

# 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	Version check . . . . .	13
4.3	Checks with regular expressions . . . . .	14
4.4	Compatibility with format dumps . . . . .	15
4.5	Switches . . . . .	15
<b>5</b>	<b>Common help macros</b>	<b>17</b>
5.1	Macros for recursions . . . . .	17
5.2	Babel’s protection of shorthand characters . . . . .	18
5.3	Coordinate transformations . . . . .	18
<b>6</b>	<b>Dealing with PDF strings</b>	<b>18</b>
6.1	Description of PDF strings . . . . .	18
6.2	Definition of <code>\pdfstringdef</code> . . . . .	19
6.2.1	Preprocessing . . . . .	20
6.2.2	Expansion . . . . .	26
6.2.3	Postprocessing . . . . .	27
6.3	Encodings . . . . .	32
6.3.1	XeTeX . . . . .	32
6.3.2	Workaround for package linguex . . . . .	32
6.3.3	Catcodes saving and restoring for <code>.def</code> files . . . . .	32
6.3.4	PD1 encoding . . . . .	33
6.3.5	PU encoding . . . . .	33
6.4	Additional user commands . . . . .	34
6.4.1	<code>\texorpdfstring</code> . . . . .	34
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 . . . . .	36
6.5.3	CJK patch . . . . .	36
6.5.4	CJK bookmarks . . . . .	37
6.5.5	CJK unicode . . . . .	39
6.5.6	<code>\@inmathwarn-Patch</code> . . . . .	43
6.5.7	Unexpandable spaces . . . . .	45
6.5.8	Marker for commands . . . . .	45
6.5.9	<code>\hspace fix</code> . . . . .	45
6.5.10	Fix for AMS classes . . . . .	45
6.5.11	Reference commands . . . . .	46
6.5.12	Redefining the defining commands . . . . .	48
6.5.13	<code>\ifnextchar</code> . . . . .	49
6.5.14	<code>\@protected@testoptifnextchar</code> . . . . .	50

6.6	Help macros for postprocessing	50
6.6.1	Generic warning.	50
6.6.2	Protecting spaces	50
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.)	65
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	72
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>83</b>
<b>12</b>	<b>Language options</b>	<b>85</b>
<b>13</b>	<b>Options to change appearance of links</b>	<b>94</b>
<b>14</b>	<b>Bookmarking</b>	<b>94</b>
<b>15</b>	<b>PDF-specific options</b>	<b>97</b>
15.1	Package <code>xspace</code> support	111
15.2	Option <code>draft</code>	111
15.3	PDF/A	112
15.4	Patch for babel's <code>\texttilde</code>	113
15.4.1	Driver loading	114
15.4.2	Bookmarks	118
<b>16</b>	<b>User hypertext macros</b>	<b>121</b>
16.1	Link box support for XeTeX	128
<b>17</b>	<b>Underlying basic hypertext macros</b>	<b>129</b>
<b>18</b>	<b>Option ‘<code>destlabel</code>’</b>	<b>133</b>

<b>19 Forms creation</b>	<b>135</b>
19.1 Field flags	135
19.1.1 Declarations of field flags	137
19.1.2 Set submit flags	140
19.1.3 Set annot flags in fields	140
19.1.4 Pushbutton field	141
19.1.5 Check box field	141
19.1.6 Radio button field	141
19.1.7 Text fields	142
19.1.8 Choice fields	142
19.2 Choice field	143
19.3 Forms	145
<b>20 Setup</b>	<b>153</b>
<b>21 Low-level utility macros</b>	<b>154</b>
<b>22 Localized nullifying of package</b>	<b>155</b>
<b>23 Package nohyperref</b>	<b>156</b>
<b>24 The Mangling Of Aux and Toc Files</b>	<b>157</b>
<b>25 Title strings</b>	<b>158</b>
<b>26 Page numbers</b>	<b>159</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 titlesec and titletoc support</b>	<b>175</b>
<b>31 Package varioref support</b>	<b>175</b>
<b>32 Package longtable support</b>	<b>176</b>
<b>33 Equations</b>	<b>176</b>
<b>34 Footnotes</b>	<b>182</b>
<b>35 Float captions</b>	<b>187</b>
<b>36 Bibliographic references</b>	<b>189</b>
36.1 Package harvard	192
36.2 Package chicago	193

