pdf@box}
11298 \providecommand*{\Hy@setouterhbox}{\sbox}
11299 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
11300 \def\Hy@DEST{/DEST}
11301 \def\pdf@rect#1{%
11302   \begingroup
11303   \chardef\x=1 %
11304   \def\Hy@temp{#1}%
11305   \ifx\Hy@temp\@empty
11306     \chardef\x=0 %
11307   \else
11308     \def\y{\anchor@spot}%
11309     \ifx\Hy@temp\y
11310       \def\y{\relax}%
11311     \ifx\anchor@spot\y
11312       \chardef\x=0 %

```

```

11313     \fi
11314     \fi
11315     \fi
11316 \expandafter\endgroup
11317 \ifcase\x
11318   \literalps@out{H.S}%
11319   \literalps@out{H.R}%
11320 \else
11321   \leavevmode
11322   \Hy@SaveSpaceFactor
11323   \ifmmode
11324     \def\Hy@LinkMath{$}%
11325   \else
11326     \let\Hy@LinkMath\@empty
11327   \fi
11328   \ifHy@breaklinks
11329     \Hy@setouterhbox\pdf@box{%
11330       \Hy@RestoreSpaceFactor
11331       \Hy@LinkMath
11332       \Hy@AllowHyphens#1\Hy@xspace@end
11333       \Hy@LinkMath
11334       \Hy@SaveSpaceFactor
11335     }%
11336   \else
11337     \sbox\pdf@box{%
11338       \Hy@RestoreSpaceFactor
11339       \Hy@LinkMath
11340       #1\Hy@xspace@end
11341       \Hy@LinkMath
11342       \Hy@SaveSpaceFactor
11343     }%
11344   \fi
11345   \dimen@ \ht\pdf@box
11346   \ifdim\dp\pdf@box=\z@
11347     \literalps@out{H.S}%
11348   \else
11349     \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
11350   \fi

```

If the text has to be horizontal mode stuff then just unbox the saved box like this, which saves executing it twice, which can mess up counters etc (thanks DPC...).

```

11351   \ifHy@breaklinks
11352     \ifhmode
11353       \Hy@breaklinksunhbox\pdf@box
11354     \else
11355       \box\pdf@box
11356     \fi
11357   \else
11358     \expandafter\box\pdf@box
11359   \fi

```

but if it can have multiple paragraphs you'd need one of these, but in that case the measured box size would be wrong anyway.

```
\ifHy@breaklinks#1\else\box\pdf@box\fi
```

```

\ifHy@breaklinks{#1}\else\box\pdf@box\fi

11360 \ifdim\dimen@=\z@
11361 \literalps@out{H.R}%
11362 \else
11363 \raise\dimen@\hbox{\literalps@out{H.R}}%
11364 \fi
11365 \Hy@RestoreSpaceFactor
11366 \fi
11367 \ifx\pdf@type\Hy@DEST
11368 \else
11369 \pdf@addtoksx{H.B}%
11370 \fi
11371 }

```

All the supplied material is stored in a token list; since I do not feel sure I quite understand these, things may not work as expected with expansion. We'll have to experiment.

```

11372 \newtoks\pdf@toks
11373 \newtoks\pdf@defaulttoks
11374 \pdf@defaulttoks={}
11375 \def\pdf@addtoks#1#2{%
11376 \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
11377 \@processme
11378 }
11379 \def\pdf@addtoksx#1{%
11380 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
11381 \@processme
11382 }
11383 \def\PDFdefaults#1{%
11384 \pdf@defaulttoks={#1}%
11385 }

```

This is the list of allowed keys. See the Acrobat manual for an explanation.

```

11386 % what is the type of pdfmark?
11387 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11388 % what is the link type?
11389 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11390 \def\pdf@linktype{link}
11391 % named object?
11392 \define@key{PDF}{objdef}{\edef\pdf@objdef{#1}}
11393 \let\pdf@objdef\@empty
11394 % parameter is a stream of PDF
11395 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
11396 % parameter is a name
11397 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11398 % parameter is a array
11399 \define@key{PDF}{Border}{%
11400 \edef\Hy@temp{#1}%
11401 \ifx\Hy@temp\@empty
11402 \else
11403 \pdf@addtoks[{#1}\Hy@BorderArrayPatch]{Border}% hash-ok
11404 \fi
11405 }
11406 \let\Hy@BorderArrayPatch\@empty

```

```

11407 % parameter is a dictionary
11408 \define@key{PDF}{BorderStyle}{%
11409   \edef\Hy@temp{#1}%
11410   \ifx\Hy@temp\@empty
11411     \else
11412       \pdf@addtoks{<<#1>>}{BS}%
11413     \fi
11414 }
11415 % parameter is a array
11416 \define@key{PDF}{Color}{%
11417   \ifx\relax#1\relax
11418     \else
11419       \pdf@addtoks{[#1]}{Color}% hash-ok
11420     \fi
11421 }
11422 % parameter is a string
11423 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11424 % parameter is a integer
11425 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11426 % parameter is a array
11427 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11428 % parameter is a string
11429 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11430 % parameter is a string or file
11431 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11432 % parameter is a destination
11433 \define@key{PDF}{Dest}{%
11434   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11435   \ifx\Hy@pstringDest\@empty
11436     \Hy@pdfmarkerrortrue
11437     \Hy@Warning{Destination with empty name ignored}%
11438   \else
11439     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11440   \fi
11441 }
11442 \define@key{PDF}{DestAnchor}{%
11443   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11444   \ifx\Hy@pstringDest\@empty
11445     \Hy@pdfmarkerrortrue
11446     \Hy@Warning{Destination with empty name ignored}%
11447   \else
11448     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11449   \fi
11450 }
11451 % parameter is a string
11452 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11453 % parameter is a string
11454 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11455 % parameter is a int
11456 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11457 \define@key{PDF}{PDFAFlags}{%
11458   \ifHy@pdfa
11459     \pdf@addtoks{#1}{F}%
11460   \fi

```

```

11461 }
11462 % parameter is a name
11463 \define@key{PDF}{AcroHighlight}{%
11464   \begingroup
11465   \edef\x{#1}%
11466   \expandafter\endgroup\ifx\x\@empty
11467   \else
11468   \pdf@addtoks{#1}{H}%
11469   \fi
11470 }
11471 % parameter is a string
11472 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11473 % parameter is a string
11474 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11475 % parameter is a string
11476 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11477 % parameter is a string
11478 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11479 % parameter is a Boolean
11480 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11481 % parameter is a integer or name
11482 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11483 % parameter is a name
11484 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11485 % parameter is a string
11486 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11487 % parameter is a array
11488 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11489 % parameter is a integer
11490 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
11491 % parameter is a name
11492 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11493 % parameter is a string
11494 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11495 % parameter is a string
11496 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11497 % parameter is a string
11498 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11499 % parameter is an array
11500 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11501 % parameter is a string
11502 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

11503 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11504 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11505 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
11506 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11507 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11508 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11509 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
11510 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11511 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11512 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
11513 \define@key{PDF}{Trapped}{%

```

```

11514 \edef\Hy@temp{#1}%
11515 \ifx\Hy@temp@empty
11516 \else
11517 \pdf@addtoks{/#1}{Trapped}%
11518 \fi
11519 }
11520
11521 </pdfmarkbase>
11522 <*pdfmark>
11523 \def\Acrobatmenu#1#2{%
11524 \EdefEscapeName\Hy@temp@menu{#1}%
11525 \Hy@Acrobatmenu{#1}{#2}{%
11526 \pdfmark[{#2}]{%
11527 linktype=menu,%
11528 pdfmark=/ANN,%
11529 AcroHighlight=\@pdfhighlight,%
11530 Border=\@pdfborder,%
11531 BorderStyle=\@pdfborderstyle,%
11532 Color=\@menubordercolor,%
11533 Action={<</Subtype/Named/N/\Hy@temp@menu>>},%
11534 Subtype=/Link,%
11535 PDFAFlags=4%
11536 }%
11537 }%
11538 }

```

And now for some useful examples:

```

11539 \def\PDFNextPage{\@ifnextchar{\PDFNextPage@}{\PDFNextPage@[]}}
11540 \def\PDFNextPage@[#1]#2{%
11541 \pdfmark[{#2}]{%
11542 #1,%
11543 Border=\@pdfborder,%
11544 BorderStyle=\@pdfborderstyle,%
11545 Color=.2 .1 .5,%
11546 pdfmark=/ANN,%
11547 Subtype=/Link,%
11548 PDFAFlags=4,%
11549 Page=/Next%
11550 }%
11551 }
11552 \def\PDFPreviousPage{%
11553 \@ifnextchar{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11554 }
11555 \def\PDFPreviousPage@[#1]#2{%
11556 \pdfmark[{#2}]{%
11557 #1,%
11558 Border=\@pdfborder,%
11559 BorderStyle=\@pdfborderstyle,%
11560 Color=.4 .4 .1,%
11561 pdfmark=/ANN,%
11562 Subtype=/Link,%
11563 PDFAFlags=4,%
11564 Page=/Prev%
11565 }%
11566 }

```

```

11567 \def\PDFOpen#1{%
11568   \pdfmark{#1,pdfmark=/DOCVIEW}%
11569 }

```

This will only work if you use Distiller 2.1 or higher.

```

11570 \def\hyper@linkurl#1#2{%
11571   \begingroup
11572     \Hy@pstringdef\Hy@pstringURI{#2}%
11573     \hyper@chars
11574     \leavevmode
11575     \pdfmark[{#1}]{%
11576       pdfmark=/ANN,%
11577       linktype=url,%
11578       AcroHighlight=\@pdfhighlight,%
11579       Border=\@pdfborder,%
11580       BorderStyle=\@pdfborderstyle,%
11581       Color=\@urlbordercolor,%
11582       Action={<<%
11583         /Subtype/URI%
11584         /URI(\Hy@pstringURI)%
11585         \ifHy@href@ismap
11586           /IsMap true%
11587         \fi
11588       >>},%
11589       Subtype=/Link,%
11590       PDFAFlags=4%
11591     }%
11592   \endgroup
11593 }
11594 \def\hyper@linkfile#1#2#3{%
11595   \begingroup
11596     \def\Hy@pstringF{#2}%
11597     \Hy@CleanupFile\Hy@pstringF
11598     \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11599     \Hy@pstringdef\Hy@pstringD{#3}%
11600     \Hy@MakeRemoteAction
11601     \leavevmode
11602     \pdfmark[{#1}]{%
11603       pdfmark=/ANN,%
11604       Subtype=/Link,%
11605       PDFAFlags=4,%
11606       AcroHighlight=\@pdfhighlight,%
11607       Border=\@pdfborder,%
11608       BorderStyle=\@pdfborderstyle,%
11609       linktype=file,%
11610       Color=\@filebordercolor,%
11611       Action={%
11612         <<%
11613           /S/GoToR%
11614           \Hy@SetNewWindow
11615           /F(\Hy@pstringF)%
11616           /D%
11617           \ifx\#3\%
11618             [\Hy@href@page\@pdfremotestartview]%
11619           \else

```

```

11620      (\Hy@pstringD)cvn%
11621      \fi
11622      \Hy@href@nextactionraw
11623      >>%
11624      }%
11625      }%
11626      \endgroup
11627 }
11628 \def\@hyper@launch run:#1\#2#3{%
11629   \begingroup
11630   \Hy@pstringdef\Hy@pstringF{#1}%
11631   \Hy@pstringdef\Hy@pstringP{#3}%
11632   \leavevmode
11633   \pdfmark[{#2}]{%
11634     pdfmark=/ANN,%
11635     Subtype=/Link,%
11636     PDFAFlags=4,%
11637     AcroHighlight=\@pdfhighlight,%
11638     Border=\@pdfborder,%
11639     BorderStyle=\@pdfborderstyle,%
11640     linktype=run,%
11641     Color=\@runbordercolor,%
11642     Action={%
11643       <<%
11644       /S/Launch%
11645       \Hy@SetNewWindow
11646       /F(\Hy@pstringF)%
11647       \ifx\#3\%
11648       \else
11649       /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11650       \fi
11651       \Hy@href@nextactionraw
11652       >>%
11653       }%
11654       }%
11655     \endgroup
11656   }
11657 }</pdfmark>

```

Unfortunately, some parts of the `pdfmark` PostScript code depend on vagaries of the dvi driver. We isolate here all the problems.

## 44.9 Rokicki's dvips

dvips thinks in 10ths of a big point, its coordinate space is resolution dependent, and its  $y$  axis starts at the top of the page. Other drivers can and will be different!

The work is done in `SDict`, because we add in some header definitions in a moment.

```

11658 (*dvips)
11659 \providecommand*\XR@ext}{pdf}
11660 \let\Hy@raisedlink\@empty
11661 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
11662 \def\headerps@out#1{\special{! #1}}%
11663 \input{pdfmark.def}%

```

```

11664 \ifx\@pdfproducer\relax
11665 \def\@pdfproducer{dvips + Distiller}%
11666 \fi
11667 \providecommand*\@pdfborder{0 0 1}
11668 \providecommand*\@pdfborderstyle{}
11669 \providecommand*\@pdfview{XYZ}
11670 \providecommand*\@pdfviewparams{ H.V}
11671 \def\Hy@BorderArrayPatch{BorderArrayPatch}

11672 \g@addto@macro\Hy@FirstPageHook{%
11673 \headerps@out{%

```

Unless I am going mad, this *appears* to be the relationship between the default coordinate system (PDF), and dvips;

```

/DvipsToPDF { .01383701 div Resolution div } def
/PDFToDvips { .01383701 mul Resolution mul } def

```

the latter's coordinates are resolution dependent, but what that .01383701 is, who knows? well, almost everyone except me, I expect...And yes, Maarten Gelderman <mgelderman@econ.vu.nl> points out that its 1/72.27 (the number of points to an inch, big points to inch is 1/72). This also suggests that the code would be more understandable (and exact) if 0.013 div would be replaced by 72.27 mul, so here we go. If this isn't right, I'll revert it.

```

11674 /DvipsToPDF{72.27 mul Resolution div} def%
11675 /PDFToDvips{72.27 div Resolution mul} def%
11676 /BPToDvips{72 div Resolution mul}def

```

The values inside the /Border array are not taken literally, but interpreted by ghostscript using the resolution of the dvi driver. I don't know how other distiller programs behaves in this manner.

Note GhostScript changed its behaviour here and later versions do not need this scaling, so test the PostScript interpreter is GhostScript and if so check its version.

If using gs and release > 9.27 no-op, otherwise patch.

```

11677 product (Ghostscript) search {pop pop pop revision 927 gt}%
11678 {pop false} ifelse%
11679 {%
11680 /BorderArrayPatch{} def%
11681 }%
11682 {%
11683 /BorderArrayPatch{%
11684 [exch{%
11685 dup dup type/integertype eq exch type/realtype eq or%
11686 {BPToDvips}if%
11687 }forall]%
11688 }def%
11689 } ifelse

```

The rectangle around the links starts off *exactly* the size of the box; we will to make it slightly bigger, 1 point on all sides.

```

11690 /HyperBorder {1 PDFToDvips} def%
11691 /H.V {pdf@hoff pdf@voff null} def%
11692 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def%

```

H.S (start of anchor, link, or rect) stores the  $x$  and  $y$  coordinates of the current point, in PDF coordinates

```

11693 /H.S {%
11694   currentpoint %
11695   HyperBorder add /pdf@lly exch def %
11696   dup DvipsToPDF 72 add /pdf@hoff exch def %
11697   HyperBorder sub /pdf@llx exch def%
11698 } def%
```

The calculation of upper left  $y$  is done without raising the point in  $\text{\TeX}$ , by simply adding on the current `\baselineskip` to the current  $y$ . This is usually too much, so we remove a notional 2 points.

We have to see what the current `baselineskip` is, and convert it to the dvips coordinate system.

Argument: `baselineskip` in pt. The  $x$  and  $y$  coordinates of the current point, minus the `baselineskip`

```

11699 /H.L {%
11700   2 sub dup%
11701   /HyperBasePt exch def %
11702   PDFToDvips /HyperBaseDvips exch def %
11703   currentpoint %
11704   HyperBaseDvips sub /pdf@ury exch def%
11705   /pdf@urx exch def%
11706 } def%
11707 /H.A {%
11708   H.L %
11709 % |pdf@voff| = the distance from the top of the page to a point
11710 % |baselineskip| above the current point in PDF coordinates
11711   currentpoint exch pop %
11712   vsize 72 sub exch DvipsToPDF %
11713   HyperBasePt sub % baseline skip
11714   sub /pdf@voff exch def%
11715 } def%
11716 /H.R {%
11717   currentpoint %
11718   HyperBorder sub /pdf@ury exch def %
11719   HyperBorder add /pdf@urx exch def %
11720 % |pdf@voff| = the distance from the top of the page to the current point, in
11721 % PDF coordinates
11722   currentpoint exch pop vsize 72 sub %
11723   exch DvipsToPDF sub /pdf@voff exch def%
11724 } def%
11725 }%
11726 }
11727 \AddToHook{shipout/firstpage}{%
11728   \ifHy@setpagesize
11729     \begingroup
11730     \ifnum\mag=\@m
11731       \ifdim\stockwidth>\z@
11732         \ifdim\stockheight>\z@
11733           \special{papersize=\the\stockwidth,\the\stockheight}%
11734         \else
11735           \ifdim\paperwidth>\z@
11736             \ifdim\paperheight>\z@
```

```

11737         \special{papersize=\the\paperwidth,\the\paperheight}%
11738     \fi
11739 \fi
11740 \fi
11741 \else
11742     \ifdim\stockwidth=\z@
11743     \ifdim\paperwidth>\z@
11744     \ifdim\paperheight>\z@
11745         \special{papersize=\the\paperwidth,\the\paperheight}%
11746     \fi
11747 \fi
11748 \fi
11749 \fi
11750 \fi
11751 \endgroup
11752 \fi
11753 \Hy@DisableOption{setpagesize}%
11754 }

11755 \def\setpdfinkmargin#1{%
11756     \begingroup
11757     \setlength{\dimen@}{#1}%
11758     \literalps@out{%
11759         /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11760     }%
11761 \endgroup
11762 }

11763 </dvips>

```

## 44.10 VTeX's vtexpdfmark driver

This part is derived from the dvips (many names reflect this).

The origin seems to be the same as TeX's origin, 1 in from the left and 1 in downwards from the top. The direction of the  $y$  axis is downwards, the opposite of the dvips case. Units seems to be pt or bp.

```

11764 (*vtexpdfmark)
11765 \providecommand*\XR@ext}{pdf}
11766 \let\Hy@raisedlink\@empty
11767 \def\literalps@out#1{\special{pS:#1}}%
11768 \def\headerps@out#1{\immediate\special{pS:#1}}%
11769 \input{pdfmark.def}%
11770 \ifx\@pdfproducer\relax
11771     \ifnum\OpMode=\@ne
11772         \def\@pdfproducer{VTeX}%
11773     \else
11774         \def\@pdfproducer{VTeX + Distiller}%
11775     \fi
11776 \fi
11777 \providecommand*\@pdfborder{0 0 1}
11778 \providecommand*\@pdfborderstyle{}
11779 \providecommand*\@pdfview{XYZ}
11780 \providecommand*\@pdfviewparams{ H.V}
11781 \g@addto@macro\Hy@FirstPageHook{%

```

```

11782 \headerps@out{%
11783   /vsize {\Hy@pageheight} def%

```

The rectangle around the links starts off *exactly* the size of the box; we will to make it slightly bigger, 1 point on all sides.

```

11784   /HyperBorder {1} def%
11785   /H.V {pdf@hoff pdf@voff null} def%
11786   /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def%

```

H.S (start of anchor, link, or rect) stores the  $x$  and  $y$  coordinates of the current point, in PDF coordinates:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

11787   /H.S {%
11788     currentpoint %
11789     HyperBorder sub%
11790     /pdf@lly exch def %
11791     dup 72 add /pdf@hoff exch def %
11792     HyperBorder sub%
11793     /pdf@llx exch def%
11794   } def%

```

The  $x$  and  $y$  coordinates of the current point, minus the `\baselineskip`:  $\text{pdf@ury} = Y_c + \text{HyperBasePt} + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11795   /H.L {%
11796     2 sub%
11797     /HyperBasePt exch def %
11798     currentpoint %
11799     HyperBasePt add HyperBorder add%
11800     /pdf@ury exch def %
11801     HyperBorder add%
11802     /pdf@urx exch def%
11803   } def%
11804   /H.A {%
11805     H.L %
11806     currentpoint exch pop %
11807     vsize 72 sub exch %
11808     HyperBasePt add add%
11809     /pdf@voff exch def%
11810   } def%

```

$\text{pdf@ury} = Y_c + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11811   /H.R {%
11812     currentpoint %
11813     HyperBorder add%
11814     /pdf@ury exch def %
11815     HyperBorder add%
11816     /pdf@urx exch def %
11817     currentpoint exch pop vsize 72 sub add%
11818     /pdf@voff exch def%
11819   } def%
11820 }%
11821 }

```

```

11822 \def\setpdfinkmargin#1{%
11823   \begingroup
11824   \setlength{\dimen@}{#1}%

```

```

11825 \literalps@out{%
11826 /HyperBorder{\strip@pt\dimen@}def%
11827 }%
11828 \endgroup
11829 }
11830 </vtxpdfmark>

```

## 44.11 Textures

```

11831 (*textures)
11832 \providecommand*\XR@ext}{pdf}

```

At the suggestion of Jacques Distler (distler@golem.ph.utexas.edu), try to derive a suitable driver for Textures. This was initially a copy of dvips, with some guesses about Textures behaviour. Ross Moore (ross@maths.mq.edu.au) has added modifications for better compatibility, and to support use of pdfmark.

Start by defining a macro that expands to the end-of-line character. This will be used to format the appearance of PostScript code, to enhance readability, and avoid excessively long lines which might otherwise become broken to bad places.

`\Hy@ps@CR` The macro `\Hy@ps@CR` contains the end-of-line character.

```

11833 \begingroup
11834 \obeylines %
11835 \gdef\Hy@ps@CR{\noexpand
11836 }%
11837 \endgroup %

```

Textures has two types of `\special` command for inserting PostScript code directly into the dvi output. The ‘postscript’ way preserves TeX’s idea of where on the page the `\special` occurred, but it wraps the contents with a **save-restore** pair, and adjusts the user-space coordinate system for local drawing commands. The ‘rawpostscript’ way simply inserts code, without regard for the location on the page.

Thus, to put arbitrary PostScript coding at a fixed location requires using *both* `\special` constructions. It works by pushing the device-space coordinates onto the operand stack, where they can be used to transform back to the correct user-space coordinates for the whole page, within a ‘rawpostscript’ `\special`.

```

11838 \def\literalps@out#1{%
11839 \special{postscript 0 0 transform}%
11840 \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11841 }%
11842 %

```

The ‘prepostscript’ is a 3rd kind of `\special`, used for inserting definitions into the dictionaries, before page-building begins. These are to be available for use on all pages.

```

11843 \def\headerps@out#1{%
11844 \special{%
11845 prepostscript TeXdict begin\Hy@ps@CR
11846 #1\Hy@ps@CR
11847 end%
11848 }%
11849 }%
11850 %

```

To correctly support the `pdfmark` method, for embedding PDF definitions with `.ps` files in a non-intrusive way, an appropriate definition needs to be made *before* the file `pdfmark.def` is read. Other parameters are best set afterwards.

```

11851 \g@addto@macro\Hy@FirstPageHook{%
11852   \headerps@out{%
11853     /betterpdfmark {%
11854       systemdict begin %
11855         dup /BP eq%
11856         {cleartomark gsave nulldevice []%
11857           {dup /EP eq%
11858             {cleartomark cleartomark grestore}%
11859             {cleartomark}%
11860             ifelse%
11861           }ifelse %
11862         end%
11863       }def\Hy@ps@CR
11864     ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11865   }% end of \headerps@out
11866 }% end of \AddToHook{shipout/firstpage}
11867 %
11868 \input{pdfmark.def}%
11869 %
11870 \ifx\@pdfproducer\relax
11871   \def\@pdfproducer{Textures + Distiller}%
11872 \fi
11873 \providecommand*\@pdfborder{0 0 1}
11874 \providecommand*\@pdfborderstyle{}
11875 \providecommand*\@pdfview{XYZ}
11876 \providecommand*\@pdfviewparams{ H.V}
11877 %

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called `pdf@llx pdf@lly pdf@urx pdf@ury`, which are the coordinates of the bounding rectangle of the link, and `pdf@hoff pdf@voff` which are the PDF page offsets. The `Rect` pair are called at the LL and UR corners of a box known to  $\text{\TeX}$ .

```

11878 \Hy@AtBeginDocument{%
11879   \headerps@out{%

```

`Textures` lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```

11880   /vsize {\Hy@pageheight} def%
11881   /DvipsToPDF {} def%
11882   /PDFToDvips {} def%
11883   /BPToDvips {} def%
11884   /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11885   /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11886   /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11887   /H.S {%
11888     currentpoint %
11889     HyperBorder add /pdf@lly exch def %
11890     dup DvipsToPDF 72 add /pdf@hoff exch def %
11891     HyperBorder sub /pdf@llx exch def%
11892   } def\Hy@ps@CR

```

```

11893 /H.L {%
11894 2 sub %
11895 PDFToDvips /HyperBase exch def %
11896 currentpoint %
11897 HyperBase sub /pdf@ury exch def%
11898 /pdf@urx exch def%
11899 } def\Hy@ps@CR
11900 /H.A {%
11901 H.L %
11902 currentpoint exch pop %
11903 vsize 72 sub exch DvipsToPDF %
11904 HyperBase sub % baseline skip
11905 sub /pdf@voff exch def%
11906 } def\Hy@ps@CR
11907 /H.R {%
11908 currentpoint %
11909 HyperBorder sub /pdf@ury exch def %
11910 HyperBorder add /pdf@urx exch def %
11911 currentpoint exch pop vsize 72 sub %
11912 exch DvipsToPDF sub /pdf@voff exch def%
11913 } def\Hy@ps@CR
11914 }%
11915 }

11916 \def\setpdfinkmargin#1{%
11917 \begingroup
11918 \setlength{\dimen@}{#1}%
11919 \literalps@out{%
11920 /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11921 }%
11922 \endgroup
11923 }

11924 \Hy@AtBeginDocument{%
11925 \ifHy@colorlinks
11926 \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11927 \fi
11928 }

11929 \expandafter\let\expandafter\keepPDF@SetupDoc
11930 \csname PDF@SetupDoc\endcsname
11931 \def\PDF@SetupDoc{%
11932 \ifx\@baseurl\@empty
11933 \else
11934 \special{html:<base href="\@baseurl">}%
11935 \fi
11936 \keepPDF@SetupDoc
11937 }
11938 \Hy@WrapperDef\hyper@anchor#1{%
11939 \Hy@SaveLastskip
11940 \Hy@VerboseAnchor{#1}%
11941 \begingroup

```

Textures provides built-in support for HyperTeX specials so this part combines code from `hypertex.def` with what is established by loading `pdfmark.def`, or any other driver.

```

11942 \let\protect=\string
11943 \special{html:<a name=%
11944     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11945 \endgroup
11946 \Hy@activeanchortrue
11947 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11948 \special{html:</a>}%
11949 \Hy@activeanchorfalse
11950 \Hy@RestoreLastskip
11951 }
11952 \Hy@WrapperDef\hyper@anchorstart#1{%
11953 \Hy@SaveLastskip
11954 \Hy@VerboseAnchor{#1}%
11955 \begingroup
11956 \hyper@chars
11957 \special{html:<a name=%
11958     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11959 \endgroup
11960 \Hy@activeanchortrue
11961 }
11962 \def\hyper@anchorend{%
11963 \special{html:</a>}%
11964 \Hy@activeanchorfalse
11965 \Hy@RestoreLastskip
11966 }
11967 \def\@urltype{url}
11968 \def\hyper@linkstart#1#2{%
11969 \Hy@VerboseLinkStart{#1}{#2}%
11970 \expandafter\Hy@colorlink\csname @#1color\endcsname
11971 \def\Hy@tempa{#1}%
11972 \ifx\Hy@tempa\@urltype
11973 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11974 \else
11975 \begingroup
11976 \hyper@chars
11977 \special{%
11978     html:<a href=%
11979     \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>%
11980     }%
11981 \endgroup
11982 \fi
11983 }
11984 \def\hyper@linkend{%
11985 \special{html:</a>}%
11986 \Hy@endcolorlink
11987 }
11988 \def\hyper@linkfile#1#2#3{%
11989 \hyper@linkurl{#1}{%
11990     \Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi
11991     }%
11992 }
11993 \def\hyper@linkurl#1#2{%
11994 \leavevmode
11995 \ifHy@raiselinks

```

```

11996 \Hy@SaveSpaceFactor
11997 \Hy@SaveSavedSpaceFactor
11998 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11999 \Hy@RestoreSavedSpaceFactor
12000 \@linkdim\dp\@tempboxa
12001 \lower\@linkdim\hbox{%
12002   \hyper@chars
12003   \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
12004 }%
12005 \Hy@colorlink\@urlcolor
12006 \Hy@RestoreSpaceFactor
12007 #1\Hy@xspace@end
12008 \Hy@SaveSpaceFactor
12009 \@linkdim\ht\@tempboxa
12010 \advance\@linkdim by -6.5\p@
12011 \raise\@linkdim\hbox{\special{html:</a>}}%
12012 \Hy@endcolorlink
12013 \Hy@RestoreSpaceFactor
12014 \else
12015 \begingroup
12016 \hyper@chars
12017 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
12018 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
12019 \special{html:</a>}}%
12020 \Hy@endcolorlink
12021 \endgroup
12022 \fi
12023 }

```

Very poor implementation of \hyper@link without considering #1.

```

12024 \def\hyper@link#1#2#3{%
12025   \Hy@VerboseLinkStart{#1}{#2}%
12026   \hyper@linkurl{#3}{\#\Hy@HyperDestNameFilter{#2}}%
12027 }
12028 \def\hyper@image#1#2{%
12029   \begingroup
12030   \hyper@chars
12031   \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
12032 \endgroup
12033 }
12034 \</textures>

```

## 44.12 dvipsone

```

12035 % \subsection{dvipsone driver}
12036 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
12037 % |\special| commands.
12038 (*dvipsone)
12039 \providecommand*\XR@ext{pdf}
12040 \let\Hy@raisedlink\@empty
12041 \providecommand*\@pdfborder{0 0 1}
12042 \providecommand*\@pdfborderstyle{}
12043 \def\literalps@out#1{\special{ps:#1}}%
12044 \def\headerps@out#1{\special{headertext=#1}}%

```

```

12045 \input{pdfmark.def}%
12046 \HyInfo@AddonUnsupportedtrue
12047 \def\PDF@FinishDoc{%
12048   \Hy@UseMaketitleInfos
12049   \HyInfo@TrappedUnsupported
12050   \special{PDF: Keywords \@pdfkeywords}%
12051   \special{PDF: Title \@pdftitle}%
12052   \special{PDF: Creator \@pdfcreator}%
12053   \ifx\@pdfcreationdate\@empty
12054   \else
12055     \special{PDF: CreationDate \@pdfcreationdate}%
12056   \fi
12057   \ifx\@pdfmoddate\@empty
12058   \else
12059     \special{PDF: ModDate \@pdfmoddate}%
12060   \fi
12061   \special{PDF: Author \@pdfauthor}%
12062   \ifx\@pdfproducer\relax
12063   \else
12064     \special{PDF: Producer \@pdfproducer}%
12065   \fi
12066   \special{PDF: Subject \@pdfsubject}%
12067   \Hy@DisableOption{pdfauthor}%
12068   \Hy@DisableOption{pdftitle}%
12069   \Hy@DisableOption{pdfsubject}%
12070   \Hy@DisableOption{pdfcreator}%
12071   \Hy@DisableOption{addtopdfcreator}%
12072   \Hy@DisableOption{pdfcreationdate}%
12073   \Hy@DisableOption{pdfcreationdate}%
12074   \Hy@DisableOption{pdfmoddate}%
12075   \Hy@DisableOption{pdfproducer}%
12076   \Hy@DisableOption{pdfkeywords}%
12077   \Hy@DisableOption{pdftrapped}%
12078   \Hy@DisableOption{pdfinfo}%
12079 }
12080 \def\PDF@SetupDoc{%
12081   \def\Hy@temp{}%
12082   \ifx\@pdfstartpage\@empty
12083   \else
12084     \ifx\@pdfstartview\@empty
12085     \else
12086       \edef\Hy@temp{%
12087         ,Page=\@pdfstartpage
12088         ,View=\@pdfstartview
12089       }%
12090     \fi
12091   \fi
12092   \edef\Hy@temp{%
12093     \noexpand\pdfmark{%
12094       pdfmark=/DOCVIEW,%
12095       PageMode=/\@pdfpagemode
12096     }\Hy@temp
12097   }%
12098 }%

```

```

12099 \Hy@temp
12100 \ifx\@pdfpagescrop\@empty
12101 \else
12102 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
12103 \fi
12104 \edef\Hy@temp{%
12105 \ifHy@pdftoolbar\else /HideToolbar true\fi
12106 \ifHy@pdfmenubar\else /HideMenubar true\fi
12107 \ifHy@pdfwindowui\else /HideWindowUI true\fi
12108 \ifHy@pdffitwindow /FitWindow true\fi
12109 \ifHy@pdfcenterwindow /CenterWindow true\fi
12110 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
12111 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
12112 \Hy@UseNameKey{Direction}\@pdfdirection
12113 \Hy@UseNameKey{ViewArea}\@pdfviewarea
12114 \Hy@UseNameKey{ViewClip}\@pdfviewclip
12115 \Hy@UseNameKey{PrintArea}\@pdfprintarea
12116 \Hy@UseNameKey{PrintClip}\@pdfprintclip
12117 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
12118 \Hy@UseNameKey{Duplex}\@pdfduplex
12119 \ifx\@pdfpicktraybypdfsize\@empty
12120 \else
12121 /PickTrayByPDFSize \@pdfpicktraybypdfsize
12122 \fi
12123 \ifx\@pdfprintpagerange\@empty
12124 \else
12125 /PrintPageRange[\@pdfprintpagerange]%
12126 \fi
12127 \ifx\@pdfnumcopies\@empty
12128 \else
12129 /NumCopies \@pdfnumcopies
12130 \fi
12131 }%
12132 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
12133 \pdfmark{%
12134 pdfmark=/PUT,%
12135 Raw={%
12136 \string{Catalog\string}<<%
12137 \ifx\Hy@temp\@empty
12138 \else
12139 /ViewerPreferences<<\Hy@temp>>%
12140 \fi
12141 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
12142 \ifx\@pdflang\relax
12143 \else
12144 /Lang(\@pdflang)%
12145 \fi
12146 \ifx\@baseurl\@empty
12147 \else
12148 /URI<</Base(\Hy@pstringB)>>%
12149 \fi
12150 >>%
12151 }%
12152 }%

```

```

12153 }
12154 \providecommand*\@pdfview{XYZ}
12155 \providecommand*\@pdfviewparams{ %
12156   gsave revscl currentpoint grestore %
12157   72 add exch pop null exch null%
12158 }
12159 \def\Hy@BorderArrayPatch{BorderArrayPatch}

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called `pdf@llx pdf@lly pdf@urx pdf@ury`, which are the coordinates of the bounding rectangle of the link, and `pdf@hoff pdf@voff` which are the PDF page offsets. These latter are currently not used in the dvipsone setup. The Rect pair are called at the LL and UR corners of a box known to  $\TeX$ .

```

12160 \g@addto@macro\Hy@FirstPageHook{%
12161   \headerps@out{%

```

dvipsone lives in scaled points; does this mean 65536 or 65781?

```

12162   /DvipsToPDF { 65781 div } def%
12163   /PDFToDvips { 65781 mul } def%
12164   /BPToDvips{65781 mul}def%
12165   /HyperBorder { 1 PDFToDvips } def%
12166   /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def%

```

The values inside the /Boder array are not taken literally, but interpreted by ghostscript using the resolution of the dvi driver. I don't know how other distiller programs behaves in this manner.

```

12167   /BorderArrayPatch{%
12168     [exch{%
12169       dup dup type/integertype eq exch type/realtype eq or%
12170       {BPToDvips}if%
12171     }forall]%
12172   }def%
12173   /H.S {%
12174     currentpoint %
12175     HyperBorder add /pdf@lly exch def %
12176     dup DvipsToPDF 72 add /pdf@hoff exch def %
12177     HyperBorder sub /pdf@llx exch def%
12178   } def%
12179   /H.L {%
12180     2 sub %
12181     PDFToDvips /HyperBase exch def %
12182     currentpoint %
12183     HyperBase sub /pdf@ury exch def%
12184     /pdf@urx exch def%
12185   } def%
12186   /H.A {%
12187     H.L %
12188     currentpoint exch pop %
12189     HyperBase sub % baseline skip
12190     DvipsToPDF /pdf@voff exch def%
12191   } def%
12192   /H.R {%
12193     currentpoint %
12194     HyperBorder sub /pdf@ury exch def %
12195     HyperBorder add /pdf@urx exch def %

```

```

12196     currentpoint exch pop DvipsToPDF /pdf@voff exch def%
12197   } def%
12198 }%
12199 }

12200 \def\setpdfinkmargin#1{%
12201   \begingroup
12202     \setlength{\dimen@}{#1}%
12203     \literalps@out{%
12204       /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
12205     }%
12206   \endgroup
12207 }

12208 </dvipsone>

```

## 44.13 TeX4ht

```

12209 <*\tex4ht>
12210 \providecommand*\XR@ext}{html}
12211 \let\Hy@raisedlink\@empty
12212 \@ifpackageloaded{tex4ht}{%
12213   \Hy@InfoNoLine{tex4ht is already loaded}%
12214 }{%
12215   \RequirePackage[hTeX4ht]{tex4ht}%
12216 }
12217 \hyperlinkfileprefix{}
12218 \let\PDF@FinishDoc\@empty
12219 \def\PDF@SetupDoc{%
12220   \ifx\@baseurl\@empty
12221     \else
12222       \special{t4ht=<base href="\@baseurl">}%
12223     \fi
12224 }
12225 \Hy@WrapperDef\hyper@anchor#1{%
12226   \Hy@SaveLastskip
12227   \Hy@VerboseAnchor{#1}%
12228   \begingroup
12229     \let\protect=\string
12230     \special{t4ht=<a name=%
12231       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12232   \endgroup
12233   \Hy@activeanchortrue
12234   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
12235   \special{t4ht=</a>}%
12236   \Hy@activeanchorfalse
12237   \Hy@RestoreLastskip
12238 }
12239 \Hy@WrapperDef\hyper@anchorstart#1{%
12240   \Hy@SaveLastskip
12241   \Hy@VerboseAnchor{#1}%
12242   \begingroup
12243     \hyper@chars\special{t4ht=<a name=%
12244       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12245   \endgroup
12246   \Hy@activeanchortrue

```

```

12247 }
12248 \def\hyper@anchorend{%
12249 \special{t4ht=</a>}%
12250 \Hy@activeanchorfalse
12251 \Hy@RestoreLastskip
12252 }
12253 \def\@urltype{url}
12254 \def\hyper@linkstart#1#2{%
12255 \Hy@VerboseLinkStart{#1}{#2}%
12256 \expandafter\Hy@colorlink\csname @#1color\endcsname
12257 \def\Hy@tempa{#1}%
12258 \ifx\Hy@tempa\@urltype
12259 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12260 \else
12261 \begingroup
12262 \hyper@chars
12263 \special{t4ht=<a href=%
12264 \hyper@quote\#\Hy@DestNameFilter{#2}\hyper@quote>}%
12265 \endgroup
12266 \fi
12267 }
12268 \def\hyper@linkend{%
12269 \special{t4ht=</a>}%
12270 \Hy@endcolorlink
12271 }
12272 \def\hyper@linkfile#1#2#3{%
12273 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
12274 }
12275 \def\hyper@linkurl#1#2{%
12276 \leavevmode
12277 \ifHy@raiselinks
12278 \Hy@SaveSpaceFactor
12279 \Hy@SaveSavedSpaceFactor
12280 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12281 \Hy@RestoreSavedSpaceFactor
12282 \@linkdim\dp\@tempboxa
12283 \lower\@linkdim\hbox{%
12284 \begingroup
12285 \hyper@chars
12286 \special{%
12287 t4ht=<a href=\hyper@quote#2\hyper@quote>%
12288 }%
12289 \endgroup
12290 }%
12291 \Hy@colorlink\@urlcolor
12292 \Hy@RestoreSpaceFactor
12293 #1\Hy@xspace@end
12294 \Hy@SaveSpaceFactor
12295 \Hy@endcolorlink
12296 \@linkdim\ht\@tempboxa
12297 \advance\@linkdim by -6.5\p@
12298 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
12299 \Hy@RestoreSpaceFactor
12300 \else

```

```

12301 \begingroup
12302 \hyper@chars
12303 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12304 \Hy@colorlink\@urlcolor
12305 #1\Hy@xspace@end
12306 \Hy@endcolorlink
12307 \special{t4ht=</a>}%
12308 \endgroup
12309 \fi
12310 }

```

Poor implementation of `\hyper@link` without considering #1.

```

12311 \def\hyper@link#1#2#3{%
12312 \Hy@VerboseLinkStart{#1}{#2}%
12313 \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
12314 }
12315 \def\hyper@image#1#2{%
12316 \begingroup
12317 \hyper@chars
12318 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
12319 \endgroup
12320 }
12321 \let\autoref\ref
12322 \ifx \rEFLiNK \UnDef
12323 \def\rEFLiNK #1#2{#2}%
12324 \fi
12325 \let\backref\@gobble

```

Fix for `tex4ht`.

```

12326 \AtBeginDocument{%
12327 \expandafter
12328 \let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
12329 \expandafter\def\csname Make:Label\endcsname#1#2{%
12330 \ifhmode
12331 \Hy@SaveSpaceFactor
12332 \else
12333 \global\Hy@SavedSpaceFactor=1000 %
12334 \fi
12335 \Hy@OrgMakeLabel{#1}{#2}%
12336 \Hy@RestoreSpaceFactor
12337 #2\Hy@xspace@end%
12338 \Hy@SaveSpaceFactor
12339 }%
12340 \Hy@RestoreSpaceFactor
12341 }%
12342 }
12343 </tex4ht>
12344 <*\tex4htcfg>
12345 \IfFileExists{\jobname.cfg}{\endinput}{}
12346 \Preamble{html}
12347 \begin{document}%
12348 \EndPreamble
12349 \def\TeX{TeX}
12350 \def\OMEGA{Omega}
12351 \def\LaTeX{LaTeX}

```

```

12352 \def\LaTeXe{\LaTeX2e}
12353 \def\TeX{e-TeX}
12354 \def\MF{Metafont}
12355 \def\MP{MetaPost}
12356 \</tex4htcfg>

```

## 45 Driver-specific form support

### 45.1 pdfmarks

change 2020-06-20: added /Euro to encoding

```

12357 \*pdfmark
12358 \long\def\@Form[#1]{%
12359 \g@addto@macro\Hy@FirstPageHook{%
12360 \headerps@out{%
12361 [%
12362 /__objdef{pdfDocEncoding}%
12363 /type/dict%
12364 /OBJ pdfmark%
12365 [%
12366 {pdfDocEncoding}%
12367 <<%
12368 /Type/Encoding%
12369 /Differences[%
12370 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
12371 /tilde %
12372 39/quotesingle %
12373 96/grave %
12374 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12375 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
12376 /quotedblbase/quotedblleft/quotedblright/quoteleft%
12377 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
12378 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12379 160/Euro %
12380 164/currency %
12381 166/brokenbar %
12382 168/dieresis/copyright/ordfeminine %
12383 172/logicalnot/.notdef/registered/macron/degree/plusminus%
12384 /twosuperior/threesuperior/acute/mu %
12385 183/periodcentered/cedilla/onesuperior/ordmasculine %
12386 188/onequarter/onehalf/threequarters %
12387 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
12388 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
12389 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
12390 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
12391 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
12392 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
12393 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
12394 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
12395 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
12396 /ucircumflex/udieresis/yacute/thorn/ydieresis%
12397 ]%
12398 >>%
12399 /PUT pdfmark%

```

```

12400 [%
12401   /__objdef{ZaDb}%
12402   /type/dict%
12403 /OBJ pdfmark%
12404 [%
12405   {ZaDb}%
12406   <<%
12407     /Type/Font%
12408     /Subtype/Type1%
12409     /Name/ZaDb%
12410     /BaseFont/ZapfDingbats%
12411   >>%
12412 /PUT pdfmark%
12413 [%
12414   /__objdef{Helv}%
12415   /type/dict%
12416 /OBJ pdfmark%
12417 [%
12418   {Helv}%
12419   <<%
12420     /Type/Font%
12421     /Subtype/Type1%
12422     /Name/Helv%
12423     /BaseFont/Helvetica%
12424     /Encoding{pdfDocEncoding}%
12425   >>%
12426 /PUT pdfmark%
12427 [%
12428   /__objdef{aform}%
12429   /type/dict%
12430 /OBJ pdfmark%
12431 [%
12432   /__objdef{afields}%
12433   /type/array%
12434 /OBJ pdfmark%
12435 [%
12436   /__objdef{corder}%
12437   /type/array%
12438 /OBJ pdfmark%
12439 {%
12440 [%
12441   /BBox[0 0 100 100]%
12442   /__objdef{Check}%
12443 /BP pdfmark %
12444 1 0 0 setrgbcolor%
12445 /ZapfDingbats 80 selectfont %
12446 20 20 moveto%
12447 (4)show%
12448 [/EP pdfmark%
12449 [%
12450   /BBox[0 0 100 100]%
12451   /__objdef{Cross}%
12452 /BP pdfmark %
12453 1 0 0 setrgbcolor%

```

```

12454 /ZapfDingbats 80 selectfont %
12455 20 20 moveto%
12456 (8)show%
12457 [/EP pdfmark%
12458 [%
12459 /BBox[0 0 250 100]%
12460 /_objdef{Submit}%
12461 /BP pdfmark %
12462 0.6 setgray %
12463 0 0 250 100 rectfill %
12464 1 setgray %
12465 2 2 moveto %
12466 2 98 lineto %
12467 248 98 lineto %
12468 246 96 lineto %
12469 4 96 lineto %
12470 4 4 lineto %
12471 fill %
12472 0.34 setgray %
12473 248 98 moveto %
12474 248 2 lineto %
12475 2 2 lineto %
12476 4 4 lineto %
12477 246 4 lineto %
12478 246 96 lineto %
12479 fill%
12480 /Helvetica 76 selectfont %
12481 0 setgray %
12482 8 22.5 moveto%
12483 (Submit)show%
12484 [/EP pdfmark%
12485 [%
12486 /BBox[0 0 250 100]%
12487 /_objdef{SubmitP}%
12488 /BP pdfmark %
12489 0.6 setgray %
12490 0 0 250 100 rectfill %
12491 0.34 setgray %
12492 2 2 moveto %
12493 2 98 lineto %
12494 248 98 lineto %
12495 246 96 lineto %
12496 4 96 lineto %
12497 4 4 lineto %
12498 fill %
12499 1 setgray %
12500 248 98 moveto %
12501 248 2 lineto %
12502 2 2 lineto %
12503 4 4 lineto %
12504 246 4 lineto %
12505 246 96 lineto %
12506 fill%
12507 /Helvetica 76 selectfont %

```

```

12508 0 setgray %
12509 10 20.5 moveto%
12510 (Submit)show%
12511 [/EP pdfmark%
12512 } ?pdfmark%
12513 [%
12514 {aform}%
12515 <<%
12516 /Fields{afields}%
12517 /DR<<%
12518 /Font<<%
12519 /ZaDb{ZaDb}%
12520 /Helv{Helv}%
12521 >>%
12522 >>%
12523 /DA(/Helv 10 Tf 0 g)%
12524 /CO{corder}%
12525 \ifHy@pdfa
12526 \else
12527 \ifHyField@NeedAppearances
12528 /NeedAppearances true%
12529 \fi
12530 \fi
12531 >>%
12532 /PUT pdfmark%
12533 [%
12534 {Catalog}%
12535 <<%
12536 /AcroForm{aform}%
12537 >>%
12538 /PUT pdfmark%
12539 }}%
12540 \kvsetkeys{Form}{#1}%
12541 }
12542 \let\@endForm\@empty
12543 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12544 \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
12545 }

12546 \newcount\HyField@AnnotCount
12547 \HyField@AnnotCount=\z@
12548 \def\HyField@AdvanceAnnotCount{%
12549 \global\advance\HyField@AnnotCount\@ne
12550 }
12551 \def\HyField@TheAnnotCount{%
12552 \the\HyField@AnnotCount
12553 }

12554 \edef\Fld@pageobjref{/P\string{ThisPage\string}}
12555 \def\HyField@AddToFields#1{%
12556 \pdfmark{%
12557 pdfmark=/APPEND,%
12558 Raw={%
12559 \string{afields\string}%
12560 \string{#1\HyField@TheAnnotCount\string}%

```

```

12561 }%
12562 }%
12563 \ifx\Fld@calculate@code\@empty
12564 \else
12565 \pdfmark{%
12566 pdfmark=/APPEND,%
12567 Raw={%
12568 \string{corder\string}%
12569 \string{#1\HyField@TheAnnotCount\string}%
12570 }%
12571 }%
12572 \fi
12573 }

12574 \def\@TextField[#1]#2{% parameters, label
12575 \def\Fld@name{#2}%
12576 \let\Fld@default\@empty
12577 \let\Fld@value\@empty
12578 \def\Fld@width{\DefaultWidthofText}%
12579 \def\Fld@height{%
12580 \ifFld@multiline
12581 \DefaultHeightofTextMultiline
12582 \else
12583 \DefaultHeightofText
12584 \fi
12585 }%
12586 \begingroup
12587 \expandafter\HyField@SetKeys\expandafter{%
12588 \DefaultOptionsofText,#1%
12589 }%
12590 \HyField@FlagsText
12591 \ifFld@hidden\def\Fld@width{1sp}\fi
12592 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12593 \HyField@AdvanceAnnotCount
12594 \LayoutTextField{#2}{%
12595 \leavevmode
12596 \Hy@escapeform\PDFForm@Text
12597 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
12598 pdfmark=/ANN,%
12599 objdef=text\HyField@TheAnnotCount,%
12600 Raw={\PDFForm@Text}%
12601 }%
12602 }%
12603 \HyField@AddToFields{text}%
12604 \endgroup
12605 }

12606 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12607 \def\Fld@name{#2}%
12608 \let\Fld@default\relax
12609 \let\Fld@value\relax
12610 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12611 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12612 \begingroup
12613 \Fld@menulength=0 %
12614 \@tempdima\z@

```

```

12615 \@for\@curropt:=#3\do{%
12616 \expandafter\Fld@checkequals\@curropt==\\%
12617 \Hy@StepCount\Fld@menulength
12618 \settowidth{\@tempdimb}{\@currDisplay}%
12619 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12620 }%
12621 \advance\@tempdima by 15\p@
12622 \begingroup
12623 \HyField@SetKeys{#1}%
12624 \edef\x{\endgroup
12625 \noexpand\expandafter
12626 \noexpand\HyField@SetKeys
12627 \noexpand\expandafter{%
12628 \expandafter\noexpand\csname DefaultOptionsof%
12629 \ifFld@radio
12630 Radio%
12631 \else
12632 \ifFld@combo
12633 \ifFld@popdown
12634 PopdownBox%
12635 \else
12636 ComboBox%
12637 \fi
12638 \else
12639 ListBox%
12640 \fi
12641 \fi
12642 \endcsname
12643 }%
12644 }\x
12645 \HyField@SetKeys{#1}%
12646 \ifFld@hidden\def\Fld@width{1sp}\fi
12647 \ifx\Fld@value\relax
12648 \let\Fld@value\Fld@default
12649 \fi
12650 \LayoutChoiceField{#2}{%
12651 \ifFld@radio
12652 \HyField@FlagsRadioButton
12653 \@@Radio{#3}%
12654 \else
12655 \begingroup
12656 \HyField@FlagsChoice
12657 \ifdim\Fld@width<\@tempdima
12658 \ifdim\@tempdima<1cm\@tempdima1cm\fi
12659 \edef\Fld@width{\the\@tempdima}%
12660 \fi
12661 \ifFld@combo
12662 \else
12663 \@tempdima=\the\Fld@menulength\Fld@charsize
12664 \advance\@tempdima by \Fld@borderwidth bp %
12665 \advance\@tempdima by \Fld@borderwidth bp %
12666 \edef\Fld@height{\the\@tempdima}%
12667 \fi
12668 \@@ListBox{#3}%

```

```

12669     \endgroup
12670     \fi
12671 }%
12672 \endgroup
12673 }
12674 \def\@@Radio#1{%
12675   \Fld@listcount=0 %
12676   \EdefEscapeName\Fld@default{\Fld@default}%
12677   \@for\@curropt:=#1\do{%
12678     \expandafter\Fld@checkequals\@curropt==\%
12679     \EdefEscapeName\@currValue{\@currValue}%
12680     \Hy@StepCount\Fld@listcount
12681     \@currDisplay\space
12682     \Hy@escapeform\PDFForm@Radio
12683     \ifnum\Fld@listcount=1 %
12684       \HyField@AdvanceAnnotCount
12685     \fi
12686     \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12687       pdfmark=/ANN,%
12688       objdef=\ifnum\Fld@listcount=1 radio\HyField@TheAnnotCount\fi,%
12689       Raw={%
12690         \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12691       }%
12692     } % deliberate space between radio buttons
12693     \ifnum\Fld@listcount=1 %
12694       \HyField@AddToFields{radio}%
12695     \fi
12696   }%
12697 }
12698 \newcount\Fld@listcount
12699 \def\@@Listbox#1{%
12700   \HyField@PDFChoices{#1}%
12701   \Hy@escapeform\PDFForm@List
12702   \HyField@AdvanceAnnotCount
12703   \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
12704     pdfmark=/ANN,%
12705     objdef=list\HyField@TheAnnotCount,%
12706     Raw={\PDFForm@List}%
12707   }%
12708   \HyField@AddToFields{list}%
12709 }
12710 \def\@PushButton[#1]#2{% parameters, label
12711   \def\Fld@name{#2}%
12712   \begingroup
12713     \expandafter\HyField@SetKeys\expandafter{%
12714       \DefaultOptionsofPushButton,#1%
12715     }%
12716     \ifHy@pdfa
12717       \Hy@Error{%
12718         PDF/A: Push button with JavaScript is prohibited%
12719       }\@ehc
12720     \LayoutPushButtonField{%
12721       \leavevmode
12722       \MakeButtonField{#2}%

```

```

12723 }%
12724 \else
12725   \HyField@FlagsPushButton
12726   \ifFld@hidden\def\Fld@width{1sp}\fi
12727   \HyField@AdvanceAnnotCount
12728   \LayoutPushButtonField{%
12729     \leavevmode
12730     \Hy@escapeform\PDFForm@Push
12731     \pdfmark[\MakeButtonField{#2}]{%
12732       pdfmark=/ANN,%
12733       objdef=push\HyField@TheAnnotCount,%
12734       Raw={\PDFForm@Push}%
12735     }%
12736   }%
12737   \HyField@AddToFields{push}%
12738 \fi
12739 \endgroup
12740 }
12741 \def\@Submit[#1]#2{%
12742   \def\Fld@width{\DefaultWidthofSubmit}%
12743   \def\Fld@height{\DefaultHeightofSubmit}%
12744   \begingroup
12745     \expandafter\HyField@SetKeys\expandafter{%
12746       \DefaultOptionsofSubmit,#1%
12747     }%
12748     \HyField@FlagsPushButton
12749     \HyField@FlagsSubmit
12750     \ifFld@hidden\def\Fld@width{1sp}\fi
12751     \Hy@escapeform\PDFForm@Submit
12752     \HyField@AdvanceAnnotCount
12753     \pdfmark[\MakeButtonField{#2}]{%
12754       pdfmark=/ANN,%
12755       objdef=submit\HyField@TheAnnotCount,%
12756       Raw={\PDFForm@Submit /AP<</N{Submit}/D{SubmitP}>>}%
12757     }%
12758     \HyField@AddToFields{submit}%
12759   \endgroup
12760 }
12761 \def\@Reset[#1]#2{%
12762   \def\Fld@width{\DefaultWidthofReset}%
12763   \def\Fld@height{\DefaultHeightofReset}%
12764   \begingroup
12765     \expandafter\HyField@SetKeys\expandafter{%
12766       \DefaultOptionsofReset,#1%
12767     }%
12768     \leavevmode
12769     \ifHy@pdfa
12770       \Hy@Error{%
12771         PDF/A: Reset action is prohibited%
12772       }\@ehc
12773       \MakeButtonField{#2}%
12774     \else
12775       \HyField@FlagsPushButton
12776       \ifFld@hidden\def\Fld@width{1sp}\fi

```

```

12777 \Hy@escapeform\PDFForm@Reset
12778 \HyField@AdvanceAnnotCount
12779 \pdfmark[\MakeButtonField{#2}]{%
12780 pdfmark=/ANN,%
12781 objdef=reset\HyField@TheAnnotCount,%
12782 Raw={\PDFForm@Reset}%
12783 }%
12784 \HyField@AddToFields{reset}%
12785 \fi
12786 \endgroup
12787 }%
12788 \def\@CheckBox[#1]#2{% parameters, label
12789 \def\Fld@name{#2}%
12790 \def\Fld@default{0}%
12791 \begingroup
12792 \def\Fld@width{\DefaultWidthofCheckBox}%
12793 \def\Fld@height{\DefaultHeightofCheckBox}%
12794 \expandafter\HyField@SetKeys\expandafter{%
12795 \DefaultOptionsofCheckBox,#1%
12796 }%
12797 \HyField@FlagsCheckBox
12798 \ifFld@hidden\def\Fld@width{1sp}\fi
12799 \HyField@AdvanceAnnotCount
12800 \LayoutCheckBox{#2}{%
12801 \leavevmode
12802 \Hy@escapeform\PDFForm@Check
12803 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
12804 pdfmark=/ANN,%
12805 objdef=check\HyField@TheAnnotCount,%
12806 Raw={\PDFForm@Check}%
12807 }%
12808 }%
12809 \HyField@AddToFields{check}%
12810 \endgroup
12811 }
12812 \pdfmark

```

## 45.2 HyperTeX

```

12813 (*hypertex)
12814 \def\@Form[#1]{%
12815 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12816 }
12817 \let\@endForm\@empty
12818 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12819 \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12820 }
12821 \def\@TextField[#1]#2{% parameters, label
12822 \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12823 }
12824 \def\@CheckBox[#1]#2{% parameters, label
12825 \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12826 }
12827 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices

```

```

12828 \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12829 }
12830 \def\@PushButton[#1]#2{% parameters, label
12831 \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12832 }
12833 \def\@Reset[#1]#2{%
12834 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12835 }
12836 \def\@Submit[#1]#2{%
12837 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12838 }
12839 </hypertex>

```

### 45.3 TeX4ht

```

12840 (*tex4ht)
12841 \def\@Form[#1]{%
12842 \kvsetkeys{Form}{#1}%
12843 \HCode{<form action="\Form@action" method="\Form@method">}%
12844 }
12845 \def\@endForm{\HCode{</form>}}
12846 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12847 \Hy@Message{Sorry, TeX4ht does not support gauges}%
12848 }
12849 \def\@TextField[#1]#2{% parameters, label
12850 \let\Hy@reserved@a\@empty
12851 \def\Fld@name{#2}%
12852 \let\Fld@default\@empty
12853 \bgroup
12854 \Field@toks={ }%
12855 \kvsetkeys{Field}{#1}%
12856 \HCode{<label for="\Fld@name">#2</label>}%
12857 \ifFld@password
12858 \@@PasswordField
12859 \else
12860 \@@TextField
12861 \fi
12862 \egroup
12863 }
12864 \def\@@PasswordField{%
12865 \HCode{%
12866 <input type="password" %
12867 id="\Fld@name" %
12868 name="\Fld@name" %
12869 \ifFld@hidden type="hidden" \fi
12870 value="\Fld@default" %
12871 \the\Field@toks
12872 >%
12873 }%
12874 }
12875 \def\@@TextField{%
12876 \ifFld@multiline
12877 \HCode{<textarea %
12878 \ifFld@readonly readonly \fi
12879 id="\Fld@name" %

```

```

12880     name="\Fld@name" %
12881     \ifFld@hidden type="hidden" \fi
12882     \the\Field@toks>%
12883 }%
12884 \Fld@default
12885 \HCode{</textarea>}%
12886 \else
12887 \HCode{<input type="textbox" %
12888     \ifFld@readonly readonly \fi
12889     id="\Fld@name" %
12890     name="\Fld@name" %
12891     \ifFld@hidden type="hidden" \fi
12892     value="\Fld@default" %
12893     \the\Field@toks>%
12894 }%
12895 \fi
12896 }
12897 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12898 \def\Fld@name{#2}%
12899 \let\Fld@default\@empty
12900 \let\Hy@reserved@a\relax
12901 \begingroup
12902 \expandafter\Fld@findlength#3\\%
12903 \Field@toks={ }%
12904 \kvsetkeys{Field}{#1}%
12905 #2%
12906 \ifFld@radio
12907 \expandafter\@@Radio#3\\%
12908 \else
12909 \expandafter\@@Menu#3\\%
12910 \fi
12911 \endgroup
12912 }
12913 \def\Fld@findlength#1\\{%
12914 \Fld@menulength=0 %
12915 \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
12916 }
12917 \def\@@Menu#1\\{%
12918 \HCode{<select size="\the\Fld@menulength" %
12919     name="\Fld@name" %
12920     \the\Field@toks>%
12921 }%
12922 \@for\@curropt:=#1\do{%
12923 \expandafter\Fld@checkequals\@curropt==\\%
12924 \HCode{<option %
12925     \ifx\@curropt\Fld@default selected \fi
12926     value="\@currValue">\@currDisplay</option>%
12927 }%
12928 }%
12929 \HCode{</select>}%
12930 }
12931 \def\@@Radio#1\\{%
12932 \@for\@curropt:=#1\do{%
12933 \expandafter\Fld@checkequals\@curropt==\\%

```

```

12934 \HCode{<input type="radio" %
12935 \ifx\@curropt\Fld@default checked \fi
12936 name="\Fld@name" %
12937 value="\@currValue" %
12938 \the\Field@toks>%
12939 }%
12940 \@currDisplay
12941 }%
12942 }
12943 \def\@PushButton[#1]#2{% parameters, label
12944 \def\Fld@name{#2}%
12945 \bgroup
12946 \Field@toks={ }%
12947 \kvsetkeys{Field}{#1}%
12948 \HCode{<input type="button" %
12949 name="\Fld@name" %
12950 value="#2" %
12951 \the\Field@toks>%
12952 }%
12953 \HCode{</button>}%
12954 \egroup
12955 }
12956 \def\@Submit[#1]#2{%
12957 \HCode{<button type="submit">#2</button>}%
12958 }
12959 \def\@Reset[#1]#2{%
12960 \HCode{<button type="reset">#2</button>}%
12961 }
12962 \def\@CheckBox[#1]#2{% parameters, label
12963 \let\Hy@reserved@a\@empty
12964 \def\Fld@name{#2}%
12965 \def\Fld@default{0}%
12966 \bgroup
12967 \Field@toks={ }%
12968 \kvsetkeys{Field}{#1}%
12969 \HCode{<input type="checkbox" %
12970 \ifFld@checked checked \fi
12971 \ifFld@disabled disabled \fi
12972 \ifFld@readonly readonly \fi
12973 name="\Fld@name" %
12974 \ifFld@hidden type="hidden" \fi
12975 value="\Fld@default" %
12976 \the\Field@toks>%
12977 #2%
12978 }%
12979 \egroup
12980 }
12981 </tex4ht>

```

## 45.4 pdfTeX

```

12982 <*pdfTeX>
12983 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12984 \Hy@Message{Sorry, pdfTeX does not support FORM gauges}%
12985 }

```

```

12986 \def\MakeFieldObject#1#2{\sbox0{#1}%
12987 \immediate\pdfxform0 %
12988 \expandafter\edef\csname #2Object\endcsname{%
12989 \the\pdfastxform\space 0 R%
12990 }%
12991 % \hbox to 0pt{\hskip-\maxdimen{\pdfrefxform \the\pdfastxform}}}%
12992 }%
12993 \let\HyField@afields\@empty
12994 \let\HyField@cofields\@empty
12995 \ifundefined{pdfastlink}
12996 {%
12997 \let\HyField@AddToFields\relax
12998 \PackageInfo{hyperref}{%
12999 You need pdfTeX 1.40.0 for setting the /Fields entry.%
13000 \MessageBreak
13001 Adobe Reader/Acrobat accepts an empty /Field array,%
13002 \MessageBreak
13003 but other PDF viewers might complain%
13004 }}%
13005 {%
13006 \let\HyField@AuxAddToFields\@gobble
13007 \let\HyField@AuxAddToCoFields\@gobbletwo
13008 \def\HyField@AfterAuxOpen{\Hy@AtBeginDocument}%

```

Insertion sort for calculation field list. In case of equal sort keys (for example, if ‘calculatesortkey’ is not used at all) the keys keep document calling order.

```

13009 \def\HyField@ABD@AuxAddToCoFields#1#2{%
13010 \begingroup
13011 \Hy@safe@activestrue
13012 \let\@secondoftwo\relax
13013 \ifx\HyField@cofields\@empty
13014 \xdef\HyField@cofields{%
13015 \@secondoftwo{#1}{ #2 0 R}%
13016 }%
13017 \else
13018 \let\@secondoftwo\relax
13019 \def\HyField@AddCoField###1##2##3{%
13020 \ifx##1\@empty
13021 \@secondoftwo{#1}{ #2 0 R}%
13022 \expandafter\@gobble
13023 \else
13024 \ifnum\pdfstrcmp{##2}{#1}>\z@
13025 \@secondoftwo{#1}{ #2 0 R}%
13026 \@secondoftwo{##2}{##3}%
13027 \expandafter\expandafter\expandafter\@gobble
13028 \else
13029 \@secondoftwo{##2}{##3}%
13030 \fi
13031 \fi
13032 \HyField@AddCoField
13033 }%
13034 \xdef\HyField@cofields{%
13035 \expandafter\HyField@AddCoField
13036 \HyField@cofields\@empty\@empty\@empty
13037 }%

```

```

13038 \fi
13039 \endgroup
13040 }%
13041 \Hy@AtBeginDocument{%
13042 \if@filesw
13043 \immediate\write\@mainaux{%
13044 \string\providecommand\string\HyField@AuxAddToFields[1]{}%
13045 }%
13046 \immediate\write\@mainaux{%
13047 \string\providecommand\string\HyField@AuxAddToCoFields[2]{}%
13048 }%
13049 \fi
13050 \let\HyField@AfterAuxOpen\@firstofone
13051 \def\HyField@AuxAddToFields#1{%
13052 \xdef\HyField@afields{%
13053 \ifx\HyField@afields\@empty
13054 \else
13055 \HyField@afields
13056 \space
13057 \fi
13058 #1 0 R%
13059 }%
13060 }%
13061 \let\HyField@AuxAddToCoFields\HyField@ABD@AuxAddToCoFields
13062 }%
13063 \def\HyField@AddToFields{%
13064 \expandafter\HyField@@AddToFields\expandafter{%
13065 \the\pdfastlink
13066 }%
13067 \ifx\Fld@calculate@code\@empty
13068 \else
13069 \begingroup
13070 \Hy@safe@activestrue
13071 \edef\Hy@temp{%
13072 \endgroup
13073 \if@filesw
13074 \write\@mainaux{%
13075 \string\HyField@AuxAddToCoFields{%
13076 \Fld@calculate@sortkey
13077 }{%
13078 \the\pdfastlink
13079 }%
13080 }%
13081 \fi
13082 }%
13083 \Hy@temp
13084 \fi
13085 }%
13086 \def\HyField@@AddToFields#1{%
13087 \HyField@AfterAuxOpen{%
13088 \if@filesw
13089 \write\@mainaux{%
13090 \string\HyField@AuxAddToFields{#1}%
13091 }%

```

```

13092     \fi
13093   }%
13094 }%
13095 }
13096 \def\@Form[#1]{%
13097   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13098   \kvsetkeys{Form}{#1}%
13099   \pdf@ifdraftmode{}{%
13100     \Hy@FormObjects
13101     \ifnum\pdfTeXversion>13 %
13102       \pdfrefobj\OBJ@pdfdocencoding
13103       \pdfrefobj\OBJ@ZaDb
13104       \pdfrefobj\OBJ@Helv
13105     \fi
13106     \AddToHook{enddocument/afteraux}{%
13107       \immediate\pdfobj{%
13108         <<%
13109         /Fields[\HyField@afields]%
13110         \ifx\HyField@cofields\@empty
13111         \else
13112           /CO[\romannumeral-`\Q\HyField@cofields]%
13113         \fi
13114         /DR<<%
13115         /Font<<%
13116         /ZaDb \OBJ@ZaDb\space 0 R%
13117         /Helv \OBJ@Helv\space 0 R%
13118         >>%
13119       >>%
13120       /DA(/Helv 10 Tf 0 g)%
13121       \ifHy@pdfa
13122       \else
13123         \ifHyField@NeedAppearances
13124         /NeedAppearances true%
13125       \fi
13126       \fi
13127     >>%
13128   }%
13129   \edef\OBJ@acroform{\the\pdflastobj}%
13130   \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
13131 }%
13132 }%
13133 \MakeFieldObject{%
Same as \ding{123} of package pifont.
13134   \begingroup
13135     \fontfamily{pzd}%
13136     \fontencoding{U}%
13137     \fontseries{m}%
13138     \fontshape{n}%
13139     \selectfont
13140     \char123 %
13141   \endgroup
13142 }{Ding}%
13143 \MakeFieldObject{%
13144   \fbox{\textcolor{yellow}{\textsff{Submit}}}%

```

```

13145 }{Submit}%
13146 \MakeFieldObject{%
13147   \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
13148 }{SubmitP}%
13149 }
13150 \let\@endForm\@empty
13151 \let\HyAnn@AbsPageLabel\@empty
13152 \let\Fld@pageobjref\@empty
13153 \@ifundefined{pdfpageref}{%
13154 }{%
13155   \@ifpackageloaded{zref-abspage}{%
13156     \newcount\HyAnn@Count
13157     \HyAnn@Count=\z@
13158     \def\HyAnn@AbsPageLabel{%
13159       \global\advance\HyAnn@Count by\@ne
13160       \zref@labelbyprops{HyAnn@\the\HyAnn@Count}{abspage}%
13161       \zref@refused{HyAnn@\the\HyAnn@Count}%
13162     }%
13163     \def\Fld@pageobjref{%
13164       \zref@ifrefundefined{HyAnn@\the\HyAnn@Count}{%
13165       }{%
13166         \zref@ifrefcontainsprop{HyAnn@\the\HyAnn@Count}{abspage}{%
13167           /P \pdfpageref
13168           \zref@extractdefault{HyAnn@\the\HyAnn@Count}{abspage}{1} %
13169           \space 0 R%
13170         }{%
13171         }%
13172       }%
13173     }%
13174   }{%
13175   }%
13176 }
13177 \def\@TextField[#1]#2{% parameters, label
13178   \def\Fld@name{#2}%
13179   \let\Fld@default\@empty
13180   \let\Fld@value\@empty
13181   \def\Fld@width{\DefaultWidthofText}%
13182   \def\Fld@height{%
13183     \ifFld@multiline
13184       \DefaultHeightofTextMultiline
13185     \else
13186       \DefaultHeightofText
13187     \fi
13188   }%
13189   \begingroup
13190     \expandafter\HyField@SetKeys\expandafter{%
13191       \DefaultOptionsofText,#1%
13192     }%
13193   \PDFForm@Name
13194   \HyField@FlagsText
13195   \ifFld@hidden\def\Fld@width{1sp}\fi
13196   \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13197   \LayoutTextField{#2}%
13198   \leavevmode

```

```

13199 \HyAnn@AbsPageLabel
13200 \Hy@escapeform\PDFForm@Text
13201 \pdfstartlink user {\PDFForm@Text}\relax
13202 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
13203 \HyField@AddToFields
13204 }%
13205 \endgroup
13206 }
13207 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13208 \def\Fld@name{#2}%
13209 \let\Fld@default\relax
13210 \let\Fld@value\relax
13211 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13212 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13213 \begingroup
13214 \Fld@menulength=0 %
13215 \@tempdima\z@
13216 \@for\@curropt:=#3\do{%
13217 \expandafter\Fld@checkequals\@curropt==\%
13218 \Hy@StepCount\Fld@menulength
13219 \settowidth{\@tempdimb}{\@currDisplay}%
13220 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13221 }%
13222 \advance\@tempdima by 15\p@
13223 \begingroup
13224 \HyField@SetKeys{#1}%
13225 \edef\x{\endgroup
13226 \noexpand\expandafter
13227 \noexpand\HyField@SetKeys
13228 \noexpand\expandafter{%
13229 \expandafter\noexpand\curname DefaultOptionsof%
13230 \ifFld@radio
13231 Radio%
13232 \else
13233 \ifFld@combo
13234 \ifFld@popdown
13235 PopdownBox%
13236 \else
13237 ComboBox%
13238 \fi
13239 \else
13240 ListBox%
13241 \fi
13242 \fi
13243 \endcurname
13244 }%
13245 }\x
13246 \HyField@SetKeys{#1}%
13247 \PDFForm@Name
13248 \ifFld@hidden\def\Fld@width{1sp}\fi
13249 \ifx\Fld@value\relax
13250 \let\Fld@value\Fld@default
13251 \fi
13252 \LayoutChoiceField{#2}{%

```

```

13253 \ifFld@radio
13254 \HyField@FlagsRadioButton
13255 \@@Radio{#3}%
13256 \else
13257 \begingroup
13258 \HyField@FlagsChoice
13259 \ifdim\Fld@width<\@tempdima
13260 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13261 \edef\Fld@width{\the\@tempdima}%
13262 \fi
13263 \ifFld@combo
13264 \else
13265 \@tempdima=\the\Fld@menulength\Fld@charsize
13266 \advance\@tempdima by \Fld@borderwidth bp %
13267 \advance\@tempdima by \Fld@borderwidth bp %
13268 \edef\Fld@height{\the\@tempdima}%
13269 \fi
13270 \@@ListBox{#3}%
13271 \endgroup
13272 \fi
13273 }%
13274 \endgroup
13275 }
13276 \def\@@Radio#1{%
13277 \Fld@listcount=0 %
13278 \EdefEscapeName\Fld@default{\Fld@default}%
13279 \@for\@curropt:=#1\do{%
13280 \expandafter\Fld@checkequals\@curropt==\%
13281 \EdefEscapeName\@currValue{\@currValue}%
13282 \Hy@StepCount\Fld@listcount
13283 \@currDisplay\space
13284 \leavevmode
13285 \HyAnn@AbsPageLabel
13286 \Hy@escapeform\PDFForm@Radio
13287 \pdfstartlink user {%
13288 \PDFForm@Radio
13289 /AP<<%
13290 /N<<%

```

Laurent.Guillope@math.univ-nantes.fr (Laurent Guillope) persuades me that this was wrong: `/\Fld@name\the\Fld@listcount`. But I leave it here to remind me that it is untested.

```

13291 /\@currValue\space \DingObject
13292 >>%
13293 >>%
13294 }%
13295 \relax
13296 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
13297 \ifnum\Fld@listcount=1 %
13298 \HyField@AddToFields
13299 \fi
13300 \space % deliberate space between radio buttons
13301 }%
13302 }

```

```

13303 \newcount\Fld@listcount
13304 \def\@@ListBox#1{%
13305   \HyField@PDFChoices{#1}%
13306   \leavevmode
13307   \HyAnn@AbsPageLabel
13308   \Hy@escapeform\PDFForm@List
13309   \pdfstartlink user {\PDFForm@List}\relax
13310   \MakeChoiceField{\Fld@width}{\Fld@height}%
13311   \pdfendlink
13312   \HyField@AddToFields
13313 }
13314 \def\@PushButton[#1]#2{% parameters, label
13315   \def\Fld@name{#2}%
13316   \begingroup
13317     \expandafter\HyField@SetKeys\expandafter{%
13318       \DefaultOptionsofPushButton,#1%
13319     }%
13320     \PDFForm@Name
13321     \ifHy@pdfa
13322       \Hy@Error{%
13323         PDF/A: Push button with JavaScript is prohibited%
13324       }\@ehc
13325       \LayoutPushButtonField{%
13326         \leavevmode
13327         \MakeButtonField{#2}%
13328       }%
13329     \else
13330       \HyField@FlagsPushButton
13331       \ifFld@hidden\def\Fld@width{1sp}\fi
13332       \LayoutPushButtonField{%
13333         \leavevmode
13334         \HyAnn@AbsPageLabel
13335         \Hy@escapeform\PDFForm@Push
13336         \pdfstartlink user {\PDFForm@Push}\relax
13337         \MakeButtonField{#2}%
13338         \pdfendlink
13339         \HyField@AddToFields
13340       }%
13341     \fi
13342   \endgroup
13343 }
13344 \def\@Submit[#1]#2{%
13345   \def\Fld@width{\DefaultWidthofSubmit}%
13346   \def\Fld@height{\DefaultHeightofSubmit}%
13347   \begingroup
13348     \expandafter\HyField@SetKeys\expandafter{%
13349       \DefaultOptionsofSubmit,#1%
13350     }%
13351     \HyField@FlagsPushButton
13352     \HyField@FlagsSubmit
13353     \ifFld@hidden\def\Fld@width{1sp}\fi
13354     \leavevmode
13355     \HyAnn@AbsPageLabel
13356     \Hy@escapeform\PDFForm@Submit

```

```

13357 \pdfstartlink user {%
13358 \PDFForm@Submit
13359 /AP<</N \SubmitObject/D \SubmitPObject>>%
13360 }%
13361 \relax
13362 \MakeButtonField{#2}%
13363 \pdfendlink
13364 \HyField@AddToFields
13365 \endgroup
13366 }
13367 \def\@Reset[#1]#2{%
13368 \def\Fld@width{\DefaultWidthofReset}%
13369 \def\Fld@height{\DefaultHeightofReset}%
13370 \begingroup
13371 \expandafter\HyField@SetKeys\expandafter{%
13372 \DefaultOptionsofReset,#1%
13373 }%
13374 \leavevmode
13375 \ifHy@pdfa
13376 \Hy@Error{%
13377 PDF/A: Reset action is prohibited%
13378 }\@ehc
13379 \MakeButtonField{#2}%
13380 \else
13381 \HyField@FlagsPushButton
13382 \ifFld@hidden\def\Fld@width{1sp}\fi
13383 \HyAnn@AbsPageLabel
13384 \Hy@escapeform\PDFForm@Reset
13385 \pdfstartlink user {\PDFForm@Reset}\relax
13386 \MakeButtonField{#2}%
13387 \pdfendlink
13388 \HyField@AddToFields
13389 \fi
13390 \endgroup
13391 }
13392 \def\@CheckBox[#1]#2{% parameters, label
13393 \def\Fld@name{#2}%
13394 \def\Fld@default{0}%
13395 \begingroup
13396 \def\Fld@width{\DefaultWidthofCheckBox}%
13397 \def\Fld@height{\DefaultHeightofCheckBox}%
13398 \expandafter\HyField@SetKeys\expandafter{%
13399 \DefaultOptionsofCheckBox,#1%
13400 }%
13401 \PDFForm@Name
13402 \HyField@FlagsCheckBox
13403 \ifFld@hidden\def\Fld@width{1sp}\fi
13404 \LayoutCheckField{#2}{%
13405 \leavevmode
13406 \HyAnn@AbsPageLabel
13407 \Hy@escapeform\PDFForm@Check
13408 \pdfstartlink user {\PDFForm@Check}\relax
13409 \MakeCheckField{\Fld@width}{\Fld@height}%
13410 \pdfendlink

```

```

13411 \HyField@AddToFields
13412 }%
13413 \endgroup
13414 }
13415 \def\Hy@FormObjects{%
13416 \pdfobj {%
13417 <<%
13418 /Type/Encoding%
13419 /Differences[%
13420 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
13421 /ring/tilde %
13422 39/quotesingle %
13423 96/grave %
13424 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13425 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13426 /quotedblbase/quotedblleft/quotedblright/quoteleft%
13427 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
13428 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13429 160/Euro %
13430 164/currency %
13431 166/brokenbar %
13432 168/dieresis/copyright/ordfeminine %
13433 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13434 /twosuperior/threesuperior/acute/mu %
13435 183/periodcentered/cedilla/onesuperior/ordmasculine %
13436 188/onequarter/onehalf/threequarters %
13437 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13438 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
13439 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
13440 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
13441 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
13442 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
13443 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
13444 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
13445 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
13446 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
13447 ]%
13448 >>%
13449 }%
13450 \xdef\OBJ@pdfdocencoding{\the\pdflastobj}%
13451 \pdfobj{%
13452 <<%
13453 /Type/Font%
13454 /Subtype/Type1%
13455 /Name/ZaDb%
13456 /BaseFont/ZapfDingbats%
13457 >>%
13458 }%
13459 \xdef\OBJ@ZaDb{\the\pdflastobj}%
13460 \pdfobj{%
13461 <<%
13462 /Type/Font%
13463 /Subtype/Type1%
13464 /Name/Helv%

```

```

13465 /BaseFont/Helvetica%
13466 /Encoding \OBJ@pdfdocencoding\space 0 R%
13467 >>%
13468 }%
13469 \xdef\OBJ@Helv{\the\pdfastobj}%
13470 \global\let\Hy@FormObjects\relax
13471 }
13472 \pdfTeX

```

## 45.5 dvipdfm, xetex

D. P. Story adapted the pdf<sub>T</sub>E<sub>X</sub> forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```

13473 \*dvipdfm | xetex

```

\@Gauge

```

13474 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13475 \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
13476 }

```

\@Form

```

13477 \def\@Form[#1]{%
13478 \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13479 \kvsetkeys{Form}{#1}%
13480 \Hy@FormObjects
13481 \@pdfm@mark{obj @afields []}%
13482 \@pdfm@mark{obj @corder []}%
13483 \@pdfm@mark{%
13484 obj @aform <<%
13485 /Fields @afields%
13486 /DR<<%
13487 /Font<<%
13488 /ZaDb @OBJZaDb%
13489 /Helv @OBJHelv%
13490 >>%
13491 >>%
13492 /DA(/Helv 10 Tf 0 g)%
13493 /CO @corder%
13494 \ifHy@pdfa
13495 \else
13496 \ifHyField@NeedAppearances
13497 /NeedAppearances true%
13498 \fi
13499 \fi
13500 >>%
13501 }%
13502 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
13503 }

```

\@endForm

```

13504 \let\@endForm\@empty

```

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.

```

13505 \def\dvipdfm@setdim{%

```

```

13506 height \the\ht\pdfm@box\space
13507 width \the\wd\pdfm@box\space
13508 depth \the\dp\pdfm@box\space
13509 }

```

\HyField@AnnotCount

```

13510 \newcount\HyField@AnnotCount
13511 \HyField@AnnotCount=\z@

```

\HyField@AdvanceAnnotCount

```

13512 \def\HyField@AdvanceAnnotCount{%
13513 \global\advance\HyField@AnnotCount\@ne
13514 }

```

\HyField@TheAnnotCount

```

13515 \def\HyField@TheAnnotCount{%
13516 \the\HyField@AnnotCount
13517 }

```

\Fld@pageobjref

```

13518 \def\Fld@pageobjref{/P @thispage}%

```

\HyField@AddToFields

```

13519 \def\HyField@AddToFields#1{%
13520 \@pdfm@mark{put @afields @#1\HyField@TheAnnotCount}%
13521 \ifx\Fld@calculate@code\@empty
13522 \else
13523 \@pdfm@mark{put @corder @#1\HyField@TheAnnotCount}%
13524 \fi
13525 }

```

\@TextField

```

13526 \def\@TextField[#1]#2{% parameters, label
13527 \def\Fld@name{#2}%
13528 \let\Fld@default\@empty
13529 \let\Fld@value\@empty
13530 \def\Fld@width{\DefaultWidthofText}%
13531 \def\Fld@height{%
13532 \ifFld@multiline
13533 \DefaultHeightofTextMultiline
13534 \else
13535 \DefaultHeightofText
13536 \fi
13537 }%
13538 \begingroup
13539 \expandafter\HyField@SetKeys\expandafter{%
13540 \DefaultOptionsofText,#1%
13541 }%
13542 \PDFForm@Name
13543 \HyField@FlagsText
13544 \ifFld@hidden\def\Fld@width{1sp}\fi
13545 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13546 \setbox\pdfm@box=\hbox{%

```

```

13547 \MakeTextField{\Fld@width}{\Fld@height}%
13548 }%
13549 \HyField@AdvanceAnnotCount
13550 \LayoutTextField{#2}{%
13551 \leavevmode
13552 \Hy@escapeform\PDFForm@Text
13553 \@pdfm@mark{%
13554 ann @text\HyField@TheAnnotCount\space
13555 \dvi pdfm@setdim << \PDFForm@Text >>%
13556 }%
13557 }%
13558 \unhbox\pdfm@box
13559 \HyField@AddToFields{text}%
13560 % record in @afields array
13561 \endgroup
13562 }

```

#### \@ChoiceMenu

```

13563 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13564 \def\Fld@name{#2}%
13565 \let\Fld@default\relax
13566 \let\Fld@value\relax
13567 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13568 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13569 \begingroup
13570 \Fld@menulength=0 %
13571 \@tempdima\z@
13572 \@for\@curropt:=#3\do{%
13573 \expandafter\Fld@checkequals\@curropt==\%
13574 \Hy@StepCount\Fld@menulength
13575 \settowidth{\@tempdimb}{\@currDisplay}%
13576 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13577 }%
13578 \advance\@tempdima by 15\p@
13579 \begingroup
13580 \HyField@SetKeys{#1}%
13581 \edef\x{\endgroup
13582 \noexpand\expandafter
13583 \noexpand\HyField@SetKeys
13584 \noexpand\expandafter{%
13585 \expandafter\noexpand\curname DefaultOptionsof%
13586 \ifFld@radio
13587 Radio%
13588 \else
13589 \ifFld@combo
13590 \ifFld@popdown
13591 PopdownBox%
13592 \else
13593 ComboBox%
13594 \fi
13595 \else
13596 ListBox%
13597 \fi
13598 \fi

```

```

13599     \endcsname
13600   }%
13601 } \x
13602 \HyField@SetKeys{#1}%
13603 \PDFForm@Name
13604 \ifFld@hidden\def\Fld@width{1sp}\fi
13605 \ifx\Fld@value\relax
13606   \let\Fld@value\Fld@default
13607 \fi
13608 \LayoutChoiceField{#2}{%
13609   \ifFld@radio
13610     \HyField@FlagsRadioButton
13611     \@@Radio{#3}%
13612   \else
13613     \begingroup
13614       \HyField@FlagsChoice
13615       \ifdim\Fld@width<\@tempdima
13616         \ifdim\@tempdima<1cm\@tempdima1cm\fi
13617         \edef\Fld@width{\the\@tempdima}%
13618       \fi
13619       \ifFld@combo
13620       \else
13621         \@tempdima=\the\Fld@menulength\Fld@charsize
13622         \advance\@tempdima by \Fld@borderwidth bp %
13623         \advance\@tempdima by \Fld@borderwidth bp %
13624         \edef\Fld@height{\the\@tempdima}%
13625       \fi
13626       \@@ListBox{#3}%
13627     \endgroup
13628   \fi
13629 }%
13630 \endgroup
13631 }

```

#### \@@Radio

```

13632 \def\@@Radio#1{%
13633   \Fld@listcount=0 %
13634   \EdefEscapeName\Fld@default{\Fld@default}%
13635   \setbox\pdfm@box=\hbox{%
13636     \MakeRadioField{\Fld@width}{\Fld@height}%
13637   }%
13638   \@for\@curropt:=#1\do{%
13639     \expandafter\Fld@checkequals\@curropt==\%
13640     \EdefEscapeName\@currValue{\@currValue}%
13641     \Hy@StepCount\Fld@listcount
13642     \@currDisplay\space
13643     \leavevmode
13644     \Hy@escapeform\PDFForm@Radio
13645     \ifnum\Fld@listcount=1 %
13646       \HyField@AdvanceAnnotCount
13647     \fi
13648     \@pdfm@mark{%
13649       ann %
13650     \ifnum\Fld@listcount=1 %

```

```

13651      @radio\HyField@TheAnnotCount%
13652      \space
13653      \fi
13654      \dvipdfm@setdim
13655      <<%
13656      \PDFForm@Radio
13657      /AP<</N<</\@currValue /null>>>>%
13658      >>%
13659      }%
13660      \unhcopy\pdfm@box\space% deliberate space between radio buttons
13661      \ifnum\Fld@listcount=1 %
13662      \HyField@AddToFields{radio}%
13663      \fi
13664      }%
13665      }

\Fld@listcount
13666 \newcount\Fld@listcount

\@@Listbox
13667 \def\@@Listbox#1{%
13668   \HyField@PDFChoices{#1}%
13669   \setbox\pdfm@box=\hbox{%
13670     \MakeChoiceField{\Fld@width}{\Fld@height}%
13671   }%
13672   \leavevmode
13673   \Hy@escapeform\PDFForm@List
13674   \HyField@AdvanceAnnotCount
13675   \@pdfm@mark{%
13676     ann @list\HyField@TheAnnotCount\space
13677     \dvipdfm@setdim
13678     <<\PDFForm@List>>%
13679   }%
13680   \unhbox\pdfm@box
13681   \HyField@AddToFields{list}%
13682   }

\@PushButton
13683 \def\@PushButton[#1]#2{% parameters, label
13684   \def\Fld@name{#2}%
13685   \begingroup
13686     \expandafter\HyField@SetKeys\expandafter{%
13687       \DefaultOptionsofPushButton,#1%
13688     }%
13689     \PDFForm@Name
13690     \ifHy@pdfa
13691       \Hy@Error{%
13692         PDF/A: Push button with JavaScript is prohibited%
13693       }\@ehc
13694       \LayoutPushButtonField{%
13695         \leavevmode
13696         \MakeButtonField{#2}%
13697       }%
13698     \else

```

```

13699 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}}%
13700 \HyField@FlagsPushButton
13701 \iffld@hidden\def\Fld@width{1sp}\fi
13702 \HyField@AdvanceAnnotCount
13703 \LayoutPushButtonField{%
13704 \leavevmode
13705 \Hy@escapeform\PDFForm@Push
13706 \@pdfm@mark{%
13707 ann @push\HyField@TheAnnotCount\space
13708 \dvi pdfm@setdim
13709 <<\PDFForm@Push>>%
13710 }%
13711 }%
13712 \unhbox\pdfm@box
13713 \HyField@AddToFields{push}%
13714 \fi
13715 \endgroup
13716 }

\@Submit
13717 \def\@Submit[#1]#2{%
13718 \def\Fld@width{\DefaultWidthofSubmit}%
13719 \def\Fld@height{\DefaultHeightofSubmit}%
13720 \begingroup
13721 \expandafter\HyField@SetKeys\expandafter{%
13722 \DefaultOptionsofSubmit,#1%
13723 }%
13724 \HyField@FlagsPushButton
13725 \HyField@FlagsSubmit
13726 \iffld@hidden\def\Fld@width{1sp}\fi
13727 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}}%
13728 \leavevmode
13729 \Hy@escapeform\PDFForm@Submit
13730 \HyField@AdvanceAnnotCount
13731 \@pdfm@mark{%
13732 ann @submit\HyField@TheAnnotCount\space
13733 \dvi pdfm@setdim
13734 <<\PDFForm@Submit>>%
13735 }%
13736 \unhbox\pdfm@box%
13737 \HyField@AddToFields{submit}%
13738 \endgroup
13739 }

\@Reset
13740 \def\@Reset[#1]#2{%
13741 \def\Fld@width{\DefaultWidthofReset}%
13742 \def\Fld@height{\DefaultHeightofReset}%
13743 \begingroup
13744 \expandafter\HyField@SetKeys\expandafter{%
13745 \DefaultOptionsofReset,#1%
13746 }%
13747 \leavevmode
13748 \ifHy@pdfa

```

```

13749 \Hy@Error{%
13750     PDF/A: Reset action is prohibited%
13751 } \@ehc
13752 \MakeButtonField{#2}%
13753 \else
13754 \HyField@FlagsPushButton
13755 \ifFld@hidden\def\Fld@width{1sp}\fi
13756 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13757 \Hy@escapeform\PDFForm@Reset
13758 \HyField@AdvanceAnnotCount
13759 \@pdfm@mark{%
13760     ann @reset\HyField@TheAnnotCount\space
13761     \dvi pdfm@setdim
13762     <<\PDFForm@Reset>>%
13763 }%
13764 \unhbox\pdfm@box
13765 \HyField@AddToFields{reset}%
13766 \fi
13767 \endgroup
13768 }

\@CheckBox
13769 \def\@CheckBox[#1]#2{% parameters, label
13770 \def\Fld@name{#2}%
13771 \def\Fld@default{0}%
13772 \begingroup
13773 \def\Fld@width{\DefaultWidthofCheckBox}%
13774 \def\Fld@height{\DefaultHeightofCheckBox}%
13775 \expandafter\HyField@SetKeys\expandafter{%
13776     \DefaultOptionsofCheckBox,#1%
13777 }%
13778 \PDFForm@Name
13779 \HyField@FlagsCheckBox
13780 \ifFld@hidden\def\Fld@width{1sp}\fi
13781 \setbox\pdfm@box=\hbox{%
13782     \MakeCheckField{\Fld@width}{\Fld@height}%
13783 }%
13784 \HyField@AdvanceAnnotCount
13785 \LayoutCheckField{#2}{%
13786     \leavevmode
13787     \Hy@escapeform\PDFForm@Check
13788     \@pdfm@mark{%
13789         ann @check\HyField@TheAnnotCount\space
13790         \dvi pdfm@setdim
13791         <<\PDFForm@Check>>%
13792     }%
13793     \unhbox\pdfm@box
13794     \HyField@AddToFields{check}%
13795 }%
13796 \endgroup
13797 }

13798 \def\Hy@FormObjects{%
13799 \@pdfm@mark{obj @OBJpdfdocencoding%

```

```

13800 <<%
13801 /Type/Encoding%
13802 /Differences[%
13803 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13804 39/quotesingle %
13805 96/grave %
13806 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13807 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13808 /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
13809 /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
13810 /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13811 160/Euro %
13812 164/currency %
13813 166/brokenbar %
13814 168/dieresis/copyright/ordfeminine %
13815 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13816 /twosuperior/threesuperior/acute/mu %
13817 183/periodcentered/cedilla/onesuperior/ordmasculine %
13818 188/onequarter/onehalf/threequarters %
13819 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13820 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
13821 /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
13822 /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
13823 /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
13824 /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
13825 /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
13826 /eth/ntilde/ograde/oacute/ocircumflex/otilde/odieresis%
13827 /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
13828 /thorn/ydieresis%
13829 ]%
13830 >>%
13831 }%
13832 \@pdfm@mark{obj @OBJZaDb%
13833 <<%
13834 /Type/Font%
13835 /Subtype/Type1%
13836 /Name/ZaDb%
13837 /BaseFont/ZapfDingbats%
13838 >>%
13839 }%
13840 \@pdfm@mark{obj @OBJHelv%
13841 <<%
13842 /Type/Font%
13843 /Subtype/Type1%
13844 /Name/Helv%
13845 /BaseFont/Helvetica%
13846 /Encoding @OBJpdfdocencoding%
13847 >>%
13848 }%
13849 \global\let\Hy@FormObjects\relax
13850 }
13851 \</dvipdfm | xetex>

```

## 45.6 Common forms part

```

13852 (*pdfform)

\Fld@pageobjref
13853 \providecommand*{\Fld@pageobjref}{}

\Hy@escapestring
13854 \@ifundefined{pdf@escapestring}
13855 {%
13856 \let\Hy@escapestring\@firstofone
13857 \def\Hy@escapeform#1{%
13858 \ifHy@pdfescapeform
13859 \def\Hy@escapestring##1{%
13860 \noexpand\Hy@escapestring{\noexpand##1}%
13861 }%
13862 \edef\Hy@temp{#1}%
13863 \expandafter\Hy@@@escapeform\Hy@temp\Hy@escapestring{}\@nil
13864 \def\Hy@escapestring##1{%
13865 \@ifundefined{Hy@esc@\string##1}{%
13866 ##1%
13867 \ThisShouldNotHappen
13868 }{%
13869 \csname Hy@esc@\string##1\endcsname
13870 }%
13871 }%
13872 \else
13873 \let\Hy@escapestring\@firstofone
13874 \fi
13875 }%
13876 \def\Hy@@@escapeform#1\Hy@escapestring#2#3\@nil{%
13877 \ifx\#3\%
13878 \else
13879 \expandafter
13880 \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13881 \Hy@ReturnAfterFi{%
13882 \Hy@@@escapeform#3\@nil
13883 }%
13884 \fi
13885 }%
13886 }{%
13887 \def\Hy@escapeform#1{%
13888 \ifHy@pdfescapeform
13889 \let\Hy@escapestring\pdfescapestring
13890 \else
13891 \let\Hy@escapestring\@firstofone
13892 \fi
13893 }%
13894 \Hy@escapeform}%
13895 }

\PDFForm@Name
13896 \def\PDFForm@Name{%
13897 \PDFForm@@@Name\Fld@name
13898 \ifx\Fld@altname\relax

```

```

13899 \else
13900 \PDFForm@@Name\Fld@altname
13901 \fi
13902 \ifx\Fld@mappingname\relax
13903 \else
13904 \PDFForm@@Name\Fld@mappingname
13905 \fi
13906 }

```

#### \PDFForm@@Name

```

13907 \def\PDFForm@@Name#1{%
13908 \begingroup
13909 \ifnum\Hy@pdf@major@minor@version<105 % implementation note 117, PDF spec 1.7
13910 \ifHy@unicode
13911 \Hy@unicodedefalse
13912 \fi
13913 \fi
13914 \pdfstringdef\Hy@gtemp#1%
13915 \endgroup
13916 \let#1\Hy@gtemp
13917 }

```

#### \Fld@additionalactions

```

13918 \def\Fld@@@additionalactions{%
K input (keystroke) format
13919 \ifx\Fld@keystroke@code\@empty
13920 \else
13921 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13922 \fi
F display format
13923 \ifx\Fld@format@code\@empty
13924 \else
13925 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13926 \fi
V validation
13927 \ifx\Fld@validate@code\@empty
13928 \else
13929 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13930 \fi
C calculation
13931 \ifx\Fld@calculate@code\@empty
13932 \else
13933 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13934 \fi
Fo receiving the input focus
13935 \ifx\Fld@onfocus@code\@empty
13936 \else
13937 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13938 \fi

```

Bl losing the input focus (blurred)

```
13939 \ifx\Fld@onblur@code\@empty
13940 \else
13941 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13942 \fi
```

D pressing the mouse button (down)

```
13943 \ifx\Fld@onmousedown@code\@empty
13944 \else
13945 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13946 \fi
```

U releasing the mouse button (up)

```
13947 \ifx\Fld@onmouseup@code\@empty
13948 \else
13949 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13950 \fi
```

E cursor enters the annotation's active area.

```
13951 \ifx\Fld@onenter@code\@empty
13952 \else
13953 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13954 \fi
```

X cursor exits the annotation's active area.

```
13955 \ifx\Fld@onexit@code\@empty
13956 \else
13957 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13958 \fi
13959 }
13960 \def\Fld@additionalactions{%
13961 \if\Fld@@additionalactions-%
13962 \else
13963 \ifHy@pdfa
13964 \else
13965 /AA<<\Fld@@additionalactions>>%
13966 \fi
13967 \fi
13968 }
```

\Fld@annotnames

```
13969 \def\Fld@annotnames{%
13970 /T(\Fld@name)%
13971 \ifx\Fld@altname\relax
13972 \else
13973 /TU(\Fld@altname)%
13974 \fi
13975 \ifx\Fld@mappingname\relax
13976 \else
13977 /TM(\Fld@mappingname)%
13978 \fi
13979 }
```

\PDFForm@Check

```
13980 \def\PDFForm@Check{%
```

```

13981 /Subtype/Widget%
13982 \Fld@annotflags
13983 \Fld@pageobjref
13984 \Fld@annotnames
13985 /FT/Btn%
13986 \Fld@flags
13987 /Q \Fld@align
13988 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13989 /AP<< /N <</Yes<<>>>> >> %new string /Yes is from below
13990 /MK<<%
13991 \ifnum\Fld@rotation=\z@
13992 \else
13993 /R \Fld@rotation
13994 \fi
13995 \ifx\Fld@bordercolor\relax
13996 \else
13997 /BC[\Fld@bordercolor]%
13998 \fi
13999 \ifx\Fld@bcolor\relax
14000 \else
14001 /BG[\Fld@bcolor]%
14002 \fi
14003 /CA(\Hy@escapestring{\Fld@cbsymbol})%
14004 >>%
14005 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
14006 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14007 /H/P%
14008 \ifFld@checked /V/Yes/AS/Yes\else /V/Off/AS/Off\fi
14009 \Fld@additionalactions
14010 }

```

#### \PDFForm@Push

```

14011 \ifHy@pdfa
14012 \else
14013 \def\PDFForm@Push{%
14014 /Subtype/Widget%
14015 \Fld@annotflags
14016 \Fld@pageobjref
14017 \Fld@annotnames
14018 /FT/Btn%
14019 \Fld@flags
14020 /H/P%
14021 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14022 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14023 \ifx\Fld@bordercolor\relax\else 1\fi
14024 \space
14025 \else
14026 /MK<<%
14027 \ifnum\Fld@rotation=\z@
14028 \else
14029 /R \Fld@rotation
14030 \fi
14031 \ifx\Fld@bordercolor\relax
14032 \else

```

```

14033         /BC[\Fld@bordercolor]%
14034     \fi
14035     >>%
14036 \fi
14037 /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
14038 \Fld@additionalactions
14039 }%
14040 \fi

```

#### \PDFForm@List

```

14041 \def\PDFForm@List{%
14042 /Subtype/Widget%
14043 \Fld@annotflags
14044 \Fld@pageobjref
14045 \Fld@annotnames
14046 /FT/Ch%
14047 \Fld@flags
14048 /Q \Fld@align
14049 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14050 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14051     \ifx\Fld@bordercolor\relax\else 1\fi
14052     \ifx\Fld@bcolor\relax \else 1\fi
14053     \space
14054 \else
14055 /MK<<%
14056     \ifnum\Fld@rotation=\z@
14057     \else
14058     /R \Fld@rotation
14059     \fi
14060     \ifx\Fld@bordercolor\relax
14061     \else
14062     /BC[\Fld@bordercolor]%
14063     \fi
14064     \ifx\Fld@bcolor\relax
14065     \else
14066     /BG[\Fld@bcolor]%
14067     \fi
14068     >>%
14069 \fi
14070 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14071     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14072 \Fld@choices
14073 \Fld@additionalactions
14074 }

```

#### \PDFForm@Radio

```

14075 \def\PDFForm@Radio{%
14076 /Subtype/Widget%
14077 \Fld@annotflags
14078 \Fld@pageobjref
14079 \Fld@annotnames
14080 /FT/Btn%
14081 \Fld@flags
14082 /H/P%

```

```

14083 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14084 /MK<<%
14085 \ifnum\Fld@rotation=\z@
14086 \else
14087 /R \Fld@rotation
14088 \fi
14089 \ifx\Fld@bordercolor\relax
14090 \else
14091 /BC[\Fld@bordercolor]%
14092 \fi
14093 \ifx\Fld@bcolor\relax
14094 \else
14095 /BG[\Fld@bcolor]%
14096 \fi
14097 /CA(\Hy@escapestring{\Fld@radiosymbol})%
14098 >>%
14099 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
14100 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%

```

New code, the default value is used for all buttons

```

14101 \ifx\Fld@default\@empty
14102 /V/Off%
14103 /DV/Off%
14104 \else
14105 /V/\Fld@default
14106 /DV/\Fld@default
14107 \fi
14108 \Fld@additionalactions
14109 }

```

\PDFForm@Text

```

14110 \def\PDFForm@Text{%
14111 /Subtype/Widget%
14112 \Fld@annotflags
14113 \Fld@pageobjref
14114 \Fld@annotnames
14115 /FT/Tx%
14116 \Fld@flags
14117 /Q \Fld@align
14118 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
14119 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14120 \ifx\Fld@bordercolor\relax\else 1\fi
14121 \ifx\Fld@bcolor\relax \else 1\fi
14122 \space
14123 \else
14124 /MK<<%
14125 \ifnum\Fld@rotation=\z@
14126 \else
14127 /R \Fld@rotation
14128 \fi
14129 \ifx\Fld@bordercolor\relax
14130 \else
14131 /BC[\Fld@bordercolor]%
14132 \fi

```

```

14133     \ifx\Fld@bcolor\relax
14134     \else
14135         /BG[\Fld@bcolor]%
14136     \fi
14137     >>%
14138 \fi
14139 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14140     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14141 /DV(\Hy@escapestring{\Fld@default})%
14142 /V(\Hy@escapestring{\Fld@value})%
14143 \Fld@additionalactions
14144 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
14145 }

```

\PDFForm@Submit

```

14146 \def\PDFForm@Submit{%
14147     /Subtype/Widget%
14148     \Fld@annotflags
14149     \Fld@pageobjref
14150     \Fld@annotnames
14151     /FT/Btn%
14152     \Fld@flags
14153     /H/P%
14154     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14155     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14156         \ifx\Fld@bordercolor\relax\else 1\fi
14157         \space
14158     \else
14159         /MK<<%
14160         \ifnum\Fld@rotation=\z@
14161         \else
14162             /R \Fld@rotation
14163         \fi
14164         \ifx\Fld@bordercolor\relax
14165         \else
14166             /BC[\Fld@bordercolor]%
14167         \fi
14168         >>%
14169     \fi
14170     /A<<%
14171     /S/SubmitForm%
14172     /F<<%
14173     /FS/URL%
14174     /F(\Hy@escapestring{\Form@action})%
14175     >>%
14176     \Fld@submitflags
14177     >>%
14178     \Fld@additionalactions
14179 }

```

\PDFForm@Reset

```

14180 \ifHy@pdfa
14181 \else
14182     \def\PDFForm@Reset{%

```

```

14183 /Subtype/Widget%
14184 \Fld@annotflags
14185 \Fld@pageobjref
14186 \Fld@annotnames
14187 /FT/Btn%
14188 \Fld@flags
14189 /H/P%
14190 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
14191 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14192 \ifx\Fld@bordercolor\relax\else 1\fi
14193 \space
14194 \else
14195 /MK<<%
14196 \ifnum\Fld@rotation=\z@
14197 \else
14198 /R \Fld@rotation
14199 \fi
14200 \ifx\Fld@bordercolor\relax
14201 \else
14202 /BC[\Fld@bordercolor]%
14203 \fi
14204 % /CA (Clear)
14205 % /AC (Done)
14206 >>%
14207 \fi
14208 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14209 /A<</S/ResetForm>>%
14210 \Fld@additionalactions
14211 }%
14212 \fi

14213 </pdfform>
14214 <*packageEnd>

```

## 46 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `repere.sty`); it needed the `repere` or `makebook.pl` post-processor to work properly. Now redundant, as it is done entirely in  $\text{\LaTeX}$  macros.

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the information we need? We do the *same* for `\@ssect`, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

change 2026-02-22: Use `\MakeLinkTarget`

```

14215 \def\phantomsection{\MakeLinkTarget[section]}
14216 </packageEnd>

```

### 46.1 Bookmarks

```

14217 <*outlines>

```

This section was written by Heiko Oberdiek; the code replaces an earlier version by David Carlisle.

The first part of bookmark code is in section 6. Further documentation is available as paper and slides of the talk, that Heiko Oberdiek has given at the EuroTeX'99 meeting in Heidelberg. See `paper.pdf` and `slides.pdf` in the `doc` directory of `hyperref`.

When using the right-to-left typesetting based on  $\varepsilon$ -TeX, the order of the `\BOOKMARK` commands written to the `\@outlinefile` could appear wrong, because of mis-feature of  $\varepsilon$ -TeX's implementation (that it processes the shipped out lines left-to-right, instead of the order in which they appear in the document). The wrong order will appear when the file contains two bookmarks on the same line typeset right-to-left.