<b>37</b>	<b>Page numbers</b>	<b>194</b>
<b>38</b>	<b>Table of contents</b>	<b>196</b>
<b>39</b>	<b>New counters</b>	<b>198</b>
<b>40</b>	<b>AMSL<sup>A</sup>T<sub>E</sub>X compatibility</b>	<b>199</b>
40.1	<code>\@addtoreset</code> and <code>\numberwithin</code> patches . . . . .	200
<b>41</b>	<b>Included figures</b>	<b>201</b>
<b>42</b>	<b>hyperindex entries</b>	<b>201</b>
<b>43</b>	<b>Configuration files</b>	<b>210</b>
43.1	PS/PDF strings . . . . .	210
43.2	pdftex . . . . .	211
43.2.1	Fix for problem with different nesting levels . . . . .	224
43.3	hypertex . . . . .	225
43.4	dviwindo . . . . .	227
43.5	dvipdfm/xetex dvi to PDF converter . . . . .	233
43.6	VTeX typesetting system . . . . .	243
43.7	Fix for Adobe bug number 466320 . . . . .	256
43.8	Direct pdfmark support . . . . .	257
43.9	Rokicki's dvips . . . . .	271
43.10	VTeX's vtexpdfmark driver . . . . .	274
43.11	Textures . . . . .	275
43.12	dvipsone . . . . .	280
43.13	TeX4ht . . . . .	283
<b>44</b>	<b>Driver-specific form support</b>	<b>286</b>
44.1	pdfmarks . . . . .	286
44.2	HyperTeX . . . . .	295
44.3	TeX4ht . . . . .	295
44.4	pdfTeX . . . . .	298
44.5	dvipdfm, xetex . . . . .	307
44.6	Common forms part . . . . .	315
<b>45</b>	<b>Bookmarks in the PDF file</b>	<b>323</b>
45.1	Bookmarks . . . . .	323
45.1.1	Rerun warning . . . . .	326
45.1.2	Driver stuff . . . . .	327
<b>46</b>	<b>Encoding definition files for encodings of PDF strings</b>	<b>333</b>
46.1	PD1 encoding . . . . .	333
46.2	PU encoding . . . . .	342
46.2.1	NFSS2 accents . . . . .	342
46.2.2	Basic Latin: U+0000 to U+007F . . . . .	344
46.2.3	Latin-1 Supplement: U+0080 to U+00FF . . . . .	346
46.2.4	Latin Extended-A: U+0080 to U+017F . . . . .	350
46.2.5	Latin Extended-B: U+0180 to U+024F . . . . .	356
46.2.6	IPA Extensions: U+0250 to U+02AF . . . . .	360

46.2.7	Spacing Modifier Letters: U+02B0 to U+02FF . . . . .	366
46.2.8	Combining Diacritical Marks: U+0300 to U+036F . . . . .	367
46.2.9	Greek and Coptic: U+0370 to U+03FF . . . . .	368
46.2.10	Cyrillic: U+0400 to U+04FF . . . . .	371
46.2.11	Hebrew: U+0590 to U+05FF . . . . .	382
46.2.12	Thai: U+0E00 to U+0E7F . . . . .	384
46.2.13	Phonetic Extensions: U+1D00 to U+1D7F . . . . .	384
46.2.14	Phonetic Extensions Supplement: U+1D80 to U+1DBF . . . . .	385
46.2.15	Latin Extended Additional: U+1E00 to U+1EFF . . . . .	385
46.2.16	General Punctuation: U+2000 to U+206F . . . . .	391
46.2.17	Superscripts and Subscripts: U+2070 to U+209F . . . . .	392
46.2.18	Currency Symbols: U+20A0 to U+20CF . . . . .	394
46.2.19	Letterlike Symbols: U+2100 to U+214F . . . . .	394
46.2.20	Number Forms: U+2150 to U+218F . . . . .	395
46.2.21	Arrows: U+2190 to U+21FF . . . . .	396
46.2.22	Mathematical Operators: U+2200 to U+22FF . . . . .	400
46.2.23	Miscellaneous Technical: U+2300 to U+23FF . . . . .	411
46.2.24	Control Pictures: U+2400 to U+243F . . . . .	412
46.2.25	Optical Character Recognition: U+2440 to U+245F . . . . .	412
46.2.26	Enclosed Alphanumerics: U+2460 to U+24FF . . . . .	412
46.2.27	Box Drawing: U+2500 to U+257F . . . . .	415
46.2.28	Geometric Shapes: U+25A0 to U+25FF . . . . .	415
46.2.29	Miscellaneous Symbols: U+2600 to U+26FF . . . . .	416
46.2.30	Dingbats: U+2700 to U+27BF . . . . .	421
46.2.31	Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF . . . . .	424
46.2.32	Supplemental Arrows-A: U+27F0 to U+27FF . . . . .	424
46.2.33	Supplemental Arrows-B: U+2900 to U+297F . . . . .	425
46.2.34	Miscellaneous Mathematical Symbols-B: U+2980 to U+29FF . . . . .	427
46.2.35	Supplemental Mathematical Operators: U+2A00 to U+2AFF . . . . .	427
46.2.36	Miscellaneous Symbols and Arrows: U+2B00 to U+2BFF . . . . .	431
46.2.37	Latin Extended-C: U+2C60 to U+2C7F . . . . .	431
46.2.38	Supplemental Punctuation: U+2E00 to U+2E7F . . . . .	431
46.2.39	Modifier Tone Letters: U+A700 to U+A71F . . . . .	431
46.2.40	Latin Extended-D: U+A720 to U+A7FF . . . . .	431
46.2.41	Alphabetic Presentation Forms: U+FB00 to U+FB4F . . . . .	432
46.2.42	Musical Symbols: U+1D100 to U+1D1FF . . . . .	432
46.2.43	Miscellaneous Symbols and Pictographs: U+1F300 to U+1F5FF . . . . .	432
46.2.44	Transport and Map Symbols: U+1F680 to U+1F6FF . . . . .	432
46.2.45	Miscellaneous . . . . .	433
46.2.46	Aliases . . . . .	433
46.3	PU encoding, additions for VnT <sub>E</sub> X . . . . .	433
46.4	PU encoding, additions for Arabi . . . . .	436
<b>47</b>	<b>End of file hycheck.tex</b> . . . . .	<b>461</b>
<b>48</b>	<b>Index</b> . . . . .	<b>462</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 LATEX.
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 L<sup>A</sup>T<sub>E</sub>X 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<sub>␣</sub> 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#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

change 2020-07-24: require newer pdftexcmds and remove fallback code for version older than 2010. change 2021-08-14: require expl3

```

232 \ifx\ExplSyntaxOn\undefined \RequirePackage{expl3}\fi
233 \RequirePackage{ltxcmds}[2010/11/12]
234 \RequirePackage{iftex}[2019/10/24]
235 \RequirePackage{pdftexcmds}[2018/09/10]
236 \RequirePackage{infwarerr}[2010/04/08]
237 \RequirePackage{keyval}[1997/11/10]
238 \RequirePackage{kvsetkeys}[2007/09/29]
239 \RequirePackage{kvdefinekeys}[2011/04/07]
240 \RequirePackage{pdfescape}[2007/11/11]
241 \RequirePackage{hycolor}
242 \RequirePackage{letltxmacro}[2008/06/13]
243 \RequirePackage{auxhook}[2009/12/14]
244 \def\Hy@Error{\@PackageError{hyperref}}

```

```

245 \def\Hy@Warning{\@PackageWarning{hyperref}}
246 \def\Hy@WarningNoLine{\@PackageWarningNoLine{hyperref}}
247 \def\Hy@Info{\@PackageInfo{hyperref}}
248 \def\Hy@InfoNoLine{\@PackageInfoNoLine{hyperref}}
249 \def\Hy@Message#1{%
250   \GenericWarning{%
251     (hyperref)\@spaces\@spaces\@spaces\@spaces
252   }{%
253     Package hyperref Message: #1\ltx@gobble
254   }%
255 }