To work around this problem, the `bookmark@seq@number` counter is used to write the bookmark's sequential number into a comment in the `\@outlinefile`, which could be used to post-process it to achieve the proper ordering of `\BOOKMARK` commands in that file.

```

14218 \def\Hy@writebookmark#1#2#3#4#5{%
14219   % section number, text, label, level, file
14220   \ifx\WriteBookmarks\relax%
14221   \else
14222     \ifnum#4>\Hy@bookmarksdepth\relax
14223     \else
14224       \@@writetorep{#1}{#2}{#3}{#4}{#5}%
14225     \fi
14226   \fi
14227 }
14228 \def\Hy@currentbookmarklevel{0}
14229 \def\Hy@numberline#1{#1 }
14230 \def\@@@writetorep#1#2#3#4#5{%
14231   \begingroup
14232   \edef\Hy@tempa{#5}%
14233   \ifx\Hy@tempa\Hy@bookmarkstype
14234     \edef\Hy@level{#4}%
14235     \ifx\Hy@levelcheck Y%
14236       \@tempcnta\Hy@level\relax
14237       \advance\@tempcnta by -1 %
14238       \ifnum\Hy@currentbookmarklevel<\@tempcnta
14239         \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
14240       \advance\@tempcnta by 1 %
14241       \Hy@Warning{%
14242         Difference (\the\@tempcnta) between bookmark levels is %
14243         greater \MessageBreak than one, level fixed%
14244       }%
14245       \@tempcnta\Hy@currentbookmarklevel
14246       \advance\@tempcnta by 1 %
14247       \edef\Hy@level{\the\@tempcnta}%
14248     \fi
14249   \else
14250     \global\let\Hy@levelcheck Y%
14251   \fi
14252   \global\let\Hy@currentbookmarklevel\Hy@level
14253   \@tempcnta\Hy@level\relax
14254   \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%

```

```

14255 \advance\@tempcnta by -1 %
14256 \edef\Hy@tempa{#3}%
14257 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
14258 \ifx\Hy@tempa\Hy@tempb
14259 \Hy@Warning{%
14260 The anchor of a bookmark and its parent's must not%
14261 \MessageBreak be the same. Added a new anchor%
14262 }%
14263 \phantomsection
14264 \fi
14265 \ifHy@bookmarksnumbered
14266 \let\numberline\Hy@numberline
14267 \let\booknumberline\Hy@numberline
14268 \let\partnumberline\Hy@numberline
14269 \let\chapternumberline\Hy@numberline
14270 \else
14271 \let\numberline\@gobble
14272 \let\booknumberline\@gobble
14273 \let\partnumberline\@gobble
14274 \let\chapternumberline\@gobble
14275 \fi
14276 \pdfstringdef\Hy@tempa{#2}%
14277 \HyPsd@SanitizeForOutFile\Hy@tempa
14278 \if@filesw
14279 \stepcounter{bookmark@seq@number}%
14280 \@ifundefined{@outlinefile}{%
14281 }{%
14282 \protected@write\@outlinefile{}{%
14283 \protect\BOOKMARK
14284 [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
14285 {\Hy@tempa}{\Hy@tempb}%
14286 \@percentchar\space\thebookmark@seq@number
14287 }%
14288 }%
14289 \fi
14290 \fi
14291 \endgroup
14292 }
14293 \newcounter{bookmark@seq@number}

14294 \begingroup
14295 \lccode`(`=`{%
14296 \lccode`)`=`}%
14297 \lccode`1`=\z@
14298 \lccode`2`=\z@
14299 \lccode`3`=\z@
14300 \lccode`5`=\z@
14301 \lccode`7`=\z@
14302 \lccode`\#`=\z@
14303 \lccode`\` `=\z@
14304 \lccode`\{` `=\z@
14305 \lccode`\}` `=\z@
14306 \lowercase{%
14307 \endgroup
14308 \def\HyPsd@SanitizeForOutFile#1{%

```

```

14309 \@onelevel@sanitize\Hy@tempa
14310 \escapechar`\\%
14311 \edef\Hy@tempa{%
14312   \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa\@nil
14313 }%
14314 \edef\Hy@tempa{%
14315   \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa\@nil
14316 }%
14317 }%
14318 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
14319   #1%
14320   \ifx\\#2\\%
14321     \expandafter\@gobble
14322   \else
14323     \expandafter\@firstofone
14324   \fi
14325   {%
14326     \string\173%
14327     \HyPsd@SanitizeOut@BraceLeft#2\@nil
14328   }%
14329 }%
14330 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
14331   #1%
14332   \ifx\\#2\\%
14333     \expandafter\@gobble
14334   \else
14335     \expandafter\@firstofone
14336   \fi
14337   {%
14338     \string\175%
14339     \HyPsd@SanitizeOut@BraceRight#2\@nil
14340   }%
14341 }%
14342 }

```

In the call of `\BOOKMARK` the braces around `#4` are omitted, because it is not likely, that the level number contains `]`.

```

14343 \newcommand{\currentpdfbookmark}{%
14344   \pdfbookmark[\Hy@currentbookmarklevel]%
14345 }
14346 \newcommand{\subpdfbookmark}{%
14347   \@tempcnta\Hy@currentbookmarklevel
14348   \Hy@StepCount\@tempcnta
14349   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
14350 }
14351 \newcommand{\belowpdfbookmark}[2]{%
14352   \@tempcnta\Hy@currentbookmarklevel
14353   \Hy@StepCount\@tempcnta
14354   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
14355   \advance\@tempcnta by -1 %
14356   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
14357 }

```

Tobias Oetiker rightly points out that we need a way to force a bookmark entry. So we introduce `\pdfbookmark`, with two parameters, the title, and a symbolic

name. By default this is at level 1, but we can reset that with the optional first argument.

```

14358 \renewcommand\pdfbookmark[3][0]{%
14359   \Hy@writebookmark-}{#2}{#3.#1}{#1}{toc}%
14360   \hyper@anchorstart{#3.#1}\hyper@anchorend
14361 }
14362 \def\BOOKMARK{%
14363   \@ifnextchar{\@BOOKMARK}{\@@BOOKMARK[1][-]}%
14364 }
14365 \def\@BOOKMARK[#1]{%
14366   \@ifnextchar{\@@BOOKMARK[{#1}]}{\@@BOOKMARK[{#1}][-]}%
14367 }

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the texinfopdf macros.

#### 46.1.1 Rerun warning

`\Hy@OutlineRerunCheck`

```

14368 \RequirePackage{rerunfilecheck}[2009/12/10]
14369 \def\Hy@OutlineRerunCheck{%
14370   \RerunFileCheck{\jobname.out}{%
14371     \immediate\closeout\@outlinefile
14372   }{%
14373     Rerun to get outlines right\MessageBreak
14374     or use package `bookmark'%
14375   }%
14376 }

```

#### 46.1.2 Driver stuff

The VTEX section was written originally by VTEX, but then amended by Denis Girou ([denis.girou@idris.fr](mailto:denis.girou@idris.fr)), then by Taco Hoekwater ([taco.hoekwater@wkap.nl](mailto:taco.hoekwater@wkap.nl)). The problem is that VTEX, with its close integration of the PDF backend, does look at the contents of bookmarks, escaping \ and the like.

```

14377 (*vtx)
14378 \newcount\@serial@counter\@serial@counter=1\relax

```

`\hv@pdf@char` Plain octal codes doesn't work with versions below 6.50. So for early versions hex numbers have to be used. It would be possible to program this instead of the large `\ifcase`, but I'm too lazy to sort that out now.

```

14379 \begingroup
14380 \catcode\'=12 %
14381 \ifnum\Hy@VTeXversion<650 %
14382   \catcode\'=12 %
14383   \gdef\hv@pdf@char#1#2#3{%
14384     \char
14385     \ifcase'#1#2#3 %
14386       "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
14387       \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
14388       \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
14389       \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
14390       \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
14391       \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%

```

```

14392 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
14393 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
14394 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
14395 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
14396 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
14397 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
14398 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
14399 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
14400 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
14401 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
14402 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
14403 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
14404 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
14405 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
14406 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
14407 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
14408 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
14409 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
14410 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
14411 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
14412 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
14413 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
14414 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
14415 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
14416 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
14417 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
14418 \fi
14419 }%
14420 \else
14421 \gdef\hv@pdf@char{\char'}%
14422 \fi
14423 \endgroup

```

\@@BOOKMARK

```

14424 \def\@@BOOKMARK[#1][#2]#3#4#5{%
14425 \expandafter\edef\csname @count@#3\endcsname{%
14426 \the\@serial@counter
14427 }%
14428 \edef\@mycount{\the\@serial@counter}%
14429 \Hy@StepCount\@serial@counter
14430 \edef\@parcount{%
14431 \expandafter\ifx\csname @count@#5\endcsname\relax
14432 0%
14433 \else
14434 \csname @count@#5\endcsname
14435 \fi
14436 }%
14437 \immediate\special{%
14438 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
14439 s=\ifx#2-c\else o\fi,t=#4%
14440 }%
14441 }%

```

\ReadBookmarks

```

14442 \def\ReadBookmarks{%
14443   \begingroup
14444     \def\0{\hv@pdf@char 0}%
14445     \def\1{\hv@pdf@char 1}%
14446     \def\2{\hv@pdf@char 2}%
14447     \def\3{\hv@pdf@char 3}%
14448     \def\({}%
14449     \def\)}%
14450     \def\do##1{%
14451       \ifnum\catcode`##1=\active
14452         \@makeother##1%
14453       \else
14454         \ifnum\catcode`##1=6 %
14455           \@makeother##1%
14456         \fi
14457       \fi
14458     }%
14459     \dospecials
14460     \Hy@safe@activetrue
14461     \InputIfFileExists{\jobname.out}{\}{}%
14462   \endgroup
14463   \ifx\WriteBookmarks\relax
14464   \else
14465     \if@filesw
14466       \newwrite\@outlinefile
14467       \Hy@OutlineRerunCheck
14468       \immediate\openout\@outlinefile=\jobname.out\relax
14469     \fi
14470   \fi
14471 }

14472 </vtx>

14473 (*!vtx)
14474 \def\ReadBookmarks{%
14475   \pdf@ifdraftmode{\}%
14476   \begingroup
14477     \def\do##1{%
14478       \ifnum\catcode`##1=\active
14479         \@makeother##1%
14480       \else
14481         \ifnum\catcode`##1=6 %
14482           \@makeother##1%
14483         \fi
14484       \fi
14485     }%
14486     \dospecials
14487     \Hy@safe@activetrue
14488     \escapechar=`\%
14489     \def\@@BOOKMARK[##1][##2]##3##4##5{%
14490       \calc@bm@number{##5}%
14491     }%
14492     \InputIfFileExists{\jobname.out}{\}{}%
14493     \ifx\WriteBookmarks\relax
14494       \global\let\WriteBookmarks\relax

```

```

14495 \fi
14496 \def\@@BOOKMARK[##1][##2]###4###5{%
14497 \def\Hy@temp{##4}%
14498 \*pdfTex)
14499 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14500 \Hy@OutlineName{}\Hy@pstringName{%
14501 ##2\check@bm@number{##3}%
14502 }{%
14503 \expandafter\strip@prefix\meaning\Hy@temp
14504 }%
14505 \*pdfTex)
14506 \*pdfmark)
14507 \pdfmark{%
14508 pdfmark=/OUT,%
14509 Count={##2\check@bm@number{##3}},%
14510 Dest={##3},%
14511 Title=\expandafter\strip@prefix\meaning\Hy@temp
14512 }%
14513 \*pdfmark)
14514 \*dvipdfm|xetex)
14515 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14516 \*pdfm@mark{%
14517 outline \ifHy@DvipdfmxOutlineOpen
14518 [%
14519 \ifnum##21>\z@
14520 \else
14521 -%
14522 \fi
14523 ] %
14524 \fi
14525 ##1<<%
14526 /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
14527 /A<<%
14528 /S/GoTo%
14529 /D(\Hy@pstringName)%
14530 >>%
14531 >>%
14532 }%
14533 \*dvipdfm|xetex)
14534 }%
14535 \begingroup
14536 \def\WriteBookmarks{0}%
14537 \InputIfFileExists{jobname.out}{-}{-}%
14538 \endgroup
14539 %{\escapechar\m@ne\InputIfFileExists{jobname.out}{-}{-}}%
14540 \endgroup
14541 }%
14542 \ifx\WriteBookmarks\relax
14543 \else
14544 \if@files
14545 \newwrite\@outlinefile
14546 \Hy@OutlineRerunCheck
14547 \immediate\openout\@outlinefile=jobname.out\relax
14548 \fi

```

```

14549 \fi
14550 }
14551 (*pdfTeX)
14552 \def\Hy@OutlineName#1#2#3#4{%
14553 \pdfoutline goto name{#2}count#3{#4}%
14554 }
14555 \pdfTeX
14556 \def\check@bm@number#1{%
14557 \expandafter\ifx\csname B_#1\endcsname\relax
14558 0%
14559 \else
14560 \csname B_#1\endcsname
14561 \fi
14562 }
14563 \def\calc@bm@number#1{%
14564 \@tempcnta=\check@bm@number{#1}\relax
14565 \advance\@tempcnta by 1 %
14566 \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
14567 }
14568 \!vTeX
14569 \ifHy@implicit
14570 \else
14571 \expandafter\endinput
14572 \fi
14573 \!outlines
14574 (*outlines | hypertex)
14575 \newlength\Hy@SectionHShift
14576 \def\Hy@SectionAnchorHref#1{%
14577 \ifx\protect\@typeset@protect
14578 \Hy@@SectionAnchor{#1}%
14579 \fi
14580 }
14581 \DeclareRobustCommand*{\Hy@@SectionAnchor}[1]{%
14582 \leavevmode
14583 \hbox to Opt{%
14584 \kern-\Hy@SectionHShift
14585 \Hy@raisedlink{%
14586 \hyper@anchorstart{#1}\hyper@anchorend
14587 }%
14588 \hss
14589 }%
14590 }
14591 \AddToNoCaseChangeList{\Hy@@SectionAnchor}
14592 \@ifundefined{hyper@nopatch@sectioning}
14593 {
14594 \let\H@old@ssect\@ssect
14595 \def\@ssect#1#2#3#4#5{%
14596 \Hy@MakeCurrentHrefAuto{section*}%
14597 \setlength{\Hy@SectionHShift}{#1}%
14598 \begingroup
14599 \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
14600 \toks\tw@\expandafter{%
14601 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%

```

```

14602     #5%
14603 }%
14604 \edef\x{\endgroup
14605   \the\toks@{\the\toks\tw@}%
14606 }\x
14607 }
14608 \let\H@old@schapter\@schapter
14609 \def\@schapter#1{%
14610   \begingroup
14611     \let\@mkboth\@gobbletwo
14612     \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14613     \Hy@raisedlink{%
14614       \hyper@anchorstart{\@currentHref}\hyper@anchorend
14615     }%
14616   \endgroup
14617   \H@old@schapter{#1}%
14618 }

```

If there is no chapter number (`\frontmatter` or `\backmatter`) then the counting by `\refstepcounter{chapter}` is not executed, so there will be no destination for `\ddcontentsline`. So `\@chapter` is overloaded to avoid this:

```

14619 \@ifundefined{chapter}{%}{%
14620   \let\Hy@org@chapter\@chapter
14621   \def\@chapter{%
14622     \def\Hy@next{%
14623       \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14624       \Hy@raisedlink{%
14625         \hyper@anchorstart{\@currentHref}\hyper@anchorend
14626       }%
14627     }%
14628     \ifnum\c@secnumdepth>\m@ne
14629       \@ifundefined{if@mainmatter}%
14630       \iftrue{\csname if@mainmatter\endcsname}%
14631       \let\Hy@next\relax
14632     \fi
14633     \fi
14634     \Hy@next
14635     \Hy@org@chapter
14636   }%
14637 }

14638 \let\H@old@part\@part
14639 \@ifundefined{chapter}
14640   {\let\Hy@secnum@part\z@}
14641   {\let\Hy@secnum@part\m@ne}
14642 \def\@part{%
14643   \ifnum\Hy@secnum@part>\c@secnumdepth
14644     \phantomsection
14645     \fi
14646   \H@old@part
14647 }

14648 \let\H@old@spart\@spart
14649 \def\@spart#1{%
14650   \Hy@MakeCurrentHrefAuto{part*}%

```

```

14651 \Hy@raisedlink{%
14652   \hyper@anchorstart{\@currentHref}\hyper@anchorend
14653 }%
14654 \H@old@spart{#1}%
14655 }
14656 \let\H@old@sect\@sect
14657 \def\@sect#1#2#3#4#5#6[#7]#8{%
14658   \ifnum #2>\c@secnumdepth
14659     \expandafter\@firstoftwo
14660   \else
14661     \expandafter\@secondoftwo
14662   \fi
14663   {%
14664     \Hy@MakeCurrentHrefAuto{section*}%
14665     \setlength{\Hy@SectionHShift}{#3}%
14666     \begingroup
14667       \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
14668       \toks\tw@\expandafter{%
14669         \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14670         #8%
14671       }%
14672       \edef\x{\endgroup
14673         \the\toks@\the\toks\tw@}%
14674       }\x
14675     }%
14676     \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
14677   }%
14678 }
14679 }{}

14680 </outlines | hypertex>
14681 <*outlines>

14682 \expandafter\def\csname Parent-4\endcsname{}
14683 \expandafter\def\csname Parent-3\endcsname{}
14684 \expandafter\def\csname Parent-2\endcsname{}
14685 \expandafter\def\csname Parent-1\endcsname{}
14686 \expandafter\def\csname Parent0\endcsname{}
14687 \expandafter\def\csname Parent1\endcsname{}
14688 \expandafter\def\csname Parent2\endcsname{}
14689 \expandafter\def\csname Parent3\endcsname{}
14690 \expandafter\def\csname Parent4\endcsname{}

14691 </outlines>

```

## 47 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 47.1 PD1 encoding

```

14692 <*pd1enc>
14693 \DeclareFontEncoding{PD1}{}{}

```

## Accents

```

14694 \DeclareTextAccent{\`}{PD1}{\textasciigrave}
14695 \DeclareTextAccent{\'}{PD1}{\textacute}
14696 \DeclareTextAccent{\~}{PD1}{\textasciicircum}
14697 \DeclareTextAccent{\~}{PD1}{\texttilde}
14698 \DeclareTextAccent{\"}{PD1}{\textasciidieresis}
14699 \DeclareTextAccent{\r}{PD1}{\textring}
14700 \DeclareTextAccent{\v}{PD1}{\textasciicaron}
14701 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
14702 \DeclareTextAccent{\c}{PD1}{\textcedilla}
14703 \DeclareTextAccent{\=}{PD1}{\textasciimacron}
14704 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}
14705 \DeclareTextAccent{\d}{PD1}{\textdotbelow}
14706 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textasciigrave}
14707 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
14708 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\textasciicircum}
14709 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
14710 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textasciidieresis}
14711 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
14712 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
14713 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
14714 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
14715 \DeclareTextCompositeCommand{\=}{PD1}{\@empty}{\textasciimacron}
14716 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
14717 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
14718 \DeclareTextCompositeCommand{\`}{PD1}{\ }{\textasciigrave}
14719 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textacute}
14720 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\textasciicircum}
14721 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}
14722 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}
14723 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textring}
14724 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
14725 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
14726 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
14727 \DeclareTextCompositeCommand{\=}{PD1}{\ }{\textasciimacron}
14728 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
14729 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
14730 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
14731 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
14732 \DeclareTextCommand{\newtie}{PD1}[1]{%
14733   \TextSymbolUnavailable{\newtie{#1}}#1%
14734 }

```

Special white space escape characters not for use in bookmarks but for other PDF strings.

```

14735 % U+0009 (CHARACTER TABULATION)
14736 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
14737 % U+000A (LINE FEED)
14738 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
14739 % U+000D (CARRIAGE RETURN)
14740 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

```

## Accent glyph names

```

14741 % U+02D8 BREVE; breve
14742 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8

```

14743 % U+02C7 CARON; caron  
 14744 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7  
 14745 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex  
 14746 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6  
 14747 % U+02D9 DOT ABOVE; dotaccent  
 14748 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9  
 14749 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
 14750 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD  
 14751 % U+02DB OGONEK; ogonek  
 14752 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB  
 14753 % U+02DA RING ABOVE; ring  
 14754 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA  
 14755 % U+02DC SMALL TILDE; ilde, \*tilde  
 14756 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC  
 \040: U+0020 SPACE; \*space, spacehackarabic  
 \041: U+0021 EXCLAMATION MARK; exclam  
 14757 % U+0022 QUOTATION MARK; quotedbl  
 14758 \DeclareTextCommand{\textquotedbl}{PD1}{"}% \042 U+0022  
 14759 % U+0023 NUMBER SIGN; numbersign  
 14760 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023  
 14761 % U+0024 DOLLAR SIGN; dollar  
 14762 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024  
 14763 % U+0025 PERCENT SIGN; percent  
 14764 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025  
 14765 % U+0026 AMPERSAND; ampersand  
 14766 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026  
 \047: U+0027 APOSTROPHE; quotesingle  
  
 14767 % U+0028 LEFT PARENTHESIS; parenleft  
 14768 \DeclareTextCommand{\textparenleft}{PD1}{\string\{}% \050 U+0028  
 14769 % U+0029 RIGHT PARENTHESIS; parenright  
 14770 \DeclareTextCommand{\textparenright}{PD1}{\string\}}% \051 U+0029  
 \052: U+002A ASTERISK; asterisk  
 \053: U+002B PLUS SIGN; plus  
 \054: U+002C COMMA; comma  
 \055: U+002D HYPHEN-MINUS; hyphen  
 \056: U+002E FULL STOP; period  
 14771 % U+002E FULL STOP; period  
 14772 \DeclareTextCommand{\textdotbelow}{PD1}{.}% \056 U+002E  
 \057: U+002F SOLIDUS; slash  
 \060: U+0030 DIGIT ZERO; zero  
 ...  
 \071: U+0039 DIGIT NINE; nine  
 \072: U+003A COLON; colon  
 \073: U+003B SEMICOLON; semicolon  
 14773 % U+003C LESS-THAN SIGN; less  
 14774 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
 \075: U+003D EQUALS SIGN; equal  
 14775 % U+003E GREATER-THAN SIGN; greater  
 14776 \DeclareTextCommand{\textgreater}{PD1}{>}% \076 U+003E

\077: U+003F QUESTION MARK; question  
 \100: U+0040 COMMERCIAL AT; at  
 \101: U+0041 LATIN CAPITAL LETTER A; A  
 ...  
 \132: U+005A LATIN CAPITAL LETTER Z; Z  
 \133: U+005B LEFT SQUARE BRACKET; bracketleft  
 14777 % U+005C REVERSE SOLIDUS; backslash  
 14778 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
 14779 % "U+2216 SET MINUS" simulated by "U+005C REVERSE SOLIDUS"  
 14780 \DeclareTextCommand{\textsetminus}{PD1}{\textbackslash}  
 \135: U+005D RIGHT SQUARE BRACKET; bracketright  
 14781 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 14782 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
 14783 % U+005F LOW LINE; underscore  
 14784 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
 14785 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
 14786 % U+0060 GRAVE ACCENT; grave  
 14787 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
 \141: U+0061 LATIN SMALL LETTER A; a  
 ...  
 \150: U+0068 LATIN SMALL LETTER H; h  
 14788 % U+0069 LATIN SMALL LETTER I; i  
 14789 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
 \152: U+006A LATIN SMALL LETTER J; j  
 ...  
 \172: U+007A LATIN SMALL LETTER Z; z  
 14790 % U+007B LEFT CURLY BRACKET; braceleft  
 14791 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
 14792 % U+007C VERTICAL LINE; \*bar, verticalbar  
 14793 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
 14794 % U+007D RIGHT CURLY BRACKET; braceright  
 14795 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
 14796 % U+007E TILDE; asciitilde  
 14797 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
 Slot \177 (0x7F) is undefined in PDFDocEncoding.  
 14798 % U+2022 BULLET; bullet  
 14799 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
 14800 % U+2020 DAGGER; dagger  
 14801 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
 14802 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
 14803 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
 14804 \DeclareTextCommand{\textddagger}{PD1}{\textdaggerdbl}  
 14805 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 14806 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
 14807 % U+2014 EM DASH; emdash  
 14808 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
 14809 % U+2013 EN DASH; endash  
 14810 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
 14811 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 14812 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
 14813 % U+2044 FRACTION SLASH; fraction  
 14814 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044

14815 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
singleft  
14816 \DeclareTextCommand{\guilsingleft}{PD1}{\210}% U+2039  
14817 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
singright  
14818 \DeclareTextCommand{\guilsingright}{PD1}{\211}% U+203A  
14819 % U+2212 MINUS SIGN; minus  
14820 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
14821 % U+2030 PER MILLE SIGN; perthousand  
14822 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
14823 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
14824 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
14825 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
14826 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
14827 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
14828 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
14829 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
14830 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
14831 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
14832 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
14833 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
14834 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
14835 % U+2122 TRADE MARK SIGN; trademark  
14836 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
14837 % U+FB01 LATIN SMALL LIGATURE FI; fi  
14838 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
14839 % U+FB02 LATIN SMALL LIGATURE FL; fl  
14840 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
14841 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
14842 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
14843 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
14844 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
14845 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
14846 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
14847 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
14848 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230}% U+0178  
14849 \DeclareTextCommand{\IJ}{PD1}{IJ}% ligature U+0049 U+004A  
14850 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
14851 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
14852 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
14853 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
14854 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
14855 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
14856 % U+0153 LATIN SMALL LIGATURE OE; oe  
14857 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
14858 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
14859 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
14860 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
14861 \DeclareTextCompositeCommand{\v}{PD1}{z}{\236}% U+017E  
Slot \237 (0x9F) is not defined in PDFDocEncoding.  
The euro \240 is inserted in version 1.3 of the pdf specification.  
14862 % U+20AC EURO SIGN; \*Euro, euro  
14863 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
14864 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown

14865 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
14866 % U+00A2 CENT SIGN; cent  
14867 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
14868 % U+00A3 POUND SIGN; sterling  
14869 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
14870 % U+00A4 CURRENCY SIGN; currency  
14871 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
14872 % U+00A5 YEN SIGN; yen  
14873 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
14874 % U+00A6 BROKEN BAR; brokenbar  
14875 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
14876 % U+00A7 SECTION SIGN; section  
14877 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
14878 % U+00A8 DIAERESIS; dieresis  
14879 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
14880 % U+00A9 COPYRIGHT SIGN; copyright  
14881 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
14882 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
14883 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
14884 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetleft  
14885 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
14886 \DeclareTextCommand{\guillemetleft}{PD1}{\253}% U+00AB  
14887 % U+00AC NOT SIGN; logicalnot  
14888 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
14889 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
  
No glyph \255 in PDFDocEncoding.  
14890 % U+00AE REGISTERED SIGN; registered  
14891 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
14892 % U+00AF MACRON; \*macron, overscore  
14893 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
14894 % U+00B0 DEGREE SIGN; degree  
14895 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
14896 % U+00B1 PLUS-MINUS SIGN; plusminus  
14897 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
14898 % U+00B2 SUPERSCRIPT TWO; twosuperior  
14899 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}%\* U+00B2  
14900 % U+00B3 SUPERSCRIPT THREE; threesuperior  
14901 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}%\* U+00B3  
14902 % U+00B4 ACUTE ACCENT; acute  
14903 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
14904 % U+00B5 MICRO SIGN; mu, mul  
14905 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
14906 % U+00B6 PILCROW SIGN; paragraph  
14907 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
14908 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14909 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
14910 % U+00B8 CEDILLA; cedilla  
14911 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
14912 % U+00B9 SUPERSCRIPT ONE; onesuperior  
14913 \DeclareTextCommand{\textonesuperior}{PD1}{\271}%\* U+00B9  
14914 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14915 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
14916 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetright  
14917 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB

14918 \DeclareTextCommand{\guillemetright}{PD1}{\273}% U+00BB  
14919 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
14920 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
14921 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14922 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
14923 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14924 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
14925 % U+00BF INVERTED QUESTION MARK; questiondown  
14926 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
14927 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14928 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
14929 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14930 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
14931 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14932 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
14933 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14934 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
14935 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14936 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
14937 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14938 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14939 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14940 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14941 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14942 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14943 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14944 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
14945 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14946 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
14947 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14948 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
14949 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14950 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
14951 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14952 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
14953 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14954 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
14955 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14956 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
14957 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14958 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
14959 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14960 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
14961 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14962 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14963 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
14964 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14965 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
14966 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14967 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
14968 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14969 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
14970 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14971 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5

14972 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14973 \DeclareTextCompositeCommand{"}{PD1}{O}{\326}% U+00D6  
14974 % U+00D7 MULTIPLICATION SIGN; multiply  
14975 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14976 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14977 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14978 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14979 \DeclareTextCompositeCommand{"}{PD1}{U}{\331}% U+00D9  
14980 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14981 \DeclareTextCompositeCommand{"}{PD1}{U}{\332}% U+00DA  
14982 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14983 \DeclareTextCompositeCommand{"}{PD1}{U}{\333}% U+00DB  
14984 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14985 \DeclareTextCompositeCommand{"}{PD1}{U}{\334}% U+00DC  
14986 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14987 \DeclareTextCompositeCommand{"}{PD1}{Y}{\335}% U+00DD  
14988 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
14989 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
14990 \DeclareTextCommand{\textThorn}{PD1}{\336}%\* U+00DE  
14991 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14992 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
14993 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14994 \DeclareTextCompositeCommand{"}{PD1}{a}{\340}% U+00E0  
14995 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14996 \DeclareTextCompositeCommand{"}{PD1}{a}{\341}% U+00E1  
14997 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14998 \DeclareTextCompositeCommand{"}{PD1}{a}{\342}% U+00E2  
14999 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
15000 \DeclareTextCompositeCommand{"}{PD1}{a}{\343}% U+00E3  
15001 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
15002 \DeclareTextCompositeCommand{"}{PD1}{a}{\344}% U+00E4  
15003 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
15004 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
15005 % U+00E6 LATIN SMALL LETTER AE; ae  
15006 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
15007 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
15008 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7  
15009 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
15010 \DeclareTextCompositeCommand{"}{PD1}{e}{\350}% U+00E8  
15011 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
15012 \DeclareTextCompositeCommand{"}{PD1}{e}{\351}% U+00E9  
15013 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
15014 \DeclareTextCompositeCommand{"}{PD1}{e}{\352}% U+00EA  
15015 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
15016 \DeclareTextCompositeCommand{"}{PD1}{e}{\353}% U+00EB  
15017 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
15018 \DeclareTextCompositeCommand{"}{PD1}{i}{\354}% U+00EC  
15019 \DeclareTextCompositeCommand{"}{PD1}{i}{\354}% U+00EC  
15020 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
15021 \DeclareTextCompositeCommand{"}{PD1}{i}{\355}% U+00ED  
15022 \DeclareTextCompositeCommand{"}{PD1}{i}{\355}% U+00ED  
15023 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
15024 \DeclareTextCompositeCommand{"}{PD1}{i}{\356}% U+00EE  
15025 \DeclareTextCompositeCommand{"}{PD1}{i}{\356}% U+00EE

15026 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
15027 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
15028 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF  
15029 % U+00F0 LATIN SMALL LETTER ETH; eth  
15030 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
15031 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
15032 \DeclareTextCompositeCommand{~}{PD1}{n}{\361}% U+00F1  
15033 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
15034 \DeclareTextCompositeCommand{`}{PD1}{o}{\362}% U+00F2  
15035 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
15036 \DeclareTextCompositeCommand{'}{PD1}{o}{\363}% U+00F3  
15037 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
15038 \DeclareTextCompositeCommand{^}{PD1}{o}{\364}% U+00F4  
15039 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
15040 \DeclareTextCompositeCommand{~}{PD1}{o}{\365}% U+00F5  
15041 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
15042 \DeclareTextCompositeCommand{"}{PD1}{o}{\366}% U+00F6  
15043 % U+00F7 DIVISION SIGN; divide  
15044 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
15045 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
15046 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
15047 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
15048 \DeclareTextCompositeCommand{`}{PD1}{u}{\371}% U+00F9  
15049 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
15050 \DeclareTextCompositeCommand{'}{PD1}{u}{\372}% U+00FA  
15051 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
15052 \DeclareTextCompositeCommand{^}{PD1}{u}{\373}% U+00FB  
15053 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
15054 \DeclareTextCompositeCommand{"}{PD1}{u}{\374}% U+00FC  
15055 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
15056 \DeclareTextCompositeCommand{'}{PD1}{y}{\375}% U+00FD  
15057 % U+00FE LATIN SMALL LETTER THORN; thorn; \th, \thorn (wasysym)  
15058 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE  
15059 \DeclareTextCommand{\textthorn}{PD1}{\376}%\* U+00FE  
15060 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
15061 \DeclareTextCompositeCommand{"}{PD1}{y}{\377}% U+00FF  
15062 \DeclareTextCommand{\ij}{PD1}{ij}% ligature U+0069 U+006A

Glyphs that consist of several characters.

15063 \DeclareTextCommand{\SS}{PD1}{SS}%  
15064 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}%

Aliases (german.sty)

15065 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}%  
15066 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}%  
15067 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}%  
15068 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}%  
15069 \DeclareTextCommand{\textflqq}{PD1}{\guillemetleft}%  
15070 \DeclareTextCommand{\textfrqq}{PD1}{\guillemetright}%  
15071 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}%  
15072 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}%

Aliases (math names)

15073 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}%  
15074 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}%  
15075 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}%

```

15076 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}%
15077 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}%
15078 \DeclareTextCommand{\textbeta}{PD1}{\ss}%

```

Polish aliases. PDF encoding does not have the characters, but it is useful to Poles to have the plain letters regardless. Requested by Wojciech Myszka (W.Myszka@immt.pwr.wroc.pl).

```

15079 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
15080 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute
15081 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
15082 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute
15083 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute
15084 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
15085 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
15086 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
15087 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
15088 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
15089 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
15090 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
15091 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
15092 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot
15093 </pd1enc>

```

## 47.2 PU encoding

```

15094 <*puenc>
15095 \DeclareFontEncoding{PU}{}{}

```

### 47.2.1 NFSS2 accents

```

15096 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
15097 \DeclareTextCommand{\`}{PU}[1]{#1\83\000}% U+0300
15098 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
15099 \DeclareTextCommand{\'}{PU}[1]{#1\83\001}% U+0301
15100 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
15101 \DeclareTextCommand{\^}{PU}[1]{#1\83\002}% U+0302
15102 % U+0303 COMBINING TILDE; tildecmb, *tildecomb
15103 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303
15104 % U+0304 COMBINING MACRON; macroncmb
15105 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304
15106 % U+0306 COMBINING BREVE; brevecmb
15107 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306
15108 \ifx\CYRDZE@undefined \else
15109 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306
15110 \fi
15111 % U+0307 COMBINING DOT ABOVE; dotaccentcmb
15112 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307
15113 % U+0308 COMBINING DIAERESIS; dieresiscmb
15114 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308
15115 % U+030A COMBINING RING ABOVE; ringcmb
15116 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A
15117 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb
15118 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B
15119 % U+030C COMBINING CARON; caroncmb
15120 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C
15121 </puenc>

```

```

15122 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
15123 \DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F
15124 (*puenc)
15125 \ifx\CYRDZE\@undefined \else
15126 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F
15127 \fi
15128 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
15129 \DeclareTextCommand{\textinvbreve}{PU}[1]{#1\83\021}% U+0311
15130 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311
15131 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcmb
15132 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323
15133 % U+0324 COMBINING DIAERESIS BELOW; dieresisbelowcmb; \textsubum-
    laut (tipa)
15134 \DeclareTextCommand{\textsubumlaut}{PU}[1]{#1\83\044}% U+0324
15135 % U+0325 COMBINING RING BELOW; ringbelowcmb; \textsubring (tipa)
15136 \DeclareTextCommand{\textsubring}{PU}[1]{#1\83\045}% U+0325
15137 % U+0327 COMBINING CEDILLA; cedillacmb
15138 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327
15139 % U+0328 COMBINING OGONEK; ogonekcmb
15140 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328
15141 % U+032D COMBINING CIRCUMFLEX ACCENT BELOW;
15142 % \textsubcircum (tipa)
15143 \DeclareTextCommand{\textsubcircum}{PU}[1]{#1\83\055}% U+032D
15144 % U+032E COMBINING BREVE BELOW; brevebelowcmb
15145 \DeclareTextCommand{\textsubbreve}{PU}[1]{#1\83\056}% U+032E
15146 % U+0330 COMBINING TILDE BELOW; tildebelowcmb; \textsubtilde (tipa)
15147 \DeclareTextCommand{\textsubtilde}{PU}[1]{#1\83\060}% U+0330
15148 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
15149 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331
15150 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-
    blecmb
15151 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361
15152 % U+20DD COMBINING ENCLOSING CIRCLE
15153 \DeclareTextCommand{\textcircled}{PU}[1]{#1\9040\335}% U+20DD

```

Double accents.

```

15154 \DeclareTextCommand{\textacutemacron}{PU}[1]{#1\83\001\83\004}% U+0301 U+0304
15155 \DeclareTextCommand{\textgravemacron}{PU}[1]{#1\83\000\83\004}% U+0300 U+0304

```

\@empty is an artefact of the NFSS2 machinery, it gets inserted for empty arguments and spaces.

```

15156 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textasciigrave}%
15157 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}%
15158 \DeclareTextCompositeCommand{\^}{PU}{\@empty}{\textasciicircum}%
15159 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}%
15160 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}%
15161 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textstring}%
15162 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}%
15163 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}%
15164 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}%
15165 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}%
15166 (/puenc)
15167 \puextra\DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}%
15168 (*puenc)
15169 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}%

```

```

15170 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}%
15171 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}%
15172 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\@empty}{\{\ \83\021\}}% U+0311
15173 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\@empty}{\{\ \83\044\}}% U+0324
15174 \DeclareTextCompositeCommand{\textsubring}{PU}{\@empty}{\textringlow}%
15175 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\@empty}{\textcircum-
low}%
15176 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\@empty}{\{\ \83\056\}}% U+032E
15177 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\@empty}{\texttildebelow}%
15178 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}%
15179 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}%
15180 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}%
15181 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}%
15182 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}%
15183 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\@empty}{\{\ \83\001\83\004\}}% U+0301 U
15184 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\@empty}{\{\ \83\000\83\004\}}% U+0300 U
15185 \DeclareTextCompositeCommand{\`}{PU}{\ }{\textasciigrave}%
15186 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}%
15187 \DeclareTextCompositeCommand{\~}{PU}{\ }{\textasciicircum}%
15188 \DeclareTextCompositeCommand{\~}{PU}{\ }{\texttilde}%
15189 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}%
15190 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}%
15191 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}%
15192 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}%
15193 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}%
15194 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}%
15195 (/puenc)
15196 \puextra\DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}%
15197 (*puenc)
15198 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}%
15199 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}%
15200 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}%
15201 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\ }{\{\ \83\021\}}% U+0311
15202 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\ }{\{\ \83\044\}}% U+0324
15203 \DeclareTextCompositeCommand{\textsubring}{PU}{\ }{\textringlow}%
15204 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\ }{\textcircumlow}%
15205 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\ }{\{\ \83\056\}}% U+032E
15206 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\ }{\texttildebelow}%
15207 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}%
15208 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}%
15209 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}%
15210 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}%
15211 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}%
15212 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\ }{\{\ \83\001\83\004\}}% U+0301 U+0304
15213 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\ }{\{\ \83\000\83\004\}}% U+0300 U+0304

Accents for capitals (see encoding TS1)
15214 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}%
15215 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}%
15216 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}%
15217 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}%
15218 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}%
15219 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}%
15220 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\"{#1}}%

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15221 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}%
15222 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}%
15223 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}%
15224 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}%
15225 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}%
15226 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.\{#1}}%
15227 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}%
15228 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}%

```

#### 47.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

```

15229 % U+0009 (CHARACTER TABULATION)
15230 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
15231 % U+000A (LINE FEED)
15232 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A
15233 % U+000D (CARRIAGE RETURN)
15234 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D

\80\040: U+0020 SPACE; space, spacehackarabic
\80\041: U+0021 EXCLAMATION MARK; exclam

15235 % U+0022 QUOTATION MARK; quotedbl
15236 \DeclareTextCommand{\textquotedbl}{PU}{"}% \80\042 U+0022
15237 % U+0023 NUMBER SIGN; numbersign
15238 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023
15239 % U+0024 DOLLAR SIGN; dollar
15240 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024
15241 %* \textdollar -> \mathdollar
15242 %* \textdollar -> \EyesDollar (marvosym)
15243 % U+0025 PERCENT SIGN; percent
15244 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025
15245 % U+0026 AMPERSAND; ampersand
15246 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026
15247 %* \textampersand -> \binampersand (stmaryrd)
15248 %* \textampersand -> \with (cml)
15249 % U+0027 APOSTROPHE; quotesingle
15250 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027
15251 % U+0028 LEFT PARENTHESIS; parenleft
15252 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028
15253 % U+0029 RIGHT PARENTHESIS; parenright
15254 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029
15255 % U+002A ASTERISK; asterisk; (?)
15256 \DeclareTextCommand{\textasteriskcentered}{PU}{\80\052}% U+002A
15257 % U+002B PLUS SIGN; plus; \MVPlus (marvosym)
15258 \DeclareTextCommand{\textMVPlus}{PU}{\80\053}%* U+002B
15259 % U+002C COMMA; comma; \MVComma (marvosym)
15260 \DeclareTextCommand{\textMVComma}{PU}{\80\054}%* U+002C
15261 % U+002D HYPHEN-MINUS; hyphen; \MVMinus (marvosym)
15262 \DeclareTextCommand{\textMVMinus}{PU}{\80\055}%* U+002D
15263 % U+002E FULL STOP; period; \MVPeriod (marvosym)
15264 \DeclareTextCommand{\textMVPeriod}{PU}{\80\056}%* U+002E
15265 % U+002F SOLIDUS; slash; \MVDivision (marvosym)
15266 \DeclareTextCommand{\textMVDivision}{PU}{\80\057}%* U+002F
15267 % U+0030 DIGIT ZERO; zero; \MVZero (marvosym)
15268 \DeclareTextCommand{\textMVZero}{PU}{\80\060}%* U+0030

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15269 % U+0031 DIGIT ONE; one; \MVOne (marvosym)  
 15270 \DeclareTextCommand{\textMVOne}{PU}{\80\061}%\* U+0031  
 15271 % U+0032 DIGIT TWO; two; \MVTwo (marvosym)  
 15272 \DeclareTextCommand{\textMVTwo}{PU}{\80\062}%\* U+0032  
 15273 % U+0033 DIGIT THREE; three; \MVThree (marvosym)  
 15274 \DeclareTextCommand{\textMVThree}{PU}{\80\063}%\* U+0033  
 15275 % U+0034 DIGIT FOUR; four; \MVFour (marvosym)  
 15276 \DeclareTextCommand{\textMVFour}{PU}{\80\064}%\* U+0034  
 15277 % U+0035 DIGIT FIVE; five; \MVFive (marvosym)  
 15278 \DeclareTextCommand{\textMVFive}{PU}{\80\065}%\* U+0035  
 15279 % U+0036 DIGIT SIX; six; \MVSix (marvosym)  
 15280 \DeclareTextCommand{\textMVSix}{PU}{\80\066}%\* U+0036  
 15281 % U+0037 DIGIT SEVEN; seven; \MVSeven (marvosym)  
 15282 \DeclareTextCommand{\textMVSeven}{PU}{\80\067}%\* U+0037  
 15283 % U+0038 DIGIT EIGHT; eight; \MVEight (marvosym)  
 15284 \DeclareTextCommand{\textMVEight}{PU}{\80\070}%\* U+0038  
 15285 % U+0039 DIGIT NINE; nine; \MVNine (marvosym)  
 15286 \DeclareTextCommand{\textMVNine}{PU}{\80\071}%\* U+0039  
 \80\072: U+003A COLON; colon  
 \80\073: U+003B SEMICOLON; semicolon  
 15287 % U+003C LESS-THAN SIGN; less  
 15288 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C  
 \80\075: U+003D EQUALS SIGN; equal  
 15289 % U+003E GREATER-THAN SIGN; greater  
 15290 \DeclareTextCommand{\textgreater}{PU}{>}% \80\076 U+003E  
 \80\077: U+003F QUESTION MARK; question  
 15291 % U+0040 COMMERCIAL AT; at; \MVAt (marvosym)  
 15292 \DeclareTextCommand{\textMVAt}{PU}{\80\100}%\* U+0040  
 \80\101: U+0041 LATIN CAPITAL LETTER A; A  
 ...  
 \80\132: U+005A LATIN CAPITAL LETTER Z; Z  
 \80\133: U+005B LEFT SQUARE BRACKET; bracketleft  
 15293 % U+005C REVERSE SOLIDUS; backslash  
 15294 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C  
 \80\135: U+005D RIGHT SQUARE BRACKET; bracketright  
 15295 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 15296 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E  
 15297 % U+005F LOW LINE; underscore  
 15298 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F  
 15299 %\* \textunderscore -> \mathunderscore (LaTeX)  
 15300 % U+0060 GRAVE ACCENT; grave  
 15301 \DeclareTextCommand{\textasciigrave}{PU}{\80\140}% U+0060  
 \80\141: U+0061 LATIN SMALL LETTER A; a  
 ...  
 \80\150: U+0068 LATIN SMALL LETTER H; h  
 15302 % U+0069 LATIN SMALL LETTER I; i  
 15303 \DeclareTextCompositeCommand{\.}{PU}{i}% \80\151 U+0069  
 15304 \DeclareTextCompositeCommand{\.}{PU}{i}% \80\151 U+0069

$\backslash 80\backslash 152$ : U+006A LATIN SMALL LETTER J; j  
 ...  
 $\backslash 80\backslash 172$ : U+007A LATIN SMALL LETTER Z; z  
 15305 % U+007B LEFT CURLY BRACKET; braceleft  
 15306 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B  
 15307 % U+007C VERTICAL LINE; \*bar, verticalbar  
 15308 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C  
 15309 %\* \textbar -> \textvertline (tipa)  
 15310 % U+007D RIGHT CURLY BRACKET; braceright  
 15311 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D  
 15312 % U+007E TILDE; asciitilde  
 15313 \DeclareTextCommand{\textasciitilde}{PU}{\80\176}% U+007E

### 47.2.3 Latin-1 Supplement: U+0080 to U+00FF

$\backslash 80\backslash 240$ : U+00A0 NO-BREAK SPACE; nbspace, nonbreakingspace  
 15314 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 15315 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1  
 15316 % U+00A2 CENT SIGN; cent  
 15317 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2  
 15318 % U+00A3 POUND SIGN; sterling  
 15319 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3  
 15320 %\* \textsterling -> \mathsterling (LaTeX)  
 15321 %\* \textsterling -> \pounds (LaTeX)  
 15322 % U+00A4 CURRENCY SIGN; currency  
 15323 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
 15324 % U+00A5 YEN SIGN; yen  
 15325 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
 15326 % U+00A6 BROKEN BAR; brokenbar  
 15327 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
 15328 %\* \textbrokenbar -> \brokenvert (wasysym)  
 15329 % U+00A7 SECTION SIGN; section  
 15330 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
 15331 %\* \textsection -> \mathsection (LaTeX)  
 15332 %\* \textsection -> \S (LaTeX)  
 15333 % U+00A8 DIAERESIS; dieresis  
 15334 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
 15335 % U+00A9 COPYRIGHT SIGN; copyright  
 15336 \DeclareTextCommand{\textcopyright}{PU}{\80\251}%\* U+00A9  
 15337 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 15338 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
 15339 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetleft  
 15340 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
 15341 \DeclareTextCommand{\guillemetleft}{PU}{\80\253}% U+00AB  
 15342 % U+00AC NOT SIGN; logicalnot  
 15343 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
 15344 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
 $\backslash 80\backslash 255$ : U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
 15345 % U+00AE REGISTERED SIGN; registered  
 15346 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
 15347 % U+00AF MACRON; \*macron, overscore  
 15348 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
 15349 % U+00B0 DEGREE SIGN; degree

15350 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
15351 % U+00B1 PLUS-MINUS SIGN; plusminus  
15352 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
15353 % U+00B2 SUPERSCRIPT TWO; twosuperior  
15354 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}%\* U+00B2  
15355 % U+00B3 SUPERSCRIPT THREE; threesuperior  
15356 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}%\* U+00B3  
15357 % U+00B4 ACUTE ACCENT; acute  
15358 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
15359 \DeclareTextCommand{\textasciacute}{PU}{\80\264}% U+00B4  
15360 % U+00B5 MICRO SIGN; mu, mu1  
15361 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
15362 % U+00B6 PILCROW SIGN; paragraph  
15363 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
15364 %\* \textparagraph -> \mathparagraph (LaTeX)  
15365 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
15366 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
15367 %\* \textperiodcentered -> \MultiplicationDot (marvosym)  
15368 %\* \textperiodcentered -> \Squaredot (marvosym)  
15369 % U+00B8 CEDILLA; cedilla  
15370 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
15371 % U+00B9 SUPERSCRIPT ONE; onesuperior  
15372 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}%\* U+00B9  
15373 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
15374 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA  
15375 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetright  
15376 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
15377 \DeclareTextCommand{\guillemetright}{PU}{\80\273}% U+00BB  
15378 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
15379 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
15380 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
15381 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
15382 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
15383 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
15384 % U+00BF INVERTED QUESTION MARK; questiondown  
15385 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
15386 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
15387 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
15388 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
15389 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
15390 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
15391 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
15392 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
15393 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
15394 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
15395 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4  
15396 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
15397 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
15398 % U+00C6 LATIN CAPITAL LETTER AE; AE  
15399 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
15400 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
15401 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
15402 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
15403 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8

15404 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
15405 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
15406 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
15407 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
15408 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
15409 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
15410 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
15411 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
15412 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
15413 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
15414 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
15415 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
15416 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
15417 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
15418 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
15419 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
15420 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
15421 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
15422 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
15423 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
15424 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
15425 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
15426 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
15427 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
15428 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
15429 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
15430 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
15431 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6  
15432 % U+00D7 MULTIPLICATION SIGN; multiply  
15433 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
15434 %\* \textmultiply -> \vartimes (stmaryrd)  
15435 %\* \textmultiply -> \MVMultiplication (marvosym)  
15436 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
15437 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
15438 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
15439 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
15440 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
15441 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
15442 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
15443 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
15444 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
15445 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
15446 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
15447 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
15448 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
15449 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
15450 \DeclareTextCommand{\textThorn}{PU}{\80\336}%\* U+00DE  
15451 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
15452 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
15453 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
15454 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
15455 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
15456 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
15457 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex

15458 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\342}% U+00E2  
15459 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
15460 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
15461 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
15462 \DeclareTextCompositeCommand{"}{PU}{a}{\80\344}% U+00E4  
15463 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
15464 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
15465 % U+00E6 LATIN SMALL LETTER AE; ae  
15466 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
15467 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
15468 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
15469 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
15470 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
15471 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
15472 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
15473 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
15474 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
15475 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
15476 \DeclareTextCompositeCommand{"}{PU}{e}{\80\353}% U+00EB  
15477 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
15478 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
15479 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
15480 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
15481 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15482 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15483 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
15484 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15485 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15486 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
15487 \DeclareTextCompositeCommand{"}{PU}{i}{\80\357}% U+00EF  
15488 \DeclareTextCompositeCommand{"}{PU}{i}{\80\357}% U+00EF  
15489 % U+00F0 LATIN SMALL LETTER ETH; eth  
15490 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
15491 %\* \dh -> \eth (wsuipa, phonetic)  
15492 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
15493 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
15494 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
15495 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
15496 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
15497 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
15498 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
15499 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
15500 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otild  
15501 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
15502 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
15503 \DeclareTextCompositeCommand{"}{PU}{o}{\80\366}% U+00F6  
15504 % U+00F7 DIVISION SIGN; divide  
15505 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
15506 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
15507 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
15508 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
15509 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
15510 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
15511 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA

15512 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 15513 \DeclareTextCompositeCommand{\~}{PU}{u}{\80\373}% U+00FB  
 15514 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 15515 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
 15516 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 15517 \DeclareTextCompositeCommand{\' }{PU}{y}{\80\375}% U+00FD  
 15518 % U+00FE LATIN SMALL LETTER THORN; thorn;  
 15519 % \th, \thorn (wasysym), \textthorn (tipa)  
 15520 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
 15521 \DeclareTextCommand{\textthorn}{PU}{\80\376}%\* U+00FE  
 15522 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 15523 \DeclareTextCompositeCommand{\\"}{PU}{y}{\80\377}% U+00FF

#### 47.2.4 Latin Extended-A: U+0080 to U+017F

15524 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
 15525 \DeclareTextCompositeCommand{=} {PU}{A}{\81\000}% U+0100  
 15526 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
 15527 \DeclareTextCompositeCommand{=} {PU}{a}{\81\001}% U+0101  
 15528 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
 15529 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
 15530 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
 15531 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
 15532 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
 15533 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
 15534 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
 15535 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
 15536 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
 15537 \DeclareTextCompositeCommand{\' }{PU}{C}{\81\006}% U+0106  
 15538 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
 15539 \DeclareTextCompositeCommand{\' }{PU}{c}{\81\007}% U+0107  
 15540 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
 15541 \DeclareTextCompositeCommand{\^ }{PU}{C}{\81\010}% U+0108  
 15542 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
 15543 \DeclareTextCompositeCommand{\^ }{PU}{c}{\81\011}% U+0109  
 15544 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotac-  
 cent  
 15545 \DeclareTextCompositeCommand{\. }{PU}{C}{\81\012}% U+010A  
 15546 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
 15547 \DeclareTextCompositeCommand{\. }{PU}{c}{\81\013}% U+010B  
 15548 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
 15549 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
 15550 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
 15551 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
 15552 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
 15553 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
 15554 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
 15555 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
 15556 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
 15557 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
 15558 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron;  
 15559 % \textcrd (tipa)  
 15560 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
 15561 \DeclareTextCommand{\textcrd}{PU}{\81\021}% U+0111

15562 %\* \textcrd -> \crossd (wsuipa)  
15563 % An alternate glyph with the stroke through the bowl:  
15564 %\* \textcrd -> \textbard (tipa)  
15565 %\* \textcrd -> \bard (wsuipa)  
15566 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
15567 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
15568 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
15569 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
15570 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
15571 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
15572 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
15573 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
15574 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
15575 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
15576 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
15577 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
15578 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
15579 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
15580 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
15581 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
15582 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
15583 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
15584 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
15585 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
15586 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
15587 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
15588 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
15589 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
15590 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
15591 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
15592 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
15593 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
15594 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotac-  
cent  
15595 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
15596 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
15597 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
15598 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcom-  
maaccent  
15599 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
15600 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
15601 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
15602 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
15603 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
15604 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
15605 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
15606 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
15607 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
15608 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar; \hbar (AmS)  
15609 \DeclareTextCommand{\textthbar}{PU}{\81\047}%\* U+0127  
15610 %\* \textthbar -> \textcrh (tipa)  
15611 %\* \textthbar -> \crossh (wsuipa)  
15612 %\* \textthbar -> \planck (phonetic)  
15613 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde

15614 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
15615 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
15616 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15617 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15618 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
15619 \DeclareTextCompositeCommand{=} {PU}{I}{\81\052}% U+012A  
15620 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
15621 \DeclareTextCompositeCommand{=} {PU}{i}{\81\053}% U+012B  
15622 \DeclareTextCompositeCommand{=} {PU}{i}{\81\053}% U+012B  
15623 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
15624 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
15625 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
15626 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
15627 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
15628 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
15629 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
15630 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
15631 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
15632 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
15633 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
15634 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
15635 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
15636 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
15637 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
15638 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
15639 % U+0133 LATIN SMALL LIGATURE IJ; ij  
15640 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
15641 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
15642 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
15643 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
15644 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
15645 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
15646 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaac-  
cent  
15647 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136  
15648 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
15649 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067}% U+0137

The canonical name of U+0138, small letter kra, would be `\textkgreenlandic`, following the glyph naming convention. However `latex/base/inputenc.dtx` has chosen `\textkra`.

15650 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic  
15651 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138  
15652 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute  
15653 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139  
15654 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute  
15655 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
15656 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaac-  
cent  
15657 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B  
15658 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent  
15659 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C  
15660 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron  
15661 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D

15662 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron  
 15663 \DeclareTextCompositeCommand{\v}{PU}{l}{\81\076}% U+013E  
 There seems to be no variants of letters ‘L’ and ‘l’ with a dot above (reasonable).  
 Therefore the \. accent is reused instead of making a separate accent macro  
 \textmiddledot.  
 15664 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotac-  
 cent  
 15665 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F  
 15666 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent  
 15667 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140  
 15668 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
 15669 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141  
 15670 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
 15671 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142  
 15672 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute  
 15673 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143  
 15674 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute  
 15675 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144  
 15676 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaac-  
 cent  
 15677 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145  
 15678 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
 15679 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146  
 15680 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
 15681 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147  
 15682 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
 15683 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148  
 15684 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napos-  
 trophe, quoterightn  
 15685 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
 15686 % U+014A LATIN CAPITAL LETTER ENG; Eng  
 15687 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
 15688 % U+014B LATIN SMALL LETTER ENG; eng  
 15689 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
 15690 %\* \ng -> \eng (wsuipa)  
 15691 %\* \ng -> \engma (phonetic)  
 15692 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
 15693 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C  
 15694 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
 15695 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D  
 15696 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
 15697 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
 15698 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
 15699 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
 15700 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odbla-  
 cute, Ohungarumlaut  
 15701 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
 15702 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odbla-  
 cute, ohungarumlaut  
 15703 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
 15704 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
 15705 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
 15706 % U+0153 LATIN SMALL LIGATURE OE; oe  
 15707 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153

15708 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
 15709 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124}% U+0154  
 15710 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
 15711 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125}% U+0155  
 15712 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaac-  
 cent  
 15713 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
 15714 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
 15715 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157  
 15716 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
 15717 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
 15718 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
 15719 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
 15720 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
 15721 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
 15722 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
 15723 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
 15724 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
 15725 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
 15726 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
 15727 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
 15728 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
 15729 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
 15730 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
 15731 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
 15732 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
 15733 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
 15734 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
 15735 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
 15736 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaac-  
 cent  
 15737 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
 15738 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
 15739 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
 15740 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
 15741 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
 15742 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
 15743 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
 15744 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
 15745 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
 15746 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
 15747 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
 15748 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
 15749 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
 15750 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
 15751 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
 15752 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
 15753 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
 15754 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
 15755 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
 15756 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
 15757 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
 15758 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
 15759 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D

15760 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
 15761 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
 15762 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
 15763 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
 15764 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udblacute, Uhungarumlaut  
 15765 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
 15766 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhungarumlaut  
 15767 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
 15768 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
 15769 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172  
 15770 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
 15771 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
 15772 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
 15773 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
 15774 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
 15775 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
 15776 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
 15777 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
 15778 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
 15779 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
 15780 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 15781 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178  
 15782 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
 15783 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
 15784 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
 15785 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
 15786 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
 15787 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B  
 15788 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
 15789 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C  
 15790 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 15791 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
 15792 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 15793 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
 15794 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
 15795 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

#### 47.2.5 Latin Extended-B: U+0180 to U+024F

15796 % U+0180 LATIN SMALL LETTER B WITH STROKE; bstroke; \textcrb (tipa)  
 15797 \DeclareTextCommand{\textcrb}{PU}{\81\200}% U+0180  
 15798 %\* \textcrb -> \crossb (wsuipa)  
 15799 % An alternate glyph with the stroke through the bowl:  
 15800 %\* \textcrb -> \textbarb (tipa)  
 15801 %\* \textcrb -> \barb (wsuipa)  
 15802 % U+0181 LATIN CAPITAL LETTER B WITH HOOK; Bhook; \hausab (phonetic)  
 15803 \DeclareTextCommand{\texthausab}{PU}{\81\201}%\* U+0181  
 15804 % U+0188 LATIN SMALL LETTER C WITH HOOK; chook; \texthtc (tipa)  
 15805 \DeclareTextCommand{\texthtc}{PU}{\81\210}% U+0188  
 15806 % U+018A LATIN CAPITAL LETTER D WITH HOOK; Dhook; \hausad (phonetic)  
 15807 \DeclareTextCommand{\texthausad}{PU}{\81\212}%\* U+018A

15808 % U+018E LATIN CAPITAL LETTER REVERSED E; Ereversed  
15809 \DeclareTextCommand{\textEreversed}{PU}{\81\216}% U+018E  
15810 \DeclareTextCommand{\textrevE}{PU}{\81\216}% U+018E  
15811 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
15812 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
15813 %\* \textflorin -> \Florin (marvosym)  
15814 % U+0195 LATIN SMALL LETTER HV; hv; \texthvlig (tipa)  
15815 \DeclareTextCommand{\texthvlig}{PU}{\81\225}% U+0195  
15816 %\* \texthvlig -> \hv (wsuipa)  
15817 % U+0198 LATIN CAPITAL LETTER K WITH HOOK; Khook; \hausak (phonetic)  
15818 \DeclareTextCommand{\texthausak}{PU}{\81\230}%\* U+0198  
15819 % U+0199 LATIN SMALL LETTER K WITH HOOK; khook; \texthtk (tipa)  
15820 \DeclareTextCommand{\texthtk}{PU}{\81\231}% U+0199  
15821 %\* \texthtk -> \hausak (phonetic)  
15822 % U+019A LATIN SMALL LETTER L WITH BAR; lbar;  
15823 % \textbarl (tipa), \barl (wsuipa)  
15824 \DeclareTextCommand{\textbarl}{PU}{\81\232}%\* U+019A  
15825 % U+019B LATIN SMALL LETTER LAMBDA WITH STROKE/  
15826 % LATIN SMALL LETTER BARRED LAMBDA; lambdastroke;  
15827 % \textclambda (tipa)  
15828 \DeclareTextCommand{\textclambda}{PU}{\81\233}% U+019B  
15829 %\* \textclambda -> \crossnilambda (wsuipa)  
15830 %\* \textclambda -> \barlambd (phonetic)  
15831 %\* \textclambda -> \lambdabar (txfonts/pxfonts)  
15832 %\* \textclambda -> \lambdaslash (txfonts/pxfonts)  
15833 % U+019E LATIN SMALL LETTER N WITH LONG RIGHT LEG; nlegrightlong;  
15834 % \textnrleg (tipx)  
15835 \DeclareTextCommand{\textPUnrleg}{PU}{\81\236}% U+019E  
15836 %\* \textPUnrleg -> \textnrleg (tipx)  
15837 % U+01A5 LATIN SMALL LETTER P WITH HOOK; phook; \texthtp (tipa)  
15838 \DeclareTextCommand{\texthtp}{PU}{\81\245}% U+01A5  
15839 % U+01AB LATIN SMALL LETTER T WITH PALATAL HOOK; tpalatalhook;  
15840 % \textlhookt (tipa)  
15841 \DeclareTextCommand{\textlhookt}{PU}{\81\253}% U+01AB  
15842 % U+01AD LATIN SMALL LETTER T WITH HOOK; thook; \texthtt (tipa)  
15843 \DeclareTextCommand{\texthtt}{PU}{\81\255}% U+01AD  
15844 % U+01B9 LATIN SMALL LETTER EZH REVERSED/  
15845 % LATIN SMALL LETTER REVERSED YOGH; \textrevyogh (tipa)  
15846 \DeclareTextCommand{\textrevyogh}{PU}{\81\271}% U+01B9  
15847 % U+01BB LATIN LETTER TWO WITH STROKE; twostroke; \textcrtwo (tipa)  
15848 \DeclareTextCommand{\textcrtwo}{PU}{\81\273}% U+01BB  
15849 % U+01BE LATIN LETTER INVERTED GLOTTAL STOP WITH STROKE;  
15850 % glottalinvertedstroke; \textcrinvglotstop (tipa)  
15851 \DeclareTextCommand{\textcrinvglotstop}{PU}{\81\276}% U+01BE  
15852 % U+01BF LATIN LETTER WYNN; wynn; \textwynn (tipa)  
15853 \DeclareTextCommand{\textwynn}{PU}{\81\277}% U+01BF  
15854 % U+01C0 LATIN LETTER DENTAL CLICK/LATIN LETTER PIPE; clickdental;  
15855 % \textpipe (tipa)  
15856 \DeclareTextCommand{\textpipe}{PU}{\81\300}% U+01C0  
15857 %\* \textpipe -> \textpipevar (tipx)  
15858 % U+01C1 LATIN LETTER LATERAL CLICK/LATIN LETTER

15859 % DOUBLE PIPE; clicklateral; \textdoublepipe (tipa)  
15860 \DeclareTextCommand{\textdoublepipe}{PU}{\81\301}% U+01C1  
15861 %\* \textdoublepipe -> \textdoublepipevar (tipx)  
15862 % U+01C2 LATIN LETTER ALVEOLAR CLICK/LATIN LETTER PIPE DOUBLE BAR;  
15863 % clickalveolar; \textdoublebarpipe (tipa)  
15864 \DeclareTextCommand{\textdoublebarpipe}{PU}{\81\302}% U+01C2  
15865 %\* \textdoublebarpipe -> \textdoublebarpipevar (tipx)  
15866 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
15867 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
15868 % U+01CE LATIN SMALL LETTER A WITH CARON; acarón  
15869 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
15870 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
15871 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
15872 % U+01D0 LATIN SMALL LETTER I WITH CARON; icarón  
15873 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
15874 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
15875 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
15876 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
15877 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocarón  
15878 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
15879 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
15880 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
15881 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucarón  
15882 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
15883 % U+01DD LATIN SMALL LETTER TURNED E; eturned; \inve (wasysym)  
15884 \DeclareTextCommand{\textinve}{PU}{\81\335}%\* U+01DD  
15885 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
15886 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
15887 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
15888 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
15889 %\* \textgslash -> \textcrg (tipa)  
15890 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
15891 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
15892 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcarón  
15893 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
15894 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
15895 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8  
15896 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcarón  
15897 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
15898 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
15899 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
15900 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
15901 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
15902 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
15903 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15904 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15905 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
15906 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
15907 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
15908 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
15909 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
15910 \DeclareTextCompositeCommand{\`}{PU}{N}{\81\370}% U+01F8  
15911 % U+01F9 LATIN SMALL LETTER N WITH GRAVE

15912 \DeclareTextCompositeCommand{\`}{PU}{n}{\81\371}% U+01F9  
15913 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
15914 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC  
15915 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
15916 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD  
15917 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE;  
15918 % \*Oslashacute, Ostrokeacut  
15919 \DeclareTextCompositeCommand{\'}{PU}{\O}{\81\376}% U+01FE  
15920 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE;  
15921 % \*oslashacute, ostrokeacute  
15922 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF  
15923 </puenc>  
15924 <\*puextra>  
15925 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
15926 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
15927 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
15928 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
15929 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
15930 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
15931 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
15932 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
15933 </puextra>  
15934 <\*puenc>  
15935 % U+0206 LATIN CAPITAL LETTER E WITH INVERTED BREVE; Einvert-  
edbreve  
15936 \DeclareTextCompositeCommand{\textinvbreve}{PU}{E}{\82\006}% U+0206  
15937 % U+0207 LATIN SMALL LETTER E WITH INVERTED BREVE; einvert-  
breve  
15938 \DeclareTextCompositeCommand{\textinvbreve}{PU}{e}{\82\007}% U+0207  
15939 </puenc>  
15940 <\*puextra>  
15941 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
15942 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
15943 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
15944 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15945 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15946 </puextra>  
15947 <\*puenc>  
15948 % U+020A LATIN CAPITAL LETTER I WITH INVERTED BREVE; Iinvert-  
breve  
15949 \DeclareTextCompositeCommand{\textinvbreve}{PU}{I}{\82\012}% U+020A  
15950 % U+020B LATIN SMALL LETTER I WITH INVERTED BREVE; iinvert-  
breve  
15951 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
15952 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
15953 </puenc>  
15954 <\*puextra>  
15955 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
15956 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
15957 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
15958 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
15959 </puextra>  
15960 <\*puenc>  
15961 % U+020E LATIN CAPITAL LETTER O WITH INVERTED BREVE; Oinvert-

edbreve  
 15962 \DeclareTextCompositeCommand{\textinvbreve}{PU}{O}{\82\016}% U+020E  
 15963 % U+020F LATIN SMALL LETTER O WITH INVERTED BREVE; oinverted-  
 breve  
 15964 \DeclareTextCompositeCommand{\textinvbreve}{PU}{o}{\82\017}% U+020F  
 15965 \end{puenc}  
 15966 \begin{puextra}  
 15967 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
 15968 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
 15969 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
 15970 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
 15971 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
 15972 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
 15973 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
 15974 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
 15975 \end{puextra}  
 15976 \begin{puenc}  
 15977 % U+0216 LATIN CAPITAL LETTER U WITH INVERTED BREVE; Uinvert-  
 edbreve  
 15978 \DeclareTextCompositeCommand{\textinvbreve}{PU}{U}{\82\026}% U+0216  
 15979 % U+0217 LATIN SMALL LETTER U WITH INVERTED BREVE; uinverted-  
 breve  
 15980 \DeclareTextCompositeCommand{\textinvbreve}{PU}{u}{\82\027}% U+0217  
 15981 % U+021E LATIN CAPITAL LETTER H WITH CARON  
 15982 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
 15983 % U+021F LATIN SMALL LETTER H WITH CARON  
 15984 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
 15985 % U+0221 LATIN SMALL LETTER D WITH CURL; \textctd (tipa)  
 15986 \DeclareTextCommand{\textctd}{PU}{\82\041}% U+0221  
 15987 % U+0225 LATIN SMALL LETTER Z WITH HOOK; \textcommatailz (tipa)  
 15988 \DeclareTextCommand{\textcommatailz}{PU}{\82\045}% U+0225  
 15989 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
 15990 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
 15991 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
 15992 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
 15993 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
 15994 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
 15995 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
 15996 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
 15997 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
 15998 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
 15999 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
 16000 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
 16001 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
 16002 \DeclareTextCompositeCommand{\=}{PU}{Y}{\82\062}% U+0232  
 16003 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
 16004 \DeclareTextCompositeCommand{\=}{PU}{y}{\82\063}% U+0233  
 16005 % U+0235 LATIN SMALL LETTER N WITH CURL; \textctn (tipa)  
 16006 \DeclareTextCommand{\textctn}{PU}{\82\065}% U+0235  
 16007 % U+0236 LATIN SMALL LETTER T WITH CURL; \textctt (tipa)  
 16008 \DeclareTextCommand{\textctt}{PU}{\82\066}% U+0236  
 16009 % U+0237 LATIN SMALL LETTER DOTLESS J  
 16010 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237  
 16011 % U+0238 LATIN SMALL LETTER DB DIGRAPH; \textdblig (tipx)

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16012 \DeclareTextCommand{\textPUdblig}{PU}{\82\070}% U+0238
16013 %* \textPUdblig -> \textdblig (tipx)
16014 % U+0239 LATIN SMALL LETTER QP DIGRAPH; \textqplig (tipx)
16015 \DeclareTextCommand{\textPUqplig}{PU}{\82\071}% U+0239
16016 %* \textPUqplig -> \textqplig (tipx)
16017 % U+023C LATIN SMALL LETTER C WITH STROKE; \slashc (wsuipa)
16018 \DeclareTextCommand{\textslashc}{PU}{\82\074}% U+023C
16019 %* \textslashc -> \textcentoldstyle (textcomp)
16020 % With bar instead of stroke:
16021 %* \textslashc -> \textbarc (tipa)

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#### 47.2.6 IPA Extensions: U+0250 to U+02AF

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16022 % U+0250 LATIN SMALL LETTER TURNED A; aturned; \textturna (tipa)
16023 \DeclareTextCommand{\textturna}{PU}{\82\120}% U+0250
16024 %* \textturna -> \inva (wasysym)
16025 % U+0251 LATIN SMALL LETTER ALPHA/LATIN SMALL LETTER
16026 % SCRIPT A; ascript; \textscripta (tipa), \scripta (wsuipa)
16027 \DeclareTextCommand{\textscripta}{PU}{\82\121}% U+0251
16028 %* \textscripta -> \vara (phonetic)
16029 % U+0252 LATIN SMALL LETTER TURNED ALPHA; ascriptturned;
16030 % \textturnscripta (tipa)
16031 \DeclareTextCommand{\textturnscripta}{PU}{\82\122}% U+0252
16032 %* \textturnscripta -> \invscripta (wsuipa)
16033 %* \textturnscripta -> \rotvara (phonetic)
16034 % U+0253 LATIN CAPITAL LETTER B WITH HOOK; bhook; \texthtb (tipa)
16035 \DeclareTextCommand{\texthtb}{PU}{\82\123}% U+0253
16036 %* \texthtb -> \hookb (wsuipa)
16037 %* \texthtb -> \hausab (phonetic)
16038 % U+0254 LATIN SMALL LETTER OPEN O; oopen;
16039 % \textopeno (tipa), \openo (wasysym)
16040 \DeclareTextCommand{\textopeno}{PU}{\82\124}% U+0254
16041 %* \textopeno -> \varopeno (phonetic)
16042 % U+0255 LATIN SMALL LETTER C WITH CURL; ccurl; \textctc (tipa)
16043 \DeclareTextCommand{\textctc}{PU}{\82\125}% U+0255
16044 %* \textctc -> \curlyc (wsuipa)
16045 % U+0256 LATIN SMALL LETTER D WITH TAIL; dtail; \textrtaild (tipa)
16046 \DeclareTextCommand{\textrtaild}{PU}{\82\126}% U+0256
16047 %* \textrtaild -> \taild (wsuipa)
16048 % U+0257 LATIN SMALL LETTER D WITH HOOK; dhook; \texthtd (tipa)
16049 \DeclareTextCommand{\texthtd}{PU}{\82\127}% U+0257
16050 %* \texthtd -> \hookd (wsuipa)
16051 %* \texthtd -> \hausad (phonetic)
16052 % U+0258 LATIN SMALL LETTER REVERSED E; ereversed;
16053 % \textreve (tipa), \reve (wsuipa)
16054 \DeclareTextCommand{\textreve}{PU}{\82\130}% U+0258
16055 % U+0259 LATIN SMALL LETTER SCHWA; schwa;
16056 % \textschwa (tipa), \schwa (wsuipa, phonetic)
16057 \DeclareTextCommand{\textschwa}{PU}{\82\131}% U+0259
16058 % U+025A LATIN SMALL LETTER SCHWA WITH HOOK; schwahook;
16059 % \textrhookschwa (tipa)
16060 \DeclareTextCommand{\textrhookschwa}{PU}{\82\132}% U+025A
16061 %* \textrhookschwa -> \er (wsuipa)
16062 % U+025B LATIN SMALL LETTER OPEN E/LATIN SMALL LETTER EP-
        SILON; eopen;

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16063 % \niepsilon (wsuipa)  
16064 \DeclareTextCommand{\textniepsilon}{PU}{\82\133}%\* U+025B  
16065 %\* \textniepsilon -> \epsi (phonetic)  
16066 % U+025C LATIN SMALL LETTER REVERSED OPEN E; eopenreversed;  
16067 % \textreversedepsilon (tipa), \reversedepsilon (wsuipa)  
16068 \DeclareTextCommand{\textreversedepsilon}{PU}{\82\134}%\* U+025C  
16069 % U+025D LATIN SMALL LETTER REVERSED OPEN E WITH HOOK; eopenreversedhook;  
16070 % \texthookreversedepsilon (tipa)  
16071 \DeclareTextCommand{\texthookreversedepsilon}{PU}{\82\135}%\* U+025D  
16072 %\* \texthookreversedepsilon -> \hookreversedepsilon (wsuipa)  
16073 % U+025E LATIN SMALL LETTER CLOSED REVERSED OPEN E; eopenreversedclosed;  
16074 % \textclosedreversedepsilon (tipa)  
16075 \DeclareTextCommand{\textclosedreversedepsilon}{PU}{\82\136}% U+025E  
16076 %\* \textclosedreversedepsilon -> \closedreversedepsilon (wsuipa)  
16077 % U+025F LATIN SMALL LETTER DOTLESS J WITH STROKE; jdotlessstroke;  
16078 % \textbardotlessj (tipa)  
16079 \DeclareTextCommand{\textbardotlessj}{PU}{\82\137}% U+025F  
16080 %\* \textbardotlessj -> \barj (phonetic)  
16081 % U+0260 LATIN SMALL LETTER G WITH HOOK; ghook; \texthtg (tipa)  
16082 \DeclareTextCommand{\texthtg}{PU}{\82\140}% U+0260  
16083 %\* \texthtg -> \hookg (wsuipa)  
16084 % U+0261 LATIN SMALL LETTER SCRIPT G; gscript;  
16085 % \textscriptg (tipa), \scriptg (wsuipa)  
16086 \DeclareTextCommand{\textscriptg}{PU}{\82\141}%\* U+0261  
16087 %\* \textscriptg -> \varg (phonetic)  
16088 % U+0262 LATIN LETTER SMALL CAPITAL G; \textscg (tipa), \scg (wsuipa)  
16089 \DeclareTextCommand{\textscg}{PU}{\82\142}%\* U+0262  
16090 % U+0263 LATIN SMALL LETTER GAMMA; gammalatin; small;  
16091 % \ipagamma (wsuipa), \vod (phonetic)  
16092 \DeclareTextCommand{\textipagamma}{PU}{\82\143}%\* U+0263  
16093 %\* \textipagamma -> \vod (pnonetic)  
16094 % U+0264 LATIN SMALL LETTER RAMS HORN; ramshorn;  
16095 % \babygamma (wsuipa)  
16096 \DeclareTextCommand{\textbabygamma}{PU}{\82\144}%\* U+0264  
16097 % U+0265 LATIN SMALL LETTER TURNED H; hturned; \textturnh (tipa)  
16098 \DeclareTextCommand{\textturnh}{PU}{\82\145}% U+0265  
16099 %\* \textturnh -> \invh (wsuipa)  
16100 %\* \textturnh -> \udesc (phonetic)  
16101 % U+0266 LATIN SMALL LETTER H WITH HOOK; hhook; \texthth (tipa)  
16102 \DeclareTextCommand{\texthth}{PU}{\82\146}% U+0266  
16103 %\* \texthth -> \hookh (wsuipa)  
16104 %\* \texthth -> \voicedh (phonetic)  
16105 % U+0267 LATIN SMALL LETTER HENG WITH HOOK; henghook; \textheng (tipa)  
16106 \DeclareTextCommand{\textheng}{PU}{\82\147}% U+0267  
16107 %\* \textheng -> \hookheng (wsuipa)  
16108 % U+0268 LATIN SMALL LETTER I WITH STROKE;  
16109 % \textbari (tipa), \bari (wsuipa)  
16110 \DeclareTextCommand{\textbari}{PU}{\82\150}%\* U+0268  
16111 %\* \textbari -> \ibar (phonetic)  
16112 % U+0269 LATIN SMALL LETTER IOTA; italatin; \niota (wsuipa)

16113 \DeclareTextCommand{\textniota}{PU}{\82\151}%\* U+0269  
16114 %\* \textniota -> \vari (phonetic)  
16115 % U+026A LATIN LETTER SMALL CAPITAL I; \textsci (tipa), \sci (wsuipa)  
16116 \DeclareTextCommand{\textsci}{PU}{\82\152}%\* U+026A  
16117 % U+026B LATIN SMALL LETTER L WITH MIDDLE TILDE; lmiddletilde;  
16118 % \textltilde (tipa)  
16119 \DeclareTextCommand{\textltilde}{PU}{\82\153}% U+026B  
16120 %\* \textltilde -> \tildel (wsuipa)  
16121 % U+026C LATIN SMALL LETTER L WITH BELT; lbelt; \textbeltl (tipa)  
16122 \DeclareTextCommand{\textbeltl}{PU}{\82\154}% U+026C  
16123 %\* \textbeltl -> \latfric (wsuipa)  
16124 % U+026D LATIN SMALL LETTER L WITH RETROFLEX HOOK;  
16125 % lhookretroflex; \textrtail (tipa)  
16126 \DeclareTextCommand{\textrtail}{PU}{\82\155}% U+026D  
16127 %\* \textrtail -> \tail (wsuipa)  
16128 % U+026E LATIN SMALL LETTER LEZH; lezh; \textlyoghlig (tipa)  
16129 \DeclareTextCommand{\textlyoghlig}{PU}{\82\156}% U+026E  
16130 %\* \textlyoghlig -> \lz (wsuipa)  
16131 % U+026F LATIN SMALL LETTER TURNED M; mturned; \textturnm (tipa)  
16132 \DeclareTextCommand{\textturnm}{PU}{\82\157}% U+026F  
16133 %\* \textturnm -> \invm (wsuipa)  
16134 %\* \textturnm -> \rotm (phonetic)  
16135 % U+0270 LATIN SMALL LETTER TURNED M WITH LONG LEG; mlongleg-  
turned;  
16136 % \textturnmreg (tipa)  
16137 \DeclareTextCommand{\textturnmreg}{PU}{\82\160}% U+0270  
16138 %\* \textturnmreg -> \legm (wsuipa)  
16139 % U+0271 LATIN SMALL LETTER M WITH HOOK; mhook; \textltailm (tipa)  
16140 \DeclareTextCommand{\textltailm}{PU}{\82\161}% U+0271  
16141 %\* \textltailm -> \labdentalnas (wsuipa)  
16142 %\* \textltailm -> \emgma (phonetic)  
16143 % U+0272 LATIN SMALL LETTER N WITH LEFT HOOK; nhookleft; \textl-  
tailn (tipa)  
16144 \DeclareTextCommand{\textltailn}{PU}{\82\162}% U+0272  
16145 %\* \textltailn -> \nj (wsuipa)  
16146 %\* \textltailn -> \nya (phonetic)  
16147 % U+0273 LATIN SMALL LETTER N WITH RETROFLEX HOOK;  
16148 % nhookretroflex; \textrtailn (tipa)  
16149 \DeclareTextCommand{\textrtailn}{PU}{\82\163}% U+0273  
16150 %\* \textrtailn -> \tailn (wsuipa)  
16151 % U+0274 LATIN LETTER SMALL CAPITAL N; \textscn (tipa), \scn (wsuipa)  
16152 \DeclareTextCommand{\textscn}{PU}{\82\164}%\* U+0274  
16153 % U+0275 LATIN CAPITAL LETTER O WITH MIDDLE TILDE/  
16154 % LATIN CAPITAL LETTER BARRED O; obarred;  
16155 % \textbaro (tipa), \baro (wsuipa)  
16156 % But \baro from stmaryrd is different!  
16157 \DeclareTextCommand{\textbaro}{PU}{\82\165}% U+0275  
16158 % U+0276 LATIN LETTER SMALL CAPITAL OE; \textscoelig (tipa)  
16159 \DeclareTextCommand{\textscoelig}{PU}{\82\166}% U+0276  
16160 % U+0277 LATIN SMALL LETTER CLOSED OMEGA; omegalatinclosed;  
16161 % \textcloseomega (tipa)  
16162 \DeclareTextCommand{\textcloseomega}{PU}{\82\167}% U+0277  
16163 %\* \textcloseomega -> \closedniomega (wsuipa)  
16164 %\* \textcloseomega -> \varomega (phonetic)

16165 % U+0278 LATIN SMALL LETTER PHI; philatin; \nphi (wsuipa)  
 16166 \DeclareTextCommand{\textnphi}{PU}{\82\170}%\* U+0278  
 16167 % U+0279 LATIN SMALL LETTER TURNED R; rturned; \textturnr (tipa)  
 16168 \DeclareTextCommand{\textturnr}{PU}{\82\171}% U+0279  
 16169 %\* \textturnr -> \invr (wsuipa)  
 16170 %\* \textturnr -> \rotr (phonetic)  
 16171 % U+027A LATIN SMALL LETTER TURNED R WITH LONG LEG;  
 16172 % rlonglegturned; \textturnlongleg (tipa)  
 16173 \DeclareTextCommand{\textturnlongleg}{PU}{\82\172}% U+027A  
 16174 %\* \textturnlongleg -> \invleg (wsuipa)  
 16175 % U+027B LATIN SMALL LETTER TURNED R WITH HOOK; rhocturned;  
 16176 % \textturnrrtail (tipa)  
 16177 \DeclareTextCommand{\textturnrrtail}{PU}{\82\173}% U+027B  
 16178 %\* \textturnrrtail -> \tailinvr (wsuipa)  
 16179 % U+027C LATIN SMALL LETTER R WITH LONG LEG; rlongleg; \textlong-  
 16180 % leg (tipa)  
 16180 \DeclareTextCommand{\textlongleg}{PU}{\82\174}%\* U+027C  
 16181 %\* \textlongleg -> \leg (wsuipa)  
 16182 % U+027D LATIN SMALL LETTER R WITH TAIL; rhoct; \textrtailr (tipa)  
 16183 \DeclareTextCommand{\textrtailr}{PU}{\82\175}% U+027D  
 16184 %\* \textrtailr -> \tailr (wsuipa)  
 16185 % U+027E LATIN SMALL LETTER R WITH FISHHOOK; rfishhook;  
 16186 % \textfishhookr (tipa)  
 16187 \DeclareTextCommand{\textfishhookr}{PU}{\82\176}% U+027E  
 16188 %\* \textfishhookr -> \flapr (wsuipa)  
 16189 %\* \textfishhookr -> \flap (phonetic)  
 16190 % U+027F LATIN SMALL LETTER REVERSED R WITH FISHHOOK; rfish-  
 16191 % hookreversed;  
 16191 % \textlhtlongi (tipa)  
 16192 \DeclareTextCommand{\textlhtlongi}{PU}{\82\177}% U+027F  
 16193 % U+0280 LATIN LETTER SMALL CAPITAL R; \textscr (tipa), \scr (wsuipa)  
 16194 \DeclareTextCommand{\textscr}{PU}{\82\200}%\* U+0280  
 16195 % U+0281 LATIN LETTER SMALL CAPITAL INVERTED R; Rsmallinverted;  
 16196 % \textinvscr (tipa), \invscr (wsuipa)  
 16197 \DeclareTextCommand{\textinvscr}{PU}{\82\201}%\* U+0281  
 16198 % U+0282 LATIN SMALL LETTER S WITH HOOK; shook; \textrtails (tipa)  
 16199 \DeclareTextCommand{\textrtails}{PU}{\82\202}% U+0282  
 16200 %\* \textrtails -> \tails (wsuipa)  
 16201 % U+0283 LATIN SMALL LETTER ESH; esh; \textesh (tipa), \esh (wsuipa)  
 16202 \DeclareTextCommand{\textesh}{PU}{\82\203}%\* U+0283  
 16203 % U+0284 LATIN SMALL LETTER DOTLESS J WITH STROKE AND HOOK;  
 16204 % dotlessjstrokehook; \texthtbardotlessj (tipa)  
 16205 \DeclareTextCommand{\texthtbardotlessj}{PU}{\82\204}% U+0284  
 16206 % U+0285 LATIN SMALL LETTER SQUAT REVERSED ESH; eshsquat-  
 16207 % reversed;  
 16207 % \textvibyi (tipa)  
 16208 \DeclareTextCommand{\textvibyi}{PU}{\82\205}% U+0285  
 16209 % U+0286 LATIN SMALL LETTER ESH WITH CURL; eshcurl; \textctesh (tipa)  
 16210 \DeclareTextCommand{\textctesh}{PU}{\82\206}% U+0286  
 16211 %\* \textctesh -> \curlyesh (wsuipa)  
 16212 % U+0287 LATIN SMALL LETTER TURNED T; tturned; \textturnt (tipa)  
 16213 \DeclareTextCommand{\textturnt}{PU}{\82\207}% U+0287  
 16214 %\* \textturnt -> \clickt (wsuipa)  
 16215 % U+0288 LATIN SMALL LETTER T WITH RETROFLEX HOOK; retroflex-

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hook;
16216 % \texttrtail (tipa)
16217 \DeclareTextCommand{\texttrtail}{PU}{\82\210}% U+0288
16218 %* \texttrtail -> \tail (wsuipa)
16219 % U+0289 LATIN SMALL LETTER U BAR; ubar;
16220 % \textbaru (tipa), \baru (wsuipa)
16221 \DeclareTextCommand{\textbaru}{PU}{\82\211}%* U+0289
16222 %* \textbaru -> \ubar (phonetic)
16223 % U+028A LATIN SMALL LETTER UPSILON; \niupsilon (wsuipa)
16224 \DeclareTextCommand{\textniupsilon}{PU}{\82\212}%* U+028A
16225 %* \textniupsilon -> \rotOmega (phonetic)
16226 % U+028B LATIN SMALL LETTER V WITH HOOK/LATIN SMALL LET-
TER SCRIPT V;
16227 % vhook; \textscriptv (tipa), \scriptv (wsuipa)
16228 \DeclareTextCommand{\textscriptv}{PU}{\82\213}%* U+028B
16229 % U+028C LATIN SMALL LETTER TURNED V; vturned; \textturnv (tipa)
16230 \DeclareTextCommand{\textturnv}{PU}{\82\214}%* U+028C
16231 %* \textturnv -> \invv (wsuipa)
16232 %* \textturnv -> \pwedge (phonetic)
16233 % U+028D LATIN SMALL LETTER TURNED W; wturned; \textturnw (tipa)
16234 \DeclareTextCommand{\textturnw}{PU}{\82\215}%* U+028D
16235 %* \textturnw -> \invw (wsuipa)
16236 %* \textturnw -> \rotw (phonetic)
16237 % U+028E LATIN SMALL LETTER TURNED Y; yturned; \textturny (tipa)
16238 \DeclareTextCommand{\textturny}{PU}{\82\216}%* U+028E
16239 %* \textturny -> \invy (wsuipa)
16240 %* \textturny -> \roty (phonetic)
16241 % U+028F LATIN LETTER SMALL CAPITAL Y; \textscy (tipa), \scy (wsuipa)
16242 \DeclareTextCommand{\textscy}{PU}{\82\217}%* U+028F
16243 % U+0290 LATIN SMALL LETTER Z WITH RETROFLEX HOOK; zretroflex-
hook;
16244 % \textrtailz (tipa)
16245 \DeclareTextCommand{\textrtailz}{PU}{\82\220}% U+0290
16246 %* \textrtailz -> \tailz (wsuipa)
16247 % U+0291 LATIN SMALL LETTER Z WITH CURL; zcurl; \textctz (tipa)
16248 \DeclareTextCommand{\textctz}{PU}{\82\221}% U+0291
16249 %* \textctz -> \curlyz (wsuipa)
16250 % U+0292 LATIN SMALL LETTER EZH/LATIN SMALL LETTER YOGH; ezh;
16251 % \textyogh (tipa), \yogh (wsuipa)
16252 \DeclareTextCommand{\textyogh}{PU}{\82\222}%* U+0292
16253 % U+0293 LATIN SMALL LETTER EZH WITH CURL/LATIN SMALL LET-
TER YOGH CURL;
16254 % ezhcurl; \textctyogh (tipa)
16255 \DeclareTextCommand{\textctyogh}{PU}{\82\223}% U+0293
16256 %* \textctyogh -> \curlyyogh (wsuipa)
16257 % U+0294 LATIN LETTER GLOTTAL STOP; glottalstop;
16258 % \textglotstop (tipa), \glotstop (wsuipa)
16259 \DeclareTextCommand{\textglotstop}{PU}{\82\224}%* U+0294
16260 %* \textglotstop -> \ejective (wsuipa)
16261 %* \textglotstop -> \glottal (phonetic)
16262 % U+0295 LATIN LETTER PHARYNGEAL VOICED FRICATIVE/
16263 % LATIN LETTER REVERSED GLOTTAL STOP; glottalstopreversed;
16264 % \textrevglotstop (tipa), \revglotstop (wsuipa)
16265 \DeclareTextCommand{\textrevglotstop}{PU}{\82\225}%* U+0295

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16266 %\* \textrevglotstop -> \reveject (wsuipa)  
 16267 % U+0296 LATIN LETTER INVERTED GLOTTAL STOP; glottalstopinverted;  
 16268 % \textinvglotstop (tipa), \invglotstop (wsuipa)  
 16269 \DeclareTextCommand{\textinvglotstop}{PU}{\82\226}%\* U+0296  
 16270 % U+0297 LATIN LETTER STRETCHED C; cstretched; \textstretchc (tipa)  
 16271 \DeclareTextCommand{\textstretchc}{PU}{\82\227}% U+0297  
 16272 %\* \textstretchc -> \clickc (wsuipa)  
 16273 %\* \textstretchc -> \textstretchcvar (tipx)  
 16274 % U+0298 LATIN LETTER BILABIAL CLICK; bilabialclick;  
 16275 % \textbullseye (tipa)  
 16276 \DeclareTextCommand{\textbullseye}{PU}{\82\230}% U+0298  
 16277 %\* \textbullseye -> \clickb (wsuipa)  
 16278 %\* \textbullseye -> \textObullseye (tipx)  
 16279 % U+0299 LATIN LETTER SMALL CAPITAL B; \textscb (tipa)  
 16280 \DeclareTextCommand{\textscb}{PU}{\82\231}% U+0299  
 16281 % U+029A LATIN SMALL LETTER CLOSED OPEN E; eopenclosed;  
 16282 % \textcloseepsilon (tipa)  
 16283 \DeclareTextCommand{\textcloseepsilon}{PU}{\82\232}% U+029A  
 16284 % U+029B LATIN LETTER SMALL CAPITAL G WITH HOOK; Gsmallhook;  
 16285 % \texthtscg (tipa)  
 16286 \DeclareTextCommand{\texthtscg}{PU}{\82\233}% U+029B  
 16287 % U+029C LATIN LETTER SMALL CAPITAL H; \textsch (tipa)  
 16288 \DeclareTextCommand{\textsch}{PU}{\82\234}% U+029C  
 16289 % U+029D LATIN SMALL LETTER J WITH CROSSED-TAIL; jcros-  
 tail; \textcdj (tipa)  
 16290 \DeclareTextCommand{\textctj}{PU}{\82\235}% U+029D  
 16291 %\* \textctj -> \textctjvar (tipx)  
 16292 % U+029E LATIN SMALL LETTER TURNED K; kturned; \textturnk (tipa)  
 16293 \DeclareTextCommand{\textturnk}{PU}{\82\236}% U+029E  
 16294 %\* \textturnk -> \textturnsck (tipx)  
 16295 % U+029F LATIN LETTER SMALL CAPITAL L; \textsl (tipa)  
 16296 \DeclareTextCommand{\textsl}{PU}{\82\237}% U+029F  
 16297 % U+02A0 LATIN SMALL LETTER Q WITH HOOK; qhook; \texthtq (tipa)  
 16298 \DeclareTextCommand{\texthtq}{PU}{\82\240}% U+02A0  
 16299 % U+02A1 LATIN LETTER GLOTTAL STOP WITH STROKE; glottalstop-  
 stroke;  
 16300 % \textbarglotstop (tipa)  
 16301 \DeclareTextCommand{\textbarglotstop}{PU}{\82\241}% U+02A1  
 16302 % U+02A2 LATIN LETTER REVERSED GLOTTAL STOP WITH STROKE/  
 16303 % LATIN LETTER REVERSED GLOTTAL STOP BAR; glottalstopstrokere-  
 versed;  
 16304 % \textbarrevglotstop (tipa)  
 16305 \DeclareTextCommand{\textbarrevglotstop}{PU}{\82\242}% U+02A2  
 16306 % U+02A3 LATIN SMALL LETTER DZ DIGRAPH; dzaltone; \textdzlig (tipa)  
 16307 \DeclareTextCommand{\textdzlig}{PU}{\82\243}% U+02A3  
 16308 %\* \textdzlig -> \dz (wsupipa)  
 16309 % U+02A4 LATIN SMALL LETTER DEZH DIGRAPH; dezh; \textdyogh-  
 lig (tipa)  
 16310 \DeclareTextCommand{\textdyoghlig}{PU}{\82\244}% U+02A4  
 16311 % U+02A5 LATIN SMALL LETTER DZ DIGRAPH WITH CURL; dzcurl;  
 16312 % \textdctzlig (tipa)  
 16313 \DeclareTextCommand{\textdctzlig}{PU}{\82\245}% U+02A5  
 16314 % U+02A6 LATIN SMALL LETTER TS DIGRAPH; ts; \texttslig (tipa)  
 16315 \DeclareTextCommand{\texttslig}{PU}{\82\246}% U+02A6

16316 % U+02A7 LATIN SMALL LETTER TESH DIGRAPH; tesh; \texttreshlig (tipa)  
 16317 \DeclareTextCommand{\texttreshlig}{PU}{\82\247}% U+02A7  
 16318 %\* \texttreshlig -> \tesh (wsuipa)  
 16319 % U+02A8 LATIN SMALL LETTER TC DIGRAPH WITH CURL; tccurl;  
 16320 % \texttctclig (tipa)  
 16321 \DeclareTextCommand{\texttctclig}{PU}{\82\250}% U+02A8  
 16322 % U+02AE LATIN SMALL LETTER TURNED H WITH FISHHOOK;  
 16323 % \textlhtlongy (tipa)  
 16324 \DeclareTextCommand{\textlhtlongy}{PU}{\82\256}% U+02AE  
 16325 % U+02AF LATIN SMALL LETTER TURNED H WITH FISHHOOK AND TAIL;  
 16326 % \textvibyy (tipa)  
 16327 \DeclareTextCommand{\textvibyy}{PU}{\82\257}% U+02AF

#### 47.2.7 Spacing Modifier Letters: U+02B0 to U+02FF

16328 % U+02BD MODIFIER LETTER REVERSED COMMA;  
 16329 % commareversedmod, afi64937; \textrevapostrophe (tipa)  
 16330 \DeclareTextCommand{\textrevapostrophe}{PU}{\82\275}% U+02BD  
 16331 % U+02C0 MODIFIER LETTER GLOTTAL STOP; glottalstopmod;  
 16332 % \textraseglotstop (tipa)  
 16333 \DeclareTextCommand{\textraseglotstop}{PU}{\82\300}% U+02C0  
 16334 % U+02C2 MODIFIER LETTER LEFT ARROWHEAD; arrowheadleftmod;  
 16335 % \textlptr (tipa)  
 16336 \DeclareTextCommand{\textlptr}{PU}{\82\302}% U+02C2  
 16337 % U+02C3 MODIFIER LETTER RIGHT ARROWHEAD; arrowheadrightmod;  
 16338 % \textrptr (tipa)  
 16339 \DeclareTextCommand{\textrptr}{PU}{\82\303}% U+02C3  
 16340 % U+02C7 CARON; caron  
 16341 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
 16342 % U+02C8 MODIFIER LETTER VERTICAL LINE; verticallinemod;  
 16343 % \textprimstress (tipa)  
 16344 \DeclareTextCommand{\textprimstress}{PU}{\82\310}% U+02C8  
 16345 % U+02CC MODIFIER LETTER LOW VERTICAL LINE; verticallinelowmod;  
 16346 % \textsecstress (tipa)  
 16347 \DeclareTextCommand{\textsecstress}{PU}{\82\314}% U+02CC  
 16348 % U+02D0 MODIFIER LETTER TRIANGULAR COLON; colontriangularmod;  
 16349 % \textlengthmark (tipa)  
 16350 \DeclareTextCommand{\textlengthmark}{PU}{\82\320}% U+02D0  
 16351 % U+02D1 MODIFIER LETTER HALF TRIANGULAR COLON; colontriangu-  
 16352 % larhalfmod;  
 16352 % \texthalflength (tipa)  
 16353 \DeclareTextCommand{\texthalflength}{PU}{\82\321}% U+02D1  
 16354 % U+02D8 BREVE; breve  
 16355 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
 16356 % U+02D9 DOT ABOVE; dotaccent  
 16357 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
 16358 % U+02DA RING ABOVE; ring  
 16359 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
 16360 % U+02DB OGONEK; ogonek  
 16361 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
 16362 % U+02DC SMALL TILDE; ilde, \*tilde  
 16363 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
 16364 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
 16365 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
 16366 \DeclareTextCommand{\textacutedbl}{PU}{\82\335}% U+02DD

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16367 % U+02F3 MODIFIER LETTER LOW RING
16368 \DeclareTextCommand{\textringlow}{PU}{\82\363}% U+02F3
16369 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT
16370 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5
16371 % U+02F7 MODIFIER LETTER LOW TILDE
16372 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7
16373 % U+02F9 MODIFIER LETTER BEGIN HIGH TONE; \textopencorner (tipa)
16374 \DeclareTextCommand{\textopencorner}{PU}{\82\371}% U+02F9
16375 % U+02FA MODIFIER LETTER END HIGH TONE; \textcorner (tipa)
16376 \DeclareTextCommand{\textcorner}{PU}{\82\372}% U+02FA

```

#### 47.2.8 Combining Diacritical Marks: U+0300 to U+036F

```

16377 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
16378 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F
16379 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
16380 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311
16381 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcomb
16382 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323
16383 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
16384 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331
16385 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-
    blecmb
16386 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

```

#### 47.2.9 Greek and Coptic: U+0370 to U+03FF

Greek is only loaded if \textBeta is defined.

```

16387 \ifx\textBeta\@undefined \else
16388 \input{puenc-greek.def}
16389 \fi
16390 \end{puenc}

```

#### 47.2.10 Cyrillic: U+0400 to U+04FF

Thanks to Vladimir Volovich (vvv@vvv.vsu.ru) for the help with the Cyrillic glyph names. Cyrillic only loaded if \CYRDZE is defined.