```

## 4.2 Version check

\Hy@VersionChecked

```

256 \chardef\Hy@VersionChecked=0 %

```

\Hy@VersionCheck

```

257 \def\Hy@VersionCheck#1{%
258   \begingroup
259   \ltx@ifundefined{ver@hyperref.sty}{%
260     \Hy@Error{%
261       This should not happen!\MessageBreak
262       Missing hyperref version%
263     }\@ehd
264   }{%
265     \ltx@ifundefined{ver@#1}{%
266       \Hy@Error{%
267         This should not happen!\MessageBreak
268         Missing version of `#1'%
269       }\@ehd
270     }{%
271       \def\x##1##2##3{%
272         \expandafter\expandafter\expandafter\Hy@@VersionCheck
273         \expandafter\expandafter\expandafter##2%
274         \csname ver@##3\endcsname##1##1\@nil
275       }%
276       \x{ }\y{hyperref.sty}%
277       \x{ }\z{#1}%
278       \ifx\y\z
279         \else
280         \edef\a{#1}%
281         \edef\b{\HyOpt@CustomDriver.def}%
282         \ifx\a\b
283           \Hy@WarningNoLine{%
284             Version mismatch (custom driver)!\MessageBreak
285             * \y: hyperref.sty\MessageBreak
286             * \z: \a
287           }%
288         \else
289         \Hy@Error{%
290           Version mismatch!\MessageBreak
291           * \y: hyperref.sty\MessageBreak
292           * \z: \a

```

```

293     }\@ehd
294     \fi
295     \fi
296   }%
297 }%
298 \endgroup
299 \chardef\Hy@VersionChecked=1 %
300 }

```

\Hy@@VersionCheck

```

301 \def\Hy@@VersionCheck #1#2 #3 #4\@nil{%
302   \def#1{#2 #3}%
303 }

```

### 4.3 Checks with regular expressions

```

304 \ltx@ifundefined{pdfmatch}{%
305   \def\Hy@Match#1#2#3#4#5{%
306   }{%
307     \def\Hy@Match#1#2#3{%
308       \begingroup
309       \edef\~{\ltx@backslashchar\string~}%
310       \edef\.\{\ltx@backslashchar.}%
311       \edef\[\{\ltx@backslashchar[}%
312       \edef\${\ltx@backslashchar$}%
313       \edef\(\{\ltx@backslashchar(}%
314       \edef\)\{\ltx@backslashchar)}%
315       \edef\|\{\ltx@backslashchar|}%
316       \edef\*\{\ltx@backslashchar*}%
317       \edef\+\{\ltx@backslashchar+}%
318       \edef\?\{\ltx@backslashchar?}%
319       \edef\{\{\ltx@backslashchar\ltx@leftbracechar}%
320       \edef\}\{\ltx@rightbracechar}%
321       \edef\\{\ltx@backslashchar\ltx@backslashchar}%
322       \let\ \ltx@space
323       \ifcase\pdfmatch#2{#3}{#1} %
324       \endgroup
325       \expandafter\ltx@secondoftwo
326       \or
327       \endgroup
328       \expandafter\ltx@firstoftwo
329       \else
330       \Hy@Warning{%
331         Internal error: Wrong pattern!\MessageBreak
332         --> #3 <--\MessageBreak
333         Pattern check ignored%
334       }%
335       \endgroup
336       \expandafter\ltx@firstoftwo
337     \fi
338   }%
339 }

```

## 4.4 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  $\text{\LaTeX}$  processing.

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

```
340 \@ifundefined{AfterBeginDocument}{%
341   \def\AfterBeginDocument{\AtBeginDocument}%
342 }{}%
```

`\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.

```
343 \def\Hy@AtBeginDocument{%
344   \ltx@LocalAppendToMacro\Hy@AtBeginDocumentHook
345 }
```

`\Hy@AtEndOfPackage`

```
346 \def\Hy@AtEndOfPackage{%
347   \ltx@LocalAppendToMacro\Hy@AtEndOfPackageHook
348 }
```

`\Hy@AtBeginDocumentHook`

```
349 \let\Hy@AtBeginDocumentHook\ltx@empty
```

`\Hy@AtEndOfPackageHook`

```
350 \let\Hy@AtEndOfPackageHook\ltx@empty
```

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

```
351 \AtEndOfPackage{%
352   \Hy@AtEndOfPackageHook
353   \let\Hy@AtEndOfPackageHook\@undefined
354   \AfterBeginDocument{%
355     \Hy@AtBeginDocumentHook}%
356   \let\Hy@AtBeginDocumentHook\@undefined
357 }%
```