```

16391 (*puenc)
16392 \ifx\CYRDZE\@undefined \else
16393 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE
16394 \DeclareTextCompositeCommand{\'}{PU}{\CYRE}{\84\000}% U+0400
16395 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrrilic, *afi10023
16396 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401
16397 \DeclareTextCompositeCommand{\"}{PU}{\CYRE}{\84\001}% U+0401
16398 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, *afi10051
16399 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402
16400 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, *afi10052
16401 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403
16402 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrrilic, *afi10053
16403 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404
16404 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, *afi10054
16405 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405
16406 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I;
16407 % Icyrrilic, *afi10055
16408 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406

```

16409 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, \*afii10056  
 16410 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407  
 16411 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407  
 16412 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, \*afii10057  
 16413 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408  
 16414 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, \*afii10058  
 16415 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409  
 16416 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, \*afii10059  
 16417 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A  
 16418 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, \*afii10060  
 16419 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B  
 16420 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, \*afii10061  
 16421 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C  
 16422 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
 16423 \DeclareTextCompositeCommand{\`}{PU}{\CYRI}{\84\015}% U+040D  
 16424 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
 16425 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
 16426 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E  
 16427 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
 16428 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
 16429 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
 16430 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
 16431 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018  
 16432 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
 16433 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
 16434 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
 16435 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
 16436 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
 16437 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
 16438 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
 16439 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
 16440 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
 16441 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
 16442 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
 16443 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
 16444 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
 16445 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
 16446 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
 16447 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
 16448 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
 16449 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
 16450 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
 16451 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
 16452 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
 16453 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
 16454 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
 16455 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
 16456 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
 16457 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
 16458 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
 16459 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
 16460 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
 16461 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
 16462 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034

16463 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
16464 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
16465 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
16466 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
16467 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
16468 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
16469 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
16470 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
16471 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
16472 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
16473 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
16474 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
16475 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
16476 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
16477 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
16478 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
16479 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
16480 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
16481 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
16482 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN;  
16483 % Hardsigncyrillic, \*afii10044  
16484 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
16485 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
16486 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
16487 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN;  
16488 % Softsigncyrillic, \*afii10046  
16489 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
16490 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047  
16491 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
16492 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
16493 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
16494 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
16495 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
16496 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
16497 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
16498 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
16499 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
16500 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
16501 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
16502 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
16503 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
16504 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
16505 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
16506 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
16507 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
16508 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhacyrillic  
16509 \DeclareTextCommand{\cyrz}{PU}{\84\066}% U+0436  
16510 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
16511 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
16512 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
16513 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
16514 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
16515 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
16516 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439

16517 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
16518 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
16519 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
16520 \DeclareTextCommand{\cyrl}{PU}{\84\073}% U+043B  
16521 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
16522 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C  
16523 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
16524 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
16525 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
16526 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
16527 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
16528 \DeclareTextCommand{\cyrf}{PU}{\84\077}% U+043F  
16529 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
16530 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
16531 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
16532 \DeclareTextCommand{\cyrs}{PU}{\84\101}% U+0441  
16533 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
16534 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442  
16535 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
16536 \DeclareTextCommand{\cyru}{PU}{\84\103}% U+0443  
16537 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
16538 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
16539 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
16540 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
16541 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
16542 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446  
16543 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
16544 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
16545 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
16546 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
16547 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
16548 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
16549 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyril-  
lic  
16550 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
16551 %\* \cyrhrdsn -> \hardsign (tipa)  
16552 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
16553 \DeclareTextCommand{\cyry}{PU}{\84\113}% U+044B  
16554 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
16555 \DeclareTextCommand{\cyrsftsn}{PU}{\84\114}% U+044C  
16556 %\* \cyrsftsn -> \softsign (tipa)  
16557 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
16558 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
16559 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
16560 \DeclareTextCommand{\cyryu}{PU}{\84\116}% U+044E  
16561 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
16562 \DeclareTextCommand{\cyrya}{PU}{\84\117}% U+044F  
16563 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
16564 \DeclareTextCompositeCommand{\`}{PU}{\cyre}{\84\120}% U+0450  
16565 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
16566 \DeclareTextCommand{\cyryo}{PU}{\84\121}% U+0451  
16567 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451  
16568 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
16569 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452

16570 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
 16571 \DeclareTextCompositeCommand{\'}{PU}{\cyr}{\84\123}% U+0453  
 16572 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
 16573 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454  
 16574 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
 16575 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
 16576 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I;  
 16577 % \*afii10103, icyrillic  
 16578 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456  
 16579 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
 16580 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457  
 16581 \DeclareTextCompositeCommand{\"}{PU}{\cyrii}{\84\127}% U+0457  
 16582 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
 16583 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
 16584 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
 16585 \DeclareTextCommand{\cyrlje}{PU}{\84\131}% U+0459  
 16586 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
 16587 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
 16588 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
 16589 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
 16590 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
 16591 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
 16592 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
 16593 \DeclareTextCompositeCommand{\`}{PU}{\cyri}{\84\135}% U+045D  
 16594 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
 16595 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
 16596 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
 16597 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
 16598 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
 16599 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
 16600 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
 16601 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
 16602 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
 16603 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
 16604 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
 16605 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
 16606 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463  
 16607 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
 16608 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
 16609 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
 16610 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
 16611 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslitlecyrillic  
 16612 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
 16613 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslitlecyrillic  
 16614 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
 16615 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslitlei-  
 otifiedcyrillic  
 16616 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
 16617 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslitleioti-  
 fiedcyrillic  
 16618 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
 16619 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
 16620 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
 16621 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic

16622 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
16623 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbgiotified-cyrillic  
16624 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
16625 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbgiotified-cyrillic  
16626 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
16627 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
16628 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
16629 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
16630 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
16631 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
16632 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
16633 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
16634 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
16635 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
16636 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
16637 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
16638 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
16639 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
16640 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
16641 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
16642 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
16643 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE GRAVE ACCENT; Izhitsadblgravecyrillic  
16644 % GRAVE ACCENT; Izhitsadblgravecyrillic  
16645 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\166}% U+0476  
16646 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE GRAVE ACCENT; izhitsadblgravecyrillic  
16647 % GRAVE ACCENT; izhitsadblgravecyrillic  
16648 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
16649 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
16650 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
16651 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
16652 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
16653 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyrillic  
16654 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
16655 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
16656 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
16657 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlocyrillic  
16658 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
16659 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlocyrillic  
16660 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
16661 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
16662 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
16663 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
16664 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
16665 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
16666 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
16667 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
16668 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
16669 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
16670 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482

\84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrillicmb  
 \84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalization-cyrillicmb  
 \84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneumatacyrillicmb  
 \84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumat-acyrillicmb  
 \84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
 \84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
 \84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN  
 16671 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 16672 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
 16673 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 16674 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 16675 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 16676 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 16677 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 16678 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 16679 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 16680 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 16681 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 16682 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 16683 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturn-cyrillic, \*afii10050  
 16684 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 16685 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, gheupturncyrillic  
 16686 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 16687 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestroke-cyrillic  
 16688 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 16689 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 16690 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 16691 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK;  
 16692 % Ghemiddlehookcyrillic  
 16693 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 16694 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK;  
 16695 % ghemiddlehookcyrillic  
 16696 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 16697 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER;  
 16698 % Zhedescendercyrillic  
 16699 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 16700 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER;  
 16701 % zhedescendercyrillic  
 16702 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 16703 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescendercyrillic  
 16704 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 16705 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 16706 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescendercyrillic  
 16707 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499  
 16708 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499

16709 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescendercyrillic  
 16710 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
 16711 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescendercyrillic  
 16712 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
 16713 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE;  
 16714 % Kavertikalstrokecyrillic  
 16715 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
 16716 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE;  
 16717 % kavertikalstrokecyrillic  
 16718 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
 16719 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
 16720 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
 16721 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
 16722 \DeclareTextCommand{\cyrkhrs}{PU}{\84\237}% U+049F  
 16723 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
 16724 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
 16725 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
 16726 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
 16727 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescendercyrillic  
 16728 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
 16729 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescendercyrillic  
 16730 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
 16731 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
 16732 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
 16733 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
 16734 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
 16735 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemiddlehookcyrillic  
 16736 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
 16737 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic  
 16738 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
 16739 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic  
 16740 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
 16741 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
 16742 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
 16743 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic  
 16744 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
 16745 \DeclareTextCompositeCommand{\k}{PU}{\CYRS}{\84\252}% U+04AA  
 16746 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic  
 16747 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
 16748 \DeclareTextCompositeCommand{\k}{PU}{\cyrs}{\84\253}% U+04AB  
 16749 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic  
 16750 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
 16751 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic

16752 \DeclareTextCommand{\cyrt dsc}{PU}{\84\255}% U+04AD  
16753 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
16754 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
16755 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
16756 \DeclareTextCommand{\cyry}{PU}{\84\257}% U+04AF  
16757 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic  
16758 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
16759 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; ustraightstrokecyrillic  
16760 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% U+04B1  
16761 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadesccendercyrillic  
16762 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
16763 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic  
16764 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3  
16765 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
16766 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
16767 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
16768 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
16769 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER;  
16770 % Chedescendercyrillic  
16771 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
16772 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
16773 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
16774 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE;  
16775 % Cheverticalstrokecyrillic  
16776 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
16777 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE;  
16778 % cheverticalstrokecyrillic  
16779 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
16780 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
16781 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
16782 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
16783 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
16784 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasiancyrillic  
16785 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
16786 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyrillic  
16787 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
16788 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCENDER; Chedescenderabkhasiancyrillic  
16789 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
16790 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
16791 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCENDER; chedescenderabkhasiancyrillic  
16792 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
16793 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
16794 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
16795 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
16796 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic

16797 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
 16798 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
 16799 \DeclareTextCompositeCommand{\U}{PU}{\cyrz}{\84\302}% U+04C2  
 16800 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
 16801 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
 16802 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
 16803 \DeclareTextCommand{\cyrk}{PU}{\84\304}% U+04C4  
 16804 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
 16805 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
 16806 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
 16807 \DeclareTextCommand{\cyrl}{PU}{\84\306}% U+04C6  
 16808 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
 16809 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
 16810 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
 16811 \DeclareTextCommand{\cyrn}{PU}{\84\310}% U+04C8  
 16812 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakas-  
 siancyrillic  
 16813 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
 16814 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-  
 cyrillic  
 16815 \DeclareTextCommand{\cyrch}{PU}{\84\314}% U+04CC  
 16816 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
 16817 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
 16818 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
 16819 \DeclareTextCommand{\cyrm}{PU}{\84\316}% U+04CE  
 \84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
 16820 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevecyrillic  
 16821 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
 16822 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevecyrillic  
 16823 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
 16824 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyril-  
 lic  
 16825 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\322}% U+04D2  
 16826 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
 16827 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\323}% U+04D3  
 16828 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
 16829 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
 16830 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
 16831 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
 16832 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevcyrillic  
 16833 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
 16834 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevcyrillic  
 16835 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
 16836 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
 16837 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
 16838 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
 16839 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% U+04D9  
 16840 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS;  
 16841 % Schwadiescyrillic  
 16842 \DeclareTextCompositeCommand{\U}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
 16843 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS;  
 16844 % schwadiescyrillic  
 16845 \DeclareTextCompositeCommand{\U}{PU}{\cyrschwa}{\84\333}% U+04DB  
 16846 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhediere-

siscyrillic  
 16847 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% U+04DC  
 16848 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieresis-  
 cyrillic  
 16849 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\335}% U+04DD  
 16850 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieresis-  
 cyrillic  
 16851 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% U+04DE  
 16852 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresiscyril-  
 lic  
 16853 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% U+04DF  
 16854 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-  
 cyrillic  
 16855 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
 16856 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyril-  
 lic  
 16857 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
 16858 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
 16859 \DeclareTextCompositeCommand{=} {PU}{\CYRI}{\84\342}% U+04E2  
 16860 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
 16861 \DeclareTextCompositeCommand{=} {PU}{\cyri}{\84\343}% U+04E3  
 16862 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic  
 16863 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% U+04E4  
 16864 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic  
 16865 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% U+04E5  
 16866 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyril-  
 lic  
 16867 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6  
 16868 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
 16869 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7  
 16870 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
 16871 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
 16872 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
 16873 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
 16874 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS;  
 16875 % Obarreddieresiscyrillic  
 16876 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
 16877 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS;  
 16878 % obarreddieresiscyrillic  
 16879 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
 16880 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
 16881 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
 16882 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
 16883 \DeclareTextCompositeCommand{"}{PU}{\cyrerev}{\84\355}% U+04ED  
 16884 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
 16885 \DeclareTextCompositeCommand{=} {PU}{\CYRU}{\84\356}% U+04EE  
 16886 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
 16887 \DeclareTextCompositeCommand{=} {PU}{\cyru}{\84\357}% U+04EF  
 16888 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyril-  
 lic  
 16889 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0  
 16890 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
 16891 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1  
 16892 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhun-

```

garumlautcyrillic
16893 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U+04F2
16894 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhun-
garumlautcyrillic
16895 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% U+04F3
16896 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chediere-
siscyrillic
16897 \DeclareTextCompositeCommand{\"}{PU}{\CYRCH}{\84\364}% U+04F4
16898 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieres-
cyrillic
16899 \DeclareTextCompositeCommand{\"}{PU}{\cyrch}{\84\365}% U+04F5
16900 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER
16901 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6
16902 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER
16903 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7
16904 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudiere-
siscyrillic
16905 \DeclareTextCompositeCommand{\"}{PU}{\CYRERY}{\84\370}% U+04F8
16906 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudiere-
siscyrillic
16907 \DeclareTextCompositeCommand{\"}{PU}{\cyrery}{\84\371}% U+04F9
\84\372: U+04FA CYRILLIC CAPITAL LETTER GHE WITH STROKE AND
HOOK
\84\373: U+04FB CYRILLIC SMALL LETTER GHE WITH STROKE AND
HOOK
16908 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK
16909 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC
16910 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK
16911 \DeclareTextCommand{\cyrhkh}{PU}{\84\375}% U+04FD
16912 \fi
\84\376: U+04FE CYRILLIC CAPITAL LETTER HA WITH STROKE
\84\377: U+04FF CYRILLIC SMALL LETTER HA WITH STROKE

```

#### 47.2.11 Hebrew: U+0590 to U+05FF

Macro names are taken from `he8enc.def`. `hebrew` is only loaded if `\hebdalet` is defined

```

16913 \ifx\hebdalet\@undefined\else
16914 % U+05C3 HEBREW PUNCTUATION SOF PASUQ
16915 \DeclareTextCommand{\sofpasuq}{PU}{\85\303}% U+05C3
16916 % U+05D0 HEBREW LETTER ALEF
16917 \DeclareTextCommand{\hebalef}{PU}{\85\320}% U+05D0
16918 % U+05D1 HEBREW LETTER BET
16919 \DeclareTextCommand{\hebbet}{PU}{\85\321}% U+05D1
16920 % U+05D2 HEBREW LETTER GIMEL
16921 \DeclareTextCommand{\hebgimel}{PU}{\85\322}% U+05D2
16922 % U+05D3 HEBREW LETTER DALET
16923 \DeclareTextCommand{\hebdalet}{PU}{\85\323}% U+05D3
16924 % U+05D4 HEBREW LETTER HE
16925 \DeclareTextCommand{\hebhe}{PU}{\85\324}% U+05D4
16926 % U+05D5 HEBREW LETTER VAV
16927 \DeclareTextCommand{\hebvav}{PU}{\85\325}% U+05D5

```

16928 % U+05D6 HEBREW LETTER ZAYIN  
 16929 \DeclareTextCommand{\hebzayin}{PU}{\85\326}% U+05D6  
 16930 % U+05D7 HEBREW LETTER HET  
 16931 \DeclareTextCommand{\hebheth}{PU}{\85\327}% U+05D7  
 16932 % U+05D8 HEBREW LETTER TET  
 16933 \DeclareTextCommand{\hebtet}{PU}{\85\330}% U+05D8  
 16934 % U+05D9 HEBREW LETTER YOD  
 16935 \DeclareTextCommand{\hebyod}{PU}{\85\331}% U+05D9  
 16936 % U+05DA HEBREW LETTER FINAL KAF  
 16937 \DeclareTextCommand{\hebfinalkaf}{PU}{\85\332}% U+05DA  
 16938 % U+05DB HEBREW LETTER KAF  
 16939 \DeclareTextCommand{\hebkaf}{PU}{\85\333}% U+05DB  
 16940 % U+05DC HEBREW LETTER LAMED  
 16941 \DeclareTextCommand{\heblamed}{PU}{\85\334}% U+05DC  
 16942 % U+05DD HEBREW LETTER FINAL MEM  
 16943 \DeclareTextCommand{\hebfinalmem}{PU}{\85\335}% U+05DD  
 16944 % U+05DE HEBREW LETTER MEM  
 16945 \DeclareTextCommand{\hebmeme}{PU}{\85\336}% U+05DE  
 16946 % U+05DF HEBREW LETTER FINAL NUN  
 16947 \DeclareTextCommand{\hebfinalnun}{PU}{\85\337}% U+05DF  
 16948 % U+05E0 HEBREW LETTER NUN  
 16949 \DeclareTextCommand{\hebnun}{PU}{\85\340}% U+05E0  
 16950 % U+05E1 HEBREW LETTER SAMEKH  
 16951 \DeclareTextCommand{\hebsamekh}{PU}{\85\341}% U+05E1  
 16952 % U+05E2 HEBREW LETTER AYIN  
 16953 \DeclareTextCommand{\hebayin}{PU}{\85\342}% U+05E2  
 16954 % U+05E3 HEBREW LETTER FINAL PE  
 16955 \DeclareTextCommand{\hebfinalpe}{PU}{\85\343}% U+05E3  
 16956 % U+05E4 HEBREW LETTER PE  
 16957 \DeclareTextCommand{\hebpe}{PU}{\85\344}% U+05E4  
 16958 % U+05E5 HEBREW LETTER FINAL TSADI  
 16959 \DeclareTextCommand{\hebfinaltsadi}{PU}{\85\345}% U+05E5  
 16960 % U+05E6 HEBREW LETTER TSADI  
 16961 \DeclareTextCommand{\hebtsadi}{PU}{\85\346}% U+05E6  
 16962 % U+05E7 HEBREW LETTER QOF  
 16963 \DeclareTextCommand{\hebqof}{PU}{\85\347}% U+05E7  
 16964 % U+05E8 HEBREW LETTER RESH  
 16965 \DeclareTextCommand{\hebresh}{PU}{\85\350}% U+05E8  
 16966 % U+05E9 HEBREW LETTER SHIN  
 16967 \DeclareTextCommand{\hebshin}{PU}{\85\351}% U+05E9  
 16968 %\* \hebshin -> \hebsin (he8)  
 16969 % U+05EA HEBREW LETTER TAV  
 16970 \DeclareTextCommand{\hebtav}{PU}{\85\352}% U+05EA  
 16971 % U+05F0 HEBREW LIGATURE YIDDISH DOUBLE VAV  
 16972 \DeclareTextCommand{\doublevav}{PU}{\85\360}% U+05F0  
 16973 % U+05F1 HEBREW LIGATURE YIDDISH VAV YOD  
 16974 \DeclareTextCommand{\vavyod}{PU}{\85\361}% U+05F1  
 16975 % U+05F2 HEBREW LIGATURE YIDDISH DOUBLE YOD  
 16976 \DeclareTextCommand{\doubleyod}{PU}{\85\362}% U+05F2  
 16977 \fi

#### 47.2.12 Thai: U+0E00 to U+0E7F

16978 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai

16979 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

#### 47.2.13 Phonetic Extensions: U+1D00 to U+1D7F

16980 % U+1D00 LATIN LETTER SMALL CAPITAL A; \textscA (tipa)  
16981 \DeclareTextCommand{\textscA}{PU}{\9035\000}% U+1D00  
16982 % U+1D05 LATIN LETTER SMALL CAPITAL D; \textscD (wsuipa)  
16983 \DeclareTextCommand{\textscD}{PU}{\9035\005}% U+1D05  
16984 % U+1D07 LATIN LETTER SMALL CAPITAL E; \textscE (tipa)  
16985 \DeclareTextCommand{\textscE}{PU}{\9035\007}% U+1D07  
16986 % U+1D0A LATIN LETTER SMALL CAPITAL J; \textscJ (tipa)  
16987 \DeclareTextCommand{\textscJ}{PU}{\9035\012}% U+1D0A  
16988 % U+1D0B LATIN LETTER SMALL CAPITAL K; \textscK (tipx)  
16989 \DeclareTextCommand{\textPUscK}{PU}{\9035\013}% U+1D0B  
16990 %\* \textPUscK -> \textscK (tipx)  
16991 % U+1D0D LATIN LETTER SMALL CAPITAL M; \textscM (tipx)  
16992 \DeclareTextCommand{\textPUscM}{PU}{\9035\015}% U+1D0D  
16993 %\* \textPUscM -> \textscM (tipx)  
16994 % U+1D18 LATIN LETTER SMALL CAPITAL P; \textscP (tipx)  
16995 \DeclareTextCommand{\textPUscP}{PU}{\9035\030}% U+1D18  
16996 %\* \textPUscP -> \textscP (tipx)  
16997 % U+1D19 LATIN LETTER SMALL CAPITAL REVERSED R; \textrevscr (tipx)  
16998 \DeclareTextCommand{\textPUrevscr}{PU}{\9035\031}% U+1D19  
16999 %\* \textPUrevscr -> \textrevscr (tipx)  
17000 % U+1D1C LATIN LETTER SMALL CAPITAL U; \textscU (tipa), \scU (wsuipa)  
17001 \DeclareTextCommand{\textscU}{PU}{\9035\034}% U+1D1C  
17002 % U+1D62 LATIN SUBSCRIPT SMALL LETTER I  
17003 \DeclareTextCommand{\textiinferior}{PU}{\9035\142}% U+1D62  
17004 % U+1D63 LATIN SUBSCRIPT SMALL LETTER R  
17005 \DeclareTextCommand{\textrinferior}{PU}{\9035\143}% U+1D63  
17006 % U+1D64 LATIN SUBSCRIPT SMALL LETTER U  
17007 \DeclareTextCommand{\textuinferior}{PU}{\9035\144}% U+1D64  
17008 % U+1D65 LATIN SUBSCRIPT SMALL LETTER V  
17009 \DeclareTextCommand{\textvinferior}{PU}{\9035\145}% U+1D65  
17010 % U+1D66 GREEK SUBSCRIPT SMALL LETTER BETA  
17011 \DeclareTextCommand{\textbetainferior}{PU}{\9035\146}% U+1D66  
17012 % U+1D67 GREEK SUBSCRIPT SMALL LETTER GAMMA  
17013 \DeclareTextCommand{\textgammainferior}{PU}{\9035\147}% U+1D67  
17014 % U+1D68 GREEK SUBSCRIPT SMALL LETTER RHO  
17015 \DeclareTextCommand{\textrhoinferior}{PU}{\9035\150}% U+1D68  
17016 % U+1D69 GREEK SUBSCRIPT SMALL LETTER PHI  
17017 \DeclareTextCommand{\textphiinferior}{PU}{\9035\151}% U+1D69  
17018 % U+1D6A GREEK SUBSCRIPT SMALL LETTER CHI  
17019 \DeclareTextCommand{\textchiinferior}{PU}{\9035\152}% U+1D6A  
17020 % U+1D7B LATIN SMALL CAPITAL LETTER I WITH STROKE;  
17021 % \barsci (wsuipa)  
17022 \DeclareTextCommand{\textbarsci}{PU}{\9035\173}% U+1D7B  
17023 % U+1D7D LATIN SMALL LETTER P WITH STROKE; \barp (wsuipa)  
17024 \DeclareTextCommand{\textbarp}{PU}{\9035\175}% U+1D7D  
17025 % U+1D7E LATIN SMALL CAPITAL LETTER U WITH STROKE;  
17026 % \barscu (wsuipa)  
17027 \DeclareTextCommand{\textbarscu}{PU}{\9035\176}% U+1D7E

#### 47.2.14 Phonetic Extensions Supplement: U+1D80 to U+1DBF

17028 % U+1D8F LATIN SMALL LETTER A WITH RETROFLEX HOOK; \tex-  
 trhooka (tipx)  
 17029 \DeclareTextCommand{\textPurhooka}{PU}{\9035\217}% U+1D8F  
 17030 %\* \textPurhooka -> \textrhooka (tipx)  
 17031 % U+1D91 LATIN SMALL LETTER D WITH HOOK AND TAIL; \texthtr-  
 taild (tipa)  
 17032 \DeclareTextCommand{\texthtrtaild}{PU}{\9035\221}%\* U+1D91  
 17033 % U+1D92 LATIN SMALL LETTER E WITH RETROFLEX HOOK; \tex-  
 trhooke (tipx)  
 17034 \DeclareTextCommand{\textPurhooke}{PU}{\9035\222}% U+1D92  
 17035 %\* \textPurhooke -> \textrhooke (tipx)  
 17036 % U+1D93 LATIN SMALL LETTER OPEN E WITH RETROFLEX HOOK;  
 17037 % \textrhookepsilon (tipx)  
 17038 \DeclareTextCommand{\textPurhookepsilon}{PU}{\9035\223}% U+1D93  
 17039 %\* \textPurhookepsilon -> \textrhookepsilon (tipx)  
 17040 % U+1D97 LATIN SMALL LETTER OPEN O WITH RETROFLEX HOOK;  
 17041 % \textrhookopeno (tipx)  
 17042 \DeclareTextCommand{\textPurhookopeno}{PU}{\9035\227}% U+1D97  
 17043 %\* \textPurhookopeno -> \textrhookopeno (tipx)

#### 47.2.15 Latin Extended Additional: U+1E00 to U+1EFF

17044 % U+1E00 LATIN CAPITAL LETTER A WITH RING BELOW; Aringbelow  
 17045 \DeclareTextCompositeCommand{\textsubring}{PU}{A}{\9036\000}% U+1E00  
 17046 % U+1E01 LATIN SMALL LETTER A WITH RING BELOW; aringbelow  
 17047 \DeclareTextCompositeCommand{\textsubring}{PU}{a}{\9036\001}% U+1E01  
 17048 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
 17049 \DeclareTextCompositeCommand{.}{PU}{B}{\9036\002}% U+1E02  
 17050 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
 17051 \DeclareTextCompositeCommand{.}{PU}{b}{\9036\003}% U+1E03  
 17052 % U+1E04 LATIN CAPITAL LETTER B WITH DOT BELOW; Bdotbelow  
 17053 \DeclareTextCompositeCommand{\d}{PU}{B}{\9036\004}% U+1E04  
 17054 % U+1E05 LATIN SMALL LETTER B WITH DOT BELOW; bdotbelow  
 17055 \DeclareTextCompositeCommand{\d}{PU}{b}{\9036\005}% U+1E05  
 17056 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
 17057 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
 17058 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
 17059 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
 17060 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
 17061 \DeclareTextCompositeCommand{.}{PU}{D}{\9036\012}% U+1E0A  
 17062 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
 17063 \DeclareTextCompositeCommand{.}{PU}{d}{\9036\013}% U+1E0B  
 17064 % U+1E0C LATIN CAPITAL LETTER D WITH DOT BELOW; Ddotbelow  
 17065 \DeclareTextCompositeCommand{\d}{PU}{D}{\9036\014}% U+1E0C  
 17066 % U+1E0D LATIN SMALL LETTER D WITH DOT BELOW; ddotbelow  
 17067 \DeclareTextCompositeCommand{\d}{PU}{d}{\9036\015}% U+1E0D  
 17068 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
 17069 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
 17070 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
 17071 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
 17072 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
 17073 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
 17074 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
 17075 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
 17076 % U+1E12 LATIN CAPITAL LETTER D WITH CIRCUMFLEX BELOW; Dcir-

cumflexbelow  
 17077 \DeclareTextCompositeCommand{\textsubcircum}{PU}{D}{\9036\022}% U+1E12  
 17078 % U+1E13 LATIN SMALL LETTER D WITH CIRCUMFLEX BELOW; dcir-  
 cumflexbelow  
 17079 \DeclareTextCompositeCommand{\textsubcircum}{PU}{d}{\9036\023}% U+1E13  
 17080 % U+1E14 LATIN CAPITAL LETTER E WITH MACRON AND GRAVE;  
 17081 % E macrongrave  
 17082 \DeclareTextCompositeCommand{\textgravemacron}{PU}{E}{\9036\024}% U+1E14  
 17083 % U+1E15 LATIN SMALL LETTER E WITH MACRON AND GRAVE;  
 17084 % e macrongrave  
 17085 \DeclareTextCompositeCommand{\textgravemacron}{PU}{e}{\9036\025}% U+1E15  
 17086 % U+1E16 LATIN CAPITAL LETTER E WITH MACRON AND ACUTE;  
 17087 % E macronacute  
 17088 \DeclareTextCompositeCommand{\textacutemacron}{PU}{E}{\9036\026}% U+1E16  
 17089 % U+1E17 LATIN SMALL LETTER E WITH MACRON AND ACUTE;  
 17090 % e macronacute  
 17091 \DeclareTextCompositeCommand{\textacutemacron}{PU}{e}{\9036\027}% U+1E17  
 17092 % U+1E18 LATIN CAPITAL LETTER E WITH CIRCUMFLEX BELOW; Ecir-  
 cumflexbelow  
 17093 \DeclareTextCompositeCommand{\textsubcircum}{PU}{E}{\9036\030}% U+1E18  
 17094 % U+1E19 LATIN SMALL LETTER E WITH CIRCUMFLEX BELOW; ecir-  
 cumflexbelow  
 17095 \DeclareTextCompositeCommand{\textsubcircum}{PU}{e}{\9036\031}% U+1E19  
 17096 % U+1E1A LATIN CAPITAL LETTER E WITH TILDE BELOW; Etildebelow  
 17097 \DeclareTextCompositeCommand{\textsubtilde}{PU}{E}{\9036\032}% U+1E1A  
 17098 % U+1E1B LATIN SMALL LETTER E WITH TILDE BELOW; etildebelow  
 17099 \DeclareTextCompositeCommand{\textsubtilde}{PU}{e}{\9036\033}% U+1E1B  
 17100 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
 17101 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
 17102 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
 17103 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
 17104 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
 17105 \DeclareTextCompositeCommand{\=}{PU}{G}{\9036\040}% U+1E20  
 17106 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
 17107 \DeclareTextCompositeCommand{\=}{PU}{g}{\9036\041}% U+1E21  
 17108 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
 17109 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22  
 17110 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
 17111 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23  
 17112 % U+1E24 LATIN CAPITAL LETTER H WITH DOT BELOW; Hdotbelow  
 17113 \DeclareTextCompositeCommand{\d}{PU}{H}{\9036\044}% U+1E24  
 17114 % U+1E25 LATIN SMALL LETTER H WITH DOT BELOW; hdotbelow  
 17115 \DeclareTextCompositeCommand{\d}{PU}{h}{\9036\045}% U+1E25  
 17116 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
 17117 \DeclareTextCompositeCommand{\"}{PU}{H}{\9036\046}% U+1E26  
 17118 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
 17119 \DeclareTextCompositeCommand{\"}{PU}{h}{\9036\047}% U+1E27  
 17120 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
 17121 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28  
 17122 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
 17123 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
 17124 % U+1E2A LATIN CAPITAL LETTER H WITH BREVE BELOW; Hbrevebelow  
 17125 \DeclareTextCompositeCommand{\textsubbreve}{PU}{H}{\9036\052}% U+1E2A  
 17126 % U+1E2B LATIN SMALL LETTER H WITH BREVE BELOW; hbrevebelow

17127 \DeclareTextCompositeCommand{\textsubbreve}{PU}{h}{\9036\053}% U+1E2B  
17128 % U+1E2C LATIN CAPITAL LETTER I WITH TILDE BELOW; Itildebelow  
17129 \DeclareTextCompositeCommand{\textsubtilde}{PU}{i}{\9036\054}% U+1E2C  
17130 % U+1E2D LATIN SMALL LETTER I WITH TILDE BELOW; itildebelow  
17131 \DeclareTextCompositeCommand{\textsubtilde}{PU}{i}{\9036\055}% U+1E2D  
17132 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
17133 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30  
17134 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
17135 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31  
17136 % U+1E32 LATIN CAPITAL LETTER K WITH DOT BELOW; Kdotbelow  
17137 \DeclareTextCompositeCommand{\d}{PU}{K}{\9036\062}% U+1E32  
17138 % U+1E33 LATIN SMALL LETTER K WITH DOT BELOW; kdotbelow  
17139 \DeclareTextCompositeCommand{\d}{PU}{k}{\9036\063}% U+1E33  
17140 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
17141 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
17142 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
17143 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35  
17144 % U+1E36 LATIN CAPITAL LETTER L WITH DOT BELOW; Ldotbelow  
17145 \DeclareTextCompositeCommand{\d}{PU}{L}{\9036\066}% U+1E36  
17146 % U+1E37 LATIN SMALL LETTER L WITH DOT BELOW; ldotbelow  
17147 \DeclareTextCompositeCommand{\d}{PU}{l}{\9036\067}% U+1E37  
17148 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
17149 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
17150 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
17151 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
17152 % U+1E3C LATIN CAPITAL LETTER L WITH CIRCUMFLEX BELOW; Lcir-  
cumflexbelow  
17153 \DeclareTextCompositeCommand{\textsubcircum}{PU}{L}{\9036\074}% U+1E3C  
17154 % U+1E3D LATIN SMALL LETTER L WITH CIRCUMFLEX BELOW; lcir-  
cumflexbelow  
17155 \DeclareTextCompositeCommand{\textsubcircum}{PU}{l}{\9036\075}% U+1E3D  
17156 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
17157 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E  
17158 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
17159 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
17160 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
17161 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
17162 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
17163 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
17164 % U+1E42 LATIN CAPITAL LETTER M WITH DOT BELOW; Mdotbelow  
17165 \DeclareTextCompositeCommand{\d}{PU}{M}{\9036\102}% U+1E42  
17166 % U+1E43 LATIN SMALL LETTER M WITH DOT BELOW; mdotbelow  
17167 \DeclareTextCompositeCommand{\d}{PU}{m}{\9036\103}% U+1E43  
17168 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
17169 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
17170 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
17171 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
17172 % U+1E46 LATIN CAPITAL LETTER N WITH DOT BELOW; Ndotbelow  
17173 \DeclareTextCompositeCommand{\d}{PU}{N}{\9036\106}% U+1E46  
17174 % U+1E47 LATIN SMALL LETTER N WITH DOT BELOW; ndotbelow  
17175 \DeclareTextCompositeCommand{\d}{PU}{n}{\9036\107}% U+1E47  
17176 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
17177 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
17178 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow

17179 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
17180 % U+1E4A LATIN CAPITAL LETTER N WITH CIRCUMFLEX BELOW; Ncir-  
cumflexbelow  
17181 \DeclareTextCompositeCommand{\textsubcircum}{PU}{N}{\9036\112}% U+1E4A  
17182 % U+1E4B LATIN SMALL LETTER N WITH CIRCUMFLEX BELOW; ncir-  
cumflexbelow  
17183 \DeclareTextCompositeCommand{\textsubcircum}{PU}{n}{\9036\113}% U+1E4B  
17184 % U+1E50 LATIN CAPITAL LETTER O WITH MACRON AND GRAVE;  
17185 % Omacrongrave  
17186 \DeclareTextCompositeCommand{\textgravemacron}{PU}{O}{\9036\120}% U+1E50  
17187 % U+1E51 LATIN SMALL LETTER O WITH MACRON AND GRAVE;  
17188 % omacrongrave  
17189 \DeclareTextCompositeCommand{\textgravemacron}{PU}{o}{\9036\121}% U+1E51  
17190 % U+1E52 LATIN CAPITAL LETTER O WITH MACRON AND ACUTE;  
17191 % Omacronacute  
17192 \DeclareTextCompositeCommand{\textacutemacron}{PU}{O}{\9036\122}% U+1E52  
17193 % U+1E53 LATIN SMALL LETTER O WITH MACRON AND ACUTE;  
17194 % omacronacute  
17195 \DeclareTextCompositeCommand{\textacutemacron}{PU}{o}{\9036\123}% U+1E53  
17196 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
17197 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
17198 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
17199 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
17200 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
17201 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
17202 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
17203 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
17204 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
17205 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
17206 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
17207 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
17208 % U+1E5A LATIN CAPITAL LETTER R WITH DOT BELOW; Rdotbelow  
17209 \DeclareTextCompositeCommand{\d}{PU}{R}{\9036\132}% U+1E5A  
17210 % U+1E5B LATIN SMALL LETTER R WITH DOT BELOW; rdotbelow  
17211 \DeclareTextCompositeCommand{\d}{PU}{r}{\9036\133}% U+1E5B  
17212 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
17213 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
17214 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
17215 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
17216 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
17217 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
17218 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
17219 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
17220 % U+1E62 LATIN CAPITAL LETTER S WITH DOT BELOW; Sdotbelow  
17221 \DeclareTextCompositeCommand{\d}{PU}{S}{\9036\142}% U+1E62  
17222 % U+1E63 LATIN SMALL LETTER S WITH DOT BELOW; sdotbelow  
17223 \DeclareTextCompositeCommand{\d}{PU}{s}{\9036\143}% U+1E63  
17224 % U+1E6A LATIN CAPITAL LETTER T WITH DOT ABOVE; Tdotaccent  
17225 \DeclareTextCompositeCommand{\.}{PU}{T}{\9036\152}% U+1E6A  
17226 % U+1E6B LATIN SMALL LETTER T WITH DOT ABOVE; tdotaccent  
17227 \DeclareTextCompositeCommand{\.}{PU}{t}{\9036\153}% U+1E6B  
17228 % U+1E6C LATIN CAPITAL LETTER T WITH DOT BELOW; Tdotbelow  
17229 \DeclareTextCompositeCommand{\d}{PU}{T}{\9036\154}% U+1E6C  
17230 % U+1E6D LATIN SMALL LETTER T WITH DOT BELOW; tdotbelow

17231 \DeclareTextCompositeCommand{\d}{PU}{t}{\9036\155}% U+1E6D  
17232 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
17233 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
17234 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
17235 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
17236 % U+1E70 LATIN CAPITAL LETTER T WITH CIRCUMFLEX BELOW; Tcircumflexbelow  
17237 \DeclareTextCompositeCommand{\textsubcircum}{PU}{T}{\9036\160}% U+1E70  
17238 % U+1E71 LATIN SMALL LETTER T WITH CIRCUMFLEX BELOW; tcircumflexbelow  
17239 \DeclareTextCompositeCommand{\textsubcircum}{PU}{t}{\9036\161}% U+1E71  
17240 % U+1E72 LATIN CAPITAL LETTER U WITH DIAERESIS BELOW; Udieresisbelow  
17241 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{U}{\9036\162}% U+1E72  
17242 % U+1E73 LATIN SMALL LETTER U WITH DIAERESIS BELOW; udieresisbelow  
17243 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{u}{\9036\163}% U+1E73  
17244 % U+1E74 LATIN CAPITAL LETTER U WITH TILDE BELOW; Utildebelow  
17245 \DeclareTextCompositeCommand{\textsubtilde}{PU}{U}{\9036\164}% U+1E74  
17246 % U+1E75 LATIN SMALL LETTER U WITH TILDE BELOW; utildebelow  
17247 \DeclareTextCompositeCommand{\textsubtilde}{PU}{u}{\9036\165}% U+1E75  
17248 % U+1E76 LATIN CAPITAL LETTER U WITH CIRCUMFLEX BELOW; Ucircumflexbelow  
17249 \DeclareTextCompositeCommand{\textsubcircum}{PU}{U}{\9036\166}% U+1E76  
17250 % U+1E77 LATIN SMALL LETTER U WITH CIRCUMFLEX BELOW; ucircumflexbelow  
17251 \DeclareTextCompositeCommand{\textsubcircum}{PU}{u}{\9036\167}% U+1E77  
17252 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
17253 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
17254 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
17255 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
17256 % U+1E7E LATIN CAPITAL LETTER V WITH DOT BELOW; Vdotbelow  
17257 \DeclareTextCompositeCommand{\d}{PU}{V}{\9036\176}% U+1E7E  
17258 % U+1E7F LATIN SMALL LETTER V WITH DOT BELOW; vdotbelow  
17259 \DeclareTextCompositeCommand{\d}{PU}{v}{\9036\177}% U+1E7F  
17260 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
17261 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80  
17262 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
17263 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81  
17264 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
17265 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
17266 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
17267 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
17268 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
17269 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84  
17270 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
17271 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85  
17272 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
17273 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86  
17274 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
17275 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87  
17276 % U+1E88 LATIN CAPITAL LETTER W WITH DOT BELOW; wdotbelow  
17277 \DeclareTextCompositeCommand{\d}{PU}{W}{\9036\210}% U+1E88  
17278 % U+1E89 LATIN SMALL LETTER W WITH DOT BELOW; wdotbelow

17279 \DeclareTextCompositeCommand{\d}{PU}{w}{\9036\211}% U+1E89  
17280 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
17281 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A  
17282 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
17283 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B  
17284 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
17285 \DeclareTextCompositeCommand{"}{PU}{X}{\9036\214}% U+1E8C  
17286 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
17287 \DeclareTextCompositeCommand{"}{PU}{x}{\9036\215}% U+1E8D  
17288 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
17289 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E  
17290 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
17291 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F  
17292 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
17293 \DeclareTextCompositeCommand{\^}{PU}{Z}{\9036\220}% U+1E90  
17294 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
17295 \DeclareTextCompositeCommand{\^}{PU}{z}{\9036\221}% U+1E91  
17296 % U+1E92 LATIN CAPITAL LETTER Z WITH DOT BELOW; Zdotbelow  
17297 \DeclareTextCompositeCommand{\d}{PU}{Z}{\9036\222}% U+1E92  
17298 % U+1E93 LATIN SMALL LETTER Z WITH DOT BELOW; zdotbelow  
17299 \DeclareTextCompositeCommand{\d}{PU}{z}{\9036\223}% U+1E93  
17300 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
17301 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
17302 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
17303 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
17304 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
17305 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
17306 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
17307 \DeclareTextCompositeCommand{"}{PU}{t}{\9036\227}% U+1E97  
17308 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
17309 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
17310 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
17311 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
17312 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdotaccent  
17313 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B  
17314 % U+1EA0 LATIN CAPITAL LETTER A WITH DOT BELOW; Adotbelow  
17315 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
17316 % U+1EA1 LATIN SMALL LETTER A WITH DOT BELOW; adotbelow  
17317 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1  
17318 % U+1EB8 LATIN CAPITAL LETTER E WITH DOT BELOW; Edotbelow  
17319 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8  
17320 % U+1EB9 LATIN SMALL LETTER E WITH DOT BELOW; edotbelow  
17321 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9  
17322 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
17323 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
17324 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
17325 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
17326 % U+1ECA LATIN CAPITAL LETTER I WITH DOT BELOW; Idotbelow  
17327 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA  
17328 % U+1ECB LATIN SMALL LETTER I WITH DOT BELOW; idotbelow  
17329 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB  
17330 % U+1ECC LATIN CAPITAL LETTER O WITH DOT BELOW; Odotbelow  
17331 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC

17332 % U+1ECD LATIN SMALL LETTER O WITH DOT BELOW; odotbelow  
 17333 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD  
 17334 % U+1EE4 LATIN CAPITAL LETTER U WITH DOT BELOW; Udotbelow  
 17335 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4  
 17336 % U+1EE5 LATIN SMALL LETTER U WITH DOT BELOW; udotbelow  
 17337 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
 17338 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
 17339 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2  
 17340 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
 17341 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
 17342 % U+1EF4 LATIN CAPITAL LETTER Y WITH DOT BELOW; Ydotbelow  
 17343 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4  
 17344 % U+1EF5 LATIN SMALL LETTER Y WITH DOT BELOW; ydotbelow  
 17345 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
 17346 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
 17347 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
 17348 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
 17349 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

#### 47.2.16 General Punctuation: U+2000 to U+206F

17350 % U+200C ZERO WIDTH NON-JOINER; \*afi61664, zerowidthnonjoiner  
 17351 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
 17352 % U+2013 EN DASH; endash  
 17353 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
 17354 % U+2014 EM DASH; emdash  
 17355 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 17356 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 17357 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 17358 %\* \textbardbl -> \textdoublevertline (tipa)  
 17359 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 17360 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 17361 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 17362 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 17363 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 17364 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 17365 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 17366 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 17367 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 17368 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 17369 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 17370 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 17371 % U+2020 DAGGER; dagger  
 17372 \DeclareTextCommand{\textdagger}{PU}{\9040\040}%\* U+2020  
 17373 %\* \textdagger -> \dag (LaTeX)  
 17374 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
 17375 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
 17376 %\* \textdaggerdbl -> \ddagger (LaTeX)  
 17377 %\* \textdaggerdbl -> \ddag (LaTeX)  
 17378 % U+2022 BULLET; bullet  
 17379 \DeclareTextCommand{\textbullet}{PU}{\9040\042}%\* U+2022  
 17380 % U+2025 TWO DOT LEADER; \hdotfor (MnSymbol)  
 17381 \DeclareTextCommand{\texthdotfor}{PU}{\9040\045}%\* U+2025  
 17382 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 17383 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026

17384 %\* \textellipsis -> \mathellipsis  
 17385 % U+2030 PER MILLE SIGN; perthousand  
 17386 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 17387 % U+2031 PER TEN THOUSAND SIGN  
 17388 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
 17389 % U+2032 PRIME; minute; \prime (MnSymbol)  
 17390 \DeclareTextCommand{\textprime}{PU}{\9040\062}%\* U+2032  
 17391 % U+2033 DOUBLE PRIME; \second (mathabx)  
 17392 \DeclareTextCommand{\textsecond}{PU}{\9040\063}%\* U+2033  
 17393 % U+2034 TRIPLE PRIME; \third (mathabx)  
 17394 \DeclareTextCommand{\texttthird}{PU}{\9040\064}%\* U+2034  
 17395 % U+2035 REVERSED PRIME; \backprime (AmsS)  
 17396 \DeclareTextCommand{\textbackprime}{PU}{\9040\065}%\* U+2035  
 17397 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 inglleft  
 17398 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071}% U+2039  
 17399 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guils-  
 inglright  
 17400 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072}% U+203A  
 17401 % U+203B REFERENCE MARK; referencemark  
 17402 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
 17403 % U+203D INTERROBANG  
 17404 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
 17405 % U+2044 FRACTION SLASH; fraction  
 17406 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
 17407 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
 17408 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
 17409 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
 17410 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
 17411 % U+2052 COMMERCIAL MINUS SIGN  
 17412 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052  
 17413 % U+2056 THREE DOT PUNCTUATION; \lefttherefore (MnSymbol)  
 17414 \DeclareTextCommand{\textlefttherefore}{PU}{\9040\126}%\* U+2056  
 17415 % U+2057 QUADRUPLE PRIME; \fourth (mathabx)  
 17416 \DeclareTextCommand{\textfourth}{PU}{\9040\127}%\* U+2057  
 17417 % U+2058 FOUR DOT PUNCTUATION; \diamonddots (MnSymbol)  
 17418 \DeclareTextCommand{\textdiamonddots}{PU}{\9040\130}%\* U+2058

#### 47.2.17 Superscripts and Subscripts: U+2070 to U+209F

17419 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
 17420 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}%\* U+2070  
 17421 % U+2071 SUPERSCRIPT LATIN SMALL LETTER I  
 17422 \DeclareTextCommand{\textisuperior}{PU}{\9040\161}%\* U+2071  
 17423 % U+2074 SUPERSCRIPT FOUR; foursuperior  
 17424 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}%\* U+2074  
 17425 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
 17426 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}%\* U+2075  
 17427 % U+2076 SUPERSCRIPT SIX; sixsuperior  
 17428 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}%\* U+2076  
 17429 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
 17430 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}%\* U+2077  
 17431 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
 17432 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}%\* U+2078  
 17433 % U+2079 SUPERSCRIPT NINE; ninesuperior

17434 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}%\* U+2079  
17435 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
17436 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}%\* U+207A  
17437 % U+207B SUPERSCRIPT MINUS  
17438 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}%\* U+207B  
17439 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
17440 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}%\* U+207C  
17441 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
17442 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}%\* U+207D  
17443 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
17444 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}%\* U+207E  
17445 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
17446 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}%\* U+207F  
17447 % U+2080 SUBSCRIPT ZERO; zeroinferior  
17448 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}%\* U+2080  
17449 % U+2081 SUBSCRIPT ONE; oneinferior  
17450 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}%\* U+2081  
17451 % U+2082 SUBSCRIPT TWO; twoinferior  
17452 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}%\* U+2082  
17453 % U+2083 SUBSCRIPT THREE; threeinferior  
17454 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}%\* U+2083  
17455 % U+2084 SUBSCRIPT FOUR; fourinferior  
17456 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}%\* U+2084  
17457 % U+2085 SUBSCRIPT FIVE; fiveinferior  
17458 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}%\* U+2085  
17459 % U+2086 SUBSCRIPT SIX; sixinferior  
17460 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}%\* U+2086  
17461 % U+2087 SUBSCRIPT SEVEN; seveninferior  
17462 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}%\* U+2087  
17463 % U+2088 SUBSCRIPT EIGHT; eightinferior  
17464 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}%\* U+2088  
17465 % U+2089 SUBSCRIPT NINE; nineinferior  
17466 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}%\* U+2089  
17467 % U+208A SUBSCRIPT PLUS SIGN  
17468 \DeclareTextCommand{\textplusinferior}{PU}{\9040\212}%\* U+208A  
17469 % U+208B SUBSCRIPT MINUS  
17470 \DeclareTextCommand{\textminusinferior}{PU}{\9040\213}%\* U+208B  
17471 % U+208C SUBSCRIPT EQUALS SIGN  
17472 \DeclareTextCommand{\textequalsinferior}{PU}{\9040\214}%\* U+208C  
17473 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
17474 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}%\* U+208D  
17475 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
17476 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}%\* U+208E  
17477 % U+2090 LATIN SUBSCRIPT SMALL LETTER A  
17478 \DeclareTextCommand{\textainferior}{PU}{\9040\220}%\* U+2090  
17479 % U+2091 LATIN SUBSCRIPT SMALL LETTER E  
17480 \DeclareTextCommand{\texteinferior}{PU}{\9040\221}%\* U+2091  
17481 % U+2092 LATIN SUBSCRIPT SMALL LETTER O  
17482 \DeclareTextCommand{\textoinferior}{PU}{\9040\222}%\* U+2092  
17483 % U+2093 LATIN SUBSCRIPT SMALL LETTER X  
17484 \DeclareTextCommand{\textxinferior}{PU}{\9040\223}%\* U+2093  
17485 % U+2094 LATIN SUBSCRIPT SMALL LETTER SCHWA  
17486 \DeclareTextCommand{\textschwainferior}{PU}{\9040\224}%\* U+2094  
17487 % U+2095 LATIN SUBSCRIPT SMALL LETTER H

17488 \DeclareTextCommand{\textthininferior}{PU}{\9040\225}%\* U+2095  
 17489 % U+2096 LATIN SUBSCRIPT SMALL LETTER K  
 17490 \DeclareTextCommand{\textkinferior}{PU}{\9040\226}%\* U+2096  
 17491 % U+2097 LATIN SUBSCRIPT SMALL LETTER L  
 17492 \DeclareTextCommand{\textlinferior}{PU}{\9040\227}%\* U+2097  
 17493 % U+2098 LATIN SUBSCRIPT SMALL LETTER M  
 17494 \DeclareTextCommand{\textminferior}{PU}{\9040\230}%\* U+2098  
 17495 % U+2099 LATIN SUBSCRIPT SMALL LETTER N  
 17496 \DeclareTextCommand{\textninferior}{PU}{\9040\231}%\* U+2099  
 17497 % U+209A LATIN SUBSCRIPT SMALL LETTER P  
 17498 \DeclareTextCommand{\textpinferior}{PU}{\9040\232}%\* U+209A  
 17499 % U+209B LATIN SUBSCRIPT SMALL LETTER S  
 17500 \DeclareTextCommand{\textsinferior}{PU}{\9040\233}%\* U+209B  
 17501 % U+209C LATIN SUBSCRIPT SMALL LETTER T  
 17502 \DeclareTextCommand{\texttinferior}{PU}{\9040\234}%\* U+209C

#### 47.2.18 Currency Symbols: U+20A0 to U+20CF

17503 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
 17504 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
 17505 % U+20A4 LIRA SIGN; afii08941, \*lira  
 17506 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 17507 % U+20A6 NAIRA SIGN  
 17508 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 17509 % U+20A7 PESETA SIGN; peseta  
 17510 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
 17511 % U+20A9 WON SIGN; won  
 17512 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
 17513 % U+20AB DONG SIGN; dong  
 17514 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
 17515 % U+20AC EURO SIGN; \*Euro, euro  
 17516 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
 17517 %\* \texteuro -> \EurDig (marvosym)  
 17518 %\* \texteuro -> \EURdig (marvosym)  
 17519 %\* \texteuro -> \EurHv (marvosym)  
 17520 %\* \texteuro -> \EURhv (marvosym)  
 17521 %\* \texteuro -> \EurCr (marvosym)  
 17522 %\* \texteuro -> \EURcr (marvosym)  
 17523 %\* \texteuro -> \EurTm (marvosym)  
 17524 %\* \texteuro -> \EURtm (marvosym)  
 17525 %\* \texteuro -> \Eur (marvosym)  
 17526 % U+20B0 GERMAN PENNY SIGN; \Deleatur (marvosym)  
 17527 \DeclareTextCommand{\textDeleatur}{PU}{\9040\260}%\* U+20B0  
 17528 %\* \textDeleatur -> \Denarius (marvosym)  
 17529 % U+20B1 PESO SIGN  
 17530 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 17531 % U+20B2 GUARANI SIGN  
 17532 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

#### 47.2.19 Letterlike Symbols: U+2100 to U+214F

17533 % U+2103 DEGREE CELSIUS; centigrade  
 17534 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 17535 % U+210F PLANCK CONSTANT OVER TWO PI; \hslash (AmS)  
 17536 \DeclareTextCommand{\texthslash}{PU}{\9041\017}%\* U+210F  
 17537 % U+2111 BLACK-LETTER CAPITAL I (=imaginary part); Ifraktur; \Im (La-

TeX)

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17538 \DeclareTextCommand{\textIm}{PU}{\9041\021}%* U+2111
17539 % U+2113 SCRIPT SMALL L (=ell, liter); afii61289, lsquare; \ell (LaTeX)
17540 \DeclareTextCommand{\textell}{PU}{\9041\023}%* U+2113
17541 % U+2116 NUMERO SIGN; *afii61352, numero
17542 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116
17543 % U+2117 SOUND RECORDING COPYRIGHT
17544 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117
17545 % U+2118 SCRIPT CAPITAL P (=Weierstrass elliptic function);
17546 % weierstrass; \wp (LaTeX)
17547 \DeclareTextCommand{\textwp}{PU}{\9041\030}%* U+2118
17548 % U+211C BLACK-LETTER CAPITAL R (=real part); Rfraktur; \Re (LaTeX)
17549 \DeclareTextCommand{\textRe}{PU}{\9041\034}%* U+211C
17550 % U+211E PRESCRIPTION TAKE; prescription
17551 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E
17552 % U+2120 SERVICE MARK
17553 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120
17554 % U+2122 TRADE MARK SIGN; trademark
17555 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122
17556 % U+2126 OHM SIGN; Ohm, Omega
17557 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126
17558 % U+2127 INVERTED OHM SIGN
17559 \DeclareTextCommand{\textmho}{PU}{\9041\047}%* U+2127
17560 %* \textmho -> \agemO (wasysym)
17561 % U+2129 TURNED GREEK SMALL LETTER IOTA; \riota (phonetic)
17562 \DeclareTextCommand{\textriota}{PU}{\9041\051}%* U+2129
17563 % U+212B ANGSTROM SIGN; angstrom
17564 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B
17565 % U+212E ESTIMATED SYMBOL; estimated
17566 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E
17567 %* \textestimated -> \EstimatedSign (marvosym)
17568 %* \textestimated -> \Ecommerce (marvosym)
17569 % U+2132 TURNED CAPITAL F; \Finv (AmS)
17570 \DeclareTextCommand{\textFinv}{PU}{\9041\062}%* U+2132
17571 % U+2135 ALEF SYMBOL; aleph; \aleph (LaTeX)
17572 \DeclareTextCommand{\textaleph}{PU}{\9041\065}%* U+2135
17573 % U+2136 BET SYMBOL; \beth (AmS, MnSymbol)
17574 \DeclareTextCommand{\textbeth}{PU}{\9041\066}%* U+2136
17575 % U+2137 GIMEL SYMBOL; \gimel (AmS, MnSymbol)
17576 \DeclareTextCommand{\textgimel}{PU}{\9041\067}%* U+2137
17577 % U+2138 DALET SYMBOL; \daleth (AmS, MnSymbol)
17578 \DeclareTextCommand{\textdaleth}{PU}{\9041\070}%* U+2138
17579 % U+213B FACSIMILE SIGN; \fax (marvosym)
17580 \DeclareTextCommand{\textfax}{PU}{\9041\073}%* U+213B
17581 % U+2141 TURNED SANS-SERIF CAPITAL G (=game); \Game
17582 \DeclareTextCommand{\textGame}{PU}{\9041\101}%* U+2141
17583 % U+214B TURNED AMPERSAND; \invamp (txfonts/pxfonts)
17584 \DeclareTextCommand{\textinvamp}{PU}{\9041\113}% U+214B
17585 %* \textinvamp -> \bindnasrepma (stmaryrd)
17586 %* \textinvamp -> \parr (cml)

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#### 47.2.20 Number Forms: U+2150 to U+218F

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17587 % U+2150 VULGAR FRACTION ONE SEVENTH
17588 \DeclareTextCommand{\textoneseventh}{PU}{\9041\120}% U+2150

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17589 % U+2151 VULGAR FRACTION ONE NINTH  
 17590 \DeclareTextCommand{\textoneninth}{PU}{\9041\121}% U+2151  
 17591 % U+2152 VULGAR FRACTION ONE TENTH  
 17592 \DeclareTextCommand{\textonetenth}{PU}{\9041\122}% U+2152  
 17593 % U+2153 VULGAR FRACTION ONE THIRD; onethird  
 17594 \DeclareTextCommand{\textonethird}{PU}{\9041\123}% U+2153  
 17595 % U+2154 VULGAR FRACTION TWO THIRDS; twothirds  
 17596 \DeclareTextCommand{\texttwothirds}{PU}{\9041\124}% U+2154  
 17597 % U+2155 VULGAR FRACTION ONE FIFTH  
 17598 \DeclareTextCommand{\textonefifth}{PU}{\9041\125}% U+2155  
 17599 % U+2156 VULGAR FRACTION TWO FIFTHS  
 17600 \DeclareTextCommand{\texttwofifths}{PU}{\9041\126}% U+2156  
 17601 % U+2157 VULGAR FRACTION THREE FIFTHS  
 17602 \DeclareTextCommand{\textthreefifths}{PU}{\9041\127}% U+2157  
 17603 % U+2158 VULGAR FRACTION FOUR FIFTHS  
 17604 \DeclareTextCommand{\textfourfifths}{PU}{\9041\130}% U+2158  
 17605 % U+2159 VULGAR FRACTION ONE SIXTH  
 17606 \DeclareTextCommand{\textonesixth}{PU}{\9041\131}% U+2159  
 17607 % U+215A VULGAR FRACTION FIVE SIXTHS  
 17608 \DeclareTextCommand{\textfivesixths}{PU}{\9041\132}% U+215A  
 17609 % U+215B VULGAR FRACTION ONE EIGHTH; oneeighth  
 17610 \DeclareTextCommand{\textoneeighth}{PU}{\9041\133}% U+215B  
 17611 % U+215C VULGAR FRACTION THREE EIGHTHS; threeeighths  
 17612 \DeclareTextCommand{\textthreeeighths}{PU}{\9041\134}% U+215C  
 17613 % U+215D VULGAR FRACTION FIVE EIGHTHS; fiveeighths  
 17614 \DeclareTextCommand{\textfiveeighths}{PU}{\9041\135}% U+215D  
 17615 % U+215E VULGAR FRACTION SEVEN EIGHTHS; seveneighths  
 17616 \DeclareTextCommand{\textseveneighths}{PU}{\9041\136}% U+215E  
 17617 % U+2184 LATIN SMALL LETTER REVERSED C  
 17618 \DeclareTextCommand{\textrevc}{PU}{\9041\204}% U+2184  
 17619 % U+2189 VULGAR FRACTION ZERO THIRDS  
 17620 \DeclareTextCommand{\textzerthirds}{PU}{\9041\211}% U+2189

#### 47.2.21 Arrows: U+2190 to U+21FF

17621 % U+2190 LEFTWARDS ARROW; arrowleft  
 17622 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}%\* U+2190  
 17623 % U+2191 UPWARDS ARROW; arrowup  
 17624 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}%\* U+2191  
 17625 % U+2192 RIGHTWARDS ARROW; arrowright  
 17626 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}%\* U+2192  
 17627 %\* \textrightarrow -> \MVRightArrow (marvosym)  
 17628 %\* \textrightarrow -> \MVRightarrow (marvosym)  
 17629 % U+2193 DOWNWARDS ARROW; arrowdown  
 17630 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}%\* U+2193  
 17631 %\* \textdownarrow -> \MVArrowDown (marvosym)  
 17632 %\* \textdownarrow -> \Force (marvosym)  
 17633 % U+2194 LEFT RIGHT ARROW; arrowboth; \leftrightarrow (LaTeX)  
 17634 \DeclareTextCommand{\textleftrightarrow}{PU}{\9041\224}%\* U+2194  
 17635 % U+2195 UP DOWN ARROW; arrowupdn; \updownarrow (LaTeX)  
 17636 \DeclareTextCommand{\textupdownarrow}{PU}{\9041\225}%\* U+2195  
 17637 % U+2196 NORTH WEST ARROW; arrowupleft; \nwarrow (LaTeX)  
 17638 \DeclareTextCommand{\textnwarrow}{PU}{\9041\226}%\* U+2196  
 17639 % U+2197 NORTH EAST ARROW; arrowupright; \nearrow (LaTeX)  
 17640 \DeclareTextCommand{\textnearrow}{PU}{\9041\227}%\* U+2197

17641 %\* \textnearrow -> \textglobrise (tipa)  
17642 % U+2198 SOUTH EAST ARROW; arrowdownright; \searrow (LaTeX)  
17643 \DeclareTextCommand{\textsearrow}{PU}{\9041\230}%\* U+2198  
17644 %\* \textsearrow -> \textglobfall (tipa)  
17645 % U+2199 SOUTH WEST ARROW; arrowdownleft; \swarrow (LaTeX)  
17646 \DeclareTextCommand{\textswarrow}{PU}{\9041\231}%\* U+2199  
17647 % U+219A LEFTWARDS ARROW WITH STROKE; \leftarrow (AmS)  
17648 \DeclareTextCommand{\textleftarrow}{PU}{\9041\232}%\* U+219A  
17649 % U+219B RIGHTWARDS ARROW WITH STROKE; \rightarrow (AmS)  
17650 \DeclareTextCommand{\textrightarrow}{PU}{\9041\233}%\* U+219B  
17651 % U+219E LEFTWARDS TWO HEADED ARROW; \twoheadleftarrow (AmS)  
17652 \DeclareTextCommand{\texttwoheadleftarrow}{PU}{\9041\236}%\* U+219E  
17653 % \twoheadleftarrow (txfonts/pxfonts)  
17654 \DeclareTextCommand{\textntwoheadleftarrow}{PU}{\9041\236\83\070}%\* U+219E U+0338  
17655 % U+219F UPWARDS TWO HEADED ARROW; \twoheaduparrow (MnSymbol)  
17656 \DeclareTextCommand{\texttwoheaduparrow}{PU}{\9041\237}%\* U+219F  
17657 % U+21A0 RIGHTWARDS TWO HEADED ARROW;  
17658 % \twoheadrightarrow (AmS)  
17659 \DeclareTextCommand{\texttwoheadrightarrow}{PU}{\9041\240}%\* U+21A0  
17660 % \twoheadrightarrow (txfonts/pxfonts)  
17661 \DeclareTextCommand{\textntwoheadrightarrow}{PU}{\9041\240\83\070}%\* U+21A0 U+0338  
17662 % U+21A1 DOWNWARDS TWO HEADED ARROW; \twoheaddownarrow (Mn-  
Symbol)  
17663 \DeclareTextCommand{\texttwoheaddownarrow}{PU}{\9041\241}%\* U+21A1  
17664 % U+21A2 LEFTWARDS ARROW WITH TAIL; \leftarrowtail (AmS)  
17665 \DeclareTextCommand{\textleftarrowtail}{PU}{\9041\242}%\* U+21A2  
17666 % U+21A3 RIGHTWARDS ARROW WITH TAIL; \rightarrowtail (AmS)  
17667 \DeclareTextCommand{\textrightarrowtail}{PU}{\9041\243}%\* U+21A3  
17668 % U+21A6 RIGHTWARDS ARROW FROM BAR; \mapsto (LaTeX)  
17669 \DeclareTextCommand{\textmapsto}{PU}{\9041\246}%\* U+21A6  
17670 % U+21A9 LEFTWARDS ARROW WITH HOOK; \hookleftarrow (LaTeX)  
17671 \DeclareTextCommand{\texthookleftarrow}{PU}{\9041\251}%\* U+21A9  
17672 % U+21AA RIGHTWARDS ARROW WITH HOOK; \hookrightarrow (LaTeX)  
17673 \DeclareTextCommand{\texthookrightarrow}{PU}{\9041\252}%\* U+21AA  
17674 % U+21AB LEFTWARDS ARROW WITH LOOP; \looparrowleft (AmS)  
17675 \DeclareTextCommand{\textlooparrowleft}{PU}{\9041\253}%\* U+21AB  
17676 % U+21AC RIGHTWARDS ARROW WITH LOOP; \looparrowright (AmS)  
17677 \DeclareTextCommand{\textlooparrowright}{PU}{\9041\254}%\* U+21AC  
17678 % U+21AE LEFT RIGHT ARROW WITH STROKE; \leftrightharrow (AmS)  
17679 \DeclareTextCommand{\textleftrightharrow}{PU}{\9041\256}%\* U+21AE  
17680 % U+21AF DOWNWARDS ZIGZAG ARROW; \lightning (stmaryrd)  
17681 \DeclareTextCommand{\textlightning}{PU}{\9041\257}%\* U+21AF  
17682 %\* \textlightning -> \Lightning (marvosym)  
17683 % U+21B5 DOWNWARDS ARROW WITH CORNER LEFTWARDS;  
17684 % \dls (mathabx)  
17685 \DeclareTextCommand{\textdls}{PU}{\9041\265}%\* U+21B5  
17686 % U+21B6 ANTICLOCKWISE TOP SEMICIRCLE ARROW;  
17687 % \curvearrowleft (AmS)  
17688 \DeclareTextCommand{\textcurvearrowleft}{PU}{\9041\266}%\* U+21B6  
17689 % U+21B7 CLOCKWISE TOP SEMICIRCLE ARROW; \curvearrowright (AmS)  
17690 \DeclareTextCommand{\textcurvearrowright}{PU}{\9041\267}%\* U+21B7  
17691 % U+21BC LEFTWARDS HARPOON WITH BARB UPWARDS; harpoonleft-  
barbup;  
17692 % \leftharpoonup (LaTeX)

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17693 \DeclareTextCommand{\textleftharpoonup}{PU}{\9041\274}%* U+21BC
17694 % U+21BD LEFTWARDS HARPOON WITH BARB DOWNWARDS;
17695 % \leftharpoondown (LaTeX)
17696 \DeclareTextCommand{\textleftharpoondown}{PU}{\9041\275}%* U+21BD
17697 % U+21BE UPWARDS HARPOON WITH BARB RIGHTWARDS;
17698 % \upharpoonright (AmS)
17699 \DeclareTextCommand{\textupharpoonright}{PU}{\9041\276}%* U+21BE
17700 % U+21BF UPWARDS HARPOON WITH BARB LEFTWARDS;
17701 % \upharpoonleft (AmS)
17702 \DeclareTextCommand{\textupharpoonleft}{PU}{\9041\277}%* U+21BF
17703 % U+21C0 RIGHTWARDS HARPOON WITH BARB UPWARDS; harpoonright-
    barbup
17704 % \rightharpoonup (LaTeX)
17705 \DeclareTextCommand{\textrightharpoonup}{PU}{\9041\300}%* U+21C0
17706 % U+21C1 RIGHTWARDS HARPOON WITH BARB DOWNWARDS;
17707 % \rightharpoondown (LaTeX)
17708 \DeclareTextCommand{\textrightharpoondown}{PU}{\9041\301}%* U+21C1
17709 % U+21C2 DOWNWARDS HARPOON WITH BARB RIGHTWARDS;
17710 % \downharpoonright (AmS)
17711 \DeclareTextCommand{\textdownharpoonright}{PU}{\9041\302}%* U+21C2
17712 % U+21C3 DOWNWARDS HARPOON WITH BARB LEFTWARDS;
17713 % \downharpoonleft (AmS)
17714 \DeclareTextCommand{\textdownharpoonleft}{PU}{\9041\303}%* U+21C3
17715 % U+21C4 RIGHTWARDS ARROW OVER LEFTWARDS ARROW;
17716 % \arrowrightoverleft; \rightleftarrows (MnSymbol)
17717 \DeclareTextCommand{\textrightleftarrows}{PU}{\9041\304}%* U+21C4
17718 % U+21C5 UPWARDS ARROW LEFTWARDS OF DOWNWARDS ARROW; ar-
    rowupleftofdown;
17719 % \updownarrows (MnSymbol)
17720 \DeclareTextCommand{\textupdownarrows}{PU}{\9041\305}%* U+21C5
17721 % U+21C6 LEFTWARDS ARROW OVER RIGHTWARDS ARROW; arrowleft-
    overright;
17722 % \leftrightharrows (AmS)
17723 \DeclareTextCommand{\textleftrightharrows}{PU}{\9041\306}%* U+21C6
17724 % U+21C7 LEFTWARDS PAIRED ARROWS; \leftleftarrows (AmS)
17725 \DeclareTextCommand{\textleftleftarrows}{PU}{\9041\307}%* U+21C7
17726 % U+21C8 UPWARDS PAIRED ARROWS; \upuparrows (AmS)
17727 \DeclareTextCommand{\textupuparrows}{PU}{\9041\310}%* U+21C8
17728 % U+21C9 RIGHTWARDS PAIRED ARROWS; \rightrightarrows (AmS)
17729 \DeclareTextCommand{\textrightarrows}{PU}{\9041\311}%* U+21C9
17730 % U+21CA DOWNWARDS PAIRED ARROWS; \downdownarrows (AmS)
17731 \DeclareTextCommand{\textdowndownarrows}{PU}{\9041\312}%* U+21CA
17732 % U+21CB LEFTWARDS HARPOON OVER RIGHTWARDS HARPOON;
17733 % \leftrightharpoons (AmS);
17734 \DeclareTextCommand{\textleftrightharpoons}{PU}{\9041\313}%* U+21CB
17735 % U+21CC RIGHTWARDS HARPOON OVER LEFTWARDS HARPOON;
17736 % \rightleftharpoons (LaTeX, AmS)
17737 \DeclareTextCommand{\textrightleftharpoons}{PU}{\9041\314}%* U+21CC
17738 % U+21CD LEFTWARDS DOUBLE ARROW WITH STROKE; arrowleftd-
    blstroke;
17739 % \nLeftarrow (AmS)
17740 \DeclareTextCommand{\textnLeftarrow}{PU}{\9041\315}%* U+21CD
17741 % U+21CE LEFT RIGHT DOUBLE ARROW WITH STROKE; \nLeftrightarrow
    (AmS)

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17742 \DeclareTextCommand{\textnLeftrightarrow}{PU}{\9041\316}%* U+21CE
17743 % U+21CF RIGHTWARDS DOUBLE ARROW WITH STROKE; arrowrightd-
      blstroke;
17744 % \nRrightarrow (AmS)
17745 \DeclareTextCommand{\textnRrightarrow}{PU}{\9041\317}%* U+21CF
17746 % U+21D0 LEFTWARDS DOUBLE ARROW; arrowdblleft, arrowleftdbl;
17747 % \Leftarrow (LaTeX)
17748 \DeclareTextCommand{\textLeftarrow}{PU}{\9041\320}%* U+21D0
17749 % U+21D1 UPWARDS DOUBLE ARROW; arrowdblup; \Uparrow (LaTeX)
17750 \DeclareTextCommand{\textUparrow}{PU}{\9041\321}%* U+21D1
17751 % U+21D2 RIGHTWARDS DOUBLE ARROW; arrowdblright, dblarrowright;
17752 % \Rrightarrow (LaTeX)
17753 \DeclareTextCommand{\textRrightarrow}{PU}{\9041\322}%* U+21D2
17754 %* \textRrightarrow -> \Conclusion (marvosym)
17755 % U+21D3 DOWNWARDS DOUBLE ARROW; arrowdbldown; \Downarrow (La-
      TeX)
17756 \DeclareTextCommand{\textDownarrow}{PU}{\9041\323}%* U+21D3
17757 % U+21D4 LEFT RIGHT DOUBLE ARROW; arrowdblboth;
17758 % \Leftrightarrow (LaTeX)
17759 \DeclareTextCommand{\textLeftrightarrow}{PU}{\9041\324}%* U+21D4
17760 %* \textLeftrightarrow -> \Equivalence (marvosym)
17761 % U+21D5 UP DOWN DOUBLE ARROW; \Updownarrow (LaTeX)
17762 \DeclareTextCommand{\textUpdownarrow}{PU}{\9041\325}%* U+21D5
17763 % U+21D6 NORTH WEST DOUBLE ARROW; \Nwarrow (MnSymbol)
17764 \DeclareTextCommand{\textNwarrow}{PU}{\9041\326}%* U+21D6
17765 % U+21D7 NORTH EAST DOUBLE ARROW; \Nearrow (MnSymbol)
17766 \DeclareTextCommand{\textNearrow}{PU}{\9041\327}%* U+21D7
17767 % U+21D8 SOUTH EAST DOUBLE ARROW; \Searrow (MnSymbol)
17768 \DeclareTextCommand{\textSearrow}{PU}{\9041\330}%* U+21D8
17769 % U+21D9 SOUTH WEST DOUBLE ARROW; \Swarrow (MnSymbol)
17770 \DeclareTextCommand{\textSwarrow}{PU}{\9041\331}%* U+21D9
17771 % U+21DA LEFTWARDS TRIPLE ARROW; \Lleftarrow (AmS)
17772 \DeclareTextCommand{\textLleftarrow}{PU}{\9041\332}%* U+21DA
17773 % U+21DB RIGHTWARDS TRIPLE ARROW; \Rrightarrow (MnSymbol)
17774 \DeclareTextCommand{\textRrightarrow}{PU}{\9041\333}%* U+21DB
17775 % U+21DC LEFTWARDS SQUIGGLE ARROW; \leftsquigarrow (mathabx)
17776 \DeclareTextCommand{\textleftsquigarrow}{PU}{\9041\334}%* U+21DC
17777 % U+21DD RIGHTWARDS SQUIGGLE ARROW; \rightsquigarrow (mathabx)
17778 \DeclareTextCommand{\textright squigarrow}{PU}{\9041\335}%* U+21DD
17779 % U+21E0 LEFTWARDS DASHED ARROW; arrowdashleft;
17780 % \dashleftarrow (AmS)
17781 \DeclareTextCommand{\texdashleftarrow}{PU}{\9041\340}%* U+21E0
17782 %* \texdashleftarrow -> \dashedleftarrow (MnSymbol)
17783 % U+21E1 UPWARDS DASHED ARROW; arrowdashup; \dasheduparrow (Mn-
      Symbol)
17784 \DeclareTextCommand{\texdashuparrow}{PU}{\9041\341}%* U+21E1
17785 % U+21E2 RIGHTWARDS DASHED ARROW; arrowdashright; \dashrightar-
      row (AmS)
17786 \DeclareTextCommand{\texdashrightarrow}{PU}{\9041\342}%* U+21E2
17787 %* \texdashrightarrow -> \dashedrightarrow (MnSymbol)
17788 % U+21E3 DOWNWARDS DASHED ARROW; arrowdashdown; \dasheddownar-
      row (MnSymbol)
17789 \DeclareTextCommand{\texdashdownarrow}{PU}{\9041\343}%* U+21E3
17790 % U+21E8 RIGHTWARDS WHITE ARROW; \pointer (wasysym)

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17791 \DeclareTextCommand{\textpointer}{PU}{\9041\350}%* U+21E8
17792 % U+21F5 DOWNWARDS ARROW LEFTWARDS OF UPWARDS ARROW;
17793 % \downuparrows (MnSymbol)
17794 \DeclareTextCommand{\textdownuparrows}{PU}{\9041\365}%* U+21F5
17795 % U+21FD LEFTWARDS OPEN-HEADED ARROW; \leftarrowtriangle (stmaryrd)
17796 \DeclareTextCommand{\textleftarrowtriangle}{PU}{\9041\375}%* U+21FD
17797 % U+21FE RIGHTWARDS OPEN-HEADED ARROW; \rightarrowtriangle (stmaryrd)
17798 \DeclareTextCommand{\textrightarrowtriangle}{PU}{\9041\376}%* U+21FE
17799 % U+21FF LEFT RIGHT OPEN-HEADED ARROW; \leftrightarrowtriangle
      gle (stmaryrd)
17800 \DeclareTextCommand{\textleftrightarrowtriangle}{PU}{\9041\377}%* U+21FF

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#### 47.2.22 Mathematical Operators: U+2200 to U+22FF

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17801 % U+2200 FOR ALL; forall; \forall (LaTeX)
17802 \DeclareTextCommand{\textforall}{PU}{\9042\000}%* U+2200
17803 % U+2201 COMPLEMENT; \complement (AmS)
17804 \DeclareTextCommand{\textcomplement}{PU}{\9042\001}%* U+2201
17805 % U+2202 PARTIAL DIFFERENTIAL; partialdiff; \partial (LaTeX)
17806 \DeclareTextCommand{\textpartial}{PU}{\9042\002}%* U+2202
17807 % U+2203 THERE EXISTS; existential; \exists (LaTeX)
17808 \DeclareTextCommand{\textexists}{PU}{\9042\003}%* U+2203
17809 % U+2204 THERE DOES NOT EXIST; \nexists (AmS)
17810 \DeclareTextCommand{\textnexists}{PU}{\9042\004}%* U+2204
17811 % U+2205 EMPTY SET; emptyset; \emptyset (LaTeX), \varnothing (AmS)
17812 \DeclareTextCommand{\textemptyset}{PU}{\9042\005}%* U+2205
17813 %* \textemptyset -> \varnothing (AmS)
17814 % U+2206 INCREMENT; increment, Delta; \triangle (LaTeX)
17815 \DeclareTextCommand{\texttriangle}{PU}{\9042\006}%* U+2206
17816 % U+2207 NABLA; nabla, gradient; \nabla (LaTeX)
17817 \DeclareTextCommand{\textnabla}{PU}{\9042\007}%* U+2207
17818 % U+2208 ELEMENT OF; element; \in (LaTeX)
17819 \DeclareTextCommand{\textinsymbol}{PU}{\9042\010}%* U+2208
17820 % U+2209 NOT AN ELEMENT OF; notelement, notelementof; \notin (LaTeX)
17821 \DeclareTextCommand{\textnotin}{PU}{\9042\011}%* U+2209
17822 % U+220A SMALL ELEMENT OF; \smallin (mathdesign)
17823 \DeclareTextCommand{\textsmallin}{PU}{\9042\012}%* U+220A
17824 % U+220B CONTAINS AS MEMBER; suchthat; \ni (LaTeX)
17825 \DeclareTextCommand{\textni}{PU}{\9042\013}%* U+220B
17826 %* \textni -> \owns (mathabx)
17827 % U+220C DOES NOT CONTAIN AS MEMBER; \notowner (mathabx)
17828 \DeclareTextCommand{\textnotowner}{PU}{\9042\014}%* U+220C
17829 %* \textnotowner -> \notni (txfonts/pxfonts)
17830 % U+220D SMALL CONTAINS AS MEMBER; \smallowns (mathdesign)
17831 \DeclareTextCommand{\textsmallowns}{PU}{\9042\015}%* U+220D
17832 % U+220F N-ARY PRODUCT; \prod (LaTeX)
17833 \DeclareTextCommand{\textprod}{PU}{\9042\017}%* U+220F
17834 % U+2210 N-ARY COPRODUCT; \amalg (LaTeX)
17835 \DeclareTextCommand{\textamalg}{PU}{\9042\020}%* U+2210
17836 % U+2211 N-ARY SUMMATION; summation; \sum (LaTeX)
17837 \DeclareTextCommand{\textsum}{PU}{\9042\021}%* U+2211
17838 % U+2212 MINUS SIGN; minus
17839 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212
17840 % U+2213 MINUS-OR-PLUS SIGN; minusplus; \mp (LaTeX)
17841 \DeclareTextCommand{\textmp}{PU}{\9042\023}%* U+2213

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17842 % U+2214 DOT PLUS; \dotplus (AmS)  
17843 \DeclareTextCommand{\textdotplus}{PU}{\9042\024}%\* U+2214  
17844 % U+2215 DIVISION SLASH; divisionslash; \Divides (marvosym)  
17845 \DeclareTextCommand{\textDivides}{PU}{\9042\025}%\* U+2215  
17846 % \DividesNot (marvosym)  
17847 \DeclareTextCommand{\textDividesNot}{PU}{\9042\025\9040\322}%\* U+2215 U+20D2  
17848 % U+2216 SET MINUS; \setminus (LaTeX)  
17849 \DeclareTextCommand{\textsetminus}{PU}{\9042\026}%\* U+2216  
17850 % U+2217 ASTERISK OPERATOR; asteriskmath; \ast (LaTeX)  
17851 \DeclareTextCommand{\textast}{PU}{\9042\027}%\* U+2217  
17852 % U+2218 RING OPERATOR; \circ (LaTeX)  
17853 \DeclareTextCommand{\textcirc}{PU}{\9042\030}%\* U+2218  
17854 % U+2219 BULLET OPERATOR; bulletoperator; \bullet (LaTeX)  
17855 \DeclareTextCommand{\textbulletoperator}{PU}{\9042\031}%\* U+2219  
17856 % U+221A SQUARE ROOT; radical  
17857 \DeclareTextCommand{\textsurd}{PU}{\9042\032}%\* U+221A  
17858 % U+221D PROPORTIONAL TO; proportional; \propto (LaTeX)  
17859 \DeclareTextCommand{\textpropto}{PU}{\9042\035}%\* U+221D  
17860 %\* \textpropto -> \varprop (wasysym)  
17861 % U+221E INFINITY; infinity; \infty (LaTeX)  
17862 \DeclareTextCommand{\textinfty}{PU}{\9042\036}%\* U+221E  
17863 % U+2220 ANGLE; angle; \angle (LaTeX)  
17864 \DeclareTextCommand{\textangle}{PU}{\9042\040}%\* U+2220  
17865 % U+2221 MEASURED ANGLE; \measuredangle (mathabx, MnSymbol)  
17866 \DeclareTextCommand{\textmeasuredangle}{PU}{\9042\041}%\* U+2221  
17867 % U+2222 SPHERICAL ANGLE; \sphericalangle (AmS)  
17868 \DeclareTextCommand{\textsphericalangle}{PU}{\9042\042}%\* U+2222  
17869 %\* \textsphericalangle -> \varangle (wasysym)  
17870 %\* \textsphericalangle -> \Anglesign (marvosym)  
17871 %\* \textsphericalangle -> \AngleSign (marvosym)  
17872 % U+2223 DIVIDES; divides; \mid (LaTeX)  
17873 \DeclareTextCommand{\textmid}{PU}{\9042\043}%\* U+2223  
17874 % U+2224 DOES NOT DIVIDE; \nmid (AmS)  
17875 \DeclareTextCommand{\textnmid}{PU}{\9042\044}%\* U+2224  
17876 %\* \textnmid -> \notdivides (mathabx)  
17877 % U+2225 PARALLEL TO; parallel; \parallel (LaTeX)  
17878 \DeclareTextCommand{\textparallel}{PU}{\9042\045}%\* U+2225  
17879 % U+2226 NOT PARALLEL TO; notparallel; \nparallel (AmS)  
17880 \DeclareTextCommand{\textnparallel}{PU}{\9042\046}%\* U+2226  
17881 %\* \textnparallel -> nUpdownline (MnSymbol)  
17882 % U+2227 LOGICAL AND; logicaland; \wedge (LaTeX)  
17883 \DeclareTextCommand{\textwedge}{PU}{\9042\047}%\* U+2227  
17884 % \owedge (stmaryrd)  
17885 \DeclareTextCommand{\textowedge}{PU}{\9042\047\9040\335}%\* U+2227 U+20DD  
17886 %\* \textowedge -> \varowedge (stmaryrd)  
17887 % U+2228 LOGICAL OR; logicalor; \vee (LaTeX)  
17888 \DeclareTextCommand{\textvee}{PU}{\9042\050}%\* U+2228  
17889 % \ovee (stmaryrd)  
17890 \DeclareTextCommand{\textovee}{PU}{\9042\050\9040\335}%\* U+2228 U+20DD  
17891 %\* \textovee -> \varovee (stmaryrd)  
17892 % U+2229 INTERSECTION; intersection; \cap (LaTeX)  
17893 \DeclareTextCommand{\textcap}{PU}{\9042\051}%\* U+2229  
17894 % U+222A UNION; union; \cup (LaTeX)  
17895 \DeclareTextCommand{\textcup}{PU}{\9042\052}%\* U+222A

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17896 % U+222B INTEGRAL; integral; \int (LaTeX)
17897 \DeclareTextCommand{\textint}{PU}{\9042\053}%* U+222B
17898 %* \textint -> \varint (wasysym)
17899 % U+222C DOUBLE INTEGRAL; dblintegral; \iint (AmS)
17900 \DeclareTextCommand{\textiint}{PU}{\9042\054}%* U+222C
17901 % U+222D TRIPLE INTEGRAL; \iiint (AmS)
17902 \DeclareTextCommand{\textiiiint}{PU}{\9042\055}%* U+222D
17903 % U+222E CONTOUR INTEGRAL; contourintegral; \oint (LaTeX)
17904 \DeclareTextCommand{\textoint}{PU}{\9042\056}%* U+222E
17905 %* \textoint -> \varoint (wasysym)
17906 % U+222F SURFACE INTEGRAL; \oiint (wasysym)
17907 \DeclareTextCommand{\textoiint}{PU}{\9042\057}%* U+222F
17908 % U+2232 CLOCKWISE CONTOUR INTEGRAL;
17909 % \ointclockwise (txfonts/pxfonts)
17910 \DeclareTextCommand{\textointclockwise}{PU}{\9042\062}%* U+2232
17911 % U+2233 ANTICLOCKWISE CONTOUR INTEGRAL; \ointctrclockwise (tx-
    fonts/pxfonts)
17912 \DeclareTextCommand{\textointctrclockwise}{PU}{\9042\063}%* U+2233
17913 % U+2234 THEREFORE; therefore; \therefore (AmS)
17914 \DeclareTextCommand{\texttherefore}{PU}{\9042\064}%* U+2234
17915 %* \texttherefore -> uptherefore (MnSymbol)
17916 % U+2235 BECAUSE; because; \because (AmS)
17917 \DeclareTextCommand{\textbecause}{PU}{\9042\065}%* U+2235
17918 %* \textbecause -> \downtherefore (MnSymbol)
17919 % U+2236 RATIO; \vdotdot (MnSymbol)
17920 \DeclareTextCommand{\textvdotdot}{PU}{\9042\066}%* U+2236
17921 % U+2237 PROPORTION; \squaredots (MnSymbol)
17922 \DeclareTextCommand{\textsquaredots}{PU}{\9042\067}%* U+2237
17923 % U+2238 DOT MINUS; \dotminus (MnSymbol)
17924 \DeclareTextCommand{\textdotminus}{PU}{\9042\070}%* U+2238
17925 %* \textdotminus -> \textdotdiv (mathabx)
17926 % U+2239 EXCESS; \eqcolon (txfonts/pxfonts)
17927 \DeclareTextCommand{\texteqcolon}{PU}{\9042\071}%* U+2239
17928 % U+223C TILDE OPERATOR; similar; \sim (LaTeX)
17929 \DeclareTextCommand{\textsim}{PU}{\9042\074}%* U+223C
17930 %* \textsim -> \AC (wasysym)
17931 % U+223D REVERSED TILDE; reversedtilde; \backsim (AmS)
17932 \DeclareTextCommand{\textbacksim}{PU}{\9042\075}%* U+223D
17933 % \nbacksim (txfonts/pxfonts)
17934 \DeclareTextCommand{\textnbacksim}{PU}{\9042\075\83\070}%* U+223D U+0338
17935 % U+2240 WREATH PRODUCT; \wr (LaTeX)
17936 \DeclareTextCommand{\textwr}{PU}{\9042\100}%* U+2240
17937 %* \textwr -> \wreath (MnSymbol)
17938 % U+2241 NOT TILDE; \nsim (AmS)
17939 \DeclareTextCommand{\textnsim}{PU}{\9042\101}%* U+2241
17940 % U+2242 MINUS TILDE; \eqsim (MnSymbol)
17941 \DeclareTextCommand{\texteqsim}{PU}{\9042\102}%* U+2242
17942 % \neqsim (MnSymbol)
17943 \DeclareTextCommand{\textneqsim}{PU}{\9042\102\83\070}%* U+2242 U+0338
17944 % U+2243 ASYMPTOTICALLY EQUAL TO; asymptoticallyequal; \simeq (La-
    TeX)
17945 \DeclareTextCommand{\textsimeq}{PU}{\9042\103}%* U+2243
17946 % U+2244 NOT ASYMPTOTICALLY EQUAL TO; \nsimeq (txfonts/pxfonts)
17947 \DeclareTextCommand{\textnsimeq}{PU}{\9042\104}%* U+2244

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17948 % U+2245 APPROXIMATELY EQUAL TO; approximatelyequal; \cong (LaTeX)  
17949 \DeclareTextCommand{\textcong}{PU}{\9042\105}%\* U+2245  
17950 % U+2247 NEITHER APPROXIMATELY NOR ACTUALLY EQUAL TO;  
17951 % \ncong (AmS)  
17952 \DeclareTextCommand{\textncong}{PU}{\9042\107}%\* U+2247  
17953 % U+2248 ALMOST EQUAL TO; approxequal; \approx (LaTeX)  
17954 \DeclareTextCommand{\textapprox}{PU}{\9042\110}%\* U+2248  
17955 % U+2249 NOT ALMOST EQUAL TO; \napprox (txfonts/pxfonts0  
17956 \DeclareTextCommand{\textnapprox}{PU}{\9042\111}%\* U+2249  
17957 %\* \textnapprox -> \nthickapprox (txfonts/pxfonts)  
17958 % U+224A ALMOST EQUAL OR EQUAL TO; \approxeq (AmS)  
17959 \DeclareTextCommand{\textapproxeq}{PU}{\9042\112}%\* U+224A  
17960 % \napproxeq (txfonts/pxfonts)  
17961 \DeclareTextCommand{\textnapproxeq}{PU}{\9042\112\83\070}%\* U+224A U+0338  
17962 % U+224B TRIPLE TILDE; \triplesim (MnSymbol)  
17963 \DeclareTextCommand{\texttriplesim}{PU}{\9042\113}%\* U+224B  
17964 %\* \texttriplesim -> \VHF (wasysym)  
17965 % \ntriplesim (MnSymbol)  
17966 \DeclareTextCommand{\textntriplesim}{PU}{\9042\113\83\070}%\* U+224B U+0338  
17967 % U+224C ALL EQUAL TO; allequal; \backcong (MnSymbol)  
17968 \DeclareTextCommand{\textbackcong}{PU}{\9042\114}%\* U+224C  
17969 % \nbackcong (MnSymbol)  
17970 \DeclareTextCommand{\textnbackcong}{PU}{\9042\114\83\070}%\* U+224C U+0338  
17971 % U+224D EQUIVALENT TO; \asymp (LaTeX)  
17972 \DeclareTextCommand{\textasympt}{PU}{\9042\115}%\* U+224D  
17973 % \nasympt (txfonts/pxfonts)  
17974 \DeclareTextCommand{\textnasympt}{PU}{\9042\115\83\070}%\* U+224D U+0338  
17975 %\* \textnasympt -> \notasympt (mathabx)  
17976 % U+224E GEOMETRICALLY EQUIVALENT TO; \Bumpeq (AmS)  
17977 \DeclareTextCommand{\textBumpeq}{PU}{\9042\116}%\* U+224E  
17978 % \nBumpeq (txfonts/pxfonts)  
17979 \DeclareTextCommand{\textnBumpeq}{PU}{\9042\116\83\070}%\* U+224E U+0338  
17980 % U+224F DIFFERENCE BETWEEN; \bumpeq (AmS)  
17981 \DeclareTextCommand{\textbumpeq}{PU}{\9042\117}%\* U+224F  
17982 % \nbumpeq (txfonts/pxfonts)  
17983 \DeclareTextCommand{\textnbumpeq}{PU}{\9042\117\83\070}%\* U+224F U+0338  
17984 % U+2250 APPROACHES THE LIMIT; approaches; \doteq (LaTeX)  
17985 \DeclareTextCommand{\textdoteq}{PU}{\9042\120}%\* U+2250  
17986 % \ndoteq (MnSymbol)  
17987 \DeclareTextCommand{\textndoteq}{PU}{\9042\120\83\070}%\* U+2250 U+0338  
17988 % U+2251 GEOMETRICALLY EQUAL TO; geometricallyequal;  
17989 % \doteqdot (AmS)  
17990 \DeclareTextCommand{\textdoteqdot}{PU}{\9042\121}%\* U+2251  
17991 %\* \textdoteqdot -> \Doteq (MnSymbol)  
17992 % \nDoteq (MnSymbol)  
17993 \DeclareTextCommand{\textnDoteq}{PU}{\9042\121\83\070}%\* U+2251 U+0338  
17994 % U+2252 APPROXIMATELY EQUAL TO OR THE IMAGE OF; approx-  
qualorimage;  
17995 % \fallingdotseq (AmS)  
17996 \DeclareTextCommand{\textfallingdoteq}{PU}{\9042\122}%\* U+2252  
17997 % \nfallingdotseq (MnSymbol)  
17998 \DeclareTextCommand{\textnfallingdoteq}{PU}{\9042\122\83\070}%\* U+2252 U+0338  
17999 % U+2253 IMAGE OF OR APPROXIMATELY EQUAL TO; imageorapproxi-  
matelyequal;

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18000 % \risingdotseq (AmS)
18001 \DeclareTextCommand{\textrisingdoteq}{PU}{\9042\123}%* U+2253
18002 % \nrisingdoteq (MnSymbol)
18003 \DeclareTextCommand{\textnrisingdoteq}{PU}{\9042\123\83\070}%* U+2253 U+0338
18004 % U+2254 COLON EQUALS; \colonequals (colonequals)
18005 \DeclareTextCommand{\textcolonequals}{PU}{\9042\124}%* U+2254
18006 % U+2255 EQUALS COLON; \equalscolon (colonequals)
18007 \DeclareTextCommand{\textequalscolon}{PU}{\9042\125}%* U+2255
18008 % U+2256 RING IN EQUAL TO; \eqcirc (AmS)
18009 \DeclareTextCommand{\texteqcirc}{PU}{\9042\126}%* U+2256
18010 % \neqcirc (MnSymbol)
18011 \DeclareTextCommand{\textneqcirc}{PU}{\9042\126\83\070}%* U+2256 U+0338
18012 % U+2257 RING EQUAL TO; \circeq (AmS)
18013 \DeclareTextCommand{\textcirceq}{PU}{\9042\127}%* U+2257
18014 % \ncirceq (MnSymbol)
18015 \DeclareTextCommand{\textncirceq}{PU}{\9042\127\83\070}%* U+2257 U+0338
18016 % U+2259 ESTIMATES; \hateq (MnSymbol)
18017 \DeclareTextCommand{\texthateq}{PU}{\9042\131}%* U+2259
18018 %* \texthateq -> \corresponds (mathabx)
18019 %* \texthateq -> \Corresponds (marvosym)
18020 % \nhateq (MnSymbol)
18021 \DeclareTextCommand{\textnhateq}{PU}{\9042\131\83\070}%* U+2259 U+0338
18022 % U+225C DELTA EQUAL TO; \triangleeq (AmS)
18023 \DeclareTextCommand{\texttriangleeq}{PU}{\9042\134}%* U+225C
18024 % U+2260 NOT EQUAL TO; notequal; \ne (LaTeX), \neq (LaTeX)
18025 \DeclareTextCommand{\textneq}{PU}{\9042\140}%* U+2260
18026 \DeclareTextCommand{\textne}{PU}{\9042\140}%* U+2260
18027 %* \textneq -> \nequal (MnSymbol)
18028 % U+2261 IDENTICAL TO; equivalence; \equiv (LaTeX)
18029 \DeclareTextCommand{\textequiv}{PU}{\9042\141}%* U+2261
18030 %* \textequiv -> \Congruent (marvosym)
18031 % U+2262 NOT IDENTICAL TO; notidentical; \nequiv (txfonts/pxfonts)
18032 \DeclareTextCommand{\textnequiv}{PU}{\9042\142}%* U+2262
18033 %* \textnequiv -> \NotCongruent (marvosym)
18034 %* \textnequiv -> \notequiv (mathabx)
18035 % U+2264 LESS-THAN OR EQUAL TO; lessequal; \le (LaTeX), \leq (LaTeX)
18036 \DeclareTextCommand{\textleq}{PU}{\9042\144}%* U+2264
18037 \DeclareTextCommand{\textile}{PU}{\9042\144}%* U+2264
18038 %* \textleq -> \LessOrEqual (marvosym)
18039 % U+2265 GREATER-THAN OR EQUAL TO; greaterequal;
18040 % \ge (LaTeX), \geq (LaTeX)
18041 \DeclareTextCommand{\textgeq}{PU}{\9042\145}%* U+2265
18042 \DeclareTextCommand{\textge}{PU}{\9042\145}%* U+2265
18043 %* \textgeq -> \LargerOrEqual (marvosym)
18044 % U+2266 LESS-THAN OVER EQUAL TO; lessoverequal; \leqq (AmS)
18045 \DeclareTextCommand{\textleqq}{PU}{\9042\146}%* U+2266
18046 % \nleqq (txfonts/pxfonts)
18047 \DeclareTextCommand{\textnleqq}{PU}{\9042\146\83\070}%* U+2266 U+0338
18048 % U+2267 GREATER-THAN OVER EQUAL TO; greateroverequal; \geqq (AmS)
18049 \DeclareTextCommand{\textgeqq}{PU}{\9042\147}%* U+2267
18050 % \ngeqq (txfonts/pxfonts)
18051 \DeclareTextCommand{\textngeqq}{PU}{\9042\147\83\070}%* U+2267 U+0338
18052 % U+2268 LESS-THAN BUT NOT EQUAL TO; \lneqq (AmS)
18053 \DeclareTextCommand{\textlneqq}{PU}{\9042\150}%* U+2268

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18054 % U+2269 GREATER-THAN BUT NOT EQUAL TO; \gneqq (AmS)  
18055 \DeclareTextCommand{\textgneqq}{PU}{\9042\151}%\* U+2269  
18056 % U+226A MUCH LESS-THAN; muchless; \ll (LaTeX)  
18057 \DeclareTextCommand{\textll}{PU}{\9042\152}%\* U+226A  
18058 % \nll (txfonts/pxfonts)  
18059 \DeclareTextCommand{\textnll}{PU}{\9042\152\83\070}%\* U+226A U+0338  
18060 % U+226B MUCH GREATER-THAN; muchgreater; \gg (LaTeX)  
18061 \DeclareTextCommand{\textgg}{PU}{\9042\153}%\* U+226B  
18062 % \ngg (txfonts/pxfonts)  
18063 \DeclareTextCommand{\textngg}{PU}{\9042\153\83\070}%\* U+226B U+0338  
18064 % U+226C BETWEEN; \between (AmS)  
18065 \DeclareTextCommand{\textbetween}{PU}{\9042\154}%\* U+226C  
18066 % U+226E NOT LESS-THAN; notless; \nless (AmS)  
18067 \DeclareTextCommand{\textnless}{PU}{\9042\156}%\* U+226E  
18068 % U+226F NOT GREATER-THAN; notgreater; \ngtr (AmS)  
18069 \DeclareTextCommand{\textngtr}{PU}{\9042\157}%\* U+226F  
18070 % U+2270 NEITHER LESS-THAN NOR EQUAL TO; notlessnorequal;  
18071 % \nleq (AmS)  
18072 \DeclareTextCommand{\textnleq}{PU}{\9042\160}%\* U+2270  
18073 % U+2271 NEITHER GREATER-THAN NOR EQUAL TO; notgreaternorequal;  
18074 % \ngeq (AmS)  
18074 \DeclareTextCommand{\textngeq}{PU}{\9042\161}%\* U+2271  
18075 % U+2272 LESS-THAN OR EQUIVALENT TO; lessorequivalent; \lessim (AmS)  
18076 \DeclareTextCommand{\textlessim}{PU}{\9042\162}%\* U+2272  
18077 %\* \textlessim -> \apprle (wasysym)  
18078 % U+2273 GREATER-THAN OR EQUIVALENT TO; greaterorequivalent; \gtrsim (AmS)  
18079 \DeclareTextCommand{\textgtrsim}{PU}{\9042\163}%\* U+2273  
18080 %\* \textgtrsim -> \apprge (wasysym)  
18081 % U+2274 NEITHER LESS-THAN NOR EQUIVALENT TO; \nlessim (txfonts/pxfonts)  
18082 \DeclareTextCommand{\textnlessim}{PU}{\9042\164}%\* U+2274  
18083 % U+2275 NEITHER GREATER-THAN NOR EQUIVALENT TO; \ngtrsim (txfonts/pxfonts)  
18084 \DeclareTextCommand{\textngtrsim}{PU}{\9042\165}%\* U+2275  
18085 % U+2276 LESS-THAN OR GREATER-THAN; lessorgreater; \lessgtr (AmS)  
18086 \DeclareTextCommand{\textlessgtr}{PU}{\9042\166}%\* U+2276  
18087 % U+2277 GREATER-THAN OR LESS-THAN; greaterorless; \gtrless (AmS)  
18088 \DeclareTextCommand{\textgtrless}{PU}{\9042\167}%\* U+2277  
18089 % U+2278 NEITHER LESS-THAN NOR GREATER-THAN; \ngtrless (txfonts/pxfonts)  
18090 \DeclareTextCommand{\textngtrless}{PU}{\9042\170}%\* U+2278  
18091 % U+2279 NEITHER GREATER-THAN NOR LESS-THAN; \nlessgtr (txfonts/pxfonts)  
18092 \DeclareTextCommand{\textnlessgtr}{PU}{\9042\171}%\* U+2279  
18093 % U+227A PRECEDES; precedes; \prec (LaTeX)  
18094 \DeclareTextCommand{\textprec}{PU}{\9042\172}%\* U+227A  
18095 % U+227B SUCCEEDS; succeeds; \succ (LaTeX)  
18096 \DeclareTextCommand{\textsucc}{PU}{\9042\173}%\* U+227B  
18097 % U+227C PRECEDES OR EQUAL TO; \preccurlyeq (AmS)  
18098 \DeclareTextCommand{\textpreccurlyeq}{PU}{\9042\174}%\* U+227C  
18099 % U+227D SUCCEEDS OR EQUAL TO; \succcurlyeq (AmS)  
18100 \DeclareTextCommand{\textsucccurlyeq}{PU}{\9042\175}%\* U+227D  
18101 % U+227E PRECEDES OR EQUIVALENT TO; \precsim (AmS)

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18102 \DeclareTextCommand{\textprecsim}{PU}{\9042\176}%* U+227E
18103 % \nprecsim (txfonts/pxfonts)
18104 \DeclareTextCommand{\textnprecsim}{PU}{\9042\176\83\070}%* U+227E U+0338
18105 % U+227F SUCCEEDS OR EQUIVALENT TO; \succsim (AmS)
18106 \DeclareTextCommand{\textsuccsim}{PU}{\9042\177}%* U+227F
18107 % \nsuccsim (txfonts/pxfonts)
18108 \DeclareTextCommand{\textnsuccsim}{PU}{\9042\177\83\070}%* U+227F U+0338
18109 % U+2280 DOES NOT PRECEDE; notprecedes; \nprec (AmS)
18110 \DeclareTextCommand{\textnprec}{PU}{\9042\200}%* U+2280
18111 % U+2281 DOES NOT SUCCEED; notsucceeds; \nsucc (AmS)
18112 \DeclareTextCommand{\textnsucc}{PU}{\9042\201}%* U+2281
18113 % U+2282 SUBSET OF; propersubset; \subset (LaTeX)
18114 \DeclareTextCommand{\textsubset}{PU}{\9042\202}%* U+2282
18115 % U+2283 SUPERSET OF; propersuperset; \supset (LaTeX)
18116 \DeclareTextCommand{\textsupset}{PU}{\9042\203}%* U+2283
18117 % U+2284 NOT A SUBSET OF; notsubset; \nsubset (mathabx)
18118 \DeclareTextCommand{\textnsubset}{PU}{\9042\204}%* U+2284
18119 % U+2285 NOT A SUPERSET OF; notsuperset; \nsupset (mathabx)
18120 \DeclareTextCommand{\textnsupset}{PU}{\9042\205}%* U+2285
18121 % U+2286 SUBSET OF OR EQUAL TO; reflexsubset; \subseteq (LaTeX)
18122 \DeclareTextCommand{\textsubseteq}{PU}{\9042\206}%* U+2286
18123 % U+2287 SUPERSET OF OR EQUAL TO; reflexsuperset; \supseteq (LaTeX)
18124 \DeclareTextCommand{\textsupseteq}{PU}{\9042\207}%* U+2287
18125 % U+2288 NEITHER A SUBSET OF NOR EQUAL TO; \nsubseteq (AmS)
18126 \DeclareTextCommand{\textnsubseteq}{PU}{\9042\210}%* U+2288
18127 % U+2289 NEITHER A SUPERSET OF NOR EQUAL TO; \nsupseteq (AmS)
18128 \DeclareTextCommand{\textnsupseteq}{PU}{\9042\211}%* U+2289
18129 % U+228A SUBSET OF WITH NOT EQUAL TO; subsetnotequal; \subsetneq
      neq (AmS)
18130 \DeclareTextCommand{\textsubsetneq}{PU}{\9042\212}%* U+228A
18131 % U+228B SUPERSET OF WITH NOT EQUAL TO; supersetnotequal; \supsetneq
      neq (AmS)
18132 \DeclareTextCommand{\textsupsetneq}{PU}{\9042\213}%* U+228B
18133 % U+228D MULTISSET MULTIPLICATION; \cupdot (MnSymbol)
18134 \DeclareTextCommand{\textcupdot}{PU}{\9042\215}%* U+228D
18135 % U+228E MULTISSET UNION; \cupplus (MnSymbol)
18136 \DeclareTextCommand{\textcupplus}{PU}{\9042\216}%* U+228E
18137 % U+228F SQUARE IMAGE OF; \sqsubset (latexsym, ...)
18138 \DeclareTextCommand{\textsqsubset}{PU}{\9042\217}%* U+228F
18139 % \nsqsubset (txfonts/pxfonts)
18140 \DeclareTextCommand{\textnsqsubset}{PU}{\9042\217\83\070}%* U+228F U+0338
18141 % U+2290 SQUARE ORIGINAL OF; \sqsupset (latexsym, ...)
18142 \DeclareTextCommand{\textsqsupset}{PU}{\9042\220}%* U+2290
18143 % \nsqsupset (txfonts/pxfonts)
18144 \DeclareTextCommand{\textnsqsupset}{PU}{\9042\220\83\070}%* U+2290 U+0338
18145 % U+2291 SQUARE IMAGE OF OR EQUAL TO; \sqsubseteq (LaTeX)
18146 \DeclareTextCommand{\textsqsubseteq}{PU}{\9042\221}%* U+2291
18147 % \nsqsubseteq (txfonts/pxfonts)
18148 \DeclareTextCommand{\textnsqsubseteq}{PU}{\9042\221\83\070}%* U+2291 U+0338
18149 % U+2292 SQUARE ORIGINAL OF OR EQUAL TO; \sqsupseteq (LaTeX)
18150 \DeclareTextCommand{\textsqsupseteq}{PU}{\9042\222}%* U+2292
18151 % \nsqsupseteq (txfonts/pxfonts)
18152 \DeclareTextCommand{\textnsqsupseteq}{PU}{\9042\222\83\070}%* U+2292 U+0338
18153 % U+2293 SQUARE CAP; \sqcap (LaTeX)

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18154 \DeclareTextCommand{\textsqcap}{PU}{\9042\223}%* U+2293
18155 % U+2294 SQUARE CUP; \sqcup (LaTeX)
18156 \DeclareTextCommand{\textsqcup}{PU}{\9042\224}%* U+2294
18157 % U+2295 CIRCLED PLUS; circleplus; \oplus (LaTeX)
18158 \DeclareTextCommand{\textoplus}{PU}{\9042\225}%* U+2295
18159 %* \textoplus -> \varoplus (stmaryrd)
18160 % U+2296 CIRCLED MINUS; minuscircle; \ominus (LaTeX)
18161 \DeclareTextCommand{\textominus}{PU}{\9042\226}%* U+2296
18162 %* \textominus -> \varominus (stmaryrd)
18163 % U+2297 CIRCLED TIMES; circlemultiply; \otimes (LaTeX)
18164 \DeclareTextCommand{\textotimes}{PU}{\9042\227}%* U+2297
18165 %* \textotimes -> \varotimes (stmaryrd)
18166 % U+2298 CIRCLED DIVISION SLASH; \oslash (LaTeX)
18167 \DeclareTextCommand{\textoslash}{PU}{\9042\230}%* U+2298
18168 %* \textoslash -> \varoslash (stmaryrd)
18169 % U+2299 CIRCLED DOT OPERATOR; circle(d?)ot; \odot (LaTeX)
18170 \DeclareTextCommand{\textodot}{PU}{\9042\231}%* U+2299
18171 %* \textodot -> \varodot (stmaryrd)
18172 % U+229A CIRCLED RING OPERATOR; \circledcirc (AmS)
18173 \DeclareTextCommand{\textcircledcirc}{PU}{\9042\232}%* U+229A
18174 %* \textcircledcirc -> \ocirc (mathabx)
18175 %* \textcircledcirc -> \varocircle (stmaryrd)
18176 % U+229B CIRCLED ASTERISK OPERATOR; \circledast (AmS)
18177 \DeclareTextCommand{\textcircledast}{PU}{\9042\233}%* U+229B
18178 %* \textcircledast -> \varoast (stmaryrd)
18179 %* \textcircledast -> \oasterisk (mathabx)
18180 % U+229D CIRCLED DASH; \circleddash (AmS)
18181 \DeclareTextCommand{\textcircleddash}{PU}{\9042\235}%* U+229D
18182 % U+229E SQUARED PLUS; \boxplus (AmS)
18183 \DeclareTextCommand{\textboxplus}{PU}{\9042\236}%* U+229E
18184 % U+229F SQUARED MINUS; \boxminus (AmS)
18185 \DeclareTextCommand{\textboxminus}{PU}{\9042\237}%* U+229F
18186 % U+22A0 SQUARED TIMES; \boxtimes (AmS)
18187 \DeclareTextCommand{\textboxtimes}{PU}{\9042\240}%* U+22A0
18188 % U+22A1 SQUARED DOT OPERATOR; \boxdot (AmS)
18189 \DeclareTextCommand{\textboxdot}{PU}{\9042\241}%* U+22A1
18190 % U+22A2 RIGHT TACK; \vdash (LaTeX)
18191 \DeclareTextCommand{\textvdash}{PU}{\9042\242}%* U+22A2
18192 %* \textvdash -> \rightvdash (MnSymbol)
18193 % U+22A3 LEFT TACK; \dashleftarrow; \dashv (LaTeX)
18194 \DeclareTextCommand{\textdashv}{PU}{\9042\243}%* U+22A3
18195 %* \textdashv -> \leftvdash (MnSymbol)
18196 % \ndashv (mathabx)
18197 \DeclareTextCommand{\textndashv}{PU}{\9042\243\83\070}%* U+22A3 U+0338
18198 %* \textndashv -> \nleftvdash (MnSymbol)
18199 % U+22A4 DOWN TACK (=top); \tackdown; \top (LaTeX)
18200 \DeclareTextCommand{\textttop}{PU}{\9042\244}%* U+22A4
18201 %* \textttop -> \downvdash (MnSymbol)
18202 % \ndownvdash (MnSymbol)
18203 \DeclareTextCommand{\textndownvdash}{PU}{\9042\244\83\070}%* U+22A4 U+0338
18204 % U+22A5 UP TACK (=base, bottom); \bot (LaTeX)
18205 \DeclareTextCommand{\textbot}{PU}{\9042\245}%* U+22A5
18206 %* \textbot -> \upvdash (MnSymbol)
18207 % \nupvdash (MnSymbol)

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18208 \DeclareTextCommand{\textnupvdash}{PU}{\9042\245\83\070}%* U+22A5 U+0338
18209 %* \textnupvdash -> \nperp (MnSymbol)
18210 % U+22A8 TRUE; \vDash (AmS)
18211 \DeclareTextCommand{\textvDash}{PU}{\9042\250}%* U+22A8
18212 %* \textvDash -> \models (LaTeX)
18213 %* \textvDash -> \rightmodels (MnSymbol)
18214 % U+22A9 FORCES; \Vdash (AmS)
18215 \DeclareTextCommand{\textVdash}{PU}{\9042\251}%* U+22A9
18216 %* \textVdash -> \rightVdash (MnSymbol)
18217 % U+22AA TRIPLE VERTICAL BAR RIGHT TURNSTILE; \Vvdash (AmS)
18218 \DeclareTextCommand{\textVvdash}{PU}{\9042\252}%* U+22AA
18219 % \nVdash (mathabx)
18220 \DeclareTextCommand{\textnVdash}{PU}{\9042\252\83\070}%* U+22AA U+0338
18221 % U+22AB DOUBLE VERTICAL BAR DOUBLE RIGHT TURNSTILE;
18222 % \VDash (mathabx)
18223 \DeclareTextCommand{\textVDash}{PU}{\9042\253}%* U+22AB
18224 %* \textVDash -> \rightModels (MnSymbol)
18225 % U+22AC DOES NOT PROVE; \nvdash (AmS)
18226 \DeclareTextCommand{\textnvdash}{PU}{\9042\254}%* U+22AC
18227 %* \textnvdash -> \nrightrvdash (MnSymbol)
18228 % U+22AD NOT TRUE; \nvDash (AmS)
18229 \DeclareTextCommand{\textnvDash}{PU}{\9042\255}%* U+22AD
18230 %* \textnvDash -> \nrightrmodels (MnSymbol)
18231 %* \textnvDash -> \nmodels (MnSymbol)
18232 % U+22AE DOES NOT FORCE; \nVdash (txfonts/pxfonts)
18233 \DeclareTextCommand{\textnVdash}{PU}{\9042\256}%* U+22AE
18234 %* \textnVdash -> \nrightrVdash (MnSymbol)
18235 % U+22AF NEGATED DOUBLE VERTICAL BAR DOUBLE RIGHT TURN-
      STILE; \nVDash (AmS)
18236 \DeclareTextCommand{\textnVDash}{PU}{\9042\257}%* U+22AF
18237 %* \textnVDash -> \nrightrModels (MnSymbol)
18238 % U+22B2 NORMAL SUBGROUP OF; \lhd (latexsym, ...)
18239 \DeclareTextCommand{\textlhd}{PU}{\9042\262}%* U+22B2
18240 %* \textlhd -> \lessclosed (MnSymbol)
18241 % U+22B3 CONTAINS AS NORMAL SUBGROUP; \rhd (latexsym, ...)
18242 \DeclareTextCommand{\textrhd}{PU}{\9042\263}%* U+22B3
18243 %* \textrhd -> \gtrclosed (MnSymbol)
18244 % U+22B4 NORMAL SUBGROUP OF OR EQUAL TO; \unlhd (latexsym, ...)
18245 \DeclareTextCommand{\textunlhd}{PU}{\9042\264}%* U+22B4
18246 %* \textunlhd -> \leqclosed (MnSymbol)
18247 %* \textunlhd -> \trianglelefteq (MnSymbol)
18248 % U+22B5 CONTAINS AS NORMAL SUBGROUP OR EQUAL TO; \unrhd (la-
      texsym, ...)
18249 \DeclareTextCommand{\textunrhd}{PU}{\9042\265}%* U+22B5
18250 %* \textunrhd -> \geqclosed (MnSymbol)
18251 %* \textunrhd -> \trianglerighteq (MnSymbol)
18252 % U+22B6 ORIGINAL OF; \multimapdotbothA (txfonts/pxfonts)
18253 \DeclareTextCommand{\textmultimapdotbothA}{PU}{\9042\266}%* U+22B6
18254 % U+22B7 IMAGE OF; \multimapdotbothB (txfonts/pxfonts)
18255 \DeclareTextCommand{\textmultimapdotbothB}{PU}{\9042\267}%* U+22B7
18256 % U+22B8 MULTIMAP; \multimap (AmS, txfonts/pxfonts)
18257 \DeclareTextCommand{\textmultimap}{PU}{\9042\270}%* U+22B8
18258 % U+22BB XOR; \veebar (AmS)
18259 \DeclareTextCommand{\textveebar}{PU}{\9042\273}%* U+22BB

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18260 % U+22BC NAND; \barwedge (mathabx)
18261 \DeclareTextCommand{\textbarwedge}{PU}{\9042\274}%* U+22BC
18262 % U+22C6 STAR OPERATOR; \star (LaTeX)
18263 \DeclareTextCommand{\textstar}{PU}{\9042\306}%* U+22C6
18264 % U+22C7 DIVISION TIMES; \divideontimes (AmS)
18265 \DeclareTextCommand{\textdivideontimes}{PU}{\9042\307}%* U+22C7
18266 % U+22C8 BOWTIE; \bowtie (LaTeX)
18267 \DeclareTextCommand{\textbowtie}{PU}{\9042\310}%* U+22C8
18268 %* \textbowtie -> \Bowtie (wasysym)
18269 % U+22C9 LEFT NORMAL FACTOR SEMIDIRECT PRODUCT; \ltimes (AmS)
18270 \DeclareTextCommand{\textltimes}{PU}{\9042\311}%* U+22C9
18271 % U+22CA RIGHT NORMAL FACTOR SEMIDIRECT PRODUCT;
18272 % \rtimes (AmS)
18273 \DeclareTextCommand{\textrttimes}{PU}{\9042\312}%* U+22CA
18274 % U+22CB LEFT SEMIDIRECT PRODUCT; \leftthreetimes (AmS)
18275 \DeclareTextCommand{\textleftthreetimes}{PU}{\9042\313}%* U+22CB
18276 % U+22CC RIGHT SEMIDIRECT PRODUCT; \rightthreetimes (AmS)
18277 \DeclareTextCommand{\textrightthreetimes}{PU}{\9042\314}%* U+22CC
18278 % U+22CD REVERSED TILDE EQUALS; \backsimeq (AmS)
18279 \DeclareTextCommand{\textbacksimeq}{PU}{\9042\315}%* U+22CD
18280 % \nbacksimeq (txfonts/pxfonts)
18281 \DeclareTextCommand{\textnbacksimeq}{PU}{\9042\315\83\070}%* U+22CD U+0338
18282 % U+22CE CURLY LOGICAL OR; curlyor; \curlyvee (AmS)
18283 \DeclareTextCommand{\textcurlyvee}{PU}{\9042\316}%* U+22CE
18284 %* \textcurlyvee -> \varcurlyvee (stmaryrd)
18285 % U+22CF CURLY LOGICAL AND; curlyand; \curlywedge (AmS)
18286 \DeclareTextCommand{\textcurlywedge}{PU}{\9042\317}%* U+22CF
18287 %* \textcurlywedge -> \varcurlywedge (stmaryrd)
18288 % U+22D0 DOUBLE SUBSET; \Subset (AmS)
18289 \DeclareTextCommand{\textSubset}{PU}{\9042\320}%* U+22D0
18290 % \nSubset (txfonts/pxfonts)
18291 \DeclareTextCommand{\textnSubset}{PU}{\9042\320\83\070}%* U+22D0 U+0338
18292 % U+22D1 DOUBLE SUPERSET; \Supset (AmS)
18293 \DeclareTextCommand{\textSupset}{PU}{\9042\321}%* U+22D1
18294 % \nSupset (txfonts/pxfonts)
18295 \DeclareTextCommand{\textnSupset}{PU}{\9042\321\83\070}%* U+22D1 U+0338
18296 % U+22D2 DOUBLE INTERSECTION; \Cap (AmS)
18297 \DeclareTextCommand{\textCap}{PU}{\9042\322}%* U+22D2
18298 %* \textCap -> \doublecap (mathabx)
18299 % U+22D3 DOUBLE UNION; \Cup (AmS)
18300 \DeclareTextCommand{\textCup}{PU}{\9042\323}%* U+22D3
18301 %* \textCup -> \doublecup (mathabx)
18302 % U+22D4 PITCHFORK; \pitchfork (mathabx)
18303 \DeclareTextCommand{\textpitchfork}{PU}{\9042\324}%* U+22D4
18304 % U+22D6 LESS-THAN WITH DOT; \lessdot (AmS)
18305 \DeclareTextCommand{\textlessdot}{PU}{\9042\326}%* U+22D6
18306 % U+22D7 GREATER-THAN WITH DOT; \gtrdot (AmS)
18307 \DeclareTextCommand{\textgtrdot}{PU}{\9042\327}%* U+22D7
18308 % U+22D8 VERY MUCH LESS-THAN; \lll (AmS)
18309 \DeclareTextCommand{\textlll}{PU}{\9042\330}%* U+22D8
18310 % U+22D9 VERY MUCH GREATER-THAN; \ggg (AmS)
18311 \DeclareTextCommand{\textggg}{PU}{\9042\331}%* U+22D9
18312 % U+22DA LESS-THAN EQUAL TO OR GREATER-THAN; lessequalorgreater;
18313 % \lesseqgtr (AmS)

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18314 \DeclareTextCommand{\textlesseqgtr}{PU}{\9042\332}%* U+22DA
18315 % U+22DB GREATER-THAN EQUAL TO OR LESS-THAN; greaterqualorless;
18316 % \gtreqless (AmS)
18317 \DeclareTextCommand{\textgtreqless}{PU}{\9042\333}%* U+22DB
18318 % U+22DE EQUAL TO OR PRECEDES; \curlyeqprec (MnSymbol)
18319 \DeclareTextCommand{\textcurlyeqprec}{PU}{\9042\336}%* U+22DE
18320 % \ncurlyeqprec (mathabx)
18321 \DeclareTextCommand{\textncurlyeqprec}{PU}{\9042\336\83\070}%* U+22DE U+0338
18322 % U+22DF EQUAL TO OR SUCCEEDS; \curlyeqsucc (MnSymbol)
18323 \DeclareTextCommand{\textcurlyeqsucc}{PU}{\9042\337}%* U+22DF
18324 % \ncurlyeqsucc (mathabx)
18325 \DeclareTextCommand{\textncurlyeqsucc}{PU}{\9042\337\83\070}%* U+22DF U+0338
18326 % U+22E0 DOES NOT PRECEDE OR EQUAL; \npreccurlyeq (txfonts/pxfonts)
18327 \DeclareTextCommand{\textnpreccurlyeq}{PU}{\9042\340}%* U+22E0
18328 % U+22E1 DOES NOT SUCCEED OR EQUAL; \nsucccurlyeq (txfonts/pxfonts)
18329 \DeclareTextCommand{\textnsucccurlyeq}{PU}{\9042\341}%* U+22E1
18330 % U+22E2 NOT SQUARE IMAGE OF OR EQUAL TO; \nsqsubseteq (tx-
18331 % fonts/pxfonts)
18331 \DeclareTextCommand{\textnqsubseteq}{PU}{\9042\342}%* U+22E2
18332 % U+22E3 NOT SQUARE ORIGINAL OF OR EQUAL TO; \nsqsupseteq (tx-
18333 % fonts/pxfonts)
18333 \DeclareTextCommand{\textnqsupseteq}{PU}{\9042\343}%* U+22E3
18334 % U+22E4 SQUARE IMAGE OF OR NOT EQUAL TO; \sqsubsetneq (mathabx)
18335 \DeclareTextCommand{\textsqsubsetneq}{PU}{\9042\344}%* U+22E4
18336 %* \textsqsubsetneq -> \varsqsubsetneq (mathabx)
18337 % U+22E5 SQUARE ORIGINAL OF OR NOT EQUAL TO; \sqsupsetneq (math-
18338 % abx)
18338 \DeclareTextCommand{\textsqsupsetneq}{PU}{\9042\345}%* U+22E5
18339 %* \textsqsupsetneq -> \varsqsupsetneq (mathabx)
18340 % U+22E6 LESS-THAN BUT NOT EQUIVALENT TO; \lnsim (AmS)
18341 \DeclareTextCommand{\textlnsim}{PU}{\9042\346}%* U+22E6
18342 % U+22E7 GREATER-THAN BUT NOT EQUIVALENT TO; \gnsim (AmS)
18343 \DeclareTextCommand{\textgnsim}{PU}{\9042\347}%* U+22E7
18344 % U+22E8 PRECEDES BUT NOT EQUIVALENT TO; \precsim (AmS)
18345 \DeclareTextCommand{\textprecsim}{PU}{\9042\350}%* U+22E8
18346 % U+22E9 SUCCEEDS BUT NOT EQUIVALENT TO; \succsim (AmS)
18347 \DeclareTextCommand{\textsuccsim}{PU}{\9042\351}%* U+22E9
18348 % U+22EA NOT NORMAL SUBGROUP OF; \ntriangleleft (AmS)
18349 \DeclareTextCommand{\textntriangleleft}{PU}{\9042\352}%* U+22EA
18350 %* \textntriangleleft -> \nlessclosed (MnSymbol)
18351 % U+22EB DOES NOT CONTAIN AS NORMAL SUBGROUP; \ntriangleright (AmS)
18352 \DeclareTextCommand{\textntriangleright}{PU}{\9042\353}%* U+22EB
18353 %* \textntriangleright -> \ngtrclosed (MnSymbol)
18354 % U+22EC NOT NORMAL SUBGROUP OF OR EQUAL TO;
18355 % \ntrianglelefteq (AmS)
18356 \DeclareTextCommand{\textntrianglelefteq}{PU}{\9042\354}%* U+22EC
18357 % U+22ED DOES NOT CONTAIN AS NORMAL SUBGROUP OR EQUAL;
18358 % \ntrianglerighteq (AmS)
18359 \DeclareTextCommand{\textntrianglerighteq}{PU}{\9042\355}%* U+22ED
18360 %* \textntrianglerighteq -> \textngeqclosed
18361 % U+22EE VERTICAL ELLIPSIS; ellipsisvertical; \vdots (LaTeX)
18362 \DeclareTextCommand{\textvdots}{PU}{\9042\356}%* U+22EE
18363 % U+22EF MIDLINE HORIZONTAL ELLIPSIS; \cdots (LaTeX)

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18364 \DeclareTextCommand{\textcdots}{PU}{\9042\357}%\* U+22EF  
 18365 % U+22F0 UP RIGHT DIAGONAL ELLIPSIS; \udots (MnSymbol)  
 18366 \DeclareTextCommand{\textudots}{PU}{\9042\360}%\* U+22F0  
 18367 % U+22F1 DOWN RIGHT DIAGONAL ELLIPSIS; \ddots (LaTeX)  
 18368 \DeclareTextCommand{\textddots}{PU}{\9042\361}%\* U+22F1  
 18369 % U+22F6 ELEMENT OF WITH OVERBAR; \barin (mathabx)  
 18370 \DeclareTextCommand{\textbarin}{PU}{\9042\366}%\* U+22F6

#### 47.2.23 Miscellaneous Technical: U+2300 to U+23FF

18371 % U+2300 DIAMETER SIGN; \diameter (mathabx,wasysym)  
 18372 \DeclareTextCommand{\textdiameter}{PU}{\9043\000}%\* U+2300  
 18373 % U+2310 REVERSED NOT SIGN; \backneg (MnSymbol)  
 18374 \DeclareTextCommand{\textbackneg}{PU}{\9043\020}%\* U+2310  
 18375 % U+2311 SQUARE LOZENGE; \wasylozenge (wasysym)  
 18376 \DeclareTextCommand{\textwasylozenge}{PU}{\9043\021}%\* U+2311  
 18377 % U+2319 TURNED NOT SIGN; \invbackneg (MnSymbol)  
 18378 \DeclareTextCommand{\textinvbackneg}{PU}{\9043\031}%\* U+2319  
 18379 % U+231A WATCH; \clock (wasysym)  
 18380 \DeclareTextCommand{\textclock}{PU}{\9043\032}%\* U+231A  
 18381 %\* \textclock -> \Clocklogo (marvosym)  
 18382 %\* \textclock -> \ClockLogo (marvosym)  
 18383 % U+231C TOP LEFT CORNER; \ulcorner (AmS)  
 18384 \DeclareTextCommand{\textulcorner}{PU}{\9043\034}%\* U+231C  
 18385 % U+231D TOP RIGHT CORNER; \urcorner (AmS)  
 18386 \DeclareTextCommand{\texturcorner}{PU}{\9043\035}%\* U+231D  
 18387 % U+231E BOTTOM LEFT CORNER; \llcorner (AmS)  
 18388 \DeclareTextCommand{\textllcorner}{PU}{\9043\036}%\* U+231E  
 18389 % U+231F BOTTOM RIGHT CORNER; \lrcorner (AmS)  
 18390 \DeclareTextCommand{\textlrcorner}{PU}{\9043\037}%\* U+231F  
 18391 % U+2322 FROWN; \frown (LaTeX)  
 18392 \DeclareTextCommand{\textfrown}{PU}{\9043\042}%\* U+2322  
 18393 % U+2323 SMILE; \smile (LaTeX)  
 18394 \DeclareTextCommand{\textsmile}{PU}{\9043\043}%\* U+2323  
 18395 % U+2328 KEYBOARD; \Keyboard (marvosym)  
 18396 \DeclareTextCommand{\textKeyboard}{PU}{\9043\050}%\* U+2328  
 18397 % U+2329 LEFT-POINTING ANGLE BRACKET; \angleleft; \angle (LaTeX)  
 18398 \DeclareTextCommand{\textlangle}{PU}{\9043\051}%\* U+2329  
 18399 % U+232A RIGHT-POINTING ANGLE BRACKET; \angleright; \rangle (LaTeX)  
 18400 \DeclareTextCommand{\textrangle}{PU}{\9043\052}%\* U+232A  
 18401 % U+2339 APL FUNCTIONAL SYMBOL QUAD DIVIDE; \APLinv (wasysym)  
 18402 \DeclareTextCommand{\textAPLinv}{PU}{\9043\071}%\* U+2339  
 18403 % U+233C APL FUNCTIONAL SYMBOL QUAD CIRCLE; \Tumbler (marvosym)  
 18404 \DeclareTextCommand{\textTumbler}{PU}{\9043\074}%\* U+233C  
 18405 % U+233D APL FUNCTIONAL SYMBOL CIRCLE STILE; \baro (stmaryrd)  
 18406 \DeclareTextCommand{\textstmaryrdbaro}{PU}{\9043\075}%\* U+233D  
 18407 %\* \textstmaryrdbaro -> \baro (stmaryrd)  
 18408 % U+233F APL FUNCTIONAL SYMBOL SLASH BAR; \notslash (wasysym)  
 18409 \DeclareTextCommand{\textnotslash}{PU}{\9043\077}%\* U+233F  
 18410 % U+2340 APL FUNCTIONAL SYMBOL BACKSLASH BAR;  
 18411 % \notbackslash (wasysym)  
 18412 \DeclareTextCommand{\textnotbackslash}{PU}{\9043\100}%\* U+2340  
 18413 % U+2342 APL FUNCTIONAL SYMBOL QUAD BACKSLASH; \boxbackslash (mathabx)

18414 \DeclareTextCommand{\textboxbackslash}{PU}{\9043\102}%\* U+2342  
 18415 % U+2347 APL FUNCTIONAL SYMBOL QUAD LEFTWARDS ARROW;  
 18416 % \APLleftarrowbox (wasysym)  
 18417 \DeclareTextCommand{\textAPLleftarrowbox}{PU}{\9043\107}%\* U+2347  
 18418 % U+2348 APL FUNCTIONAL SYMBOL QUAD RIGHTWARDS ARROW;  
 18419 % \APLrightarrowbox (wasysym)  
 18420 \DeclareTextCommand{\textAPLrightarrowbox}{PU}{\9043\110}%\* U+2348  
 18421 % U+2350 APL FUNCTIONAL SYMBOL QUAD UPWARDS ARROW; \APLup-  
 parrowbox (wasysym)  
 18422 \DeclareTextCommand{\textAPLuparrowbox}{PU}{\9043\120}%\* U+2350  
 18423 % U+2357 APL FUNCTIONAL SYMBOL QUAD DOWNWARDS ARROW;  
 18424 % \APLdownarrowbox (wasysym)  
 18425 \DeclareTextCommand{\textAPLdownarrowbox}{PU}{\9043\127}%\* U+2357  
 18426 % U+235E APL FUNCTIONAL SYMBOL QUOTE QUAD;  
 18427 % \APLinput (wasysym)  
 18428 \DeclareTextCommand{\textAPLinput}{PU}{\9043\136}%\* U+235E  
 18429 % U+2370 APL FUNCTIONAL SYMBOL QUAD QUESTION; \Request (china2e)  
 18430 \DeclareTextCommand{\textRequest}{PU}{\9043\160}%\* U+2370  
 18431 % U+2393 DIRECT CURRENT SYMBOL FORM TWO; \Beam (marvosym)  
 18432 \DeclareTextCommand{\textBeam}{PU}{\9043\223}%\* U+2393  
 18433 % U+2394 SOFTWARE-FUNCTION SYMBOL; \hexagon (wasysym)  
 18434 \DeclareTextCommand{\texthexagon}{PU}{\9043\224}%\* U+2394  
 18435 % U+2395 APL FUNCTIONAL SYMBOL QUAD; \APLbox (wasysym)  
 18436 \DeclareTextCommand{\textAPLbox}{PU}{\9043\225}%\* U+2395  
 18437 % U+23ED BLACK RIGHT-POINTING DOUBLE TRIANGLE WITH VERTI-  
 CAL BAR;  
 18438 % \ForwardToIndex (marvosym)  
 18439 \DeclareTextCommand{\textForwardToIndex}{PU}{\9043\355}%\* U+23ED  
 18440 % U+23EE BLACK LEFT-POINTING DOUBLE TRIANGLE WITH VERTI-  
 CAL BAR;  
 18441 % \RewindToIndex (marvosym)  
 18442 \DeclareTextCommand{\textRewindToIndex}{PU}{\9043\356}%\* U+23EE

#### 47.2.24 Control Pictures: U+2400 to U+243F

18443 % U+2422 BLANK SYMBOL  
 18444 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
 18445 % U+2423 OPEN BOX; blank  
 18446 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

#### 47.2.25 Optical Character Recognition: U+2440 to U+245F

18447 % U+244A OCR DOUBLE BACKSLASH; \bbslash (stmaryrd)  
 18448 \DeclareTextCommand{\textbbslash}{PU}{\9044\112}%\* U+244A  
 18449 %\* \textbbslash -> \varparalelinv (txfonts/pxfonts)

#### 47.2.26 Enclosed Alphanumerics: U+2460 to U+24FF

18450 % U+2460 CIRCLED DIGIT ONE; onecircle  
 18451 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
 18452 % U+2461 CIRCLED DIGIT TWO; twocircle  
 18453 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
 18454 % U+2462 CIRCLED DIGIT THREE; threecircle  
 18455 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
 18456 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
 18457 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
 18458 % U+2464 CIRCLED DIGIT FIVE; fivecircle

18459 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
18460 % U+2465 CIRCLED DIGIT SIX; sixcircle  
18461 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
18462 % U+2466 CIRCLED DIGIT SEVEN; sevenscircle  
18463 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
18464 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
18465 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
18466 % U+2468 CIRCLED DIGIT NINE; ninecircle  
18467 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
18468 % U+2469 CIRCLED NUMBER TEN; tencircle  
18469 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
18470 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
18471 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
18472 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
18473 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
18474 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
18475 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
18476 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
18477 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
18478 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
18479 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
18480 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
18481 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
18482 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
18483 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
18484 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
18485 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
18486 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
18487 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
18488 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
18489 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
18490 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
18491 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
18492 % \CircledA (marvosym)  
18493 \DeclareTextCommand{\textCircledA}{PU}{\9044\266}%\* U+24B6  
18494 %\* \textCircledA -> \CleaningA  
18495 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
18496 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
18497 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
18498 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
18499 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
18500 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
18501 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
18502 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
18503 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
18504 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
18505 % \CleaningF (marvosym)  
18506 \DeclareTextCommand{\textCleaningF}{PU}{\9044\273}%\* U+24BB  
18507 % \CleaningFF (marvosym)  
18508 \DeclareTextCommand{\textCleaningFF}{PU}{\9044\273\83\062}%\* U+24BB U+0332  
18509 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
18510 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
18511 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
18512 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD

18513 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle  
18514 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
18515 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
18516 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
18517 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
18518 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
18519 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
18520 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
18521 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
18522 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
18523 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
18524 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
18525 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
18526 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
18527 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
18528 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
18529 % \CleaningP (marvosym)  
18530 \DeclareTextCommand{\textCleaningP}{PU}{\9044\305}%\* U+24C5  
18531 % \CleaningPP (marvosym)  
18532 \DeclareTextCommand{\textCleaningPP}{PU}{\9044\305\83\062}%\* U+24C5 U+0332  
18533 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
18534 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
18535 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
18536 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
18537 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
18538 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
18539 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
18540 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
18541 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
18542 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
18543 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
18544 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
18545 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
18546 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
18547 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
18548 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
18549 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
18550 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
18551 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
18552 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
18553 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
18554 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
18555 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
18556 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
18557 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
18558 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
18559 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
18560 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
18561 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
18562 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
18563 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
18564 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
18565 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
18566 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6

18567 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
 18568 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
 18569 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
 18570 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
 18571 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
 18572 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
 18573 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
 18574 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
 18575 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
 18576 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
 18577 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
 18578 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
 18579 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
 18580 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
 18581 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
 18582 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
 18583 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
 18584 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
 18585 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
 18586 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
 18587 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
 18588 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
 18589 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
 18590 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
 18591 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
 18592 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
 18593 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
 18594 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
 18595 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
 18596 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
 18597 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
 18598 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
 18599 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
 18600 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
 18601 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
 18602 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
 18603 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
 18604 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
 18605 % U+24EA CIRCLED DIGIT ZERO  
 18606 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

#### 47.2.27 Box Drawing: U+2500 to 257F

18607 % U+2504 BOX DRAWINGS LIGHT TRIPLE DASH HORIZONTAL; \Cutting-  
 Line (marvosym)  
 18608 \DeclareTextCommand{\textCuttingLine}{PU}{\9045\004}%\* U+2504  
 18609 %\* \textCuttingLine -> \Kutline (marvosym)  
 18610 %\* \textCuttingLine -> \CutLine (marvosym)  
 18611 %\* \textCuttingLine -> \Cutline (marvosym)

#### 47.2.28 Geometric Shapes: U+25A0 to U+25FF

18612 % U+25B2 BLACK UP-POINTING TRIANGLE; \UParrow (wasysym)  
 18613 \DeclareTextCommand{\textUParrow}{PU}{\9045\262}%\* U+25B2  
 18614 %\* \textUParrow -> \MoveUp (marvosym)  
 18615 % U+25B3 WHITE UP-POINTING TRIANGLE; whiteuppointingtriangle;

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18616 % \bigtriangleup (LaTeX)
18617 \DeclareTextCommand{\textbigtriangleup}{PU}{\9045\263}%* U+25B3
18618 %* \textbigtriangleup -> \APLup (wasysym)
18619 %* \textbigtriangleup -> \Bleech (marvosym)
18620 % U+25B6 BLACK RIGHT-POINTING TRIANGLE; \Forward (marvosym)
18621 \DeclareTextCommand{\textForward}{PU}{\9045\266}%* U+25B6
18622 % U+25B7 WHITE RIGHT-POINTING TRIANGLE (= z notation range restric-
tion);
18623 % whiterightpointingtriangle; \triangleright (LaTeX)
18624 \DeclareTextCommand{\texttriangleright}{PU}{\9045\267}%* U+25B7
18625 % U+25BA BLACK RIGHT-POINTING POINTER; \RHD (wasysym)
18626 \DeclareTextCommand{\textRHD}{PU}{\9045\272}%* U+25BA
18627 % U+25BC BLACK DOWN-POINTING TRIANGLE; \DOWNarrow (wasysym)
18628 \DeclareTextCommand{\textDOWNarrow}{PU}{\9045\274}%* U+25BC
18629 %* \textDOWNarrow -> \MoveDown (marvosym)
18630 % U+25BD WHITE DOWN-POINTING TRIANGLE; whitedownpointingtrian-
gle;
18631 % \bigtriangledown (LaTeX)
18632 \DeclareTextCommand{\textbigtriangledown}{PU}{\9045\275}%* U+25BD
18633 %* \textbigtriangledown -> \APLdown (wasysym)
18634 % U+25C0 BLACK LEFT-POINTING TRIANGLE; \Rewind (marvosym)
18635 \DeclareTextCommand{\textRewind}{PU}{\9045\300}%* U+25C0
18636 % U+25C1 WHITE RIGHT-POINTING TRIANGLE (= z notation domain re-
striction);
18637 % whiteleftpointingtriangle; \triangleleft (LaTeX)
18638 \DeclareTextCommand{\texttriangleleft}{PU}{\9045\301}%* U+25C1
18639 % U+25C4 BLACK LEFT-POINTING POINTER; \LHD (wasysym)
18640 \DeclareTextCommand{\textLHD}{PU}{\9045\304}%* U+25C4
18641 % U+25C7 WHITE DIAMOND; whitediamond; \diamond (LaTeX)
18642 \DeclareTextCommand{\textdiamond}{PU}{\9045\307}%* U+25C7
18643 %* \textdiamond -> \Diamond (wasysym)
18644 % U+25CA LOZENGE; lozenge; \lozenge (AmS)
18645 \DeclareTextCommand{\textlozenge}{PU}{\9045\312}%* U+25CA
18646 % U+25D6 LEFT HALF BLACK CIRCLE; \LEFTCIRCLE (wasysym)
18647 \DeclareTextCommand{\textLEFTCIRCLE}{PU}{\9045\326}%* U+25D6
18648 % U+25D7 RIGHT HALF BLACK CIRCLE; \RIGHTCIRCLE (wasysym)
18649 \DeclareTextCommand{\textRIGHTCIRCLE}{PU}{\9045\327}%* U+25D7
18650 % U+25E6 WHITE BULLET; *openbullet, whitebullet
18651 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}%* U+25E6
18652 % U+25EB WHITE SQUARE WITH VERTICAL BISECTING LINE;
18653 % \boxbar (stmaryrd)
18654 \DeclareTextCommand{\textboxbar}{PU}{\9045\353}%* U+25EB
18655 % U+25EF LARGE CIRCLE; largecircle
18656 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}%* U+25EF
18657 %* \textbigcircle -> \varbigcirc (stmaryrd)
18658 %

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#### 47.2.29 Miscellaneous Symbols: U+2600 to U+26FF

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18659 % U+2601 CLOUD; \Cloud (ifsym)
18660 \DeclareTextCommand{\textCloud}{PU}{\9046\001}%* U+2601
18661 % U+2605 BLACK STAR; \FiveStar (bbding)
18662 \DeclareTextCommand{\textFiveStar}{PU}{\9046\005}%* U+2605
18663 % U+2606 WHITE STAR; \FiveStarOpen (bbding)
18664 \DeclareTextCommand{\textFiveStarOpen}{PU}{\9046\006}%* U+2606

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18665 % U+260E BLACK TELEPHONE; telephoneblack; \Phone (bding)  
18666 \DeclareTextCommand{\textPhone}{PU}{\9046\016}%\* U+260E  
18667 %\* \textPhone -> \Telefon (marvosym)  
18668 % U+2610 BALLOT BOX; \boxempty (stmaryrd)  
18669 \DeclareTextCommand{\textboxempty}{PU}{\9046\020}%\* U+2610  
18670 %\* \textboxempty -> \Box (wasysym)  
18671 % U+2611 BALLOT BOX WITH CHECK; \Checkedbox (marvosym)  
18672 \DeclareTextCommand{\textCheckedbox}{PU}{\9046\021}%\* U+2611  
18673 %\* \textCheckedbox -> \CheckedBox (marvosym)  
18674 % U+2612 BALLOT BOX WITH X; \Crossedbox (marvosym)  
18675 \DeclareTextCommand{\textCrossedbox}{PU}{\9046\022}%\* U+2612  
18676 %\* \textCrossedbox -> \XBox (wasysym)  
18677 %\* \textCrossedbox -> \CrossedBox (marvosym)  
18678 % U+2615 HOT BEVERAGE; \Coffeecup (marvosym)  
18679 \DeclareTextCommand{\textCoffeecup}{PU}{\9046\025}%\* U+2615  
18680 % U+261A BLACK LEFT POINTING INDEX; \HandCuffLeft (bding)  
18681 \DeclareTextCommand{\textHandCuffLeft}{PU}{\9046\032}%\* U+261A  
18682 % U+261B BLACK RIGHT POINTING INDEX; \HandCuffRight (bding)  
18683 \DeclareTextCommand{\textHandCuffRight}{PU}{\9046\033}%\* U+261B  
18684 % U+261C WHITE LEFT POINTING INDEX; \HandLeft (bding)  
18685 \DeclareTextCommand{\textHandLeft}{PU}{\9046\034}%\* U+261C  
18686 %\* \textHandLeft -> \rightpointleft (fourier)  
18687 % U+261E WHITE RIGHT POINTING INDEX; \HandRight (bding)  
18688 \DeclareTextCommand{\textHandRight}{PU}{\9046\036}%\* U+261E  
18689 %\* \textHandRight -> \leftpointright (fourier)  
18690 %\* \textHandRight -> \PointingHand (marvosym)  
18691 %\* \textHandRight -> \Pointinghand (marvosym)  
18692 % U+2622 RADIOACTIVE SIGN; \Radioactivity (marvosym)  
18693 \DeclareTextCommand{\textRadioactivity}{PU}{\9046\042}%\* U+2622  
18694 %\* \textRadioactivity -> \Radiation (ifsym)  
18695 % U+2623 BIOHAZARD SIGN; \Biohazard (marvosym)  
18696 \DeclareTextCommand{\textBiohazard}{PU}{\9046\043}%\* U+2623  
18697 % U+2625 ANKH; \Ankh (marvosym)  
18698 \DeclareTextCommand{\textAnkh}{PU}{\9046\045}%\* U+2625  
18699 % U+262F YIN YANG; \YinYang (marvosym)  
18700 \DeclareTextCommand{\textYinYang}{PU}{\9046\057}%\* U+262F  
18701 %\* \textYinYang -> \Yinyang (marvosym)  
18702 %\* \textYinYang -> \YingYang (marvosym)  
18703 %\* \textYinYang -> \Yingyang (marvosym)  
18704 % U+2639 WHITE FROWNING FACE; \frownie (wasysym)  
18705 \DeclareTextCommand{\textfrownie}{PU}{\9046\071}%\* U+2639  
18706 %\* \textfrownie -> \Frowny (marvosym)  
18707 % U+263A WHITE SMILING FACE; \smiley (wasysym)  
18708 \DeclareTextCommand{\textsmiley}{PU}{\9046\072}%\* U+263A  
18709 %\* \textsmiley -> \Smiley (marvosym)  
18710 % U+263B BLACK SMILING FACE; \blacksmiley (wasysym)  
18711 \DeclareTextCommand{\textblacksmiley}{PU}{\9046\073}%\* U+263B  
18712 % U+263C WHITE SUN WITH RAYS; \sun (wasysym)  
18713 \DeclareTextCommand{\textsun}{PU}{\9046\074}%\* U+263C  
18714 %\* \textsun -> \Sun (marvosym)  
18715 % U+263D FIRST QUARTER MOON; \leftmoon (wasysym, mathabx)  
18716 \DeclareTextCommand{\textleftmoon}{PU}{\9046\075}%\* U+263D  
18717 % U+263E LAST QUARTER MOON; \rightmoon (wasysym, mathabx)  
18718 \DeclareTextCommand{\textrightmoon}{PU}{\9046\076}%\* U+263E

18719 % U+263F MERCURY; \mercury (wasysym)  
18720 \DeclareTextCommand{\textmercury}{PU}{\9046\077}%\* U+263F  
18721 %\* \textmercury -> \Mercury (marvosym)  
18722 % U+2640 FEMALE SIGN; female; \female (wasysym)  
18723 \DeclareTextCommand{\textPUfemale}{PU}{\9046\100}% U+2640  
18724 %\* \textPUfemale -> \textfemale (tipx)  
18725 %\* \textPUfemale -> \female (wasysym)  
18726 %\* \textPUfemale -> \venus (wasysym)  
18727 %\* \textPUfemale -> \Venus (marvosym)  
18728 %\* \textPUfemale -> \Female (marvosym)  
18729 % U+2641 EARTH; \earth (wasysym)  
18730 \DeclareTextCommand{\textearth}{PU}{\9046\101}%\* U+2641  
18731 %\* \textearth -> \Earth (marvosym)  
18732 % U+2642 MALE SIGN; male, mars; \male (wasysym)  
18733 \DeclareTextCommand{\textmale}{PU}{\9046\102}%\* U+2642  
18734 %\* \textmale -> \mars (wasysym)  
18735 %\* \textmale -> \Mars (marvosym)  
18736 %\* \textmale -> \Male (marvosym)  
18737 % U+2643 JUPITER; \jupiter (wasysym)  
18738 \DeclareTextCommand{\textjupiter}{PU}{\9046\103}%\* U+2643  
18739 %\* \textjupiter -> \Jupiter (marvosym)  
18740 % U+2644 SATURN; \saturn (wasysym)  
18741 \DeclareTextCommand{\textsaturn}{PU}{\9046\104}%\* U+2644  
18742 %\* \textsaturn -> \Saturn (marvosym)  
18743 % U+2645 URANUS; \uranus (wasysym)  
18744 \DeclareTextCommand{\texturanus}{PU}{\9046\105}%\* U+2645  
18745 %\* \texturanus -> \Uranus (marvosym)  
18746 % U+2646 NEPTUNE; \neptune (wasysym)  
18747 \DeclareTextCommand{\textneptune}{PU}{\9046\106}%\* U+2646  
18748 %\* \textneptune -> \Neptune (marvosym)  
18749 % U+2647 PLUTO; \pluto (wasysym)  
18750 \DeclareTextCommand{\textpluto}{PU}{\9046\107}%\* U+2647  
18751 %\* \textpluto -> \Pluto (marvosym)  
18752 % U+2648 ARIES; \aries (wasysym)  
18753 \DeclareTextCommand{\textaries}{PU}{\9046\110}%\* U+2648  
18754 %\* \textaries -> \Aries (marvosym)  
18755 % U+2649 TAURUS; \taurus (wasysym)  
18756 \DeclareTextCommand{\texttaurus}{PU}{\9046\111}%\* U+2649  
18757 %\* \texttaurus -> \Taurus (marvosym)  
18758 % U+264A GEMINI; \gemini (wasysym)  
18759 \DeclareTextCommand{\textgemini}{PU}{\9046\112}%\* U+264A  
18760 %\* \textgemini -> \Gemini (marvosym)  
18761 % U+264B CANCER; \cancer (wasysym)  
18762 \DeclareTextCommand{\textcancer}{PU}{\9046\113}%\* U+264B  
18763 %\* \textcancer -> \Cancer (marvosym)  
18764 % U+264C LEO; \leo (wasysym)  
18765 \DeclareTextCommand{\textleo}{PU}{\9046\114}%\* U+264C  
18766 %\* \textleo -> \Leo (marvosym)  
18767 % U+264D VIRGO; \virgo (wasysym)  
18768 \DeclareTextCommand{\textvirgo}{PU}{\9046\115}%\* U+264D  
18769 %\* \textvirgo -> \Virgo (marvosym)  
18770 % U+264E LIBRA; \libra (wasysym)  
18771 \DeclareTextCommand{\textlibra}{PU}{\9046\116}%\* U+264E  
18772 %\* \textlibra -> \Libra (marvosym)

18773 % U+264F SCORPIO; \scorpio (wasysym)  
18774 \DeclareTextCommand{\textscorpio}{PU}{\9046\117}%\* U+264F  
18775 %\* \textscorpio -> \Scorpio (marvosym)  
18776 % U+2650 SAGITTARIUS; \sagittarius (wasysym)  
18777 \DeclareTextCommand{\textsagittarius}{PU}{\9046\120}%\* U+2650  
18778 %\* \textsagittarius -> \Sagittarius (marvosym)  
18779 % U+2651 CAPRICORN; \capricornus (wasysym)  
18780 \DeclareTextCommand{\textcapricornus}{PU}{\9046\121}%\* U+2651  
18781 %\* \textcapricornus -> \Capricorn (marvosym)  
18782 % U+2652 AQUARIUS; \aquarius (wasysym)  
18783 \DeclareTextCommand{\textaquarius}{PU}{\9046\122}%\* U+2652  
18784 %\* \textaquarius -> \Aquarius (marvosym)  
18785 % U+2653 PISCES; \pisces (wasysym)  
18786 \DeclareTextCommand{\textpisces}{PU}{\9046\123}%\* U+2653  
18787 %\* \textpisces -> \Pisces (marvosym)  
18788 % U+2660 BLACK SPADE SUIT; spade, spadesuitblack; \spadesuit (LaTeX)  
18789 \DeclareTextCommand{\textspadesuitblack}{PU}{\9046\140}% U+2660  
18790 %\* \textspadesuitblack -> \spadesuit (MnSymbol)  
18791 % U+2661 WHITE HEART SUIT; heartsuitwhite; \heartsuit (LaTeX)  
18792 \DeclareTextCommand{\textheartsuitwhite}{PU}{\9046\141}% U+2661  
18793 %\* \textheartsuitwhite -> \Heart (marvosym)  
18794 %\* \textheartsuitwhite -> \heartsuit (MnSymbol)  
18795 % U+2662 WHITE DIAMOND SUIT; diamondsuitwhite; \diamondsuit (LaTeX)  
18796 \DeclareTextCommand{\textdiamondsuitwhite}{PU}{\9046\142}% U+2662  
18797 %\* \textdiamondsuitwhite -> \diamondsuit (MnSymbol)  
18798 % U+2663 BLACK CLUB SUIT; club, clubsuitblack; \clubsuit (LaTeX)  
18799 \DeclareTextCommand{\textclubsuitblack}{PU}{\9046\143}% U+2663  
18800 %\* \textclubsuitblack -> \clubsuit (MnSymbol)  
18801 % U+2664 WHITE SPADE SUIT; spadesuitwhite  
18802 \DeclareTextCommand{\textspadesuitwhite}{PU}{\9046\144}% U+2664  
18803 % U+2665 BLACK HEART SUIT; heartsuitblack, heart  
18804 \DeclareTextCommand{\textheartsuitblack}{PU}{\9046\145}% U+2665  
18805 % U+2666 BLACK DIAMOND SUIT; diamond  
18806 \DeclareTextCommand{\textdiamondsuitblack}{PU}{\9046\146}% U+2666  
18807 % U+2667 WHITE CLUB SUIT; clubsuitwhite  
18808 \DeclareTextCommand{\textclubsuitwhite}{PU}{\9046\147}% U+2667  
18809 % U+2669 QUARTER NOTE; quarternote; \quarternote (wasysym, arev)  
18810 \DeclareTextCommand{\textquarternote}{PU}{\9046\151}%\* U+2669  
18811 % U+266A EIGHTH NOTE; musicalnote; \textmusicalnote (textcomp)  
18812 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A  
18813 %\* \textmusicalnote -> \eighthnote (wasysym, arev)  
18814 % U+266B BEAMED EIGHTH NOTES; eighthnotebeamed; \twonotes (wasysym)  
18815 \DeclareTextCommand{\texttwonotes}{PU}{\9046\153}%\* U+266B  
18816 % U+266C BEAMED SIXTEENTH NOTES; beamedsixteenthnotes; \sixteenth-  
note (arev)  
18817 \DeclareTextCommand{\textsixteenthnote}{PU}{\9046\154}%\* U+266C  
18818 % U+266D MUSIC FLAT SIGN; musicflatsign; \flat (LaTeX)  
18819 \DeclareTextCommand{\textflat}{PU}{\9046\155}%\* U+266D  
18820 % U+266E MUSIC NATURAL SIGN; \natural (LaTeX)  
18821 \DeclareTextCommand{\textnatural}{PU}{\9046\156}%\* U+266E  
18822 % U+266F MUSIC SHARP SIGN; musicsharpsign; \sharp (LaTeX)  
18823 \DeclareTextCommand{\textsharp}{PU}{\9046\157}%\* U+266F  
18824 % U+2672 UNIVERSAL RECYCLING SYMBOL; \recycle (recycle)  
18825 \DeclareTextCommand{\textrecycle}{PU}{\9046\162}%\* U+2672

18826 %\* \textrecycle -> \Recycling (marvosym)  
18827 % U+267F WHEELCHAIR SYMBOL; \Wheelchair (marvosym)  
18828 \DeclareTextCommand{\textWheelchair}{PU}{\9046\177}%\* U+267F  
18829 % U+2691 BLACK FLAG; \Flag (ifsym)  
18830 \DeclareTextCommand{\textFlag}{PU}{\9046\221}%\* U+2691  
18831 %\* \textFlag -> \VarFlag (ifsym)  
18832 % U+2692 HAMMER AND PICK; \MineSign (marvosym)  
18833 \DeclareTextCommand{\textMineSign}{PU}{\9046\222}%\* U+2692  
18834 % U+2694 CROSSED SWORDS; \dsmilitary (dictsym)  
18835 \DeclareTextCommand{\textdsmilitary}{PU}{\9046\224}%\* U+2694  
18836 %\* \textdsmilitary -> \textxswup (fourier)  
18837 % U+2695 STAFF OF AESCULAPIUS; \dsmedical (dictsym)  
18838 \DeclareTextCommand{\textdsmedical}{PU}{\9046\225}%\* U+2695  
18839 % U+2696 SCALES; \dsjuridical (dictsym)  
18840 \DeclareTextCommand{\textdsjuridical}{PU}{\9046\226}%\* U+2696  
18841 % U+2697 ALEMBIC; \dschemical (dictsym)  
18842 \DeclareTextCommand{\textdschemical}{PU}{\9046\227}%\* U+2697  
18843 % U+2698 FLOWER; \dsbiological (dictsym)  
18844 \DeclareTextCommand{\textdsbiological}{PU}{\9046\230}%\* U+2698  
18845 % U+269A STAFF OF HERMES; \dscommercial (dictsym)  
18846 \DeclareTextCommand{\textdscommercial}{PU}{\9046\232}%\* U+269A  
18847 % U+269D OUTLINED WHITE STAR; \manstar (manfnt)  
18848 \DeclareTextCommand{\textmanstar}{PU}{\9046\235}%\* U+269D  
18849 % U+26A0 WARNING SIGN; \danger (fourier)  
18850 \DeclareTextCommand{\textdanger}{PU}{\9046\240}%\* U+26A0  
18851 % U+26A2 DOUBLED FEMALE SIGN; \FemaleFemale (marvosym)  
18852 \DeclareTextCommand{\textFemaleFemale}{PU}{\9046\242}%\* U+26A2  
18853 % U+26A3 DOUBLED MALE SIGN; \MaleMale (marvosym)  
18854 \DeclareTextCommand{\textMaleMale}{PU}{\9046\243}%\* U+26A3  
18855 % U+26A4 INTERLOCKED FEMALE AND MALE SIGN; \FemaleMale (marvosym)  
18856 \DeclareTextCommand{\textFemaleMale}{PU}{\9046\244}%\* U+26A4  
18857 % U+26A5 MALE AND FEMALE SIGN; \Hermaphrodite (marvosym)  
18858 \DeclareTextCommand{\textHermaphrodite}{PU}{\9046\245}%\* U+26A5  
18859 % U+26AA MEDIUM WHITE CIRCLE; \Neural (marvosym)  
18860 \DeclareTextCommand{\textNeutral}{PU}{\9046\252}%\* U+26AA  
18861 % U+26AD MARRIAGE SYMBOL  
18862 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
18863 % U+26AE DIVORCE SYMBOL  
18864 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE  
18865 % U+26B2 NEUTER; \textunconfemale (tipx)  
18866 \DeclareTextCommand{\textPUunconfemale}{PU}{\9046\262}% U+26B2  
18867 %\* \textPUunconfemale -> \textunconfemale (tipx)  
18868 % U+26B9 SEXTILE; \hexstar (wasysym)  
18869 \DeclareTextCommand{\texthexstar}{PU}{\9046\271}%\* U+26B9  
18870 % U+26BD SOCCER BALL; \Football (marvosym)  
18871 \DeclareTextCommand{\textSoccerBall}{PU}{\9046\275}% U+26BD  
18872 %\* \textSoccerBall -> \Football (marvosym)  
18873 % U+26C5 SUN BEHIND CLOUD; \SunCloud (ifsym)  
18874 \DeclareTextCommand{\textSunCloud}{PU}{\9046\305}%\* U+26C5  
18875 % U+26C6 RAIN; \Rain (ifsym)  
18876 \DeclareTextCommand{\textRain}{PU}{\9046\306}%\* U+26C6  
18877 % U+26D4 NO ENTRY; \noway (fourier)  
18878 \DeclareTextCommand{\textnoway}{PU}{\9046\324}%\* U+26D4

18879 % U+26F0 MOUNTAIN; \Mountain (ifsym)  
 18880 \DeclareTextCommand{\textMountain}{PU}{\9046\360}%\* U+26F0  
 18881 % U+26FA TENT; \Tent (ifsym)  
 18882 \DeclareTextCommand{\textTent}{PU}{\9046\372}%\* U+26FA

#### 47.2.30 Dingbats: U+2700 to U+27BF

18883 % U+2701 UPPER BLADE SCISSORS; \ScissorRightBrokenBottom (bding)  
 18884 \DeclareTextCommand{\textScissorRightBrokenBottom}{PU}{\9047\001}% U+2701  
 18885 %\* \textScissorRightBrokenBottom -> \CutLeft (marvosym)  
 18886 %\* \textScissorRightBrokenBottom -> \Cutright (marvosym)  
 18887 % U+2702 BLACK SCISSORS; \ScissorRight (bding)  
 18888 \DeclareTextCommand{\textScissorRight}{PU}{\9047\002}%\* U+2702  
 18889 %\* \textScissorRight -> \RightScissors (marvosym)  
 18890 %\* \textScissorRight -> \Leftscissors (marvosym)  
 18891 % U+2703 LOWER BLADE SCISSORS; \ScissorRightBrokenTop (bding)  
 18892 \DeclareTextCommand{\textScissorRightBrokenTop}{PU}{\9047\003}%\* U+2703  
 18893 % U+2704 WHITE SCISSORS; \ScissorHollowRight (bding)  
 18894 \DeclareTextCommand{\textScissorHollowRight}{PU}{\9047\004}%\* U+2704  
 18895 % U+2706 TELEPHONE LOCATION SIGN; \PhoneHandset (bding)  
 18896 \DeclareTextCommand{\textPhoneHandset}{PU}{\9047\006}%\* U+2706  
 18897 % U+2707 TAPE DRIVE; \Tape (bding)  
 18898 \DeclareTextCommand{\textTape}{PU}{\9047\007}%\* U+2707  
 18899 % U+2708 AIRPLANE; \Plane (bding)  
 18900 \DeclareTextCommand{\textPlane}{PU}{\9047\010}%\* U+2708  
 18901 % U+2709 ENVELOPE; \Envelope (bding),  
 18902 \DeclareTextCommand{\textEnvelope}{PU}{\9047\011}%\* U+2709  
 18903 %\* \textEnvelope -> \Letter (marvosym)  
 18904 % U+270C VICTORY HAND; \Peace (bding)  
 18905 \DeclareTextCommand{\textPeace}{PU}{\9047\014}%\* U+270C  
 18906 % U+270D WRITING HAND; \WritingHand (marvosym)  
 18907 \DeclareTextCommand{\textWritingHand}{PU}{\9047\015}%\* U+270D  
 18908 %\* \textWritingHand -> \Writinghand (marvosym)  
 18909 % U+270E LOWER RIGHT PENCIL; \PencilRightDown (bding)  
 18910 \DeclareTextCommand{\textPencilRightDown}{PU}{\9047\016}%\* U+270E  
 18911 % U+270F PENCIL; \PencilRight (bding)  
 18912 \DeclareTextCommand{\textPencilRight}{PU}{\9047\017}%\* U+270F  
 18913 % U+2710 UPPER RIGHT PENCIL; \PencilRightUp (bding)  
 18914 \DeclareTextCommand{\textPencilRightUp}{PU}{\9047\020}%\* U+2710  
 18915 % U+2711 WHITE NIB; \NibRight (bding)  
 18916 \DeclareTextCommand{\textNibRight}{PU}{\9047\021}%\* U+2711  
 18917 % U+2712 BLACK NIB; \NibSolidRight (bding)  
 18918 \DeclareTextCommand{\textNibSolidRight}{PU}{\9047\022}%\* U+2712  
 18919 % U+2713 CHECK MARK; checkmark; \Checkmark (bding)  
 18920 \DeclareTextCommand{\textCheckmark}{PU}{\9047\023}%\* U+2713  
 18921 %\* \textCheckmark -> \checkmark (MnSymbol)  
 18922 % U+2714 HEAVY CHECK MARK; \CheckmarkBold (bding)  
 18923 \DeclareTextCommand{\textCheckmarkBold}{PU}{\9047\024}%\* U+2714  
 18924 % U+2715 MULTIPLICATION X; \XSolid (bding)  
 18925 \DeclareTextCommand{\textXSolid}{PU}{\9047\025}%\* U+2715  
 18926 % U+2716 HEAVY MULTIPLICATION X; \XSolidBold (bding)  
 18927 \DeclareTextCommand{\textXSolidBold}{PU}{\9047\026}%\* U+2716  
 18928 % U+2717 BALLOT X; \XSolidBrush (bding)  
 18929 \DeclareTextCommand{\textXSolidBrush}{PU}{\9047\027}%\* U+2717  
 18930 % U+2719 OUTLINED GREEK CROSS; \PlusOutline (bding)

18931 \DeclareTextCommand{\textPlusOutline}{PU}{\9047\031}%\* U+2719  
18932 % U+271A HEAVY GREEK CROSS; \Plus (bding)  
18933 \DeclareTextCommand{\textPlus}{PU}{\9047\032}%\* U+271A  
18934 % U+271B OPEN CENTRE CROSS; \PlusThinCenterOpen (bding)  
18935 \DeclareTextCommand{\textPlusThinCenterOpen}{PU}{\9047\033}%\* U+271B  
18936 % U+271C HEAVY OPEN CENTRE CROSS; \PlusCenterOpen (bding)  
18937 \DeclareTextCommand{\textPlusCenterOpen}{PU}{\9047\034}%\* U+271C  
18938 % U+271D LATIN CROSS; \Cross (bding)  
18939 \DeclareTextCommand{\textCross}{PU}{\9047\035}%\* U+271D  
18940 % U+271E SHADOWED WHITE LATIN CROSS; \CrossOpenShadow (bding)  
18941 \DeclareTextCommand{\textCrossOpenShadow}{PU}{\9047\036}%\* U+271E  
18942 % U+271F OUTLINED LATIN CROSS; \CrossOutline (bding)  
18943 \DeclareTextCommand{\textCrossOutline}{PU}{\9047\037}%\* U+271F  
18944 % U+2720 MALTESE CROSS; \CrossMaltese (bding)  
18945 \DeclareTextCommand{\textCrossMaltese}{PU}{\9047\040}%\* U+2720  
18946 % U+2721 STAR OF DAVID; \DavidStar (bding)  
18947 \DeclareTextCommand{\textDavidStar}{PU}{\9047\041}%\* U+2721  
18948 %\* \textDavidStar -> \davidstar (wasysym)  
18949 % U+2722 FOUR TEARDROP-SPOKED ASTERISK; \FourAsterisk (bding)  
18950 \DeclareTextCommand{\textFourAsterisk}{PU}{\9047\042}%\* U+2722  
18951 % U+2723 FOUR BALLOON-SPOKED ASTERISK; \JackStar (bding)  
18952 \DeclareTextCommand{\textJackStar}{PU}{\9047\043}%\* U+2723  
18953 % U+2724 HEAVY FOUR BALLOON-SPOKED ASTERISK; \JackStarBold (bding)  
18954 \DeclareTextCommand{\textJackStarBold}{PU}{\9047\044}%\* U+2724  
18955 % U+2725 FOUR CLUB-SPOKED ASTERISK; \CrossClowerTips (bding)  
18956 \DeclareTextCommand{\textClowerTips}{PU}{\9047\045}%\* U+2725  
18957 % U+2726 BLACK FOUR POINTED STAR; \FourStar (bding)  
18958 \DeclareTextCommand{\textFourStar}{PU}{\9047\046}%\* U+2726  
18959 % U+2727 WHITE FOUR POINTED STAR; \FourStarOpen (bding)  
18960 \DeclareTextCommand{\textFourStarOpen}{PU}{\9047\047}%\* U+2727  
18961 % U+272A CIRCLED WHITE STAR; \FiveStarOpenCircled (bding)  
18962 \DeclareTextCommand{\textFiveStarOpenCircled}{PU}{\9047\052}%\* U+272A  
18963 % U+272B OPEN CENTRE BLACK STAR; \FiveStarCenterOpen (bding)  
18964 \DeclareTextCommand{\textFiveStarCenterOpen}{PU}{\9047\053}%\* U+272B  
18965 % U+272C BLACK CENTRE WHITE STAR; \FiveStarOpenDotted (bding)  
18966 \DeclareTextCommand{\textFiveStarOpenDotted}{PU}{\9047\054}%\* U+272C  
18967 % U+272D OUTLINED BLACK STAR; \FiveStarOutline (bding)  
18968 \DeclareTextCommand{\textFiveStarOutline}{PU}{\9047\055}%\* U+272D  
18969 % U+272E HEAVY OUTLINED BLACK STAR; \FiveStarOutlineHeavy (bding)  
18970 \DeclareTextCommand{\textFiveStarOutlineHeavy}{PU}{\9047\056}%\* U+272E  
18971 % U+272F PINWHEEL STAR; \FiveStarConvex (bding)  
18972 \DeclareTextCommand{\textFiveStarConvex}{PU}{\9047\057}%\* U+272F  
18973 % U+2730 SHADOWED WHITE STAR; \FiveStarShadow (bding)  
18974 \DeclareTextCommand{\textFiveStarShadow}{PU}{\9047\060}%\* U+2730  
18975 % U+2731 HEAVY ASTERISK; \AsteriskBold (bding)  
18976 \DeclareTextCommand{\textAsteriskBold}{PU}{\9047\061}%\* U+2731  
18977 % U+2732 OPEN CENTRE ASTERISK; \AsteriskCenterOpen (bding)  
18978 \DeclareTextCommand{\textAsteriskCenterOpen}{PU}{\9047\062}%\* U+2732  
18979 % U+2734 EIGHT POINTED BLACK STAR; \EightStarTaper (bding)  
18980 \DeclareTextCommand{\textEightStarTaper}{PU}{\9047\064}%\* U+2734  
18981 % U+2735 EIGHT POINTED PINWHEEL STAR; \EightStarConvex (bding)  
18982 \DeclareTextCommand{\textEightStarConvex}{PU}{\9047\065}%\* U+2735  
18983 % U+2736 SIX POINTED BLACK STAR; \SixStar (bding)

18984 \DeclareTextCommand{\textSixStar}{PU}{\9047\066}%\* U+2736  
18985 % U+2737 EIGHT POINTED RECTILINEAR BLACK STAR; \EightStar (bding)  
18986 \DeclareTextCommand{\textEightStar}{PU}{\9047\067}%\* U+2737  
18987 % U+2738 HEAVY EIGHT POINTED RECTILINEAR BLACK STAR; \EightStarBold (bding)  
18988 \DeclareTextCommand{\textEightStarBold}{PU}{\9047\070}%\* U+2738  
18989 % U+2739 TWELVE POINTED BLACK STAR; \TwelveStar (bding)  
18990 \DeclareTextCommand{\textTwelveStar}{PU}{\9047\071}%\* U+2739  
18991 % U+273A SIXTEEN POINTED ASTERISK; \SixteenStarLight (bding)  
18992 \DeclareTextCommand{\textSixteenStarLight}{PU}{\9047\072}%\* U+273A  
18993 % U+273B TEARDROP-SPOKED ASTERISK; \SixFlowerPetalRemoved (bding)  
18994 \DeclareTextCommand{\textSixFlowerPetalRemoved}{PU}{\9047\073}%\* U+273B  
18995 % U+273C OPEN CENTRE TEARDROP-SPOKED ASTERISK;  
18996 % \SixFlowerOpenCenter (bding)  
18997 \DeclareTextCommand{\textSixFlowerOpenCenter}{PU}{\9047\074}%\* U+273C  
18998 % U+273D HEAVY TEARDROP-SPOKED ASTERISK; \Asterisk (bding)  
18999 \DeclareTextCommand{\textAsterisk}{PU}{\9047\075}%\* U+273D  
19000 % U+273E SIX PETALLED BLACK AND WHITE FLORETTE; \SixFlowerAlternate (bding)  
19001 \DeclareTextCommand{\textSixFlowerAlternate}{PU}{\9047\076}%\* U+273E  
19002 % U+273F BLACK FLORETTE; \FiveFlowerPetal (bding)  
19003 \DeclareTextCommand{\textFiveFlowerPetal}{PU}{\9047\077}%\* U+273F  
19004 % U+2740 WHITE FLORETTE; \FiveFlowerOpen (bding)  
19005 \DeclareTextCommand{\textFiveFlowerOpen}{PU}{\9047\100}%\* U+2740  
19006 % U+2741 EIGHT PETALLED OUTLINED BLACK FLORETTE; \EightFlowerPetal (bding)  
19007 \DeclareTextCommand{\textEightFlowerPetal}{PU}{\9047\101}%\* U+2741  
19008 % U+2742 CIRCLED OPEN CENTRE EIGHT POINTED STAR; \SunshineOpenCircled (bding)  
19009 \DeclareTextCommand{\textSunshineOpenCircled}{PU}{\9047\102}%\* U+2742  
19010 % U+2743 HEAVY TEARDROP-SPOKED PINWHEEL ASTERISK; \SixFlowerAltPetal (bding)  
19011 \DeclareTextCommand{\textSixFlowerAltPetal}{PU}{\9047\103}%\* U+2743  
19012 % U+2744 SNOWFLAKE; \SnowflakeChevron (bding)  
19013 \DeclareTextCommand{\textSnowflakeChevron}{PU}{\9047\104}%\* U+2744  
19014 % U+2745 TIGHT TRIFOLIATE SNOWFLAKE; \Snowflake (bding)  
19015 \DeclareTextCommand{\textSnowflake}{PU}{\9047\105}%\* U+2745  
19016 % U+2746 HEAVY CHEVRON SNOWFLAKE; \SnowflakeChevronBold (bding)  
19017 \DeclareTextCommand{\textSnowflakeChevronBold}{PU}{\9047\106}%\* U+2746  
19018 % U+2747 SPARKLE; \Sparkle (bding)  
19019 \DeclareTextCommand{\textSparkle}{PU}{\9047\107}%\* U+2747  
19020 % U+2748 HEAVY SPARKLE; \SparkleBold (bding)  
19021 \DeclareTextCommand{\textSparkleBold}{PU}{\9047\110}%\* U+2748  
19022 % U+2749 BALLOON-SPOKED ASTERISK; \AsteriskRoundedEnds (bding)  
19023 \DeclareTextCommand{\textAsteriskRoundedEnds}{PU}{\9047\111}%\* U+2749  
19024 % U+274A EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;  
19025 % \EightFlowerPetalRemoved (bding)  
19026 \DeclareTextCommand{\textEightFlowerPetalRemoved}{PU}{\9047\112}%\* U+274A  
19027 % U+274B HEAVY EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;  
19028 % \EightAsterisk (bding)  
19029 \DeclareTextCommand{\textEightAsterisk}{PU}{\9047\113}%\* U+274B  
19030 % U+274D SHADOWED WHITE CIRCLE; \CircleShadow (bding)

19031 \DeclareTextCommand{\textCircleShadow}{PU}{\9047\115}%\* U+274D  
 19032 % U+274F LOWER RIGHT DROP-SHADOWED WHITE SQUARE;  
 19033 % \SquareShadowBottomRight (bding)  
 19034 \DeclareTextCommand{\textSquareShadowBottomRight}{PU}{\9047\117}%\* U+274F  
 19035 % U+2750 UPPER RIGHT DROP-SHADOWED WHITE SQUARE;  
 19036 % \SquareShadowTopRight (bding)  
 19037 \DeclareTextCommand{\textSquareTopRight}{PU}{\9047\120}%\* U+2750  
 19038 % U+2751 LOWER RIGHT SHADOWED WHITE SQUARE;  
 19039 % \SquareCastShadowBottomRight (bding)  
 19040 \DeclareTextCommand{\textSquareCastShadowBottomRight}{PU}{\9047\121}%\* U+2751  
 19041 % U+2752 UPPER RIGHT SHADOWED WHITE SQUARE;  
 19042 % \SquareCastShadowTopRight (bding)  
 19043 \DeclareTextCommand{\textSquareCastShadowTopRight}{PU}{\9047\122}%\* U+2752  
 19044 % U+2756 BLACK DIAMOND MINUS WHITE X; \OrnamentDiamondSolid (bding)  
 19045 \DeclareTextCommand{\textDiamondSolid}{PU}{\9047\126}%\* U+2756  
 19046 % U+2758 LIGHT VERTICAL BAR; \RectangleThin (bding)  
 19047 \DeclareTextCommand{\textRectangleThin}{PU}{\9047\130}%\* U+2758  
 19048 % U+2759 MEDIUM VERTICAL BAR; \Rectangle (bding)  
 19049 \DeclareTextCommand{\textRectangle}{PU}{\9047\131}%\* U+2759  
 19050 % U+275A HEAVY VERTICAL BAR; \RectangleBold (bding)  
 19051 \DeclareTextCommand{\textRectangleBold}{PU}{\9047\132}%\* U+275A

#### 47.2.31 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

19052 % U+27C2 PERPENDICULAR; perpendicular; \perp (LaTeX)  
 19053 \DeclareTextCommand{\textperp}{PU}{\9047\302}%\* U+27C2  
 19054 % \notperp (mathabx)  
 19055 \DeclareTextCommand{\textnotperp}{PU}{\9047\302\83\070}%\* U+27C2 U+0338  
 19056 % U+27C7 OR WITH DOT INSIDE; \veedot (MnSymbol)  
 19057 \DeclareTextCommand{\textveedot}{PU}{\9047\307}%\* U+27C7  
 19058 % U+27D1 AND WITH DOT; \wedgedot (MnSymbol)  
 19059 \DeclareTextCommand{\textwedgedot}{PU}{\9047\321}%\* U+27D1  
 19060 % U+27DC LEFT MULTIMAP; \leftspoon (MnSymbol)  
 19061 \DeclareTextCommand{\textleftspoon}{PU}{\9047\334}%\* U+27DC  
 19062 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
 19063 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}%\* U+27E6  
 19064 %\* \textlbrackdbl -> \lbracket (stmaryrd)  
 19065 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
 19066 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}%\* U+27E7  
 19067 %\* \textrbrackdbl -> \rrbracket (stmaryrd)

#### 47.2.32 Supplemental Arrows-A: U+27F0 to U+27FF

19068 % U+27F2 ANTICLOCKWISE GAPPED CIRCLE ARROW;  
 19069 % \circlearrowleft (AmS)  
 19070 \DeclareTextCommand{\textcirclearrowleft}{PU}{\9047\362}%\* U+27F2  
 19071 % U+27F3 CLOCKWISE GAPPED CIRCLE ARROW; \circlearrowright (AmS)  
 19072 \DeclareTextCommand{\textcirclearrowright}{PU}{\9047\363}%\* U+27F3  
 19073 % U+27F5 LONG LEFTWARDS ARROW; \longleftarrow (AmS)  
 19074 \DeclareTextCommand{\textlongleftarrow}{PU}{\9047\365}%\* U+27F5  
 19075 % U+27F6 LONG RIGHTWARDS ARROW; \longrightarrow (AmS)  
 19076 \DeclareTextCommand{\textlongrightarrow}{PU}{\9047\366}%\* U+27F6  
 19077 % U+27F7 LONG LEFT RIGHT ARROW; \longlefttrightarrow (AmS)  
 19078 \DeclareTextCommand{\textlonglefttrightarrow}{PU}{\9047\367}%\* U+27F7  
 19079 % U+27F8 LONG LEFTWARDS DOUBLE ARROW; \Longleftarrow (AmS)

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19080 \DeclareTextCommand{\textLongleftarrow}{PU}{\9047\370}%* U+27F8
19081 % U+27F9 LONG RIGHTWARDS DOUBLE ARROW; \Longrightarrow (AmS)
19082 \DeclareTextCommand{\textLongrightarrow}{PU}{\9047\371}%* U+27F9
19083 % U+27FA LONG LEFT RIGHT DOUBLE ARROW; \Longleftrightarrow (AmS)
19084 \DeclareTextCommand{\textLongleftrightarrow}{PU}{\9047\372}%* U+27FA
19085 % U+27FC LONG RIGHTWARDS ARROW FROM BAR; \longmapsto (AmS)
19086 \DeclareTextCommand{\textlongmapsto}{PU}{\9047\374}%* U+27FC
19087 % U+27FD LONG LEFTWARDS DOUBLE ARROW FROM BAR; \Longmaps-
    from (stmaryrd)
19088 \DeclareTextCommand{\textLongmapsfrom}{PU}{\9047\375}%* U+27FD
19089 % U+27FE LONG RIGHTWARDS DOUBLE ARROW FROM BAR; \Longmap-
    sto (stmaryrd)
19090 \DeclareTextCommand{\textLongmapsto}{PU}{\9047\376}%* U+27FE

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#### 47.2.33 Supplemental Arrows-B: U+2900 to U+297F

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19091 % U+2921 NORTH WEST AND SOUTH EAST ARROW; \nwsearrow (MnSym-
    bol)
19092 \DeclareTextCommand{\textnwsearrow}{PU}{\9051\041}%* U+2921
19093 % U+2922 NORTH EAST AND SOUTH WEST ARROW; \neswarrow (MnSym-
    bol)
19094 \DeclareTextCommand{\textneswarrow}{PU}{\9051\042}%* U+2922
19095 % U+2923 NORTH WEST ARROW WITH HOOK; \hooknwarrow (MnSymbol)
19096 \DeclareTextCommand{\texthooknwarrow}{PU}{\9051\043}%* U+2923
19097 % U+2924 NORTH EAST ARROW WITH HOOK; \hooknearrow (MnSymbol)
19098 \DeclareTextCommand{\textrhooknearrow}{PU}{\9051\044}%* U+2924
19099 % U+2925 SOUTH EAST ARROW WITH HOOK; \hooksearrow (MnSymbol)
19100 \DeclareTextCommand{\texthooksearrow}{PU}{\9051\045}%* U+2925
19101 % U+2926 SOUTH WEST ARROW WITH HOOK; \hookswarrow (MnSymbol)
19102 \DeclareTextCommand{\textrhookswarrow}{PU}{\9051\046}%* U+2926
19103 % U+2933 WAVE ARROW POINTING DIRECTLY RIGHT; \leadsto (wasysym)
19104 \DeclareTextCommand{\textleadsto}{PU}{\9051\063}%* U+2933
19105 % U+2934 ARROW POINTING RIGHTWARDS THEN CURVING UPWARDS;
19106 % \rcurvearrowne (MnSymbol)
19107 \DeclareTextCommand{\textrcurvearrowne}{PU}{\9051\064}%* U+2934
19108 % U+2935 ARROW POINTING RIGHTWARDS THEN CURVING DOWN-
    WARDS;
19109 % \lcurvearrowse (MnSymbol)
19110 \DeclareTextCommand{\textlcurvearrowse}{PU}{\9051\065}%* U+2935
19111 % U+2936 ARROW POINTING DOWNWARDS THEN CURVING LEFT-
    WARDS;
19112 % \lcurvearrowsw (MnSymbol)
19113 \DeclareTextCommand{\textlcurvearrowsw}{PU}{\9051\066}%* U+2936
19114 % U+2937 ARROW POINTING DOWNWARDS THEN CURVING RIGHT-
    WARDS;
19115 % \rcurvearrowse (MnSymbol)
19116 \DeclareTextCommand{\textrcurvearrowse}{PU}{\9051\067}%* U+2937
19117 % U+2938 RIGHT-SIDE ARC CLOCKWISE ARROW; \lcurvearrowdown (Mn-
    Symbol)
19118 \DeclareTextCommand{\textlcurvearrowdown}{PU}{\9051\070}%* U+2938
19119 %* \textlcurvearrowdown -> \RightTorque (marvosym)
19120 %* \textlcurvearrowdown -> \Righttorque (marvosym)
19121 % U+2939 LEFT-SIDE ARC ANTICLOCKWISE ARROW;
19122 % \rcurvearrowdown (MnSymbol)
19123 \DeclareTextCommand{\textrcurvearrowdown}{PU}{\9051\071}%* U+2939

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19124 %* \texttrcurvearrowdown -> \LeftTorque (marvosym)
19125 %* \texttrcurvearrowdown -> \Lefttorque (marvosym)
19126 % U+293A TOP ARC ANTICLOCKWISE ARROW; \rcurvearrowleft (MnSym-
      bol)
19127 \DeclareTextCommand{\texttrcurvearrowleft}{PU}{\9051\072}%* U+293A
19128 % U+293B BOTTOM ARC ANTICLOCKWISE ARROW;
19129 % \rcurvearrowright (MnSymbol)
19130 \DeclareTextCommand{\texttrcurvearrowright}{PU}{\9051\073}%* U+293B
19131 % U+294A LEFT BARB UP RIGHT BARB DOWN HARPOON; \leftrighthar-
      poon (mathabx)
19132 \DeclareTextCommand{\textleftrightharpoon}{PU}{\9051\112}%* U+294A
19133 % U+294B LEFT BARB DOWN RIGHT BARB UP HARPOON; \rightlefthar-
      poon (mathabx)
19134 \DeclareTextCommand{\textrightleftharpoon}{PU}{\9051\113}%* U+294B
19135 % U+294C UP BARB RIGHT DOWN BARB LEFT HARPOON;
19136 % \updownharpoonrightleft (MnSymbol)
19137 \DeclareTextCommand{\textupdownharpoonrightleft}{PU}{\9051\114}%* U+294C
19138 % U+294D UP BARB LEFT DOWN BARB RIGHT HARPOON;
19139 % \updownharpoonleftright (MnSymbol)
19140 \DeclareTextCommand{\textupdownharpoonleftright}{PU}{\9051\115}%* U+294D
19141 % U+2962 LEFTWARDS HARPOON WITH BARB UP ABOVE LEFTWARDS
19142 % HARPOON WITH BARB DOWN; \leftleftharpoons (mathabx)
19143 \DeclareTextCommand{\textleftleftharpoons}{PU}{\9051\142}%* U+2962
19144 % U+2963 UPWARDS HARPOON WITH BARB LEFT BESIDE UPWARDS
19145 % HARPOON WITH BARB RIGHT; \upupharpoons (mathabx)
19146 \DeclareTextCommand{\textupupharpoons}{PU}{\9051\143}%* U+2963
19147 % U+2964 RIGHTWARDS HARPOON WITH BARB UP ABOVE RIGHT-
      WARDS HARPOON
19148 % WITH BARB DOWN; \rightrightarpoons (mathabx)
19149 \DeclareTextCommand{\textrightarpoons}{PU}{\9051\144}%* U+2964
19150 % U+2965 DOWNWARDS HARPOON WITH BARB LEFT BESIDE DOWN-
      WARDS HARPOON
19151 % WITH BARB RIGHT; \downdownharpoons (mathabx)
19152 \DeclareTextCommand{\textdowndownharpoons}{PU}{\9051\145}%* U+2965
19153 % U+296A LEFTWARDS HARPOON WITH BARB UP ABOVE LONG DASH;
19154 % \leftbarharpoon (mathabx)
19155 \DeclareTextCommand{\textleftbarharpoon}{PU}{\9051\152}%* U+296A
19156 % U+296B LEFTWARDS HARPOON WITH BARB DOWN BELOW
19157 % LONG DASH; \barleftharpoon (mathabx)
19158 \DeclareTextCommand{\textbarleftharpoon}{PU}{\9051\153}%* U+296B
19159 % U+296C RIGHTWARDS HARPOON WITH BARB UP ABOVE
19160 % LONG DASH; \rightbarharpoon (mathabx)
19161 \DeclareTextCommand{\textrightbarharpoon}{PU}{\9051\154}%* U+296C
19162 % U+296D RIGHTWARDS HARPOON WITH BARB DOWN BELOW
19163 % LONG DASH; \barrightharpoon (mathabx)
19164 \DeclareTextCommand{\textbarrightharpoon}{PU}{\9051\155}%* U+296D
19165 % U+296E UPWARDS HARPOON WITH BARB LEFT BESIDE DOWN-
      WARDS HARPOON
19166 % WITH BARB RIGHT; \updownharpoons (mathabx)
19167 \DeclareTextCommand{\textupdownharpoons}{PU}{\9051\156}%* U+296E
19168 % U+296F DOWNWARDS HARPOON WITH BARB LEFT BESIDE UP-
      WARDS HARPOON
19169 % WITH BARB RIGHT; \downupharpoons (mathabx)
19170 \DeclareTextCommand{\textdownupharpoons}{PU}{\9051\157}%* U+296F

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19171 % U+297F DOWN FISH TAIL  
 19172 \DeclareTextCommand{\textmoo}{PU}{\9051\177\83\066}%\* U+297F U+0336

#### 47.2.34 Miscellaneous Mathematical Symbols-B: U+2980 to U+29FF

19173 % U+2987 Z NOTATION LEFT IMAGE BRACKET; \llparenthesis (stmaryrd)  
 19174 \DeclareTextCommand{\textllparenthesis}{PU}{\9051\207}%\* U+2987  
 19175 % U+2988 Z NOTATION RIGHT IMAGE BRACKET; \rrparenthesis (stmaryrd)  
 19176 \DeclareTextCommand{\textrrparenthesis}{PU}{\9051\210}%\* U+2988  
 19177 % U+29B0 REVERSED EMPTY SET; \invdiameter (wasysym)  
 19178 \DeclareTextCommand{\textinvdiameter}{PU}{\9051\260}%\* U+29B0  
 19179 % U+29B6 CIRCLED VERTICAL BAR; \obar (stmaryrd)  
 19180 \DeclareTextCommand{\textobar}{PU}{\9051\266}%\* U+29B6  
 19181 %\* \textobar -> \textvarobar (stmaryrd)  
 19182 % U+29B8 CIRCLED REVERSE SOLIDUS; \obslash (stmaryrd)  
 19183 \DeclareTextCommand{\textobslash}{PU}{\9051\270}%\* U+29B8  
 19184 %\* \textobslash -> \circledbslash (txfonts/pxfonts)  
 19185 %\* \textobslash -> \obackslash (mathabx)  
 19186 %\* \textobslash -> \varobslash (stmaryrd)  
 19187 % U+29BA CIRCLE DIVIDED BY HORIZONTAL BAR AND TOP HALF  
 19188 % DIVIDED BY VERTICAL BAR; \obot (mathabx)  
 19189 \DeclareTextCommand{\textobot}{PU}{\9051\272}%\* U+29BA  
 19190 %\* \textobot -> \odplus (ulsy)  
 19191 % U+29BB CIRCLE WITH SUPERIMPOSED X; \NoChemicalCleaning (marvosym)  
 19192 \DeclareTextCommand{\textNoChemicalCleaning}{PU}{\9051\273}%\* U+29BB  
 19193 % U+29C0 CIRCLED LESS-THAN; \olessthan (stmaryrd)  
 19194 \DeclareTextCommand{\textolessthan}{PU}{\9051\300}%\* U+29C0  
 19195 %\* \textolessthan -> \varolessthan (stmaryrd)  
 19196 % U+29C1 CIRCLED GREATER-THAN; \ogreaterthan (stmaryrd)  
 19197 \DeclareTextCommand{\textogreaterthan}{PU}{\9051\301}%\* U+29C1  
 19198 %\* \textogreaterthan -> \varogreaterthan (stmaryrd)  
 19199 % U+29C4 SQUARED RISING DIAGONAL SLASH; \boxslash (mathabx, stmaryrd)  
 19200 \DeclareTextCommand{\textboxslash}{PU}{\9051\304}%\* U+29C4  
 19201 % U+29C5 SQUARED FALLING DIAGONAL SLASH; \boxbslash (stmaryrd)  
 19202 \DeclareTextCommand{\textboxbslash}{PU}{\9051\305}%\* U+29C5  
 19203 % U+29C6 SQUARED ASTERISK; \boxast (stmaryrd)  
 19204 \DeclareTextCommand{\textboxast}{PU}{\9051\306}%\* U+29C6  
 19205 % U+29C7 SQUARED SMALL CIRCLE; \boxcircle (stmaryrd)  
 19206 \DeclareTextCommand{\textboxcircle}{PU}{\9051\307}%\* U+29C7  
 19207 % U+29C8 SQUARED SQUARE; \boxbox (stmaryrd)  
 19208 \DeclareTextCommand{\textboxbox}{PU}{\9051\310}%\* U+29C8  
 19209 % U+29D3 BLACK BOWTIE; \Valve (marvosym)  
 19210 \DeclareTextCommand{\textValve}{PU}{\9051\323}%\* U+29D3  
 19211 % U+29DF DOUBLE-ENDED MULTIMAP; \multimapboth (txfonts/pxfonts)  
 19212 \DeclareTextCommand{\textmultimapboth}{PU}{\9051\337}%\* U+29DF  
 19213 % U+29E2 SHUFFLE PRODUCT; \shuffle (shuffle)  
 19214 \DeclareTextCommand{\textshuffle}{PU}{\9051\342}%\* U+29E2

#### 47.2.35 Supplemental Mathematical Operators: U+2A00 to U+2AFF

19215 % U+2A04 N-ARY UNION OPERATOR WITH PLUS; \uplus (LaTeX)  
 19216 \DeclareTextCommand{\textuplus}{PU}{\9052\004}%\* U+2A04  
 19217 % U+2A07 TWO LOGICAL AND OPERATOR; \bigdoublewedge (MnSymbol)  
 19218 \DeclareTextCommand{\textbigdoublewedge}{PU}{\9052\007}%\* U+2A07  
 19219 % U+2A08 TWO LOGICAL OR OPERATOR; \bigdoublevee (MnSymbol)

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19220 \DeclareTextCommand{\textbigdoublevee}{PU}{\9052\010}%* U+2A08
19221 % U+2A1D JOIN; \Join (latexsym, amsfonts, amssymb, mathabx, txfonts,
19222 %   pxfonts, wasysym)
19223 \DeclareTextCommand{\textJoin}{PU}{\9052\035}%* U+2A1D
19224 % U+2A1F Z NOTATION SCHEMA COMPOSITION; \fatsemi (stmaryrd)
19225 \DeclareTextCommand{\textfatsemi}{PU}{\9052\037}%* U+2A1F
19226 % U+2A22 PLUS SIGN WITH SMALL CIRCLE ABOVE; \circplus (mathabx)
19227 \DeclareTextCommand{\textcircplus}{PU}{\9052\042}%* U+2A22
19228 % U+2A2A MINUS SIGN WITH DOT BELOW; \minusdot (MnSymbol)
19229 \DeclareTextCommand{\textminusdot}{PU}{\9052\052}%* U+2A2A
19230 %* \textminusdot -> \divdot (mathabx)
19231 % U+2A30 MULTIPLICATION SIGN WITH DOT ABOVE; \dottimes (mathabx)
19232 \DeclareTextCommand{\textdottimes}{PU}{\9052\060}%* U+2A30
19233 % U+2A32 SEMIDIRECT PRODUCT WITH BOTTOM CLOSED;
19234 %   \dtimes (mathdesign)
19235 \DeclareTextCommand{\textdtimes}{PU}{\9052\062}%* U+2A32
19236 % U+2A38 CIRCLED DIVISION SIGN; \odiv (mathabx)
19237 \DeclareTextCommand{\textodiv}{PU}{\9052\070}%* U+2A38
19238 % U+2A3C INTERIOR PRODUCT; \invneg (MnSymbol)
19239 \DeclareTextCommand{\textinvneg}{PU}{\9052\074}%* U+2A3C
19240 % U+2A4E DOUBLE SQUARE INTERSECTION; \sqdoublecap (mathabx)
19241 \DeclareTextCommand{\textsqdoublecap}{PU}{\9052\116}%* U+2A4E
19242 %* \textsqdoublecap -> \doublesqcap (MnSymbol)
19243 % U+2A40 INTERSECTION WITH DOT; \capdot (MnSymbol)
19244 \DeclareTextCommand{\textcapdot}{PU}{\9052\100}%* U+2A40
19245 % U+2A4F DOUBLE SQUARE UNION; \sqdoublecup (mathabx)
19246 \DeclareTextCommand{\textsqdoublecup}{PU}{\9052\117}%* U+2A4F
19247 %* \textsqdoublecup -> \doublesqcup (MnSymbol)
19248 % U+2A55 TWO INTERSECTING LOGICAL AND; \doublewedge (MnSymbol)
19249 \DeclareTextCommand{\textdoublewedge}{PU}{\9052\125}%* U+2A55
19250 % U+2A56 TWO INTERSECTING LOGICAL OR; \doublevee (MnSymbol)
19251 \DeclareTextCommand{\textdoublevee}{PU}{\9052\126}%* U+2A56
19252 %* \textdoublevee -> \merge (stmaryrd)
19253 % U+2A5E LOGICAL AND WITH DOUBLE OVERBAR;
19254 %   \doublebarwedge (AmS)
19255 \DeclareTextCommand{\textdoublebarwedge}{PU}{\9052\136}%* U+2A5E
19256 % U+2A63 LOGICAL OR WITH DOUBLE UNDERBAR;
19257 %   \veedoublebar (mahtabx)
19258 \DeclareTextCommand{\textveedoublebar}{PU}{\9052\143}%* U+2A63
19259 % U+2A66 EQUALS SIGN WITH DOT BELOW; \eqdot (MnSymbol)
19260 \DeclareTextCommand{\texteqdot}{PU}{\9052\146}%* U+2A66
19261 % \neqdot (MnSymbol)
19262 \DeclareTextCommand{\textneqdot}{PU}{\9052\146\83\070}%* U+2A66 U+0338
19263 % U+2A74 DOUBLE COLON EQUAL; \coloncolonequals (colonequals)
19264 \DeclareTextCommand{\textcoloncolonequals}{PU}{\9052\164}%* U+2A74
19265 % U+2A7D LESS-THAN OR SLANTED EQUAL TO; \leqslant (AmS)
19266 \DeclareTextCommand{\textleqslant}{PU}{\9052\175}%* U+2A7D
19267 % \nleqslant (txfonts/pxfonts)
19268 \DeclareTextCommand{\textnleqslant}{PU}{\9052\175\83\070}%* U+2A7D U+0338
19269 % U+2A7E GREATER-THAN OR SLANTED EQUAL TO; \geqslant (AmS)
19270 \DeclareTextCommand{\textgeqslant}{PU}{\9052\176}%* U+2A7E
19271 % \ngeqslant (txfonts/pxfonts)
19272 \DeclareTextCommand{\textngeqslant}{PU}{\9052\176\83\070}%* U+2A7E U+0338
19273 % U+2A85 LESS-THAN OR APPROXIMATE; \lessapprox (AmS)

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19274 \DeclareTextCommand{\textlessapprox}{PU}{\9052\205}%* U+2A85
19275 % \nlessapprox (txfonts/pxfonts)
19276 \DeclareTextCommand{\textnlessapprox}{PU}{\9052\205\83\070}%* U+2A85 U+0338
19277 % U+2A86 GREATER-THAN OR APPROXIMATE; \gtrapprox (AmS)
19278 \DeclareTextCommand{\textgtrapprox}{PU}{\9052\206}%* U+2A86
19279 % \ngtrapprox (txfonts/pxfonts)
19280 \DeclareTextCommand{\textngtrapprox}{PU}{\9052\206\83\070}%* U+2A86 U+0338
19281 % U+2A87 LESS-THAN AND SINGLE-LINE NOT EQUAL TO; \lneq (AmS)
19282 \DeclareTextCommand{\textlneq}{PU}{\9052\207}%* U+2A87
19283 % U+2A88 GREATER-THAN AND SINGLE-LINE NOT EQUAL TO;
19284 % \gneq (AmS)
19285 \DeclareTextCommand{\textgneq}{PU}{\9052\210}%* U+2A88
19286 % U+2A89 LESS-THAN AND NOT APPROXIMATE; \lnapprox (AmS)
19287 \DeclareTextCommand{\textlnapprox}{PU}{\9052\211}%* U+2A89
19288 % U+2A8A GREATER-THAN AND NOT APPROXIMATE; \gnapprox (AmS)
19289 \DeclareTextCommand{\textgnapprox}{PU}{\9052\212}%* U+2A8A
19290 % U+2A8B LESS-THAN ABOVE DOUBLE-LINE EQUAL ABOVE GREATER-
    THAN;
19291 % \lesseqqgtr (AmS)
19292 \DeclareTextCommand{\textlesseqqgtr}{PU}{\9052\213}%* U+2A8B
19293 % U+2A8C GREATER-THAN ABOVE DOUBLE-LINE EQUAL ABOVE LESS-
    THAN;
19294 % \gtreqqless (AmS)
19295 \DeclareTextCommand{\textgtreqqless}{PU}{\9052\214}%* U+2A8C
19296 % U+2A95 SLANTED EQUAL TO OR LESS-THAN; \eqslantless (AmS)
19297 \DeclareTextCommand{\texteqslantless}{PU}{\9052\225}%* U+2A95
19298 % U+2A96 SLANTED EQUAL TO OR GREATER-THAN; \eqslantgtr (AmS)
19299 \DeclareTextCommand{\texteqslantgtr}{PU}{\9052\226}%* U+2A96
19300 % U+2AA6 LESS-THAN CLOSED BY CURVE; \leftslice (stmaryrd)
19301 \DeclareTextCommand{\textleftslice}{PU}{\9052\246}%* U+2AA6
19302 % U+2AA7 GREATER-THAN CLOSED BY CURVE; \rightslice (stmaryrd)
19303 \DeclareTextCommand{\textright slice}{PU}{\9052\247}%* U+2AA7
19304 % U+2AAF PRECEDES ABOVE SINGLE-LINE EQUALS SIGN; \preceq (Mn-
    Symbol)
19305 \DeclareTextCommand{\textpreceq}{PU}{\9052\257}%* U+2AAF
19306 % \npreceq (txfonts/pxfonts)
19307 \DeclareTextCommand{\textnpreceq}{PU}{\9052\257\83\070}%* U+2AAF U+0338
19308 % U+2AB0 SUCCEEDS ABOVE SINGLE-LINE EQUALS SIGN; \succeq (Mn-
    Symbol)
19309 \DeclareTextCommand{\textsucceq}{PU}{\9052\260}%* U+2AB0
19310 % \nsucceq (txfonts/pxfonts)
19311 \DeclareTextCommand{\textnsucceq}{PU}{\9052\260\83\070}%* U+2AB0 U+0338
19312 % U+2AB1 PRECEDES ABOVE SINGLE-LINE NOT EQUAL TO; \prec-
    neq (mathabx)
19313 \DeclareTextCommand{\textprecneq}{PU}{\9052\261}%* U+2AB1
19314 % U+2AB2 SUCCEEDS ABOVE SINGLE-LINE NOT EQUAL TO; \succ-
    neq (mathabx)
19315 \DeclareTextCommand{\textsuccneq}{PU}{\9052\262}%* U+2AB2
19316 % U+2AB3 PRECEDES ABOVE EQUALS SIGN; \preceqq (txfonts/pxfonts)
19317 \DeclareTextCommand{\textpreceqq}{PU}{\9052\263}%* U+2AB3
19318 % \npreceqq (txfonts/pxfonts)
19319 \DeclareTextCommand{\textnpreceqq}{PU}{\9052\263\83\070}%* U+2AB3 U+0338
19320 % U+2AB4 SUCCEEDS ABOVE EQUALS SIGN; \succeqq (txfonts/pxfonts)
19321 \DeclareTextCommand{\textsucceqq}{PU}{\9052\264}%* U+2AB4

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19322 % \nsucceqq (txfonts/pxfonts)
19323 \DeclareTextCommand{\textnsucceqq}{PU}{\9052\264\83\070}%* U+2AB4 U+0338
19324 % U+2AB5 PRECEDES ABOVE NOT EQUAL TO; \precneqq (txfonts/pxfonts)
19325 \DeclareTextCommand{\textprecneqq}{PU}{\9052\265}%* U+2AB5
19326 % U+2AB6 SUCCEEDS ABOVE NOT EQUAL TO; \succneqq (txfonts/pxfonts)
19327 \DeclareTextCommand{\textsucneqq}{PU}{\9052\266}%* U+2AB6
19328 % U+2AB7 PRECEDES ABOVE ALMOST EQUAL TO; \precapprox (AmS)
19329 \DeclareTextCommand{\textprecapprox}{PU}{\9052\267}%* U+2AB7
19330 % \nprecapprox (txfonts/pxfonts)
19331 \DeclareTextCommand{\textnprecapprox}{PU}{\9052\267\83\070}%* U+2AB7 U+0338
19332 % U+2AB8 SUCCEEDS ABOVE ALMOST EQUAL TO; \succapprox (AmS)
19333 \DeclareTextCommand{\textsuccapprox}{PU}{\9052\270}%* U+2AB8
19334 % \nsuccapprox (txfonts/pxfonts)
19335 \DeclareTextCommand{\textnsuccapprox}{PU}{\9052\270\83\070}%* U+2AB8 U+0338
19336 % U+2AB9 PRECEDES ABOVE NOT ALMOST EQUAL TO; \precnap-
      prox (AmS)
19337 \DeclareTextCommand{\textprecnapprox}{PU}{\9052\271}%* U+2AB9
19338 % U+2ABA SUCCEEDS ABOVE NOT ALMOST EQUAL TO; \succnap-
      prox (AmS)
19339 \DeclareTextCommand{\textsuccnapprox}{PU}{\9052\272}%* U+2ABA
19340 % U+2AC5 SUBSET OF ABOVE EQUALS SIGN; \subseteqq (AmS)
19341 \DeclareTextCommand{\textsubseteqq}{PU}{\9052\305}%* U+2AC5
19342 % \nsubseteqq (txfonts/pxfonts, mathabx)
19343 \DeclareTextCommand{\textnsubseteqq}{PU}{\9052\305\83\070}%* U+2AC5 U+0338
19344 % U+2AC6 SUPERSET OF ABOVE EQUALS SIGN; \supseteqq (AmS)
19345 \DeclareTextCommand{\textsupseteqq}{PU}{\9052\306}%* U+2AC6
19346 % \nsupseteqq (mathabx)
19347 \DeclareTextCommand{\textnsupseteqq}{PU}{\9052\306\83\070}%* U+2AC6 U+0338
19348 % U+2AE3 DOUBLE VERTICAL BAR LEFT TURNSTILE
19349 \DeclareTextCommand{\textdashV}{PU}{\9052\343}%* U+2AE3
19350 %* \textdashV -> \leftVdash (MnSymbol)
19351 % \ndashV (mathabx)
19352 \DeclareTextCommand{\textndashV}{PU}{\9052\343\83\070}%* U+2AE3 U+0338
19353 %* \textndashV -> \nleftVdash (MnSymbol)
19354 % U+2AE4 VERTICAL BAR DOUBLE LEFT TURNSTILE; \Dashv (mathabx)
19355 \DeclareTextCommand{\textDashv}{PU}{\9052\344}%* U+2AE4
19356 %* \textDashv -> \leftmodels (MnSymbol)
19357 % \nDashv (mathabx)
19358 \DeclareTextCommand{\textnDashv}{PU}{\9052\344\83\070}%* U+2AE4 U+0338
19359 %* \textnDashv -> \nleftmodels (MnSymbol)
19360 % U+2AE5 DOUBLE VERTICAL BAR DOUBLE LEFT TURNSTILE;
19361 % \DashV (mathabx)
19362 \DeclareTextCommand{\textDashV}{PU}{\9052\345}%* U+2AE5
19363 %* \textDashV -> \leftModels (MnSymbol)
19364 % \nDashV (mathabx)
19365 \DeclareTextCommand{\textnDashV}{PU}{\9052\345\83\070}%* U+2AE5 U+0338
19366 %* \textnDashV -> \nleftModels (MnSymbol)
19367 % U+2AEA DOUBLE DOWN TACK; \downmodels (MnSymbol)
19368 \DeclareTextCommand{\textdownmodels}{PU}{\9052\352}%* U+2AEA
19369 % \ndownmodels (MnSymbol)
19370 \DeclareTextCommand{\textndownmodels}{PU}{\9052\352\83\070}%* U+2AEA U+0338
19371 % U+2AEB DOUBLE UP TACK; \upmodels (MnSymbol)
19372 \DeclareTextCommand{\textupmodels}{PU}{\9052\353}%* U+2AEB
19373 % \nupmodels (MnSymbol)

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19374 \DeclareTextCommand{\textnupmodels}{PU}{\9052\353\83\070}%\* U+2AEB U+0338  
 19375 % U+2AEF VERTICAL LINE WITH CIRCLE ABOVE; \upspoon (MnSymbol)  
 19376 \DeclareTextCommand{\textupspoon}{PU}{\9052\357}%\* U+2AEF  
 19377 % U+2AF4 TRIPLE VERTICAL BAR BINARY RELATION;  
 19378 % \interleave (stmaryrd)  
 19379 \DeclareTextCommand{\textinterleave}{PU}{\9052\364}%\* U+2AF4  
 19380 % U+2AFD DOUBLE SOLIDUS OPERATOR; \sslash (stmaryrd)  
 19381 \DeclareTextCommand{\textsslash}{PU}{\9052\375}%\* U+2AFD  
 19382 %\* \textsslash -> \varparallel (txfonts\pxfonts)

#### 47.2.36 Miscellaneous Symbols and Arrows: U+2B00 to U+2BFF

19383 % U+2B20 WHITE PENTAGON; \pentagon (wasysym)  
 19384 \DeclareTextCommand{\textpentagon}{PU}{\9053\040}%\* U+2B20  
 19385 % U+2B21 WHITE HEXAGON; \varhexagon (wasysym)  
 19386 \DeclareTextCommand{\textvarhexagon}{PU}{\9053\041}%\* U+2B21

#### 47.2.37 Latin Extended-C: U+2C60 to U+2C7F

19387 % U+2C7C LATIN SUBSCRIPT SMALL LETTER J  
 19388 \DeclareTextCommand{\textjinferior}{PU}{\9054\174}%\* U+2C7C

#### 47.2.38 Supplemental Punctuation: U+2E00 to U+2E7F

19389 % U+2E13 DOTTED OBELOS; \slashdiv (MnSymbol)  
 19390 \DeclareTextCommand{\textslashdiv}{PU}{\9056\023}%\* U+2E13  
 19391 % U+2E18 INVERTED INTERROBANG; \textinterrobangdown (textcomp)  
 19392 \DeclareTextCommand{\textinterrobangdown}{PU}{\9056\030}% U+2E18  
 19393 % U+2E2D FIVE DOT MARK; \fivedots (MnSymbol)  
 19394 \DeclareTextCommand{\textfivedots}{PU}{\9056\055}%\* U+2E2D

#### 47.2.39 Modifier Tone Letters: U+A700 to U+A71F

19395 % U+A71B MODIFIER LETTER RAISED UP ARROW; \textupstep (tipa)  
 19396 \DeclareTextCommand{\textupstep}{PU}{\9247\033}% U+A71B  
 19397 % U+A71C MODIFIER LETTER RAISED DOWN ARROW;  
 19398 % \textdownstep (tipa)  
 19399 \DeclareTextCommand{\textdownstep}{PU}{\9247\034}% U+A71C

#### 47.2.40 Latin Extended-D: U+A720 to U+A7FF

19400 % U+A727 LATIN SMALL LETTER HENG; \textheng (tipx)  
 19401 \DeclareTextCommand{\textPUheng}{PU}{\9247\047}% U+A727  
 19402 %\* \textPUheng -> \textheng (tipx)  
 19403 % U+A72C LATIN CAPITAL LETTER CUATRILLO; \textlhookfour (tipx)  
 19404 \DeclareTextCommand{\textPULhookfour}{PU}{\9247\054}% U+A72C  
 19405 %\* \textPULhookfour -> \textlhookfour (tipx)  
 19406 % U+A730 LATIN LETTER SMALL CAPITAL F; \textscf (tipx)  
 19407 \DeclareTextCommand{\textPUscf}{PU}{\9247\060}% U+A730  
 19408 %\* \textPUscf -> \textscf (tipx)  
 19409 % U+A735 LATIN SMALL LETTER AO; \textao lig (tipx)  
 19410 \DeclareTextCommand{\textPUaolig}{PU}{\9247\065}% U+A735  
 19411 %\* \textPUaolig -> \textao lig (tipx)  
 19412 % U+A74F LATIN SMALL LETTER OO; \oo (wsuipa)  
 19413 \DeclareTextCommand{\textoo}{PU}{\9247\117}%\* U+A74F  
 19414 % U+A788 MODIFIER LETTER LOW CIRCUMFLEX ACCENT  
 19415 \DeclareTextCommand{\textcircumlow}{PU}{\9247\210}% U+A788

#### 47.2.41 Alphabetic Presentation Forms: U+FB00 to U+FB4F

19416 % U+FB01 LATIN SMALL LIGATURE FI; fi  
 19417 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
 19418 % U+FB02 LATIN SMALL LIGATURE FL; fl  
 19419 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

#### 47.2.42 Musical Symbols: U+1D100 to U+1D1FF

19420 % U+1D13B MUSICAL SYMBOL WHOLE REST; \GaPa (harmony)  
 19421 \DeclareTextCommand{\textGaPa}{PU}{\9330\064\9335\073}%\* U+1D13B  
 19422 % U+1D13C MUSICAL SYMBOL HALF REST; \HaPa (harmony)  
 19423 \DeclareTextCommand{\textHaPa}{PU}{\9330\064\9335\074}%\* U+1D13C  
 19424 % U+1D13D MUSICAL SYMBOL QUARTER REST; \ViPa (harmony)  
 19425 \DeclareTextCommand{\textViPa}{PU}{\9330\064\9335\075}%\* U+1D13D  
 19426 % U+1D13E MUSICAL SYMBOL EIGHTH REST; \AcPa (harmony)  
 19427 \DeclareTextCommand{\textAcPa}{PU}{\9330\064\9335\076}%\* U+1D13E  
 19428 % U+1D13F MUSICAL SYMBOL SIXTEENTH REST; \SePa (harmony)  
 19429 \DeclareTextCommand{\textSePa}{PU}{\9330\064\9335\077}%\* U+1D13F  
 19430 % U+1D140 MUSICAL SYMBOL THIRTY-SECOND REST; \ZwPa (harmony)  
 19431 \DeclareTextCommand{\textZwPa}{PU}{\9330\064\9335\100}%\* U+1D140  
 19432 % U+1D15D MUSICAL SYMBOL WHOLE NOTE; \fullnote (wasysym)  
 19433 \DeclareTextCommand{\textfullnote}{PU}{\9330\064\9335\135}%\* U+1D15D  
 19434 %\* \textfullnote -> \Ganz (harmony)  
 19435 % U+1D15E MUSICAL SYMBOL HALF NOTE; \halfnote (wasysym)  
 19436 \DeclareTextCommand{\texthalfnote}{PU}{\9330\064\9335\136}%\* U+1D15E  
 19437 %\* \texthalfnote -> \Halb (harmony)  
 19438 % U+1D15F MUSICAL SYMBOL QUARTER NOTE; \Vier (harmony)  
 19439 \DeclareTextCommand{\textVier}{PU}{\9330\064\9335\137}%\* U+1D15F  
 19440 % U+1D160 MUSICAL SYMBOL EIGHTH NOTE; \Acht (harmony)  
 19441 \DeclareTextCommand{\textAcht}{PU}{\9330\064\9335\140}%\* U+1D160  
 19442 % U+1D161 MUSICAL SYMBOL SIXTEENTH NOTE; \Sech (harmony)  
 19443 \DeclareTextCommand{\textSech}{PU}{\9330\064\9335\141}%\* U+1D161  
 19444 % U+1D162 MUSICAL SYMBOL THIRTY-SECOND NOTE; \Zwdr (harmony)  
 19445 \DeclareTextCommand{\textZwdr}{PU}{\9330\064\9335\142}%\* U+1D162

#### 47.2.43 Miscellaneous Symbols and Pictographs: U+1F300 to U+1F5FF

19446 % U+1F30D EARTH GLOBE EUROPE-AFRICA; \Mundus (marvosym)  
 19447 \DeclareTextCommand{\textMundus}{PU}{\9330\074\9337\015}%\* U+1F30D  
 19448 % U+1F319 CRESCENT MOON; \Moon (marvosym)  
 19449 \DeclareTextCommand{\textMoon}{PU}{\9330\074\9337\031}%\* U+1F319  
 19450 % U+1F468 MAN; \ManFace (marvosym)  
 19451 \DeclareTextCommand{\textManFace}{PU}{\9330\075\9334\150}%\* U+1F468  
 19452 % U+1F469 WOMAN; \WomanFace (marvosym)  
 19453 \DeclareTextCommand{\textWomanFace}{PU}{\9330\075\9334\151}%\* U+1F469  
 19454 %\* \textWomanFace -> \Womanface (marvosym)  
 19455 % U+1F4E0 FAX MACHINE; \Fax (marvosym)  
 19456 \DeclareTextCommand{\textFax}{PU}{\9330\075\9334\340}%\* U+1F4E0  
 19457 %\* \textFax -> \Faxmachine (marvosym)  
 19458 % U+1F525 FIRE; \Fire (ifsym)  
 19459 \DeclareTextCommand{\textFire}{PU}{\9330\075\9335\045}%\* U+1F525

#### 47.2.44 Transport and Map Symbols: U+1F680 to U+1F6FF

19460 % U+1F6B2 BICYCLE; \Bicycle (marvosym)  
 19461 \DeclareTextCommand{\textBicycle}{PU}{\9330\075\9336\262}%\* U+1F6B2  
 19462 % U+1F6B9 MENS SYMBOL; \Gentsroom (marvosym)  
 19463 \DeclareTextCommand{\textGentsroom}{PU}{\9330\075\9336\271}%\* U+1F6B9

```

19464 % U+1F6BA WOMENS SYMBOL; \Ladiesroom (marvosym)
19465 \DeclareTextCommand{\textLadiesroom}{PU}{\9330\075\9336\272}%* U+1F6BA

```

#### 47.2.45 Miscellaneous

```

19466 \DeclareTextCommand{\SS}{PU}{SS}%
19467 % \textcopyleft (textcomp)
19468 \DeclareTextCommand{\textcopyleft}{PU}{\9041\204\9040\335}% U+2184 U+20DD
19469 % \ccnc (ccllicenses)
19470 \DeclareTextCommand{\textccnc}{PU}{\80\044\9040\340}%* U+0024 U+20E0
19471 % \ccnd (ccllicenses)
19472 \DeclareTextCommand{\textccnd}{PU}{=\9040\335}%* U+003D U+20DD
19473 % \ccsa (ccllicenses)
19474 \DeclareTextCommand{\textccsa}{PU}{\9047\362\9040\335}%* U+27F2 U+20DD
19475 % \Info (marvosym, china2e)
19476 \DeclareTextCommand{\textInfo}{PU}{\9330\065\9334\042\9040\336}%* U+1D422 U+20DE
19477 % \CESign (marvosym)
19478 \DeclareTextCommand{\textCESign}{PU}{\80\103\80\105}%* U+0043 U+0045
19479 %* \textCESign -> \CESign (marvosym)

```

#### 47.2.46 Aliases

Aliases (german.sty)

```

19480 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}%
19481 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}%
19482 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}%
19483 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}%
19484 \DeclareTextCommand{\textflqq}{PU}{\guillemetleft}%
19485 \DeclareTextCommand{\textfrqq}{PU}{\guillemetright}%
19486 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}%
19487 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}%

```

Aliases (math names)

```

19488 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}%*
19489 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}%*
19490 \DeclareTextCommand{\textdiv}{PU}{\textdivide}%*
19491 \DeclareTextCommand{\textpm}{PU}{\textplusminus}%*
19492 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}%*
19493 \puenc

```

### 47.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

19494 \*puvnenc
19495 \DeclareTextCommand{\abreve}{PU}{\81\003}% U+0103
19496 \DeclareTextCommand{\acircumflex}{PU}{\80\342}% U+00E2
19497 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}% U+00EA
19498 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}% U+00F4
19499 \DeclareTextCommand{\ohorn}{PU}{\81\241}% U+01A1
19500 \DeclareTextCommand{\uhorn}{PU}{\81\260}% U+01B0
19501 \DeclareTextCommand{\ABREVE}{PU}{\81\002}% U+0102
19502 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}% U+00C2
19503 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}% U+00CA
19504 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}% U+00D4

```

19505 \DeclareTextCommand{\OHORN}{PU}{\81\240}% U+01A0  
 19506 \DeclareTextCommand{\UHORN}{PU}{\81\257}% U+01AF  
 19507 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
 19508 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1  
 19509 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
 19510 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}% U+1EA3  
 19511 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
 19512 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}% U+1EAF  
 19513 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}% U+1EB7  
 19514 \DeclareTextCompositeCommand{\`}{PU}{\abreve}{\9036\261}% U+1EB1  
 19515 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}% U+1EB3  
 19516 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}% U+1EB5  
 19517 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}% U+1EA5  
 19518 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}% U+1EAD  
 19519 \DeclareTextCompositeCommand{\`}{PU}{\acircumflex}{\9036\247}% U+1EA7  
 19520 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}% U+1EA9  
 19521 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}% U+1EAB  
 19522 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
 19523 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9  
 19524 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
 19525 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}% U+1EBB  
 19526 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
 19527 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}% U+1EBF  
 19528 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}% U+1EC7  
 19529 \DeclareTextCompositeCommand{\`}{PU}{\ecircumflex}{\9036\301}% U+1EC1  
 19530 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}% U+1EC3  
 19531 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}% U+1EC5  
 19532 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
 19533 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB  
 19534 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
 19535 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}% U+1EC9  
 19536 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
 19537 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
 19538 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD  
 19539 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
 19540 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}% U+1ECF  
 19541 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
 19542 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}% U+1ED1  
 19543 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}% U+1ED9  
 19544 \DeclareTextCompositeCommand{\`}{PU}{\ocircumflex}{\9036\323}% U+1ED3  
 19545 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}% U+1ED5  
 19546 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}% U+1ED7  
 19547 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}% U+1EDB  
 19548 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}% U+1EE3  
 19549 \DeclareTextCompositeCommand{\`}{PU}{\ohorn}{\9036\335}% U+1EDD  
 19550 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}% U+1EDF  
 19551 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}% U+1EE1  
 19552 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
 19553 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
 19554 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
 19555 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}% U+1EE7  
 19556 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
 19557 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}% U+1EE9  
 19558 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}% U+1EF1