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

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

## 4.5 Switches

```
360 \newif\ifHy@stoppedearly
361 \newif\ifHy@typexml
362 \newif\ifHy@activeanchor
363 \newif\ifHy@backref
364 \newif\ifHy@bookmarks
```

```

365 \newif\ifHy@bookmarksnumbered
366 \newif\ifHy@bookmarksopen
367 \newif\ifHy@breaklinks
368 \newif\ifHy@pdfcenterwindow
369 \newif\ifHy@CJKbookmarks
370 \newif\ifHy@colorlinks
371 \newif\ifHy@destlabel
372 \newif\ifHy@draft
373 \let\Hy@finaltrue\Hy@draftfalse
374 \let\Hy@finalfalse\Hy@drafttrue
375 \newif\ifHy@pdfescapeform
376 \newif\ifHy@hyperfigures
377 \newif\ifHy@pdfitwindow
378 \newif\ifHy@frenchlinks
379 \newif\ifHy@hyperfootnotes
380 \newif\ifHy@hyperindex
381 \newif\ifHy@hypertextnames
382 \newif\ifHy@implicit
383 \newif\ifHy@linktopage
384 \newif\ifHy@localanchorname
385 \newif\ifHy@pdfmenubar
386 \newif\ifHy@naturalnames
387 \newif\ifHy@nesting
388 \newif\ifHy@pdfnewwindowset
389 \newif\ifHy@pdfnewwindow
390 \newif\ifHy@ocgcolorlinks
391 \newif\ifHy@pageanchor
392 \newif\ifHy@pdfpagelabels
393 \newif\ifHy@pdfstring
394 \newif\ifHy@plainpages
395 \newif\ifHy@psize
396 \newif\ifHy@raiselinks
397 \newif\ifHy@seminarslides
398 \newif\ifHy@setpagesize
399 \newif\ifHy@texht
400 \newif\ifHy@psdextra
401 \newif\ifHy@pdftoolbar
402 \newif\ifHy@unicode
403 \newif\ifHy@pdfusetitle
404 \newif\ifHy@verbose
405 \let\Hy@debugtrue\Hy@verbosetrue
406 \let\Hy@debugfalse\Hy@verbosefalse
407 \newif\ifHy@pdfwindowui
408 \newif\ifHy@pdfdisplaydoctitle
409 \newif\ifHy@pdfa

```

Defaults for the switches are now set.

```

410 \Hy@backreffalse
411 \Hy@bookmarksnumberedfalse
412 \Hy@bookmarksopenfalse
413 \Hy@bookmarkstrue
414 \Hy@breaklinksfalse
415 \Hy@pdfcenterwindowfalse
416 \Hy@CJKbookmarksfalse
417 \Hy@destlabelfalse

```



```

418 \Hy@pdfescapeformfalse
419 \Hy@hyperfiguresfalse
420 \Hy@pdffitwindowfalse
421 \Hy@hyperfootnotetrue
422 \Hy@hyperindextrue
423 \Hy@hypertextnamestrue
424 \Hy@implicitttrue
425 \Hy@linktocpagefalse
426 \Hy@localanchornamefalse
427 \Hy@pdfmenubartrue
428 \Hy@naturalnamesfalse
429 \Hy@nestingfalse
430 \Hy@pdfnewwindowsetfalse
431 \Hy@pdfnewwindowfalse
432 \Hy@pageanchortrue
433 \Hy@pdfpagelabelstrue
434 \Hy@pdfstringfalse
435 \Hy@plainpagesfalse
436 \Hy@raiselinksfalse
437 \Hy@setpagesizetrue
438 \Hy@texhtfalse
439 \Hy@psdextrafalse
440 \Hy@pdftoolbartrue
441 \Hy@typexmlfalse
442 \Hy@unicodetrue
443 \ifx\kanjiskip\@undefined
444 \else
445 \ifx\forcecjktoken\@undefined
446 \Hy@unicodetrue
447 \fi
448 \fi
449 \Hy@pdfusetitlefalse
450 \Hy@verbosefalse
451 \Hy@pdfwindowuitrue
452 \Hy@pdfdisplaydoctitlefalse
453 \Hy@pdfafalse