19559 \DeclareTextCompositeCommand{\`}{PU}{\uhorn}{\9036\353}% U+1EEB  
19560 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}% U+1EED  
19561 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}% U+1EEF  
19562 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
19563 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
19564 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
19565 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}% U+1EF7  
19566 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9  
19567 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
19568 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
19569 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
19570 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}% U+1EA2  
19571 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
19572 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}% U+1EAE  
19573 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}% U+1EB6  
19574 \DeclareTextCompositeCommand{\`}{PU}{\ABREVE}{\9036\260}% U+1EB0  
19575 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}% U+1EB2  
19576 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}% U+1EB4  
19577 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}% U+1EA4  
19578 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}% U+1EAC  
19579 \DeclareTextCompositeCommand{\`}{PU}{\ACIRCUMFLEX}{\9036\246}% U+1EA6  
19580 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}% U+1EA8  
19581 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}% U+1EAA  
19582 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
19583 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8  
19584 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
19585 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}% U+1EBA  
19586 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
19587 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}% U+1EBE  
19588 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}% U+1EC6  
19589 \DeclareTextCompositeCommand{\`}{PU}{\ECIRCUMFLEX}{\9036\300}% U+1EC0  
19590 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}% U+1EC2  
19591 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}% U+1EC4  
19592 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
19593 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA  
19594 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
19595 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}% U+1EC8  
19596 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
19597 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
19598 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC  
19599 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
19600 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}% U+1ECE  
19601 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
19602 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}% U+1ED0  
19603 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}% U+1ED8  
19604 \DeclareTextCompositeCommand{\`}{PU}{\OCIRCUMFLEX}{\9036\322}% U+1ED2  
19605 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}% U+1ED4  
19606 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}% U+1ED6  
19607 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}% U+1EDA  
19608 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}% U+1EE2  
19609 \DeclareTextCompositeCommand{\`}{PU}{\OHORN}{\9036\334}% U+1EDC  
19610 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}% U+1EDE  
19611 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}% U+1EE0  
19612 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA

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19613 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4
19614 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9
19615 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}% U+1EE6
19616 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168
19617 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}% U+1EE8
19618 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}% U+1EF0
19619 \DeclareTextCompositeCommand{\`}{PU}{\UHORN}{\9036\352}% U+1EEA
19620 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}% U+1EEC
19621 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}% U+1EEE
19622 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD
19623 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4
19624 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2
19625 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}% U+1EF6
19626 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8
19627 </puvnenc>

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## 47.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

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19628 <*puarenc>
19629 % U+0621;afii57409;ARABIC LETTER HAMZA
19630 \DeclareTextCommand{\hamza}{PU}{\86\041}% U+0621
19631 % U+0622;afii57410;ARABIC LETTER ALEF WITH MADDA ABOVE
19632 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% U+0622
19633 % U+0623;afii57411;ARABIC LETTER ALEF WITH HAMZA ABOVE
19634 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% U+0623
19635 % U+0624;afii57412;ARABIC LETTER WAW WITH HAMZA ABOVE
19636 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% U+0624
19637 % U+0625;afii57413;ARABIC LETTER ALEF WITH HAMZA BELOW
19638 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% U+0625
19639 % U+0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
19640 \DeclareTextCommand{\yahamza}{PU}{\86\046}% U+0626
19641 % U+0627;afii57415;ARABIC LETTER ALEF
19642 \DeclareTextCommand{\alef}{PU}{\86\047}% U+0627
19643 % U+0628;afii57416;ARABIC LETTER BEH
19644 \DeclareTextCommand{\baa}{PU}{\86\050}% U+0628
19645 % U+0629;afii57417;ARABIC LETTER TEH MARBUTA
19646 \DeclareTextCommand{\T}{PU}{\86\051}% U+0629
19647 % U+062A;afii57418;ARABIC LETTER TEH
19648 \DeclareTextCommand{\taa}{PU}{\86\052}% U+062A
19649 % U+062B;afii57419;ARABIC LETTER THEH
19650 \DeclareTextCommand{\thaa}{PU}{\86\053}% U+062B
19651 % U+062C;afii57420;ARABIC LETTER JEEM
19652 \DeclareTextCommand{\jeem}{PU}{\86\054}% U+062C
19653 % U+062D;afii57421;ARABIC LETTER HAH
19654 \DeclareTextCommand{\Haa}{PU}{\86\055}% U+062D
19655 % U+062E;afii57422;ARABIC LETTER KHAH
19656 \DeclareTextCommand{\kha}{PU}{\86\056}% U+062E
19657 % U+062F;afii57423;ARABIC LETTER DAL
19658 \DeclareTextCommand{\dal}{PU}{\86\057}% U+062F
19659 % U+0630;afii57424;ARABIC LETTER THAL
19660 \DeclareTextCommand{\dhal}{PU}{\86\060}% U+0630
19661 % U+0631;afii57425;ARABIC LETTER REH

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19662 \DeclareTextCommand{\ra}{PU}{\86\061}% U+0631  
 19663 % U+0632;afii57426;ARABIC LETTER ZAIN  
 19664 \DeclareTextCommand{\zay}{PU}{\86\062}% U+0632  
 19665 % U+0633;afii57427;ARABIC LETTER SEEN  
 19666 \DeclareTextCommand{\seen}{PU}{\86\063}% U+0633  
 19667 % U+0634;afii57428;ARABIC LETTER SHEEN  
 19668 \DeclareTextCommand{\sheen}{PU}{\86\064}% U+0634  
 19669 % U+0635;afii57429;ARABIC LETTER SAD  
 19670 \DeclareTextCommand{\sad}{PU}{\86\065}% U+0635  
 19671 % U+0636;afii57430;ARABIC LETTER DAD  
 19672 \DeclareTextCommand{\dad}{PU}{\86\066}% U+0636  
 19673 % U+0637;afii57431;ARABIC LETTER TAH  
 19674 \DeclareTextCommand{\Ta}{PU}{\86\067}% U+0637  
 19675 % U+0638;afii57432;ARABIC LETTER ZAH  
 19676 \DeclareTextCommand{\za}{PU}{\86\070}% U+0638  
 19677 % U+0639;afii57433;ARABIC LETTER AIN  
 19678 \DeclareTextCommand{\ayn}{PU}{\86\071}% U+0639  
 19679 % U+063A;afii57434;ARABIC LETTER GHAIN  
 19680 \DeclareTextCommand{\ghayn}{PU}{\86\072}% U+063A  
 19681 % U+0640;afii57440;ARABIC TATWEEL  
 19682 \DeclareTextCommand{\tatweel}{PU}{\86\100}% U+0640  
 19683 % U+0641;afii57441;ARABIC LETTER FEH  
 19684 \DeclareTextCommand{\fa}{PU}{\86\101}% U+0641  
 19685 % U+0642;afii57442;ARABIC LETTER QAF  
 19686 \DeclareTextCommand{\qaf}{PU}{\86\102}% U+0642  
 19687 % U+0643;afii57443;ARABIC LETTER KAF  
 19688 \DeclareTextCommand{\kaf}{PU}{\86\103}% U+0643  
 19689 % U+0644;afii57444;ARABIC LETTER LAM  
 19690 \DeclareTextCommand{\lam}{PU}{\86\104}% U+0644  
 19691 % U+0645;afii57445;ARABIC LETTER MEEM  
 19692 \DeclareTextCommand{\meem}{PU}{\86\105}% U+0645  
 19693 % U+0646;afii57446;ARABIC LETTER NOON  
 19694 \DeclareTextCommand{\nun}{PU}{\86\106}% U+0646  
 19695 % U+0647;afii57470;ARABIC LETTER HEH  
 19696 \DeclareTextCommand{\ha}{PU}{\86\107}% U+0647  
 19697 % U+0648;afii57448;ARABIC LETTER WAW  
 19698 \DeclareTextCommand{\waw}{PU}{\86\110}% U+0648  
 19699 % U+0649;afii57449;ARABIC LETTER ALEF MAKURA  
 19700 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% U+0649  
 19701 % U+064A;afii57450;ARABIC LETTER YEH  
 19702 \DeclareTextCommand{\ya}{PU}{\86\112}% U+064A  
  
 19703 % U+064B;afii57451;ARABIC FATHATAN  
 19704 \DeclareTextCommand{\nasb}{PU}{\86\113}% U+064B  
 19705 % U+064C;afii57452;ARABIC DAMMATAN  
 19706 \DeclareTextCommand{\raff}{PU}{\86\114}% U+064C  
 19707 % U+064D;afii57453;ARABIC KASRATAN  
 19708 \DeclareTextCommand{\jarr}{PU}{\86\115}% U+064D  
 19709 % U+064E;afii57454;ARABIC FATHA  
 19710 \DeclareTextCommand{\fatha}{PU}{\86\116}% U+064E  
 19711 % U+064F;afii57455;ARABIC DAMMA  
 19712 \DeclareTextCommand{\damma}{PU}{\86\117}% U+064F  
 19713 % U+0650;afii57456;ARABIC KASRA  
 19714 \DeclareTextCommand{\kasra}{PU}{\86\120}% U+0650  
 19715 % U+0651;afii57457;ARABIC SHADDA

19716 \DeclareTextCommand{\shadda}{PU}{\86\121}% U+0651  
 19717 % U+0652;afi57458;ARABIC SUKUN  
 19718 \DeclareTextCommand{\sukun}{PU}{\86\122}% U+0652  
 Farsi  
 19719 % U+067E ARABIC LETTER PEH; afi57506  
 19720 \DeclareTextCommand{\peh}{PU}{\86\176}% U+067E  
 19721 % U+0686 ARABIC LETTER TCHEH; afi57507  
 19722 \DeclareTextCommand{\tcheh}{PU}{\86\206}% U+0686  
 19723 % U+0698 ARABIC LETTER JEH; afi57508  
 19724 \DeclareTextCommand{\jeh}{PU}{\86\230}% U+0698  
 19725 % U+06A9 ARABIC LETTER KEHEH  
 19726 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% U+06A9  
 19727 % U+06AF ARABIC LETTER GAF; afi57509  
 19728 \DeclareTextCommand{\gaf}{PU}{\86\257}% U+06AF  
 19729 % U+06CC ARABIC LETTER FARSI YEH  
 19730 \DeclareTextCommand{\farsiya}{PU}{\86\314}% U+06CC  
 19731 % U+200C ZERO WIDTH NON-JOINER; afi61664  
 19732 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% U+200C  
 19733 % U+200D ZERO WIDTH JOINER; afi301  
 19734 \DeclareTextCommand{\textEncodingNoboundary}{PU}{\9040\015}% U+200D  
 19735 </puarenc>  
 19736 <\*psdextra>  
 19737 \Hy@VersionCheck{psdextra.def}  
 19738 \DeclareTextCommand{\textGamma}{PU}{\83\223}%\* U+0393  
 19739 \DeclareTextCommand{\textDelta}{PU}{\83\224}%\* U+0394  
 19740 \DeclareTextCommand{\textTheta}{PU}{\83\230}%\* U+0398  
 19741 \DeclareTextCommand{\textLambda}{PU}{\83\233}%\* U+039B  
 19742 \DeclareTextCommand{\textXi}{PU}{\83\236}%\* U+039E  
 19743 \DeclareTextCommand{\textPi}{PU}{\83\240}%\* U+03A0  
 19744 \DeclareTextCommand{\textSigma}{PU}{\83\243}%\* U+03A3  
 19745 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}%\* U+03A5  
 19746 \DeclareTextCommand{\textPhi}{PU}{\83\246}%\* U+03A6  
 19747 \DeclareTextCommand{\textChi}{PU}{\83\247}%\* U+03A7  
 19748 \DeclareTextCommand{\textPsi}{PU}{\83\250}%\* U+03A8  
 19749 \DeclareTextCommand{\textOmega}{PU}{\83\251}%\* U+03A9  
 19750 \DeclareTextCommand{\textalpha}{PU}{\83\261}%\* U+03B1  
 19751 \DeclareTextCommand{\textbeta}{PU}{\83\262}%\* U+03B2  
 19752 \DeclareTextCommand{\textgamma}{PU}{\83\263}%\* U+03B3  
 19753 \DeclareTextCommand{\textdelta}{PU}{\83\264}%\* U+03B4  
 19754 \DeclareTextCommand{\textepsilon}{PU}{\83\265}%\* U+03B5  
 19755 \DeclareTextCommand{\textzeta}{PU}{\83\266}%\* U+03B6  
 19756 \DeclareTextCommand{\texteta}{PU}{\83\267}%\* U+03B7  
 19757 \DeclareTextCommand{\texttheta}{PU}{\83\270}%\* U+03B8  
 19758 \DeclareTextCommand{\textiota}{PU}{\83\271}%\* U+03B9  
 19759 \DeclareTextCommand{\textkappa}{PU}{\83\272}%\* U+03BA  
 19760 \DeclareTextCommand{\textlambda}{PU}{\83\273}%\* U+03BB  
 19761 \DeclareTextCommand{\textmugreek}{PU}{\83\274}%\* U+03BC  
 19762 \DeclareTextCommand{\textnu}{PU}{\83\275}%\* U+03BD  
 19763 \DeclareTextCommand{\textxi}{PU}{\83\276}%\* U+03BE  
 19764 \DeclareTextCommand{\textpi}{PU}{\83\300}%\* U+03C0  
 19765 \DeclareTextCommand{\textrho}{PU}{\83\301}%\* U+03C1  
 19766 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}%\* U+03C2

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19767 \DeclareTextCommand{\textsigma}{PU}{\83\303}%* U+03C3
19768 \DeclareTextCommand{\texttau}{PU}{\83\304}%* U+03C4
19769 \DeclareTextCommand{\textupsilon}{PU}{\83\305}%* U+03C5
19770 \DeclareTextCommand{\textphi}{PU}{\83\306}%* U+03C6
19771 \DeclareTextCommand{\textchi}{PU}{\83\307}%* U+03C7
19772 \DeclareTextCommand{\textpsi}{PU}{\83\310}%* U+03C8
19773 \DeclareTextCommand{\textomega}{PU}{\83\311}%* U+03C9
19774 \newcommand*{\psdmapshortnames}{%
19775   \let\MVPlus\textMVPlus
19776   \let\MVComma\textMVComma
19777   \let\MVMinus\textMVMinus
19778   \let\MVPeriod\textMVPeriod
19779   \let\MVDivision\textMVDivision
19780   \let\MVZero\textMVZero
19781   \let\MVOne\textMVOne
19782   \let\MVTwo\textMVTwo
19783   \let\MVThree\textMVThree
19784   \let\MVFour\textMVFour
19785   \let\MVFive\textMVFive
19786   \let\MVSix\textMVSix
19787   \let\MVSeven\textMVSeven
19788   \let\MVEight\textMVEight
19789   \let\MVNine\textMVNine
19790   \let\MVAt\textMVAt
19791   \let\copyright\textcopyright
19792   \let\twosuperior\texttwosuperior
19793   \let\threesuperior\textthreesuperior
19794   \let\onesuperior\textonesuperior
19795   \let\Thorn\textThorn
19796   \let\thorn\textthorn
19797   \let\hbar\texthbar
19798   \let\hausA\texthausA
19799   \let\hausD\texthausD
19800   \let\hausK\texthausK
19801   \let\barl\textbarl
19802   \let\inve\textinve
19803   \let\slashc\textslashc
19804   \let\scripta\textscripta
19805   \let\openo\textopeno
19806   \let\rtaild\textrtaild
19807   \let\reve\textreve
19808   \let\schwa\textschwa
19809   \let\niepsilon\textniepsilon
19810   \let\repsilon\textrepsilon
19811   \let\rhookrepsilon\texthookrepsilon
19812   \let\scriptg\textscriptg
19813   \let\scg\textscg
19814   \let\ipagamma\textipagamma
19815   \let\babygamma\textbabygamma
19816   \let\bari\textbari
19817   \let\niiota\textniiota
19818   \let\sci\textsci
19819   \let\scn\textscn
19820   \let\niphi\textniphi

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19821 \let\longlegr\textlonglegr  
 19822 \let\scr\textscr  
 19823 \let\invscr\textinvscr  
 19824 \let\esh\textesh  
 19825 \let\baru\textbaru  
 19826 \let\niupsilon\textniupsilon  
 19827 \let\scriptv\textscriptv  
 19828 \let\turnv\textturnv  
 19829 \let\turnw\textturnw  
 19830 \let\turny\textturny  
 19831 \let\scy\textscy  
 19832 \let\yogh\textyogh  
 19833 \let\glotstop\textglotstop  
 19834 \let\revglotstop\textrevglotstop  
 19835 \let\invglotstop\textinvglotstop  
 19836 \let\Gamma\textGamma  
 19837 \let\Delta\textDelta  
 19838 \let\Theta\textTheta  
 19839 \let\Lambda\textLambda  
 19840 \let\Xi\textXi  
 19841 \let\Pi\textPi  
 19842 \let\Sigma\textSigma  
 19843 \let\Upsilon\textUpsilon  
 19844 \let\Phi\textPhi  
 19845 \let\Psi\textPsi  
 19846 \let\Omega\textOmega  
 19847 \let\alpha\textalpha  
 19848 \let\beta\textbeta  
 19849 \let\gamma\textgamma  
 19850 \let\delta\textdelta  
 19851 \let\epsilon\textepsilon  
 19852 \let\zeta\textzeta  
 19853 \let\eta\texteta  
 19854 \let\theta\texttheta  
 19855 \let\iota\textiota  
 19856 \let\kappa\textkappa  
 19857 \let\lambda\textlambda  
 19858 \let\mu\textmu  
 19859 \let\mugreek\textmugreek  
 19860 \let\nu\textnu  
 19861 \let\xi\textxi  
 19862 \let\pi\textpi  
 19863 \let\rho\textrho  
 19864 \let\varsigma\textvarsigma  
 19865 \let\sigma\textsigma  
 19866 \let\tau\texttau  
 19867 \let\upsilon\textupsilon  
 19868 \let\phi\textphi  
 19869 \let\chi\textchi  
 19870 \let\psi\textpsi  
 19871 \let\omega\textomega  
 19872 \let\scd\textscd  
 19873 \let\scu\textscu  
 19874 \let\iinferior\textiinferior

19875 \let\rinferior\textrinferior  
 19876 \let\uinferior\textuinferior  
 19877 \let\vinferior\textvinferior  
 19878 \let\betainferior\textbetainferior  
 19879 \let\gammainferior\textgammainferior  
 19880 \let\rhoinferior\textrhoinferior  
 19881 \let\phiinferior\textphiinferior  
 19882 \let\chiinferior\textchiinferior  
 19883 \let\barsci\textbarsci  
 19884 \let\barp\textbarp  
 19885 \let\barscu\textbarscu  
 19886 \let\htrtaild\texthtrtaild  
 19887 \let\dagger\textdagger  
 19888 \let\bullet\textbullet  
 19889 \let\hdotfor\texthdotfor  
 19890 \let\prime\textprime  
 19891 \let\second\textsecond  
 19892 \let\third\textthird  
 19893 \let\backprime\textbackprime  
 19894 \let\lefttherefore\textlefttherefore  
 19895 \let\fourth\textfourth  
 19896 \let\diamonddots\textdiamonddots  
 19897 \let\zerosuperior\textzerosuperior  
 19898 \let\isuperior\textisuperior  
 19899 \let\foursuperior\textfoursuperior  
 19900 \let\fivesuperior\textfivesuperior  
 19901 \let\sixsuperior\textsixsuperior  
 19902 \let\sevensuperior\textsevensuperior  
 19903 \let\eightsuperior\texteightsuperior  
 19904 \let\ninesuperior\textninesuperior  
 19905 \let\plussuperior\textplussuperior  
 19906 \let\minussuperior\textminussuperior  
 19907 \let>equalsuperior\textequalsuperior  
 19908 \let\parenleftsuperior\textparenleftsuperior  
 19909 \let\parenrightsuperior\textparenrightsuperior  
 19910 \let\nsuperior\textnsuperior  
 19911 \let\zeroinferior\textzeroinferior  
 19912 \let\oneinferior\textoneinferior  
 19913 \let\twoinferior\texttwoinferior  
 19914 \let\threeinferior\textthreeinferior  
 19915 \let\fourinferior\textfourinferior  
 19916 \let\fiveinferior\textfiveinferior  
 19917 \let\sixinferior\textsixinferior  
 19918 \let\seveninferior\textseveninferior  
 19919 \let\eightinferior\texteightinferior  
 19920 \let\nineinferior\textnineinferior  
 19921 \let\plusinferior\textplusinferior  
 19922 \let\minusinferior\textminusinferior  
 19923 \let>equalsinferior\textequalsinferior  
 19924 \let\parenleftinferior\textparenleftinferior  
 19925 \let\parenrightinferior\textparenrightinferior  
 19926 \let\ainferior\textainferior  
 19927 \let\einferior\texteinferior  
 19928 \let\oinferior\textoinferior

19929 \let\xinferior\textxinferior  
 19930 \let\schwainferior\textschwainferior  
 19931 \let\hinferior\texthinferior  
 19932 \let\kinferior\textkinferior  
 19933 \let\linferior\textlinferior  
 19934 \let\minferior\textminferior  
 19935 \let\ninferior\textninferior  
 19936 \let\pinferior\textpinferior  
 19937 \let\sinferior\textsinferior  
 19938 \let\tinferior\texttinferior  
 19939 \let\Deleatur\textDeleatur  
 19940 \let\hslash\texthslash  
 19941 \let\Im\textIm  
 19942 \let\ell\textell  
 19943 \let\wp\textwp  
 19944 \let\Re\textRe  
 19945 \let\mho\textmho  
 19946 \let\riota\textriota  
 19947 \let\Finv\textFinv  
 19948 \let\aleph\textaleph  
 19949 \let\beth\textbeth  
 19950 \let\gimel\textgimel  
 19951 \let\daleth\textdaleth  
 19952 \let\xfax\textfax  
 19953 \let\Game\textGame  
 19954 \let\leftarrow\textleftarrow  
 19955 \let\uparrow\textuparrow  
 19956 \let\rightarrow\textrightarrow  
 19957 \let\downarrow\textdownarrow  
 19958 \let\leftrightarrow\textleftrightarrow  
 19959 \let\updownarrow\textupdownarrow  
 19960 \let\rightarrowtail\textrightarrowtail  
 19961 \let\nearrow\textnearrow  
 19962 \let\searrow\textsearrow  
 19963 \let\swarrow\textswarrow  
 19964 \let\rightarrowtail\textrightarrowtail  
 19965 \let\rightarrowtail\textrightarrowtail  
 19966 \let\twoheadleftarrow\texttwoheadleftarrow  
 19967 \let\ntwoheadleftarrow\textntwoheadleftarrow  
 19968 \let\twoheaduparrow\texttwoheaduparrow  
 19969 \let\twoheadrightarrow\texttwoheadrightarrow  
 19970 \let\ntwoheadrightarrow\textntwoheadrightarrow  
 19971 \let\twoheaddownarrow\texttwoheaddownarrow  
 19972 \let\leftarrowtail\textleftarrowtail  
 19973 \let\rightarrowtail\textrightarrowtail  
 19974 \let\mapsto\textmapsto  
 19975 \let\hookrightarrow\texthookrightarrow  
 19976 \let\hookrightarrow\texthookrightarrow  
 19977 \let\looparrowleft\textlooparrowleft  
 19978 \let\looparrowright\textlooparrowright  
 19979 \let\rightarrowtail\textrightarrowtail  
 19980 \let\lightning\textlightning  
 19981 \let\dlsh\textdlsh  
 19982 \let\curvearrowleft\textcurvearrowleft

19983  $\backslash\text{let}\backslash\text{curvearrowright}\backslash\text{textcurvearrowright}$   
 19984  $\backslash\text{let}\backslash\text{leftharpoonup}\backslash\text{textleftharpoonup}$   
 19985  $\backslash\text{let}\backslash\text{leftharpoondown}\backslash\text{textleftharpoondown}$   
 19986  $\backslash\text{let}\backslash\text{upharpoonright}\backslash\text{textupharpoonright}$   
 19987  $\backslash\text{let}\backslash\text{upharpoonleft}\backslash\text{textupharpoonleft}$   
 19988  $\backslash\text{let}\backslash\text{rightharpoonup}\backslash\text{textrightharpoonup}$   
 19989  $\backslash\text{let}\backslash\text{rightharpoondown}\backslash\text{textrightharpoondown}$   
 19990  $\backslash\text{let}\backslash\text{downharpoonright}\backslash\text{textdownharpoonright}$   
 19991  $\backslash\text{let}\backslash\text{downharpoonleft}\backslash\text{textdownharpoonleft}$   
 19992  $\backslash\text{let}\backslash\text{rightleftarrows}\backslash\text{textrightleftarrows}$   
 19993  $\backslash\text{let}\backslash\text{updownarrows}\backslash\text{textupdownarrows}$   
 19994  $\backslash\text{let}\backslash\text{leftrightharpoons}\backslash\text{textleftrightharpoons}$   
 19995  $\backslash\text{let}\backslash\text{leftleftarrows}\backslash\text{textleftleftarrows}$   
 19996  $\backslash\text{let}\backslash\text{upuparrows}\backslash\text{textupuparrows}$   
 19997  $\backslash\text{let}\backslash\text{rightrightarrows}\backslash\text{textrightrightarrows}$   
 19998  $\backslash\text{let}\backslash\text{downdownarrows}\backslash\text{textdowndownarrows}$   
 19999  $\backslash\text{let}\backslash\text{leftrightharpoons}\backslash\text{textleftrightharpoons}$   
 20000  $\backslash\text{let}\backslash\text{rightleftharpoons}\backslash\text{textrightleftharpoons}$   
 20001  $\backslash\text{let}\backslash\text{nLeftarrow}\backslash\text{textnLeftarrow}$   
 20002  $\backslash\text{let}\backslash\text{nLeftrightarrow}\backslash\text{textnLeftrightarrow}$   
 20003  $\backslash\text{let}\backslash\text{nRrightarrow}\backslash\text{textnRrightarrow}$   
 20004  $\backslash\text{let}\backslash\text{Leftarrow}\backslash\text{textLeftarrow}$   
 20005  $\backslash\text{let}\backslash\text{Uparrow}\backslash\text{textUparrow}$   
 20006  $\backslash\text{let}\backslash\text{Rrightarrow}\backslash\text{textRrightarrow}$   
 20007  $\backslash\text{let}\backslash\text{Downarrow}\backslash\text{textDownarrow}$   
 20008  $\backslash\text{let}\backslash\text{Leftrightarrow}\backslash\text{textLeftrightarrow}$   
 20009  $\backslash\text{let}\backslash\text{Updownarrow}\backslash\text{textUpdownarrow}$   
 20010  $\backslash\text{let}\backslash\text{Nwarrow}\backslash\text{textNwarrow}$   
 20011  $\backslash\text{let}\backslash\text{Nearrow}\backslash\text{textNearrow}$   
 20012  $\backslash\text{let}\backslash\text{Searrow}\backslash\text{textSearrow}$   
 20013  $\backslash\text{let}\backslash\text{Swarrow}\backslash\text{textSwarrow}$   
 20014  $\backslash\text{let}\backslash\text{Lleftarrow}\backslash\text{textLleftarrow}$   
 20015  $\backslash\text{let}\backslash\text{Rrightarrow}\backslash\text{textRrightarrow}$   
 20016  $\backslash\text{let}\backslash\text{leftsquigarrow}\backslash\text{textleftsquigarrow}$   
 20017  $\backslash\text{let}\backslash\text{rightsquigarrow}\backslash\text{textrightsquigarrow}$   
 20018  $\backslash\text{let}\backslash\text{dashleftarrow}\backslash\text{texdashleftarrow}$   
 20019  $\backslash\text{let}\backslash\text{dasheduparrow}\backslash\text{textdasheduparrow}$   
 20020  $\backslash\text{let}\backslash\text{dashrightarrow}\backslash\text{texdashrightarrow}$   
 20021  $\backslash\text{let}\backslash\text{dasheddownarrow}\backslash\text{textdasheddownarrow}$   
 20022  $\backslash\text{let}\backslash\text{pointer}\backslash\text{textpointer}$   
 20023  $\backslash\text{let}\backslash\text{downuparrows}\backslash\text{textdownuparrows}$   
 20024  $\backslash\text{let}\backslash\text{leftarrowtriangle}\backslash\text{textleftarrowtriangle}$   
 20025  $\backslash\text{let}\backslash\text{rightarrowtriangle}\backslash\text{textrightarrowtriangle}$   
 20026  $\backslash\text{let}\backslash\text{leftrightharpoonuptriangle}\backslash\text{textleftrightharpoonuptriangle}$   
 20027  $\backslash\text{let}\backslash\text{forall}\backslash\text{textforall}$   
 20028  $\backslash\text{let}\backslash\text{complement}\backslash\text{textcomplement}$   
 20029  $\backslash\text{let}\backslash\text{partial}\backslash\text{textpartial}$   
 20030  $\backslash\text{let}\backslash\text{exists}\backslash\text{textexists}$   
 20031  $\backslash\text{let}\backslash\text{nexists}\backslash\text{textnexists}$   
 20032  $\backslash\text{let}\backslash\text{emptyset}\backslash\text{textemptyset}$   
 20033  $\backslash\text{let}\backslash\text{triangle}\backslash\text{texttriangle}$   
 20034  $\backslash\text{let}\backslash\text{nabla}\backslash\text{textnabla}$   
 20035  $\backslash\text{let}\backslash\text{in}\backslash\text{textinsymbol}$   
 20036  $\backslash\text{let}\backslash\text{notin}\backslash\text{textnotin}$

20037 \let\smallin\textsmallin  
 20038 \let\ni\textni  
 20039 \let\notowner\textnotowner  
 20040 \let\smallowns\textsmallowns  
 20041 \let\prod\textprod  
 20042 \let\amalg\textamalg  
 20043 \let\sum\textsum  
 20044 \let\mp\textmp  
 20045 \let\dotplus\textdotplus  
 20046 \let\Divides\textDivides  
 20047 \let\DividesNot\textDividesNot  
 20048 \let\setminus\textsetminus  
 20049 \let\ast\textast  
 20050 \let\circ\textcirc  
 20051 \let\surd\textsurd  
 20052 \let\propto\textpropto  
 20053 \let\infty\textinfty  
 20054 \let\angle\textangle  
 20055 \let\measuredangle\textmeasuredangle  
 20056 \let\sphericalangle\textsphericalangle  
 20057 \let\mid\textmid  
 20058 \let\nmid\textnmid  
 20059 \let\parallel\textparallel  
 20060 \let\nparallel\textnparallel  
 20061 \let\wedge\textwedge  
 20062 \let\owedge\textowedge  
 20063 \let\vee\textvee  
 20064 \let\ovee\textovee  
 20065 \let\cap\textcap  
 20066 \let\cup\textcup  
 20067 \let\int\textint  
 20068 \let\iint\textiint  
 20069 \let\iiint\textiiint  
 20070 \let\oint\textoint  
 20071 \let\oiint\textoiint  
 20072 \let\ointclockwise\textointclockwise  
 20073 \let\ointctrlockwise\textointctrlockwise  
 20074 \let\therefore\texttherefore  
 20075 \let\because\textbecause  
 20076 \let\vdots\textvdots  
 20077 \let\squaredots\textsquaredots  
 20078 \let\dotminus\textdotminus  
 20079 \let\eqcolon\texteqcolon  
 20080 \let\sim\textsim  
 20081 \let\backsim\textbacksim  
 20082 \let\nbacksim\textnbacksim  
 20083 \let\wr\textwr  
 20084 \let\sim\textsim  
 20085 \let\eqsim\texteqsim  
 20086 \let\neqsim\textneqsim  
 20087 \let\simeq\textsimeq  
 20088 \let\nsimeq\textnsimeq  
 20089 \let\cong\textcong  
 20090 \let\ncong\textncong

20091 \let\approx\textapprox  
 20092 \let\napprox\textnapprox  
 20093 \let\approxeq\textapproxeq  
 20094 \let\napproxeq\textnapproxeq  
 20095 \let\triplesim\texttriplesim  
 20096 \let\ntriplesim\textntriplesim  
 20097 \let\backcong\textbackcong  
 20098 \let\nbackcong\textnbackcong  
 20099 \let\asymp\textasymp  
 20100 \let\nasymp\textnasymp  
 20101 \let\Bumpeq\textBumpeq  
 20102 \let\NBumpeq\textNBumpeq  
 20103 \let\bumpeq\textbumpeq  
 20104 \let\Nbumpeq\textNbumpeq  
 20105 \let\doteq\textdoteq  
 20106 \let\ndoteq\textndoteq  
 20107 \let\doteqdot\textdoteqdot  
 20108 \let\NDoteq\textNDoteq  
 20109 \let\fallingdoteq\textfallingdoteq  
 20110 \let\Nfallingdoteq\textNfallingdoteq  
 20111 \let\risingdoteq\textrisingdoteq  
 20112 \let\Nrisingdoteq\textNrisingdoteq  
 20113 \let\colonequals\textcolonequals  
 20114 \let\equalscolon\textequalscolon  
 20115 \let\eqcirc\texteqcirc  
 20116 \let\neqcirc\textneqcirc  
 20117 \let\circeq\textcirceq  
 20118 \let\ncirceq\textncirceq  
 20119 \let\hateq\texthateq  
 20120 \let\nhateq\textnhateq  
 20121 \let\triangleeq\texttriangleeq  
 20122 \let\neq\textneq  
 20123 \let\ne\textne  
 20124 \let\equiv\textequiv  
 20125 \let\nequiv\textnequiv  
 20126 \let\leq\textleq  
 20127 \let\le\textle  
 20128 \let\geq\textgeq  
 20129 \let\ge\textge  
 20130 \let\leqq\textleqq  
 20131 \let\Nleqq\textNleqq  
 20132 \let\geqq\textgeqq  
 20133 \let\Ngeqq\textNgeqq  
 20134 \let\lneqq\textlneqq  
 20135 \let\gneqq\textgneqq  
 20136 \let\ll\textll  
 20137 \let\nll\textnll  
 20138 \let\gg\textgg  
 20139 \let\ngg\textngg  
 20140 \let\between\textbetween  
 20141 \let\nless\textnless  
 20142 \let\ngtr\textngtr  
 20143 \let\lneq\textlneq  
 20144 \let\ngeq\textngeq

20145 \let\lessim\textlessim  
 20146 \let\gtrsim\textgtrsim  
 20147 \let\nlessim\textnlessim  
 20148 \let\ngtrsim\textngtrsim  
 20149 \let\lessgtr\textlessgtr  
 20150 \let\gtrless\textgtrless  
 20151 \let\ngtrless\textngtrless  
 20152 \let\nlessgtr\textnlessgtr  
 20153 \let\prec\textprec  
 20154 \let\succ\textsucc  
 20155 \let\preccurlyeq\textpreccurlyeq  
 20156 \let\succcurlyeq\textsucccurlyeq  
 20157 \let\precsim\textprecsim  
 20158 \let\nprecsim\textnprecsim  
 20159 \let\succsim\textsuccsim  
 20160 \let\nsuccsim\textnsuccsim  
 20161 \let\nprec\textnprec  
 20162 \let\nsucc\textnsucc  
 20163 \let\subset\textsubset  
 20164 \let\supset\textsupset  
 20165 \let\nsubset\textnssubset  
 20166 \let\nsupset\textnsupset  
 20167 \let\subseteq\textsubseteq  
 20168 \let\supseteq\textsupseteq  
 20169 \let\nsubseteq\textnssubseteq  
 20170 \let\nsupseteq\textnsupseteq  
 20171 \let\subsetneq\textsubsetneq  
 20172 \let\supsetneq\textsupsetneq  
 20173 \let\cupdot\textcupdot  
 20174 \let\cupplus\textcupplus  
 20175 \let\sqsubset\textsqsubset  
 20176 \let\nsqsubset\textnsqsubset  
 20177 \let\sqsupset\textsqsupset  
 20178 \let\nsqsupset\textnsqsupset  
 20179 \let\sqsubseteq\textsqsubseteq  
 20180 \let\nsqsubseteq\textnsqsubseteq  
 20181 \let\sqsupseteq\textsqsupseteq  
 20182 \let\nsqsupseteq\textnsqsupseteq  
 20183 \let\sqcap\textsqcap  
 20184 \let\sqcup\textsqcup  
 20185 \let\oplus\textoplus  
 20186 \let\ominus\textominus  
 20187 \let\otimes\textotimes  
 20188 \let\oslash\textoslash  
 20189 \let\odot\textodot  
 20190 \let\circledcirc\textcircledcirc  
 20191 \let\circledast\textcircledast  
 20192 \let\circleddash\textcircleddash  
 20193 \let\boxplus\textboxplus  
 20194 \let\boxminus\textboxminus  
 20195 \let\boxtimes\textboxtimes  
 20196 \let\boxdot\textboxdot  
 20197 \let\vdash\textvdash  
 20198 \let\dashv\textdashv

20199  $\backslash\mathrm{let}\backslash\mathrm{ndashv}\backslash\mathrm{textndashv}$   
 20200  $\backslash\mathrm{let}\backslash\mathrm{top}\backslash\mathrm{texttop}$   
 20201  $\backslash\mathrm{let}\backslash\mathrm{ndownvdash}\backslash\mathrm{textndownvdash}$   
 20202  $\backslash\mathrm{let}\backslash\mathrm{bot}\backslash\mathrm{textbot}$   
 20203  $\backslash\mathrm{let}\backslash\mathrm{nupvdash}\backslash\mathrm{textnupvdash}$   
 20204  $\backslash\mathrm{let}\backslash\mathrm{vDash}\backslash\mathrm{textvDash}$   
 20205  $\backslash\mathrm{let}\backslash\mathrm{Vdash}\backslash\mathrm{textVdash}$   
 20206  $\backslash\mathrm{let}\backslash\mathrm{Vvdash}\backslash\mathrm{textVvdash}$   
 20207  $\backslash\mathrm{let}\backslash\mathrm{nVdash}\backslash\mathrm{textnVdash}$   
 20208  $\backslash\mathrm{let}\backslash\mathrm{VDash}\backslash\mathrm{textVDash}$   
 20209  $\backslash\mathrm{let}\backslash\mathrm{nvDash}\backslash\mathrm{textnvDash}$   
 20210  $\backslash\mathrm{let}\backslash\mathrm{nvDash}\backslash\mathrm{textnvDash}$   
 20211  $\backslash\mathrm{let}\backslash\mathrm{nVdash}\backslash\mathrm{textnVdash}$   
 20212  $\backslash\mathrm{let}\backslash\mathrm{nVDash}\backslash\mathrm{textnVDash}$   
 20213  $\backslash\mathrm{let}\backslash\mathrm{lhs}\backslash\mathrm{textrhs}$   
 20214  $\backslash\mathrm{let}\backslash\mathrm{rhd}\backslash\mathrm{textrhd}$   
 20215  $\backslash\mathrm{let}\backslash\mathrm{unlhd}\backslash\mathrm{textunlhd}$   
 20216  $\backslash\mathrm{let}\backslash\mathrm{unrhd}\backslash\mathrm{textunrhd}$   
 20217  $\backslash\mathrm{let}\backslash\mathrm{multimapdotbothA}\backslash\mathrm{textmultimapdotbothA}$   
 20218  $\backslash\mathrm{let}\backslash\mathrm{multimapdotbothB}\backslash\mathrm{textmultimapdotbothB}$   
 20219  $\backslash\mathrm{let}\backslash\mathrm{multimap}\backslash\mathrm{textmultimap}$   
 20220  $\backslash\mathrm{let}\backslash\mathrm{veebar}\backslash\mathrm{textveebar}$   
 20221  $\backslash\mathrm{let}\backslash\mathrm{barwedge}\backslash\mathrm{textbarwedge}$   
 20222  $\backslash\mathrm{let}\backslash\mathrm{star}\backslash\mathrm{textstar}$   
 20223  $\backslash\mathrm{let}\backslash\mathrm{divideontimes}\backslash\mathrm{textdivideontimes}$   
 20224  $\backslash\mathrm{let}\backslash\mathrm{bowtie}\backslash\mathrm{textbowtie}$   
 20225  $\backslash\mathrm{let}\backslash\mathrm{ltimes}\backslash\mathrm{texltimes}$   
 20226  $\backslash\mathrm{let}\backslash\mathrm{rtimes}\backslash\mathrm{textrtimes}$   
 20227  $\backslash\mathrm{let}\backslash\mathrm{leftthreetimes}\backslash\mathrm{textleftthreetimes}$   
 20228  $\backslash\mathrm{let}\backslash\mathrm{rightthreetimes}\backslash\mathrm{textrightthreetimes}$   
 20229  $\backslash\mathrm{let}\backslash\mathrm{backsimeq}\backslash\mathrm{textbacksimeq}$   
 20230  $\backslash\mathrm{let}\backslash\mathrm{nbacksimeq}\backslash\mathrm{textnbacksimeq}$   
 20231  $\backslash\mathrm{let}\backslash\mathrm{curlyvee}\backslash\mathrm{textcurlyvee}$   
 20232  $\backslash\mathrm{let}\backslash\mathrm{curlywedge}\backslash\mathrm{textcurlywedge}$   
 20233  $\backslash\mathrm{let}\backslash\mathrm{Subset}\backslash\mathrm{textSubset}$   
 20234  $\backslash\mathrm{let}\backslash\mathrm{nSubset}\backslash\mathrm{textnSubset}$   
 20235  $\backslash\mathrm{let}\backslash\mathrm{Supset}\backslash\mathrm{textSupset}$   
 20236  $\backslash\mathrm{let}\backslash\mathrm{nSupset}\backslash\mathrm{textnSupset}$   
 20237  $\backslash\mathrm{let}\backslash\mathrm{Cap}\backslash\mathrm{textCap}$   
 20238  $\backslash\mathrm{let}\backslash\mathrm{Cup}\backslash\mathrm{textCup}$   
 20239  $\backslash\mathrm{let}\backslash\mathrm{pitchfork}\backslash\mathrm{textpitchfork}$   
 20240  $\backslash\mathrm{let}\backslash\mathrm{lessdot}\backslash\mathrm{textlessdot}$   
 20241  $\backslash\mathrm{let}\backslash\mathrm{gtrdot}\backslash\mathrm{textgtrdot}$   
 20242  $\backslash\mathrm{let}\backslash\mathrm{lll}\backslash\mathrm{texlll}$   
 20243  $\backslash\mathrm{let}\backslash\mathrm{ggg}\backslash\mathrm{textggg}$   
 20244  $\backslash\mathrm{let}\backslash\mathrm{lesseqgtr}\backslash\mathrm{textlesseqgtr}$   
 20245  $\backslash\mathrm{let}\backslash\mathrm{gtreqless}\backslash\mathrm{textgtreqless}$   
 20246  $\backslash\mathrm{let}\backslash\mathrm{curlyeqprec}\backslash\mathrm{textcurlyeqprec}$   
 20247  $\backslash\mathrm{let}\backslash\mathrm{ncurlyeqprec}\backslash\mathrm{textncurlyeqprec}$   
 20248  $\backslash\mathrm{let}\backslash\mathrm{curlyeqsucc}\backslash\mathrm{textcurlyeqsucc}$   
 20249  $\backslash\mathrm{let}\backslash\mathrm{ncurlyeqsucc}\backslash\mathrm{textncurlyeqsucc}$   
 20250  $\backslash\mathrm{let}\backslash\mathrm{npreccurlyeq}\backslash\mathrm{textnpreccurlyeq}$   
 20251  $\backslash\mathrm{let}\backslash\mathrm{nsucccurlyeq}\backslash\mathrm{textnsucccurlyeq}$   
 20252  $\backslash\mathrm{let}\backslash\mathrm{nqsubseteq}\backslash\mathrm{textnqsubseteq}$

20253  $\backslash\text{let}\backslash\text{nqsupseteq}\backslash\text{textnqsupseteq}$   
 20254  $\backslash\text{let}\backslash\text{sqsubsetneq}\backslash\text{textsqssubsetneq}$   
 20255  $\backslash\text{let}\backslash\text{sqsupsetneq}\backslash\text{textsqsupsetneq}$   
 20256  $\backslash\text{let}\backslash\text{lnsim}\backslash\text{textlnsim}$   
 20257  $\backslash\text{let}\backslash\text{gnsim}\backslash\text{textgnsim}$   
 20258  $\backslash\text{let}\backslash\text{precnsim}\backslash\text{textprecnsim}$   
 20259  $\backslash\text{let}\backslash\text{succnsim}\backslash\text{textsuccnsim}$   
 20260  $\backslash\text{let}\backslash\text{ntriangleleft}\backslash\text{textntriangleleft}$   
 20261  $\backslash\text{let}\backslash\text{ntriangleright}\backslash\text{textntriangleright}$   
 20262  $\backslash\text{let}\backslash\text{ntrianglelefteq}\backslash\text{textntrianglelefteq}$   
 20263  $\backslash\text{let}\backslash\text{ntrianglerighteq}\backslash\text{textntrianglerighteq}$   
 20264  $\backslash\text{let}\backslash\text{vdots}\backslash\text{textvdots}$   
 20265  $\backslash\text{let}\backslash\text{cdots}\backslash\text{textcdots}$   
 20266  $\backslash\text{let}\backslash\text{udots}\backslash\text{textudots}$   
 20267  $\backslash\text{let}\backslash\text{ddots}\backslash\text{textddots}$   
 20268  $\backslash\text{let}\backslash\text{barin}\backslash\text{textbarin}$   
 20269  $\backslash\text{let}\backslash\text{diameter}\backslash\text{textdiameter}$   
 20270  $\backslash\text{let}\backslash\text{backneg}\backslash\text{textbackneg}$   
 20271  $\backslash\text{let}\backslash\text{wasylozenge}\backslash\text{textwasylozenge}$   
 20272  $\backslash\text{let}\backslash\text{invbackneg}\backslash\text{textinvbackneg}$   
 20273  $\backslash\text{let}\backslash\text{clock}\backslash\text{textclock}$   
 20274  $\backslash\text{let}\backslash\text{ulcorner}\backslash\text{textulcorner}$   
 20275  $\backslash\text{let}\backslash\text{urcorner}\backslash\text{texturcorner}$   
 20276  $\backslash\text{let}\backslash\text{llcorner}\backslash\text{textllcorner}$   
 20277  $\backslash\text{let}\backslash\text{lrcorner}\backslash\text{textlrcorner}$   
 20278  $\backslash\text{let}\backslash\text{frown}\backslash\text{textfrown}$   
 20279  $\backslash\text{let}\backslash\text{smile}\backslash\text{textsmile}$   
 20280  $\backslash\text{let}\backslash\text{Keyboard}\backslash\text{textKeyboard}$   
 20281  $\backslash\text{let}\backslash\text{langle}\backslash\text{textlangle}$   
 20282  $\backslash\text{let}\backslash\text{rangle}\backslash\text{textrangle}$   
 20283  $\backslash\text{let}\backslash\text{APLinv}\backslash\text{textAPLinv}$   
 20284  $\backslash\text{let}\backslash\text{Tumbler}\backslash\text{textTumbler}$   
 20285  $\backslash\text{let}\backslash\text{notslash}\backslash\text{textnotslash}$   
 20286  $\backslash\text{let}\backslash\text{notbackslash}\backslash\text{textnotbackslash}$   
 20287  $\backslash\text{let}\backslash\text{boxbackslash}\backslash\text{textboxbackslash}$   
 20288  $\backslash\text{let}\backslash\text{APLleftarrowbox}\backslash\text{textAPLleftarrowbox}$   
 20289  $\backslash\text{let}\backslash\text{APLrightarrowbox}\backslash\text{textAPLrightarrowbox}$   
 20290  $\backslash\text{let}\backslash\text{APLuparrowbox}\backslash\text{textAPLuparrowbox}$   
 20291  $\backslash\text{let}\backslash\text{APLdownarrowbox}\backslash\text{textAPLdownarrowbox}$   
 20292  $\backslash\text{let}\backslash\text{APLinput}\backslash\text{textAPLinput}$   
 20293  $\backslash\text{let}\backslash\text{Request}\backslash\text{textRequest}$   
 20294  $\backslash\text{let}\backslash\text{Beam}\backslash\text{textBeam}$   
 20295  $\backslash\text{let}\backslash\text{hexagon}\backslash\text{texthexagon}$   
 20296  $\backslash\text{let}\backslash\text{APLbox}\backslash\text{textAPLbox}$   
 20297  $\backslash\text{let}\backslash\text{ForwardToIndex}\backslash\text{textForwardToIndex}$   
 20298  $\backslash\text{let}\backslash\text{RewindToIndex}\backslash\text{textRewindToIndex}$   
 20299  $\backslash\text{let}\backslash\text{bbslash}\backslash\text{textbbslash}$   
 20300  $\backslash\text{let}\backslash\text{CircledA}\backslash\text{textCircledA}$   
 20301  $\backslash\text{let}\backslash\text{CleaningF}\backslash\text{textCleaningF}$   
 20302  $\backslash\text{let}\backslash\text{CleaningFF}\backslash\text{textCleaningFF}$   
 20303  $\backslash\text{let}\backslash\text{CleaningP}\backslash\text{textCleaningP}$   
 20304  $\backslash\text{let}\backslash\text{CleaningPP}\backslash\text{textCleaningPP}$   
 20305  $\backslash\text{let}\backslash\text{CuttingLine}\backslash\text{textCuttingLine}$   
 20306  $\backslash\text{let}\backslash\text{UParrow}\backslash\text{textUParrow}$

20307 \let\bigtriangleup\textbigtriangleup  
 20308 \let\Forward\textForward  
 20309 \let\triangleright\texttriangleright  
 20310 \let\RHD\textRHD  
 20311 \let\DOWNarrow\textDOWNarrow  
 20312 \let\bigtriangledown\textbigtriangledown  
 20313 \let\Rewind\textRewind  
 20314 \let\triangleleft\texttriangleleft  
 20315 \let\LHD\textLHD  
 20316 \let\diamond\textdiamond  
 20317 \let\lozenge\textlozenge  
 20318 \let\LEFTCIRCLE\textLEFTCIRCLE  
 20319 \let\RIGHTCIRCLE\textRIGHTCIRCLE  
 20320 \let\openbullet\textopenbullet  
 20321 \let\boxbar\textboxbar  
 20322 \let\bigcirc\textbigcirc  
 20323 \let\Cloud\textCloud  
 20324 \let\FiveStar\textFiveStar  
 20325 \let\FiveStarOpen\textFiveStarOpen  
 20326 \let\Phone\textPhone  
 20327 \let\boxempty\textboxempty  
 20328 \let\Checkedbox\textCheckedbox  
 20329 \let\Crossedbox\textCrossedbox  
 20330 \let\Coffeecup\textCoffeecup  
 20331 \let\HandCuffLeft\textHandCuffLeft  
 20332 \let\HandCuffRight\textHandCuffRight  
 20333 \let\HandLeft\textHandLeft  
 20334 \let\HandRight\textHandRight  
 20335 \let\Radioactivity\textRadioactivity  
 20336 \let\Biohazard\textBiohazard  
 20337 \let\Ankh\textAnkh  
 20338 \let\YinYang\textYinYang  
 20339 \let\frownie\textfrownie  
 20340 \let\smiley\textsmiley  
 20341 \let\blacksmiley\textblacksmiley  
 20342 \let\sun\textsun  
 20343 \let\leftmoon\textleftmoon  
 20344 \let\rightmoon\textrightmoon  
 20345 \let\mercury\textmercury  
 20346 \let\earth\textearth  
 20347 \let\male\textmale  
 20348 \let\jupiter\textjupiter  
 20349 \let\saturn\textsaturn  
 20350 \let\uranus\texturanus  
 20351 \let\neptune\textneptune  
 20352 \let\pluto\textpluto  
 20353 \let\aries\textaries  
 20354 \let\taurus\texttaurus  
 20355 \let\gemini\textgemini  
 20356 \let\cancer\textcancer  
 20357 \let\leo\textleo  
 20358 \let\virgo\textvirgo  
 20359 \let\libra\textlibra  
 20360 \let\scorpio\textscorpio

20361 \let\sagittarius\textsagittarius  
 20362 \let\capricornus\textcapricornus  
 20363 \let\aquarius\textaquarius  
 20364 \let\pisces\textpisces  
 20365 \let\quarternote\textquarternote  
 20366 \let\wonotes\textwonotes  
 20367 \let\sixteenthnote\textsixteenthnote  
 20368 \let\flat\textflat  
 20369 \let\natural\textnatural  
 20370 \let\sharp\textsharp  
 20371 \let\recycle\textrecycle  
 20372 \let\Wheelchair\textWheelchair  
 20373 \let\Flag\textFlag  
 20374 \let\MineSign\textMineSign  
 20375 \let\ds military\textds military  
 20376 \let\ds medical\textds medical  
 20377 \let\ds juridical\textds juridical  
 20378 \let\ds chemical\textds chemical  
 20379 \let\ds biological\textds biological  
 20380 \let\ds commercial\textds commercial  
 20381 \let\manstar\textmanstar  
 20382 \let\danger\textdanger  
 20383 \let\FemaleFemale\textFemaleFemale  
 20384 \let\MaleMale\textMaleMale  
 20385 \let\FemaleMale\textFemaleMale  
 20386 \let\Hermaphrodite\textHermaphrodite  
 20387 \let\Neutral\textNeutral  
 20388 \let\hexstar\texthexstar  
 20389 \let\SunCload\textSunCload  
 20390 \let\Rain\textRain  
 20391 \let\noway\textnoway  
 20392 \let\Mountain\textMountain  
 20393 \let\Tent\textTent  
 20394 \let\ScissorRight\textScissorRight  
 20395 \let\ScissorRightBrokenTop\textScissorRightBrokenTop  
 20396 \let\ScissorHollowRight\textScissorHollowRight  
 20397 \let\PhoneHandset\textPhoneHandset  
 20398 \let\Tape\textTape  
 20399 \let\Plane\textPlane  
 20400 \let\Envelope\textEnvelope  
 20401 \let\Peace\textPeace  
 20402 \let\WritingHand\textWritingHand  
 20403 \let\PencilRightDown\textPencilRightDown  
 20404 \let\PencilRight\textPencilRight  
 20405 \let\PencilRightUp\textPencilRightUp  
 20406 \let\NibRight\textNibRight  
 20407 \let\NibSolidRight\textNibSolidRight  
 20408 \let\Checkmark\textCheckmark  
 20409 \let\CheckmarkBold\textCheckmarkBold  
 20410 \let\XSolid\textXSolid  
 20411 \let\XSolidBold\textXSolidBold  
 20412 \let\XSolidBrush\textXSolidBrush  
 20413 \let\PlusOutline\textPlusOutline  
 20414 \let\Plus\textPlus

20415 \let\PlusThinCenterOpen\textPlusThinCenterOpen  
 20416 \let\PlusCenterOpen\textPlusCenterOpen  
 20417 \let\Cross\textCross  
 20418 \let\CrossOpenShadow\textCrossOpenShadow  
 20419 \let\CrossOutline\textCrossOutline  
 20420 \let\CrossMaltese\textCrossMaltese  
 20421 \let\DavidStar\textDavidStar  
 20422 \let\FourAsterisk\textFourAsterisk  
 20423 \let\JackStar\textJackStar  
 20424 \let\JackStarBold\textJackStarBold  
 20425 \let\ClowerTips\textClowerTips  
 20426 \let\FourStar\textFourStar  
 20427 \let\FourStarOpen\textFourStarOpen  
 20428 \let\FiveStarOpenCircled\textFiveStarOpenCircled  
 20429 \let\FiveStarCenterOpen\textFiveStarCenterOpen  
 20430 \let\FiveStarOpenDotted\textFiveStarOpenDotted  
 20431 \let\FiveStarOutline\textFiveStarOutline  
 20432 \let\FiveStarOutlineHeavy\textFiveStarOutlineHeavy  
 20433 \let\FiveStarConvex\textFiveStarConvex  
 20434 \let\FiveStarShadow\textFiveStarShadow  
 20435 \let\AsteriskBold\textAsteriskBold  
 20436 \let\AsteriskCenterOpen\textAsteriskCenterOpen  
 20437 \let\EightStarTaper\textEightStarTaper  
 20438 \let\EightStarConvex\textEightStarConvex  
 20439 \let\SixStar\textSixStar  
 20440 \let\EightStar\textEightStar  
 20441 \let\EightStarBold\textEightStarBold  
 20442 \let\TwelveStar\textTwelveStar  
 20443 \let\SixteenStarLight\textSixteenStarLight  
 20444 \let\SixFlowerPetalRemoved\textSixFlowerPetalRemoved  
 20445 \let\SixFlowerOpenCenter\textSixFlowerOpenCenter  
 20446 \let\Asterisk\textAsterisk  
 20447 \let\SixFlowerAlternate\textSixFlowerAlternate  
 20448 \let\FiveFlowerPetal\textFiveFlowerPetal  
 20449 \let\FiveFlowerOpen\textFiveFlowerOpen  
 20450 \let\EightFlowerPetal\textEightFlowerPetal  
 20451 \let\SunshineOpenCircled\textSunshineOpenCircled  
 20452 \let\SixFlowerAltPetal\textSixFlowerAltPetal  
 20453 \let\SnowflakeChevron\textSnowflakeChevron  
 20454 \let\Snowflake\textSnowflake  
 20455 \let\SnowflakeChevronBold\textSnowflakeChevronBold  
 20456 \let\Sparkle\textSparkle  
 20457 \let\SparkleBold\textSparkleBold  
 20458 \let\AsteriskRoundedEnds\textAsteriskRoundedEnds  
 20459 \let\EightFlowerPetalRemoved\textEightFlowerPetalRemoved  
 20460 \let\EightAsterisk\textEightAsterisk  
 20461 \let\CircleShadow\textCircleShadow  
 20462 \let\SquareShadowBottomRight\textSquareShadowBottomRight  
 20463 \let\SquareTopRight\textSquareTopRight  
 20464 \let\SquareCastShadowBottomRight\textSquareCastShadowBottomRight  
 20465 \let\SquareCastShadowTopRight\textSquareCastShadowTopRight  
 20466 \let\DiamondSolid\textDiamondSolid  
 20467 \let\RectangleThin\textRectangleThin  
 20468 \let\Rectangle\textRectangle

20469  $\backslash\mathrm{let}\backslash\mathrm{RectangleBold}\backslash\mathrm{textRectangleBold}$   
 20470  $\backslash\mathrm{let}\backslash\mathrm{perp}\backslash\mathrm{textperp}$   
 20471  $\backslash\mathrm{let}\backslash\mathrm{notperp}\backslash\mathrm{textnotperp}$   
 20472  $\backslash\mathrm{let}\backslash\mathrm{veedot}\backslash\mathrm{textveedot}$   
 20473  $\backslash\mathrm{let}\backslash\mathrm{wedgedot}\backslash\mathrm{textwedgedot}$   
 20474  $\backslash\mathrm{let}\backslash\mathrm{leftspoon}\backslash\mathrm{textleftspoon}$   
 20475  $\backslash\mathrm{let}\backslash\mathrm{lbrackdbl}\backslash\mathrm{textlbrackdbl}$   
 20476  $\backslash\mathrm{let}\backslash\mathrm{rbrackdbl}\backslash\mathrm{textrbrackdbl}$   
 20477  $\backslash\mathrm{let}\backslash\mathrm{circlearrowleft}\backslash\mathrm{textcirclearrowleft}$   
 20478  $\backslash\mathrm{let}\backslash\mathrm{circlearrowright}\backslash\mathrm{textcirclearrowright}$   
 20479  $\backslash\mathrm{let}\backslash\mathrm{longleftarrow}\backslash\mathrm{textlongleftarrow}$   
 20480  $\backslash\mathrm{let}\backslash\mathrm{longrightarrow}\backslash\mathrm{textlongrightarrow}$   
 20481  $\backslash\mathrm{let}\backslash\mathrm{longleftarrowrightarrow}\backslash\mathrm{textlongleftarrowrightarrow}$   
 20482  $\backslash\mathrm{let}\backslash\mathrm{Longleftarrow}\backslash\mathrm{textLongleftarrow}$   
 20483  $\backslash\mathrm{let}\backslash\mathrm{Longrightarrow}\backslash\mathrm{textLongrightarrow}$   
 20484  $\backslash\mathrm{let}\backslash\mathrm{Longleftarrowrightarrow}\backslash\mathrm{textLongleftarrowrightarrow}$   
 20485  $\backslash\mathrm{let}\backslash\mathrm{longmapsto}\backslash\mathrm{textlongmapsto}$   
 20486  $\backslash\mathrm{let}\backslash\mathrm{Longmapsfrom}\backslash\mathrm{textLongmapsfrom}$   
 20487  $\backslash\mathrm{let}\backslash\mathrm{Longmapsto}\backslash\mathrm{textLongmapsto}$   
 20488  $\backslash\mathrm{let}\backslash\mathrm{nwsearrow}\backslash\mathrm{textnwsearrow}$   
 20489  $\backslash\mathrm{let}\backslash\mathrm{neswarrow}\backslash\mathrm{textneswarrow}$   
 20490  $\backslash\mathrm{let}\backslash\mathrm{lhooknwarrow}\backslash\mathrm{textlhooknwarrow}$   
 20491  $\backslash\mathrm{let}\backslash\mathrm{rhooknearrow}\backslash\mathrm{textrhooknearrow}$   
 20492  $\backslash\mathrm{let}\backslash\mathrm{lhooksearrow}\backslash\mathrm{textlhooksearrow}$   
 20493  $\backslash\mathrm{let}\backslash\mathrm{rhookswarrow}\backslash\mathrm{textrhookswarrow}$   
 20494  $\backslash\mathrm{let}\backslash\mathrm{leadsto}\backslash\mathrm{textleadsto}$   
 20495  $\backslash\mathrm{let}\backslash\mathrm{rcurvearrowne}\backslash\mathrm{textrcurvearrowne}$   
 20496  $\backslash\mathrm{let}\backslash\mathrm{lcurvearrowse}\backslash\mathrm{textlcurvearrowse}$   
 20497  $\backslash\mathrm{let}\backslash\mathrm{lcurvearrowsw}\backslash\mathrm{textlcurvearrowsw}$   
 20498  $\backslash\mathrm{let}\backslash\mathrm{rcurvearrowse}\backslash\mathrm{textrcurvearrowse}$   
 20499  $\backslash\mathrm{let}\backslash\mathrm{lcurvearrowdown}\backslash\mathrm{textlcurvearrowdown}$   
 20500  $\backslash\mathrm{let}\backslash\mathrm{rcurvearrowdown}\backslash\mathrm{textrcurvearrowdown}$   
 20501  $\backslash\mathrm{let}\backslash\mathrm{rcurvearrowleft}\backslash\mathrm{textrcurvearrowleft}$   
 20502  $\backslash\mathrm{let}\backslash\mathrm{rcurvearrowright}\backslash\mathrm{textrcurvearrowright}$   
 20503  $\backslash\mathrm{let}\backslash\mathrm{leftrightharpoon}\backslash\mathrm{textleftrightharpoon}$   
 20504  $\backslash\mathrm{let}\backslash\mathrm{rightleftharpoon}\backslash\mathrm{textrightleftharpoon}$   
 20505  $\backslash\mathrm{let}\backslash\mathrm{updownharpoonrightleft}\backslash\mathrm{textupdownharpoonrightleft}$   
 20506  $\backslash\mathrm{let}\backslash\mathrm{updownharpoonleftright}\backslash\mathrm{textupdownharpoonleftright}$   
 20507  $\backslash\mathrm{let}\backslash\mathrm{leftleftharpoons}\backslash\mathrm{textleftleftharpoons}$   
 20508  $\backslash\mathrm{let}\backslash\mathrm{upupharpoons}\backslash\mathrm{textupupharpoons}$   
 20509  $\backslash\mathrm{let}\backslash\mathrm{rightrightarpoons}\backslash\mathrm{textrightarpoons}$   
 20510  $\backslash\mathrm{let}\backslash\mathrm{downdownharpoons}\backslash\mathrm{textdowndownharpoons}$   
 20511  $\backslash\mathrm{let}\backslash\mathrm{leftbarharpoon}\backslash\mathrm{textleftbarharpoon}$   
 20512  $\backslash\mathrm{let}\backslash\mathrm{barleftharpoon}\backslash\mathrm{textbarleftharpoon}$   
 20513  $\backslash\mathrm{let}\backslash\mathrm{rightbarharpoon}\backslash\mathrm{textrightbarharpoon}$   
 20514  $\backslash\mathrm{let}\backslash\mathrm{barrightharpoon}\backslash\mathrm{textbarrightharpoon}$   
 20515  $\backslash\mathrm{let}\backslash\mathrm{updownharpoons}\backslash\mathrm{textupdownharpoons}$   
 20516  $\backslash\mathrm{let}\backslash\mathrm{downupharpoons}\backslash\mathrm{textdownupharpoons}$   
 20517  $\backslash\mathrm{let}\backslash\mathrm{moo}\backslash\mathrm{textmoo}$   
 20518  $\backslash\mathrm{let}\backslash\mathrm{llparenthesis}\backslash\mathrm{textllparenthesis}$   
 20519  $\backslash\mathrm{let}\backslash\mathrm{rrparenthesis}\backslash\mathrm{textrrparenthesis}$   
 20520  $\backslash\mathrm{let}\backslash\mathrm{invdiameter}\backslash\mathrm{textinvdiameter}$   
 20521  $\backslash\mathrm{let}\backslash\mathrm{oobar}\backslash\mathrm{textobar}$   
 20522  $\backslash\mathrm{let}\backslash\mathrm{obslash}\backslash\mathrm{textobslash}$

20523 \let\obot\textobot  
 20524 \let\NoChemicalCleaning\textNoChemicalCleaning  
 20525 \let\olessthan\textolessthan  
 20526 \let\ogreaterthan\textogreaterthan  
 20527 \let\boxslash\textboxslash  
 20528 \let\boxbslash\textboxbslash  
 20529 \let\boxast\textboxast  
 20530 \let\boxcircle\textboxcircle  
 20531 \let\boxbox\textboxbox  
 20532 \let\Valve\textValve  
 20533 \let\multimapboth\textmultimapboth  
 20534 \let\shuffle\textshuffle  
 20535 \let\uplus\textuplus  
 20536 \let\bigdoublewedge\textbigdoublewedge  
 20537 \let\bigdoublevee\textbigdoublevee  
 20538 \let\Join\textJoin  
 20539 \let\fatsemi\textfatsemi  
 20540 \let\circplus\textcircplus  
 20541 \let\minusdot\textminusdot  
 20542 \let\dotimes\textdotimes  
 20543 \let\dtimes\textdtimes  
 20544 \let\odiv\textodiv  
 20545 \let\invneg\textinvneg  
 20546 \let\squdoublecap\textsqudoublecap  
 20547 \let\capdot\textcapdot  
 20548 \let\squdoublecup\textsqudoublecup  
 20549 \let\doublewedge\textdoublewedge  
 20550 \let\doublevee\textdoublevee  
 20551 \let\doublebarwedge\textdoublebarwedge  
 20552 \let\veedoublebar\textveedoublebar  
 20553 \let\eqdot\texteqdot  
 20554 \let\neqdot\textneqdot  
 20555 \let\coloncolonequals\textcoloncolonequals  
 20556 \let\leqslant\textleqslant  
 20557 \let\leqslant\textleqslant  
 20558 \let\geqslant\textgeqslant  
 20559 \let\ngeslant\textngeslant  
 20560 \let\lessapprox\textlessapprox  
 20561 \let\llessapprox\textllessapprox  
 20562 \let\gtrapprox\textgtrapprox  
 20563 \let\ngtrapprox\textngtrapprox  
 20564 \let\lneq\textlneq  
 20565 \let\gneq\textgneq  
 20566 \let\lnapprox\textlnapprox  
 20567 \let\gnapprox\textgnapprox  
 20568 \let\lesseqqgtr\textlesseqqgtr  
 20569 \let\gtreqqlless\textgtreqqlless  
 20570 \let\eqslantless\texteqslantless  
 20571 \let\eqslantgtr\texteqslantgtr  
 20572 \let\leftslice\textleftslice  
 20573 \let\rightslice\textright slice  
 20574 \let\preceq\textpreceq  
 20575 \let\lpreceq\textlpreceq  
 20576 \let\succeq\textsucceq

20577 \let\nsucceq\textnsucceq  
 20578 \let\precneq\textprecneq  
 20579 \let\succneq\textsuccneq  
 20580 \let\preceqq\textpreceqq  
 20581 \let\npreceqq\textnpreceqq  
 20582 \let\succeqq\textsucceqq  
 20583 \let\nsucceqq\textnsucceqq  
 20584 \let\precneqq\textprecneqq  
 20585 \let\succneqq\textsuccneqq  
 20586 \let\precapprox\textprecapprox  
 20587 \let\nprecapprox\textnprecapprox  
 20588 \let\succapprox\textsuccapprox  
 20589 \let\nsuccapprox\textnsuccapprox  
 20590 \let\precnapprox\textprecnapprox  
 20591 \let\succnapprox\textsuccnapprox  
 20592 \let\subseteqq\textsubseteqq  
 20593 \let\nsubseteqq\textnsubseteqq  
 20594 \let\supseteqq\textsupseteqq  
 20595 \let\nsupseteqq\textnsupseteqq  
 20596 \let\dashV\textdashV  
 20597 \let\ndashV\textndashV  
 20598 \let\Dashv\textDashv  
 20599 \let\ndashv\textndashv  
 20600 \let\DashV\textDashV  
 20601 \let\ndashV\textndashV  
 20602 \let\downmodels\textdownmodels  
 20603 \let\ndownmodels\textndownmodels  
 20604 \let\upmodels\textupmodels  
 20605 \let\nupmodels\textnupmodels  
 20606 \let\upspoon\textupspoon  
 20607 \let\interleave\textinterleave  
 20608 \let\slash\textslash  
 20609 \let\pentagon\textpentagon  
 20610 \let\varhexagon\textvarhexagon  
 20611 \let\jinferior\textjinferior  
 20612 \let\slashdiv\textslashdiv  
 20613 \let\fivedots\textfivedots  
 20614 \let\oo\textoo  
 20615 \let\GaPa\textGaPa  
 20616 \let\HaPa\textHaPa  
 20617 \let\ViPa\textViPa  
 20618 \let\AcPa\textAcPa  
 20619 \let\SePa\textSePa  
 20620 \let\ZwPa\textZwPa  
 20621 \let\fullnote\textfullnote  
 20622 \let\halfnote\texthalfnote  
 20623 \let\Vier\textVier  
 20624 \let\Acht\textAcht  
 20625 \let\Sech\textSech  
 20626 \let\Zwdr\textZwdr  
 20627 \let\Mundus\textMundus  
 20628 \let\Moon\textMoon  
 20629 \let\ManFace\textManFace  
 20630 \let\WomanFace\textWomanFace

20631 \let\Fax\textFax  
 20632 \let\Fire\textFire  
 20633 \let\Bicycle\textBicycle  
 20634 \let\Gentsroom\textGentsroom  
 20635 \let\Ladiesroom\textLadiesroom  
 20636 \let\ccnc\textccnc  
 20637 \let\ccsa\textccsa  
 20638 \let\Info\textInfo  
 20639 \let\CESign\textCESign  
 20640 \let\neg\textneg  
 20641 \let\times\texttimes  
 20642 \let\div\textdiv  
 20643 \let\pm\textpm  
 20644 \let\cdot\textcdot  
 20645 }% \psdmapshortnames  
 20646 \newcommand\*{\psdaliasnames}{%  
 20647 \let\epsdice\HyPsd@DieFace  
 20648 \let\fcdice\HyPsd@DieFace  
 20649 \let\MoonPha\HyPsd@MoonPha  
 20650 \let\mathdollar\textdollar  
 20651 \let\EyesDollar\textdollar  
 20652 \let\binampersand\textampersand  
 20653 \let\with\textampersand  
 20654 \let\mathunderscore\textunderscore  
 20655 \let\textvertline\textbar  
 20656 \let\mathsterling\textsterling  
 20657 \let\pounds\textsterling  
 20658 \let\brokenvert\textbrokenbar  
 20659 \let\mathsection\textsection  
 20660 \let\S\textsection  
 20661 \let\mathparagraph\textparagraph  
 20662 \let\MultiplicationDot\textperiodcentered  
 20663 \let\Squaredot\textperiodcentered  
 20664 \let\var times\textmultiply  
 20665 \let\MVMultiplication\textmultiply  
 20666 \let\eth\dh  
 20667 \let\crossd\textcrd  
 20668 \let\textbard\textcrd  
 20669 \let\bard\textcrd  
 20670 \let\textcrh\textthbar  
 20671 \let\crossh\textthbar  
 20672 \let\planck\textthbar  
 20673 \let\eng\ng  
 20674 \let\engma\ng  
 20675 \let\crossb\textcrb  
 20676 \let\textbarb\textcrb  
 20677 \let\barb\textcrb  
 20678 \let\Florin\textflorin  
 20679 \let\hv\texthvl  
 20680 \let\hausak\texthtk  
 20681 \let\crossnilambda\textcrlambda  
 20682 \let\barlambda\textcrlambda  
 20683 \let\lambdabar\textcrlambda  
 20684 \let\lambdaslash\textcrlambda

20685 \let\textnrleg\textPUnrleg  
 20686 \let\textpipevar\textpipe  
 20687 \let\textdoublepipevar\textdoublepipe  
 20688 \let\textdoublebarpipevar\textdoublebarpipe  
 20689 \let\textcrg\textgslash  
 20690 \let\textdblig\textPUdblig  
 20691 \let\textqplig\textPUqplig  
 20692 \let\textcentoldstyle\textslashc  
 20693 \let\textbarc\textslashc  
 20694 \let\inva\textturna  
 20695 \let\vara\textscripta  
 20696 \let\invscripta\textturnscripta  
 20697 \let\rotvara\textturnscripta  
 20698 \let\hookb\texthtb  
 20699 \let\hausab\texthtb  
 20700 \let\varopeno\textopeno  
 20701 \let\curlyc\textctc  
 20702 \let\taild\textrtaild  
 20703 \let\hookd\texthtd  
 20704 \let\hausad\texthtd  
 20705 \let\er\textrhooschwa  
 20706 \let\epsi\textniepsilon  
 20707 \let\hookrepsilon\textrhoorepsilon  
 20708 \let\closedrepsilon\textcloserepsilon  
 20709 \let\barj\textbardotlessj  
 20710 \let\hookg\texthtg  
 20711 \let\varg\textscriptg  
 20712 \let\vod\textipagamma  
 20713 \let\invh\textturnh  
 20714 \let\udesc\textturnh  
 20715 \let\hookh\texthth  
 20716 \let\voicedh\texthth  
 20717 \let\hookheng\texththeng  
 20718 \let\ibar\textbari  
 20719 \let\vari\textniota  
 20720 \let\tildel\textltilde  
 20721 \let\latfric\textbeltl  
 20722 \let\taill\textrtail  
 20723 \let\lz\textlyoghlig  
 20724 \let\invm\textturnm  
 20725 \let\rotm\textturnm  
 20726 \let\legm\textturnmrleg  
 20727 \let\labdentalnas\textltailm  
 20728 \let\emgma\textltailm  
 20729 \let\nj\textltailn  
 20730 \let\enya\textltailn  
 20731 \let\tailn\textrtailn  
 20732 \let\closedniomega\textcloseomega  
 20733 \let\varomega\textcloseomega  
 20734 \let\invr\textturnr  
 20735 \let\rotr\textturnr  
 20736 \let\invlegr\textturnlonglegr  
 20737 \let\tailinvr\textturnrrtail  
 20738 \let\legr\textlonglegr

20739 \let\tailr\textrtailr  
 20740 \let\flapr\textfishhookr  
 20741 \let\flap\textfishhookr  
 20742 \let\tails\textrtails  
 20743 \let\curlyesh\textctesh  
 20744 \let\clickt\textturnt  
 20745 \let\tailt\textrtailt  
 20746 \let\ubar\textbaru  
 20747 \let\rotOmega\textniupsilon  
 20748 \let\invv\textturnv  
 20749 \let\pwedge\textturnv  
 20750 \let\invw\textturnw  
 20751 \let\rotw\textturnw  
 20752 \let\invy\textturny  
 20753 \let\roty\textturny  
 20754 \let\tailz\textrtailz  
 20755 \let\curlyz\textctz  
 20756 \let\curlyyogh\textctyogh  
 20757 \let\ejective\textglotstop  
 20758 \let\glottal\textglotstop  
 20759 \let\reveject\textrevglotstop  
 20760 \let\clickc\textstretchc  
 20761 \let\textstretchcvar\textstretchc  
 20762 \let\clickb\textbullseye  
 20763 \let\textObullseye\textbullseye  
 20764 \let\textctjvar\textctj  
 20765 \let\textturnsck\textturnk  
 20766 \let\dz\textdzlig  
 20767 \let\tesh\textteshlig  
 20768 \let\digamma\textdigammagreek  
 20769 \let\hardsign\cyrhrdsn  
 20770 \let\softsign\cyrsoftsn  
 20771 \let\hebsin\hebshin  
 20772 \let\textsck\textPUscK  
 20773 \let\textscm\textPUscm  
 20774 \let\textscp\textPUscp  
 20775 \let\textrevscr\textPUrevscr  
 20776 \let\textrhoKa\textPURhooka  
 20777 \let\textrhoKe\textPURhooke  
 20778 \let\textrhoKepsilon\textPURhookepsilon  
 20779 \let\textrhoKopeno\textPURhookopeno  
 20780 \let\textdoublevertline\textbardbl  
 20781 \let\dag\textdagger  
 20782 \let\ddagger\textdaggerdbl  
 20783 \let\ddag\textdaggerdbl  
 20784 \let\mathellipsis\textellipsis  
 20785 \let\EurDig\texteuro  
 20786 \let\EURdig\texteuro  
 20787 \let\EurHv\texteuro  
 20788 \let\EURhv\texteuro  
 20789 \let\EurCr\texteuro  
 20790 \let\EURcr\texteuro  
 20791 \let\EurTm\texteuro  
 20792 \let\EURtm\texteuro

20793 \let\Eur\texteuro  
 20794 \let\Denarius\textDeleatur  
 20795 \let\agemO\textmho  
 20796 \let\EstimatedSign\textestimated  
 20797 \let\Ecommerce\textestimated  
 20798 \let\bindnasrepma\textinvamp  
 20799 \let\parr\textinvamp  
 20800 \let\MVRightArrow\textrightarrow  
 20801 \let\MVRightarrow\textrightarrow  
 20802 \let\MVArrowDown\textdownarrow  
 20803 \let\Force\textdownarrow  
 20804 \let\textglobrise\textnearrow  
 20805 \let\textglobfall\textsearrow  
 20806 \let\Lightning\textlightning  
 20807 \let\Conclusion\textrightarrow  
 20808 \let\dashedleftarrow\textdashleftarrow  
 20809 \let\dashedrightarrow\textdashrightarrow  
 20810 \let\varnothing\textemptyset  
 20811 \let\owns\textni  
 20812 \let\notni\textnotowner  
 20813 \let\varprop\textpropto  
 20814 \let\varangle\textsphericalangle  
 20815 \let\Anglesign\textsphericalangle  
 20816 \let\AngleSign\textsphericalangle  
 20817 \let\notdivides\textnmid  
 20818 \let\varowedge\textowedge  
 20819 \let\varovee\textovee  
 20820 \let\varint\textint  
 20821 \let\varoint\textoint  
 20822 \let\downtherefore\textbecause  
 20823 \let\textdotdiv\textdotminus  
 20824 \let\AC\textsim  
 20825 \let\wreath\textwr  
 20826 \let\nthickapprox\textnapprox  
 20827 \let\VHF\texttriplesim  
 20828 \let\notasymp\textnasyp  
 20829 \let\Doteq\textdoteqdot  
 20830 \let\corresponds\texthateq  
 20831 \let\Corresponds\texthateq  
 20832 \let\nequal\textneq  
 20833 \let\Congruent\textequiv  
 20834 \let\NotCongruent\textnequiv  
 20835 \let\notequiv\textnequiv  
 20836 \let\LessOrEqual\textleq  
 20837 \let\LargerOrEqual\textgeq  
 20838 \let\apprle\textlessim  
 20839 \let\apprge\textgtrsim  
 20840 \let\varoplus\textoplus  
 20841 \let\varominus\textominus  
 20842 \let\varotimes\textotimes  
 20843 \let\varoslash\textoslash  
 20844 \let\varodot\textodot  
 20845 \let\ocirc\textcircledcirc  
 20846 \let\varocircle\textcircledcirc

20847 \let\varoast\textcircledast  
 20848 \let\oasterisk\textcircledast  
 20849 \let\rightvdash\textvdash  
 20850 \let\leftvdash\textdashv  
 20851 \let\leftvdash\textndashv  
 20852 \let\downvdash\texttop  
 20853 \let\upvdash\textbot  
 20854 \let\nperp\textnupvdash  
 20855 \let\models\textvDash  
 20856 \let\rightmodels\textvDash  
 20857 \let\rightVdash\textVdash  
 20858 \let\rightModels\textVDash  
 20859 \let\rightvdash\textnvdash  
 20860 \let\rightmodels\textnvDash  
 20861 \let\nmodels\textnvDash  
 20862 \let\rightVdash\textnVdash  
 20863 \let\rightModels\textnVDash  
 20864 \let\lessclosed\textlhd  
 20865 \let\gtrclosed\textrhd  
 20866 \let\leqclosed\textunlhd  
 20867 \let\trianglelefteq\textunlhd  
 20868 \let\geqclosed\textunrhd  
 20869 \let\trianglerighteq\textunrhd  
 20870 \let\Bowtie\textbowtie  
 20871 \let\varcurlyvee\textcurlyvee  
 20872 \let\varcurlywedge\textcurlywedge  
 20873 \let\doublecap\textCap  
 20874 \let\doublecup\textCup  
 20875 \let\varsubsetneq\textsubsetneq  
 20876 \let\varsupsetneq\textsupsetneq  
 20877 \let\lessclosed\textntriangleleft  
 20878 \let\ngtrclosed\textntriangleright  
 20879 \let\Clocklogo\textclock  
 20880 \let\ClockLogo\textclock  
 20881 \let\baro\textstmaryrdbaro  
 20882 \let\varparallelinv\textbbslash  
 20883 \let\CleaningA\textCircledA  
 20884 \let\Kutline\textCuttingLine  
 20885 \let\CutLine\textCuttingLine  
 20886 \let\Cutline\textCuttingLine  
 20887 \let\MoveUp\textUParrow  
 20888 \let\APLup\textbigtriangleup  
 20889 \let\Bleech\textbigtriangleup  
 20890 \let\MoveDown\textDOWNarrow  
 20891 \let\APLdown\textbigtriangledown  
 20892 \let\Diamond\textdiamond  
 20893 \let\varbigcirc\textbigcircle  
 20894 \let\Telefon\textPhone  
 20895 \let\Box\textboxempty  
 20896 \let\CheckedBox\textCheckedbox  
 20897 \let\XBox\textCrossedbox  
 20898 \let\CrossedBox\textCrossedbox  
 20899 \let\rightpointleft\textHandLeft  
 20900 \let\leftpointright\textHandRight

20901 \let\PointingHand\textHandRight  
 20902 \let\Pointinghand\textHandRight  
 20903 \let\Radiation\textRadioactivity  
 20904 \let\Yinyang\textYinYang  
 20905 \let\YingYang\textYinYang  
 20906 \let\Yingyang\textYinYang  
 20907 \let\Frowny\textfrownie  
 20908 \let\Smiley\textsmiley  
 20909 \let\Sun\textsun  
 20910 \let\Mercury\textmercury  
 20911 \let\textfemale\textPUfemale  
 20912 \let\female\textPUfemale  
 20913 \let\venus\textPUfemale  
 20914 \let\Venus\textPUfemale  
 20915 \let\Female\textPUfemale  
 20916 \let\Earth\textearth  
 20917 \let\mars\textmale  
 20918 \let\Mars\textmale  
 20919 \let\Male\textmale  
 20920 \let\Jupiter\textjupiter  
 20921 \let\Saturn\textsaturn  
 20922 \let\Uranus\texturanus  
 20923 \let\Neptune\textneptune  
 20924 \let\Pluto\textpluto  
 20925 \let\Aries\textaries  
 20926 \let\Taurus\texttaurus  
 20927 \let\Gemini\textgemini  
 20928 \let\Cancer\textcancer  
 20929 \let\Leo\textleo  
 20930 \let\Virgo\textvirgo  
 20931 \let\Libra\textlibra  
 20932 \let\Scorpio\textscorpio  
 20933 \let\Sagittarius\textsagittarius  
 20934 \let\Capricorn\textcapricornus  
 20935 \let\Aquarius\textaquarius  
 20936 \let\Pisces\textpisces  
 20937 \let\spadesuit\textspadesuitblack  
 20938 \let\Heart\textheartsuitwhite  
 20939 \let\heartsuit\textheartsuitwhite  
 20940 \let\diamondsuit\textdiamondsuitwhite  
 20941 \let\clubsuit\textclubsuitblack  
 20942 \let\leighthnote\textmusicalnote  
 20943 \let\Recycling\textrecycle  
 20944 \let\VarFlag\textFlag  
 20945 \let\textxswup\textdsmilitary  
 20946 \let\textuncrfemale\textPUuncrfemale  
 20947 \let\Football\textSoccerBall  
 20948 \let\CutLeft\textScissorRightBrokenBottom  
 20949 \let\Cutright\textScissorRightBrokenBottom  
 20950 \let\RightScissors\textScissorRight  
 20951 \let\Leftscissors\textScissorRight  
 20952 \let\Letter\textEnvelope  
 20953 \let\Writinghand\textWritingHand  
 20954 \let\checkmark\textCheckmark

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20955 \let\DavidStar\textDavidStar
20956 \let\llbracket\textlbrackdbl
20957 \let\rrbracket\textrrackdbl
20958 \let\RightTorque\textlcurvearrowdown
20959 \let\Righttorque\textlcurvearrowdown
20960 \let\LeftTorque\textrcurvearrowdown
20961 \let\Lefttorque\textrcurvearrowdown
20962 \let\textvarobar\textobar
20963 \let\circledbslash\textobslash
20964 \let\obackslash\textobslash
20965 \let\varobslash\textobslash
20966 \let\odplus\textobot
20967 \let\varolessthan\textolessthan
20968 \let\varogreaterthan\textogreaterthan
20969 \let\divdot\textminusdot
20970 \let\doublesqcap\textsquaddoublecap
20971 \let\doublesqcup\textsquaddoublecup
20972 \let\merge\textdoublevee
20973 \let\leftVdash\textdashV
20974 \let\nleftVdash\textndashV
20975 \let\leftmodels\textDashv
20976 \let\nleftmodels\textnDashv
20977 \let\leftModels\textDashV
20978 \let\nleftModels\textnDashV
20979 \let\varparallel\textsslash
20980 \let\textheng\textPUheng
20981 \let\textlhookfour\textPUlhookfour
20982 \let\textscf\textPUscf
20983 \let\textaoig\textPUaolig
20984 \let\Ganz\textfullnote
20985 \let\Halb\texthalfnote
20986 \let\Womanface\textWomanFace
20987 \let\Faxmachine\textFax
20988 \let\CEsign\textCESign
20989 }% \psdaliasnames
20990 </psdextra>

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## 48 End of file hycheck.tex