```

## 5 Common help macros

\Hy@StepCount

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

\Hy@GlobalStepCount

```

455 \def\Hy@GlobalStepCount#1{\global\advance#1 by 1 }%
456 \newdimen\@linkdim
457 \let\Hy@driver\ltx@empty
458 \let\MaybeStopEarly\relax
459 \newcount\Hy@linkcounter
460 \newcount\Hy@pagecounter
461 \Hy@linkcounter0
462 \Hy@pagecounter0

```

### 5.1 Macros for recursions

```

463 \let\Hy@ReturnEnd\@empty
464 \long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{\fi\fi#1}
465 \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.

```

466 \def\Hy@safe@activetrue{\csname @safe@activetrue\endcsname}
467 \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).

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

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

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

Example (TeX):

```

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

```

`\hypercalcbp`

```

468 \def\hypercalcbp#1{%
469   \strip@pt\dimexpr 0.99626401\dimexpr(#1)\relax\relax
470 }%
471 \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:
 

<code>\\</code>	the backslash itself
<code>\), \((</code>	unbalanced parentheses
<code>\n, \r, \t, \b, \f</code>	special white space escape sequences
<code>\ddd</code>	octal character code <code>ddd</code>
- 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 T<sub>E</sub>X 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.

`\uppercaseUnsupportedInPdfStrings`  
`\lowercaseUnsupportedInPdfStrings`

```

472 \ExplSyntaxOn
473 \@ifundefined{text__uppercase:n}{}
474 {
475   \def\MakeUppercaseUnsupportedInPdfStrings#1{\use:e {\text__uppercase:n {#1}}}
476   \def\MakeLowercaseUnsupportedInPdfStrings#1{\use:e {\text__lowercase:n {#1}}}
477 }
478 \ExplSyntaxOff

```

`\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 T<sub>E</sub>X, because the tokens have only cat-codes 10 until 12.

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

```

479 \def\pdfstringdef#1#2{%

```

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

```

480   \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.

```
481 \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.

```
482 \edef\0{\string\0}%  
483 \edef\1{\string\1}%  
484 \edef\2{\string\2}%  
485 \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.

```
486 \ifHy@unicode  
487 \edef\8{\string\8}%  
488 \edef\9{\string\9}%  
489 \fontencoding{PU}%  
490 \HyPsd@UTFviii  
491 \def\ifpdfstringunicode##1##2{##1}%  
492 \else  
493 \fontencoding{PD1}%  
494 \def\ifpdfstringunicode##1##2{##2}%  
495 \fi  
496 \let\utf@viii@undeferr\HyPsd@utf@viii@undeferr  
497 \enc@update
```

**Internal encoding commands.** `\pdfstringdef` interpretes 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).

```
498 \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).

```
499 \let\@inmathwarn\HyPsd@inmathwarn
```

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

```
500 \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.

```
501 \let\{\textbraceleft
502 \let\}\textbraceright
503 \let\\\textbackslash
504 \let\#\textnumbersign
505 \let\$\textdollar
506 \let\%\textpercent
507 \let\&\textampersand
508 % \let\~\textasciitilde
509 \let\_ \textunderscore
510 \let\P\textparagraph
511 \let\ldots\textellipsis
512 \let\dots\textellipsis
513 \ltx@ifundefined{textEncodingNoboundary}%
514 {}{\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.

```
515 \def\{\pdfstringdefWarn\}%
516 \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.

```

517 \def\TeX{\TeX}%
518 \def\LaTeX{La\TeX}%
519 \def\LaTeXe{%
520   \LaTeX2%
521   \ifHy@unicode\83\265\else e\fi
522 }%
523 \def\eTeX{%
524   \ifHy@unicode\83\265\else e\fi
525   -\TeX%
526 }%
527 \def\SliTeX{Sli\TeX}%
528 \def\MF{Metafont}%
529 \def\MP{Metapost}%