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20991 <*check>
20992 \typeout{}
20993 \begin{document}
20994 \end{document}
20995 </check>

```

## 49 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; numbers in *roman* refer to the code lines where the entry is used.

Symbols				
\! . . . . .	195, 220, 1766	15447, 15456, 15472, 15481, 15482, 15497, 15511, 15517, 15537, 15539, 15653, 15655, 15673, 15675, 15709, 15711, 15721, 15723, 15783, 15785, 15906, 15908, 15914, 15916, 15919, 15922, 16401, 16421, 16571, 16591, 17133, 17135, 17157, 17159, 17197, 17199, 17265, 17267, 19507, 19512, 19517, 19522, 19527, 19532, 19537, 19542, 19547, 19552, 19557, 19562, 19567, 19572, 19577, 19582, 19587, 19592, 19597, 19602, 19607, 19612, 19617, 19622	16861, 16885, 16887, 17105, 17107	\> . . . . . 197, 222
\" . . . . .	202, 227, 3061, 14382, 14698, 14710, 14722, 14848, 14936, 14950, 14958, 14973, 14985, 15002, 15016, 15027, 15028, 15042, 15054, 15061, 15114, 15160, 15189, 15220, 15395, 15409, 15417, 15431, 15445, 15462, 15476, 15487, 15488, 15503, 15515, 15523, 15781, 16397, 16411, 16567, 16581, 16825, 16827, 16842, 16845, 16847, 16849, 16851, 16853, 16863, 16865, 16867, 16869, 16876, 16879, 16881, 16883, 16889, 16891, 16897, 16899, 16905, 16907, 17117, 17119, 17269, 17271, 17285, 17287, 17307	\( . . . . . 190, 215, 326, 760, 763, 765, 1768, 14448, 14768	\? . . . . . 331	
\# . . . . .	540, 1851, 1852, 4769, 4781, 4783, 4799, 4831, 4891, 8700, 8702, 9444, 9453, 9488, 10331, 11979, 11990, 12026, 12264, 12273, 12313, 14302	\) . . . . . 191, 216, 327, 732, 738, 741, 1769, 14449, 14770	\@ . . . . . 3052	
\\$ . . . . .	184, 209, 325, 541, 4771, 4890	\* . . . . . 329	\@@@ . . . . . 2210	
\% . . . . .	542, 1766, 1826, 1827, 4768, 4778, 4780, 4832, 8702	\+ . . . . . 200, 225, 330	\@@BOOKMARK 14363, 14366, <u>14424</u> , 14489, 14496	
\& . . . . .	185, 210, 543, 4772, 4784, 4786, 12036	\- . . . . . 201, 226	\@@ListBox 12668, 12699, 13270, <u>13304</u> , 13626, <u>13667</u>	
\' . . . . .	203, 228, 3001, 3015, 3056, 3058, 3059, 3060, 3061, 3066, 3067, 3069, 3074, 3080, 3084, 3085, 3088, 3131, 3132, 3137, 3138, 3139, 3140, 3141, 3142, 3143, 3144, 3146, 3149, 3156, 3157, 3158, 3159, 3162, 3168, 3181, 14380, 14695, 14707, 14719, 14930, 14946, 14954, 14967, 14981, 14987, 14996, 15012, 15021, 15022, 15036, 15050, 15056, 15080, 15082, 15083, 15084, 15087, 15089, 15090, 15091, 15099, 15157, 15186, 15217, 15389, 15405, 15413, 15425, 15441,	\. . . . . 198, 223, 323, 3512, 3925, 14701, 14713, 14725, 14789, 15085, 15092, 15112, 15163, 15192, 15226, 15303, 15304, 15545, 15547, 15575, 15577, 15595, 15597, 15634, 15665, 15667, 15787, 15789, 15990, 15992, 15998, 16000, 17049, 17051, 17061, 17063, 17101, 17103, 17109, 17111, 17161, 17163, 17169, 17171, 17201, 17203, 17205, 17207, 17217, 17219, 17225, 17227, 17273, 17275, 17281, 17283, 17289, 17291, 17313	\@Chyper@Creadexternallink . . . . . 5194, 5196	\@@Menu . . . . . 12909, 12917
		\/ . . . . . 194, 219, 673, 674, 675, 743, 1535, 8260	\@@PasswordField 12858, 12864	\@@Radio 12653, 12674, 12907, 12931, 13255, 13276, 13611, <u>13632</u>
		\: . . . . . 189, 214	\@@TextField . . . 12860, 12875	\@@commahyperpage 8394, 8395
		\; . . . . . 199, 224	\@@Chyperref 4994, 4995	\@@@hyper@Creadexternallink . . . . . 5194, 5196
		\< . . . . . 196, 221	\@Cwindex . . . . . 8295, 8296	\@@@hyperref 4994, 4995
		\= . . . . . 167, 173, 180, 183, 14703, 14715, 14727, 15105, 15169, 15198, 15225, 15525, 15527, 15567, 15569, 15619, 15621, 15622, 15693, 15695, 15753, 15755, 16002, 16004, 16859,	\@Cwritetorep . . . 14224, 14230	\@@@hyperref 4994, 4995
			\@Alph . . . . . 7007, 7009	\@@@hyperref 4994, 4995
			\@BIBLABEL . . . 7673, 7679, 7685	\@@@hyperref 4994, 4995
			\@BOOKMARK . . . 14363, 14365	\@@@hyperref 4994, 4995
			\@CheckBox 6181, 10396, 12788, <u>12824</u> , <u>12962</u> , <u>13392</u> , <u>13769</u>	\@@@hyperref 4994, 4995
			\@ChoiceMenu . . . 6178, 10399, <u>12606</u> , <u>12827</u> , <u>12897</u> , <u>13207</u> , <u>13563</u>	\@@@hyperref 4994, 4995
			\@Form . . . . . 5854, 10386, 12358, <u>12814</u> , <u>12841</u> , <u>13096</u> , <u>13477</u>	\@@@hyperref 4994, 4995
			\@Gauge . . . . . 6187, 10390, 12543, <u>12818</u> , <u>12846</u> , <u>12983</u> , <u>13474</u>	\@@@hyperref 4994, 4995
			\@Localurfalse . . . . . 10339	\@@@hyperref 4994, 4995
			\@Localurltrue . . . . . 10336	\@@@hyperref 4994, 4995
			\@M . . . . . 2253, 4877	\@@@hyperref 4994, 4995
			\@MM . . . . . 7429	\@@@hyperref 4994, 4995
			\@PushButton . . . . 6184, 10402, <u>12710</u> , <u>12830</u> , <u>12943</u> , <u>13314</u> , <u>13683</u>	\@@@hyperref 4994, 4995
			\@Refstar . . . . . 4742, 8503	\@@@hyperref 4994, 4995
			\@Reset . . . . . 6193, 10405, 12761, <u>12833</u> , <u>12959</u> , <u>13367</u> , <u>13740</u>	\@@@hyperref 4994, 4995
			\@Submit . . . . . 6190, 10408, 12741, <u>12836</u> , <u>12956</u> , <u>13344</u> , <u>13717</u>	\@@@hyperref 4994, 4995
			\@TextField 6175, 10393, 12574, <u>12821</u> , <u>12849</u> , <u>13177</u> , <u>13526</u>	\@@@hyperref 4994, 4995
			\@addtoreset . . . 8192, 8193, 8208	\@@@hyperref 4994, 4995

\@alph . . . . .	7003, 7005	\@currentHpage . . . .	7854, 7859, 7866, 7917, 7928, 7935	\@filecolor . . .	3481, 3493, 9101, 9627, 9644, 10039, 10550
\@anchorcolor . . . . .	3491, 9413, 9508, 10458, 11947, 12234	\@currentHref . . . . .		\@firstoffive . . . .	4732, 8495, 8593
\@arabic . . . . .	6910, 6926, 7002	. . . . .	2212, 5087, 5387, 6298, 7033, 7035, 7045, 7047, 7054, 7067, 7069, 7079, 7107, 7118, 7120, 7138, 7159, 7163, 7168, 7191, 7232, 7239, 7241, 7255, 7257, 7322, 7345, 7355, 7357, 7358, 7414, 7443, 7543, 7569, 7573, 7601, 7603, 7773, 7963, 7990, 8003, 8028, 8168, 14601, 14614, 14625, 14652, 14669	\@firstofone . . . . .	573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 627, 660, 1271, 2678, 4222, 4621, 5015, 5382, 5399, 5820, 5826, 6076, 6832, 7000, 7012, 7536, 7619, 7921, 8249, 9306, 13050, 13856, 13873, 13891, 14323, 14335
\@auxout . . . . .	2204, 5042, 5358, 7693, 7708, 7735, 7745, 7764, 7770, 7794	\@currentcounter . . .	6859, 6877, 7432	\@firstoftwo . . . . .	. . . . .
\@backslashchar . . . . .	322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 334, 1069, 1728, 1732, 1735, 1873, 1890, 1896, 1900, 1908, 4084, 4794, 8715, 8725	\@currentlabel . . . . .	7433, 7766, 7773, 8173, 8180	. . . . .	341, 349, 619, 643, 899, 915, 2086, 2340, 2347, 5274, 6377, 7308, 7331, 14659
\@baseurl . . . . .	3498, 3500, 5252, 9152, 9155, 9398, 9400, 9685, 9687, 10208, 10218, 10304, 10306, 10841, 10843, 11225, 11239, 11932, 11934, 12132, 12146, 12220, 12222	\@currentlabelname . .	2202, 7323, 7346, 7415, 7444, 7548	\@fnsymbol . . . . .	7001
\@bibitem . . . . .	7700, 7742	\@currentlabstr . . . .	2201, 2209	\@footnotemark . . . .	7285, 7351, 7369, 7452, 7464, 7466, 7478, 7479, 7510, 7512
\@biblabel . . . . .	7673, 7731	\@currname . . . . .	2323	\@footnotetext . . . .	7284, 7291, 7328, 7368, 7465, 7467, 7481, 7482, 7503
\@bookmarkopenstatus . .	4619, 4636, 14284	\@curropt . . . . .	12615, 12616, 12677, 12678, 12915, 12922, 12923, 12925, 12932, 12933, 12935, 13216, 13217, 13279, 13280, 13572, 13573, 13638, 13639	\@for . . . . .	3523, 5464, 12615, 12677, 12915, 12922, 12932, 13216, 13279, 13572, 13638
\@bookmarksopenlevel . .	3452, 3454, 4622	\@dblarg . . . . .	7538, 7621	\@fourthoffive . . . .	5030, 8583, 8590
\@bsphack . . . . .	2197, 5035, 7768	\@documentclasshook . .	4228	\@gobble . . . . .	49, 56, 117, 259, 264, 566, 567, 568, 569, 606, 607, 608, 609, 629, 646, 647, 648, 657, 659, 922, 1208, 1269, 1288, 1301, 1305, 1368, 1431, 1432, 1439, 1444, 1458, 1463, 2060, 2224, 2519, 2531, 2684, 3898, 4215, 4220, 4242, 4251, 4257, 4324, 4636, 4759, 5378, 5380, 5805, 6066, 6336, 6337, 6343, 6347, 6348, 6350, 6351, 6363, 6365, 6381, 6382, 6385, 6386, 6388, 6441, 6660, 6806, 6826, 6830, 7525, 7616, 8648, 9308, 10727, 10730, 12325, 13006, 13022, 13027, 13097, 13478, 14271, 14272, 14273, 14274, 14321, 14333
\@capstartfalse . . . . .	7563	\@ehc . . . . .	2575, 2683, 2709, 2725, 2760, 2799, 2806, 2817, 2823, 2861, 4322, 4939, 5216, 5568, 5692, 5886, 5919, 6113, 6166, 12719, 12772, 13324, 13378, 13693, 13751	\@gobble@om . . . . .	7971, 7973
\@caption . . . . .	7528, 7540, 7584, 7621, 7623	\@ehd . . . . .	63, 274, 280, 304, 7524, 7615	\@gobble@som . . . . .	7972
\@capttype . . . . .	2206, 7523, 7527, 7531, 7538, 7545, 7600, 7614, 7618, 7621	\@elt . . . . .	6898, 6900, 6901, 6906	\@gobblefour . . . . .	572, 683, 965, 966, 967, 3706
\@car . . . . .	1351, 1367, 1385, 1405, 3431, 5474	\@endForm . . . . .	5855, 10389, 12542, 12817, 12845, 13150, 13504	\@gobbleopt . . . . .	6388, 6390
\@chapter . . . . .	14620, 14621	\@eqnocr . . . . .	7179	\@gobblethre . . . . .	7895
\@cite . . . . .	7829, 7835	\@eqnstarfalse . . . . .	7153, 7182		
\@cite@opt . . . . .	7830, 7836, 7840, 7850	\@eqnstartrue . . . . .	7179		
\@citebordercolor . . . .	3546, 4147	\@esphack . . . . .	2218, 5046, 7778, 8307		
\@citecolor . . . . .	3492	\@extra@b@citeb . . . .	7658, 7661, 7678, 7683, 7703, 7723		
\@citedata@opt . . . . .	7831, 7837, 7839	\@extra@b@info . . . . .	7657, 7660, 7664		
\@citedatax . . . . .	7846, 7851	\@fifthoffive . . . . .	5029, 8455, 8588		
\@citedatax@opt . . . . .	7843, 7849	\@filebordercolor . . .	3547, 4145, 9080, 9082, 10021, 10023, 10544, 10546, 11610		
\@citeseppen . . . . .	7828, 7834				
\@commahyperpage . . . .	8389, 8394				
\@cons . . . . .	8189				
\@ctrerr . . . . .	6975, 6984				
\@currDisplay . . . . .	5942, 12618, 12681, 12926, 12940, 13219, 13283, 13575, 13642				
\@currValue . . . . .	5944, 5946, 5948, 12679, 12690, 12926, 12937, 13281, 13291, 13640, 13657				
\@currentHlabel . . . . .	7054				

<code>\@gobbletwo</code> 570, 650, 676, 684, 685, 964, 1386, 1463, 1467, 2407, 3704, 3705, 4261, 5398, 5400, 5753, 6339, 6353, 6367, 6376, 6384, 6388, 8572, 13007, 14611	7654, 7656, 7667, 7874, 7890, 8012, 8025, 8040, 8163, 8190, 8197, 8206, 8207, 8217, 8221, 8222, 8229, 8323, 8514, 8560, 8561, 8605, 8606, 8608, 8609, 8650, 8756, 8787, 8818, 9017, 9027, 10481, 10584, 10923, 10924, 10970, 11013, 11092, 11277, 12995, 13097, 13153, 13478, 13854, 13865, 14280, 14592, 14619, 14629, 14639	<code>\@mpfn</code> . . . . . 7288, 7487, 7500 <code>\@mpfootnotetext</code> . . 7291, 7304, 7305, 7370 <code>\@mycount</code> . . . . . 14428, 14438 <code>\@namedef</code> . . . 2163, 2165, 2167, 2169, 2171, 2173, 2175, 2177, 2179, 2181, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2343, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 3298, 3310, 5574, 5575, 5576, 5577, 5897, 5898, 7178, 7181, 7758, 7759, 7760, 7761 <code>\@namerefstar</code> . . . . . 4738, 8500 <code>\@nameuse</code> . . 2206, 2634, 5580, 5889 <code>\@ne</code> 2594, 2748, 4533, 4607, 4909, 6515, 6516, 6523, 7858, 7860, 7869, 7872, 7873, 7886, 8778, 9949, 9950, 9955, 10820, 11771, 12549, 13159, 13513 <code>\@newl@bel</code> . . . . . 5341, 7660 <code>\@nil</code> . . . . . 285, 312, 1263, 1266, 1274, 1351, 1369, 1387, 1403, 1405, 1408, 1411, 1414, 1944, 1946, 1962, 1964, 3431, 4816, 4820, 4825, 5269, 5277, 5283, 5285, 5474, 6057, 6060, 6079, 6416, 6419, 6426, 6428, 6429, 6542, 6590, 6591, 6593, 6616, 6633, 6687, 6689, 7102, 7111, 7113, 7125, 8373, 8375, 8382, 8405, 8408, 8418, 8434, 8437, 8607, 8638, 8711, 8717, 8721, 8727, 10692, 10694, 13863, 13876, 13882, 14312, 14315, 14318, 14327, 14330, 14339 <code>\@nocnterr</code> . . . . . 8207, 8222 <code>\@nocounterr</code> . . . . . 8206, 8221 <code>\@number</code> . . . . . 7000, 7921 <code>\@nx</code> . . . 8210, 8225, 8228, 8230 <code>\@onelevel@sanitize</code> . 2400, 2404, 2606, 3430, 4299, 4329, 4343, 4850, 5264, 5267, 5280, 5294, 5564, 5798, 5882, 6643, 6645, 6899, 6918, 7041, 7996, 8362,
<code>\@harvarditem</code> . . . . . 7783, 7785 <code>\@hyper@anchor</code> . . 5302, 5303 <code>\@hyper@itemfalse</code> . . 6839, 6847, 6874 <code>\@hyper@itemtrue</code> . . . . . 6840 <code>\@hyper@launch</code> . . . 5222, 5231, 9105, 10045, 10619, 11628 <code>\@hyper@linkfile</code> . . . 5203, 5206, 5210, 5242 <code>\@hyper@readexternallink</code> 5197, 5201 <code>\@hyperdef</code> . . . . . 5002, 5003 <code>\@hyperpage</code> . . . . . 8386, 8387 <code>\@hyperref</code> . . . . . 4982, 4994 <code>\@ifclassloaded</code> 6513, 7855, 9311 <code>\@ifnextchar</code> . . 12, 88, 103, 123, 677, 4884, 4982, 5002, 5150, 5854, 6175, 6178, 6181, 6184, 6187, 6190, 6193, 6388, 6397, 6406, 7468, 7486, 7783, 7841, 11250, 11539, 11553, 14363, 14366 <code>\@ifpackagelater</code> . . . . . 6854 <code>\@ifpackageloaded</code> . . . . . 809, 950, 2192, 4205, 4415, 7062, 7095, 7132, 7265, 7365, 7381, 7421, 7597, 7753, 7826, 8255, 8256, 8257, 8513, 12212, 13155 <code>\@ifpackagewith</code> . . . . . 4203 <code>\@ifstar</code> . . . . . 66, 8552 <code>\@ifundefined</code> . . . . . . . . 34, 270, 276, 317, 353, 494, 549, 628, 668, 744, 820, 821, 822, 876, 886, 899, 918, 921, 1320, 1415, 1416, 1540, 2143, 2193, 2320, 2339, 2340, 2383, 2496, 2627, 2648, 2649, 3307, 3352, 3360, 3367, 3389, 3429, 4208, 4237, 4239, 4412, 4413, 4934, 5347, 5378, 5390, 5563, 5881, 6434, 6759, 6896, 6916, 6923, 6945, 6960, 7096, 7099, 7100, 7131, 7156, 7184, 7247, 7263, 7272, 7274, 7281, 7521, 7529, 7547,	<code>\@indexfile</code> . . . 8299, 8314, 8329, 8333, 8343 <code>\@inmathwarn</code> . . . . . 534, 535 <code>\@inpenc@undefined@</code> . . . 1935 <code>\@kernel@refstepcounter</code> . 6843 <code>\@latex@</code> . . . . . 6428, 6429 <code>\@latex@error</code> . . . . . 7524, 7615 <code>\@latex@warning</code> . . . 5022, 8430, 8450, 8467, 8599 <code>\@lbibitem</code> . . . . . 7674, 7730 <code>\@linkbordercolor</code> . . 3548, 4142, 9035, 10448 <code>\@linkcolor</code> . . . . . 3490, 11278 <code>\@linkdim</code> 473, 9462, 9463, 9471, 9472, 9473, 9542, 9543, 9555, 9556, 9557, 9579, 9580, 9593, 9594, 9595, 9619, 9620, 9633, 9634, 9635, 12000, 12001, 12009, 12010, 12011, 12282, 12283, 12296, 12297, 12298 <code>\@listctr</code> . . . . . 7709, 7746 <code>\@m</code> 9336, 10272, 10416, 10774, 11730 <code>\@mainaux</code> . . 5406, 6789, 6797, 13043, 13046, 13074, 13089 <code>\@makecaption</code> 7564, 7566, 7634 <code>\@makefnmark</code> . . . . . 7360, 7515 <code>\@makefnstext</code> . . . . . 7434 <code>\@makeother</code> . . . . . 166, 167, 179, 180, 182, 183, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 4775, 4784, 8687, 14452, 14455, 14479, 14482 <code>\@menubordercolor</code> . 3549, 4144, 9374, 9376, 10119, 10121, 10657, 10659, 11532 <code>\@menucolor</code> 3495, 9389, 10130, 10663 <code>\@mkboth</code> . . . . . 650, 14611	

8481, 9807, 14309  
 \@outlinefile 14282, 14371, 14466,  
 14468, 14545, 14547  
 \@pagerefstar . 4734, 8497, 8518,  
 8525, 8534, 8543  
 \@pagesetref . . . . . 8446  
 \@parboxrestore 7431, 7556, 7629  
 \@parcount . . . . . 14430, 14438  
 \@part . . . . . 14638, 14642  
 \@partaux . . . . . 5404  
 \@pdfauthor . 3722, 4150, 9212,  
 9665, 10153, 10894, 11149,  
 12061  
 \@pdfborder . . . . .  
 . . 3381, 3567, 3568, 3569,  
 3576, 3580, 3603, 3605,  
 4702, 8968, 9825, 10446,  
 11027, 11110, 11530, 11543,  
 11558, 11579, 11607, 11638,  
 11667, 11777, 11873, 12041  
 \@pdfborderstyle . . 3382, 3584,  
 3585, 3586, 3595, 3599,  
 3607, 3609, 4703, 6028,  
 8969, 9826, 10447, 11028,  
 11111, 11531, 11544, 11559,  
 11580, 11608, 11639, 11668,  
 11778, 11874, 12042  
 \@pdfcreationdate . . . . .  
 . . 3744, 4153, 9216, 9218,  
 9657, 9659, 10145, 10147,  
 11124, 11126, 12053, 12055  
 \@pdfcreator . 3734, 3739, 4152,  
 9215, 9656, 10144, 10897,  
 11148, 12052  
 \@pdfdirection . . . . . 9175, 9723,  
 10188, 10853, 11205, 12112  
 \@pdfduplex 9181, 9729, 10194,  
 10859, 11211, 12118  
 \@pdfhighlight 3553, 3561, 3563,  
 4148, 11026, 11109, 11529,  
 11578, 11606, 11637  
 \@pdfkeywords 3763, 4156, 9228,  
 9654, 10158, 10902, 11150,  
 12050  
 \@pdflang 4023, 4025, 4026, 4028,  
 4030, 4032, 4038, 4068,  
 4069, 4071, 4092, 4096,  
 4098, 4115, 4124, 4131,  
 4163, 9201, 9203, 9751,  
 9753, 10228, 10230, 11235,  
 11237, 12142, 12144  
 \@pdfm@dest . . 9769, 9828, 9832  
 \@pdfm@mark 6777, 9768, 9820,  
 9840, 9854, 9856, 9870,  
 9872, 9877, 9878, 9908,  
 9932, 9934, 9939, 9957,  
 9980, 10014, 10050, 10082,  
 10112, 10140, 10209, 10236,  
 13481, 13482, 13483, 13502,  
 13520, 13523, 13553, 13648,  
 13675, 13706, 13731, 13759,  
 13788, 13799, 13832, 13840,  
 14516  
 \@pdfmoddate . . . . .  
 . . 3750, 4154, 9220, 9222,  
 9661, 9663, 10149, 10151,  
 11128, 11132, 12057, 12059  
 \@pdfnonfullscreenpagemode . .  
 9174, 9722, 10187, 10852,  
 11204, 12111  
 \@pdfnumcopies 9190, 9192, 9738,  
 9740, 10203, 10205, 10868,  
 10870, 11220, 11222, 12127,  
 12129  
 \@pdfpageduration . 3508, 9273,  
 9277, 9282, 10253, 10255,  
 10258, 10783, 10785, 10788,  
 11066, 11068, 11076  
 \@pdfpagelayout . . . . . 9200,  
 9750, 10227, 10873, 10875,  
 11234, 12141  
 \@pdfpagemode 4401, 4402, 4632,  
 4633, 4642, 4643, 9154,  
 9706, 10222, 10840, 11188,  
 12095  
 \@pdfpagescrop 3968, 4158, 9139,  
 9143, 9689, 9690, 9711,  
 9713, 10234, 10236, 10829,  
 10831, 11193, 11195, 12100,  
 12102  
 \@pdfpagetransition . 3504, 9249,  
 9253, 9258, 10242, 10244,  
 10247, 10672, 10674, 10676,  
 11049, 11051, 11059  
 \@pdfpicktraybypdfsize . . . . .  
 . . 9182, 9184, 9730, 9732,  
 10195, 10197, 10860, 10862,  
 11212, 11214, 12119, 12121  
 \@pdfprintarea . . . . 9178, 9726,  
 10191, 10856, 11208, 12115  
 \@pdfprintclip 9179, 9727, 10192,  
 10857, 11209, 12116  
 \@pdfprintpagerange . . . . .  
 . . 3674, 4162, 9186, 9188,  
 9734, 9736, 10199, 10201,  
 10864, 10866, 11216, 11218,  
 12123, 12125  
 \@pdfprintscaling . . 9180, 9728,  
 10193, 10858, 11210, 12117  
 \@pdfproducer . . . . .  
 . . 3728, 4151, 9224, 9226,  
 9666, 9668, 10154, 10156,  
 10797, 10798, 10802, 10805,  
 10806, 10898, 10900, 11135,  
 11139, 11664, 11665, 11770,  
 11772, 11774, 11870, 11871,  
 12062, 12064  
 \@pdfremotestartview . . . . .  
 . . 3929, 3931, 3932, 3955,  
 3959, 3961, 3962, 3964,  
 4160, 9093, 10030, 11618  
 \@pdfstartpage . . . . .  
 . . 3912, 3914, 4161, 9160,  
 9164, 9693, 9698, 10211,  
 10215, 10833, 10837, 11175,  
 11180, 12082, 12087  
 \@pdfstartview . . . . .  
 . . 3919, 3921, 4159, 9162,  
 9164, 9695, 9699, 10213,  
 10215, 10835, 11177, 11181,  
 12084, 12088  
 \@pdfsubject . 3757, 4155, 9214,  
 9670, 10143, 10896, 11147,  
 12066  
 \@pdftempa . . . 5208, 5209, 5212  
 \@pdftempwordfile . . 5199, 5209  
 \@pdftempwordrun . 5200, 5212  
 \@pdftitle 3716, 4149, 9213, 9655,  
 10142, 10895, 11146, 12051  
 \@pdftrapped 3768, 3771, 3774,  
 3783, 3792, 4157, 9229,  
 9231, 10159, 10161, 11151  
 \@pdfview . . . 3900, 8950, 8958,  
 9775, 9779, 9783, 9787,  
 9791, 9795, 9796, 9799,  
 9800, 9803, 9807, 9809,  
 9824, 10445, 10455, 10467,  
 10964, 10984, 11669, 11779,  
 11875, 12154  
 \@pdfviewarea 9176, 9724, 10189,  
 10854, 11206, 12113  
 \@pdfviewclip 9177, 9725, 10190,  
 10855, 11207, 12114  
 \@pdfviewparams . . . . . 3902,  
 3904, 10964, 10984, 11670,  
 11780, 11876, 12155  
 \@percentchar 4779, 4780, 4832,  
 14286  
 \@processme . . . . .  
 . . 5930, 5931, 9255, 9261,

9279, 9285, 11253, 11254,  
 11376, 11377, 11380, 11381  
 \@protected@testopt . . . . . 680  
 \@protected@testopt@xargs 681  
 \@refstar . . . . . 4730, 8494  
 \@runbordercolor . . . 3550, 4146,  
 9114, 9116, 10057, 10059,  
 10638, 10640, 11641  
 \@runcolor . . 3496, 9134, 10073,  
 10644  
 \@safe@activesfalse . . . . . 633  
 \@safe@activetrue . . . . . 632  
 \@savsf . . . . . 8953, 8961  
 \@schapter . . . . . 14608, 14609  
 \@secondoffive 4736, 8456, 8457,  
 8498  
 \@secondoftwo . . . . .  
 . . 338, 616, 619, 626, 899,  
 913, 1337, 2088, 2339, 2340,  
 2349, 2351, 5168, 5272,  
 7310, 7333, 13012, 13015,  
 13018, 13021, 13025, 13026,  
 13029, 14661  
 \@sect . . . . . 14656, 14657  
 \@seqncr . . . . . 7179  
 \@serial@counter . 14378, 14426,  
 14428, 14429  
 \@setminipage . . . . . 7558, 7631  
 \@setref . . . . . 8425, 8426, 8463  
 \@sharp . . . . . 7102, 7108  
 \@skiphyperreffalse . 6848, 7689,  
 7701  
 \@skiphyperreftrue . 7675, 7701  
 \@spaces . . . . . 262  
 \@spart . . . . . 14648, 14649  
 \@ssect . . . . . 14594, 14595  
 \@tempa 7383, 7387, 7390, 7402  
 \@tempb . . . . . 7203, 7207  
 \@tempboxa . 9460, 9462, 9471,  
 9540, 9542, 9545, 9546,  
 9555, 9561, 9562, 9577,  
 9579, 9582, 9583, 9593,  
 9599, 9600, 9617, 9619,  
 9622, 9623, 9633, 9639,  
 9640, 11998, 12000, 12009,  
 12280, 12282, 12296  
 \@tempcnta 1914, 14236, 14237,  
 14238, 14239, 14240, 14242,  
 14245, 14246, 14247, 14253,  
 14255, 14257, 14347, 14348,  
 14349, 14352, 14353, 14354,  
 14355, 14356, 14564, 14565,  
 14566  
 \@tempdima . 2256, 6230, 6231,  
 6232, 6233, 6234, 6235,  
 6236, 6237, 12614, 12619,  
 12621, 12657, 12658, 12659,  
 12663, 12664, 12665, 12666,  
 13215, 13220, 13222, 13259,  
 13260, 13261, 13265, 13266,  
 13267, 13268, 13571, 13576,  
 13578, 13615, 13616, 13617,  
 13621, 13622, 13623, 13624  
 \@tempdimb . . . . 12618, 12619,  
 13219, 13220, 13575, 13576  
 \@tempswafalse . . . . . 7845  
 \@tempswatrue 7815, 7818, 7821,  
 7842  
 \@temptokena 3276, 3281, 3284,  
 3286  
 \@tfor . . . . . 7204  
 \@the@H@page 7887, 7924, 7926,  
 7927, 7928  
 \@thefnmark . 7289, 7300, 7394,  
 7433, 7450, 7457, 7488,  
 7501, 7508  
 \@thirdoffive . . . . . 4740, 8501  
 \@thm . . . . . 7268, 7269  
 \@typeset@protect . . . . . 14577  
 \@undefined . 371, 374, 460, 462,  
 686, 2654, 2714, 3280, 4421,  
 4510, 6378, 6605, 6623,  
 6668, 7523, 7588, 7593,  
 7599, 7614, 8489, 10808,  
 10822, 15108, 15125, 16387,  
 16392, 16913  
 \@unexpandable@protect . 4987,  
 8360, 8479  
 \@unprocessedoptions . . . 4580  
 \@urlbordercolor . . . 3551, 4143,  
 9045, 9047, 10089, 10091,  
 10570, 10572, 11581  
 \@urlcolor 3494, 9064, 9467, 9480,  
 9587, 9604, 10103, 10576,  
 12005, 12018, 12291, 12304  
 \@urltype . . 9433, 9438, 10309,  
 10335, 10475, 10489, 11967,  
 11972, 12253, 12258  
 \@vwid@setup . . . . . 7060  
 \@vwid@wrap . . . . . 7059  
 \@whilenum . . . . . 981  
 \@wrindex . . . . 8263, 8264, 8295  
 \@writefile . . . . . 7771  
 \@x@sf . . 7353, 7362, 7514, 7516  
 \@xfootnote . . . . . 7486  
 \@xfootnotemark . . . 7297, 7505  
 \@xfootnotenext . . . 7286, 7498  
 \@exp . . . 8179, 8209, 8210, 8224,  
 8225, 8227, 8228  
 \@xxxii . . . . . 5100  
 \[ 192, 217, 324, 3573, 3591, 4951  
 \{ . 332, 537, 1768, 10955, 14304  
 \} . 333, 538, 1769, 10955, 14305  
 \\_ . . . . . 335, 665, 3096, 3099,  
 3925, 14718, 14719, 14720,  
 14721, 14722, 14723, 14724,  
 14725, 14726, 14727, 14728,  
 14729, 15185, 15186, 15187,  
 15188, 15189, 15190, 15191,  
 15192, 15193, 15194, 15196,  
 15198, 15199, 15200, 15201,  
 15202, 15203, 15204, 15205,  
 15206, 15207, 15208, 15209,  
 15210, 15211, 15212, 15213  
 \] . . . . . 193, 218  
 \^ . . . . . 186, 211,  
 322, 1866, 1867, 3079, 4766,  
 4767, 4776, 14696, 14708,  
 14720, 14932, 14948, 14956,  
 14969, 14983, 14998, 15014,  
 15024, 15025, 15038, 15052,  
 15101, 15158, 15187, 15218,  
 15391, 15407, 15415, 15427,  
 15443, 15458, 15474, 15484,  
 15485, 15499, 15513, 15541,  
 15543, 15587, 15589, 15603,  
 15605, 15642, 15644, 15645,  
 15725, 15727, 15773, 15775,  
 15777, 15779, 17293, 17295  
 \\_ . . . 187, 212, 545, 4770, 4788,  
 4789, 5059, 5072, 5085  
 \` . . . . . 166, 172, 179,  
 182, 3015, 3150, 3155, 3160,  
 3161, 3164, 3167, 3170,  
 3172, 3180, 14303, 14694,  
 14706, 14718, 14928, 14944,  
 14952, 14965, 14979, 14994,  
 15010, 15018, 15019, 15034,  
 15048, 15097, 15156, 15185,  
 15216, 15387, 15403, 15411,  
 15423, 15439, 15454, 15470,  
 15478, 15479, 15495, 15509,  
 15910, 15912, 16394, 16423,  
 16564, 16593, 17261, 17263,  
 17339, 17341, 19509, 19514,  
 19519, 19524, 19529, 19534,  
 19539, 19544, 19549, 19554,  
 19559, 19564, 19569, 19574,  
 19579, 19584, 19589, 19594,  
 19599, 19604, 19609, 19614,  
 19619, 19624

\l ..... 188, 213,  
328, 1674, 1767, 1808, 2961,  
4186, 8259, 8686, 8696

\~ ..... 544,  
983, 1922, 3073, 3081, 3082,  
3083, 4792, 14697, 14709,  
14721, 14934, 14963, 14971,  
15000, 15032, 15040, 15103,  
15159, 15188, 15219, 15393,  
15421, 15429, 15460, 15493,  
15501, 15614, 15616, 15617,  
15749, 15751, 17253, 17255,  
17323, 17325, 17347, 17349,  
19511, 19516, 19521, 19526,  
19531, 19536, 19541, 19546,  
19551, 19556, 19561, 19566,  
19571, 19576, 19581, 19586,  
19591, 19596, 19601, 19606,  
19611, 19616, 19621, 19626

# Numbers

\3 ..... 521, 1027, 1028, 1029,  
1030, 1031, 1032, 1033,  
1034, 1143, 1144, 1145,  
1146, 1147, 1148, 1149,  
1150, 2037, 2173, 2181,  
2183, 14447, 14928, 14930,  
14932, 14934, 14936, 14938,  
14940, 14942, 14944, 14946,  
14948, 14950, 14952, 14954,  
14956, 14958, 14960, 14961,  
14963, 14965, 14967, 14969,  
14971, 14973, 14975, 14977,  
14979, 14981, 14983, 14985,  
14987, 14989, 14990, 14992,  
14994, 14996, 14998, 15000,  
15002, 15004, 15006, 15008,  
15010, 15012, 15014, 15016,  
15018, 15019, 15021, 15022,  
15024, 15025, 15027, 15028,  
15030, 15032, 15034, 15036,  
15038, 15040, 15042, 15044,  
15046, 15048, 15050, 15052,  
15054, 15056, 15058, 15059,  
15061, 15153, 15387, 15389,  
15391, 15393, 15395, 15397,  
15399, 15401, 15403, 15405,  
15407, 15409, 15411, 15413,  
15415, 15417, 15419, 15421,  
15423, 15425, 15427, 15429,  
15431, 15433, 15437, 15439,  
15441, 15443, 15445, 15447,  
15449, 15450, 15452, 15454,  
15456, 15458, 15460, 15462,

15464, 15466, 15468, 15470,  
15472, 15474, 15476, 15478,  
15479, 15481, 15482, 15484,  
15485, 15487, 15488, 15490,  
15493, 15495, 15497, 15499,  
15501, 15503, 15505, 15507,  
15509, 15511, 15513, 15515,  
15517, 15520, 15521, 15523,  
15856, 15860, 15864, 15867,  
15869, 15871, 15873, 15874,  
15876, 15878, 15880, 15882,  
15884, 15886, 15888, 15891,  
15893, 15895, 15897, 15899,  
15901, 15903, 15904, 15906,  
15908, 15910, 15912, 15914,  
15916, 15919, 15922, 16333,  
16336, 16339, 16341, 16344,  
16347, 16350, 16353, 16355,  
16357, 16359, 16361, 16363,  
16365, 16366, 16368, 16370,  
16372, 16374, 16376, 16795,  
16797, 16799, 16801, 16803,  
16805, 16807, 16809, 16811,  
16813, 16815, 16817, 16819,  
16821, 16823, 16825, 16827,  
16829, 16831, 16833, 16835,  
16837, 16839, 16842, 16845,  
16847, 16849, 16851, 16853,  
16855, 16857, 16859, 16861,  
16863, 16865, 16867, 16869,  
16871, 16873, 16876, 16879,  
16881, 16883, 16885, 16887,  
16889, 16891, 16893, 16895,  
16897, 16899, 16901, 16903,  
16905, 16907, 16909, 16911,  
16915, 16917, 16919, 16921,  
16923, 16925, 16927, 16929,  
16931, 16933, 16935, 16937,  
16939, 16941, 16943, 16945,  
16947, 16949, 16951, 16953,  
16955, 16957, 16959, 16961,  
16963, 16965, 16967, 16970,  
16972, 16974, 16976, 17327,  
17329, 17331, 17333, 17335,  
17337, 17339, 17341, 17343,  
17345, 17347, 17349, 17705,  
17708, 17711, 17714, 17717,  
17720, 17723, 17725, 17727,  
17729, 17731, 17734, 17737,  
17740, 17742, 17745, 17748,  
17750, 17753, 17756, 17759,  
17762, 17764, 17766, 17768,  
17770, 17772, 17774, 17776,  
17778, 17781, 17784, 17786,

17789, 17791, 17794, 17796,  
17798, 17800, 17847, 17885,  
17890, 18263, 18265, 18267,  
18270, 18273, 18275, 18277,  
18279, 18281, 18283, 18286,  
18289, 18291, 18293, 18295,  
18297, 18300, 18303, 18305,  
18307, 18309, 18311, 18314,  
18317, 18319, 18321, 18323,  
18325, 18327, 18329, 18331,  
18333, 18335, 18338, 18341,  
18343, 18345, 18347, 18349,  
18352, 18356, 18359, 18362,  
18364, 18366, 18368, 18370,  
18439, 18442, 18518, 18520,  
18522, 18524, 18526, 18528,  
18530, 18532, 18534, 18536,  
18538, 18540, 18542, 18544,  
18546, 18548, 18550, 18552,  
18554, 18556, 18558, 18560,  
18562, 18564, 18566, 18568,  
18570, 18572, 18574, 18576,  
18578, 18580, 18582, 18584,  
18586, 18588, 18590, 18592,  
18594, 18596, 18598, 18600,  
18602, 18604, 18606, 18635,  
18638, 18640, 18642, 18645,  
18647, 18649, 18651, 18654,  
18656, 18874, 18876, 18878,  
18880, 18882, 19053, 19055,  
19057, 19059, 19061, 19063,  
19066, 19070, 19072, 19074,  
19076, 19078, 19080, 19082,  
19084, 19086, 19088, 19090,  
19194, 19197, 19200, 19202,  
19204, 19206, 19208, 19210,  
19212, 19214, 19341, 19343,  
19345, 19347, 19349, 19352,  
19355, 19358, 19362, 19365,  
19368, 19370, 19372, 19374,  
19376, 19379, 19381, 19456,  
19468, 19470, 19472, 19474,  
19476, 19496, 19497, 19498,  
19502, 19503, 19504, 19507,  
19509, 19511, 19522, 19524,  
19528, 19529, 19530, 19531,  
19532, 19533, 19534, 19535,  
19537, 19538, 19539, 19540,  
19541, 19542, 19543, 19544,  
19545, 19546, 19547, 19548,  
19549, 19550, 19551, 19552,  
19553, 19554, 19555, 19557,  
19558, 19559, 19560, 19561,  
19562, 19563, 19564, 19565,

19566, 19567, 19569, 19571,  
19582, 19584, 19588, 19589,  
19590, 19591, 19592, 19593,  
19594, 19595, 19597, 19598,  
19599, 19600, 19601, 19602,  
19603, 19604, 19605, 19606,  
19607, 19608, 19609, 19610,  
19611, 19612, 19613, 19614,  
19615, 19617, 19618, 19619,  
19620, 19621, 19622, 19623,  
19624, 19625, 19626, 19730,  
19764, 19765, 19766, 19767,  
19768, 19769, 19770, 19771,  
19772, 19773

\9 . 524, 1047, 1050, 1081, 1965,  
1980, 1989, 2017, 2037,  
2073, 2077, 2091, 2095,  
2103, 2108, 2111, 2145,  
2149, 2152, 2155, 2165,  
2167, 2169, 2171, 2173,  
2175, 2177, 2179, 2181,  
2183, 15153, 16979, 16981,  
16983, 16985, 16987, 16989,  
16992, 16995, 16998, 17001,  
17003, 17005, 17007, 17009,  
17011, 17013, 17015, 17017,  
17019, 17022, 17024, 17027,  
17029, 17032, 17034, 17038,  
17042, 17045, 17047, 17049,  
17051, 17053, 17055, 17057,  
17059, 17061, 17063, 17065,  
17067, 17069, 17071, 17073,  
17075, 17077, 17079, 17082,  
17085, 17088, 17091, 17093,  
17095, 17097, 17099, 17101,  
17103, 17105, 17107, 17109,  
17111, 17113, 17115, 17117,  
17119, 17121, 17123, 17125,  
17127, 17129, 17131, 17133,  
17135, 17137, 17139, 17141,  
17143, 17145, 17147, 17149,  
17151, 17153, 17155, 17157,  
17159, 17161, 17163, 17165,  
17167, 17169, 17171, 17173,  
17175, 17177, 17179, 17181,  
17183, 17186, 17189, 17192,  
17195, 17197, 17199, 17201,  
17203, 17205, 17207, 17209,  
17211, 17213, 17215, 17217,  
17219, 17221, 17223, 17225,  
17227, 17229, 17231, 17233,  
17235, 17237, 17239, 17241,  
17243, 17245, 17247, 17249,  
17251, 17253, 17255, 17257,

17259, 17261, 17263, 17265,  
17267, 17269, 17271, 17273,  
17275, 17277, 17279, 17281,  
17283, 17285, 17287, 17289,  
17291, 17293, 17295, 17297,  
17299, 17301, 17303, 17305,  
17307, 17309, 17311, 17313,  
17315, 17317, 17319, 17321,  
17323, 17325, 17327, 17329,  
17331, 17333, 17335, 17337,  
17339, 17341, 17343, 17345,  
17347, 17349, 17351, 17353,  
17355, 17357, 17360, 17362,  
17364, 17366, 17368, 17370,  
17372, 17375, 17379, 17381,  
17383, 17386, 17388, 17390,  
17392, 17394, 17396, 17398,  
17400, 17402, 17404, 17406,  
17408, 17410, 17412, 17414,  
17416, 17418, 17420, 17422,  
17424, 17426, 17428, 17430,  
17432, 17434, 17436, 17438,  
17440, 17442, 17444, 17446,  
17448, 17450, 17452, 17454,  
17456, 17458, 17460, 17462,  
17464, 17466, 17468, 17470,  
17472, 17474, 17476, 17478,  
17480, 17482, 17484, 17486,  
17488, 17490, 17492, 17494,  
17496, 17498, 17500, 17502,  
17504, 17506, 17508, 17510,  
17512, 17514, 17516, 17527,  
17530, 17532, 17534, 17536,  
17538, 17540, 17542, 17544,  
17547, 17549, 17551, 17553,  
17555, 17557, 17559, 17562,  
17564, 17566, 17570, 17572,  
17574, 17576, 17578, 17580,  
17582, 17584, 17588, 17590,  
17592, 17594, 17596, 17598,  
17600, 17602, 17604, 17606,  
17608, 17610, 17612, 17614,  
17616, 17618, 17620, 17622,  
17624, 17626, 17630, 17634,  
17636, 17638, 17640, 17643,  
17646, 17648, 17650, 17652,  
17654, 17656, 17659, 17661,  
17663, 17665, 17667, 17669,  
17671, 17673, 17675, 17677,  
17679, 17681, 17685, 17688,  
17690, 17693, 17696, 17699,  
17702, 17705, 17708, 17711,  
17714, 17717, 17720, 17723,  
17725, 17727, 17729, 17731,

17734, 17737, 17740, 17742,  
17745, 17748, 17750, 17753,  
17756, 17759, 17762, 17764,  
17766, 17768, 17770, 17772,  
17774, 17776, 17778, 17781,  
17784, 17786, 17789, 17791,  
17794, 17796, 17798, 17800,  
17802, 17804, 17806, 17808,  
17810, 17812, 17815, 17817,  
17819, 17821, 17823, 17825,  
17828, 17831, 17833, 17835,  
17837, 17839, 17841, 17843,  
17845, 17847, 17849, 17851,  
17853, 17855, 17857, 17859,  
17862, 17864, 17866, 17868,  
17873, 17875, 17878, 17880,  
17883, 17885, 17888, 17890,  
17893, 17895, 17897, 17900,  
17902, 17904, 17907, 17910,  
17912, 17914, 17917, 17920,  
17922, 17924, 17927, 17929,  
17932, 17934, 17936, 17939,  
17941, 17943, 17945, 17947,  
17949, 17952, 17954, 17956,  
17959, 17961, 17963, 17966,  
17968, 17970, 17972, 17974,  
17977, 17979, 17981, 17983,  
17985, 17987, 17990, 17993,  
17996, 17998, 18001, 18003,  
18005, 18007, 18009, 18011,  
18013, 18015, 18017, 18021,  
18023, 18025, 18026, 18029,  
18032, 18036, 18037, 18041,  
18042, 18045, 18047, 18049,  
18051, 18053, 18055, 18057,  
18059, 18061, 18063, 18065,  
18067, 18069, 18072, 18074,  
18076, 18079, 18082, 18084,  
18086, 18088, 18090, 18092,  
18094, 18096, 18098, 18100,  
18102, 18104, 18106, 18108,  
18110, 18112, 18114, 18116,  
18118, 18120, 18122, 18124,  
18126, 18128, 18130, 18132,  
18134, 18136, 18138, 18140,  
18142, 18144, 18146, 18148,  
18150, 18152, 18154, 18156,  
18158, 18161, 18164, 18167,  
18170, 18173, 18177, 18181,  
18183, 18185, 18187, 18189,  
18191, 18194, 18197, 18200,  
18203, 18205, 18208, 18211,  
18215, 18218, 18220, 18223,  
18226, 18229, 18233, 18236,

18239, 18242, 18245, 18249,  
 18253, 18255, 18257, 18259,  
 18261, 18263, 18265, 18267,  
 18270, 18273, 18275, 18277,  
 18279, 18281, 18283, 18286,  
 18289, 18291, 18293, 18295,  
 18297, 18300, 18303, 18305,  
 18307, 18309, 18311, 18314,  
 18317, 18319, 18321, 18323,  
 18325, 18327, 18329, 18331,  
 18333, 18335, 18338, 18341,  
 18343, 18345, 18347, 18349,  
 18352, 18356, 18359, 18362,  
 18364, 18366, 18368, 18370,  
 18372, 18374, 18376, 18378,  
 18380, 18384, 18386, 18388,  
 18390, 18392, 18394, 18396,  
 18398, 18400, 18402, 18404,  
 18406, 18409, 18412, 18414,  
 18417, 18420, 18422, 18425,  
 18428, 18430, 18432, 18434,  
 18436, 18439, 18442, 18444,  
 18446, 18448, 18451, 18453,  
 18455, 18457, 18459, 18461,  
 18463, 18465, 18467, 18469,  
 18471, 18473, 18475, 18477,  
 18479, 18481, 18483, 18485,  
 18487, 18489, 18491, 18493,  
 18496, 18498, 18500, 18502,  
 18504, 18506, 18508, 18510,  
 18512, 18514, 18516, 18518,  
 18520, 18522, 18524, 18526,  
 18528, 18530, 18532, 18534,  
 18536, 18538, 18540, 18542,  
 18544, 18546, 18548, 18550,  
 18552, 18554, 18556, 18558,  
 18560, 18562, 18564, 18566,  
 18568, 18570, 18572, 18574,  
 18576, 18578, 18580, 18582,  
 18584, 18586, 18588, 18590,  
 18592, 18594, 18596, 18598,  
 18600, 18602, 18604, 18606,  
 18608, 18613, 18617, 18621,  
 18624, 18626, 18628, 18632,  
 18635, 18638, 18640, 18642,  
 18645, 18647, 18649, 18651,  
 18654, 18656, 18660, 18662,  
 18664, 18666, 18669, 18672,  
 18675, 18679, 18681, 18683,  
 18685, 18688, 18693, 18696,  
 18698, 18700, 18705, 18708,  
 18711, 18713, 18716, 18718,  
 18720, 18723, 18730, 18733,  
 18738, 18741, 18744, 18747,

18750, 18753, 18756, 18759,  
 18762, 18765, 18768, 18771,  
 18774, 18777, 18780, 18783,  
 18786, 18789, 18792, 18796,  
 18799, 18802, 18804, 18806,  
 18808, 18810, 18812, 18815,  
 18817, 18819, 18821, 18823,  
 18825, 18828, 18830, 18833,  
 18835, 18838, 18840, 18842,  
 18844, 18846, 18848, 18850,  
 18852, 18854, 18856, 18858,  
 18860, 18862, 18864, 18866,  
 18869, 18871, 18874, 18876,  
 18878, 18880, 18882, 18884,  
 18888, 18892, 18894, 18896,  
 18898, 18900, 18902, 18905,  
 18907, 18910, 18912, 18914,  
 18916, 18918, 18920, 18923,  
 18925, 18927, 18929, 18931,  
 18933, 18935, 18937, 18939,  
 18941, 18943, 18945, 18947,  
 18950, 18952, 18954, 18956,  
 18958, 18960, 18962, 18964,  
 18966, 18968, 18970, 18972,  
 18974, 18976, 18978, 18980,  
 18982, 18984, 18986, 18988,  
 18990, 18992, 18994, 18997,  
 18999, 19001, 19003, 19005,  
 19007, 19009, 19011, 19013,  
 19015, 19017, 19019, 19021,  
 19023, 19026, 19029, 19031,  
 19034, 19037, 19040, 19043,  
 19045, 19047, 19049, 19051,  
 19053, 19055, 19057, 19059,  
 19061, 19063, 19066, 19070,  
 19072, 19074, 19076, 19078,  
 19080, 19082, 19084, 19086,  
 19088, 19090, 19092, 19094,  
 19096, 19098, 19100, 19102,  
 19104, 19107, 19110, 19113,  
 19116, 19118, 19123, 19127,  
 19130, 19132, 19134, 19137,  
 19140, 19143, 19146, 19149,  
 19152, 19155, 19158, 19161,  
 19164, 19167, 19170, 19172,  
 19174, 19176, 19178, 19180,  
 19183, 19189, 19192, 19194,  
 19197, 19200, 19202, 19204,  
 19206, 19208, 19210, 19212,  
 19214, 19216, 19218, 19220,  
 19223, 19225, 19227, 19229,  
 19232, 19235, 19237, 19239,  
 19241, 19244, 19246, 19249,  
 19251, 19255, 19258, 19260,

19262, 19264, 19266, 19268,  
 19270, 19272, 19274, 19276,  
 19278, 19280, 19282, 19285,  
 19287, 19289, 19292, 19295,  
 19297, 19299, 19301, 19303,  
 19305, 19307, 19309, 19311,  
 19313, 19315, 19317, 19319,  
 19321, 19323, 19325, 19327,  
 19329, 19331, 19333, 19335,  
 19337, 19339, 19341, 19343,  
 19345, 19347, 19349, 19352,  
 19355, 19358, 19362, 19365,  
 19368, 19370, 19372, 19374,  
 19376, 19379, 19381, 19384,  
 19386, 19388, 19390, 19392,  
 19394, 19396, 19399, 19401,  
 19404, 19407, 19410, 19413,  
 19415, 19417, 19419, 19421,  
 19423, 19425, 19427, 19429,  
 19431, 19433, 19436, 19439,  
 19441, 19443, 19445, 19447,  
 19449, 19451, 19453, 19456,  
 19459, 19461, 19463, 19465,  
 19468, 19470, 19472, 19474,  
 19476, 19508, 19510, 19512,  
 19513, 19514, 19515, 19516,  
 19517, 19518, 19519, 19520,  
 19521, 19523, 19525, 19526,  
 19527, 19528, 19529, 19530,  
 19531, 19533, 19535, 19538,  
 19540, 19542, 19543, 19544,  
 19545, 19546, 19547, 19548,  
 19549, 19550, 19551, 19553,  
 19555, 19557, 19558, 19559,  
 19560, 19561, 19563, 19564,  
 19565, 19566, 19568, 19570,  
 19572, 19573, 19574, 19575,  
 19576, 19577, 19578, 19579,  
 19580, 19581, 19583, 19585,  
 19586, 19587, 19588, 19589,  
 19590, 19591, 19593, 19595,  
 19598, 19600, 19602, 19603,  
 19604, 19605, 19606, 19607,  
 19608, 19609, 19610, 19611,  
 19613, 19615, 19617, 19618,  
 19619, 19620, 19621, 19623,  
 19624, 19625, 19626, 19732,  
 19734

## A

\a . . . . . 291, 293, 297, 303  
 \ABREVE 19501, 19572, 19573,  
 19574, 19575, 19576  
 \abreve . . 19495, 19512, 19513,

19514, 19515, 19516

\AC . . . . . 17930, 20824

\AccFancyVerbLineautorefname . . . . . 3123

\Accfootnoteautorefname . 3103

\Acctheoremautorefname . 3127

\acctonos 3185, 3186, 3187, 3188, 3189, 3190, 3191, 3192, 3193, 3194, 3195, 3196, 3197, 3198, 3199, 3200

\Acht . . . . . 19440, 20624

\ACIRCUMFLEX 19502, 19577, 19578, 19579, 19580, 19581

\acircumflex 3172, 19496, 19517, 19518, 19519, 19520, 19521

\AcPa . . . . . 19426, 20618

\Acrobatmenu 2226, 4266, 6375, 9366, 10108, 10649, 11523

\active . . . . . 961, 968, 1545, 4767, 4768, 4769, 4770, 4771, 4772, 4776, 4778, 4781, 4789, 14451, 14478

\add@accent . . . . . 536

\addcontentsline . . . 7552, 7625, 7965, 8026, 8157

\addcontentslinebookmark 8014

\addcontentslinebookmarkOff . . . . . 8015

\addcontentslinebookmarkReset . . . . . 8018, 8020

\addtocontents . . . . 8027, 8158

\addtocounter . . . . . 7220

\AddToDocumentProperties . . . . 2319, 3713, 3719, 3725, 3731, 3754, 3760

\AddToHook . 5144, 5403, 5405, 6461, 6473, 6478, 6707, 6852, 6889, 7057, 7216, 7223, 7245, 7266, 7645, 7719, 8150, 8165, 8219, 8660, 9905, 10269, 11727, 11866, 13106

\AddToHookNext . . 6989, 7237, 7238, 7253, 7254

\AddToHookWithArguments . . . . 7639, 7721, 7725, 8030, 8085, 8101, 8118, 8134

\AddToNoCaseChangeList 14591

\adl@LT@array . . . . . 7100

\advance . . . . . 471, 472, 982, 4917, 5109, 5122, 5424, 5752, 5796, 6231, 6232, 6235, 6236, 6515, 6523,

6560, 7858, 7869, 7872, 7886, 9472, 9556, 9594, 9634, 9949, 9959, 10804, 12010, 12297, 12549, 12621, 12664, 12665, 13159, 13222, 13266, 13267, 13513, 13578, 13622, 13623, 14237, 14239, 14240, 14246, 14255, 14355, 14565

\AE . . . . . 14940, 15399, 15914

\ae . . . . . 15006, 15466, 15916

\afterassignment . . . 1554, 1560, 1566, 6006

\AfterBeginDocument . 353, 372

\aftergroup . . . . . 7437

\agemO . . . . . 17560, 20795

\ainferior . . . . . 19926

\alef . . . . . 19642

\alefhamza . . . . . 19634

\aleflowerhamza . . . . . 19638

\alefmadda . . . . . 19632

\alefmaqsura . . . . . 19700

\aleph . . . . . 17571, 19948

\Alph . . . . . 6609, 6955

\alph . . . . . 6610, 7196, 7225

\alpha . . . . . 19847

\amalg . . . . . 17834, 20042

\AMSautorefname . . . . . 8661

\anchor@spot . 5307, 5320, 5327, 5333, 5335, 9005, 9413, 9508, 10381, 10458, 10961, 11308, 11311, 11947, 12234

\and . . . . . 6440

\angle . . . . . 17863, 20054

\AngleSign . . . . . 17871, 20816

\Anglesign . . . . . 17870, 20815

\Ankh . . . . . 18697, 20337

\APLbox . . . . . 18435, 20296

\APLdown . . . . . 18633, 20891

\APLdownarrowbox . . . 18424, 20291

\APLinput . . . . . 18427, 20292

\APLinv . . . . . 18401, 20283

\APLleftarrowbox 18416, 20288

\APLrightarrowbox 18419, 20289

\APLup . . . . . 18618, 20888

\APLuparrowbox . 18421, 20290

\appendix . . . . . 6947, 6959

\appendixautorefname . . . . . 2971, 2989, 3007, 3025, 3043, 3061, 3079, 3111, 3112, 3137, 3155, 3173, 3191, 3209, 3227, 3245, 3263, 8671

\apprge . . . . . 18080, 20839

\apple . . . . . 18077, 20838

\approx . . . . . 17953, 20091

\approxeq . . . . . 17958, 20093

\appto . . . . . 7060

\Aquarius . . . . . 18784, 20935

\aquarius . . . . . 18782, 20363

\arabic . . . . . 6606, 8205, 8220

\Aries . . . . . 18754, 20925

\aries . . . . . 18752, 20353

\AssignSocketPlug . . 6851, 6861, 6881, 7060

\ast . . . . . 17850, 20049

\Asterisk . . . . . 18998, 20446

\AsteriskBold . . . 18975, 20435

\AsteriskCenterOpen . . 18977, 20436

\AsteriskRoundedEnds . 19022, 20458

\asympt . . . . . 17971, 20099

\AtBeginDocument . 354, 5370, 5374, 7264, 12326

\AtEndOfPackage . . . . . 369

\author . . . . . 6396, 6406

\autopageref . . . . . 4400, 8551

\autoref . 654, 4399, 8570, 12321

\ayn . . . . . 19678

B

\b 292, 293, 810, 814, 820, 14704, 14716, 14728, 15149, 15178, 15207, 17057, 17059, 17069, 17071, 17141, 17143, 17149, 17151, 17177, 17179, 17213, 17215, 17233, 17235, 17301, 17303, 17305

\baa . . . . . 19644

\babygamma . . . . 16095, 19815

\back@none . . . 2906, 2916, 2929

\back@page . . . . . 2908, 2921

\back@section 2907, 2913, 2919, 2925

\back@slide . . . . . 2909, 2918

\backcite . . . . . 7772

\backcong . . . . . 17967, 20097

\backneg . . . . . 18373, 20270

\backprime . . . . . 17395, 19893

\backref . . . . . 7803, 12325

\backsim . . . . . 17931, 20081

\backsimeq . . . . . 18278, 20229

\barb . . . . . 15801, 20677

\bard . . . . . 15565, 20669

\bari . . . . . 16109, 19816

\barin . . . . . 18369, 20266

<code>\barj</code> . . . . .	16080, 20709	<code>\Bleech</code> . . . . .	18619, 20889	<code>\c@secnumdepth</code> .	14628, 14643, 14658
<code>\barl</code> . . . . .	15823, 19801	<code>\BOOKMARK</code> . .	14283, 14362	<code>\c@slide</code> . . . . .	7859
<code>\barlambda</code> . . . . .	15830, 20682	<code>\booknumberline</code> .	14267, 14272	<code>\c@tocdepth</code> . . . . .	3422, 3427
<code>\barleftharpoon</code> . .	19157, 20512	<code>\bool</code> . . . . .	5145, 6866	<code>\calc@bm@number</code>	14490, 14563
<code>\baro</code> . . . . .	16155, 16156, 18405, 18407, 20881	<code>\bot</code> . . . . .	18204, 20202	<code>\calculate@pdfview</code> .	3896, 3899
<code>\barp</code> . . . . .	17023, 19884	<code>\Bowtie</code> . . . . .	18268, 20870	<code>\Cancer</code> . . . . .	18763, 20928
<code>\barrightharpoon</code> .	19163, 20514	<code>\bowtie</code> . . . . .	18266, 20224	<code>\cancer</code> . . . . .	18761, 20356
<code>\barsci</code> . . . . .	17021, 19883	<code>\Box</code> . . . . .	18670, 20895	<code>\Cap</code> . . . . .	18296, 20237
<code>\barscu</code> . . . . .	17026, 19885	<code>\box</code> . . . . .	6238, 6468, 8932, 9937, 11355, 11358	<code>\cap</code> . . . . .	17892, 20065
<code>\baru</code> . . . . .	16220, 19825	<code>\boxast</code> . . . . .	19203, 20529	<code>\capdot</code> . . . . .	19243, 20547
<code>\barwedge</code> . . . . .	18260, 20221	<code>\boxbackslash</code> . .	18413, 20287	<code>\capitalacute</code> . . . . .	15217
<code>\baselineskip</code> . . . .	2229, 9527, 10980, 11012, 11710	<code>\boxbar</code> . . . . .	18653, 20321	<code>\capitalbreve</code> . . . . .	15224
<code>\bbl@cite@choice</code> . . . . .	7668	<code>\boxbox</code> . . . . .	19207, 20531	<code>\capitalcaron</code> . . . . .	15223
<code>\bbl@info</code> . . . . .	629	<code>\boxbslash</code> . . . . .	19201, 20528	<code>\capitalcedilla</code> . . . . .	15214
<code>\bbslash</code> . . . . .	18447, 20299	<code>\boxcircle</code> . . . . .	19205, 20530	<code>\capitalcircumflex</code> . . . . .	15218
<code>\BCPdata</code> . . . . .	492, 499, 505	<code>\boxdot</code> . . . . .	18188, 20196	<code>\capitaldieresis</code> . . . . .	15220
<code>\Beam</code> . . . . .	18431, 20294	<code>\boxempty</code> . . . . .	18668, 20327	<code>\capitaldotaccent</code> . . . . .	15226
<code>\because</code> . . . . .	17916, 20075	<code>\boxminus</code> . . . . .	18184, 20194	<code>\capitalgrave</code> . . . . .	15216
<code>\BeforeTeXIVht</code> . . . . .	2690	<code>\boxplus</code> . . . . .	18182, 20193	<code>\capitalhungarumlaut</code> . . .	15221
<code>\begin</code> . . . . .	614, 12347, 20993	<code>\boxslash</code> . . . . .	19199, 20527	<code>\capitalmacron</code> . . . . .	15225
<code>\belowpdfbookmark</code> . . . .	14351	<code>\boxtimes</code> . . . . .	18186, 20195	<code>\capitalnewtie</code> . . . . .	15228
<code>\beta</code> . . . . .	19848	<code>\brokenvert</code> . . . . .	15328, 20658	<code>\capitalogonek</code> . . . . .	15215
<code>\betainferior</code> . . . . .	19878	<code>\bullet</code> . . . . .	17854, 19888	<code>\capitalring</code> . . . . .	15222
<code>\beth</code> . . . . .	17573, 19949	<code>\Bumpeq</code> . . . . .	17976, 20101	<code>\capitaltie</code> . . . . .	15227
<code>\between</code> . . . . .	18064, 20140	<code>\bumpeq</code> . . . . .	17980, 20103	<code>\capitaltilde</code> . . . . .	15219
<code>\bfseries</code> . . . . .	588, 8429, 8449, 8466, 8598	<b>C</b>			
<code>\bgroup</code> . . . . .	674, 4884, 7423, 7436, 8918, 9923, 10381, 11001, 12853, 12945, 12966	<code>\C</code> . . . . .	15126, 16645, 16648	<code>\Capricorn</code> . . . . .	18781, 20934
<code>\bibcite</code> . . . . .	7659, 7665, 7669, 7694, 7709, 7736, 7746	<code>\c</code> . . . . .	811, 815, 821, 3073, 3081, 3082, 3083, 5145, 6419, 6426, 14702, 14714, 14726, 14942, 15008, 15138, 15164, 15193, 15214, 15401, 15468, 15599, 15601, 15647, 15649, 15657, 15659, 15677, 15679, 15713, 15715, 15729, 15731, 15737, 15739, 15994, 15996, 16705, 16708, 17073, 17075, 17121, 17123	<code>\capricornus</code> . . . .	18779, 20362
<code>\Bicycle</code> . . . . .	19460, 20633	<code>\c@footnote</code> . .	7299, 7385, 7393, 7507	<code>\caption</code> . . . . .	7522, 7524, 7613, 7615
<code>\bigcircle</code> . . . . .	20322	<code>\c@Hy@AnnotLevel</code> .	9949, 9950, 9959	<code>\catcode</code> . . . . .	172, 173, 184, 185, 186, 187, 206, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 937, 961, 968, 1545, 1674, 1675, 1808, 1809, 1865, 1866, 1867, 4652, 4654, 4766, 4767, 4768, 4769, 4770, 4771, 4772, 4776, 4778, 4781, 4789, 4799, 4890, 4891, 8686, 11042, 11043, 14380, 14382, 14451, 14454, 14478, 14481
<code>\bigdoublevee</code> . . .	19219, 20537	<code>\c@Hy@tempcnt</code> . . .	4902, 4903, 4909, 4917	<code>\ccnc</code> . . . . .	19469, 20636
<code>\bigdoublewedge</code> .	19217, 20536	<code>\c@note</code> . . . . .	7859	<code>\ccnd</code> . . . . .	19471
<code>\bigtriangledown</code> .	18631, 20312	<code>\c@overlay</code> . . . . .	7859	<code>\ccsa</code> . . . . .	19473, 20637
<code>\bigtriangleup</code> . . .	18616, 20307	<code>\c@page</code> . . . . .	6515, 6523, 6540, 6560, 6561, 6565, 6577, 6579, 6584, 6591, 6593, 6595, 6624, 7858, 7860, 7862, 7869, 7872, 7873, 7886, 7916, 7917	<code>\cdot</code> . . . . .	20644
<code>\binampersand</code> . . .	15247, 20652			<code>\cdots</code> . . . . .	18363, 20265
<code>\bindnasrepma</code> . . .	17585, 20798			<code>\CESign</code> . . . . .	19477, 20639
<code>\Biohazard</code> . . . . .	18695, 20336			<code>\CESign</code> . . . . .	19479, 20988
<code>\bitsetGetDec</code> . . . . .	5476, 5609, 5627, 5641, 5654, 5670, 5702, 5727			<code>\cf@encoding</code> . . . . .	1286
<code>\bitsetGetHex</code> . . . . .	5477				
<code>\bitsetGetSetBitList</code> . . . .	5465				
<code>\bitsetIsEmpty</code> . . . .	5606, 5624, 5638, 5651, 5667, 5699, 5724				
<code>\bitsetReset</code> . . . .	5579, 5613, 5632, 5646, 5659, 5675, 5707				
<code>\bitsetSetValue</code> . . . .	5445, 5455				
<code>\blacksmiley</code> . . . .	18710, 20341				

<code>\chapterautorefname</code>	2972, 2990, 3008, 3026, 3044, 3062, 3080, 3109, 3138, 3156, 3174, 3192, 3210, 3228, 3246, 3264, 8672
<code>\chapternumberline</code>	14269, 14274
<code>\char</code>	13140, 14384, 14421
<code>\chardef</code>	267, 310, 2486, 2487, 2488, 2489, 2748, 2750, 4575, 4607, 11303, 11306, 11312
<code>\check@bm@number</code>	14501, 14509, 14556, 14564
<code>\CheckBox</code>	6180
<code>\CheckCommand</code>	7382
<code>\checkcommand</code>	42, 7498, 7505, 7512, 7613, 7623, 7730, 7742, 8157, 8160, 8205, 8463
<code>\CheckedBox</code>	18673, 20896
<code>\Checkedbox</code>	18671, 20328
<code>\checklatex</code>	4, 7497, 7612, 7729, 8156, 8462
<code>\Checkmark</code>	18919, 20408
<code>\checkmark</code>	18921, 20954
<code>\CheckmarkBold</code>	18922, 20409
<code>\checkpackage</code>	9, 8204
<code>\chi</code>	19869
<code>\chiinferior</code>	19882
<code>\ChoiceBox</code>	5800
<code>\ChoiceMenu</code>	6177
<code>\circ</code>	17852, 20050
<code>\circeq</code>	18012, 20117
<code>\circlearrowleft</code>	19069, 20477
<code>\circlearrowright</code>	19071, 20478
<code>\CircledA</code>	18492, 20300
<code>\circledast</code>	18176, 20191
<code>\circledbslash</code>	19184, 20963
<code>\circledcirc</code>	18172, 20190
<code>\circleddash</code>	18180, 20192
<code>\CircleShadow</code>	19030, 20461
<code>\circplus</code>	19226, 20540
<code>\citation</code>	7764
<code>\citeauthoryear</code>	7830, 7836
<code>\citeN</code>	7827
<code>\CJK@char</code>	964
<code>\CJK@charx</code>	965
<code>\CJK@CJK</code>	953
<code>\CJK@eight</code>	1164, 1167, 1281
<code>\CJK@five</code>	1164, 1166, 1281
<code>\CJK@four</code>	1163, 1166, 1280
<code>\CJK@hundred</code>	1230
<code>\CJK@hundredmillion</code>	1193
<code>\CJK@ignorespaces</code>	963
<code>\CJK@kern</code>	951
<code>\CJK@minus</code>	1155
<code>\CJK@nine</code>	1164, 1168, 1281
<code>\CJK@null</code>	1257
<code>\CJK@one</code>	1163, 1165, 1280
<code>\CJK@punctchar</code>	966
<code>\CJK@punctcharx</code>	967
<code>\CJK@seven</code>	1164, 1167, 1281
<code>\CJK@six</code>	1164, 1167, 1281
<code>\CJK@ten</code>	1165, 1166, 1167, 1168, 1245
<code>\CJK@tentousand</code>	1178, 1199
<code>\CJK@thousand</code>	1215
<code>\CJK@three</code>	1163, 1166, 1280
<code>\CJK@two</code>	1163, 1165, 1280
<code>\CJK@zero</code>	1163, 1181, 1198, 1202, 1218, 1233, 1255
<code>\CJKdigits</code>	1040
<code>\CJKkern</code>	952
<code>\CJKnumber</code>	1039
<code>\cl@ckpt</code>	6905
<code>\CleaningA</code>	18494, 20883
<code>\CleaningF</code>	18505, 20301
<code>\CleaningFF</code>	18507, 20302
<code>\CleaningP</code>	18529, 20303
<code>\CleaningPP</code>	18531, 20304
<code>\clickb</code>	16277, 20762
<code>\clickc</code>	16272, 20760
<code>\clickt</code>	16214, 20744
<code>\clock</code>	18379, 20273
<code>\ClockLogo</code>	18382, 20880
<code>\Clocklogo</code>	18381, 20879
<code>\close@pdfink</code>	8999, 9024, 9033, 9065, 9102, 9135, 9390
<code>\closedniomega</code>	16163, 20732
<code>\closedrevepsilon</code>	16076, 20708
<code>\closeout</code>	14371
<code>\Cloud</code>	18659, 20323
<code>\ClowerTips</code>	20425
<code>\clubsuit</code>	18798, 18800, 20941
<code>\codeof</code>	7794
<code>\Coffeecup</code>	18678, 20330
<code>\coloncolonequals</code>	19263, 20555
<code>\colonequals</code>	18004, 20113
<code>\color@begingroup</code>	8918, 9923
<code>\color@endgroup</code>	8925, 9930
<code>\columnwidth</code>	7430
<code>\comma@entry</code>	5791, 5798, 5800
<code>\comma@parse</code>	5790
<code>\complement</code>	17803, 20028
<code>\Conclusion</code>	17754, 20807
<code>\cong</code>	17948, 20089
<code>\Congruent</code>	18030, 20833
<code>\contentsline</code>	8028, 8037, 8158, 8160
<code>\copy</code>	5118, 5120, 5131, 5140, 8928, 9907, 9933
<code>\copyright</code>	19791
<code>\Corresponds</code>	18019, 20831
<code>\corresponds</code>	18018, 20830
<code>\count@</code>	980, 981, 982, 983, 1555, 1913, 3438, 3439, 3444, 3445, 5423, 5424, 5439, 5735, 5750, 5752, 5774, 5796, 5812, 10800, 10801, 10802, 10803, 10804, 10807
<code>\Cross</code>	18938, 20417
<code>\crossb</code>	15798, 20675
<code>\CrossClowerTips</code>	18955
<code>\crossd</code>	15562, 20667
<code>\CrossedBox</code>	18677, 20898
<code>\Crossedbox</code>	18674, 20329
<code>\crossh</code>	15611, 20671
<code>\CrossMaltese</code>	18944, 20420
<code>\crossnilambda</code>	15829, 20681
<code>\CrossOpenShadow</code>	18940, 20418
<code>\CrossOutline</code>	18942, 20419
<code>\cs</code>	5054, 5059, 5063, 5072, 5076, 5085
<code>\Cube</code>	611
<code>\Cup</code>	18299, 20238
<code>\cup</code>	17894, 20066
<code>\cupdot</code>	18133, 20173
<code>\cupplus</code>	18135, 20174
<code>\curlyc</code>	16044, 20701
<code>\curlyeqprec</code>	18318, 20246
<code>\curlyeqsucc</code>	18322, 20248
<code>\curlyesh</code>	16211, 20743
<code>\curlyvee</code>	18282, 20231
<code>\curlywedge</code>	18285, 20232
<code>\curlyyogh</code>	16256, 20756
<code>\curlyz</code>	16249, 20755
<code>\CurrentBorderColor</code>	8989, 8991, 9018, 9020, 9028, 9030, 9035, 10448, 10482, 10484, 10500, 10502, 10521, 10523, 10585, 10587, 10604, 10606
<code>\currentpdfbookmark</code>	14343
<code>\curu</code>	16596
<code>\curvearrowleft</code>	17687, 19982
<code>\curvearrowright</code>	17689, 19983
<code>\CutLeft</code>	18885, 20948
<code>\CutLine</code>	18610, 20885
<code>\Cutline</code>	18611, 20886
<code>\Cutright</code>	18886, 20949

\CuttingLine . . . .	18607, 20305	\cyrerev . . . . .	16558, 16883	\CYRKDSC . . . . .	16710
\cyr 634, 3091, 3093, 3096, 3099,		\CYRERY . . . . .	16486, 16905	\cyrkdsc . . . . .	16712
3102, 3103, 3104, 3105,		\cyrery 3091, 3093, 16553, 16907		\CYRKHCRS . . . . .	16720
3106, 3107, 3108, 3109,		\CYRF . . . . .	16471	\cyrkhcrs . . . . .	16722
3110, 3111, 3113, 3115,		\cyrf . . . . .	16538	\CYRKHK . . . . .	16801
3116, 3117, 3118, 3119,		\CYRFITA . . . . .	16636	\cyrkhk . . . . .	16803
3120, 3121, 3122, 3123,		\cyrfita . . . . .	16638	\CYRKOPPA . . . . .	16666
3124, 3125, 3126, 3127,		\CYRG . . . . .	16401, 16436	\cyrkoppa . . . . .	16668
3128		\cyrgh . . . . .	3109, 16503, 16571	\CYRKSI . . . . .	16628
\CYRA . . .	16430, 16821, 16825	\CYRGDSC . . . . .	16901	\cyrksi . . . . .	16630
\cyra . . .	3093, 3100, 3102, 3107,	\cyrigdsc . . . . .	16903	\CYRKVCRS . . . . .	16715
3110, 3115, 3116, 3122,		\CYRGHCRS . . . . .	16688	\cyrkvcrs . . . . .	16718
3126, 16497, 16823, 16827		\cyrghcrs . . . . .	16690	\CYRL . . . . .	16453
\CYRABHCH . . .	16785, 16790	\CYRGHK . . . . .	16693	\cyrll . . .	3107, 3109, 3111, 3113,
\cyrabhch . . . . .	16787, 16793	\cyrghk . . . . .	16696	16520	
\CYRABHCHDSC . . . . .	16789	\CYRGUP . . . . .	16684	\CYRLDSC . . . . .	16805
\cyrabhchdsc . . . . .	16792	\cyrgup . . . . .	16686	\cyrldsc . . . . .	16807
\CYRABHDZE . . . . .	16855	\CYRH . . . . .	16473	\CYRLJE . . . . .	16415
\cyrabhdze . . . . .	16857	\cyrh . . . . .	16540	\cyrlje . . . . .	16585
\CYRABHHA . . . . .	16740	\CYRHDSC . . . . .	16762	\CYRLYUS . . . . .	16612
\cyrabhha . . . . .	16742	\cyrhdsc . . . . .	16764	\cyrlyus . . . . .	16614
\CYRAE . . . . .	16829	\CYRHHK . . . . .	16909	\CYRM . . . . .	16455
\cyrae . . . . .	16831	\cyrhhk . . . . .	16911	\cyrm . .	3096, 3100, 3126, 3127,
\CYRB . . . . .	16432	\CYRHRDSN . . . . .	16484	16522	
\cyrb . . . . .	3107, 16499	\cyrhrdsn .	16550, 16551, 20769	\CYRMDSC . . . . .	16817
\CYRBYUS . . . . .	16620	\CYRI . . .	16423, 16446, 16449,	\cyrmdsc . . . . .	16819
\cyrbyus . . . . .	16622	16859, 16863		\CYRN . . . . .	16457
\CYRC . . . . .	16475	\cyri 3093, 3096, 3100, 3106, 3111,		\cyrn . . .	3093, 3099, 3100, 3102,
\cyrc . . . . .	16542	3113, 16513, 16516, 16593,		3103, 3105, 3113, 3119,	
\CYRCH . . . . .	16477, 16897	16861, 16865		3120, 16524	
\cyrch .	3099, 3100, 3108, 16544,	\CYRIE . . . . .	16403	\CYRNDSC . . . . .	16728
16899		\cyrle . . . . .	16573	\cyrndsc . . . . .	16730
\CYRCHLDSC . . . . .	16813	\CYRII . . . . .	16408, 16411	\CYRNG . . . . .	16732
\cyrchldsc . . . . .	16815	\cyril . . . . .	16578, 16581	\cyrng . . . . .	16734
\CYRCHRDSC . . . . .	16771	\CYRIOTBYUS . . . . .	16624	\CYRNHK . . . . .	16809
\cyrchrds . . . . .	16773	\cyrriotbyus . . . . .	16626	\cyrnhk . . . . .	16811
\CYRCHVCRS . . . . .	16776	\CYRIOTE . . . . .	16608	\CYRNJE . . . . .	16417
\cyrchvcrs . . . . .	16779	\cyrriote . . . . .	16610	\cyrnje . . . . .	16587
\CYRD . . . . .	16438	\CYRIOTLYUS . . . . .	16616	\CYRO . . . . .	16459, 16867
\cyrd . . .	3096, 3099, 3110, 3115,	\cyrriotlyus . . . . .	16618	\cyro . . .	3096, 3099, 3102, 3103,
3116, 16505		\CYRISHRT . . . . .	16448	3113, 3122, 3123, 3125,	
\CYRDJE . . . . .	16399	\cyrishrt . . . . .	16515	3126, 3127, 16526, 16869	
\cyrdje . . . . .	16569	\CYRISHRTDSC . . . . .	16672	\CYROMEGA . . . . .	16600
\CYRDZE 15108, 15125, 16392,		\cyrishrtdsc . . . . .	16674	\cyromega . . . . .	16602
16405		\CYRIZH . . . . .	16640, 16645	\CYROMEGARND . . . . .	16654
\cyrdze . . . . .	16575	\cyrizh . . . . .	16642, 16648	\cyromegarnd . . . . .	16656
\CYRDZHE . . . . .	16428	\CYRJE . . . . .	16413	\CYROMEGATITLO . . .	16658
\cyrdzhe . . . . .	16598	\cyrje . . . . .	16583	\cyromegatitlo . . . . .	16660
\CYRE . .	16394, 16397, 16440,	\CYRK . . . . .	16421, 16451	\CYROT . . . . .	16662
16833		\cyrk . . .	3102, 3103, 3105, 3119,	\cyrot . . . . .	16664
\cyre . . .	3093, 3099, 3100, 3113,	3120, 3122, 3123, 3124,		\CYROTLD . . . .	16871, 16876
3125, 3126, 3127, 16507,		16518, 16591		\cyrotld . . . . .	16873, 16879
16564, 16567, 16835		\CYRKBEAK . . . . .	16724	\CYRP . . . . .	16461
\CYREREV . . . .	16491, 16881	\cyrkbeak . . . . .	16726		

\cyrp . . .	3096, 3099, 3100, 3104, 3105, 3111, 3113, 3117, 3118, 3119, 3120, 16528	\cyrushrt . . . . .	16595	\daleth . . . . .	17577, 19951
\CYRpalochka . . . . .	16795	\CYRV . . . . .	16434	\damma . . . . .	19712
\CYRPHK . . . . .	16736	\cyrv . . . . .	3091, 3093, 16501	\danger . . . . .	18849, 20382
\cyrphk . . . . .	16738	\CYRY . . . . .	16754	\dasheddownarrow . . . . .	17788, 20021
\CYRPSI . . . . .	16632	\cyrY . . . . .	16756	\dashedleftarrow . . . . .	17782, 20808
\cyrpsi . . . . .	16634	\CYRYA . . . . .	16495	\dashedrightarrow . . . . .	17787, 20809
\CYRR . . . . .	16463	\cyrYA . . . . .	16562	\dasheduparrow . . . . .	17783, 20019
\cyr . . .	3091, 3093, 3096, 3099, 3100, 3106, 3110, 3111, 3113, 3115, 3116, 3121, 3122, 3123, 3124, 3125, 3126, 3127, 16530	\CYRYAT . . . . .	16604	\dashleftarrow . . . . .	17780, 20018
\CYRRTICK . . . . .	16680	\cyrYat . . . . .	16606	\dashrightarrow . . . . .	17785, 20020
\cyrrtick . . . . .	16682	\CYRYHCRS . . . . .	16758	\DashV . . . . .	19361, 20600
\CYRS . . . . .	16465, 16745	\cyrYhcrs . . . . .	16760	\Dashv . . . . .	19354, 20598
\cyrS . . .	3096, 3099, 3102, 3103, 3106, 3121, 3122, 3123, 3124, 3128, 16532, 16748	\CYRYI . . . . .	16410	\dashV . . . . .	20596
\CYRSCHWA . . . . .	16837, 16842	\cyrYi . . . . .	16580	\dashv . . . . .	18193, 20198
\cyrschwa . . . . .	16839, 16845	\CYRYO . . . . .	16396	\DavidStar . . . . .	18946, 20421
\CYRSDSC . . . . .	16744	\cyrY . . . . .	16566	\davidstar . . . . .	18948, 20955
\cyrsdsc . . . . .	16747	\CYRYU . . . . .	16493	\ddag . . . . .	17377, 20783
\CYRSEMISFTSN . . . . .	16676	\cyrYU . . . . .	16560	\ddagger . . . . .	14802, 17374, 17376, 20782
\cyrsemisftsn . . . . .	16678	\CYRZ . . .	16444, 16705, 16851	\ddots . . . . .	18367, 20267
\CYRSFTSN . . . . .	16489	\cyrZ . .	3110, 3115, 3116, 16511, 16708, 16853	\DeclareFontEncoding . . . . .	14693, 15095
\cyrSFTSN . .	16555, 16556, 20770	\CYRZDSC . . . . .	16704	\DeclareFontFamily . . . . .	882, 892
\CYRSH . . . . .	16479	\cyrzdsc . . . . .	16707	\DeclareFontShape . . . . .	883, 893
\cyrsh . . . . .	16546	\CYRZH . .	16442, 16797, 16847	\DeclareFontSubstitution . . . . .	884, 894
\CYRSHCH . . . . .	16481	\cyrzh . .	3093, 3113, 16509, 16799, 16849	\DeclareLocalOptions . . . . .	4200
\cyrshch . . . . .	16548	\CYRZHDSC . . . . .	16699	\DeclareRobustCommand . . . . .	4881, 4968, 4970, 4972, 4981, 6174, 6177, 6180, 6183, 6186, 6189, 6192, 8551, 14581
\CYRSHHA . . . . .	16781	\cyrzhdsc . . . . .	16702	\DeclareTextAccent . . . . .	14694, 14695, 14696, 14697, 14698, 14699, 14700, 14701, 14702, 14703, 14704, 14705
\cyrshha . . . . .	16783			\DeclareVoidOption . . . . .	2687, 2701, 2712, 2728, 2734, 2739, 2753, 2763, 2768, 2774, 2780, 2809, 2826, 2833, 2839, 2844, 2849, 2864, 3349, 3357, 3365, 3375
\CYRT . . . . .	16467			\DefaultHeightofCheckBox . . . . .	6244, 12793, 13397, 13774
\cyrT . . .	3096, 3099, 3105, 3107, 3119, 3120, 3121, 3122, 3123, 3124, 3125, 3126, 3127, 16534			\DefaultHeightofChoiceMenu . . . . .	6246, 12611, 13212, 13568
\CYRTDSC . . . . .	16750			\DefaultHeightofReset . . . . .	6242, 12763, 13369, 13742
\cyrtdsc . . . . .	16752			\DefaultHeightofSubmit . . . . .	6240, 12743, 13346, 13719
\CYRTETSE . . . . .	16766			\DefaultHeightofText . . . . .	6248, 12583, 13186, 13535
\cyrtetse . . . . .	16768			\DefaultHeightofTextMultiline . . . . .	6249, 12581, 13184, 13533
\cyrthousands . . . . .	16670				
\CYRTSHE . . . . .	16419				
\cyrtshe . . . . .	16589				
\CYRU . .	16426, 16469, 16885, 16889, 16893				
\cyrU . . .	3103, 3105, 3119, 3120, 3123, 3127, 16536, 16887, 16891, 16895				
\CYRUK . . . . .	16650				
\cyruk . . . . .	16652				
\CYRUSHRT . . . . .	16425				

\DefaultOptionsofCheckBox ..	5967, 5970, 5974, 5978,	2042, 2047, 2050, 2055,
6254, 12795, 13399, 13776	5982, 5985, 5989, 5992,	2056, 6016
\DefaultOptionsofComboBox ..	5995, 5998, 6001, 6021,	\ding ..... 610, 6057, 6060
..... 6257	6037, 6040, 6043, 6046,	\DingObject ..... 13291
\DefaultOptionsofListBox 6256	6049, 6052, 6082, 6085,	\discretionary ..... 676
\DefaultOptionsofPopdownBox	6088, 6091, 6110, 6116,	\div ..... 20642
..... 6258	6132, 6137, 6143, 6158,	\divdot ..... 19230, 20969
\DefaultOptionsofPushButton .	6163, 6169, 6719, 6730,	\divide ..... 10801
6253, 12714, 13318, 13687	6988, 10879, 10885, 11387,	\divideontimes ... 18264, 20223
\DefaultOptionsofRadio .. 6259	11389, 11392, 11395, 11397,	\Divides ..... 17844, 20046
\DefaultOptionsofReset .. 6252,	11399, 11408, 11416, 11423,	\DividesNot ..... 17846, 20047
12766, 13372, 13745	11425, 11427, 11429, 11431,	\DJ ..... 3181, 14961, 15557
\DefaultOptionsofSubmit 6251,	11433, 11442, 11452, 11454,	\dj ..... 3178, 3179, 15560
12746, 13349, 13722	11456, 11457, 11463, 11472,	\dlsh ..... 17684, 19981
\DefaultOptionsofText .. 6255,	11474, 11476, 11478, 11480,	\do 981, 2402, 2407, 2412, 3523,
12588, 13191, 13540	11482, 11484, 11486, 11488,	3555, 3556, 3557, 3558,
\DefaultWidthofCheckBox 6245,	11490, 11492, 11494, 11496,	3613, 3614, 3615, 3616,
12792, 13396, 13773	11498, 11500, 11502, 11503,	3617, 3618, 3621, 3622,
\DefaultWidthofChoiceMenu ..	11504, 11505, 11506, 11507,	3623, 3624, 3625, 3626,
6247, 12610, 13211, 13567	11508, 11509, 11510, 11511,	3629, 3630, 3633, 3634,
\DefaultWidthofReset ... 6243,	11512, 11513	3635, 3636, 3637, 3640,
12762, 13368, 13741	\Deleatur ..... 17526, 19939	3641, 3642, 3643, 3644,
\DefaultWidthofSubmit .. 6241,	\Delta ..... 19837	3647, 3648, 3649, 3650,
12742, 13345, 13718	\delta ..... 19850	3651, 3654, 3655, 3656,
\DefaultWidthofText .... 6250,	\Denarius ..... 17528, 20794	3657, 3658, 3661, 3662,
12578, 13181, 13530	\dest@name ..... 5350	3665, 3666, 3667, 3670,
\deferred@thm@head 7249, 7250	\df@tag ..... 8171, 8177	3671, 3677, 3678, 3679,
\define@key .. 2384, 2386, 2430,	\DH ..... 14960, 15419	3680, 4015, 4016, 4017,
2445, 2448, 2451, 2459,	\dh . 15030, 15490, 15491, 20666	4018, 4019, 4020, 5465,
2462, 2472, 2475, 2478,	\dhal ..... 19660	7207, 12615, 12677, 12915,
2495, 2507, 2509, 2512,	\diameter ..... 18371, 20269	12922, 12932, 13216, 13279,
2529, 2533, 2539, 2542,	\Diamond ..... 18643, 20892	13572, 13638, 14450, 14477
2545, 2548, 2551, 2554,	\diamond ..... 18641, 20316	\documentclass ..... 2, 8802
2557, 2582, 2620, 2626,	\diamonddots ... 17417, 19896	\DocumentMetadata 3991, 3993
2745, 2871, 2890, 2900,	\DiamondSolid ..... 20466	\dospecials ..... 14459, 14486
2903, 2910, 2939, 2958,	\diamondsuit .... 18795, 18797,	\Doteq ..... 17991, 20829
2961, 3306, 3372, 3384,	20940	\doteq ..... 17984, 20105
3399, 3416, 3419, 3423,	\digamma ..... 20768	\doteqdot ..... 17989, 20107
3451, 3456, 3460, 3463,	\dimen@ 1561, 1638, 1639, 1642,	\dotminus ..... 17923, 20078
3470, 3482, 3489, 3499,	1644, 4172, 4173, 4175,	\dotplus ..... 17842, 20045
3502, 3505, 3509, 3525,	4182, 4183, 5108, 5109,	\dots ..... 548
3535, 3542, 3553, 3566,	5112, 5121, 5122, 5126,	\dottimes ..... 19231, 20542
3583, 3673, 3682, 3712,	6007, 6016, 6749, 6750,	\doublebarwedge . 19254, 20551
3718, 3724, 3730, 3736,	8945, 8947, 10773, 10774,	\doublecap ..... 18298, 20873
3741, 3747, 3753, 3759,	10776, 11345, 11360, 11363,	\doublecup ..... 18301, 20874
3765, 3798, 3805, 3896,	11757, 11759, 11824, 11826,	\doublesqcap ... 19242, 20970
3897, 3910, 3917, 3927,	11918, 11920, 12202, 12204	\doublesqcup ... 19247, 20971
3968, 3969, 3972, 3975,	\dimexpr 489, 1319, 1941, 1943,	\doublevav ..... 16972
3978, 3981, 3984, 3987,	1951, 1956, 1959, 1961,	\doublevee ..... 19250, 20550
3999, 4022, 4136, 4139,	1975, 1977, 1980, 1981,	\doublewedge ... 19248, 20549
4898, 4927, 4933, 4945,	1988, 1991, 1994, 1995,	\doubleyod ..... 16976
5417, 5505, 5561, 5861,	1996, 1997, 2007, 2012,	\DOWNarrow ... 18627, 20311
5866, 5879, 5907, 5950,	2020, 2024, 2029, 2039,	\Downarrow .... 17755, 20007
5953, 5956, 5960, 5963,		\downarrow ..... 19957

<code>\downdownarrows</code>	17730, 19998	<code>\einferior</code>	19927	<code>\Equivalence</code>	17760
<code>\downdownharpoons</code>	19151, 20510	<code>\ejective</code>	16260, 20757	<code>\er</code>	16061, 20705
<code>\downharpoonleft</code>	17713, 19991	<code>\ell</code>	17539, 19942	<code>\errmessage</code>	3303
<code>\downharpoonright</code>	17710, 19990	<code>\em</code>	594	<code>\escapechar</code>	517, 4350, 7200, 14310, 14488, 14539
<code>\downmodels</code>	19367, 20602	<code>\emgma</code>	16142, 20728	<code>\esh</code>	16201, 19824
<code>\downtherefore</code>	17918, 20822	<code>\emph</code>	573	<code>\EstimatedSign</code>	17567, 20796
<code>\downuparrows</code>	17793, 20023	<code>\empty</code>	963, 3426	<code>\eta</code>	19853
<code>\downupharpoons</code>	19169, 20516	<code>\emptyset</code>	17811, 20032	<code>\eTeX</code>	559, 12353
<code>\downvdash</code>	18201, 20852	<code>\enc@html</code>	5865, 5868	<code>\eth</code>	15491, 20666
<code>\dp</code>	5108, 5116, 5129, 6234, 6237, 7428, 9462, 9542, 9579, 9619, 11346, 11349, 12000, 12282, 13508	<code>\enc@update</code>	533	<code>\Eur</code>	17525, 20793
<code>\dsbiological</code>	18843, 20379	<code>\END</code>	1311, 1312, 1338, 1339, 1354, 1355, 1372, 1373, 1390, 1391, 1747, 1753, 1758, 1860, 1862, 9252, 9265, 9269, 9276, 9289, 9293	<code>\EURcr</code>	17522, 20790
<code>\dschemical</code>	18841, 20378	<code>\end</code>	615, 20994	<code>\EurCr</code>	17521, 20789
<code>\dscommercial</code>	18845, 20380	<code>\endeqnarray</code>	7155, 7174, 7182	<code>\EURdig</code>	17518, 20786
<code>\dsjuridical</code>	18839, 20377	<code>\endequation</code>	7130, 7142	<code>\EurDig</code>	17517, 20785
<code>\dsmedical</code>	18837, 20376	<code>\endForm</code>	5855	<code>\EURhV</code>	17520, 20788
<code>\dsmilitary</code>	18834, 20375	<code>\endinput</code>	64, 2698, 2793, 4396, 4527, 8423, 10970, 12345, 14571	<code>\EurHv</code>	17519, 20787
<code>\dtimes</code>	19234, 20543	<code>\endlinechar</code>	830, 851, 4765	<code>\EURtm</code>	17524, 20792
<code>\dvipdfm@setdim</code>	13505, 13555, 13654, 13677, 13708, 13733, 13761, 13790	<code>\endNoHyper</code>	6358	<code>\EurTm</code>	17523, 20791
<code>\dz</code>	16308, 20766	<code>\EndPreamble</code>	12348	<code>\evensidemargin</code>	7946
<b>E</b>					
<code>\Earth</code>	18731, 20916	<code>\endsubeqnarray</code>	7186, 7193	<code>\ExecuteOptions</code>	4187, 4188, 4192
<code>\earth</code>	18729, 20346	<code>\eng</code>	15690, 20673	<code>\exists</code>	17807, 20030
<code>\ECIRCUMFLEX</code>	19503, 19587, 19588, 19589, 19590, 19591	<code>\engma</code>	15691, 20674	<code>\exp</code>	498, 504, 2325
<code>\ecircumflex</code>	19497, 19527, 19528, 19529, 19530, 19531	<code>\ensuremath</code>	660	<code>\ExplSyntaxOff</code>	360, 509, 2337, 4288, 5089, 5148, 6882, 8153
<code>\Ecommerce</code>	17568, 20797	<code>\Envelope</code>	18901, 20400	<code>\ExplSyntaxOn</code>	356, 493, 2319, 4277, 5053, 5143, 6849, 8082
<code>\EdefEscapeName</code>	3829, 3879, 9369, 10111, 10650, 11524, 12676, 12679, 13278, 13281, 13634, 13640	<code>\enya</code>	16146, 20730	<code>\extravietnam</code>	3358
<code>\EdefEscapeString</code>	784, 794	<code>\epsdice</code>	612, 20647	<code>\extravietnamese</code>	3350
<code>\EdefUnescapeName</code>	3830	<code>\epsi</code>	16065, 20706	<code>\EyesDollar</code>	15242, 20651
<code>\EdefUnescapeString</code>	779, 7926	<code>\epsilon</code>	19851	<b>F</b>	
<code>\egroup</code>	675, 8925, 9930, 10381, 11037, 12862, 12954, 12979	<code>\eqcirc</code>	18008, 20115	<code>\fa</code>	19684
<code>\EightAsterisk</code>	19028, 20460	<code>\eqcolon</code>	17926, 20079	<code>\fallingdotseq</code>	20109
<code>\EightFlowerPetal</code>	19006, 20450	<code>\eqdot</code>	19259, 20553	<code>\fallingdotseq</code>	17995
<code>\EightFlowerPetalRemoved</code>	19025, 20459	<code>\eqnarray</code>	7154, 7157, 7179	<code>\FancyVerbLineautorefname</code>	2978, 2996, 3014, 3032, 3050, 3068, 3086, 3121, 3124, 3144, 3162, 3180, 3198, 3216, 3234, 3252, 3270, 8678
<code>\eighthnote</code>	18813, 20942	<code>\eqsim</code>	17940, 20085	<code>\farsikaf</code>	19726
<code>\eighthinferior</code>	19919	<code>\eqslantgtr</code>	19298, 20571	<code>\farsiya</code>	19730
<code>\EightStar</code>	18985, 20440	<code>\eqslantless</code>	19296, 20570	<code>\fatha</code>	19710
<code>\EightStarBold</code>	18987, 20441	<code>\equal</code>	7791	<code>\fatsemi</code>	19224, 20539
<code>\EightStarConvex</code>	18981, 20438	<code>\equalscolon</code>	18006, 20114	<code>\Fax</code>	19455, 20631
<code>\EightStarTaper</code>	18979, 20437	<code>\equalsinferior</code>	19923	<code>\fax</code>	17579, 19952
<code>\eightsuperior</code>	19903	<code>\equalsuperior</code>	19907	<code>\Faxmachine</code>	19457, 20987
		<code>\equation</code>	7129, 7133	<code>\fbox</code>	13144, 13147
		<code>\equationautorefname</code>	2965, 2983, 3001, 3019, 3037, 3055, 3073, 3091, 3092, 3131, 3149, 3167, 3185, 3203, 3221, 3239, 3257, 8661, 8665	<code>\fcdice</code>	613, 20648
		<code>\equiv</code>	18028, 20124	<code>\Female</code>	18728, 20915

\female . . .	18722, 18725, 20912	\Fld@additionalactions .	13918, 12648, 12676, 12790, 12852,
\FemaleFemale . .	18851, 20383	14009, 14038, 14073, 14108,	12870, 12884, 12892, 12899,
\FemaleMale . . . .	18855, 20385	14143, 14178, 14210	12925, 12935, 12965, 12975,
\Field@addtoks	5929, 5961, 5964,	\Fld@align . .	13179, 13196, 13209, 13250,
6138, 6159		14048, 14117	13278, 13394, 13528, 13545,
\Field@boolkey	5418, 5506, 5923,	\Fld@altname	13565, 13606, 13634, 13771,
5954, 5957		13900, 13971, 13973	14101, 14105, 14106, 14141
\Field@toks . . . . .	5927, 5928,	\Fld@annotflags . . . . .	\Fld@DingDef .
5930, 12854, 12871, 12882,		5625, 5627, 13982, 14015, 14043,	6050, 6053, 6055
12893, 12903, 12920, 12938,		14077, 14112, 14148, 14184	\Fld@disabledfalse . . . . .
12946, 12951, 12967, 12976		\Fld@annotnames	5838
\Field@Width . . . . .	5840, 5987	13969, 13984,	\Fld@export .
\figureautorefname .	2968, 2986,	14017, 14045, 14079, 14114,	5870
3004, 3022, 3040, 3058,		14150, 14186	\Fld@findlength . .
3076, 3106, 3134, 3152,		\Fld@bcolor .	12902, 12913
3170, 3188, 3206, 3224,		5846, 6086, 13999,	\Fld@flags
3242, 3260, 8668		14001, 14064, 14066, 14093,	5639, 5641, 5652, 5654,
\filename@area . . . . .	5248	14095, 14121, 14133, 14135	5668, 5670, 5700, 5702,
\filename@base . . . . .	5248	\fld@bcolor . . . . .	5725, 5727, 13986, 14019,
\filename@ext	5245, 5246, 5248,	14052	14047, 14081, 14116, 14152,
5249		\Fld@bordercolor . . . . .	14188
\filename@parse . . . . .	5244	5847,	\Fld@format@code .
\find@pdfink . .	8971, 9022, 9032	6089, 13995, 13997, 14023,	6095, 13923,
\Finv . . . . .	17569, 19947	14031, 14033, 14051, 14060,	13925
\Fire . . . . .	19458, 20632	14062, 14089, 14091, 14120,	\Fld@getmethodfalse . . . .
\firstaid@cref@updatelabeldata		14129, 14131, 14156, 14164,	5890
. . . . .	6859	14166, 14192, 14200, 14202	\Fld@getmethodtrue . . . .
\fivedots . . . . .	19393, 20613	\Fld@bordersep . . . .	5892
\FiveFlowerOpen .	19004, 20449	5848, 6038	\Fld@height
\FiveFlowerPetal .	19002, 20448	\Fld@borderstyle . . . . .	5996, 12579, 12597,
\fiveinferior . . . . .	19916	. .	12611, 12666, 12686, 12703,
\FiveStar . . . . .	18661, 20324	5850, 6022, 6023, 6024,	12743, 12763, 12793, 12803,
\FiveStarCenterOpen . .	18963,	6034, 13988, 14021, 14049,	13182, 13202, 13212, 13268,
20429		14083, 14118, 14154, 14208	13296, 13310, 13346, 13369,
\FiveStarConvex .	18971, 20433	\Fld@borderwidth . . . . .	13397, 13409, 13531, 13547,
\FiveStarOpen . .	18663, 20325	. .	13568, 13624, 13636, 13670,
\FiveStarOpenCircled . .	18961,	5849, 6002, 6228, 6231,	13719, 13742, 13774, 13782
20428		6232, 6235, 6236, 12664,	\Fld@hiddenfalse . . . . .
\FiveStarOpenDotted . .	18965,	12665, 13266, 13267, 13622,	5528
20430		13623, 13988, 14021, 14049,	\Fld@hiddentrue . . . . .
\FiveStarOutline .	18967, 20431	14083, 14118, 14154, 14208	5529
\FiveStarOutlineHeavy .	18969,	\Fld@calculate@code	\Fld@invisiblefalse . . . . .
20432		6097, 12563,	5524
\FiveStarShadow .	18973, 20434	13067, 13521, 13931, 13933	\Fld@invisibletrue . . . . .
\fivesuperior . . . . .	19900	\Fld@calculate@sortkey . .	5525
\Flag . . . . .	18829, 20373	6131, 6133, 13076	\Fld@keystroke@code . . . .
\flap . . . . .	16189, 20741	\Fld@cbsymbol	6098,
\flapr . . . . .	16188, 20740	5851, 6050, 14003	13919, 13921
\flat . . . . .	18818, 20368	\Fld@charsize	\Fld@listcount . . .
\Fld@@additionalactions	13918,	5841, 5842, 5999,	12675, 12680,
13961, 13965		12663, 13265, 13621, 14005,	12683, 12688, 12693, 12698,
\Fld@@DingDef	6057, 6060, 6079	14070, 14099, 14139, 14190	13277, 13282, 13297, 13303,
		\Fld@checkedfalse . . . . .	13633, 13641, 13645, 13650,
		5837	13661, 13666
		\Fld@checkequals . .	\Fld@loc . . . . .
		5941, 12616,	\Fld@mappingname .
		12678, 12923, 12933, 13217,	5981, 5983,
		13280, 13573, 13639	13902, 13904, 13975, 13977
		\Fld@choices . . . . .	\Fld@maxlen .
		. .	5843, 5990, 14144
		5732, 5740, 5742, 5746,	\Fld@menulength . .
		5755, 5762, 5766, 5814,	5839, 5993,
		5816, 5824, 5825, 14072	12613, 12617, 12663, 12914,
		\Fld@color . .	12915, 12918, 13214, 13218,
		5845, 6092, 14006,	13265, 13570, 13574, 13621
		14071, 14100, 14140	\Fld@name
		\Fld@default .	5975, 12575, 12607,
		5757, 5760, 5762,	12711, 12789, 12851, 12856,
		6041, 12576, 12592, 12608,	12867, 12868, 12879, 12880,
			12889, 12890, 12898, 12919,
			12936, 12944, 12949, 12964,
			12973, 13178, 13208, 13315,

13393, 13527, 13564, 13684,  
13770, 13897, 13970

\Fld@norotatefalse . . . . . 5541

\Fld@norotatetrue . . . . . 5540

\Fld@noviewfalse . . . . . 5544

\Fld@noviewtrue . . . . . 5545

\Fld@nozoomfalse . . . . . 5537

\Fld@nozoomtrue . . . . . 5536

\Fld@onblur@code . 6100, 13939,  
13941

\Fld@onclick@code . 6094, 6170,  
14037

\Fld@onenter@code 6103, 13951,  
13953

\Fld@onexit@code . 6104, 13955,  
13957

\Fld@onfocus@code 6099, 13935,  
13937

\Fld@onmousedown@code 6101,  
13943, 13945

\Fld@onmouseup@code . 6102,  
13947, 13949

\Fld@pageobjref . 12554, 13152,  
13163, 13518, 13853, 13983,  
14016, 14044, 14078, 14113,  
14149, 14185

\Fld@printfalse . . . . . 5533

\Fld@printtrue . . . . . 5532

\Fld@radiosymbol . . 5852, 6053,  
14097

\Fld@rotation . . . . . 5853,  
6083, 13991, 13993, 14022,  
14027, 14029, 14050, 14056,  
14058, 14085, 14087, 14119,  
14125, 14127, 14155, 14160,  
14162, 14191, 14196, 14198

\Fld@submitflags . . 5607, 5609,  
14176

\Fld@temp . . 6056, 6058, 6061,  
6062, 6071, 6072

\Fld@validate@code 6096, 13927,  
13929

\Fld@value . . 5758, 5764, 5766,  
6047, 12577, 12592, 12609,  
12647, 12648, 13180, 13196,  
13210, 13249, 13250, 13529,  
13545, 13566, 13605, 13606,  
14142

\Fld@width 5986, 12578, 12591,  
12597, 12610, 12646, 12657,  
12659, 12686, 12703, 12726,  
12742, 12750, 12762, 12776,  
12792, 12798, 12803, 13181,  
13195, 13202, 13211, 13248,

13259, 13261, 13296, 13310,  
13331, 13345, 13353, 13368,  
13382, 13396, 13403, 13409,  
13530, 13544, 13547, 13567,  
13604, 13615, 13617, 13636,  
13670, 13701, 13718, 13726,  
13741, 13755, 13773, 13780,  
13782

\float@caption . . . . . 7532, 7605

\float@makebox . . . . 7607, 7608

\floatingpenalty . . . . . 7429

\Florin . . . . . 15813, 20678

\flq . . . . . 641

\flqq . . . . . 639

\fntname . . . . . 7

\fntversion . . . . . 7

\font . . . . . 5096

\fontencoding . . . 525, 529, 566,  
13136

\fontfamily . . . . . 567, 13135

\fontseries . . . . . 568, 13137

\fontshape . . . . 569, 4715, 13138

\fontsize . . . . . 570

\Football . . 18870, 18872, 20947

\footins . . . . . 7423

\footnoteautorefname . . . . .  
. . 2966, 2984, 3002, 3020,  
3038, 3056, 3074, 3095,  
3098, 3132, 3150, 3168,  
3186, 3204, 3222, 3240,  
3258, 8662, 8666

\footnotesep . . . . . 7427, 7435

\footnotesize . . . . . 599, 7425

\footnotetext . . . . . 7385

\footref . . . . . 7454, 7455

\forall . . . . . 17801, 20027

\Force . . . . . 17632, 20803

\forcecjktoken . . . . . 462

\foreignlanguage . . . . . 626

\Form . . . . . 5854

\Form@aaction 5864, 12843, 14174

\Form@boolkey . . . . . 5858

\Form@htmlfalse . . . 5857, 5876

\Form@htmltrue . . . . . 5869

\Form@method 5888, 5896, 12843

\Forward . . . . . 18620, 20308

\ForwardToIndex . . 18438, 20297

\FourAsterisk . . . 18949, 20422

\fourinferior . . . . . 19915

\FourStar . . . . . 18957, 20426

\FourStarOpen . . 18959, 20427

\foursuperior . . . . . 19899

\fourth . . . . . 17415, 19895

\frown . . . . . 18391, 20278

\frownie . . . . . 18704, 20339

\Frowny . . . . . 18706, 20907

\frq . . . . . 642

\frqq . . . . . 640

\fullnote . . . . . 19432, 20621

\futurelet . . . . . 695, 1305

## G

\G . 15123, 15167, 15196, 15926,  
15928, 15930, 15932, 15942,  
15944, 15945, 15956, 15958,  
15968, 15970, 15972, 15974

\g . . . . . 2322, 2326, 2334

\g@addto@macro . . . 6482, 6654,  
7668, 7898, 7901, 7904,  
7956, 9297, 10263, 10792,  
11082, 11672, 11781, 11851,  
12160, 12359

\G@refundefinedtrue 5021, 8428,  
8448, 8465, 8597

\gaf . . . . . 19728

\Game . . . . . 17581, 19953

\Gamma . . . . . 19836

\gamma . . . . . 19849

\gammainferior . . . . . 19879

\Ganz . . . . . 19434, 20984

\GaPa . . . . . 19420, 20615

\Gauge . . . . . 6186

\ge . . . . . 18040, 20129

\Gemini . . . . . 18760, 20927

\gemini . . . . . 18758, 20355

\GenericError . . . . . 683, 3706

\GenericInfo . . . . . 685, 3704

\GenericWarning 261, 684, 3705

\Gentsroom . . . . 19462, 20634

\geq . . . . . 18040, 20128

\geqclosed . . . . . 18250, 20868

\geqq . . . . . 18048, 20132

\geqslant . . . . . 19269, 20558

\GetDocumentProperties . 2319,  
4280

\getrefbykeydefault . 7055, 7056

\gexmode . 10822, 10823, 10925

\gg . . . . . 18060, 20138

\ggg . . . . . 18310, 20243

\ghayn . . . . . 19680

\gimel . . . . . 17575, 19950

\Gin@setfile . . . . . 8238, 8239

\glossary . . . . . 648, 7973

\glotstop . . . . . 16258, 19833

\glottal . . . . . 16261, 20758

\glq . . . . . 637

\glqq . . . . . 635

\gnapprox . . . . . 19288, 20567

<code>\gneq</code> . . . . .	19284, 20565	<code>\H@refstepcounter</code> . .	6843, 7105, 7134, 7230, 7527	<code>\hebalef</code> . . . . .	16917
<code>\gneqq</code> . . . . .	18054, 20135	<code>\H@subeqnarray</code> . . .	7185, 7189	<code>\hebayin</code> . . . . .	16953
<code>\gnsim</code> . . . . .	18342, 20257	<code>\ha</code> . . . . .	19696	<code>\hebbet</code> . . . . .	16919
<code>\grq</code> . . . . .	638	<code>\Haa</code> . . . . .	19654	<code>\hebdalet</code> . . . . .	16913, 16923
<code>\grqq</code> . . . . .	636	<code>\Halb</code> . . . . .	19437, 20985	<code>\hebfinalkaf</code> . . . . .	16937
<code>\gtrapprox</code> . . . . .	19277, 20562	<code>\halfnote</code> . . . . .	19435, 20622	<code>\hebfinalmem</code> . . . . .	16943
<code>\gtrclosed</code> . . . . .	18243, 20865	<code>\halign</code> . . . . .	657	<code>\hebfinalnun</code> . . . . .	16947
<code>\gtrdot</code> . . . . .	18306, 20241	<code>\hamza</code> . . . . .	19630	<code>\hebfinalpe</code> . . . . .	16955
<code>\gtreqless</code> . . . . .	18316, 20245	<code>\HandCuffLeft</code> . . .	18680, 20331	<code>\hebfinaltsadi</code> . . . . .	16959
<code>\gtreqqless</code> . . . . .	19294, 20569	<code>\HandCuffRight</code> . .	18682, 20332	<code>\hebgimel</code> . . . . .	16921
<code>\gtrless</code> . . . . .	18087, 20150	<code>\HandLeft</code> . . . . .	18684, 20333	<code>\hebhe</code> . . . . .	16925
<code>\gtrsim</code> . . . . .	18078, 20146	<code>\HandRight</code> . . . . .	18687, 20334	<code>\hebheth</code> . . . . .	16931
<code>\guillemetleft</code> . . . .	14886, 15069, 15341, 19484	<code>\HaPa</code> . . . . .	19422, 20616	<code>\hebkaf</code> . . . . .	16939
<code>\guillemetright</code> . .	14918, 15070, 15377, 19485	<code>\HAR@checkcitations</code> . . . .	7807	<code>\heblamed</code> . . . . .	16941
<code>\guillemotleft</code> . . .	14885, 15340	<code>\HAR@citetoaux</code> . . . . .	7763	<code>\hebmam</code> . . . . .	16945
<code>\guillemotright</code> . .	14917, 15376	<code>\HAR@tempa</code> . . . . .	7808, 7809, 7810, 7811, 7812, 7813	<code>\hebnun</code> . . . . .	16949
<code>\guilsinglleft</code> . . . .	14816, 15071, 17398, 19486	<code>\hardsign</code> . . . . .	16551, 20769	<code>\hebpe</code> . . . . .	16957
<code>\guilsinglright</code> . . .	14818, 15072, 17400, 19487	<code>\harvardcite</code> . . . . .	7757, 7794	<code>\hebpof</code> . . . . .	16963
<b>H</b>		<code>\harvarditem</code> . . . . .	7782	<code>\hebrech</code> . . . . .	16965
<code>\H</code> . . . . .	15118, 15170, 15199, 15221, 15701, 15703, 15765, 15767, 16893, 16895	<code>\hateq</code> . . . . .	18016, 20119	<code>\hebsamekh</code> . . . . .	16951
<code>\h</code> . . . . .	3171, 19510, 19515, 19520, 19525, 19530, 19535, 19540, 19545, 19550, 19555, 19560, 19565, 19570, 19575, 19580, 19585, 19590, 19595, 19600, 19605, 19610, 19615, 19620, 19625	<code>\hausab</code> . . . . .	15802, 19798	<code>\hebshin</code> . . . . .	16967, 16968, 20771
<code>\H@@footnotemark</code> . . . . .	7285, 7302, 7369, 7459, 7466, 7478, 7489	<code>\hausab</code> . . . . .	16037, 20699	<code>\hebsin</code> . . . . .	16968, 20771
<code>\H@@footnotetext</code> . . . . .	7284, 7294, 7329, 7368, 7407, 7467, 7481, 7489	<code>\hausad</code> . . . . .	15806, 19799	<code>\hebtav</code> . . . . .	16970
<code>\H@@mpfootnotetext</code> . . . . .	7292, 7304, 7306, 7370	<code>\hausad</code> . . . . .	16051, 20704	<code>\hebtet</code> . . . . .	16933
<code>\H@@theHfootnote</code> . . . . .	7276, 7279	<code>\hausak</code> . . . . .	15817, 19800	<code>\hebttsadi</code> . . . . .	16961
<code>\H@endeqnarray</code> . . . .	7155, 7175	<code>\hausak</code> . . . . .	15821, 20680	<code>\hebvav</code> . . . . .	16927
<code>\H@endequation</code> . . . .	7130, 7148	<code>\hb@xt@</code> . . . . .	5111, 5124	<code>\hebyod</code> . . . . .	16935