```

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

```

530 \let\fontencoding\@gobble
531 \let\fontfamily\@gobble
532 \let\fontseries\@gobble
533 \let\fontshape\@gobble
534 \let\fontsize\@gobbletwo
535 \let\selectfont\@empty
536 \let\usefont\@gobblefour
537 \let\emph\@firstofone
538 \let\textnormal\@firstofone
539 \let\textrm\@firstofone
540 \let\textsf\@firstofone
541 \let\texttt\@firstofone
542 \let\textbf\@firstofone
543 \let\textmd\@firstofone
544 \let\textit\@firstofone
545 \let\textsc\@firstofone
546 \let\textsl\@firstofone
547 \let\textup\@firstofone
548 \let\normalfont\@empty
549 \let\rmfamily\@empty
550 \let\sffamily\@empty
551 \let\ttfamily\@empty
552 \let\bfseries\@empty
553 \let\mdseries\@empty
554 \let\itshape\@empty
555 \let\scshape\@empty
556 \let\slshape\@empty
557 \let\upshape\@empty
558 \let\em\@empty
559 \let\rm\@empty
560 \let\Huge\@empty
561 \let\LARGE\@empty
562 \let\Large\@empty
563 \let\footnotesize\@empty

```

```

564 \let\huge\@empty
565 \let\large\@empty
566 \let\normalsize\@empty
567 \let\scriptsize\@empty
568 \let\small\@empty
569 \let\tiny\@empty
570 \let\mathversion\@gobble
571 \let\phantom\@gobble
572 \let\vphantom\@gobble
573 \let\hphantom\@gobble

```

### Package pifont.

```

574 \let\ding\HyPsd@ding
575 \let\Cube\HyPsd@DieFace
576 %* \HyPsd@DieFace -> \epsdice (epsdice)
577 %* \HyPsd@DieFace -> \fcdice (hhcount)

```

### Environments.

```

578 \def\begin##1{\csname##1\endcsname}%
579 \def\end##1{\csname end##1\endcsname}%

```

### Package color.

```

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

```

### Upper- and lowercase.

```

581 \def\MakeUppercase{\MakeUppercaseUnsupportedInPdfStrings}%
582 \def\MakeLowercase{\MakeLowercaseUnsupportedInPdfStrings}%

```

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

```

583 \ifHy@psdextra
584 \ifHy@unicode
585 \csname psdmapshortnames\endcsname
586 \csname psdaliasnames\endcsname
587 \fi
588 \fi

```

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

```

589 \let\foreignlanguage\@secondoftwo
590 \let\textlatin\@firstofone
591 \ltx@ifundefined{language@group}{-}{-}%
592 \let\bbl@info\@gobble
593 \csname HyPsd@babel@\language@group\endcsname
594 }%
595 \let\@safe@activetrue\relax
596 \let\@safe@activesfalse\relax

```

Disable \cyr, used in russianb.ldf.

```

597 \let\cyr\relax

```

**Package german.**

```
598 \let\glqq\textglqq
599 \let\grqq\textgrqq
600 \let\glq\textglq
601 \let\grq\textgrq
602 \let\flqq\textflqq
603 \let\frqq\textfrqq
604 \let\flq\textflq
605 \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}

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

**AMS classes.**

```
607 \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.

```
608 \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.

```
609 \let\label\@gobble
610 \let\index\@gobble
611 \let\glossary\@gobble
612 \let\href\HyPsd@href
613 \let\@mkboth\@gobbletwo
```

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

```
614 \let\ref\HyPsd@ref
615 \let\pageref\HyPsd@pageref
616 \let\nameref\HyPsd@nameref
617 \let\autoref\HyPsd@autoref
```

**Miscellaneous commands.**

```
618 \let\leavevmode\@empty
619 \let\mbox\@empty
```

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

```
620 \def\halign{\pdfstringdefWarn\halign\@gobble}%
621 \let\ignorespaces\HyPsd@ignorespaces
622 \let\Hy@SectionAnchorHref\@gobble
623 \let\ensuremath\@firstofone
```



### Patch for cjk bookmarks.