<code>\H@endsubeqnarray</code> . . .	7186, 7194	<code>\hbar</code> . . . . .	15608, 19797	<code>\hebzayin</code> . . . . .	16929
<code>\H@eqnarray</code> . . . . .	7154, 7160	<code>\hbox</code> . . . . .	1553, 1559, 1565, 2260, 3437, 3443, 5112, 5126, 5283, 5285, 5987, 6222, 6223, 6224, 6225, 7941, 8918, 9463, 9473, 9543, 9557, 9580, 9595, 9620, 9635, 9906, 9923, 11001, 11349, 11363, 12001, 12011, 12283, 12298, 12991, 13546, 13635, 13669, 13699, 13727, 13756, 13781, 14583	<code>\hexagon</code> . . . . .	18433, 20295
<code>\H@equation</code> . . . . .	7129, 7135	<code>\hc@currentHref</code> . . . . .	7543	<code>\hexstar</code> . . . . .	18868, 20388
<code>\H@item</code> . . . . .	6836, 6841, 7676, 7701	<code>\HCode</code> . . . . .	12843, 12845, 12856, 12865, 12877, 12885, 12887, 12918, 12924, 12929, 12934, 12948, 12953, 12957, 12960, 12969	<code>\hfill</code> . . . . .	6222, 6223, 6224, 6225, 7687, 7731
<code>\H@old@part</code> . . . . .	14638, 14646	<code>\hdotfor</code> . . . . .	17380, 19889	<code>\Hfootnoteautorefname</code> . .	8662
<code>\H@old@schapter</code> . . . .	14608, 14617	<code>\headerps@out</code> . . . . .	6762, 11662, 11673, 11768, 11782, 11843, 11852, 11865, 11879, 11926, 12044, 12161, 12360	<code>\hinferior</code> . . . . .	19931
<code>\H@old@sect</code> . . . . .	14656, 14667, 14676	<code>\Heart</code> . . . . .	18793, 20938	<code>\hoffset</code> . . . . .	7942
<code>\H@old@spart</code> . . . . .	14648, 14654	<code>\heartsuit</code> . . . . .	18791, 18794, 20939	<code>\hookb</code> . . . . .	16036, 20698
<code>\H@old@ssect</code> . . . . .	14594, 14599			<code>\hookd</code> . . . . .	16050, 20703
				<code>\hookg</code> . . . . .	16083, 20710
				<code>\hookh</code> . . . . .	16103, 20715
				<code>\hookheng</code> . . . . .	16107, 20717
				<code>\hookleftarrow</code> . . . . .	17670, 19975
				<code>\hookrightarrow</code> . . . . .	17672, 19976
				<code>\hphantom</code> . . . . .	609
				<code>\href</code> . . . . .	649, 4881, 6383
				<code>\href@</code> . . . . .	4884, 4887, 4892
				<code>\href@split</code> . . . . .	4892, 4893
				<code>\hsize</code> . . . . .	7430
				<code>\hskip</code> . . . . .	1564, 1651, 2305, 2306, 4878, 6228, 12991
				<code>\hslash</code> . . . . .	17535, 19940
				<code>\hspace</code> . . . . .	645, 7797, 7798
				<code>\hss</code> . . . . .	5113, 5125, 7950, 14588

<code>\ht</code> 5117, 5121, 5130, 6230, 6233, 9471, 9546, 9555, 9562, 9583, 9593, 9600, 9623, 9633, 9640, 11345, 12009, 12296, 13506	<code>\hvtex@trans@effect@Wipe</code> 10685	<code>\Hy@author</code> . . . . . 6408, 6412
<code>\htrtaild</code> . . . . . 19886	<code>\hvtex@trans@par</code> 10719, 10723, 10725, 10728, 10731	<code>\Hy@babelnormalise</code> 4982, 4984
<code>\Huge</code> . . . . . 596	<code>\hvtex@trans@params</code> . . 10713, 10715, 10739	<code>\Hy@backout</code> . 4759, 6343, 6347, 7641
<code>\huge</code> . . . . . 600	<code>\Hy@@CleanupFile</code> . 5283, 5285	<code>\Hy@backreffalse</code> . . . 428, 2930, 2952, 4404
<code>\Hurl</code> . . . . . 4967, 4969, 4971	<code>\Hy@@DefNameKey</code> . 2427, 2429	<code>\Hy@backreftrue</code> . . . 2923, 2927, 2949
<code>\hv</code> . . . . . 15816, 20679	<code>\Hy@@escapeform</code> 13863, 13876, 13882	<code>\Hy@BeginAnnot</code> . . . 9948, 9965, 10008, 10047, 10080, 10110
<code>\hv@pdf@char</code> . . . 14379, 14444, 14445, 14446, 14447	<code>\Hy@@SectionAnchor</code> . . . 14578, 14581, 14591	<code>\Hy@bibcite</code> . . . . . 7665, 7669
<code>\hvtex@buffer</code> . . . 10692, 10696, 10704, 10707, 10716, 10720, 10736	<code>\Hy@@temp</code> . . 3467, 3469, 6106, 6108	<code>\Hy@bookmarksdepth</code> . . . 3422, 3427, 3439, 3445, 14222
<code>\hvtex@gettoken</code> . 10691, 10705, 10709, 10718, 10722	<code>\Hy@@VersionCheck</code> . . 283, 312	<code>\Hy@bookmarksfalse</code> . . . . 8022
<code>\hvtex@gettoken@</code> 10692, 10694	<code>\Hy@abspage</code> . 6502, 6588, 6704, 6788	<code>\Hy@bookmarksnumberedfalse</code> . . . . . 429
<code>\hvtex@par@dimension</code> . 10687, 10728	<code>\Hy@Acrobatmenu</code> . . 4295, 4336, 9367, 10109, 10651, 11525	<code>\Hy@bookmarksopenfalse</code> . 430
<code>\hvtex@par@direction</code> . . 10688, 10731	<code>\Hy@activeanchorfalse</code> . . . . . . . 4763, 9013, 9415, 9430, 9509, 9519, 9835, 10366, 10383, 10459, 10472, 10987, 11949, 11964, 12236, 12250	<code>\Hy@bookmarkstrue</code> . 431, 8018
<code>\hvtex@par@duration</code> . . . 10689, 10723	<code>\Hy@activeanchortrue</code> . . . . . . . 9009, 9412, 9426, 9507, 9516, 9831, 10362, 10380, 10457, 10469, 10977, 11946, 11960, 12233, 12246	<code>\Hy@bookmarkstype</code> 3457, 3459, 7977, 14233
<code>\hvtex@par@motion</code> 10690, 10725	<code>\Hy@ActiveCarriageReturn</code> 4800, 4803	<code>\Hy@boolkey</code> . 2353, 2446, 2449, 2452, 2473, 2476, 2479, 2510, 2513, 2530, 2537, 2540, 2543, 2546, 2549, 2552, 2555, 2558, 2621, 2901, 2904, 2959, 3373, 3385, 3400, 3417, 3420, 3461, 3464, 3683, 3970, 3973, 3976, 3979, 3982, 3985, 3996, 4005, 4137, 4140, 6720
<code>\hvtex@param@dimension</code> 10700, 10729, 10747, 10750	<code>\Hy@addcontentsline@addbookmark</code> . . . 7960, 8014, 8032	<code>\Hy@BorderArrayPatch</code> . 11403, 11406, 11671, 12159
<code>\hvtex@param@direction</code> 10701, 10732, 10758, 10766	<code>\Hy@AllowHyphens</code> 4874, 10975, 11007, 11332	<code>\Hy@breaklinks@unsupported</code> . . . . . . 2518, 10953
<code>\hvtex@param@duration</code> 10702, 10724, 10771, 10773	<code>\Hy@AlphNoErr</code> 6948, 6961, 6963	<code>\Hy@breaklinksfalse</code> . . . . . 432
<code>\hvtex@param@motion</code> . 10703, 10726, 10747, 10754	<code>\Hy@AnchorName</code> . . 5005, 5007, 5010, 5012, 5037, 5039, 5043, 5048, 5050	<code>\Hy@breaklinksunhbox</code> . 11299, 11353
<code>\hvtex@parse@trans</code> 10676, 10698	<code>\Hy@appendixstring</code> 6943, 6965	<code>\Hy@CatcodeWrapper</code> . . . 4647, 4704, 4753
<code>\hvtex@produce@trans</code> . . 10737, 10743	<code>\Hy@AtBeginDocument</code> . . . . . . . . . . 356, 2566, 2694, 2789, 3387, 4169, 4238, 4255, 4392, 4398, 4523, 4686, 4750, 6300, 6795, 7754, 8512, 8913, 9304, 9918, 10441, 11878, 11924, 13008, 13041	<code>\Hy@chapapp</code> 6944, 6965, 6997, 14612, 14623
<code>\hvtex@token</code> . . . 10695, 10706, 10712, 10719, 10724, 10727, 10730, 10732	<code>\Hy@AtEndOfPackage</code> . . . . 364, 818, 3351, 3359, 3366, 4406, 4414, 4638	<code>\Hy@chapterstring</code> . . 6939, 6941, 6944, 6996
<code>\hvtex@trans@code</code> 10680, 10681, 10682, 10683, 10684, 10685, 10686, 10699, 10745, 10746, 10748, 10750, 10752, 10754, 10756, 10758, 10760, 10761, 10762, 10763, 10764, 10766	<code>\Hy@AtEndOfPackageHook</code> 365, 368, 370, 371	<code>\Hy@CheckOptionValue</code> . . 2397, 2434
<code>\hvtex@trans@effect@Blinds</code> . . . . . . . . 10680		<code>\Hy@CJKbookmarksfalse</code> . . 434
<code>\hvtex@trans@effect@Box</code> 10681		<code>\Hy@cjkpu</code> . . . . . 974, 976, 997
<code>\hvtex@trans@effect@Dissolve</code> . . . . . . 10682		<code>\Hy@CleanupFile</code> . . . 5281, 9071, 10010, 10536, 11597
<code>\hvtex@trans@effect@Glitter</code> . . . . . . . 10683		<code>\Hy@colorlink</code> 3379, 4707, 4715, 4719, 8914, 8994, 9064, 9101, 9134, 9389, 9413, 9436, 9467, 9480, 9508,
<code>\hvtex@trans@effect@R</code> . . 10686		
<code>\hvtex@trans@effect@Split</code> 10684		

9524, 9549, 9565, 9587,	9673, 9674, 9675, 9676,	12270, 12295, 12306
9604, 9627, 9644, 9919,	9677, 9678, 9679, 9680,	\Hy@EndWrap 4648, 4650, 4651,
9998, 10039, 10073, 10103,	9681, 9682, 9946, 10166,	4684
10130, 10458, 10480, 10550,	10167, 10168, 10169, 10170,	\Hy@Error . . . . . 255, 271, 277,
10576, 10611, 10644, 10663,	10171, 10172, 10173, 10174,	300, 2570, 2680, 2706, 2722,
11005, 11278, 11280, 11947,	10175, 10176, 10177, 10295,	2757, 2796, 2803, 2814,
11970, 12005, 12018, 12234,	10443, 10903, 10904, 10905,	2820, 2858, 4320, 4935,
12256, 12291, 12304	10906, 10907, 10908, 10909,	5214, 5565, 5689, 5883,
\Hy@colorlinksfalse . . . . . 3376	10910, 10911, 10912, 10913,	5915, 6111, 6164, 12717,
\Hy@ColorList . . . . . 3522, 3523	10914, 11160, 11161, 11162,	12770, 13322, 13376, 13691,
\Hy@CounterExists . . . . . 6823	11163, 11164, 11165, 11166,	13749
\Hy@currentbookmarklevel . . .	11167, 11168, 11169, 11170,	\Hy@escapeform . 12596, 12682,
. . . . . 14228, 14238, 14239,	11171, 11753, 12067, 12068,	12701, 12730, 12751, 12777,
14245, 14252, 14344, 14347,	12069, 12070, 12071, 12072,	12802, 13200, 13286, 13308,
14352, 14356	12073, 12074, 12075, 12076,	13335, 13356, 13384, 13407,
\Hy@debugfalse . . . . . 424	12077, 12078	13552, 13644, 13673, 13705,
\Hy@debugtrue . . . . . 423	\Hy@DistillerDestFix . . . . 7912,	13729, 13757, 13787, 13857,
\Hy@defaultbp . . . . . 6002, 6004	10918, 10920	13887, 13894
\Hy@defaultbpAux . 6006, 6009	\Hy@draftfalse . . . . . 391	\Hy@escapestring 13854, 13921,
\Hy@defaultdriver . . 4508, 4540,	\Hy@drafttrue . . . . . 392	13925, 13929, 13933, 13937,
4550, 4562	\Hy@driver . . . 474, 2523, 2691,	13941, 13945, 13949, 13953,
\Hy@deferred@thm@head . 7249,	2703, 2715, 2718, 2730,	13957, 14003, 14037, 14097,
7250	2736, 2741, 2755, 2765,	14141, 14142, 14174
\Hy@DefFormAction 5862, 5864	2770, 2776, 2783, 2786,	\Hy@EveryPageAnchor . . 7911,
\Hy@DefNameKey . . 2426, 3554,	2812, 2828, 2835, 2841,	7957
3612, 3620, 3628, 3632,	2852, 2866, 4416, 4419,	\Hy@EveryPageBoxHook . . . . .
3639, 3646, 3653, 3660,	4427, 4430, 4434, 4437,	. . . 6459, 6463, 6467, 7956,
3664, 3669, 3676, 4014	4439, 4443, 4449, 4453,	10263, 10792, 11082
\Hy@DEST . . . . . 11300, 11367	4456, 4460, 4465, 4469,	\Hy@EveryPageHook 6458, 6462,
\Hy@destlabelfalse . . . . . 435	4472, 4476, 4480, 4484,	6654, 9297
\Hy@DestName . . . . 8958, 8965	4487, 4491, 4494, 4496,	\Hy@ExchangeLeftParenthesis .
\Hy@DestRename . . 5346, 5371,	4500, 4506, 4511, 4513,	. . . . . 8711, 8717
5375	4517, 4520, 4531, 4534,	\Hy@ExchangeRightParenthesis
\Hy@DisableOption . . . . .	4537, 4540, 4549, 4550,	. . . . . 8721, 8727
. . 2382, 4273, 4274, 4275,	4562, 4564, 4572, 4574,	\Hy@false 2223, 2363, 2915, 2951,
4289, 4294, 4411, 4582,	4576, 4578	5912
4583, 4584, 4585, 4586,	\Hy@dth@currentHref . . . 7232,	\Hy@finalfalse . . . . . 392
4587, 4588, 4589, 4590,	7233, 7240	\Hy@finaltrue . . . . . 391
4591, 4592, 4593, 4594,	\Hy@dviErrMsg . . . 2658, 2660,	\Hy@FirstPage . . . . . 4306
4595, 4596, 4597, 4598,	2663, 2669, 2682	\Hy@FirstPageHook . . . . .
4599, 4600, 4601, 4646,	\Hy@dviModetrue . . 2667, 2672	. . . 6460, 6474, 6475, 6479,
4699, 4724, 4725, 4761,	\Hy@dviPdfmxOutlineOpentru	6482, 6760, 6761, 11672,
4762, 5402, 6304, 6305,	. . . . . 4608, 4615	11781, 11851, 12160, 12359
6306, 6307, 6308, 6309,	\Hy@EndAnnot . . . 9954, 10001,	\Hy@float@caption . . 7533, 7584,
6310, 6311, 6312, 6313,	10042, 10076, 10106, 10133	7598
6314, 6315, 6316, 6317,	\Hy@endcolorlink . . 3380, 4711,	\Hy@float@currentHref . . . . .
6318, 6319, 6320, 6321,	4716, 4720, 8923, 9000,	. . . 7588, 7591, 7593, 7599,
6322, 6323, 6324, 6325,	9413, 9450, 9474, 9482,	7601, 7603
6326, 6327, 6432, 6656,	9508, 9532, 9553, 9567,	\Hy@footnote@currentHref . . .
7494, 8243, 8369, 8370,	9591, 9606, 9631, 9646,	. . . 6299, 7314, 7319, 7322,
8837, 8941, 9236, 9237,	9928, 9956, 10458, 10531,	7337, 7342, 7345, 7357,
9238, 9239, 9240, 9241,	10552, 10578, 10613, 10646,	7359, 7398, 7440, 7443
9242, 9243, 9244, 9245,	10665, 11032, 11292, 11947,	\Hy@FormObjects 13100, 13415,
9246, 9362, 9671, 9672,	11986, 12012, 12020, 12234,	13470, 13480, 13798, 13849

\Hy@frenchlinksfalse . . . . .	3378	\Hy@linkfileprefix . . . . .	3501, 5233, 9453, 10331, 11990, 12273	\Hy@next . . . . .	6604, 6614, 6619, 14622, 14631, 14634
\Hy@Gin@setfile . . . . .	8238, 8240	\Hy@LinkMath . . . . .	10996, 10998, 11003, 11035, 11324, 11326, 11331, 11333, 11339, 11341	\Hy@nextfalse . . . . .	8254
\Hy@GlobalAppendToMacro . . . . .	358, 930, 5386	\Hy@linktoc . . . . .	2481, 2483, 2491, 2493, 2503, 8050, 8091, 8107, 8124, 8140	\Hy@NextPage . . . . .	4300
\Hy@GlobalStepCount . . . . .	472, 6588, 7027, 7051, 7931	\Hy@linktoc@call . . . . .	2489	\Hy@nexttrue . . . . .	8255, 8256, 8257
\Hy@gtemp . . . . .	806, 807, 4351, 4357, 4359, 5777, 5791, 7374, 7379, 8735, 8737, 13914, 13916	\Hy@linktoc@none . . . . .	2486	\Hy@NIL . . . . .	4212, 4225, 4228
\Hy@href . . . . .	4884, 4886	\Hy@linktoc@page . . . . .	2481, 2488, 2491	\Hy@number . . . . .	3907, 3914
\Hy@href@nextactionraw . . . . .	. . . . .	\Hy@linktoc@section . . . . .	2483, 2487, 2493	\Hy@numberline . . . . .	14229, 14266, 14267, 14268, 14269
. . . . .	4921, 4944, 4946, 4947, 4949, 4954, 4958, 4960, 9060, 9097, 9130, 9385, 9994, 10035, 10069, 10099, 10126, 10495, 10565, 10633, 11622, 11651	\Hy@linktoc@pagefalse . . . . .	443	\Hy@ObsoletePaperOption . . . . .	2455, 2463
\Hy@href@page . . . . .	4899, 4901, 4905, 4906, 4908, 4915, 4918, 9093, 10030, 11618	\Hy@localanchornametrue . . . . .	444	\Hy@ocgcolor . . . . .	8917, 8931, 9922, 9936
\Hy@hyperfiguresfalse . . . . .	437	\Hy@LocalAppendToMacro . . . . .	357, 362, 365, 6908, 6924, 6929	\Hy@ocgcolorlinksfalse . . . . .	3377, 4694
\Hy@hyperfootnotetrue . . . . .	439	\Hy@LookForParentCounter . . . . .	6914	\Hy@org@chapter . . . . .	14620, 14635
\Hy@hyperindextrue . . . . .	440	\Hy@LT@currentHref . . . . .	7107, 7118	\Hy@OrgMakeLabel . . . . .	12328, 12335
\Hy@hypertextnamesfalse . . . . .	2194	\Hy@LT@footnotetext . . . . .	7397, 7406	\Hy@OutlineName . . . . .	14500, 14552
\Hy@hypertextnametrue . . . . .	441	\Hy@make@anchor . . . . .	8166, 8172, 8178	\Hy@OutlineRerunCheck . . . . .	14368, 14467, 14546
\Hy@ifempty . . . . .	359, 5157	\Hy@make@cdf@tag@@ . . . . .	8170, 8185	\Hy@PageAnchorSlide . . . . .	7871, 7909, 7923
\Hy@iffileloaded . . . . .	898, 903, 6472	\Hy@make@cdf@tag@@@ . . . . .	8176, 8186	\Hy@PageAnchorSlidesPlain . . . . .	. . . . .
\Hy@ifnotmeasuring . . . . .	6888, 6891	\Hy@MakeCurrentHref . . . . .	6990, 7039, 7052	. . . . .	7857, 7908, 7918
\Hy@ifStringEndsWith . . . . .	5249, 5261	\Hy@MakeCurrentHrefAuto . . . . .	7050, 7064, 8167, 14596, 14612, 14623, 14650, 14664	\Hy@pageanchortrue . . . . .	450
\Hy@implicittrue . . . . .	442	\Hy@MakeRemoteAction . . . . .	4904, 9074, 10013, 11600	\Hy@pagecounter . . . . .	477, 479, 7931, 7933, 7935
\Hy@Info . . . . .	258, 2371, 4362, 4364, 4367, 4369, 4372, 4374, 4377, 4379, 4382, 4384, 4631, 4637, 4712, 4717, 4721, 4843, 4870, 5472, 6261, 6263, 6266, 6268, 6271, 6273, 6276, 6278, 6281, 6283, 6286, 6288, 6291, 6293, 7755, 7982, 7999	\Hy@maketitle@end . . . . .	7470, 7475, 7477	\Hy@pageheight . . . . .	4183, 11783, 11880
\Hy@InfoNoLine . . . . .	259, 4387, 4389, 4574, 8759, 12213	\Hy@maketitle@optarg . . . . .	7468, 7473	\Hy@param . . . . .	4213, 4214, 4217, 4218, 6995, 6996, 6997, 7024, 7028
\Hy@IsNotEmpty . . . . .	5353, 5354, 5377	\Hy@Match . . . . .	318, 320, 2874, 3511, 3569, 3586, 3932, 4032, 4038, 4068, 4069, 4072, 4083, 4098, 4949, 6024	\Hy@pdf@majorminor@version . . . . .	. . . . .
\Hy@LastPage . . . . .	4309	\Hy@MaybeStopNow . . . . .	2779, 4193, 4196	. . . . .	2646, 4291, 5739, 8755, 8769, 8796, 8817, 13909
\Hy@leftbracechar . . . . .	315, 332	\Hy@Message . . . . .	260, 2693, 2788, 4391, 4522, 10387, 10391, 10394, 10397, 10400, 10403, 10406, 10409, 12544, 12815, 12819, 12822, 12825, 12828, 12831, 12834, 12837, 12847, 12984, 13475	\Hy@pdf@majorversion . . . . .	. . . . .
\Hy@level . . . . .	14234, 14236, 14247, 14252, 14253, 14254, 14284	\Hy@naturalnamesfalse . . . . .	446	. . . . .	2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2646, 6754, 8763, 8792, 8814, 8832, 8835
\Hy@levelcheck . . . . .	14235, 14250	\Hy@nestingfalse . . . . .	447	\Hy@pdf@minorversion . . . . .	. . . . .
\Hy@linkcounter . . . . .	476, 478, 7027, 7028, 7051, 7052	\Hy@newline@author . . . . .	6453	. . . . .	2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 6755, 8763, 8793, 8815, 8832, 8836
		\Hy@newline@title . . . . .	6452	\Hy@pdfafalse . . . . .	470, 4282
				\Hy@pdfatruetrue . . . . .	4285
				\Hy@pdfcenterwindowfalse . . . . .	433
				\Hy@pdfdisplaydoctitlefalse . . . . .	469
				\Hy@pdfescapeformfalse . . . . .	436
				\Hy@pdffitwindowfalse . . . . .	438
				\Hy@pdfmajorminor@version . . . . .	. . . . .
				. . . . .	2647, 8750, 8769

\Hy@pdfmajorversion	2647, 2655, 8792, 8814, 8830, 8835	9107, 9123, 9128, 10009, 10010, 10011, 10027, 10048, 10062, 10067, 10535, 10536, 10540, 10620, 10627, 10631, 11596, 11597, 11598, 11615, 11630, 11646, 11649	\Hy@ReturnAfterElseFi ...	483, 4804
\Hy@pdfmarkerrorfalse	.. 11252		\Hy@ReturnAfterElseFiFiEnd .	..... 485, 1520
\Hy@pdfmarkerrortrue	.. 11436, 11445		\Hy@ReturnAfterFi .	482, 1714, 4808, 4824, 8381, 8417, 8716, 8726, 13881
\Hy@pdfmenubartrue	.... 445		\Hy@ReturnAfterFiFiEnd .	484, 1512, 1526, 1619, 1626
\Hy@pdfminorversion	..... 2647, 8747, 8748, 8793, 8815, 8831, 8836	\Hy@pstringName	14499, 14500, 14515, 14529	\Hy@ReturnEnd .
\Hy@pdfnewwindowfalse	.. 449	\Hy@pstringP	..... 9108, 9128, 10049, 10067, 10621, 10631, 11631, 11649	481, 484, 485, 1532, 1631
\Hy@pdfnewwindowsetfalse	448, 4002	\Hy@pstringURI	... 9038, 9056, 10081, 10095, 10479, 10491, 10557, 10561, 11572, 11584	\Hy@rightbracechar
\Hy@pdfnewwindowsettrue	4004, 4923	\Hy@PutCatalog	... 6650, 6658, 6777	\Hy@safe@activesfalse
\Hy@pdfnewwindowtrue	.. 4924	\Hy@Raisedlink	2248, 7066, 7087, 7088, 7089, 7092, 7119, 7138, 7143, 7146, 7167, 7317, 7340, 7411, 7438, 7571, 7651, 7677, 7682, 7702, 8168, 11660, 11766, 12040, 12211, 14585, 14613, 14624, 14651	486, 5182, 8586
\Hy@pdfpagelabelsfalse	.. 6489	\Hy@raiselinksfalse	.. 454, 7756	\Hy@safe@activetrue
\Hy@pdfpagelabelstrue	... 451	\Hy@RemoveDurPageAttr	9276, 9289	... 486, 4340, 4796, 4833, 4841, 4869, 4986, 5339, 5349, 6994, 8043, 8478, 8575, 13011, 13070, 14460, 14487
\Hy@pdfstringdef	... 805, 5737, 5745, 5948, 6041, 6047	\Hy@RemovePercentCr	.. 4816, 4820, 4825	\Hy@SaveCatcodeSettings
\Hy@pdfstringfalse	.. 452, 6329	\Hy@RemoveTransPageAttr	... 9251, 9265	828, 877, 887, 904
\Hy@pdfstringtrue	... 662, 6301	\Hy@reserved@a	... 5149, 7158, 7188, 12850, 12900, 12963	\Hy@saved@currentHref
\Hy@pdftoolbartrue	..... 458	\Hy@RestoreCatcodes	205, 4189, 4581	7355, 7358
\Hy@pdfusetitlefalse	..... 466	\Hy@RestoreCatcodeSettings	... 872, 879, 889, 906	\Hy@saved@footnotemark
\Hy@pdfversion	..... 2645	\Hy@RestoreLastskip	..... 2269, 8959, 9416, 9431, 9510, 9520, 9822, 10367, 10384, 10460, 10473, 10968, 10988, 11950, 11965, 12237, 12251	7464, 7479
\Hy@pdfwindowuitrue	.... 468	\Hy@RestoreSavedSpaceFactor	.. 2243, 9461, 9541, 9578, 9618, 11999, 12281	\Hy@saved@footnotetext
\Hy@pkg	..... 4211, 4218	\Hy@RestoreSpaceFactor	..... 2234, 2261, 2266, 9460, 9468, 9475, 9540, 9550, 9558, 9577, 9588, 9596, 9617, 9628, 9636, 11002, 11038, 11330, 11338, 11365, 11998, 12006, 12013, 12280, 12292, 12299, 12336, 12340	7465, 7482
\Hy@plainpagesfalse	..... 453			6436, 6448
\Hy@PrevPage	..... 4303			\Hy@saved@refstepcounter
\Hy@ProvideTheHCounter	6895			6883
\Hy@ps@CR	.... 11833, 11840, 11845, 11846, 11863, 11884, 11885, 11886, 11892, 11899, 11906, 11913			\Hy@SavedSpaceFactor
\Hy@psdextrafalse	..... 457			... 2230, 2232, 2237, 2238, 2244, 12333
\Hy@pstringB	..... 9152, 9157, 10208, 10220, 11225, 11241, 12132, 12148			\Hy@SaveLastskip
\Hy@pstringD	9073, 9095, 10012, 10032, 11599, 11620			... 2269, 8955, 9404, 9419, 9501, 9513, 9770, 10354, 10370, 10450, 10463, 10958, 10972, 11939, 11953, 12226, 12240
\Hy@pstringdef	..... 8682, 8957, 8981, 9038, 9072, 9073, 9107, 9108, 9152, 9773, 9974, 10011, 10012, 10048, 10049, 10081, 10208, 10479, 10557, 10620, 10621, 11225, 11434, 11443, 11572, 11598, 11599, 11630, 11631, 12132, 13880, 14499, 14515			\Hy@SaveSavedSpaceFactor
\Hy@pstringDest	... 8957, 8958, 9773, 9820, 11434, 11435, 11439, 11443, 11444, 11448			... 2242, 9459, 9539, 9576, 9616, 11997, 12279
\Hy@pstringF	..... 9070, 9071, 9072, 9089,			\Hy@SaveSpaceFactor

\Hy@secnum@part	14640, 14641, 14643	3567, 3580, 3584, 3599, 3766, 3767, 3770, 3773, 3776, 3801, 3809, 3810, 3811, 3812, 3813, 3814, 3815, 3816, 3817, 4000, 4001, 4024, 4025, 4071, 4072, 4079, 4083, 4327, 4331, 4332, 4333, 4334, 4422, 4424, 4427, 4432, 4434, 4437, 4451, 4453, 4458, 4460, 4467, 4469, 4474, 4476, 4482, 4484, 4489, 4491, 4494, 4563, 4564, 5462, 5466, 5467, 5478, 5562, 5563, 5564, 5566, 5570, 5880, 5881, 5882, 5884, 5888, 5889, 6022, 6034, 6105, 6121, 6122, 6123, 6124, 6125, 6126, 6127, 6128, 6129, 6130, 6136, 6142, 6148, 6149, 6150, 6151, 6152, 6153, 6154, 6155, 6156, 6196, 6197, 6204, 6205, 6212, 6213, 6545, 6548, 6557, 6559, 6563, 6567, 6611, 6613, 6898, 6899, 6920, 7448, 7454, 8057, 8058, 8066, 8067, 8324, 8326, 8330, 8361, 8362, 8363, 8378, 8379, 8771, 8774, 8775, 8791, 8810, 9167, 9196, 9198, 9692, 9697, 9703, 9707, 9710, 9715, 9746, 9748, 10180, 10223, 10225, 11123, 11126, 11130, 11131, 11137, 11138, 11144, 11174, 11179, 11185, 11189, 11192, 11197, 11230, 11232, 11304, 11305, 11309, 11400, 11401, 11409, 11410, 11514, 11515, 12081, 12086, 12092, 12096, 12099, 12104, 12137, 12139, 13071, 13083, 13862, 13863, 14497, 14503, 14511, 14526	8784, 8785, 8786, 8789, 8795, 8798, 8825		
\Hy@SectionAnchorHref	.. 659, 14576, 14601, 14669		\Hy@temp@B	..... 1505, 1506	
\Hy@SectionHShift	14575, 14584, 14597, 14665		\Hy@temp@menu	..... 9369, 9384, 10111, 10125, 10650, 10653, 11524, 11533	
\Hy@setbreaklinks	.. 2515, 2519, 2531, 8743, 9763		\Hy@tempa	..... .. 2354, 2356, 2358, 2359, 2361, 2363, 2365, 2368, 2371, 2372, 2911, 2912, 2913, 2915, 2916, 2918, 2919, 2921, 2925, 2929, 2940, 2942, 2944, 2945, 2947, 2951, 4802, 4803, 4814, 4818, 4988, 4992, 5161, 5163, 5867, 5868, 5908, 5909, 5912, 5916, 6594, 6596, 6634, 6636, 6788, 6790, 7202, 7204, 7205, 7208, 7209, 7210, 7239, 7241, 7255, 7257, 7528, 7533, 7538, 7976, 7977, 7995, 7996, 8002, 9437, 9438, 10335, 10488, 10489, 11971, 11972, 12257, 12258, 14232, 14233, 14256, 14258, 14276, 14277, 14285, 14309, 14311, 14312, 14314, 14315	
\Hy@SetCatcodes	181, 231, 4191		\Hy@tempb	..... .. 5162, 5164, 5185, 6595, 6596, 6635, 6636, 14257, 14258, 14285	
\Hy@SetNewWindow	4008, 9091, 9125, 10034, 10064, 10628, 11614, 11645		\Hy@tempcolor	.. 11014, 11016, 11029, 11093, 11095, 11107	
\Hy@setouterhbox	11298, 11329		\Hy@TempPageAnchor	.. 7864, 7916, 7927, 7932, 7949	
\Hy@setpagesizetrue	..... 455		\Hy@Test@Alph	.... 6978, 7007	
\Hy@setpdfborder	..... .. 3602, 8987, 9043, 9078, 9112, 9372, 9985, 10019, 10055, 10087, 10117, 10499, 10520, 10543, 10569, 10603, 10637, 10656		\Hy@Test@alph	.... 6969, 7003	
\Hy@setpdfhighlight	..... .. 3560, 8988, 9044, 9079, 9113, 9373, 9986, 10020, 10056, 10088, 10118		\Hy@testname	8973, 8974, 8979, 8981, 8982, 8993, 9966, 9967, 9972, 9974, 9976, 9993, 10507, 10508, 10513, 10517, 10590, 10591, 10596, 10600, 11098, 11099, 11104, 11115	
\Hy@setpdfversiontrue	... 2633		\Hy@texhtfalse	..... 456	
\Hy@setref@link	.... 8434, 8437		\Hy@texhttrue	..... 2688, 4417	
\Hy@setup@XeTeXLinkBox@default	..... 5135, 5147		\Hy@theorem@makelinktarget	... 7233, 7235, 7251	
\Hy@setup@XeTeXLinkBox@dvipdfmx	..... 5095, 5146		\Hy@theorem@refstepcounter	..... 7228, 7269	
\Hy@SlidesFormatOptionalPage	. 6518, 7856, 7876, 7880		\Hy@TheSlideOptionalPage	7875, 7879, 7884, 7893	
\Hy@SlidesPage	6525, 7890, 7891, 7897, 7899, 7902, 7905				
\Hy@space	..... 335, 480, 1471				
\Hy@StartlinkName	. 8985, 8996				
\Hy@StepCount	..... 471, 6565, 12617, 12680, 12915, 13218, 13282, 13574, 13641, 14348, 14353, 14429				
\Hy@stoppedearlyfalse	... 4198, 6822				
\Hy@stoppedearlytrue	4195, 6819				
\Hy@StringLocalhost	5279, 5280, 5295				
\Hy@tabularx@hook	7367, 7375				
\Hy@temp	..... 690, 697, 2461, 2466, 2467, 2468, 2469, 2470, 2471, 3466, 3475, 3476, 3477, 3478, 3479, 3480, 3481, 3523, 3524, 3525, 3528, 3530, 3533, 3543, 3546, 3547, 3548, 3549, 3550, 3551,	\Hy@temp@A	..... 722, 723, 1504, 1506, 1517, 1519, 1524, 1525, 1528, 3802, 3804, 4212, 4225, 4228, 6915, 6918, 6919, 6920, 6921, 8273, 8274, 8275, 8282, 8310, 8311, 8312, 8321, 8348, 8772, 8783,		

<code>\Hy@title</code> . . . . .	6399, 6403	9435, 9487, 9523, 9535,	<code>\Hy@xspace@end</code> . . . . .
<code>\Hy@tocdestname</code> . .	8037, 8045, 8047	9963, 10311, 10334, 10478,	. . . 4236, 4241, 4245, 4250,
<code>\Hy@toclevel</code> . .	7987, 7991, 8004	10583, 10991, 11091, 11969,	4253, 4258, 4259, 4260,
<code>\Hy@toclinkend</code> . . . .	8038, 8054, 8062, 8069, 8073, 8075	12025, 12255, 12312	4262, 4263, 4264, 4265,
<code>\Hy@toclinkstart</code> . . .	8037, 8054, 8062, 8069, 8073, 8075	<code>\Hy@VerboseLinkStop</code> 4854, 9001	4266, 6332, 6333, 6335,
<code>\Hy@true</code> 2222, 2359, 2361, 2945, 2947, 5909		<code>\Hy@verbosetrue</code> . . . . . 423	6338, 6340, 6341, 6342,
<code>\Hy@undefinedname</code> . . . . .	. . . 8970, 8977, 8979, 9961, 9970, 9972, 10476, 10511, 10513, 10594, 10596, 11089, 11102, 11104	<code>\Hy@VersionCheck</code> . 268, 4578, 19737	6346, 6349, 6352, 6354,
<code>\Hy@unicodefalse</code> . . . . .	463, 787, 797, 2577, 2578, 2586, 3743, 3749, 7922, 13911	<code>\Hy@VersionChecked</code> . 267, 310, 4575, 4577	6355, 6356, 9032, 9064,
<code>\Hy@unicodetrue</code> . . . .	459, 2578, 6714, 6727	<code>\Hy@vt@PutCatalog</code> 6687, 6689	9101, 9134, 9480, 9551,
<code>\Hy@UseMaketitleInfos</code> . .	6454, 9209, 9652, 10138, 10892, 11121, 12048	<code>\Hy@VTeXversion</code> . . 6667, 6679, 10539, 10669, 10799, 14381	9566, 9589, 9605, 9629,
<code>\Hy@UseMaketitleString</code> .	6433, 6455, 6456	<code>\Hy@WarnHTMLFieldOption</code> . . 5934, 5968, 5971, 6144	9645, 10003, 10041, 10075,
<code>\Hy@UseNameKey</code> . . . . .	. . . 2439, 9174, 9175, 9176, 9177, 9178, 9179, 9180, 9181, 9200, 9722, 9723, 9724, 9725, 9726, 9727, 9728, 9729, 9750, 10187, 10188, 10189, 10190, 10191, 10192, 10193, 10194, 10227, 10852, 10853, 10854, 10855, 10856, 10857, 10858, 10859, 11204, 11205, 11206, 11207, 11208, 11209, 11210, 11211, 11234, 12111, 12112, 12113, 12114, 12115, 12116, 12117, 12118, 12141	<code>\Hy@Warning</code> . . . . . 256, 343, 1472, 2376, 2392, 2417, 2497, 2602, 2607, 2845, 2853, 2878, 2894, 3391, 3435, 3514, 3575, 3594, 3778, 3825, 3833, 3954, 4086, 4109, 4119, 4127, 4690, 4910, 4953, 5158, 5165, 5305, 5519, 5872, 5935, 6027, 6723, 6738, 7964, 8562, 8611, 8975, 9804, 9808, 9968, 10509, 10592, 10880, 10886, 11100, 11437, 11446, 14241, 14259	10105, 10132, 10315, 10325, 10551, 10577, 10612, 10645, 10664, 11332, 11340, 12007, 12018, 12293, 12305, 12337
<code>\Hy@varioref@undefined</code> .	8581	<code>\Hy@WarningNoLine</code> . . . . . 257, 294, 2456, 2521, 2534, 3486, 3539, 3689, 3794, 4176, 4271, 4429, 4438, 4455, 4471, 4486, 4495, 6490, 6681, 6802, 7978, 8806, 11261	<code>\HyAnn@AbsPageLabel</code> . 13151, 13158, 13199, 13285, 13307, 13334, 13355, 13383, 13406
<code>\Hy@VerboseAnchor</code> . . . . .	. . . 4866, 8956, 9405, 9420, 9502, 9514, 9771, 10355, 10371, 10451, 10464, 10959, 10973, 11940, 11954, 12227, 12241	<code>\Hy@WarningPageBorderColor</code> . . . . 3536, 3538, 3540	<code>\HyAnn@Count</code> . . 13156, 13157, 13159, 13160, 13161, 13164, 13166, 13168
<code>\Hy@verbosefalse</code> . . . . .	424, 467	<code>\Hy@WarningPageColor</code> . 3483, 3485, 3487	<code>\HyC@cmd</code> . . . . . 87, 109, 122
<code>\Hy@VerboseGlobalTemp</code>	4842, 4843, 4844, 4845, 4849	<code>\Hy@WarnOptionDisabled</code> 2388, 2391	<code>\HyC@check</code> . . . . . 68, 71, 74
<code>\Hy@VerboseLinkInfo</code> . . .	4849, 4850, 4853, 4860	<code>\Hy@WarnOptionValue</code> . . 2369, 2375, 2932, 2954	<code>\HyC@checkcommand</code> 50, 57, 59
<code>\Hy@VerboseLinkStart</code> . . . . .	. . . . . 4838, 9016, 9026,	<code>\Hy@wrapper@babel</code> 4338, 4356	<code>\HyC@checkFailed</code> . . . . 146, 157
		<code>\Hy@WrapperDef</code> . . . . .	<code>\HyC@checkItem</code> . 132, 133, 134, 135, 138
		. . . 4348, 8951, 9403, 9418, 9500, 9512, 9769, 10353, 10369, 10449, 10462, 10957, 10971, 11938, 11952, 12225, 12239	<code>\HyC@checklong</code> . . . . . 45, 53
		<code>\Hy@writebookmark</code> 2227, 7988, 14218, 14359	<code>\HyC@checkOk</code> . . . . . 144, 154
			<code>\HyC@checkPackage</code> . 12, 16, 18
			<code>\HyC@cmd</code> . 62, 75, 87, 95, 118, 131
			<code>\HyC@date</code> . . 11, 15, 23, 29, 31
			<code>\HyC@DeclareRobustCommand</code> . . . . . 114
			<code>\HyC@def</code> . . . . . 125
			<code>\HyC@defcmd</code> . . . . . 47, 54, 93
			<code>\HyC@doCheck</code> . . . . . 99, 130
			<code>\HyC@edef</code> . . . . . 125
			<code>\HyC@getDate</code> . . . . . 12, 14
			<code>\HyC@meaning</code> . . . . . 152, 160
			<code>\HyC@nc@default</code> . . . . 103, 105
			<code>\HyC@nc@noopt</code> . . 88, 91, 103, 112, 123, 127
			<code>\HyC@nc@opt</code> . . . . 88, 101, 123
			<code>\HyC@newcommand</code> . . . . . 86
			<code>\HyC@next</code> . . . . . 48, 55, 60, 83
			<code>\HyC@noValue</code> 80, 81, 82, 85, 139
			<code>\HyC@optcmd</code> . . . . . 107, 111
			<code>\HyC@org@cmd</code> . . . . . 76
			<code>\HyC@org@optcmd</code> . . . . 80, 111
			<code>\HyC@org@robustcmd</code> . . 81, 120
			<code>\HyC@org@robustoptcmd</code> . . 82

\HyC@package 10, 22, 28, 34, 37, 38  
\HyC@param . . . . . 78, 96, 102  
\HyC@robustcmd 115, 120, 121, 122  
\HyC@star . . . . . 67, 70, 94  
\HyC@string 131, 152, 155, 158  
\HyC@Toks 79, 90, 96, 106, 126  
\HyCnt@LookForParentCounter . . . . . 6902, 6914  
\HyCnt@ProvideTheHCounter . . . . . 6895  
\HyColor@FieldBColor . . 6086, 6089  
\HyColor@FieldColor . . . 6092  
\HyColor@HyperrefBorderColor . . . . . 3526, 3544  
\HyColor@HyperrefColor . . . . . 3471, 3490, 3491, 3492, 3493, 3494, 3495, 3496  
\HyColor@UseColor . 4709, 8920, 8931, 9925, 9936  
\HyField@@AddToFields 13064, 13086  
\HyField@@PDFChoices . 5757, 5758, 5771  
\HyField@@SetFlag . 5452, 5454  
\HyField@@UseFlag . 5442, 5444  
\HyField@ABD@AuxAddToCoFields . . . . . 13009, 13061  
\HyField@AddCoField . . 13019, 13032, 13035  
\HyField@AddToFields . 12555, 12603, 12694, 12708, 12737, 12758, 12784, 12809, 12997, 13063, 13203, 13298, 13312, 13339, 13364, 13388, 13411, 13519, 13559, 13662, 13681, 13713, 13737, 13765, 13794  
\HyField@AdvanceAnnotCount . . . . . 12548, 12593, 12684, 12702, 12727, 12752, 12778, 12799, 13512, 13549, 13646, 13674, 13702, 13730, 13758, 13784  
\HyField@afields . 12993, 13052, 13053, 13055, 13109  
\HyField@AfterAuxOpen 13008, 13050, 13087  
\HyField@AnnotCount . 12546, 12547, 12549, 12552, 13510, 13513, 13516  
\HyField@AuxAddToCoFields . . . . . 13007, 13047, 13061, 13075  
\HyField@AuxAddToFields . . . . . 13006, 13044, 13051, 13090  
\HyField@cofields 12994, 13013, 13014, 13034, 13036, 13110, 13112  
\HyField@FlagsAnnot 5612, 5631, 5645, 5658, 5674, 5706  
\HyField@FlagsCheckBox 5644, 12797, 13402, 13779  
\HyField@FlagsChoice . . . 5705, 12656, 13258, 13614  
\HyField@FlagsPushButton 5630, 12725, 12748, 12775, 13330, 13351, 13381, 13700, 13724, 13754  
\HyField@FlagsRadioButton . . 5657, 12652, 13254, 13610  
\HyField@FlagsSubmit . . 5578, 12749, 13352, 13725  
\HyField@FlagsText 5673, 12590, 13194, 13543  
\HyField@NeedAppearancesfalse . . . . . 5900, 5913  
\HyField@NeedAppearancestrue . . . . . 5903, 5906, 5910  
\HyField@NewBitsetFlag . 5410, 5413, 5421  
\HyField@NewFlag . . . . . 5408, 5484, 5485, 5486, 5487, 5488, 5489, 5490, 5491, 5492, 5493, 5494, 5495, 5496, 5497, 5498, 5499, 5500, 5501, 5502, 5503, 5508, 5509, 5510, 5511, 5512, 5513, 5514, 5515, 5516, 5549, 5551, 5552, 5554, 5555, 5557, 5558, 5559, 5560  
\HyField@NewFlagOnly . 5412, 5550, 5553, 5556  
\HyField@NewOption 5409, 5415  
\HyField@PDFaFlagWarning . . . 5518, 5526, 5530, 5534, 5538, 5542, 5546  
\HyField@PDFChoices . . 5730, 12700, 13305, 13668  
\HyField@PrintFlags . . . . . 5459, 5605, 5623, 5637, 5650, 5666, 5698, 5723  
\HyField@SetFlag . . 5451, 5591, 5597, 5602, 5636, 5664  
\HyField@SetKeys . 5832, 12587, 12623, 12626, 12645, 12713, 12745, 12765, 12794, 13190, 13224, 13227, 13246, 13317, 13348, 13371, 13398, 13539, 13580, 13583, 13602, 13686, 13721, 13744, 13775  
\HyField@TheAnnotCount . . . . . 12551, 12560, 12569, 12599, 12688, 12705, 12733, 12755, 12781, 12805, 13515, 13520, 13523, 13554, 13651, 13676, 13707, 13732, 13760, 13789  
\HyField@UseFlag . . . . . 5441, 5582, 5583, 5584, 5585, 5586, 5587, 5588, 5589, 5592, 5593, 5594, 5595, 5598, 5599, 5600, 5603, 5614, 5615, 5616, 5617, 5618, 5619, 5620, 5621, 5622, 5633, 5634, 5635, 5647, 5648, 5649, 5660, 5661, 5662, 5663, 5665, 5676, 5677, 5678, 5679, 5680, 5681, 5682, 5683, 5694, 5697, 5708, 5709, 5710, 5711, 5713, 5715, 5716, 5719, 5722  
\HyInd@@@wrrindex . 8269, 8272, 8303, 8309  
\HyInd@@hyperpage 8376, 8386  
\HyInd@@wrrindex . . 8264, 8265  
\HyInd@DefKey . . . . 8322, 8336, 8349, 8358  
\HyInd@EncapChar . 2962, 4186, 8259  
\HyInd@hyperpage . 8373, 8375, 8382  
\HyInd@key . . 8323, 8327, 8338, 8351, 8363  
\HyInd@Org@wrrindex 8263, 8267, 8277, 8283, 8285, 8288  
\HyInd@pagelink . . . 8391, 8397, 8399, 8402  
\HyInd@ParenLeft . . 8245, 8274, 8311, 8348  
\HyInd@ParenRight . 8246, 8275, 8282, 8312, 8321  
\HyInd@removespaces . . . 8405, 8408, 8418  
\HyInfo@AddonHandler . . 3820, 3823

\HyInfo@AddonList . . .	3853, 3854, 3888, 3895	\HyLinguex@OrgD . . .	812, 816	\hyper@anchor . . . . .	5329, 6336, 6350, 9004,
\HyInfo@Addons . . .	3874, 3890, 9233, 10163, 11153, 11157	\HyLinguex@Restore . .	813, 826, 880, 890	..	9403, 9500, 9827, 10369, 10449, 10957, 11938, 12225
\HyInfo@AddonUnsupportedtrue . .	9650, 10878, 12046	\HyNew@float@makebox . .	7585, 7608	\hyper@anchorend . . . . .	4245, 4253, 4260, 6328,
\HyInfo@do . . .	3822, 3855, 3878	\HyOpt@CheckDvi . . . . .	2676, 2729, 2735, 2740, 2764, 2769, 2775, 2827, 2834, 2840, 2865	..	6338, 6352, 6366, 7068, 7120, 7144, 7146, 7168, 7191, 7653, 7680, 7683, 7703, 7787, 8168, 9011, 9428, 9518, 9834, 10364, 10471, 10979, 11962, 12248, 14360, 14586, 14614, 14625, 14652
\HyInfo@GenerateAddons . . .	3872, 9210, 10139, 11122	\HyOpt@CustomDriver . . . . .	292, 2887, 2888, 2892, 4505, 4572	\hyper@anchorstart . .	4259, 6328, 6337, 6351, 6365, 7067, 7120, 7138, 7168, 7191, 7651, 7678, 7683, 7703, 7787, 8168, 9007, 9418, 9512, 9830, 10353, 10462, 10971, 11952, 12239, 14360, 14586, 14614, 14625, 14652
\HyInfo@Key . . .	3830, 3831, 3849, 3851, 3852, 3855, 3858, 3865, 3879, 3883	\HyOpt@DriverFallback . . . . .	2870, 2873, 2874, 2882, 4539, 4544	\hyper@chars . . . . .	4830, 9039, 9408, 9422, 9442, 9464, 9478, 9492, 9572, 9612, 10320, 10341, 10357, 10374, 10454, 10466, 10558, 11573, 11956, 11976, 12002, 12016, 12030, 12243, 12262, 12285, 12302, 12317
\HyInfo@KeyEscaped . . .	3829, 3830	\HyOrg@addtoreset . .	8189, 8192, 8194, 8223	..	10976, 10985, 11008, 11025
\HyInfo@tmp . . . . .	3839, 3849	\HyOrg@appendix . . .	6947, 6966	\hyper@currentlinktype . .	11009, 11013, 11017
\HyInfo@trapped@false . . .	3770, 3789	\HyOrg@author . . . . .	6396, 6409, 6413	\hyper@destlabel@hook . .	5345, 5352
\HyInfo@trapped@true . . .	3767, 3788	\HyOrg@elt . . . . .	6900, 6906	\hyper@hash . . . . .	4782, 4783, 4831, 5225, 5237, 5254, 5257, 6295, 10314
\HyInfo@trapped@unknown . . .	3773, 3790	\HyOrg@float@makebox . .	7586, 7607	\hyper@image . . . . .	4972, 4973, 9490, 10616, 11086, 12028, 12315
\HyInfo@TrappedUnsupported . .	3791, 3795, 9653, 10893, 12049	\HyOrg@hyperpage . .	8248, 8250, 8251	\hyper@link . . . . .	4258, 5173, 6334, 6335, 6349, 6359, 6364, 9025, 9486, 9534, 10002, 10310, 10582, 11090, 12024, 12311
\HyInfo@Value . . . . .	3843, 3846	\HyOrg@make@df@tag@@ . .	8183	\hyper@link@ . . . . .	4265, 5150, 5156, 6332, 6346, 6371
\HyLang@addto . . . . .	3274, 3290, 3308, 3350, 3358	\HyOrg@make@df@tag@@@ . .	8184	\hyper@linkend . . . . .	4245, 4253, 4262, 6340, 6354, 6368, 7361, 7646, 7648, 7725, 8038, 8110, 8113, 8144, 8146, 9024, 9448, 9531, 10001, 10003,
\HyLang@afrikaans . . . . .	2964	\HyOrg@maketitle . . .	7462, 7469, 7474		
\HyLang@catalan . . . . .	3148	\HyOrg@title . . . . .	6395, 6400, 6404		
\HyLang@danish . . . . .	3238	\HyOrg@TX@endtabularx . .	7366		
\HyLang@DeclareLang . . . . .	3288, 3317, 3318, 3319, 3320, 3321, 3322, 3323, 3324, 3325, 3326, 3327, 3328, 3329, 3330, 3331, 3332, 3333, 3334, 3335, 3336, 3337, 3338, 3339, 3340, 3341, 3342, 3343, 3344, 3345, 3346, 3347, 3348	\HyOrg@url . . . . .	4966		
\HyLang@dutch . . . . .	3202	\HyPat@NonNegativeReal . . . . .	3570, 3571, 3572, 3573, 3589, 3591, 3924, 3935, 3936, 3937, 3944, 3947, 3948, 3949, 3950		
\HyLang@english . . . . .	2982	\HyPat@ObjRef . . . . .	4950, 4951, 4964, 8744, 9764, 10954		
\HyLang@french . . . . .	3000	\hyper@@anchor . . . . .	4257, 4976, 4978, 5010, 5012, 5048, 5050, 5302, 6333, 6348, 6363, 7313, 7318, 7336, 7341, 7409, 7412, 7439, 7569, 7572, 7590, 7865, 7916, 7927, 7933		
\HyLang@german . . . . .	3018	\hyper@@link . . . . .	4836, 4894, 5000, 5029, 5149, 7661, 7758, 7759, 7760, 7808, 7810, 7812, 8439, 8454, 8572		
\HyLang@greek . . . . .	3184	\hyper@@normalise . . . . .	4805, 4809, 4813		
\HyLang@italian . . . . .	3036				
\HyLang@magyar . . . . .	3054				
\HyLang@norsk . . . . .	3220				
\HyLang@portuges . . . . .	3072				
\HyLang@russian . . . . .	3090				
\HyLang@spanish . . . . .	3130				
\HyLang@swedish . . . . .	3256				
\HyLang@vietnamese . . . . .	3166, 3350, 3358				
\HyLinguex@OrgB . . . . .	810, 814				
\HyLinguex@OrgC . . . . .	811, 815				

10346, 10529, 11011, 11984, 12268	10360, 10378, 11944, 11958, 11973, 11979, 12003, 12017, 12031, 12231, 12244, 12259, 12264, 12287, 12303, 12318	\hypersetup . . . 2598, 2624, 3328, 3806, 4188, 6381
\hyper@linkfile 4264, 5250, 6342, 6356, 6370, 9068, 9452, 9610, 10005, 10330, 10533, 11594, 11988, 12272	\hyper@readexternallink . 5179, 5190	\hypertarget . . . . . 4974, 6386
\hyper@linkstart . . . . .	\hyper@refstepcounter . . . 6873, 6877, 6894	\hyperxindexformat . 8247, 8253
. . 4261, 6339, 6353, 6367, 7359, 7642, 7648, 7723, 8037, 8094, 8097, 8128, 8130, 9015, 9434, 9522, 9962, 10003, 10333, 10477, 10990, 11968, 12254	\hyper@tilde . 4791, 4792, 4793, 6296	\HyPL@@@CheckThePage 6615, 6633
\hyper@linkurl . . . . .	\hyperbaseurl . 3498, 3499, 6382	\HyPL@@CheckThePage . 6591, 6593
. . 4263, 4971, 5225, 5232, 5253, 5257, 6341, 6355, 6369, 9036, 9453, 9455, 9488, 9570, 10078, 10318, 10331, 10555, 10617, 11087, 11570, 11989, 11993, 12026, 12273, 12275, 12313	\hypercalcbp . . . . . 488, 488	\HyPL@Alph . . . . . 6510
\hyper@livelink . . . . 6334, 6359	\hypercalcbpdef . . . . . 491	\HyPL@alph . . . . . 6511
\hyper@makecurrent 6992, 7106, 7136, 7165, 7190, 7231, 7356, 7545, 7600	\hyperdef . . . . . 5002, 6384	\HyPL@arabic . . . . . 6507
\hyper@n@rmalise . . 4797, 4801	\HyperDestLabelReplace . 5389, 5396, 5399	\HyPL@CheckThePage . . 6542, 6590
\hyper@nat@current . . . . 7643	\HyperDestNameFilter . . . . .	\HyPL@Entry 6790, 6798, 6806, 6808
\hyper@natanchorend 510, 7653	. . 4168, 4870, 5061, 5074, 5087, 5396, 8957, 8982, 9410, 9424, 9444, 9488, 9773, 9975, 10314, 10324, 10342, 10360, 10378, 10455, 10467, 10516, 10599, 11434, 11443, 11944, 11958, 11979, 12026, 12231, 12244, 12264, 12313, 14438, 14499, 14515	\HyPL@EveryPage . 6530, 6654
\hyper@natanchorstart 510, 7650	\HyperDestRename . 5369, 5387, 5400	\HyPL@Format 6606, 6607, 6608, 6609, 6610, 6622
\hyper@natlinkbreak . 510, 7647	\hyperget . . . . . 5053	\HyPL@found 6605, 6612, 6616, 6623, 6633, 6635
\hyper@natlinkend . . . . . 510	\hypergetpageref . . . . . 7056	\HyPL@Labels 6501, 6645, 6646, 6648, 6650, 6701, 6702, 6801, 6809, 6810
\hyper@natlinkstart . . . . . 510	\hypergetref . . . . . 7055	\HyPL@LastNumber 6505, 6561, 6584
\hyper@newdestlabel 5337, 5359, 5398, 5404, 5406	\HyperGlobalCurrentHref . . . .	\HyPL@LastPrefix . . 6506, 6555, 6586
\hyper@nopatch@bib . . . . . 237	. . 7013, 7015, 7023, 7024, 7028, 7031, 7035, 7042, 7043, 7047	\HyPL@LastType . . 6504, 6546, 6585
\hyper@nopatch@caption . . 239	\hyperimage . . . . . 4972, 8240	\HyPL@page . 6524, 6533, 6536, 6542, 6551
\hyper@nopatch@counter . . 236	\hyperindexformat . . . . . 8253	\HyPL@Prefix 6551, 6553, 6555, 6569, 6572, 6574, 6586, 6600, 6638
\hyper@nopatch@footnote . 240	\hyperlink . . . . 4835, 6385, 8414	\HyPL@Roman . . . . . 6508
\hyper@nopatch@longtable 243	\hyperlinkfileprefix . 3501, 3502, 3503, 12217	\HyPL@roman . . . . . 6509
\hyper@nopatch@sectioning 241	\HyperLocalCurrentHref . . . . .	\HyPL@SetPageLabels . . 6644, 6708, 6804
\hyper@nopatch@thm . . . . . 238	. . 7031, 7033, 7040, 7041, 7042, 7043, 7045	\HyPL@SlidesOptionalPage 6517, 6521, 6526
\hyper@nopatch@toc . . . . . 242	\hyperpage . . 6391, 8248, 8249, 8251, 8372	\HyPL@SlidesSetPage . . 6512, 6514, 6534, 6541
\hyper@normalise . . 4187, 4192, 4773, 4884, 4887, 4968, 4970, 4972, 4994, 5862	\HyperRaiseLinkDefault . 2229, 2257	\HyPL@storePageLabel . . 6569, 6571, 6641, 6699, 6785
\hyper@pageduration . . . . 9272, 9299, 10252, 10265, 10782, 10794, 11065, 11084	\HyperRaiseLinkHook 2228, 2258	\HyPL@thisLabel . . 6498, 6500, 6532, 6536, 6537
\hyper@pagetransition . . . 9248, 9298, 10241, 10264, 10671, 10793, 11048, 11083	\HyperRaiseLinkLength . . 2256, 2257, 2260	\HyPL@Type . . . . .
\hyper@quote 6297, 9410, 9424, 9439, 9444, 9465, 9479, 9493, 10314, 10324, 10337,	\hyperref 4981, 6387, 8510, 8526, 8535, 8557	. . 6539, 6546, 6550, 6568, 6576, 6585, 6599, 6637
	\hyperrefundefinedlink . . 5015, 5026	\HyPL@Useless . . . . 6642, 6648
		\HyPsd@@@autoref . 1393, 1395, 1398
		\HyPsd@@@CJKdigits . . 1263, 1266, 1274

\HyPsd@@@nameref 1375, 1377, 1380  
\HyPsd@@@pageref . 1357, 1359, 1362  
\HyPsd@@@ref . 1341, 1343, 1346  
\HyPsd@@@UTFviii@four 1990, 1993  
\HyPsd@@AppendItalcorr 1534  
\HyPsd@@autoref . . 1390, 1391  
\HyPsd@@autorefname . . 1411, 1414  
\HyPsd@@CJKdigits 1255, 1257, 1260  
\HyPsd@@CJKnumber . . . . . 1156, 1158, 1161, 1214, 1229, 1242, 1244, 1248  
\HyPsd@@ConvertToUnicode . . . . . 1862  
\HyPsd@@ding 2127, 2131, 2142  
\HyPsd@@GetNextTwoTokens . . . . . 1860  
\HyPsd@@GlyphProcessWarning . . . . . 1720, 1723  
\HyPsd@@hspace . . . 1311, 1312  
\HyPsd@@LetCommand . 1435, 1456  
\HyPsd@@nameref . . 1372, 1373  
\HyPsd@@pageref . . 1354, 1355  
\HyPsd@@ProtectSpacesFi 1479, 1485  
\HyPsd@@ref . . . . . 1338, 1339  
\HyPsd@@RemoveBraces . 1502  
\HyPsd@@RemoveBracesFi 1499, 1502  
\HyPsd@@RemoveCmdPrefix . . . . . 1677, 1680  
\HyPsd@@@ReplaceFi 1747, 1753, 1758  
\HyPsd@@UTFviii@four . . 1974, 1979  
\HyPsd@add@accent . 536, 1300  
\HyPsd@AfterCountRemove . . . . . 1554, 1634  
\HyPsd@AfterDimenRemove . . . . . 1560, 1637  
\HyPsd@AfterSkipRemove 1566, 1649  
\HyPsd@AMScsfix 644, 1321, 1323  
\HyPsd@AppendItalcorr . 1518, 1525, 1534  
\HyPsd@autoref . . . . . 654, 1390  
\HyPsd@autorefname 1402, 1408  
\HyPsd@CatcodeWarning . . . . . 1570, 1594, 1597, 1600, 1603, 1661  
\HyPsd@Char . . . . . 1864  
\HyPsd@CharOctByte . . . 1884, 1886, 1889, 1898, 1903  
\HyPsd@CharSurrogate . . 1878, 1895  
\HyPsd@CharTwoByte . . 1876, 1883  
\HyPsd@CheckCatcodes . . 708, 1544  
\HyPsd@CJK@Unicode . . 1038, 1042  
\HyPsd@CJKActiveChars . 978, 993  
\HyPsd@CJKdigit . . 1267, 1277  
\HyPsd@CJKdigits . 1040, 1253  
\HyPsd@CJKhook 661, 949, 960  
\HyPsd@CJKhook@bookmarks . . . . . 955, 989  
\HyPsd@CJKhook@unicode 957, 1037  
\HyPsd@CJKnumber 1039, 1153  
\HyPsd@CJKnumberFour . . . . . 1171, 1175, 1179, 1192, 1196, 1200, 1206  
\HyPsd@CJKnumberLarge 1184, 1191  
\HyPsd@CJKnumberThree 1212, 1216, 1222  
\HyPsd@CJKnumberTwo 1227, 1231, 1237  
\HyPsd@ConvertToUnicode 777, 1810  
\HyPsd@DecimalToOctal . . 970, 1001  
\HyPsd@DecimalToOctalFirst . . . . . 1044, 1080  
\HyPsd@DecimalToOctalSecond . . . . . 1045, 1054, 1117, 2146, 2152, 2155  
\HyPsd@DefCommand 691, 692, 693, 694, 1424  
\HyPsd@DieFace . 611, 612, 613, 2067, 20647, 20648  
\HyPsd@DieFaceLarge . . . 2075, 2084  
\HyPsd@ding . . . . . 610, 2117  
\HyPsd@DisableCommands 927, 929  
\HyPsd@DoConvert . 1812, 1822  
\HyPsd@DoEscape . . . . . 1836  
\HyPsd@doxspace . . . 749, 1783  
\HyPsd@empty . . 734, 736, 740, 741, 743, 751, 758  
\HyPsd@end . . . 708, 712, 1483, 1493, 1499, 1502, 1547, 1555, 1561, 1567, 1620, 1627, 1634, 1637, 1649  
\HyPsd@endWithElse . . . 1290, 1299  
\HyPsd@EscapeTeX . 786, 789, 796, 1765  
\HyPsd@expand@utfviii . . 1912, 1919, 1925  
\HyPsd@fi 1475, 1481, 1485, 1491  
\HyPsd@GetNextTwoTokens . . . . . 1860  
\HyPsd@GetOneBye . . . . 1855  
\HyPsd@GetTwoBytes . . . 1851  
\HyPsd@GLYPHERR 714, 1287, 1301, 1308  
\HyPsd@GlyphProcess . . . 716, 1708, 1721  
\HyPsd@GlyphProcessWarning . . . . . 1715, 1719  
\HyPsd@GobbleFiFi 1292, 1298  
\HyPsd@HighA . . . . 1048, 1057  
\HyPsd@HighB . . . . 1058, 1063  
\HyPsd@HighC . . . . 1064, 1067  
\HyPsd@HighD . . . . 1060, 1072  
\HyPsd@href . . . . . 649, 1337  
\HyPsd@hspace . . . . . 645, 1311  
\HyPsd@hspacetest . 1314, 1316, 1319  
\HyPsd@ifnextchar 677, 678, 679, 1461  
\HyPsd@ignorespaces . 658, 936  
\HyPsd@inmathwarn . 535, 1284  
\HyPsd@ITALCORR . 669, 673, 1308  
\HyPsd@LetCommand 695, 696, 1424  
\HyPsd@LetUnexpandableSpace . 664, 665, 666, 667, 1304, 1307  
\HyPsd@LoadExtra . . 895, 898, 2622  
\HyPsd@LoadUnicode . . . . . 885, 2561, 2567, 2569, 2576, 2619, 6713  
\HyPsd@MoonPha . . 2098, 2116, 20649  
\HyPsd@nameref . . . . 653, 1372  
\HyPsd@pageref . . . . 652, 1354  
\HyPsd@pdfencoding . . . . . 778, 2560, 2563, 2585,

2597, 2600, 2603, 2618,  
 6715, 6717, 6733, 6736  
 \HyPsd@pdfencoding@auto 778,  
 2591, 2615, 6717, 6735  
 \HyPsd@pdfencoding@pdfdoc .  
 . . . 2584, 2603, 2616  
 \HyPsd@pdfencoding@unicode .  
 . . 2588, 2617, 2618, 6715,  
 6732  
 \HyPsd@PrerenderUnicode 3699,  
 3715, 3721, 3727, 3733,  
 3738, 3756, 3762, 3842  
 \HyPsd@protected@testopt 680,  
 681, 1465  
 \HyPsd@ProtectSpaces . . . 701,  
 1475, 1524  
 \HyPsd@ref . . . . . 651, 1338  
 \HyPsd@RemoveBraces . . . 703,  
 1496, 1513, 1521, 1527  
 \HyPsd@RemoveCmdPrefix 1670,  
 1676  
 \HyPsd@RemoveMask 711, 1483,  
 1493  
 \HyPsd@RemoveSpaceWarning  
 . . . 1644, 1656, 1682  
 \HyPsd@ReplaceSpaceWarning  
 . . . 1639, 1651, 1695  
 \HyPsd@Rest 1548, 1616, 1624,  
 1627, 1635, 1640, 1646,  
 1652, 1658  
 \HyPsd@SanitizeForOutFile . .  
 . . . . . 14277, 14308  
 \HyPsd@SanitizeOut@BraceLeft  
 . . 14312, 14318, 14327  
 \HyPsd@SanitizeOut@BraceRight  
 . . 14315, 14330, 14339  
 \HyPsd@SPACEOPTI 705, 721,  
 722, 724, 726, 728, 729, 768,  
 770, 1590, 1794  
 \HyPsd@spaceopti . . . 770, 1739  
 \HyPsd@String 702, 704, 707, 709,  
 715, 717, 1507, 1508, 1518,  
 1578, 1580, 1584, 1585,  
 1589, 1590, 1605, 1606,  
 1638, 1650, 1709, 1710  
 \HyPsd@StringSubst . 718, 720,  
 726, 732, 735, 738, 741, 760,  
 763, 765, 1762  
 \HyPsd@Subst . . . . . 714,  
 723, 727, 733, 739, 743, 747,  
 752, 753, 754, 755, 756, 757,  
 761, 764, 1746, 1763, 1778,  
 1779, 1780  
 \HyPsd@temp . . . . . 779,  
 781, 782, 784, 785, 792, 794,  
 795, 2583, 2584, 2585, 2588,  
 2591, 2597, 2606, 2610,  
 6731, 6732, 6733, 6735,  
 6736, 6741  
 \HyPsd@tocsection . . . . .  
 . . 1324, 1325, 1326, 1327,  
 1328, 1329, 1330, 1332  
 \HyPsd@UnescapedString . 781  
 \HyPsd@UnexpandableSpace . .  
 . 1307, 1490, 1640, 1652  
 \HyPsd@unichar . . . 1932, 1999,  
 2005, 2010  
 \HyPsd@unichar@first@byte . . .  
 . . . . . 2018, 2038  
 \HyPsd@unichar@octtwo . 2040,  
 2048, 2054  
 \HyPsd@unichar@second@byte .  
 . . . . . 2026, 2046  
 \HyPsd@UnicodeReplacementCharacter  
 . . 2002, 2037, 2070, 2100,  
 2105, 2113, 2120, 2123,  
 2133, 2191  
 \HyPsd@utf@viii@undeferr . 532,  
 2059  
 \HyPsd@UTFviii . . . . 526, 1924  
 \HyPsd@UTFviii@cthree . 1955,  
 1964  
 \HyPsd@UTFviii@ctwo . . 1940,  
 1946  
 \HyPsd@UTFviii@ccxliv@def . .  
 . . . . . 1930, 1936  
 \HyPsd@UTFviii@ccxliv@undef  
 . . . . . 1929, 1935  
 \HyPsd@UTFviii@four . . . 1928,  
 1973  
 \HyPsd@UTFviii@three . . 1927,  
 1954  
 \HyPsd@UTFviii@two 1926, 1939  
 \HyPsd@Warning . . 1469, 1662,  
 1683, 1696, 1725, 1731  
 \HyPsd@XSPACE 671, 748, 1308  
 \HyPsd@xspace . . 746, 748, 749  
 \HyRef@@StarSetRef 8483, 8488  
 \HyRef@autopageref 8554, 8556  
 \HyRef@autopagerefname 8553,  
 8557, 8559  
 \HyRef@autoref . . . . 8572, 8573  
 \HyRef@autosetref . . 8576, 8579  
 \HyRef@CaseStar . . 8640, 8646  
 \HyRef@currentHtag . . . . .  
 . . 8592, 8610, 8613, 8619,  
 8626, 8632, 8647  
 \HyRef@MakeUppercaseFirstOfFive  
 . . . 4744, 8504, 8506  
 \HyRef@name . . . . .  
 . . 8608, 8609, 8614, 8621,  
 8639, 8640, 8641, 8643  
 \HyRef@Ref . . . . . 4729, 8509  
 \HyRef@ShowKeysInit . . . 8649,  
 8660  
 \HyRef@ShowKeysRef 8580, 8648  
 \HyRef@StarSetRef . 4732, 4736,  
 4740, 4744, 8476, 8495,  
 8498, 8501, 8504  
 \HyRef@StripStar . . 8607, 8638  
 \HyRef@testreftype . 8585, 8604  
 \HyRef@thisref . . . . 8582, 8585  
 \HyTmp@found 5782, 5792, 5795  
 \HyTmp@key . . . . . 5776, 5777  
 \HyTmp@optitem . . . . .  
 . . 5734, 5750, 5775, 5780,  
 5786, 5807, 5818  
 \HyTmp@optlist . . . 5733, 5748,  
 5749, 5778, 5779, 5784,  
 5785, 5793, 5794, 5814,  
 5816, 5823, 5826  
 \HyXeTeX@CheckUnicode . . . .  
 . . 3685, 3696, 3714, 3720,  
 3726, 3732, 3737, 3755,  
 3761, 3841, 6746

## I

\i . . 14853, 15019, 15022, 15025,  
 15028, 15303, 15479, 15482,  
 15485, 15488, 15617, 15622,  
 15627, 15632, 15636, 15873,  
 15944, 15952  
 \ibar . . . . . 16111, 20718  
 \if 1333, 6559, 6567, 7208, 7209,  
 10745, 10748, 10752, 10756,  
 10760, 10762, 10764, 13961  
 \if@eqnstar . . . . . 7152, 7161  
 \if@filesw 2199, 5041, 5357, 6786,  
 6796, 7690, 7705, 7732,  
 7744, 7764, 7769, 7788,  
 8297, 13042, 13073, 13088,  
 14278, 14465, 14544  
 \if@hyper@item . . . . . 6845  
 \if@Localurl . . . . 10301, 10347  
 \if@mid@expandable . . . . 643  
 \if@minipage . . . . . 7557, 7630  
 \if@nmbrlist . . . . . 6840  
 \if@skiphyperref . . . . . 6846  
 \IfBooleanTF . . . . . 8572  
 \ifcase . . 336, 1002, 1051, 1073,  
 1076, 1082, 1118, 1162,

1278, 1968, 2099, 2588, 3432, 4577, 5580, 5685, 5812, 5889, 6970, 6979, 8050, 8274, 8311, 8581, 10812, 11317, 14022, 14050, 14119, 14155, 14191, 14385	\ifld@readonly . . 12878, 12888, 12972	\ifHy@pdfa 427, 4290, 4689, 5213, 5517, 6109, 6162, 6290, 8986, 9052, 9087, 9121, 9381, 9984, 10018, 10054, 10086, 10116, 10498, 10519, 10542, 10568, 10602, 10636, 10655, 11458, 12525, 12716, 12769, 13121, 13321, 13375, 13494, 13690, 13748, 13963, 14011, 14180
\ifcat . . . 1549, 1576, 1583, 1588, 1593, 1596, 1599, 1602, 5313, 5315	\ifForm@html . . . . . 5856	\ifHy@pdfcenterwindow . . . 386, 9172, 9720, 10185, 10850, 11202, 12109
\ifcsname 1911, 3289, 6884, 10413	\IfFormatAtLeastT . . . . . 232	\ifHy@pdfdisplaydoctitle . . 426, 9173, 9721, 10186, 10851, 11203, 12110
\ifdim . . 1319, 1638, 1642, 1650, 1654, 2272, 2295, 4171, 4173, 4605, 9317, 9321, 9326, 9330, 9337, 9338, 9342, 9343, 9350, 9351, 9352, 10273, 10274, 10277, 10278, 10284, 10285, 10286, 10417, 10418, 10422, 10423, 10430, 10431, 10432, 11346, 11360, 11731, 11732, 11735, 11736, 11742, 11743, 11744, 12619, 12657, 12658, 13220, 13259, 13260, 13576, 13615, 13616	\ifhmode 2232, 2236, 2294, 2303, 4876, 7266, 7353, 7362, 7514, 7516, 8952, 8960, 11352, 12330	\ifHy@pdfescapeform 393, 13858, 13888
\IfDocumentMetadataT . . . 234, 4278, 7717, 8083	\ifHy@activeanchor . . 380, 5326	\ifHy@pdffitwindow . 395, 9171, 9719, 10184, 10849, 11201, 12108
\IfDocumentMetadataTF . 3988	\ifHy@backref . 381, 4381, 4756, 6275, 7765, 7801	\ifHy@pdfmarkerror 11249, 11258
\iffalse . . . . . 5901	\ifHy@bookmarks . . 382, 4630, 7962, 8017	\ifHy@pdfmenubar . . 403, 9169, 9717, 10182, 10847, 11199, 12106
\IfFileExists . 2851, 2891, 8797, 12345	\ifHy@bookmarksnumbered 383, 14265	\ifHy@pdfnewwindow 407, 4011, 10539
\ifFld@checked . . . 5835, 12970, 14008	\ifHy@bookmarksopen 384, 4620	\ifHy@pdfnewwindowset . . 406, 4009
\ifFld@comb . . . . . 5684	\ifHy@breaklinks . . . 385, 2520, 10992, 11033, 11328, 11351	\ifHy@pdfpagelabels 410, 6486, 6699, 6784
\ifFld@combo . . . . . 5712, 5717, 12632, 12661, 13233, 13263, 13589, 13619	\ifHy@CJKbookmarks . 387, 954	\ifHy@pdfstring . 411, 912, 6850, 6857
\ifFld@disabled . . . 5836, 12971	\ifHy@colorlinks 388, 4701, 6280, 11925	\ifHy@pdftoolbar . . . 419, 9168, 9716, 10181, 10846, 11198, 12105
\ifFld@edit . . . . . 5718	\ifHy@destlabel . . . . 389, 5336	\ifHy@pdfusetitle . . . . 421, 6394
\ifFld@fileselect . . . . . 5687	\ifHy@draft . . . . . 390, 4256	\ifHy@pdfwindowui . 425, 9170, 9718, 10183, 10848, 11200, 12107
\ifFld@hidden . . . 12591, 12646, 12726, 12750, 12776, 12798, 12869, 12881, 12891, 12974, 13195, 13248, 13331, 13353, 13382, 13403, 13544, 13604, 13701, 13726, 13755, 13780	\ifHy@dviMode 2657, 2677, 2872	\ifHy@plainpages 412, 4376, 7915
\ifFld@multiline . . . 5685, 12580, 12876, 13183, 13532	\ifHy@dviPdfmxOutlineOpen . . . . . . 4603, 14517	\ifHy@psdextra . . 418, 620, 902
\ifFld@multiselect . . . . . 5756	\ifHy@frenchlinks . . . 396, 4714	\ifHy@psize . . . . . 413
\ifFld@password . . 5686, 12857	\ifHy@href@ismap . . 4932, 9057, 10096, 10492, 10562, 11585	\ifHy@raiselinks 414, 9457, 9537, 9574, 9614, 11995, 12277
\ifFld@popdown . . 5504, 12633, 13234, 13590	\ifHy@hyperfigures . 394, 4361, 6260, 8237	\ifHy@seminarslides . . . . . 415
\ifFld@radio 12629, 12651, 12906, 13230, 13253, 13586, 13609	\ifHy@hyperfootnotes 397, 7273	\ifHy@setpagesize . . 416, 9305, 10270, 10414, 11728
	\ifHy@hyperindex . . 398, 4371, 6270, 8244	\ifHy@setpdfversion . 2625, 8754
	\ifHy@hypertextnames 399, 6894, 6999, 7914	\ifHy@stoppedearly . . . . . 378
	\ifHy@implicit . 400, 4386, 4728, 14569	\ifHy@texht . . . 417, 4447, 4726, 5926, 5959, 6135, 6157, 6328, 8422
	\ifHy@linktocpage . . 401, 2480, 2490	\ifHy@typexml . . . . . 379
	\ifHy@localanchorname . . . 402, 7032, 7044	
	\ifHy@naturalnames . 404, 7011	
	\ifHy@nesting . 405, 4366, 4975, 5009, 5047, 5311, 6265, 7307, 7330, 7408, 7568	
	\ifHy@next . . . . . 945, 8262	
	\ifHy@ocgcolorlinks . . . . . . . . 408, 3390, 4687, 4697, 6285, 8749, 8838, 8916, 8924, 9838, 9921, 9929	
	\ifHy@pageanchor . . . 409, 7913	

<code>\ifHy@unicode</code> . . . 420, 522, 557, 560, 621, 719, 731, 759, 767, 776, 973, 1664, 1685, 1698, 1727, 1733, 2000, 2068, 2118, 2559, 2599, 3687, 6721, 13910	<code>\ifpdfstringunicode</code> . . . 527, 530	<code>\intcalcDiv</code> . . 1049, 1892, 1899, 1902
<code>\ifHy@verbose</code> . 422, 4839, 4855, 4867, 5460, 7993, 8758	<code>\ifportrait</code> . . . . . 9316	<code>\IntCalcMod</code> . . . . .
<code>\ifHyField@NeedAppearances</code> . . 5899, 5901, 5904, 12527, 13123, 13496	<code>\ifthenelse</code> . . . . . 7791	. . . 1061, 1070, 1076, 1180, 1186, 1201, 1217, 1232, 1246, 1248, 1887, 1892, 1893, 1899, 1902, 1904
<code>\ifHyInfo@AddOnUnsupported</code> . . . . . 3818, 3832, 3873	<code>\iftrue</code> . 1478, 1757, 5904, 14630	<code>\intcalcMod</code> . . . . . 1051
<code>\IfHyperBoolean</code> . . . . . <a href="#">2344</a>	<code>\iftutex</code> . . . . . 780	<code>\intcalcNum</code> . . 2099, 2127, 2131
<code>\IfHyperBooleanExists</code> . . . <a href="#">2338</a> , 2345	<code>\ifvmode</code> . . . . . 2249, 2271, 2284	<code>\IntCalcSub</code> . . 2093, 2146, 2149, 2152, 2155
<code>\ifn@</code> . . . . . 6922	<code>\ifvoid</code> . . . . . 7113, 7117	<code>\intcalcSub</code> . . . . . 1879, 2075
<code>\ifmeasuring@</code> . . . . . 6892	<code>\ifvtx</code> . . 2665, 2781, 2810, 4483, 4519, 4533, 4536	<code>\interfootnotelinepenalty</code> . 7426
<code>\ifnmode</code> . . . 619, 10995, 11323	<code>\ifxetex</code> . 2662, 2754, 3686, 4452, 4516, 4604	<code>\interleave</code> . . . . . 19378, 20607
<code>\ifnum</code> . . 1043, 1154, 1170, 1174, 1194, 1207, 1210, 1223, 1225, 1238, 1240, 1246, 1872, 1875, 1958, 2001, 2004, 2016, 2069, 2072, 2085, 2119, 2122, 2125, 2129, 2144, 2148, 2151, 2237, 2273, 2666, 2782, 2785, 2811, 3433, 3434, 4291, 4483, 4519, 4533, 4536, 4614, 4621, 4909, 5739, 5808, 5819, 6516, 6540, 6561, 6577, 6679, 6949, 6952, 7860, 7873, 8750, 8755, 8769, 8773, 8778, 8796, 8817, 9336, 9950, 9955, 10272, 10416, 10539, 10669, 10799, 10807, 10809, 10810, 10820, 10823, 10923, 10925, 11045, 11730, 11771, 12683, 12688, 12693, 13024, 13101, 13297, 13645, 13650, 13661, 13909, 13991, 14022, 14027, 14050, 14056, 14085, 14119, 14125, 14144, 14155, 14160, 14191, 14196, 14222, 14238, 14381, 14451, 14454, 14478, 14481, 14519, 14628, 14643, 14658	<code>\ignorespaces</code> . . 658, 7226, 7315, 7324, 7338, 7347, 7445, 7553, 7564, 7567, 7626, 7634, 7698, 7713, 7740, 7749, 7799	<code>\interlinepenalty</code> . . . . . 7426
<code>\ifodd</code> . . . . . 1982, 1987, 7943	<code>\iiint</code> . . . . . 17901, 20069	<code>\inva</code> . . . . . 16024, 20694
<code>\ifpatchable</code> . . . . . 7268	<code>\iinferior</code> . . . . . 19874	<code>\invamp</code> . . . . . 17583
<code>\ifpdf</code> . . . 2659, 2702, 2713, 4426, 4509	<code>\iint</code> . . . . . 17899, 20068	<code>\invbackneg</code> . . . . . 18377, 20272
<code>\IfPDFManagementActiveTF</code> . . . . . . 2886	<code>\IJ</code> . . . . . 14849, 15638	<code>\invdiameter</code> . . . . . 19177, 20520
	<code>\ij</code> . . . . . 15062, 15640	<code>\inve</code> . . . . . 15883, 19802
	<code>\Im</code> . . . . . 17537, 19941	<code>\invglotstop</code> . . . . . 16268, 19835
	<code>\immediate</code> . . . . . . . . 5404, 5406, 6692, 6789, 6797, 7693, 7708, 7735, 7745, 7764, 7794, 8840, 8855, 8870, 10928, 11768, 12987, 13043, 13046, 13107, 14371, 14437, 14468, 14547	<code>\invh</code> . . . . . 16099, 20713
	<code>\in</code> . . . . . 17818, 20035	<code>\invlegr</code> . . . . . 16174, 20736
	<code>\in@</code> . . . . . 6920	<code>\invm</code> . . . . . 16133, 20724
	<code>\index</code> . . . . . 647, 7972	<code>\invneg</code> . . . . . 19238, 20545
	<code>\indexentry</code> . . 8300, 8315, 8330, 8334, 8344	<code>\invr</code> . . . . . 16169, 20734
	<code>\Info</code> . . . . . 19475, 20638	<code>\invscr</code> . . . . . 16196, 19823
	<code>\infty</code> . . . . . 17861, 20053	<code>\invscripta</code> . . . . . 16032, 20696
	<code>\input</code> . . . . . 878, 888, 905, 3353, 3361, 3368, 4576, 11663, 11769, 11868, 12045, 16388	<code>\invv</code> . . . . . 16231, 20748
	<code>\InputIfFileExists</code> . 4190, 14461, 14492, 14537, 14539	<code>\invw</code> . . . . . 16235, 20750
	<code>\inputlineno</code> . . . . . 4846, 5318	<code>\invy</code> . . . . . 16239, 20752
	<code>\insert</code> . . . . . 7423	<code>\iota</code> . . . . . 19855
	<code>\int</code> . . . . 8091, 8107, 8124, 8140, 17896, 20067	<code>\ipagamma</code> . . . . . 16091, 19814
	<code>\IntCalcAdd</code> . . . . . 1901	<code>\isuperior</code> . . . . . 19898
	<code>\IntCalcDec</code> . . . . . 1065, 2095	<code>\item</code> . . . 6836, 6838, 7731, 7743, 7786
	<code>\intcalcDec</code> . . . . . 2077	<code>\Itemautorefname</code> . . . . . 8663
	<code>\IntCalcDiv</code> . . . . . . . . 1059, 1068, 1073, 1176, 1185, 1197, 1214, 1229, 1244, 1885, 1891, 1897	<code>\itemautorefname</code> . . . . . . . . 2967, 2985, 3003, 3021, 3039, 3057, 3075, 3104, 3105, 3133, 3151, 3169, 3187, 3205, 3223, 3241, 3259, 8663, 8664, 8667
		<code>\itshape</code> . . . . . 590
		<b>J</b>
		<code>\j</code> . . . . . 15645, 15903, 16010
		<code>\JackStar</code> . . . . . 18951, 20423
		<code>\JackStarBold</code> . . . 18953, 20424
		<code>\jarr</code> . . . . . 19708
		<code>\jeem</code> . . . . . 19652
		<code>\jeh</code> . . . . . 19724
		<code>\jinferior</code> . . . . . 20611

<code>\jobname</code> . 12345, 14370, 14461, 14468, 14492, 14537, 14539, 14547	<code>\l</code> . . . . . 6867, 14855, 15671	6375, 7352, 7513, 8571, 8972, 9040, 9075, 9109, 9368, 9456, 9536, 9573, 9613, 9964, 10006, 10046, 10079, 10312, 10321, 10375, 10534, 10559, 10589, 10622, 10994, 11321, 11574, 11601, 11632, 11994, 12276, 12595, 12721, 12729, 12768, 12801, 13198, 13284, 13306, 13326, 13333, 13354, 13374, 13405, 13551, 13643, 13672, 13695, 13704, 13728, 13747, 13786, 14582
<code>\Join</code> . . . . . 19221, 20538	<code>\labdentals</code> . . . 16141, 20727	<code>\Leftarrow</code> . . . . . 17747, 20004
<code>\Jupiter</code> . . . . . 18739, 20920	<code>\label</code> . . . . . 646, 7971	<code>\leftarrow</code> . . . . . 19954
<code>\jupiter</code> . . . . . 18737, 20348	<code>\label@hyperref</code> . . . 5017, 5019	<code>\leftarrowtail</code> . . . . 17664, 19972
<b>K</b>	<code>\label@hook</code> . . . . . 5386	<code>\leftarrowtriangle</code> . . 17795, 20024
<code>\k</code> . 14730, 15079, 15081, 15086, 15088, 15140, 15171, 15200, 15215, 15533, 15535, 15579, 15581, 15629, 15631, 15632, 15769, 15771, 15899, 15901, 16745, 16748, 16790, 16793	<code>\label@hyperdef</code> . . . . 5002, 5033	<code>\leftbarharpoon</code> . . . 19154, 20511
<code>\kaf</code> . . . . . 19688	<code>\label@hyperref</code> . . . . 4982, 5016	<code>\LEFTCIRCLE</code> . . . . 18646, 20318
<code>\kanjiskip</code> . . . . . 460	<code>\label@name</code> . . . 5351, 5361, 5387	<code>\leftharpoondown</code> . . 17695, 19985
<code>\kappa</code> . . . . . 19856	<code>\labelsep</code> . . . . . 7798	<code>\leftharpoonup</code> . . . 17692, 19984
<code>\kasra</code> . . . . . 19714	<code>\labelwidth</code> . . . . . 7797	<code>\leftleftarrows</code> . . . 17724, 19995
<code>\keepPDF@SetupDoc</code> . . 11929, 11936	<code>\Ladiesroom</code> . . . . 19464, 20635	<code>\leftleftharpoons</code> . . 19142, 20507
<code>\kern</code> . . . 1558, 1639, 1644, 1656, 7938, 7939, 7940, 7942, 7943, 7948, 14584	<code>\lam</code> . . . . . 19690	<code>\leftModels</code> . . . . . 19363, 20977
<code>\kernel@ifnextchar</code> . . . . . 678	<code>\Lambda</code> . . . . . 19839	<code>\leftmodels</code> . . . . . 19356, 20975
<code>\Keyboard</code> . . . . . 18395, 20280	<code>\lambda</code> . . . . . 19857	<code>\leftmoon</code> . . . . . 18715, 20343
<code>\kha</code> . . . . . 19656	<code>\lambdabar</code> . . . . . 15831, 20683	<code>\leftpointright</code> . . . 18689, 20900
<code>\kinferior</code> . . . . . 19932	<code>\lambdaslash</code> . . . . 15832, 20684	<code>\Leftrightarrow</code> . . . 17758, 20008
<code>\Kutline</code> . . . . . 18609, 20884	<code>\lang</code> . . . . . 18397, 20281	<code>\leftrightharpoonup</code> . . 17633, 19958
<code>\kv@define@key</code> . . . . . 3840	<code>\language@group</code> . . . . . 630	<code>\leftrightharrows</code> . . 17722, 19994
<code>\KV@href@pdfnewwindow</code> 4930	<code>\LARGE</code> . . . . . 597	<code>\leftrightharrowtriangle</code> . . 17799, 20026
<code>\KV@href@pdfnewwindow@default</code> . . . . . 4931	<code>\Large</code> . . . . . 598	<code>\leftrightharpoon</code> . . 19131, 20503
<code>\KV@Hyp@draft</code> . . . . . 2454	<code>\large</code> . . . . . 601	<code>\leftrightharpoons</code> . . 17733, 19999
<code>\KV@Hyp@nolinks</code> . . . . . 2454	<code>\LargerOrEqual</code> . . . 18043, 20837	<code>\Leftscissors</code> . . . . 18890, 20951
<code>\KV@Hyp@pdfnewwindow</code> 4930	<code>\lastnodetype</code> . . . . . 2273	<code>\leftslice</code> . . . . . 19300, 20572
<code>\KV@Hyp@pdfnewwindow@default</code> . . . . . 4931	<code>\lastskip</code> 2272, 2280, 2287, 2295, 2299, 2306	<code>\leftspoon</code> . . . . . 19060, 20474
<code>\kv@key</code> 3826, 3829, 3836, 5737, 5740, 5742, 5746, 5750	<code>\LaTeX</code> . 554, 556, 12351, 12352	<code>\leftsquigarrow</code> . . . 17775, 20016
<code>\kv@parse</code> . . . . . 5736	<code>\LaTeXe</code> . . . . . 555, 12352	<code>\lefttherefore</code> . . . . 17413, 19894
<code>\kv@parse@normalized</code> . . . 3857, 3864	<code>\latfric</code> . . . . . 16123, 20721	<code>\leftthreetimes</code> . . . 18274, 20227
<code>\kv@processor@default</code> . . . 3860, 3867	<code>\LayoutCheckField</code> 6211, 12800, 13404, 13785	<code>\LeftTorque</code> . . . . . 19124, 20960
<code>\kv@set@family@handler</code> . 3819	<code>\LayoutChoiceField</code> 6203, 12650, 13252, 13608	<code>\Lefttorque</code> . . . . . 19125, 20961
<code>\kv@value</code> 3824, 5738, 5745, 5746	<code>\LayoutPushButtonField</code> . 6219, 12720, 12728, 13325, 13332, 13694, 13703	<code>\leftVdash</code> . . . . . 19350, 20973
<code>\kvsetkeys</code> 2624, 2689, 2829, 3693, 3799, 4292, 4546, 4565, 4688, 5833, 8751, 11257, 12540, 12842, 12855, 12904, 12947, 12968, 13098, 13479	<code>\LayoutTextField</code> . 6195, 12594, 13197, 13550	<code>\leftvdash</code> . . . . . 18195, 20850
<b>L</b>	<code>\lbrackdbl</code> . . . . . 20475	<code>\legacy</code> . . . . . 6868, 6870
<code>\L</code> . . . . . 14842, 15669	<code>\lccode</code> . 983, 1766, 1767, 1768, 1769, 1770, 1771, 1772, 1773, 1774, 1775, 1922, 6069, 8259, 8260, 14295, 14296, 14297, 14298, 14299, 14300, 14301, 14302, 14303, 14304, 14305	<code>\legm</code> . . . . . 16138, 20726
	<code>\lcurvearrowdown</code> 19117, 20499	<code>\legr</code> . . . . . 16181, 20738
	<code>\lcurvearrowse</code> . . . 19109, 20496	<code>\Leo</code> . . . . . 18766, 20929
	<code>\lcurvearrowsw</code> . . . 19112, 20497	<code>\leo</code> . . . . . 18764, 20357
	<code>\ldots</code> . . . . . 547	<code>\leq</code> . . . . . 18035, 20126
	<code>\le</code> . . . . . 18035, 20127	<code>\leqclosed</code> . . . . . 18246, 20866
	<code>\leadsto</code> . . . . . 19103, 20494	<code>\leqq</code> . . . . . 18044, 20130
	<code>\leavevmode</code> . . . . .	<code>\leqslant</code> . . . . . 19265, 20556
	. . . 655, 2226, 4266, 4296, 4336, 5105, 5138, 5218,	

<code>\lessapprox</code> . . . . .	19273, 20560	5880, 5954, 5957, 6070, 8261, 11044, 14306	<code>\Mars</code> . . . . .	18735, 20918
<code>\lessclosed</code> . . . . .	18240, 20864		<code>\mars</code> . . . . .	18734, 20917
<code>\lessdot</code> . . . . .	18304, 20240	<code>\lozenge</code> . . . . .	<code>\MathBSuppress</code> .	10322, 10326
<code>\lesseqgtr</code> . . . . .	18313, 20244	<code>\lrcorner</code> . . . . .	<code>\mathclose</code> . . . . .	7146
<code>\lesseqqgtr</code> . . . . .	19291, 20568	<code>\LT@array</code> . . . . .	<code>\mathdollar</code> . . . . .	15241, 20650
<code>\lessgtr</code> . . . . .	18085, 20149	<code>\LT@foot</code> . . . . .	<code>\mathellipsis</code> . . . . .	17384, 20784
<code>\LessOrEqual</code> . . . . .	18038, 20836	<code>\LT@p@ftn</code> . . . . .	<code>\mathopen</code> . . . . .	7137, 7166
<code>\lesssim</code> . . . . .	18075, 20145		<code>\mathparagraph</code> .	15364, 20661
<code>\Letter</code> . . . . .	18903, 20952	<code>\LT@p@ftntext</code> . . . . .	<code>\mathsection</code> . . . . .	15331, 20659
<code>\LHD</code> . . . . .	18639, 20315	<code>\LT@start</code> . . . . .	<code>\mathsterling</code> . . . . .	15320, 20656
<code>\lhd</code> . . . . .	18238, 20213	<code>\ltimes</code> . . . . .	<code>\mathunderscore</code> .	15299, 20654
<code>\hooknarrow</code> . . . . .	19095, 20490	<code>\lz</code> . . . . .	<code>\mathversion</code> . . . . .	606
<code>\hooksearrow</code> . . . . .	19099, 20492		<code>\maxdimen</code> . . . . .	3454, 12991
<code>\Libra</code> . . . . .	18772, 20931		<code>\MaybeStopEarly</code> . . . . .	
<code>\libra</code> . . . . .	18770, 20359			475, 2692, 2787, 4390, 4521, 6817, 6820
<code>\Lightning</code> . . . . .	17682, 20806		<code>\mbox</code> . . . . .	656, 8926, 9931
<code>\lightning</code> . . . . .	17680, 19980		<code>\mdseries</code> . . . . .	589
<code>\limits</code> . . . . .	4822		<code>\meaning</code> . . . . .	62, 153, 159, 2202, 6418, 7024, 7205, 14503, 14511, 14526
<code>\linferior</code> . . . . .	19933		<code>\measuredangle</code> . .	17865, 20055
<code>\literals@out</code> 2224, 10917, 10922, 10974, 10980, 11006, 11012, 11268, 11284, 11318, 11319, 11347, 11349, 11361, 11363, 11661, 11758, 11767, 11825, 11838, 11919, 12043, 12203			<code>\measuring@false</code> . . . . .	6886
<code>\ll</code> . . . . .	18056, 20136		<code>\mediaheight</code> 10419, 10424, 10433	
<code>\llap</code> . . . . .	5110		<code>\mediawidth</code> 10420, 10425, 10434	
<code>\llbracket</code> . . . . .	19064, 20956		<code>\meem</code> . . . . .	19692
<code>\llcorner</code> . . . . .	18387, 20276		<code>\Mercury</code> . . . . .	18721, 20910
<code>\Lleftarrow</code> . . . . .	17771, 20014		<code>\mercury</code> . . . . .	18719, 20345
<code>\lll</code> . . . . .	18308, 20242		<code>\merge</code> . . . . .	19252, 20972
<code>\llparenthesis</code> . . . . .	19173, 20518		<code>\MessageBreak</code> . . . . .	272, 278, 295, 296, 301, 302, 344, 345, 1670, 1691, 1704, 1727, 1732, 1734, 2377, 2378, 2393, 2415, 2418, 2420, 2498, 2499, 2522, 2523, 2571, 2572, 2573, 2608, 2609, 2629, 2681, 2707, 2723, 2758, 2797, 2804, 2815, 2821, 2845, 2854, 2859, 2879, 2895, 2933, 3392, 3515, 3516, 3576, 3577, 3595, 3596, 3690, 3779, 3834, 3835, 3955, 3956, 3991, 3992, 3993, 4087, 4088, 4089, 4110, 4112, 4120, 4121, 4128, 4178, 4430, 4431, 4439, 4440, 4456, 4457, 4472, 4473, 4487, 4488, 4496, 4497, 4691, 4911, 4912, 4936, 4937, 4953, 4954, 5463, 5468, 5477, 5520, 5566, 5690, 5801, 5873, 5884, 5916, 5917, 5936,
<code>\lnapprox</code> . . . . .	19286, 20566			
<code>\lneq</code> . . . . .	19281, 20564			
<code>\lneqq</code> . . . . .	18052, 20134			
<code>\lnsim</code> . . . . .	18340, 20256			
<code>\Longleftarrow</code> . . . . .	19079, 20482			
<code>\longleftarrow</code> . . . . .	19073, 20479			
<code>\Longleftrightarrow</code> 19083, 20484				
<code>\longleftrightarrow</code> 19077, 20481				
<code>\longleftarrow</code> . . . . .	19821			
<code>\Longmapsfrom</code> . . . . .	19087, 20486			
<code>\Longmapsto</code> . . . . .	19089, 20487			
<code>\longmapsto</code> . . . . .	19085, 20485			
<code>\Longrightarrow</code> . . . . .	19081, 20483			
<code>\longrightarrow</code> . . . . .	19075, 20480			
<code>\looparrowleft</code> . . . . .	17674, 19977			
<code>\looparrowright</code> . . . . .	17676, 19978			
<code>\lower</code> . . . . .	5112, 9463, 9543, 9580, 9620, 11349, 12001, 12283			
<code>\lowercase</code> 984, 1776, 1923, 2355, 2911, 2941, 3766, 3802, 5409, 5410, 5413, 5418, 5442, 5452, 5506, 5562,				



<code>\ngeqslant</code> . . . . .	20559	4816, 4990, 5313, 5315,	<code>\nqsupseteq</code> . . . . .	20253
<code>\ngg</code> . . . . .	18062, 20139	5341, 5472, 6015, 6615,	<code>\NR@gettitle</code> . . . . .	7550
<code>\ngtr</code> . . . . .	18068, 20142	6616, 6625, 6627, 6630,	<code>\NR@ref@showkeys</code> .	4731, 4735,
<code>\ngtrapprox</code> . . . . .	19279, 20563	6762, 6902, 6903, 6920,		4739, 4743
<code>\ngtrclosed</code> . . . . .	18353, 20878	7066, 7067, 7068, 7069,	<code>\nRrightarrow</code> . . . .	17744, 20003
<code>\ngtrless</code> . . . . .	18089, 20151	7070, 7078, 7079, 7080,	<code>\nrightarrow</code> . . . .	17649, 19965
<code>\ngtrsim</code> . . . . .	18083, 20148	7204, 7375, 7385, 7393,	<code>\nrightModels</code> . . .	18237, 20863
<code>\nhateq</code> . . . . .	18020, 20120	7394, 7395, 7397, 7524,	<code>\nrightmodels</code> . . .	18230, 20860
<code>\ni</code> . . . . .	17824, 20038	7615, 7692, 7707, 7734,	<code>\nrightVdash</code> . . . .	18234, 20862
<code>\NibRight</code> . . . . .	18915, 20406	7865, 8045, 8196, 8198,	<code>\nrightvdash</code> . . . .	18227, 20859
<code>\NibSolidRight</code> . .	18917, 20407	8483, 8484, 8614, 8615,	<code>\nrisingdoteq</code> . . . .	18002, 20112
<code>\niepsilon</code> . . . . .	16063, 19809	8620, 8622, 8627, 8628,	<code>\nsim</code> . . . . .	17938, 20084
<code>\niota</code> . . . . .	16112, 19817	8633, 8634, 9704, 11186,	<code>\nsimeq</code> . . . . .	17946, 20088
<code>\nineinferior</code> . . . . .	19920	11253, 11835, 12093, 12625,	<code>\nqsubset</code> . . . . .	18139, 20176
<code>\ninesuperior</code> . . . . .	19904	12626, 12627, 12628, 13226,	<code>\nqsubseteq</code> 18147,	18330, 20180
<code>\ninferior</code> . . . . .	19935	13227, 13228, 13229, 13582,	<code>\nqsupset</code> . . . . .	18143, 20178
<code>\nippi</code> . . . . .	16165, 19820	13583, 13584, 13585, 13860	<code>\nqsupseteq</code> 18151,	18332, 20182
<code>\niupsilon</code> . . . . .	16223, 19826	<code>\noexpandQ</code> . . . . .	<code>\nSubset</code> . . . . .	18290, 20234
<code>\nj</code> . . . . .	16145, 20729	1576	<code>\nsubset</code> . . . . .	18117, 20165
<code>\nLeftarrow</code> . . . . .	17739, 20001	<code>\nofrenchguillemets</code> . . .	<code>\nsubseteq</code> . . . . .	18125, 20169
<code>\nleftarrow</code> . . . . .	17647, 19964	686, 688	<code>\nsubseteqq</code> . . . . .	19342, 20593
<code>\nleftModels</code> . . . .	19366, 20978	<code>\NoHyper</code> . . . . .	<code>\nsucc</code> . . . . .	18111, 20162
<code>\nleftmodels</code> . . . .	19359, 20976	6331	<code>\nsuccapprox</code> . . . .	19334, 20589
<code>\nLeftrightarrow</code> .	17741, 20002	<code>\nohyperpage</code> 6374, <u>8371</u> ,	<code>\nsucccurlyeq</code> . . .	18328, 20251
<code>\nleftrightharrow</code> .	17678, 19979	8373,	<code>\nsucceq</code> . . . . .	19310, 20577
<code>\nleftVdash</code> . . . .	19353, 20974	8375	<code>\nsucceq</code> . . . . .	19322, 20583
<code>\nleftvdash</code> . . . .	18198, 20851	<code>\nolinkurl</code> . . . . .	<code>\nsuccsim</code> . . . . .	18107, 20160
<code>\nleq</code> . . . . .	18071, 20143	4968	<code>\nsuperior</code> . . . . .	19910
<code>\nleqq</code> . . . . .	18046, 20131	<code>\nolinkurl@</code> . . . . .	<code>\nSupset</code> . . . . .	18294, 20236
<code>\nleqslant</code> . . . . .	19267, 20557	4968, 4969	<code>\nsupset</code> . . . . .	18119, 20166
<code>\nless</code> . . . . .	18066, 20141	<code>\NomFancyVerbLineautorefname</code>	<code>\nsupseteq</code> . . . . .	18127, 20170
<code>\nlessapprox</code> . . . .	19275, 20561	. . . . .	<code>\nsupseteqq</code> . . . .	19346, 20595
<code>\nlessclosed</code> . . . .	18350, 20877	3122	<code>\nthickapprox</code> . . .	17957, 20826
<code>\nlessgtr</code> . . . . .	18091, 20152	<code>\Nomfootnoteautorefname</code>	<code>\ntriangleleft</code> . . . .	18348, 20260
<code>\nlesssim</code> . . . . .	18081, 20147	3102	<code>\ntrianglelefteq</code> . .	18355, 20262
<code>\nll</code> . . . . .	18058, 20137	<code>\Nomtheoremautorefname</code>	<code>\ntriangleright</code> . . .	18351, 20261
<code>\nmid</code> . . . . .	17874, 20058	3126	<code>\ntrianglerighteq</code> .	18358, 20263
<code>\nmodels</code> . . . . .	18231, 20861	<code>\nonumber</code> . . . . .	<code>\ntriplesim</code> . . . .	17965, 20096
<code>\noboundary</code> . . . . .	550	7179, 7182	<code>\ntwoheadleftarrow</code>	17653, 19967
<code>\nobreak</code> 2276, 2285, 2296, 2304,		<code>\normalbaselineskip</code> .	<code>\ntwoheadrightarrow</code> . . .	17660,
7353, 7514		6244, 6245,		19970
<code>\nobreakspace</code> .	667, 8564, 8567	6246, 6247, 6248, 6249	<code>\nu</code> . . . . .	19860
<code>\NoChemicalCleaning</code> . .	19191,	<code>\normalfont</code> . . . . .	<code>\null</code> . . . . .	7783, 7791, 8471, 8594
20524		584	<code>\number</code> 1156, 1158, 1185, 1186,	
<code>\noexpand</code> . . . . .		<code>\normalsize</code> . . . .	1876, 1941, 1942, 1943,	
. 22, 93, 95, 108, 116, 169,		<code>\notasymp</code> . . . . .	1944, 1948, 1949, 1950,	
171, 172, 173, 176, 206, 934,		<code>\notbackslash</code> . . .	1951, 1952, 1956, 1957,	
997, 1430, 1447, 1549, 1576,		<code>\NotCongruent</code> . .	1958, 1959, 1960, 1961,	
1937, 2283, 2284, 2285,		<code>\notdivides</code> . . . .	1962, 1966, 1967, 1968,	
2288, 2302, 2303, 2304,		<code>\note</code> . . . . .	1969, 1970, 1971, 1974,	
2307, 3302, 3304, 3306,		<code>\notequiv</code> . . . . .	1976, 1980, 1981, 1983,	
3307, 3308, 3310, 3328,		<code>\notin</code> . . . . .	1985, 1987, 1990, 1994,	
3525, 3526, 3528, 3890,		<code>\notni</code> . . . . .	1995, 1996, 1997, 2006,	
4352, 4356, 4357, 4546,		<code>\notowner</code> . . . . .	2007, 2011, 2012, 2019,	
		<code>\notperp</code> . . . . .		
		<code>\notslash</code> . . . . .		
		<code>\noway</code> . . . . .		
		<code>\nparallel</code> . . . . .		
		<code>\nperp</code> . . . . .		
		<code>\nprec</code> . . . . .		
		<code>\nprecapprox</code> . . . .		
		<code>\npreccurlyeq</code> . . .		
		<code>\npreceq</code> . . . . .		
		<code>\npreceqq</code> . . . . .		
		<code>\nprecsim</code> . . . . .		
		<code>\nqsubseteq</code> . . . . .		

2020, 2024, 2027, 2028,  
 2029, 2039, 2041, 2042,  
 2047, 2049, 2050, 2055,  
 2056, 4605, 4622, 5430,  
 6950, 6953, 7001, 7002,  
 7005, 7009, 8832, 8835,  
 8836, 9527, 9545, 9546,  
 9561, 9562, 9582, 9583,  
 9599, 9600, 9622, 9623,  
 9639, 9640  
`\numberline` . 7553, 7626, 14266,  
 14271  
`\numberwithin` . . . . . 8202  
`\numexpr` 1948, 1949, 1950, 1952,  
 1958, 1966, 1967, 1968,  
 1969, 1970, 1971, 1975,  
 1977, 1981, 1983, 1985,  
 1987, 1991, 1994, 1995,  
 1997, 2006, 2011, 2028,  
 2042, 2050, 2056, 2646,  
 2647, 3908  
`\nun` . . . . . 19694  
`\nupmodels` . . . . . 19373, 20605  
`\nupvdash` . . . . . 18207, 20203  
`\nVDash` . . . . . 18235, 20212  
`\nVdash` . . . . . 18232, 20211  
`\nvDash` . . . . . 18228, 20210  
`\nvdash` . . . . . 18225, 20209  
`\nVdash` . . . . . 18219, 20207  
`\Nwarrow` . . . . . 17763, 20010  
`\nwarrow` . . . . . 17637, 19960  
`\nwsearrow` . . . . . 19091, 20488

## O

`\O` . . . . . 14977, 15437, 15919  
`\o` . . . . . 15046, 15507, 15922  
`\oasterisk` . . . . . 18179, 20848  
`\obackslash` . . . . . 19185, 20964  
`\obar` . . . . . 19179, 20521  
`\obeylines` . . . . . 11834  
`\OBJ@acroform` . . 13129, 13130  
`\OBJ@Helv` 13104, 13117, 13469  
`\OBJ@OCG@print` . . 8869, 8872,  
 8880, 8907, 9855, 9857,  
 9870, 9874, 9883, 9912  
`\OBJ@OCG@view` . . . . .  
 . . 8854, 8872, 8906, 9839,  
 9841, 9854, 9874, 9911  
`\OBJ@OCGs` . . . . .  
 . . 8875, 8878, 8884, 8889,  
 8894, 9871, 9873, 9877,  
 9881, 9887, 9892, 9897  
`\OBJ@pdfdocencoding` . 13102,  
 13450, 13466

`\OBJ@ZaDb` 13103, 13116, 13459  
`\obot` . . . . . 19188, 20523  
`\obslash` . . . . . 19182, 20522  
`\ocirc` . . . . . 18174, 20845  
`\OCIRCUMFLEX` 19504, 19602,  
 19603, 19604, 19605, 19606  
`\ocircumflex` . . . . 19498, 19542,  
 19543, 19544, 19545, 19546  
`\oddsidemargin` . . . . . 7944  
`\odiv` . . . . . 19236, 20544  
`\odot` . . . . . 18169, 20189  
`\odplus` . . . . . 19190, 20966  
`\OE` . . . . . 14844, 15705  
`\oe` . . . . . 14857, 15707  
`\offinterlineskip` . . . . . 6466  
`\ogreaterthan` . . . 19196, 20526  
`\OHORN` . 19505, 19607, 19608,  
 19609, 19610, 19611  
`\ohorn` 3167, 3174, 19499, 19547,  
 19548, 19549, 19550, 19551  
`\oiint` . . . . . 17906, 20071  
`\oinferior` . . . . . 19928  
`\oint` . . . . . 17903, 20070  
`\ointclockwise` . . . 17909, 20072  
`\ointctrclockwise` . 17911, 20073  
`\oldb` . . . . . 820  
`\oldc` . . . . . 821  
`\oldd` . . . . . 822  
`\olessthan` . . . . . 19193, 20525  
`\OMEGA` . . . . . 12350  
`\Omega` . . . . . 19846  
`\omega` . . . . . 19871  
`\ominus` . . . . . 18160, 20186  
`\on@line` . . . . . 7997, 7998  
`\oneinferior` . . . . . 19912  
`\onesuperior` . . . . . 19794  
`\oo` . . . . . 19412, 20614  
`\openbullet` . . . . . 20320  
`\openo` . . . . . 16039, 19805  
`\openout` . . . . . 14468, 14547  
`\oplus` . . . . . 18157, 20185  
`\OpMode` 2666, 2782, 2785, 2798,  
 2811, 2816, 4483, 4519,  
 4533, 4536, 10820, 10925,  
 11771  
`\or` 339, 1003, 1004, 1005, 1006,  
 1007, 1008, 1009, 1010,  
 1011, 1012, 1013, 1014,  
 1015, 1016, 1017, 1018,  
 1019, 1020, 1021, 1022,  
 1023, 1024, 1025, 1026,  
 1027, 1028, 1029, 1030,  
 1031, 1032, 1033, 1034,  
 1052, 1074, 1077, 1083,

1084, 1085, 1086, 1087,  
 1088, 1089, 1090, 1091,  
 1092, 1093, 1094, 1095,  
 1096, 1097, 1098, 1099,  
 1100, 1101, 1102, 1103,  
 1104, 1105, 1106, 1107,  
 1108, 1109, 1110, 1111,  
 1112, 1113, 1114, 1119,  
 1120, 1121, 1122, 1123,  
 1124, 1125, 1126, 1127,  
 1128, 1129, 1130, 1131,  
 1132, 1133, 1134, 1135,  
 1136, 1137, 1138, 1139,  
 1140, 1141, 1142, 1143,  
 1144, 1145, 1146, 1147,  
 1148, 1149, 1150, 1163,  
 1164, 1165, 1166, 1167,  
 1279, 1280, 1281, 2101,  
 2104, 2106, 2109, 5590,  
 5596, 5601, 5813, 6970,  
 6971, 6972, 6973, 6979,  
 6980, 6981, 6982, 8052,  
 8056, 10813, 14386, 14387,  
 14388, 14389, 14390, 14391,  
 14392, 14393, 14394, 14395,  
 14396, 14397, 14398, 14399,  
 14400, 14401, 14402, 14403,  
 14404, 14405, 14406, 14407,  
 14408, 14409, 14410, 14411,  
 14412, 14413, 14414, 14415,  
 14416, 14417

`\OrnamentDiamondSolid` . 19044  
`\oslash` . . . . . 18166, 20188  
`\otimes` . . . . . 18163, 20187  
`\ovee` . . . . . 17889, 20064  
`\overlay` . . . . . 7901  
`\owedge` . . . . . 17884, 20062  
`\owns` . . . . . 17826, 20811

## P

`\P` . . . . . 546  
`\p@` 2007, 2012, 5842, 5848, 9472,  
 9556, 9594, 9634, 10773,  
 12010, 12297, 12621, 13222,  
 13578  
`\p@equation` . . . . . 8179  
`\PackageError` . . . . . 61, 255  
`\PackageInfo` . . . 258, 259, 8829,  
 12998  
`\PackageWarning` . . 256, 2628,  
 3990, 5799  
`\PackageWarningNoLine` . . 257  
`\pageautorefname` . . 2980, 2998,  
 3016, 3034, 3052, 3070,

3088, 3128, 3146, 3164, 3182, 3200, 3218, 3236, 3254, 3272, 8567, 8680	11508, 11509, 11510, 11511, 11512, 11517	\PDFForm@Name 13193, 13247, 13320, 13401, 13542, 13603, 13689, 13778, <u>13896</u>
\pagename . . . . . 8564	\pdf@addtoksx . . 11369, 11379, 11395	\PDFForm@Push . 12730, 12734, 13335, 13336, 13705, 13709, <u>14011</u>
\pageref . . 652, 4400, 8553, 8557	\pdf@box . 11297, 11329, 11337, 11345, 11346, 11349, 11353, 11355, 11358	\PDFForm@Radio 12682, 12690, 13286, 13288, 13644, 13656, <u>14075</u>
\paperheight . 4171, 9321, 9323, 9326, 9328, 9343, 9345, 9352, 9354, 10278, 10279, 10286, 10287, 10423, 10424, 10432, 10433, 11736, 11737, 11744, 11745	\pdf@defaulttoks . 11253, 11373, 11374, 11384	\PDFForm@Reset 12777, 12782, 13384, 13385, 13757, 13762, <u>14180</u>
\paperwidth . 9317, 9319, 9330, 9332, 9342, 9344, 9351, 9353, 10277, 10279, 10285, 10287, 10422, 10425, 10431, 10434, 11735, 11737, 11743, 11745	\pdf@docset . . . . . 11119	\PDFForm@Submit . . . . 12751, 12756, 13356, 13358, 13729, <u>13734, 14146</u>
\par . . . . 7552, 7581, 7624, 7634, 7785, 7805	\pdf@endanchor 8964, 9005, 9012	\PDFForm@Text . 12596, 12600, 13200, 13201, 13552, 13555, <u>14110</u>
\paragraphautorefname . . . . . . . 2976, 2994, 3012, 3030, 3048, 3066, 3084, 3117, 3119, 3142, 3160, 3178, 3196, 3214, 3232, 3250, 3268, 8676	\pdf@escapestring . . . . . 8735	\pdfhorigin . . . . . 9313
\parallel . . . . . 17877, 20059	\PDF@FinishDoc . . . 2695, 2696, 2790, 2791, 4165, 4268, 4393, 4394, 4524, 4525, 6373, 6483, 6484, <u>9207</u> , 9396, 9651, 10137, 10302, 10891, 11120, 12047, 12218	\pdfinfo . . . . . 9211
\parenleftinferior . . . . . 19924	\pdf@ifdraftmode . . 6659, 8839, 9208, 9296, 13099, 14475	\pdflastannot . . . . . 8786
\parenleftsuperior . . . . . 19908	\pdf@linktype . . . 11277, 11281, 11389, 11390	\pdflastlink . 8789, 13065, 13078
\parenrightinferior . . . . . 19925	\pdf@objdef 11256, 11270, 11272, 11286, 11288, 11392, 11393	\pdflastmatch . . . . . 4080
\parenrightsuperior . . . . . 19909	\pdf@rect . 11264, 11283, 11301	\pdflastobj . . 8783, 8854, 8869, 8875, 13129, 13450, 13459, 13469
\parr . . . . . 17586, 20799	\PDF@SetupDoc . . . 4164, 4267, 6302, 6303, 6372, 9138, 9397, 9684, 10179, 10303, 10828, 11173, 11931, 12080, 12219	\pdflastxform 8784, 12989, 12991
\partautorefname . . 2970, 2988, 3006, 3024, 3042, 3060, 3078, 3108, 3136, 3154, 3172, 3190, 3208, 3226, 3244, 3262, 8670	\PDF@SetupDox . . . . . 9138	\pdflastximage . . . . . 8785
\partial . . . . . 17805, 20029	\pdf@toks 11253, 11274, 11290, 11372, 11376, 11380	\pdflinkmargin . . . . 8947, 8949
\partnumberline . 14268, 14273	\pdf@type 11255, 11260, 11274, 11290, 11367, 11387	\pdfliteral . . . . 8927, 8929, 8934
\PassOptionsToPackage . . . . . . . 2704, 2716, 2719, 2731, 2742, 2771, 2830, 2836, 2867, 2922, 2926, 2948, 4206, 4219, 4230, 4566	\pdfbookmark 2225, 6378, 6379, 14344, 14349, 14354, 14358	\pdfm@box 9767, 13506, 13507, 13508, 13546, 13558, 13635, 13660, 13669, 13680, 13699, 13712, 13727, 13736, 13756, 13764, 13781, 13793
\patchcmd . . . . . 7269	\pdfcatalog . . 6662, 8876, 9153, 9195, 13130	\pdfmajorversion . . . 2650, 2651, 2654, 2655
\pdf@addtoks . . . 11375, 11397, 11403, 11412, 11419, 11423, 11425, 11427, 11429, 11431, 11439, 11448, 11452, 11454, 11456, 11459, 11468, 11472, 11474, 11476, 11478, 11480, 11482, 11484, 11486, 11488, 11490, 11492, 11494, 11496, 11498, 11500, 11502, 11503, 11504, 11505, 11506, 11507,	\PDFdefaults . . . . . 11383	\pdfmark 6780, 9704, 9713, 9743, 10961, 10981, 11020, 11055, 11072, 11106, 11143, 11155, 11186, 11195, 11226, 11250, 11526, 11541, 11556, 11568, 11575, 11602, 11633, 12093, 12102, 12133, 12556, 12565, 12597, 12686, 12703, 12731, 12753, 12779, 12803, 14507
	\pdfdest . . . . . 8966	\pdfmark@ . . . . . 11250, 11251
	\pdfendlink 9002, 13202, 13296, 13311, 13338, 13363, 13387, 13410	\pdfmatch . . . . . 336
	\pdfescapestring . . . . . 13889	\pdfminorversion . . . . . 8748
	\pdfextension . 2714, 4421, 4510	\PDFNextPage . . . . . 11539
	\PDFForm@@Name . . . . 13897, 13900, 13904, <u>13907</u>	\PDFNextPage@ . 11539, 11540
	\PDFForm@Check 12802, 12806, 13407, 13408, 13787, 13791, <u>13980</u>	\pdfobj 8840, 8855, 8870, 13107, 13416, 13451, 13460
	\PDFForm@List . 12701, 12706, 13308, 13309, 13673, 13678, <u>14041</u>	\pdfobjcompresslevel 8766, 8822

\PDFOpen	11567	\PhoneHandset	18895, 20397	8973, 9966, 10507, 10590, 11098	
\pdfoptionpdfminorversion	8747	\Pi	19841		
\pdfoutline	14553	\pi	19862	\protected@file@percent	7959, 8028
\pdfpageattr	9252, 9256, 9257, 9267, 9276, 9280, 9281, 9291	\pinferior	19936	\protected@write	2204, 5042, 5358, 7770, 8299, 8314, 8329, 8333, 8343, 14282
\pdfpageheight	9323, 9332, 9340, 9345, 9354	\Pisces	18787, 20936	\protected@xdef	7394, 7488
\pdfpageref	13167	\pisces	18785, 20364	\providecommand	492, 4508, 4830, 4973, 5345, 5404, 5406, 6641, 6666, 6798, 7196, 7657, 7658, 7673, 7959, 8661, 8662, 8663, 8664, 8665, 8666, 8667, 8668, 8669, 8670, 8671, 8672, 8673, 8674, 8675, 8676, 8677, 8678, 8679, 8680, 8742, 8950, 8968, 8969, 9395, 9498, 9499, 9762, 9824, 9825, 9826, 10299, 10415, 10445, 10446, 10447, 10918, 11298, 11299, 11659, 11667, 11668, 11669, 11670, 11765, 11777, 11778, 11779, 11780, 11832, 11873, 11874, 11875, 11876, 12039, 12041, 12042, 12154, 12155, 12210, 13044, 13047, 13853
\pdfpageresources	8903, 8904	\pitchfork	18302, 20239	\psdaliasnames	20646, 20989
\pdfpagesattr	9142, 9144, 9146	\planck	15612, 20672	\psdmapshortnames	19774, 20645
\pdfpagewidth	9319, 9328, 9339, 9344, 9353	\Plane	18899, 20399	\Psi	19845
\PDFPreviousPage	11552	\Plus	18932, 20414	\psi	19870
\PDFPreviousPage@	11553, 11555	\PlusCenterOpen	18936, 20416	\PushButton	6183
\pdfrefobj	13102, 13103, 13104	\plusinferior	19921	\put@me@back	5308, 5321, 5331
\pdfrefxform	12991	\PlusOutline	18930, 20413	\pwedge	16232, 20749
\pdfstartlink	8997, 9041, 9076, 9110, 9370, 13201, 13287, 13309, 13336, 13357, 13385, 13408	\plussuperior	19905	\pxfonts	19382
\pdfstrcmp	13024	\PlusThinCenterOpen	18934, 20415		
\pdfstringdef	515, 806, 3716, 3722, 3728, 3734, 3739, 3744, 3750, 3757, 3763, 3843, 5791, 6444, 6551, 6553, 7887, 7924, 13914, 14276	\Pluto	18751, 20924		
\pdfstringdefDisableCommands	819, 924, 6376, 6437	\pluto	18749, 20352		
\pdfstringdefPostHook	802, 918	\pm	20643		
\pdfstringdefPreHook	663, 918, 930, 6436, 6448	\pointer	17790, 20022		
\pdfstringdefWarn	551, 552, 657, 933, 1438, 1443, 1462, 1466	\PointingHand	18690, 20901		
\pdfTeXversion	13101	\Pointinghand	18691, 20902		
\pdfvorigin	9314	\pounds	15321, 20657		
\pdfxform	12987	\Preamble	12346		
\Peace	18904, 20401	\prec	18093, 20153		
\peh	19720	\precapprox	19328, 20586		
\penalty	1552, 2253, 4877	\preccurlyeq	18097, 20155		
\PencilRight	18911, 20404	\preceq	19304, 20574		
\PencilRightDown	18909, 20403	\preceqq	19316, 20580		
\PencilRightUp	18913, 20405	\precnapprox	19336, 20590		
\pentagon	19383, 20609	\precneq	19312, 20578		
\perp	19052, 20470	\precneqq	19324, 20584		
\phantom	607	\precnsim	18344, 20258		
\phantomsection	4166, 6380, 7968, 14215, 14263, 14644	\precsim	18101, 20157		
\Phi	19844	\PrerenderUnicode	3707		
\phi	19868	\prime	17389, 19890		
\phiinferior	19881	\process@me	6416, 6428, 6429, 9141, 9150		
\Phone	18665, 20326	\ProcessKeyvalOptions	4235		
		\prod	17832, 20041		
		\prop	2322, 2326, 2334		
		\propto	17858, 20052		
		\protect	1550, 4987, 5021, 7553, 7626, 7692, 7707, 7734, 7790, 7797, 7798, 8028, 8158, 8360, 8428, 8448, 8454, 8465, 8479, 8597, 9407, 9504, 10373, 10453, 11942, 12229, 14283, 14577		
		\protected	6387, 7179, 8037, 8038		
		\protected@edef	5161, 6517, 6611, 7202, 7219, 7433, 7875, 7879, 8973, 9966, 10507, 10590, 11098		

## Q

\Q	1545, 13112
\qaf	19686
\quarternote	18809, 20365
\quotedblbase	14824, 15065, 17370, 19480
\quotesinglbase	14834, 15067, 17364, 19482

## R

\r	14699, 14711, 14723, 14938, 15004, 15116, 15161, 15190, 15222, 15397, 15464, 15761, 15763, 17309, 17311
\ra	19662



<code>\set@display@protect</code> . . . .	4341	<code>\skip@</code> . . . .	1567, 1650, 1651, 1654, 1656, 2280, 2286, 2299, 2305	<code>\ss</code> . . . .	3020, 14992, 15078, 15452
<code>\setbox</code> . . . . .	1553, 1559, 1565, 3437, 3443, 5110, 5123, 5987, 6465, 8918, 9906, 9923, 13546, 13635, 13669, 13699, 13727, 13756, 13781	<code>\slashc</code> . . . . .	16017, 19803	<code>\sslash</code> . . . . .	19380, 20608
<code>\setcounter</code> . . . . .	4908	<code>\slashdiv</code> . . . . .	19389, 20612	<code>\star</code> . . . . .	18262, 20222
<code>\setkeys</code> . . . . .	4883, 4928	<code>\slide</code> . . . . .	7898	<code>\stepcounter</code> . . . . .	6872, 7218, 7354, 7487, 14279
<code>\setlength</code> 2257, 5091, 5999, 6749, 8945, 9313, 9314, 9319, 9323, 9328, 9332, 9339, 9340, 9344, 9345, 9353, 9354, 10419, 10420, 10424, 10425, 10433, 10434, 10773, 11757, 11824, 11918, 12202, 14597, 14665		<code>\SlitTeX</code> . . . . .	563	<code>\stockheight</code> . . . . .	4171, 4413, 9338, 9340, 10274, 10275, 10418, 10419, 11732, 11733
<code>\setminus</code> . . . . .	17848, 20048	<code>\slshape</code> . . . . .	592	<code>\stockwidth</code> . . . . .	4412, 9337, 9339, 9350, 10273, 10275, 10284, 10417, 10420, 10430, 11731, 11733, 11742
<code>\setpdfinkmargin</code> . . . . .	3897, 3898, 6747, 8943, 11755, 11822, 11916, 12200	<code>\small</code> . . . . .	604	<code>\stop@hyper</code> . . . . .	6345
<code>\settowidth</code> 12618, 13219, 13575		<code>\smallin</code> . . . . .	17822, 20037	<code>\str</code> . . . . .	5145
<code>\SetupKeyvalOptions</code> 2315, 4199		<code>\smallowns</code> . . . . .	17830, 20040	<code>\StringEncodingConvertTest</code> 782, 792	
<code>\seveninferior</code> . . . . .	19918	<code>\smash</code> . . . . .	2254	<code>\strip@period</code> . . . . .	2209
<code>\sevensuperior</code> . . . . .	19902	<code>\smile</code> . . . . .	18393, 20279	<code>\strip@prefix</code> 62, 2202, 4080, 6418, 7024, 7205, 14503, 14511, 14526	
<code>\sffamily</code> . . . . .	586	<code>\Smiley</code> . . . . .	18709, 20908	<code>\strip@pt</code> . . . . .	489, 4183, 6016, 6750, 9319, 9323, 9328, 9332, 10776, 11759, 11826, 11920, 12204, 14005, 14070, 14099, 14139, 14190
<code>\shadda</code> . . . . .	19716	<code>\smiley</code> . . . . .	18707, 20340	<code>\strip@pt@and@otherjunk</code> 10980, 11012, 11047	
<code>\sharp</code> . . . . .	18822, 20370	<code>\Snowflake</code> . . . . .	19014, 20454	<code>\strutbox</code> . . . . .	7428
<code>\sheen</code> . . . . .	19668	<code>\SnowflakeChevron</code> 19012, 20453		<code>\sub@label</code> . . . . .	2196
<code>\ShipoutBox</code> . . . . .	6465, 6468, 9906, 9907	<code>\SnowflakeChevronBold</code> . . . . .	19016, 20455	<code>\subeqnarray</code> . . . . .	7185, 7187
<code>\shortciteN</code> . . . . .	7833	<code>\sofpasuq</code> . . . . .	16915	<code>\subfig@oldlabel</code> . . . . .	2198
<code>\shuffle</code> . . . . .	19213, 20534	<code>\softsign</code> . . . . .	16556, 20770	<code>\Submit</code> . . . . .	6189
<code>\Sigma</code> . . . . .	19842	<code>\spacefactor</code> . . . . .	2232, 2238, 7353, 7362, 7514, 7516, 8953, 8961	<code>\SubmitObject</code> . . . . .	13359
<code>\sigma</code> . . . . .	19865	<code>\spadesuit</code> . . . . .	18788, 18790, 20937	<code>\SubmitPObject</code> . . . . .	13359
<code>\sim</code> . . . . .	17928, 20080	<code>\Sparkle</code> . . . . .	19018, 20456	<code>\subparagraphautorefname</code> . . . . .	2977, 2995, 3013, 3031, 3049, 3067, 3085, 3118, 3120, 3143, 3161, 3179, 3197, 3215, 3233, 3251, 3269, 8677
<code>\simeq</code> . . . . .	17944, 20087	<code>\SparkleBold</code> . . . . .	19020, 20457	<code>\subpdfbookmark</code> . . . . .	14346
<code>\sinferior</code> . . . . .	19937	<code>\special@paper</code> . . . . .	4167	<code>\subsection</code> . . . . .	12035
<code>\SixFlowerAlternate</code> . . . . .	19000, 20447	<code>\SpecialDvipdfmxOutlineOpen</code> . . . . .	2748, 2750, 4607, 4614	<code>\subsectionautorefname</code> . . . . .	2974, 2992, 3010, 3028, 3046, 3064, 3082, 3115, 3140, 3158, 3176, 3194, 3212, 3230, 3248, 3266, 8674
<code>\SixFlowerAltPetal</code> 19010, 20452		<code>\sphericalangle</code> . . . . .	17867, 20056	<code>\Subset</code> . . . . .	18288, 20233
<code>\SixFlowerOpenCenter</code> . . . . .	18996, 20445	<code>\splitmaxdepth</code> . . . . .	7428	<code>\subset</code> . . . . .	18113, 20163
<code>\SixFlowerPetalRemoved</code> 18993, 20444		<code>\splittopskip</code> . . . . .	7427	<code>\subseteq</code> . . . . .	18121, 20167
<code>\sixinferior</code> . . . . .	19917	<code>\sqcap</code> . . . . .	18153, 20183	<code>\subseteqq</code> . . . . .	19340, 20592
<code>\SixStar</code> . . . . .	18983, 20439	<code>\sqcup</code> . . . . .	18155, 20184	<code>\subsetneq</code> . . . . .	18129, 20171
<code>\sixsuperior</code> . . . . .	19901	<code>\sqdoublecap</code> . . . . .	19240, 20546	<code>\subsubsectionautorefname</code> 2975, 2993, 3011, 3029, 3047,	
<code>\SixteenStarLight</code> 18991, 20443		<code>\sqdoublecup</code> . . . . .	19245, 20548		
<code>\sixteenthnote</code> . . . . .	18816, 20367	<code>\sqsubset</code> . . . . .	18137, 20175		
<code>\SK@</code> . . . . .	8655	<code>\sqsubsepeq</code> . . . . .	18145, 20179		
<code>\SK@@ref</code> . . . . .	8655	<code>\sqsubsetneq</code> . . . . .	18334, 20254		
<code>\SK@ref</code> . . . . .	8652	<code>\sqsupset</code> . . . . .	18141, 20177		
		<code>\sqsupsepeq</code> . . . . .	18149, 20181		
		<code>\sqsupsetneq</code> . . . . .	18337, 20255		
		<code>\SquareCastShadowBottomRight</code> . . . . .	19039, 20464		
		<code>\SquareCastShadowTopRight</code> . . . . .	19042, 20465		
		<code>\Squaredot</code> . . . . .	15368, 20663		
		<code>\squaredots</code> . . . . .	17921, 20077		
		<code>\SquareShadowBottomRight</code> . . . . .	19033, 20462		
		<code>\SquareShadowTopRight</code> . . . . .	19036		
		<code>\SquareTopRight</code> . . . . .	20463		
		<code>\SS</code> . . . . .	15063, 19466		

3065, 3083, 3116, 3141,  
 3159, 3177, 3195, 3213,  
 3231, 3249, 3267, 8675  
 \succ ..... 18095, 20154  
 \succapprox ..... 19332, 20588  
 \succcurlyeq ..... 18099, 20156  
 \succeq ..... 19308, 20576  
 \succeqq ..... 19320, 20582  
 \succnapprox ..... 19338, 20591  
 \succneq ..... 19314, 20579  
 \succneqq ..... 19326, 20585  
 \succnsim ..... 18346, 20259  
 \succsim ..... 18105, 20159  
 \sukun ..... 19718  
 \sum ..... 17836, 20043  
 \Sun ..... 18714, 20909  
 \sun ..... 18712, 20342  
 \SunCloud ..... 20389  
 \SunCloud ..... 18873  
 \SunshineOpenCircled .. 19008,  
 20451  
 \Supset ..... 18292, 20235  
 \supset ..... 18115, 20164  
 \supseteq ..... 18123, 20168  
 \supseteqq ..... 19344, 20594  
 \supsetneq ..... 18131, 20172  
 \surd ..... 20051  
 \Swarrow ..... 17769, 20013  
 \swarrow ..... 17645, 19963  
 \sys ..... 5145

## T

\T ..... 19646  
 \t . 14731, 15151, 15180, 15209,  
 15227  
 \T@pageref .. 8518, 8525, 8534,  
 8543  
 \T@Ref ..... 4729  
 \Ta ..... 19674  
 \taa ..... 19648  
 \tableautorefname .. 2969, 2987,  
 3005, 3023, 3041, 3059,  
 3077, 3107, 3135, 3153,  
 3171, 3189, 3207, 3225,  
 3243, 3261, 8669  
 \tagform@ ..... 8178  
 \taild ..... 16047, 20702  
 \tailinvr ..... 16178, 20737  
 \taill ..... 16127, 20722  
 \tailn ..... 16150, 20731  
 \tailr ..... 16184, 20739  
 \tails ..... 16200, 20742  
 \tailt ..... 16218, 20745  
 \tailz ..... 16246, 20754

\Tape ..... 18897, 20398  
 \tatweel ..... 19682  
 \tau ..... 19866  
 \Taurus ..... 18757, 20926  
 \taurus ..... 18755, 20354  
 \tcheh ..... 19722  
 \Telefon ..... 18667, 20894  
 \temp@online ..... 7997, 8000  
 \Tent ..... 18881, 20393  
 \tesh ..... 16318, 20767  
 \TeX . 553, 554, 561, 563, 12349,  
 12351, 12353  
 \texorpdfstring ..... 911, 6377  
 \text ..... 499, 505  
 \textAcht ..... 19441, 20624  
 \textAcPa ..... 19427, 20618  
 \textacute 14695, 14707, 14719,  
 14903, 15157, 15186, 15358  
 \textacutedbl ..... 16366  
 \textacutemacron 15154, 15183,  
 15212, 17088, 17091, 17192,  
 17195  
 \textainferior .... 17478, 19926  
 \textaleph ..... 17572, 19948  
 \textalpha ... 3187, 3188, 3189,  
 3191, 3192, 3193, 3194,  
 3195, 3196, 3197, 3198,  
 3199, 3200, 19750, 19847  
 \textamalg ..... 17835, 20042  
 \textampersand .... 543, 14766,  
 15246, 15247, 15248, 20652,  
 20653  
 \textangle ..... 17864, 20054  
 \textangstrom ..... 17564  
 \textAnkh ..... 18698, 20337  
 \textaoilig . 19409, 19411, 20983  
 \textAPLbox .... 18436, 20296  
 \textAPLdownarrowbox 18425,  
 20291  
 \textAPLinput .. 18428, 20292  
 \textAPLinv .... 18402, 20283  
 \textAPLleftarrowbox .. 18417,  
 20288  
 \textAPLrightarrowbox . 18420,  
 20289  
 \textAPLuparrowbox .. 18422,  
 20290  
 \textapprox ..... 17954, 20091  
 \textapproxreq ... 17959, 20093  
 \textaquarius .... 18783, 18784,  
 20363, 20935  
 \textaries . 18753, 18754, 20353,  
 20925  
 \textasciicircum ..... 15359

\textasciibreve ... 14742, 15165,  
 15194, 16355  
 \textasciicaron ... 14700, 14712,  
 14724, 14744, 15162, 15191,  
 16341  
 \textasciicircum .. 14696, 14708,  
 14720, 14782, 15158, 15187,  
 15296  
 \textasciidieresis . 14698, 14710,  
 14722, 14879, 15160, 15189,  
 15334  
 \textasciigrave ... 14694, 14706,  
 14718, 14787, 15156, 15185,  
 15301  
 \textasciimacron . 14703, 14715,  
 14727, 14893, 15169, 15198,  
 15348  
 \textasciitilde 544, 4793, 14797,  
 15313  
 \textast ..... 17851, 20049  
 \textAsterisk .... 18999, 20446  
 \textAsteriskBold 18976, 20435  
 \textasteriskcentered .... 15256  
 \textAsteriskCenterOpen 18978,  
 20436  
 \textAsteriskRoundedEnds ...  
 ..... 19023, 20458  
 \textasymp ..... 17972, 20099  
 \textbygamma . 16096, 19815  
 \textbackcong ... 17968, 20097  
 \textbackneg .... 18374, 20270  
 \textbackprime .. 17396, 19893  
 \textbacksim .... 17932, 20081  
 \textbacksimeq .. 18279, 20229  
 \textbackslash .. 539, 718, 2062,  
 14778, 14780, 15294  
 \textbaht ..... 16979  
 \textbar . 14793, 15308, 15309,  
 20655  
 \textbarb ..... 15800, 20676  
 \textbarc ..... 16021, 20693  
 \textbard ..... 15564, 20668  
 \textbardbl 17357, 17358, 20780  
 \textbardotlessj .. 16078, 16079,  
 16080, 20709  
 \textbarglotstop . 16300, 16301  
 \textbari . 16109, 16110, 16111,  
 19816, 20718  
 \textbarin ..... 18370, 20268  
 \textbarl .. 15823, 15824, 19801  
 \textbarleftharpoon 19158, 20512  
 \textbaro ..... 16155, 16157  
 \textbarp ..... 17024, 19884  
 \textbarrevglotstop 16304, 16305

<code>\textbarrightharpoon</code> . . .	19164, 20514	<code>\textbrokenbar</code> . .	14875, 15327, 15328, 20658	<code>\textCircledA</code> . . .	18493, 18494, 20300, 20883
<code>\textbarsci</code> . . . . .	17022, 19883	<code>\textbullet</code> .	14799, 17379, 19888	<code>\textcircledast</code> . . .	18177, 18178, 18179, 20191, 20847, 20848
<code>\textbarscu</code> . . . . .	17027, 19885	<code>\textbulletoperator</code> . . . . .	17855	<code>\textcircledcirc</code> . .	18173, 18174, 18175, 20190, 20845, 20846
<code>\textbaru</code> .	16220, 16221, 16222, 19825, 20746	<code>\textbullseye</code> . . . .	16275, 16276, 16277, 16278, 20762, 20763	<code>\textcircledddash</code> . .	18181, 20192
<code>\textbarwedge</code> . . .	18261, 20221	<code>\textBumpeq</code> . . . .	17977, 20101	<code>\textcircledP</code> . . . . .	17544
<code>\textbbslash</code> . . . .	18448, 18449, 20299, 20882	<code>\textbumpeq</code> . . . .	17981, 20103	<code>\textCircleShadow</code>	19031, 20461
<code>\textBeam</code> . . . . .	18432, 20294	<code>\textcancer</code>	18762, 18763, 20356, 20928	<code>\textcircplus</code> . . . .	19227, 20540
<code>\textbecause</code> . . . .	17917, 17918, 20075, 20822	<code>\textCap</code> .	18297, 18298, 20237, 20873	<code>\textcircumflex</code> . . . . .	14746
<code>\textbeltl</code> .	16121, 16122, 16123, 20721	<code>\textcap</code> . . . . .	17893, 20065	<code>\textcircumlow</code> . .	15175, 15204, 19415
<code>\textBeta</code> . . . . .	16387	<code>\textcapdot</code> . . . . .	19244, 20547	<code>\textCleaningF</code> . .	18506, 20301
<code>\textbeta</code> . .	15078, 19751, 19848	<code>\textcapricornus</code> .	18780, 18781, 20362, 20934	<code>\textCleaningFF</code> .	18508, 20302
<code>\textbetainferior</code> .	17011, 19878	<code>\textccnc</code> . . . . .	19470, 20636	<code>\textCleaningP</code> . .	18530, 20303
<code>\textbeth</code> . . . . .	17574, 19949	<code>\textccnd</code> . . . . .	19472	<code>\textCleaningPP</code> .	18532, 20304
<code>\textbetween</code> . . . .	18065, 20140	<code>\textccsa</code> . . . . .	19474, 20637	<code>\textclock</code>	18380, 18381, 18382, 20273, 20879, 20880
<code>\textbf</code> . . . . .	578	<code>\textcdj</code> . . . . .	16289	<code>\textclosepsilon</code> . .	16282, 16283
<code>\textBicycle</code> . . . .	19461, 20633	<code>\textcdot</code> . .	15077, 19492, 20644	<code>\textcloseomega</code> . .	16161, 16162, 16163, 16164, 20732, 20733
<code>\textbigcircle</code> . . . .	15182, 15211, 18656, 18657, 20322, 20893	<code>\textcdots</code> . . . . .	18364, 20265	<code>\textcloserevepsilon</code> . . . .	16074, 16075, 16076, 20708
<code>\textbigdoublevee</code>	19220, 20537	<code>\textcedilla</code>	14702, 14714, 14726, 14911, 15164, 15193, 15370	<code>\textCloud</code> . . . . .	18660, 20323
<code>\textbigdoublewedge</code> . . .	19218, 20536	<code>\textcelsius</code> . . . . .	15064, 17534	<code>\textClowerTips</code> .	18956, 20425
<code>\textbigtriangledown</code> . . .	18632, 18633, 20312, 20891	<code>\textcent</code> . . . . .	14867, 15317	<code>\textclubsuitblack</code> .	2184, 18799, 18800, 20941
<code>\textbigtriangleup</code>	18617, 18618, 18619, 20307, 20888, 20889	<code>\textcentoldstyle</code> .	16019, 20692	<code>\textclubsuitwhite</code> . . . . .	18808
<code>\textBiohazard</code> . .	18696, 20336	<code>\textCESign</code> . . . .	19478, 19479, 20639, 20988	<code>\textCoffeecup</code> . . .	18679, 20330
<code>\textblacksmiley</code> .	18711, 20341	<code>\textCheckedbox</code> .	18672, 18673, 20328, 20896	<code>\textcolonequals</code> . .	19264, 20555
<code>\textblank</code> . . . . .	18444	<code>\textCheckmark</code> .	18920, 18921, 20408, 20954	<code>\textcolonequals</code> .	18005, 20113
<code>\textbot</code> .	18205, 18206, 20202, 20853	<code>\textCheckmarkBold</code> . . .	18923, 20409	<code>\textcolonmonetary</code> . . . . .	17504
<code>\textbowtie</code>	18267, 18268, 20224, 20870	<code>\textChi</code> . . . . .	19747	<code>\textcolor</code> . .	616, 13097, 13144, 13147, 13478
<code>\textboxast</code> . . . . .	19204, 20529	<code>\textchi</code> . . . .	3188, 19771, 19869	<code>\textcommatailz</code> .	15987, 15988
<code>\textboxbackslash</code>	18414, 20287	<code>\textchiinferior</code> . .	17019, 19882	<code>\textcomplement</code> .	17804, 20028
<code>\textboxbar</code> . . . . .	18654, 20321	<code>\textcirc</code> . . . . .	17853, 20050	<code>\textcompwordmark</code> . . . .	17351
<code>\textboxbox</code> . . . .	19208, 20531	<code>\textcircseq</code> . . . . .	18013, 20117	<code>\textcong</code> . . . . .	17949, 20089
<code>\textboxbslash</code> . . .	19202, 20528	<code>\textcirclearrowleft</code>	19070, 20477	<code>\textcopyleft</code> . . . .	19467, 19468
<code>\textboxcircle</code> . . .	19206, 20530	<code>\textcirclearrowright</code> . . .	19072, 20478	<code>\textcopyright</code> . . .	14881, 15336, 19791
<code>\textboxdot</code> . . . . .	18189, 20196	<code>\textcircled</code>	15153, 15182, 15211, 18451, 18453, 18455, 18457, 18459, 18461, 18463, 18465, 18467, 18469, 18471, 18473, 18475, 18477, 18479, 18481, 18483, 18485, 18487, 18489, 18491, 18496, 18498, 18500, 18502, 18504, 18510, 18512, 18514, 18516, 18518, 18520, 18522, 18524, 18526, 18528, 18534, 18536, 18538, 18540, 18542, 18544, 18546, 18548, 18550, 18552, 18554, 18556, 18558, 18560, 18562, 18564, 18566, 18568, 18570, 18572, 18574, 18576, 18578, 18580, 18582, 18584, 18586, 18588, 18590, 18592, 18594, 18596, 18598, 18600, 18602, 18604, 18606	<code>\textcorner</code> . . . . .	16375, 16376
<code>\textboxempty</code> . .	18669, 18670, 20327, 20895			<code>\textCR</code> . . . . .	14740, 15234
<code>\textboxminus</code> . . .	18185, 20194				
<code>\textboxplus</code> . . . .	18183, 20193				
<code>\textboxslash</code> . . . .	19200, 20527				
<code>\textboxtimes</code> . . .	18187, 20195				
<code>\textbraceleft</code>	537, 2063, 14791, 15306				
<code>\textbraceright</code>	538, 2063, 14795, 15311				

<code>\textcrb</code> . . .	15796, 15797, 15798, 15800, 15801, 20675, 20676, 20677
<code>\textcrd</code> . . .	15559, 15561, 15562, 15564, 15565, 20667, 20668, 20669
<code>\textcrg</code> . . . . .	15889, 20689
<code>\textcrh</code> . . . . .	15610, 20670
<code>\textcrinvglotstop</code>	15850, 15851
<code>\textcrlambda</code> . . .	15827, 15828, 15829, 15830, 15831, 15832, 20681, 20682, 20683, 20684
<code>\textCross</code> . . . . .	18939, 20417
<code>\textCrossedbox</code> .	18675, 18676, 18677, 20329, 20897, 20898
<code>\textCrossMaltese</code>	18945, 20420
<code>\textCrossOpenShadow</code> .	18941, 20418
<code>\textCrossOutline</code>	18943, 20419
<code>\textcrtwo</code> . . . . .	15847, 15848
<code>\textctc</code> . . .	16042, 16043, 16044, 20701
<code>\textctd</code> . . . . .	15985, 15986
<code>\textctesh</code>	16209, 16210, 16211, 20743
<code>\textctj</code> . . .	16290, 16291, 20764
<code>\textctjvar</code> . . . . .	16291, 20764
<code>\textctn</code> . . . . .	16005, 16006
<code>\textctt</code> . . . . .	16007, 16008
<code>\textctyogh</code>	16254, 16255, 16256, 20756
<code>\textctz</code> . . .	16247, 16248, 16249, 20755
<code>\textCup</code> .	18300, 18301, 20238, 20874
<code>\textcup</code> . . . . .	17895, 20066
<code>\textcupdot</code> . . . . .	18134, 20173
<code>\textcupplus</code> . . . .	18136, 20174
<code>\textcurlyeqprec</code> .	18319, 20246
<code>\textcurlyeqsucc</code> .	18323, 20248
<code>\textcurlyvee</code> . . . .	18283, 18284, 20231, 20871
<code>\textcurlywedge</code> . .	18286, 18287, 20232, 20872
<code>\textcurrency</code> . . .	14871, 15323
<code>\textcurvearrowleft</code>	17688, 19982
<code>\textcurvearrowright</code> . . .	17690, 19983
<code>\textCuttingLine</code> .	18608, 18609, 18610, 18611, 20305, 20884, 20885, 20886
<code>\textdagger</code>	14801, 17372, 17373, 19887, 20781
<code>\textdaggerdbl</code> . . .	14803, 14804, 17375, 17376, 17377, 20782, 20783
<code>\textdaleth</code> . . . . .	17578, 19951
<code>\textdanger</code> . . . . .	18850, 20382
<code>\textdasheddownarrow</code> .	17789, 20021
<code>\textdasheduparrow</code>	17784, 20019
<code>\textdashleftarrow</code>	17781, 17782, 20018, 20808
<code>\textdashrightarrow</code> . . . .	17786, 17787, 20020, 20809
<code>\textDashV</code>	19362, 19363, 20600, 20977
<code>\textDashv</code>	19355, 19356, 20598, 20975
<code>\textdashV</code>	19349, 19350, 20596, 20973
<code>\textdashv</code>	18194, 18195, 20198, 20850
<code>\textDavidStar</code> . .	18947, 18948, 20421, 20955
<code>\textdblig</code> .	16011, 16013, 20690
<code>\textdctzlig</code> . . . . .	16312, 16313
<code>\textddagger</code> . . . . .	14804
<code>\textddots</code> . . . . .	18368, 20267
<code>\textdegree</code>	14895, 15064, 15350
<code>\textDeleatur</code> . . .	17527, 17528, 19939, 20794
<code>\textDelta</code> . . . . .	19739, 19837
<code>\textdelta</code> . .	3200, 19753, 19850
<code>\textdiameter</code> . . .	18372, 20269
<code>\textdiamond</code> . . .	18642, 18643, 20316, 20892
<code>\textdiamonddots</code>	17418, 19896
<code>\textDiamondSolid</code>	19045, 20466
<code>\textdiamondsuitblack</code> . . .	2185, 18806
<code>\textdiamondsuitwhite</code> .	18796, 18797, 20940
<code>\textdigammagreek</code> . . . . .	20768
<code>\textdiscount</code> . . . . .	17412
<code>\textdiv</code> . . .	15075, 19490, 20642
<code>\textdivide</code>	15044, 15075, 15505, 19490
<code>\textdivideontimes</code>	18265, 20223
<code>\textDivides</code> . . . .	17845, 20046
<code>\textDividesNot</code> . .	17847, 20047
<code>\textdivorced</code> . . . . .	18864
<code>\textdlsh</code> . . . . .	17685, 19981
<code>\textdollar</code> . . .	541, 14762, 15240, 15241, 15242, 20650, 20651
<code>\textdong</code> . . . . .	17514
<code>\textdotaccent</code> . . .	14701, 14713, 14725, 14748, 15163, 15192, 16357
<code>\textdotbelow</code> . . .	14705, 14717, 14729, 14772, 15179, 15208, 16382
<code>\textdotdiv</code> . . . . .	17925, 20823
<code>\textdoteq</code> . . . . .	17985, 20105
<code>\textdoteqdot</code> . . .	17990, 17991, 20107, 20829
<code>\textdotminus</code> . . .	17924, 17925, 20078, 20823
<code>\textdotplus</code> . . . .	17843, 20045
<code>\textdottimes</code> . . .	19232, 20542
<code>\textdoublebarpipe</code>	15863, 15864, 15865, 20688
<code>\textdoublebarpipevar</code> . .	15865, 20688
<code>\textdoublebarwedge</code> . . .	19255, 20551
<code>\textdoublegrave</code> .	15167, 15196, 16378
<code>\textdoublepipe</code> . .	15859, 15860, 15861, 20687
<code>\textdoublepipevar</code>	15861, 20687
<code>\textdoublevee</code> . . .	19251, 19252, 20550, 20972
<code>\textdoublevertline</code>	17358, 20780
<code>\textdoublewedge</code>	19249, 20549
<code>\textDOWNarrow</code>	18628, 18629, 20311, 20890
<code>\textDownarrow</code> .	17756, 20007
<code>\textdownarrow</code> . .	17630, 17631, 17632, 19957, 20802, 20803
<code>\textdownarrowarrows</code> . .	17731, 19998
<code>\textdownarrowharpoons</code>	19152, 20510
<code>\textdownarrowharpoonleft</code> . .	17714, 19991
<code>\textdownarrowharpoonright</code> .	17711, 19990
<code>\textdownmodels</code> .	19368, 20602
<code>\textdownstep</code> . . .	19398, 19399
<code>\textdownuparrows</code>	17794, 20023
<code>\textdownupharpoons</code> . .	19170, 20516
<code>\textdsbiological</code> .	18844, 20379
<code>\textdschemical</code> . .	18842, 20378
<code>\textdscommercial</code>	18846, 20380
<code>\textdsjuridical</code> . .	18840, 20377
<code>\textdsmedical</code> . . .	18838, 20376
<code>\textdsmilitary</code> . .	18835, 18836, 20375, 20945

<code>\textdtimes</code> . . . . .	19235, 20543	<code>\texteuro</code> .	14863, 17516, 17517, 17518, 17519, 17520, 17521, 17522, 17523, 17524, 17525, 20785, 20786, 20787, 20788, 20789, 20790, 20791, 20792, 20793	<code>\textflq</code> . . . . .	641, 15071, 19486
<code>\textdyoghlig</code> . . . . .	16309, 16310	<code>\textexclamdown</code> . . .	756, 14865, 15315	<code>\textflqq</code> . . . . .	639, 15069, 19484
<code>\textdzlig</code> 16306, 16307, 16308, 20766		<code>\textexists</code> . . . . .	17808, 20030	<code>\textforall</code> . . . . .	17802, 20027
<code>\textearth</code> 18730, 18731, 20346, 20916		<code>\textfallingdoteq</code> .	17996, 20109	<code>\textForward</code> . . . . .	18621, 20308
<code>\textEightAsterisk</code> 19029, 20460		<code>\textfatsemi</code> . . . . .	19225, 20539	<code>\textForwardToIndex</code> . . .	18439, 20297
<code>\textEightFlowerPetal</code> . .	19007, 20450	<code>\textFax</code> .	19456, 19457, 20631, 20987	<code>\textFourAsterisk</code>	18950, 20422
<code>\textEightFlowerPetalRemoved</code> . . . . .	19026, 20459	<code>\textfax</code> . . . . .	17580, 19952	<code>\textfourfifths</code> . . . . .	17604
<code>\texteightinferior</code> .	17464, 19919	<code>\textfemale</code> . . . . .	18724, 20911	<code>\textfourinferior</code> .	17456, 19915
<code>\textEightStar</code> . . .	18986, 20440	<code>\textFemaleFemale</code>	18852, 20383	<code>\textFourStar</code> . . .	18958, 20426
<code>\textEightStarBold</code>	18988, 20441	<code>\textFemaleMale</code> .	18856, 20385	<code>\textFourStarOpen</code>	18960, 20427
<code>\textEightStarConvex</code> . .	18982, 20438	<code>\textfi</code> . . . . .	754, 14838, 19417	<code>\textfoursuperior</code> .	17424, 19899
<code>\textEightStarTaper</code> . . .	18980, 20437	<code>\TextField</code> . . . . .	6174	<code>\textfourth</code> . . . . .	17416, 19895
<code>\texteightsuperior</code>	17432, 19903	<code>\textFInv</code> . . . . .	17570, 19947	<code>\textfractionsolidus</code>	14814, 17406
<code>\texteinferior</code> . . . .	17480, 19927	<code>\textFire</code> . . . . .	19459, 20632	<code>\textfrown</code> . . . . .	18392, 20278
<code>\texttell</code> . . . . .	17540, 19942	<code>\textfishhookr</code> . . .	16186, 16187, 16188, 16189, 20740, 20741	<code>\textfrownie</code> 18705, 18706, 20339, 20907	
<code>\textellipsis</code> . . .	547, 548, 14806, 17383, 17384, 20784	<code>\textfivedots</code> . . . .	19394, 20613	<code>\textfrq</code> . . . . .	642, 15072, 19487
<code>\textemdash</code> .	752, 14808, 17355	<code>\textfiveighths</code> . . . . .	17614	<code>\textfrqq</code> . . . . .	640, 15070, 19485
<code>\textemptyset</code> . . .	17812, 17813, 20032, 20810	<code>\textFiveFlowerOpen</code> . .	19005, 20449	<code>\textfullnote</code> . . . .	19433, 19434, 20621, 20984
<code>\textEncodingNoboundary</code>	550, 19734	<code>\textFiveFlowerPetal</code> . . .	19003, 20448	<code>\textGame</code> . . . . .	17582, 19953
<code>\textendash</code> . .	753, 14810, 17353	<code>\textfiveinferior</code> . .	17458, 19916	<code>\textGamma</code> . . . . .	19738, 19836
<code>\textEnvelope</code> . . .	18902, 18903, 20400, 20952	<code>\textfivesixths</code> . . . . .	17608	<code>\textgamma</code> . .	3196, 3197, 3198, 19752, 19849
<code>\textEpsilon</code> . . . . .	3185	<code>\textFiveStar</code> . . . .	18662, 20324	<code>\textgammainferior</code>	17013, 19879
<code>\textepsilon</code> . .	3186, 3187, 3190, 3192, 3193, 3194, 3195, 3199, 3200, 19754, 19851	<code>\textFiveStarCenterOpen</code>	18964, 20429	<code>\textGaPa</code> . . . . .	19421, 20615
<code>\texteqcirc</code> . . . . .	18009, 20115	<code>\textFiveStarConvex</code> . . .	18972, 20433	<code>\textge</code> . . . . .	18042, 20129
<code>\texteqcolon</code> . . . .	17927, 20079	<code>\textFiveStarOpen</code>	18664, 20325	<code>\textgemini</code> 18759, 18760, 20355, 20927	
<code>\texteqdot</code> . . . . .	19260, 20553	<code>\textFiveStarOpenCircled</code>	18962, 20428	<code>\textGentsroom</code> . .	19463, 20634
<code>\texteqsim</code> . . . . .	17941, 20085	<code>\textFiveStarOpenDotted</code>	18966, 20430	<code>\textgeq</code> .	18041, 18043, 20128, 20837
<code>\texteqslantgtr</code> . .	19299, 20571	<code>\textFiveStarOutline</code> . . .	18968, 20431	<code>\textgeqq</code> . . . . .	18049, 20132
<code>\texteqslantless</code> . .	19297, 20570	<code>\textFiveStarOutlineHeavy</code> . . .	18970, 20432	<code>\textgeqslant</code> . . . .	19270, 20558
<code>\textequalscolon</code> .	18007, 20114	<code>\textFiveStarShadow</code> . . .	18974, 20434	<code>\textgg</code> . . . . .	18061, 20138
<code>\textequalsinferior</code>	17472, 19923	<code>\textfivesuperior</code> .	17426, 19900	<code>\textggg</code> . . . . .	18311, 20243
<code>\textequalsuperior</code>	17440, 19907	<code>\textfl</code> . . . . .	755, 14840, 19419	<code>\textgimel</code> . . . . .	17576, 19950
<code>\textequiv</code> 18029, 18030, 20124, 20833		<code>\textFlag</code> .	18830, 18831, 20373, 20944	<code>\textglobfall</code> . . . .	17644, 20805
<code>\textEreversed</code> . . . . .	15809	<code>\textflat</code> . . . . .	18819, 20368	<code>\textglobrise</code> . . . .	17641, 20804
<code>\textesh</code> . .	16201, 16202, 19824	<code>\textflorin</code> 14812, 15812, 15813, 20678		<code>\textglotstop</code> . . . .	16258, 16259, 16260, 16261, 19833, 20757, 20758
<code>\textestimated</code> . . .	17566, 17567, 17568, 20796, 20797			<code>\textglq</code> . . . . .	637, 15067, 19482
<code>\texteta</code> .	3185, 3186, 3188, 3191, 3193, 3194, 3195, 3198, 3199, 19756, 19853			<code>\textglqq</code> . . . . .	635, 15065, 19480

<code>\textgrq</code> . . . . .	638, 15068, 19483	<code>\textjupiter</code>	18738, 18739, 20348, 20920
<code>\textgrqq</code> . . . . .	636, 15066, 19481	<code>\textkappa</code> . . . . .	3187, 3189, 3192, 19759, 19856
<code>\textGslash</code> . . . . .	15886	<code>\textKeyboard</code> . . . . .	18396, 20280
<code>\textgslash</code> 15888, 15889, 20689		<code>\textkinferior</code> . . . . .	17490, 19932
<code>\textgtrapprox</code> . . . . .	19278, 20562	<code>\textkra</code> . . . . .	15651
<code>\textgtrdot</code> . . . . .	18307, 20241	<code>\textLadiesroom</code> . . . . .	19465, 20635
<code>\textgtreqless</code> . . . . .	18317, 20245	<code>\textLambda</code> . . . . .	19741, 19839
<code>\textgtreqqlless</code> . . . . .	19295, 20569	<code>\textlambda</code> 3192, 3200, 19760, 19857	
<code>\textgtrless</code> . . . . .	18088, 20150	<code>\textlangle</code> . . . . .	18398, 20281
<code>\textgtrsim</code> 18079, 18080, 20146, 20839		<code>\textlatin</code> . . . . .	627, 7012
<code>\textguarani</code> . . . . .	17532	<code>\textlbrackdbl</code> . . . . .	19063, 19064, 20475, 20956
<code>\texthalflength</code> . . . . .	16352, 16353	<code>\textlcurvearrowdown</code> . . . . .	19118, 19119, 19120, 20499, 20958, 20959
<code>\texthalfnote</code> . . . . .	19436, 19437, 20622, 20985	<code>\textlcurvearrowse</code>	19110, 20496
<code>\textHandCuffLeft</code> 18681, 20331		<code>\textlcurvearrowsw</code>	19113, 20497
<code>\textHandCuffRight</code> . . . . .	18683, 20332	<code>\textle</code> . . . . .	18037, 20127
<code>\textHandLeft</code> . . . . .	18685, 18686, 20333, 20899	<code>\textleadsto</code> . . . . .	19104, 20494
<code>\textHandRight</code> . . . . .	18688, 18689, 18690, 18691, 20334, 20900, 20901, 20902	<code>\textLeftarrow</code> . . . . .	17748, 20004
<code>\textHaPa</code> . . . . .	19423, 20616	<code>\textleftarrow</code> . . . . .	17622, 19954
<code>\texthateq</code> 18017, 18018, 18019, 20119, 20830, 20831		<code>\textleftarrowtail</code> . . . . .	17665, 19972
<code>\texthausaB</code> . . . . .	15803, 19798	<code>\textleftarrowtriangle</code> . . . . .	17796, 20024
<code>\texthausaD</code> . . . . .	15807, 19799	<code>\textleftbarharpoon</code>	19155, 20511
<code>\texthausaK</code> . . . . .	15818, 19800	<code>\textLEFTCIRCLE</code>	18647, 20318
<code>\texthbar</code> . . . . .	15609, 15610, 15611, 15612, 19797, 20670, 20671, 20672	<code>\textleftharpoondown</code> . . . . .	17696, 19985
<code>\texthdotfor</code> . . . . .	17381, 19889	<code>\textleftharpoonup</code>	17693, 19984
<code>\textheartsuitblack</code>	2186, 18804	<code>\textleftleftarrows</code>	17725, 19995
<code>\textheartsuitwhite</code> . . . . .	18792, 18793, 18794, 20938, 20939	<code>\textleftleftharpoons</code> . . . . .	19143, 20507
<code>\textheng</code> . . . . .	19400, 19402, 20980	<code>\textleftmoon</code> . . . . .	18716, 20343
<code>\textHermaphrodite</code> . . . . .	18858, 20386	<code>\textLeftrightarrow</code>	17759, 20008
<code>\texthexagon</code> . . . . .	18434, 20295	<code>\textleftrightharpoon</code> . . . . .	2189, 17634, 19958
<code>\texthexstar</code> . . . . .	18869, 20388	<code>\textleftrightharpoons</code>	17723, 19994
<code>\texthinferior</code> . . . . .	17488, 19931	<code>\textleftrightharpoontriangle</code>	17800, 20026
<code>\texthookleftarrow</code>	17671, 19975	<code>\textleftrightharpoon</code> . . . . .	19132, 20503
<code>\texthookrightarrow</code> . . . . .	17673, 19976	<code>\textleftrightharpoons</code> . . . . .	17734, 19999
<code>\textHslash</code> . . . . .	15607	<code>\textleftslice</code> . . . . .	19301, 20572
<code>\texthslash</code> . . . . .	17536, 19940	<code>\textleftspoon</code> . . . . .	19061, 20474
<code>\textHT</code> . . . . .	14736, 15230	<code>\textleftsquigarrow</code>	17776, 20016
<code>\texthtb</code> . . . . .	16034, 16035, 16036, 16037, 20698, 20699	<code>\textlefttherefore</code> . . . . .	17414, 19894
<code>\texthtbardotlessj</code>	16204, 16205	<code>\textleftthreetimes</code>	18275, 20227
<code>\texthtc</code> . . . . .	15804, 15805	<code>\textlengthmark</code> . . . . .	16349, 16350
<code>\texthtd</code> . . . . .	16048, 16049, 16050, 16051, 20703, 20704	<code>\textleo</code> . . . . .	18765, 18766, 20357, 20929
<code>\texthtg</code> . . . . .	16081, 16082, 16083, 20710		
<code>\texthth</code> . . . . .	16101, 16102, 16103, 16104, 20715, 20716		
<code>\texththeng</code>	16105, 16106, 16107, 20717		
<code>\texthtk</code> . . . . .	15819, 15820, 15821, 20680		
<code>\texthtp</code> . . . . .	15837, 15838		
<code>\texhtq</code> . . . . .	16297, 16298		
<code>\texthtrtaild</code>	17031, 17032, 19886		
<code>\texhtscg</code> . . . . .	16285, 16286		
<code>\texhtt</code> . . . . .	15842, 15843		
<code>\texthungarumlaut</code>	14750, 15170, 15199, 16365		
<code>\texthvlig</code>	15814, 15815, 15816, 20679		
<code>\textiiint</code> . . . . .	17902, 20069		
<code>\textiinferior</code> . . . . .	17003, 19874		
<code>\textiint</code> . . . . .	17900, 20068		
<code>\textIm</code> . . . . .	17538, 19941		
<code>\textInfo</code> . . . . .	19476, 20638		
<code>\textintfy</code> . . . . .	17862, 20053		
<code>\textinsymbol</code> . . . . .	17819, 20035		
<code>\textint</code> . . . . .	17897, 17898, 20067, 20820		
<code>\textinterleave</code> . . . . .	19379, 20607		
<code>\textinterrobang</code> . . . . .	17404		
<code>\textinterrobangdown</code> . . . . .	19391, 19392		
<code>\textinvamp</code>	17584, 17585, 17586, 20798, 20799		
<code>\textinvbackneg</code> . . . . .	18378, 20272		
<code>\textinvbreve</code> . . . . .	15129, 15172, 15201, 15936, 15938, 15949, 15951, 15952, 15962, 15964, 15978, 15980		
<code>\textinvdiameter</code> . . . . .	19178, 20520		
<code>\textinve</code> . . . . .	15884, 19802		
<code>\textinvglotstop</code> . . . . .	16268, 16269, 19835		
<code>\textinvneg</code> . . . . .	19239, 20545		
<code>\textinvscr</code> . . . . .	16196, 16197, 19823		
<code>\textiota</code> 3185, 3186, 3187, 3189, 3192, 3200, 19758, 19855			
<code>\textipagamma</code> . . . . .	16092, 16093, 19814, 20712		
<code>\textisuperior</code> . . . . .	17422, 19898		
<code>\textit</code> . . . . .	580		
<code>\textJackStar</code> . . . . .	18952, 20423		
<code>\textJackStarBold</code>	18954, 20424		
<code>\textjinferior</code> . . . . .	19388, 20611		
<code>\textJoin</code> . . . . .	19223, 20538		

<code>\textleq</code> ..	18036, 18038, 20126, 20836	<code>\textlongrightarrow</code>	19076, 20480	<code>\textmultimapdotbothA</code>	18253, 20217
<code>\textleqq</code> .....	18045, 20130	<code>\textlongs</code> .....	15795, 17313	<code>\textmultimapdotbothB</code>	18255, 20218
<code>\textleqslant</code> ....	19266, 20556	<code>\textlooparrowleft</code>	17675, 19977	<code>\textmultiply</code> ....	14975, 15074, 15433, 15434, 15435, 19489, 20664, 20665
<code>\textless</code> .....	14774, 15288	<code>\textlooparrowright</code>	17677, 19978	<code>\textMundus</code> ....	19447, 20627
<code>\textlessapprox</code> ..	19274, 20560	<code>\textlozenge</code> ....	18645, 20317	<code>\textmusicalnote</code> .	18811, 18812, 18813, 20942
<code>\textlessdot</code> .....	18305, 20240	<code>\textlptr</code> .....	16335, 16336	<code>\textMVAt</code> .....	15292, 19790
<code>\textlesseqgtr</code> ...	18314, 20244	<code>\textlquill</code> .....	17408	<code>\textMVComma</code> .	15260, 19776
<code>\textlesseqqgtr</code> ..	19292, 20568	<code>\textlrcorner</code> ....	18390, 20277	<code>\textMVDivision</code> .	15266, 19779
<code>\textlessgtr</code> .....	18086, 20149	<code>\textltailm</code> 16139, 16140, 16141, 16142, 20727, 20728		<code>\textMVEight</code> ...	15284, 19788
<code>\textlessssim</code> 18076, 18077, 20145, 20838		<code>\textltailn</code> 16143, 16144, 16145, 16146, 20729, 20730		<code>\textMVFive</code> ....	15278, 19785
<code>\textLF</code> .....	14738, 15232	<code>\textltilde</code> 16118, 16119, 16120, 20720		<code>\textMVFour</code> ....	15276, 19784
<code>\textLHD</code> .....	18640, 20315	<code>\textltimes</code> .....	18270, 20225	<code>\textMVMinus</code> ...	15262, 19777
<code>\textlhd</code> ..	18239, 18240, 20213, 20864	<code>\textlyoghlig</code> ....	16128, 16129, 16130, 20723	<code>\textMVNine</code> ....	15286, 19789
<code>\texthookfour</code> ...	19403, 19405, 20981	<code>\textmacronbelow</code> 14704, 14716, 14728, 14785, 15178, 15207, 16384		<code>\textMVOne</code> ....	15270, 19781
<code>\texthooknarrow</code>	19096, 20490	<code>\textmale</code> 18733, 18734, 18735, 18736, 20347, 20917, 20918, 20919		<code>\textMVPeriod</code> ..	15264, 19778
<code>\texthooksearrow</code>	19100, 20492	<code>\textMaleMale</code> ...	18854, 20384	<code>\textMVPlus</code> ....	15258, 19775
<code>\texthookt</code> .....	15840, 15841	<code>\textManFace</code> ...	19451, 20629	<code>\textMVSeven</code> ...	15282, 19787
<code>\textlhtlongi</code> ....	16191, 16192	<code>\textmanstar</code> ....	18848, 20381	<code>\textMVSix</code> .....	15280, 19786
<code>\textlhtlongy</code> ....	16323, 16324	<code>\textmapsto</code> ....	17669, 19974	<code>\textMVThree</code> ...	15274, 19783
<code>\textlibra</code> .	18771, 18772, 20359, 20931	<code>\textmarried</code> .....	18862	<code>\textMVTwo</code> ....	15272, 19782
<code>\textlightning</code> ...	17681, 17682, 19980, 20806	<code>\textmd</code> .....	579	<code>\textMVZero</code> ....	15268, 19780
<code>\textlinferior</code> ....	17492, 19933	<code>\textmeasuredangle</code> 17866, 20055		<code>\textnabla</code> .....	17817, 20034
<code>\textlira</code> .....	17506	<code>\textmercury</code> ....	18720, 18721, 20345, 20910	<code>\textnaira</code> .....	17508
<code>\textll</code> .....	18057, 20136	<code>\textmho</code> .	17559, 17560, 19945, 20795	<code>\textnapostrophe</code> .....	15685
<code>\textllcorner</code> ....	18388, 20276	<code>\textmid</code> .....	17873, 20057	<code>\textnapprox</code> ....	17956, 17957, 20092, 20826
<code>\textLleftarrow</code> ..	17772, 20014	<code>\textMineSign</code> ...	18833, 20374	<code>\textnapproxeq</code> ..	17961, 20094
<code>\textlll</code> .....	18309, 20242	<code>\textminferior</code> ...	17494, 19934	<code>\textnasymp</code> ....	17974, 17975, 20100, 20828
<code>\textllparenthesis</code> .	19174, 20518	<code>\textminus</code> .....	14820, 17839	<code>\textnatural</code> .....	18821, 20369
<code>\textlnapprox</code> ...	19287, 20566	<code>\textminusdot</code> ...	19229, 19230, 20541, 20969	<code>\textnbackcong</code> ..	17970, 20098
<code>\textlineq</code> .....	19282, 20564	<code>\textminusinferior</code> 17470, 19922		<code>\textnbacksim</code> ...	17934, 20082
<code>\textlineqq</code> .....	18053, 20134	<code>\textminussuperior</code> 17438, 19906		<code>\textnbacksimeq</code> .	18281, 20230
<code>\textlnot</code> .....	14889, 15344	<code>\textmoo</code> .....	19172, 20517	<code>\textnBumpeq</code> ...	17979, 20102
<code>\textlnsim</code> .....	18341, 20256	<code>\textMoon</code> .....	19449, 20628	<code>\textnbumpeq</code> ...	17983, 20104
<code>\textlogicalnot</code> ...	14888, 15073, 15343, 19488	<code>\textMountain</code> ...	18880, 20392	<code>\textncirceq</code> .....	18015, 20118
<code>\textLongleftarrow</code>	19080, 20482	<code>\texttmp</code> .....	17841, 20044	<code>\textncong</code> .....	17952, 20090
<code>\textlongleftarrow</code>	19074, 20479	<code>\textMu</code> .....	3190	<code>\textncurlyeqprec</code>	18321, 20247
<code>\textLongleftrightarrow</code> .	19084, 20484	<code>\texttmu</code> .	3186, 3187, 3188, 3191, 3198, 3199, 14905, 15361, 19858	<code>\textncurlyeqsucc</code>	18325, 20249
<code>\textlongleftrightarrow</code> .	19078, 20481	<code>\textmugreek</code> ....	19761, 19859	<code>\textnDashV</code> ....	19365, 19366, 20601, 20978
<code>\textlonglegr</code> ....	16179, 16180, 16181, 19821, 20738	<code>\textmultimap</code> ...	18257, 20219	<code>\textnDashv</code> ....	19358, 19359, 20599, 20976
<code>\textLongmapsfrom</code>	19088, 20486	<code>\textmultimapboth</code>	19212, 20533	<code>\textndashV</code> 19352, 19353, 20597, 20974	
<code>\textLongmapsto</code> .	19090, 20487			<code>\textndashv</code> 18197, 18198, 20199, 20851	
<code>\textlongmapsto</code> .	19086, 20485			<code>\textnDoteq</code> ....	17993, 20108
<code>\textLongrightarrow</code> ...	19082, 20483			<code>\textndoteq</code> .....	17987, 20106

<code>\textndownmodels</code>	19370, 20603	<code>\textnlessgtr</code>	18092, 20152	<code>\textntriangleright</code>	18352, 18353, 20261, 20878
<code>\textndownvdash</code>	18203, 20201	<code>\textnlesssim</code>	18082, 20147	<code>\textntrianglerighteq</code>	18359, 18360, 20263
<code>\textne</code>	18026, 20123	<code>\textnll</code>	18059, 20137	<code>\textntriplesim</code>	17966, 20096
<code>\textNearrow</code>	17766, 20011	<code>\textnmid</code>	17875, 17876, 20058, 20817	<code>\textntwoheadleftarrow</code>	17654, 19967
<code>\textnearrow</code>	17640, 17641, 19961, 20804	<code>\textNoChemicalCleaning</code>	19192, 20524	<code>\textntwoheadrightarrow</code>	17661, 19970
<code>\textneg</code>	15073, 19488, 20640	<code>\textnormal</code>	574	<code>\textnu</code>	3187, 3189, 3193, 3194, 3195, 19762, 19860
<code>\textneptune</code>	18747, 18748, 20351, 20923	<code>\textnotbackslash</code>	18412, 20286	<code>\textnumbersign</code>	540, 14760, 15238
<code>\textneq</code>	18025, 18027, 20122, 20832	<code>\textnotin</code>	17821, 20036	<code>\textnumero</code>	17542
<code>\textneqcirc</code>	18011, 20116	<code>\textnotowner</code>	17828, 17829, 20039, 20812	<code>\textnupmodels</code>	19374, 20605
<code>\textneqdot</code>	19262, 20554	<code>\textnotperp</code>	19055, 20471	<code>\textnupvdash</code>	18208, 18209, 20203, 20854
<code>\textneqsim</code>	17943, 20086	<code>\textnotslash</code>	18409, 20285	<code>\textnVDash</code>	18236, 18237, 20212, 20863
<code>\textnequiv</code>	18032, 18033, 18034, 20125, 20834, 20835	<code>\textnoway</code>	18878, 20391	<code>\textnVdash</code>	18233, 18234, 20211, 20862
<code>\textneswarrow</code>	19094, 20489	<code>\textnparallel</code>	17880, 17881, 20060	<code>\textnvDash</code>	18229, 18230, 18231, 20210, 20860, 20861
<code>\textNeutral</code>	18860, 20387	<code>\textnprec</code>	18110, 20161	<code>\textnvdash</code>	18226, 18227, 20209, 20859
<code>\textnewtie</code>	15181, 15210, 16380	<code>\textnprecapprox</code>	19331, 20587	<code>\textnVdash</code>	18220, 20207
<code>\textnexists</code>	17810, 20031	<code>\textnpreccurlyeq</code>	18327, 20250	<code>\textNwarrow</code>	17764, 20010
<code>\textnfallingdoteq</code>	17998, 20110	<code>\textnpreceq</code>	19307, 20575	<code>\textnwardow</code>	17638, 19960
<code>\textngeq</code>	18074, 20144	<code>\textnpreceqq</code>	19319, 20581	<code>\textnwsearrow</code>	19092, 20488
<code>\textngeqq</code>	18051, 20133	<code>\textnprecslant</code>	18104, 20158	<code>\textobar</code>	19180, 19181, 20521, 20962
<code>\textngeqslant</code>	19272, 20559	<code>\textnqsubseteq</code>	18331, 20252	<code>\textobot</code>	19189, 19190, 20523, 20966
<code>\textngg</code>	18063, 20139	<code>\textnqsupseteq</code>	18333, 20253	<code>\textobslash</code>	19183, 19184, 19185, 19186, 20522, 20963, 20964, 20965
<code>\textngtr</code>	18069, 20142	<code>\textnRightarrow</code>	17745, 20003	<code>\textObullseye</code>	16278, 20763
<code>\textngtrapprox</code>	19280, 20563	<code>\textnrightarrow</code>	17650, 19965	<code>\textodiv</code>	19237, 20544
<code>\textngtrless</code>	18090, 20151	<code>\textnrisingdoteq</code>	18003, 20112	<code>\textodot</code>	18170, 18171, 20189, 20844
<code>\textngtrsim</code>	18084, 20148	<code>\textnrleg</code>	15834, 15836, 20685	<code>\textogonek</code>	14752, 15171, 15200, 16361
<code>\textnhateq</code>	18021, 20120	<code>\textnsim</code>	17939, 20084	<code>\textogreaterthan</code>	19197, 19198, 20526, 20968
<code>\textni</code>	17825, 17826, 20038, 20811	<code>\textnsimeq</code>	17947, 20088	<code>\textohm</code>	17557
<code>\textNibRight</code>	18916, 20406	<code>\textnsqsubset</code>	18140, 20176	<code>\textoiint</code>	17907, 20071
<code>\textNibSolidRight</code>	18918, 20407	<code>\textnsqsubseq</code>	18148, 20180	<code>\textoinferior</code>	17482, 19928
<code>\textniepsilon</code>	16064, 16065, 19809, 20706	<code>\textnsqsupset</code>	18144, 20178	<code>\textoint</code>	17904, 17905, 20070, 20821
<code>\textniota</code>	16113, 16114, 19817, 20719	<code>\textnsqsupseteq</code>	18152, 20182	<code>\textointclockwise</code>	17910, 20072
<code>\textnineinferior</code>	17466, 19920	<code>\textnSubset</code>	18291, 20234	<code>\textointctrclockwise</code>	17912, 20073
<code>\textninesuperior</code>	17434, 19904	<code>\textnsubset</code>	18118, 20165	<code>\texttolessthan</code>	19194, 19195, 20525, 20967
<code>\textninferior</code>	17496, 19935	<code>\textnsubseq</code>	18126, 20169		
<code>\textnphi</code>	16166, 19820	<code>\textnsubseqeq</code>	19343, 20593		
<code>\textniupsilon</code>	16224, 16225, 19826, 20747	<code>\textnsucc</code>	18112, 20162		
<code>\textnLeftarrow</code>	17740, 20001	<code>\textnsuccapprox</code>	19335, 20589		
<code>\textnleftarrow</code>	17648, 19964	<code>\textnsucccurlyeq</code>	18329, 20251		
<code>\textnLeftrightarrow</code>	17742, 20002	<code>\textnsucceq</code>	19311, 20577		
<code>\textnleftrightarrow</code>	17679, 19979	<code>\textnsucceqq</code>	19323, 20583		
<code>\textnleq</code>	18072, 20143	<code>\textnsuccsim</code>	18108, 20160		
<code>\textnleqq</code>	18047, 20131	<code>\textnsuperior</code>	17446, 19910		
<code>\textnleqslant</code>	19268, 20557	<code>\textnSupset</code>	18295, 20236		
<code>\textnless</code>	18067, 20141	<code>\textnsubset</code>	18120, 20166		
<code>\textnlessapprox</code>	19276, 20561	<code>\textnsubseqeq</code>	18128, 20170		
		<code>\textnsubseqeqq</code>	19347, 20595		
		<code>\textntriangleleft</code>	18349, 18350, 20260, 20877		
		<code>\textntrianglelefteq</code>	18356, 20262		

<code>\textOmega</code> . . . . .	19749, 19846	<code>\textPencilRight</code> .	18912, 20404	<code>\textprecsim</code> . . .	18345, 20258
<code>\textomega</code> . .	3185, 3186, 3199, 19773, 19871	<code>\textPencilRightDown</code> . .	18910, 20403	<code>\textprecssim</code> . . . . .	18102, 20157
<code>\textomicron</code> .	3186, 3187, 3190, 3192, 3193, 3194, 3195, 3196, 3197	<code>\textPencilRightUp</code>	18914, 20405	<code>\textprime</code> . . . . .	17390, 19890
<code>\textominus</code>	18161, 18162, 20186, 20841	<code>\textpentagon</code> . . .	19384, 20609	<code>\textprimstress</code> . .	16343, 16344
<code>\textoneeighth</code> . . . . .	17610	<code>\textpercent</code> .	542, 14764, 15244	<code>\textprod</code> . . . . .	17833, 20041
<code>\textonefifth</code> . . . . .	17598	<code>\textperiodcentered</code> . . . .	14909, 15077, 15366, 15367, 15368, 19492, 20662, 20663	<code>\textpropto</code>	17859, 17860, 20052, 20813
<code>\textonehalf</code> . . . . .	14922, 15381	<code>\textperp</code> . . . . .	19053, 20470	<code>\textPsi</code> . . . . .	19748, 19845
<code>\textoneinferior</code> . .	17450, 19912	<code>\textpertenthousand</code> . . . .	17388	<code>\textpsi</code> . . . . .	19772, 19870
<code>\textoneninth</code> . . . . .	17590	<code>\textperthousand</code> .	14822, 17386	<code>\textPUaolig</code>	19410, 19411, 20983
<code>\textonequarter</code> . .	14920, 15379	<code>\textpeseta</code> . . . . .	17510	<code>\textPUdblig</code> . . . .	16012, 16013, 20690
<code>\textoneseventh</code> . . . . .	17588	<code>\textpeso</code> . . . . .	17530	<code>\textPUfemale</code> . . .	18723, 18724, 18725, 18726, 18727, 18728, 20911, 20912, 20913, 20914, 20915
<code>\textonesixth</code> . . . . .	17606	<code>\textPhi</code> . . . . .	19746, 19844	<code>\textPUheng</code>	19401, 19402, 20980
<code>\textonesuperior</code> .	14913, 15372, 19794	<code>\textphi</code>	3192, 3196, 3197, 19770, 19868	<code>\textPUhookfour</code>	19404, 19405, 20981
<code>\textonetenth</code> . . . . .	17592	<code>\textphiinferior</code> . .	17017, 19881	<code>\textPUnrleg</code> . . . .	15835, 15836, 20685
<code>\textonethird</code> . . . . .	17594	<code>\textPhone</code>	18666, 18667, 20326, 20894	<code>\textPUqlig</code>	16015, 16016, 20691
<code>\textoo</code> . . . . .	19413, 20614	<code>\textPhoneHandset</code>	18896, 20397	<code>\textPUrevscr</code> . . .	16998, 16999, 20775
<code>\textopenbullet</code> . .	18651, 20320	<code>\textPi</code>	3189, 3191, 19743, 19841	<code>\textPURhooka</code> . .	17029, 17030, 20776
<code>\textopencorner</code> . .	16373, 16374	<code>\textpi</code> . .	3186, 3194, 3195, 3196, 3197, 19764, 19862	<code>\textPURhooko</code> . .	17034, 17035, 20777
<code>\textopeno</code>	16039, 16040, 16041, 19805, 20700	<code>\textpinferior</code> . . . .	17498, 19936	<code>\textPURhookepsilon</code> . . .	17038, 17039, 20778
<code>\textoplus</code>	18158, 18159, 20185, 20840	<code>\textpipe</code> .	15855, 15856, 15857, 20686	<code>\textPURhookopeno</code> . . . .	17042, 17043, 20779
<code>\textordfeminine</code> .	14883, 15338	<code>\textpipevar</code> . . . .	15857, 20686	<code>\textPUscf</code> .	19407, 19408, 20982
<code>\textordmasculine</code>	14915, 15374	<code>\textpiscis</code>	18786, 18787, 20364, 20936	<code>\textPUscK</code>	16989, 16990, 20772
<code>\TextOrMath</code> . . . . .	619	<code>\textpitchfork</code> . . .	18303, 20239	<code>\textPUscm</code>	16992, 16993, 20773
<code>\textoslash</code>	18167, 18168, 20188, 20843	<code>\textPlane</code> . . . . .	18900, 20399	<code>\textPUscp</code>	16995, 16996, 20774
<code>\textotimes</code>	18164, 18165, 20187, 20842	<code>\textPlus</code> . . . . .	18933, 20414	<code>\textPUuncrfemale</code>	18866, 18867, 20946
<code>\textovee</code> .	17890, 17891, 20064, 20819	<code>\textPlusCenterOpen</code> . .	18937, 20416	<code>\textqplig</code> .	16014, 16016, 20691
<code>\textowedge</code>	17885, 17886, 20062, 20818	<code>\textplusinferior</code> .	17468, 19921	<code>\textquarternote</code> .	18810, 20365
<code>\textparagraph</code> . . . .	546, 14907, 15363, 15364, 20661	<code>\textplusminus</code> . .	14897, 15076, 15352, 19491	<code>\textquestiondown</code> . .	757, 14926, 15385
<code>\textparallel</code> . . . .	17878, 20059	<code>\textPlusOutline</code> .	18931, 20413	<code>\textquotedbl</code> . . .	14758, 15236
<code>\textparenleft</code> .	760, 761, 14768, 15252	<code>\textplussuperior</code> .	17436, 19905	<code>\textquotedblleft</code> .	14826, 15066, 17366, 19481
<code>\textparenleftinferior</code> . . .	17474, 19924	<code>\textPlusThinCenterOpen</code>	18935, 20415	<code>\textquotedblright</code>	14828, 17368
<code>\textparenleftsuperior</code> . .	17442, 19908	<code>\textpluto</code>	18750, 18751, 20352, 20924	<code>\textquoteleft</code> . . .	14830, 15068, 17360, 19483
<code>\textparenright</code> . .	14770, 15254	<code>\textpm</code> . . .	15076, 19491, 20643	<code>\textquoteright</code> . .	14832, 17362
<code>\textparenrightinferior</code> . .	17476, 19925	<code>\textpointer</code> . . . . .	17791, 20022	<code>\textquotesingle</code> . . . . .	15250
<code>\textparenrightsuperior</code> .	17444, 19909	<code>\textprec</code> . . . . .	18094, 20153	<code>\textRadioactivity</code>	18693, 18694, 20335, 20903
<code>\textpartial</code> . . . . .	17806, 20029	<code>\textprecapprox</code> . .	19329, 20586	<code>\textRain</code> . . . . .	18876, 20390
<code>\textPeace</code> . . . . .	18905, 20401	<code>\textpreccurlyeq</code> .	18098, 20155	<code>\textraiseglotstop</code>	16332, 16333
		<code>\textpreceq</code> . . . . .	19305, 20574		
		<code>\textpreceqq</code> . . . .	19317, 20580		
		<code>\textprecnapprox</code> .	19337, 20590		
		<code>\textprecneq</code> . . . .	19313, 20578		
		<code>\textprecneqq</code> . . .	19325, 20584		

<code>\textrangle</code> . . . . .	18400, 20282	<code>\textRightarrow</code> .	17753, 17754, 20006, 20807	<code>\textrtailz</code>	16244, 16245, 16246, 20754
<code>\textrbrackdbl</code> . . .	19066, 19067, 20476, 20957	<code>\textrightarrow</code> . . .	2188, 17626, 17627, 17628, 19956, 20800, 20801	<code>\textrtimes</code> . . . . .	18273, 20226
<code>\textrcurvearrowdown</code> . .	19123, 19124, 19125, 20500, 20960, 20961	<code>\textrightarrowtail</code>	17667, 19973	<code>\textsagittarius</code> . .	18777, 18778, 20361, 20933
<code>\textrcurvearrowleft</code> . . .	19127, 20501	<code>\textrightarrowtriangle</code> .	17798, 20025	<code>\textsaturn</code>	18741, 18742, 20349, 20921
<code>\textrcurvearrowne</code>	19107, 20495	<code>\textrightbarharpoon</code> . . .	19161, 20513	<code>\textsc</code> . . . . .	581
<code>\textrcurvearrowright</code> . .	19130, 20502	<code>\textRIGHTCIRCLE</code> . . .	18649, 20319	<code>\textsc a</code> . . . . .	16980, 16981
<code>\textrcurvearrowse</code>	19116, 20498	<code>\textrightharpoondown</code> .	17708, 19989	<code>\textsc b</code> . . . . .	16279, 16280
<code>\textRe</code> . . . . .	17549, 19944	<code>\textrightharpoonup</code> . . .	17705, 19988	<code>\textsc d</code> . . . . .	16983, 19872
<code>\textrecipe</code> . . . . .	17551	<code>\textrightleftarrows</code>	17717, 19992	<code>\textsc e</code> . . . . .	16984, 16985
<code>\textRectangle</code> . . .	19049, 20468	<code>\textrightleftharpoon</code> . . .	19134, 20504	<code>\textsc f</code> . . .	19406, 19408, 20982
<code>\textRectangleBold</code>	19051, 20469	<code>\textrightleftharpoons</code> . .	17737, 20000	<code>\textsc g</code> . . .	16088, 16089, 19813
<code>\textRectangleThin</code>	19047, 20467	<code>\textrightmoon</code> . .	18718, 20344	<code>\textsch</code> . . . . .	16287, 16288
<code>\textrecycle</code> 18825, 18826, 20371, 20943		<code>\textrightrightarrows</code> . . .	17729, 19997	<code>\textschwa</code> .	16056, 16057, 19808
<code>\textreferencemark</code> . . . . .	17402	<code>\textrightrightharpoons</code> .	19149, 20509	<code>\textschwainferior</code>	17486, 19930
<code>\textregistered</code> . . .	14891, 15346	<code>\textrightslice</code> . . .	19303, 20573	<code>\textsci</code> . . .	16115, 16116, 19818
<code>\textRequest</code> . . . .	18430, 20293	<code>\textrightsquigarrow</code> . . .	17778, 20017	<code>\textScissorHollowRight</code>	18894, 20396
<code>\textrevapostrophe</code>	16329, 16330	<code>\textrightthreetimes</code> . . .	18277, 20228	<code>\textScissorRight</code> .	18888, 18889, 18890, 20394, 20950, 20951
<code>\textrevc</code> . . . . .	17618	<code>\textrinferior</code> . . . .	17005, 19875	<code>\textScissorRightBrokenBottom</code>	. . . . 18884, 18885, 18886, 20948, 20949
<code>\textrevE</code> . . . . .	15810	<code>\textring</code> .	14699, 14711, 14723, 14754, 15161, 15190, 16359	<code>\textScissorRightBrokenTop</code> . .	. . . . 18892, 20395
<code>\textreve</code> . .	16053, 16054, 19807	<code>\textringlow</code>	15174, 15203, 16368	<code>\textscj</code> . . . . .	16986, 16987
<code>\textrepsilon</code> . .	16067, 16068, 19810	<code>\textriota</code> . . . . .	17562, 19946	<code>\textsc k</code> . . .	16988, 16990, 20772
<code>\textrevglotstop</code> .	16264, 16265, 16266, 19834, 20759	<code>\textringdot</code> . .	18001, 20111	<code>\textsc l</code> . . . . .	16295, 16296
<code>\textrevscr</code>	16997, 16999, 20775	<code>\textrm</code> . . . . .	575	<code>\textsc m</code> . .	16991, 16993, 20773
<code>\textrevyogh</code> . . . .	15845, 15846	<code>\textrptr</code> . . . . .	16338, 16339	<code>\textsc n</code> . . .	16151, 16152, 19819
<code>\textRewind</code> . . . .	18635, 20313	<code>\textrquill</code> . . . . .	17410	<code>\textsc oelig</code> . . . . .	16158, 16159
<code>\textRewindToIndex</code> . . .	18442, 20298	<code>\textRightarrow</code> .	17774, 20015	<code>\textscorpio</code>	18774, 18775, 20360, 20932
<code>\textRHD</code> . . . . .	18626, 20310	<code>\textrrparenthesis</code>	19176, 20519	<code>\textsc p</code> . . .	16994, 16996, 20774
<code>\textrhd</code> .	18242, 18243, 20214, 20865	<code>\textrtaild</code>	16045, 16046, 16047, 19806, 20702	<code>\textscr</code> . . .	16193, 16194, 19822
<code>\textrho</code>	3190, 3191, 3196, 3197, 3198, 3199, 19765, 19863	<code>\textrtaill</code>	16125, 16126, 16127, 20722	<code>\textscripta</code>	16026, 16027, 16028, 19804, 20695
<code>\textrho inferior</code> . .	17015, 19880	<code>\textrtailn</code>	16148, 16149, 16150, 20731	<code>\textscriptg</code>	16085, 16086, 16087, 19812, 20711
<code>\textrhooka</code>	17028, 17030, 20776	<code>\textrtailr</code>	16182, 16183, 16184, 20739	<code>\textscriptv</code>	16227, 16228, 19827
<code>\textrhooke</code>	17033, 17035, 20777	<code>\textrtails</code>	16198, 16199, 16200, 20742	<code>\textscu</code> . . .	17000, 17001, 19873
<code>\textrhookepsilon</code>	17037, 17039, 20778	<code>\textrtailt</code>	16216, 16217, 16218, 20745	<code>\textscy</code> . . .	16241, 16242, 19831
<code>\textrhooknearrow</code>	19098, 20491			<code>\textSearrow</code> . . . .	17768, 20012
<code>\textrhookopeno</code> .	17041, 17043, 20779			<code>\textsearrow</code> . . . .	17643, 17644, 19962, 20805
<code>\textrhookrepsilon</code> . . .	16070, 16071, 16072, 19811, 20707			<code>\textSech</code> . . . . .	19443, 20625
<code>\textrhookschwa</code> .	16059, 16060, 16061, 20705			<code>\textsecond</code> . . . . .	17392, 19891
<code>\textrhookswarrow</code>	19102, 20493			<code>\textsecstress</code> . . . .	16346, 16347
				<code>\textsection</code>	14877, 15330, 15331, 15332, 20659, 20660
				<code>\textSePa</code> . . . . .	19429, 20619
				<code>\textservicemark</code> . . . . .	17553

<code>\textsetminusminus</code> . . .	14780, 17849, 20048	<code>\textsqcup</code> . . . . .	18156, 20184	<code>\textsucceq</code> . . . . .	19309, 20576
<code>\textsevenighths</code> . . . . .	17616	<code>\textsqdoublecap</code> .	19241, 19242, 20546, 20970	<code>\textsucceqq</code> . . . .	19321, 20582
<code>\textseveninferior</code> .	17462, 19918	<code>\textsqdoublecup</code> .	19246, 19247, 20548, 20971	<code>\textsuccapprox</code> .	19339, 20591
<code>\textsevensuperior</code> .	17430, 19902	<code>\textsqsubset</code> . . . .	18138, 20175	<code>\textsuccneq</code> . . . .	19315, 20579
<code>\textsf</code> . . . . .	576, 13144, 13147	<code>\textsqsubseq</code> . .	18146, 20179	<code>\textsuccneqq</code> . . .	19327, 20585
<code>\textsharp</code> . . . . .	18823, 20370	<code>\textsqsubsetneq</code> .	18335, 18336, 20254, 20875	<code>\textsuccnsim</code> . . .	18347, 20259
<code>\textshuffle</code> . . . . .	19214, 20534	<code>\textsqsupset</code> . . . .	18142, 20177	<code>\textsuccsim</code> . . . .	18106, 20159
<code>\textSigma</code> .	3188, 19744, 19842	<code>\textsqsupseteq</code> . .	18150, 20181	<code>\textsum</code> . . . . .	17837, 20043
<code>\textsigma</code> . . .	3185, 3186, 3200, 19767, 19865	<code>\textsqsupsetneq</code> .	18338, 18339, 20255, 20876	<code>\textsun</code> .	18713, 18714, 20342, 20909
<code>\textsim</code> .	17929, 17930, 20080, 20824	<code>\textSquareCastShadowBottomRight</code> . . . . .	19040, 20464	<code>\textSunCloud</code> . . .	18874, 20389
<code>\textsimeq</code> . . . . .	17945, 20087	<code>\textSquareCastShadowTopRight</code> . . . . .	19043, 20465	<code>\textSunshineOpenCircled</code> .	19009, 20451
<code>\textsinferior</code> . . . .	17500, 19937	<code>\textssqaredots</code> . .	17922, 20077	<code>\textSupset</code> . . . . .	18293, 20235
<code>\textSixFlowerAlternate</code> .	19001, 20447	<code>\textSquareShadowBottomRight</code> . . . . .	19034, 20462	<code>\textsupset</code> . . . . .	18116, 20164
<code>\textSixFlowerAltPetal</code> .	19011, 20452	<code>\textSquareTopRight</code> . . .	19037, 20463	<code>\textsupseteq</code> . . . .	18124, 20168
<code>\textSixFlowerOpenCenter</code> . . . . .	18997, 20445	<code>\textsslash</code> .	19381, 19382, 20608, 20979	<code>\textsupseteqq</code> . . .	19345, 20594
<code>\textSixFlowerPetalRemoved</code> . . . . .	18994, 20444	<code>\textstar</code> . . . . .	18263, 20222	<code>\textsurd</code> . . . . .	17857, 20051
<code>\textsixinferior</code> . .	17460, 19917	<code>\textsterling</code> . . . .	14869, 15319, 15320, 15321, 20656, 20657	<code>\textSwarrow</code> . . . .	17770, 20013
<code>\textSixStar</code> . . . .	18984, 20439	<code>\textstmarydbaro</code> .	18406, 18407, 20881	<code>\textswarrow</code> . . . .	17646, 19963
<code>\textsixsuperior</code> . .	17428, 19901	<code>\textstretchc</code> . . . .	16270, 16271, 16272, 16273, 20760, 20761	<code>\TextSymbolUnavailable</code> .	14730, 14731, 14733
<code>\textSixteenStarLight</code> . .	18992, 20443	<code>\textstretchcvar</code> . .	16273, 20761	<code>\textTape</code> . . . . .	18898, 20398
<code>\textsixteenthnote</code> .	18817, 20367	<code>\textsubbreve</code> . . .	15145, 15176, 15205, 17125, 17127	<code>\texttau</code> .	3187, 3191, 3193, 3194, 3195, 19768, 19866
<code>\textsl</code> . . . . .	582	<code>\textsubcircum</code> . .	15142, 15143, 15175, 15204, 17077, 17079, 17093, 17095, 17153, 17155, 17181, 17183, 17237, 17239, 17249, 17251	<code>\texttaurus</code> .	18756, 18757, 20354, 20926
<code>\textslashc</code> .	16018, 16019, 16021, 19803, 20692, 20693	<code>\textsubring</code> . . . .	15135, 15136, 15174, 15203, 17045, 17047	<code>\texttctclig</code> . . . . .	16320, 16321
<code>\textslashdiv</code> . . . .	19390, 20612	<code>\textSubset</code> . . . . .	18289, 20233	<code>\textTent</code> . . . . .	18882, 20393
<code>\textsmallin</code> . . . . .	17823, 20037	<code>\textsubset</code> . . . . .	18114, 20163	<code>\texttेशlig</code> .	16316, 16317, 16318, 20767
<code>\textsmallowns</code> . .	17831, 20040	<code>\textsubseq</code> . . . .	18122, 20167	<code>\texttherefore</code> . . .	17914, 17915, 20074
<code>\textsmile</code> . . . . .	18394, 20279	<code>\textsubseteq</code> . . . .	19341, 20592	<code>\textTheta</code> .	3199, 19740, 19838
<code>\textsmiley</code> .	18708, 18709, 20340, 20908	<code>\textsubseteqq</code> . . .	18130, 20171	<code>\texttheta</code> . . . . .	19757, 19854
<code>\textSnowflake</code> . .	19015, 20454	<code>\textsubtilde</code> . . . .	15146, 15147, 15177, 15206, 17097, 17099, 17129, 17131, 17245, 17247	<code>\textthird</code> . . . . .	17394, 19892
<code>\textSnowflakeChevron</code> .	19013, 20453	<code>\textsubumlaut</code> . .	15133, 15134, 15173, 15202, 17241, 17243	<code>\textThorn</code> .	14990, 15450, 19795
<code>\textSnowflakeChevronBold</code> . . . . .	19017, 20455	<code>\textsucc</code> . . . . .	18096, 20154	<code>\textthorn</code> .	15059, 15519, 15521, 19796
<code>\textSoccerBall</code> . .	18871, 18872, 20947	<code>\textsuccapprox</code> . .	19333, 20588	<code>\textthreeeighths</code> . . . . .	17612
<code>\textspadesuitblack</code> .	2187, 18789, 18790, 20937	<code>\textsucccurlyeq</code> .	18100, 20156	<code>\textthreefifths</code> . . . . .	17602
<code>\textspadesuitwhite</code> . . . . .	18802			<code>\textthreeinferior</code> .	17454, 19914
<code>\textSparkle</code> . . . .	19019, 20456			<code>\textthreequarters</code> .	14924, 15383
<code>\textSparkleBold</code> .	19021, 20457			<code>\textthreesuperior</code> .	14901, 15356, 19793
<code>\textSphericalangle</code> .	17868, 17869, 17870, 17871, 20056, 20814, 20815, 20816			<code>\texttie</code> . . .	15180, 15209, 16386
<code>\textsqcap</code> . . . . .	18154, 20183			<code>\texttilde</code> .	14697, 14709, 14721, 14756, 15159, 15188, 16363

<code>\texttrademark</code> ..	14836, 17555	<code>\textudots</code> .....	18366, 20266	<code>\textvdash</code>	18191, 18192, 20197, 20849
<code>\texttriangle</code> ....	17815, 20033	<code>\textuinferior</code> ....	17007, 19876	<code>\textvdotdot</code> ....	17920, 20076
<code>\texttriangleeq</code> ..	18023, 20121	<code>\textulcorner</code> ....	18384, 20274	<code>\textvdots</code> .....	18362, 20264
<code>\texttriangleleft</code> ..	18638, 20314	<code>\textuncrfemale</code> ..	18865, 18867, 20946	<code>\textvee</code> .....	17888, 20063
<code>\texttriangleright</code> ..	18624, 20309	<code>\textunderscore</code>	545, 4787, 4788, 4790, 14784, 15298, 15299, 20654	<code>\textveebar</code> .....	18259, 20220
<code>\texttriplesim</code> ...	17963, 17964, 20095, 20827	<code>\textunlhd</code>	18245, 18246, 18247, 20215, 20866, 20867	<code>\textveedot</code> .....	19057, 20472
<code>\textTslash</code> .....	15745	<code>\textunrhd</code>	18249, 18250, 18251, 20216, 20868, 20869	<code>\textveedoublebar</code>	19258, 20552
<code>\texttslash</code> .....	15747	<code>\textup</code> .....	583	<code>\textvline</code> ....	15309, 20655
<code>\texttslig</code> .....	16314, 16315	<code>\textUParrow</code> ...	18613, 18614, 20306, 20887	<code>\textvibyi</code> .....	16207, 16208
<code>\texttt</code> .....	577	<code>\textUparrow</code> ....	17750, 20005	<code>\textvibyy</code> .....	16326, 16327
<code>\textTumbler</code> ....	18404, 20284	<code>\textUpdownarrow</code>	17762, 20009	<code>\textVier</code> .....	19439, 20623
<code>\textturna</code>	16022, 16023, 16024, 20694	<code>\textupdownarrow</code> .	2190, 17636, 19959	<code>\textvinferior</code> ....	17009, 19877
<code>\textturnh</code>	16097, 16098, 16099, 16100, 20713, 20714	<code>\textupdownarrows</code>	17720, 19993	<code>\textViPa</code> .....	19425, 20617
<code>\textturnk</code>	16292, 16293, 16294, 20765	<code>\textupdownharpoonleftright</code> ..	..... 19140, 20506	<code>\textvirgo</code>	18768, 18769, 20358, 20930
<code>\textturnlongleg</code> .	16172, 16173, 16174, 20736	<code>\textupdownharpoonrightleft</code> ..	..... 19137, 20505	<code>\textvisiblespace</code> .....	18446
<code>\textturnm</code>	16131, 16132, 16133, 16134, 20724, 20725	<code>\textupdownharpoons</code> ..	19167, 20515	<code>\textVvdash</code> ....	18218, 20206
<code>\textturnmleg</code> ..	16136, 16137, 16138, 20726	<code>\textupharpoonleft</code>	17702, 19987	<code>\textwasylozenge</code> .	18376, 20271
<code>\textturnr</code>	16167, 16168, 16169, 16170, 20734, 20735	<code>\textupharpoonright</code> ...	17699, 19986	<code>\textwedge</code> .....	17883, 20061
<code>\textturnrrtail</code> ...	16176, 16177, 16178, 20737	<code>\textupmodels</code> ...	19372, 20604	<code>\textwedgedot</code> ...	19059, 20473
<code>\textturnsck</code> ....	16294, 20765	<code>\textUpsilon</code> ....	19745, 19843	<code>\textWheelchair</code> ..	18828, 20372
<code>\textturnscripta</code> ..	16030, 16031, 16032, 16033, 20696, 20697	<code>\textupsilon</code> ..	3186, 3194, 3195, 3197, 19769, 19867	<code>\textWomanFace</code> .	19453, 19454, 20630, 20986
<code>\textturnt</code>	16212, 16213, 16214, 20744	<code>\textupspoon</code> ....	19376, 20606	<code>\textwon</code> .....	17512
<code>\textturnv</code>	16229, 16230, 16231, 16232, 19828, 20748, 20749	<code>\textupstep</code> ....	19395, 19396	<code>\textwp</code> .....	17547, 19943
<code>\textturnw</code>	16233, 16234, 16235, 16236, 19829, 20750, 20751	<code>\textupparrows</code> .	17727, 19996	<code>\textwr</code> ..	17936, 17937, 20083, 20825
<code>\textturny</code>	16237, 16238, 16239, 16240, 19830, 20752, 20753	<code>\textupparpoons</code>	19146, 20508	<code>\textWritingHand</code>	18907, 18908, 20402, 20953
<code>\textTwelveStar</code> ..	18990, 20442	<code>\texturanus</code>	18744, 18745, 20350, 20922	<code>\textwynn</code> .....	15852, 15853
<code>\texttwofifths</code> .....	17600	<code>\texturcorner</code> ....	18386, 20275	<code>\textXi</code> .....	19742, 19840
<code>\texttwoheaddownarrow</code>	17663, 19971	<code>\textValve</code> .....	19210, 20532	<code>\textxi</code> .....	3185, 19763, 19861
<code>\texttwoheadleftarrow</code> ..	17652, 19966	<code>\textvarhexagon</code> .	19386, 20610	<code>\textxinferior</code> ....	17484, 19929
<code>\texttwoheadrightarrow</code> .	17659, 19969	<code>\textvarobar</code> ....	19181, 20962	<code>\textXSolid</code> .....	18925, 20410
<code>\texttwoheaduparrow</code> ..	17656, 19968	<code>\textvarsigma</code>	3190, 3196, 3197, 19766, 19864	<code>\textXSolidBold</code> .	18927, 20411
<code>\texttwoinferior</code> ..	17452, 19913	<code>\textVDash</code>	18223, 18224, 20208, 20858	<code>\textXSolidBrush</code>	18929, 20412
<code>\texttwoonotes</code> ...	18815, 20366	<code>\textVdash</code>	18215, 18216, 20205, 20857	<code>\textxswup</code> .....	18836, 20945
<code>\texttwosuperior</code> .	14899, 15354, 19792	<code>\textvDash</code>	18211, 18212, 18213, 20204, 20855, 20856	<code>\texttyen</code> .....	14873, 15325
<code>\texttwothirds</code> .....	17596			<code>\textYinYang</code> ...	18700, 18701, 18702, 18703, 20338, 20904, 20905, 20906
				<code>\textyogh</code> .	16251, 16252, 19832
				<code>\textzeroinferior</code> .	17448, 19911
				<code>\textzerosuperior</code> .	17420, 19897
				<code>\textzer thirds</code> .....	17620
				<code>\textzeta</code> .....	19755, 19852
				<code>\textZwdr</code> .....	19445, 20626
				<code>\textZwPa</code> .....	19431, 20620
				<code>\TH</code> .	14988, 14989, 15448, 15449
				<code>\th</code> .	15057, 15058, 15519, 15520
				<code>\thaa</code> .....	19650
				<code>\thanks</code> .....	6441

<code>\thebookmark@seq@number</code> ..	<code>\toclevel@chapter</code> .....	3408	5131, 14600, 14605, 14668, 14673
..... 14286	<code>\toclevel@figure</code> .....	3414	
<code>\thefootnote</code> .....	<code>\toclevel@paragraph</code> .....	3412	<code>\TwelveStar</code> .....
7300, 7508	<code>\toclevel@part</code> .....	3406	18989, 20442
<code>\theHchapter</code> .....	<code>\toclevel@section</code> .....	3409	<code>\twoheaddownarrow</code> ...
6963	<code>\toclevel@subparagraph</code> ..	3413	17662, 19971
<code>\theHequation</code> .	<code>\toclevel@subsection</code> ....	3410	<code>\twoheadleftarrow</code> ..
7196, 7219, 7225	<code>\toclevel@subsubsection</code> ..	3411	17651, 19966
<code>\theHfootnote</code> .	<code>\toclevel@table</code> .....	3415	<code>\twoheadrightarrow</code> ..
7276, 7277, 7279	<code>\tocparagraph</code> .....	1330	17658, 19969
<code>\theHHfootnote</code> .....	<code>\tocpart</code> .....	1324	<code>\twoheaduparrow</code> .
7282	<code>\tocsection</code> .....	1327	17655, 19968
<code>\theHHmpfootnote</code> .....	<code>\tocsubsection</code> .....	1328	<code>\twoinferior</code> .....
7282	<code>\tocsubsubsection</code> .....	1329	19913
<code>\theHpage</code> .....	<code>\toks</code> ..	8439, 8440, 8442, 14600, 14605, 14668, 14673	<code>\twonotes</code> .....
7880	<code>\toks@</code> .	171, 208, 962, 985, 988, 990, 3283, 3284, 3286, 3877, 3881, 3882, 3890, 4344, 4345, 4544, 4546, 5166, 5171, 5177, 5183, 5184, 5187, 5287, 5292, 5296, 5300, 6613, 6615, 6701, 6703, 6760, 6772, 7076, 7081, 7373, 7376, 8179, 8180, 8404, 8409, 8411, 8414, 14599, 14605, 14667, 14673	<code>\twosuperior</code> .....
<code>\theHparentequation</code> ..	<code>\top</code> .....	18199, 20200	19792
7219, 7225	<code>\topmargin</code> .....	7939	<code>\TX@endtabularx</code> ..
<code>\theHsection</code> .....	<code>\triangle</code> .....	17814, 20033	7366, 7373, 7379
6961	<code>\triangleleft</code> .....	18022, 20121	
<code>\theHsubequation</code> .....	<code>\trianglelefteq</code> .....	18637, 20314	
7196	<code>\trianglelefteq</code> ...	18247, 20867	
<code>\theHy@tempcnt</code> ...	<code>\triangleright</code> .....	18623, 20309	
4903, 4911, 4918	<code>\trianglerighteq</code> ..	18251, 20869	
<code>\thempfn</code> ..	<code>\triplesim</code> .....	17962, 20095	
7289, 7395, 7488, 7501	<code>\tryhyper@link</code> ....	4997, 4999	
<code>\theoremautorefname</code> ..	<code>\ttfamily</code> .....	587	
2979, 2997, 3015, 3033, 3051, 3069, 3087, 3125, 3145, 3163, 3181, 3199, 3217, 3235, 3253, 3271, 8679	<code>\ttl@b</code> .....	7087, 7092	
<code>\thepage</code> ..	<code>\ttl@Hy@PatchSaveWrite</code> .	7070, 7074	
2207, 5023, 6492, 6518, 6533, 7773, 7876, 7924, 8028, 8158, 8300, 8317, 8330, 8334, 8346, 8431, 8451, 8468, 8600	<code>\ttl@Hy@refstepcounter</code> ..	7086	
<code>\therefore</code> .....	<code>\ttl@Hy@saveanchor</code> ..	7065, 7089	
17913, 20074	<code>\ttl@Hy@SavedCurrentHref</code> ..	7069, 7080	
<code>\Theta</code> .....	<code>\ttl@Hy@steplink</code> .....	7063	
19838	<code>\ttl@savewrite</code> .....	7076, 7078	
<code>\theta</code> .....	<code>\Tumbler</code> .....	18403, 20284	
19854	<code>\turnv</code> .....	19828	
<code>\third</code> .....	<code>\turnw</code> .....	19829	
17393, 19892	<code>\turny</code> .....	19830	
<code>\thispdfpagelabel</code> .....	<code>\tw@</code> ...	4536, 5110, 5116, 5117, 5118, 5123, 5129, 5130,	
6497			
<code>\ThisShouldNotHappen</code> ..			
13867			
<code>\Thorn</code> ...			
14988, 15448, 19795			
<code>\thorn</code> ...			
15057, 15519, 19796			
<code>\threeinferior</code> .....			
19914			
<code>\threesuperior</code> .....			
19793			
<code>\tildel</code> .....			
16120, 20720			
<code>\times</code> .....			
20641			
<code>\tinferior</code> .....			
19938			
<code>\tiny</code> .....			
605			
<code>\title</code> .....			
6395, 6397			
<code>\tl</code> .....			
357, 358, 359, 2328, 4280, 5065, 5078, 8087, 8089, 8103, 8105, 8120, 8122, 8136, 8138			
<code>\TMP@EnsureCode</code> .....			
.. 4649, 4656, 4657, 4658, 4659, 4660, 4661, 4662, 4663, 4664, 4665, 4666, 4667, 4668, 4669, 4670, 4671, 4672, 4673, 4674, 4675, 4676, 4677, 4678, 4679, 4680, 4681, 4682			
<code>\tocappendix</code> .....			
1326			
<code>\tocchapter</code> .....			
1325			

$\backslash$ updownarrows .. 17719, 19993	$\backslash$ Valve .. 19209, 20532	$\backslash$ Virgo .. 18769, 20930
$\backslash$ updownharpoonleftright 19139, 20506	$\backslash$ vara .. 16028, 20695	$\backslash$ virgo .. 18767, 20358
$\backslash$ updownharpoonrightleft 19136, 20505	$\backslash$ varangle .. 17869, 20814	$\backslash$ vod .... 16091, 16093, 20712
$\backslash$ updownharpoons 19166, 20515	$\backslash$ varbigcirc .. 18657, 20893	$\backslash$ voffset .. 7938
$\backslash$ upharpoonleft .. 17701, 19987	$\backslash$ varcurlyvee .... 18284, 20871	$\backslash$ voicedh .. 16104, 20716
$\backslash$ upharpoonright .. 17698, 19986	$\backslash$ varcurlywedge .. 18287, 20872	$\backslash$ vpageref 8520, 8528, 8537, 8545
$\backslash$ uplus .. 19215, 20535	$\backslash$ VarFlag .. 18831, 20944	$\backslash$ vphantom .. 608
$\backslash$ upmodels .. 19371, 20604	$\backslash$ varg .. 16087, 20711	$\backslash$ Vr@f .. 8523
$\backslash$ upshape .. 593	$\backslash$ varhexagon .... 19385, 20610	$\backslash$ vr@f .. 8532
$\backslash$ Upsilon .. 19843	$\backslash$ vari .. 16114, 20719	$\backslash$ Vref@star .. 8516
$\backslash$ upsilon .. 19867	$\backslash$ varint .. 17898, 20820	$\backslash$ vref@star .. 8541
$\backslash$ upspoon .. 19375, 20606	$\backslash$ varnothing 17811, 17813, 20810	$\backslash$ vskip .. 2286, 2287
$\backslash$ upuparrows .... 17726, 19996	$\backslash$ varoast .. 18178, 20847	$\backslash$ vss .. 7952
$\backslash$ upupharpoons .. 19145, 20508	$\backslash$ varobslash .. 19186, 20965	$\backslash$ vtex@trans@special ... 10744,
$\backslash$ upvdash .. 18206, 20853	$\backslash$ varocircle .. 18175, 20846	10746, 10749, 10753, 10757,
$\backslash$ Uranus .. 18745, 20922	$\backslash$ varodot .. 18171, 20844	10761, 10763, 10765, 10769,
$\backslash$ uranus .. 18743, 20350	$\backslash$ varogreaterthan . 19198, 20968	10775, 10776, 10779
$\backslash$ urcorner .. 18385, 20275	$\backslash$ varoint .. 17905, 20821	$\backslash$ VTexInitMediaSize ... 10415,
$\backslash$ Url .. 4967	$\backslash$ varolessthan .... 19195, 20967	10441
$\backslash$ url .. 4966, 4970	$\backslash$ varomega .. 16164, 20733	$\backslash$ VTexXOS 10808, 10809, 10810,
$\backslash$ url@ .. 4970, 4971	$\backslash$ varomino .. 18162, 20841	10812
$\backslash$ use .. 497, 503, 5056	$\backslash$ varopeno .. 16041, 20700	$\backslash$ VTexXversion 6668, 6671, 6674,
$\backslash$ use@file .... 5248, 5250, 5257	$\backslash$ varoplus .. 18159, 20840	10800, 10804
$\backslash$ usefont .. 572	$\backslash$ varoslash .. 18168, 20843	$\backslash$ Vvdash .. 18217, 20206
$\backslash$ UseHook .. 7037, 7053	$\backslash$ varotimes .. 18165, 20842	
$\backslash$ UseSocket .. 2250	$\backslash$ varovee .. 17891, 20819	<b>W</b>
$\backslash$ UseTaggingSocket .... 7578	$\backslash$ varowedge .. 17886, 20818	$\backslash$ wasylozenge .... 18375, 20271
$\backslash$ utf@viii@undeferr .. 532	$\backslash$ varparallel .... 19382, 20979	$\backslash$ waw .. 19698
$\backslash$ UTFviii@four@octets 1928, 1937	$\backslash$ varparallelinv ... 18449, 20882	$\backslash$ wawhamza .. 19636
$\backslash$ UTFviii@loop .. 1916	$\backslash$ varprop .. 17860, 20813	$\backslash$ wd 9545, 9561, 9582, 9599, 9622,
$\backslash$ UTFviii@three@octets .. 1927	$\backslash$ varsigma .. 19864	9639, 13507
$\backslash$ UTFviii@tmp .. 1915	$\backslash$ varsqsubsetneq .. 18336, 20875	$\backslash$ wedge .. 17882, 20061
$\backslash$ UTFviii@two@octets .... 1926	$\backslash$ varsqsupsetneq .. 18339, 20876	$\backslash$ wedgedot .. 19058, 20473
<b>V</b>	$\backslash$ vartimes .. 15434, 20664	$\backslash$ Wheelchair .... 18827, 20372
$\backslash$ v .. 14700, 14712, 14724, 14846,	$\backslash$ vavyod .. 16974	$\backslash$ with .. 15248, 20653
14851, 14859, 14861, 15120,	$\backslash$ vbox .. 6222, 6223, 6224, 6225,	$\backslash$ WomanFace .... 19452, 20630
15162, 15191, 15223, 15549,	6465, 7937	$\backslash$ Womanface .... 19454, 20986
15551, 15553, 15555, 15583,	$\backslash$ VDash .. 18222, 20208	$\backslash$ wp .. 17546, 19943
15585, 15661, 15663, 15681,	$\backslash$ Vdash .. 18214, 20205	$\backslash$ wr .. 17935, 20083
15683, 15717, 15719, 15733,	$\backslash$ vDash .. 18210, 20204	$\backslash$ wreath .. 17937, 20825
15735, 15741, 15743, 15791,	$\backslash$ vdash .. 18190, 20197	$\backslash$ write .. 4858, 5404, 5406, 6789,
15793, 15867, 15869, 15871,	$\backslash$ vdash .. 18190, 20197	6797, 7693, 7708, 7735,
15873, 15874, 15876, 15878,	$\backslash$ vdotdot .. 17919, 20076	7745, 7764, 7794, 13043,
15880, 15882, 15891, 15893,	$\backslash$ vdots .. 18361, 20264	13046, 13074, 13089
15895, 15897, 15903, 15904,	$\backslash$ vee .. 17887, 20063	$\backslash$ WriteBookmarks .. 4270, 4408,
15982, 15984	$\backslash$ veebar .. 18258, 20220	4618, 4640, 14220, 14463,
$\backslash$ V@@@footnotetext .. 7437	$\backslash$ veedot .. 19056, 20472	14493, 14494, 14536,

209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 282, 287, 288, 938, 944, 1425, 1453, 1868, 1870, 2281, 2291, 2300, 2310, 2399, 2400, 2405, 2421, 3294, 3297, 3301, 3314, 3425, 3426, 3429, 3430, 3431, 3435, 3438, 3444, 3880, 3886, 3889, 3892, 4171, 4172, 4177, 4178, 4298, 4299, 4300, 4303, 4306, 4309, 4342, 4343, 4345, 4346, 4545, 4548, 4857, 4863, 5263, 5264, 5265, 5277, 5288, 5289, 5290, 5291, 5294, 5295, 5340, 5343, 5425, 5439, 5464, 5468, 5471, 5481, 6014, 6018, 6417, 6418, 6423, 7077, 7084, 7102, 7111, 7113, 7125, 8044, 8046, 8411, 8412, 8441, 8444, 8480, 8481, 8482, 8484, 8486, 8902, 8911, 9774, 9775, 9776, 9778, 9779, 9780, 9782, 9783, 9784, 9786, 9787, 9788, 9790, 9791, 9792, 9794, 9795, 9796, 9798, 9799, 9800, 9802, 9803, 9805, 9811, 9820, 10922, 10927, 10931, 11303, 11306, 11312, 11317, 11465, 11466, 12624, 12644, 13225, 13245, 13581, 13601, 14604, 14606, 14672, 14674	5112, 5126 \XeTeXLinkBox 5092, 5103, 5136 \XeTeXLinkMargin . 5090, 5091, 5109, 5111, 5122, 5124 \XeTeXrevision . . . . . 4605 \XeTeXversion . . . . . 4605 \Xi . . . . . 19840 \xi . . . . . 19861 \xinferior . . . . . 19929 \XR@ext 2507, 2508, 5246, 5249, 6666, 8742, 9395, 9498, 9762, 10299, 11659, 11765, 11832, 12039, 12210 \XSolid . . . . . 18924, 20410 \XSolidBold . . . . 18926, 20411 \XSolidBrush . . . 18928, 20412 \xspace . . . . . 669, 671 \xspaceadddexceptions 4244, 4253	1565, 1638, 1642, 1654, 1654, 1770, 1771, 1773, 1774, 1775, 2237, 2272, 2295, 2592, 2666, 2750, 3443, 4171, 4173, 5106, 5108, 5116, 5120, 5121, 5129, 5139, 5140, 6669, 7435, 8766, 8773, 9321, 9326, 9330, 9338, 9342, 9343, 9351, 9352, 10273, 10277, 10278, 10284, 10286, 10417, 10418, 10423, 10430, 10431, 10799, 10823, 11045, 11360, 11731, 11732, 11736, 11742, 11743, 12547, 12614, 13024, 13215, 13511, 13571, 14022, 14027, 14050, 14085, 14119, 14125, 14155, 14160, 14191, 14297, 14298, 14299, 14301, 14302, 14303, 14305, 14519, 14640
\XBox . . . . . 18676, 20897 \XeTeXLink@font . . 5096, 5099 \XeTeXLink@space . 5093, 5097,	<b>Y</b> \y . . . . . 287, 289, 296, 302, 2401, 2406, 2411, 3431, 3432, 3433, 3434, 4301, 4304, 4307, 4310, 4312, 4318, 5266, 5267, 5268, 5269, 5277, 6418, 6426, 7098, 7100, 7101, 7104, 7111, 11308, 11309, 11310, 11311 \ya . . . . . 19702 \yahamza . . . . . 19640 \YingYang . . . . . 18702, 20905 \Yingyang . . . . . 18703, 20906 \YinYang . . . . . 18699, 20338 \Yinyang . . . . . 18701, 20904 \yogh . . . . . 16251, 19832	\z@skip . . . . . 1 \za . . . . . 1 \zay . . . . . 1 \zeroinferior . . . . . 1 \zerosuperior . . . . . 1 \zeta . . . . . 1 \zref@extractdefault . . . 1 \zref@ifrefcontainsprop . . 1 \zref@ifrefundefined . . . . 1 \zref@labelbyprops . . . . 1 \zref@refused . . . . . 1 \Zwdr . . . . . 19444, 2 \ZWJ . . . . . 1 \ZwPa . . . . . 19430, 2
	<b>Z</b> \z 288, 289, 297, 303, 2403, 2404, 2405, 5269, 5277 \z@ 1154, 1194, 1207, 1223, 1238, 1246, 1319, 1553, 1559,	