```
624 \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  $\text{\TeX}$ '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`).

```
625 \Hy@pdfstringtrue
626 \pdfstringdefPreHook
```

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

```
627 \HyPsd@LetUnexpandableSpace\space
628 \HyPsd@LetUnexpandableSpace\ %
629 \HyPsd@LetUnexpandableSpace~%
630 \HyPsd@LetUnexpandableSpace\nobreakspace
```

### Package xspace.

```
631 \ltx@ifundefined{@xspace}{%
632 \let\xspace\HyPsd@ITALCORR
633 }{%
634 \let\xspace\HyPsd@XSPACE
635 }%
636 \let\/\HyPsd@ITALCORR
637 \let\bgroup\/%
638 \let\egroup\/%
```

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

```
639 \let\discretionary\@gobbletwo
```

`\@ifstar` is defined in  $\text{\LaTeX}$  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 expandible 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:

```
640 \def\@ifnextchar{\HyPsd@ifnextchar\@ifnextchar}%
641 \def\kernel@ifnextchar{\HyPsd@ifnextchar\kernel@ifnextchar}%
642 \def\new@ifnextchar{\HyPsd@ifnextchar\new@ifnextchar}%
643 \let\@protected@testopt\HyPsd@protected@testopt
```

Support for package 'xargs':

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

## 6.2.2 Expansion

There are several possibilities to expand tokens within L<sup>A</sup>T<sub>E</sub>X:

**\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 T<sub>E</sub>X 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. T<sub>E</sub>X 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 L<sup>A</sup>T<sub>E</sub>X'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 L<sup>A</sup>T<sub>E</sub>X 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 T<sub>E</sub>X, 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).

```
645 \begingroup
646 \let\GenericError\@gobblefour
647 \let\GenericWarning\@gobbletwo
648 \let\GenericInfo\@gobbletwo
```

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

```
649 \ifx\nofrenchguillemets\undefined
650 \else
651 \nofrenchguillemets
652 \fi
```

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

```

653 \let\Hy@temp\xdef
654 \let\def\HyPsd@DefCommand
655 \let\gdef\HyPsd@DefCommand
656 \let\edef\HyPsd@DefCommand
657 \let\xdef\HyPsd@DefCommand
658 \let\futurelet\HyPsd@LetCommand
659 \let\let\HyPsd@LetCommand
660 \Hy@temp#1{#2}%
661 \endgroup

```

### 6.2.3 Postprocessing

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

```

662 \ifx#1\@empty
663 \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 a marker for the xspace support.
- `TEX` silently removes the outermost 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.

```

664 \HyPsd@ProtectSpaces#1%
665 \let\HyPsd@String\@empty
666 \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
667 \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.

```

668 \let\HyPsd@SPACEOPTI\relax
669 {%
670 \let\HyPsd@String\@empty
671 \expandafter\HyPsd@CheckCatcodes#1\HyPsd@End
672 \global\let#1\HyPsd@String
673 }%
674 \expandafter\HyPsd@RemoveMask\expandafter
675 |\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.

```

676 \expandafter
677 \HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
678 \let\HyPsd@String\@empty
679 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
680 \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.

```
681 \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.ldb` can produce an additional space before `\guillemotright`, because `\lastskip` and `\unskip` do not work. Therefore it is removed here.

```

682 \ifHy@unicode
683 \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
684 \HyPsd@SPACEOPTI#1%
685 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
686 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
687 {\HyPsd@SPACEOPTI\80\273}#1%
688 \else
689 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
690 \expandafter\HyPsd@Subst\expandafter{%
691 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
692 \string\273}\HyPsd@SPACEOPTI\273}#1%
693 \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 removed later.

```

694 \ifHy@unicode
695 \HyPsd@StringSubst{\}){\80\051}#1%
696 \HyPsd@Subst){\80\051}#1%
697 \let\HyPsd@empty\relax
698 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
699 {\HyPsd@empty\80\051}#1%
700 \else
701 \HyPsd@StringSubst{\}){\051}#1%
702 \HyPsd@Subst){\051}#1%
703 \let\HyPsd@empty\relax
704 \HyPsd@StringSubst{\051}{\HyPsd@empty\string\})}#1%
705 \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`.

```

706 \expandafter\HyPsd@Subst\expandafter{\//}\HyPsd@empty#1%
707 \ltx@ifundefined{@xspace}{%
708 }{%
709 \let\HyPsd@xspace\relax
710 \expandafter\HyPsd@Subst\expandafter

```

```

711      {\HyPsd@XSPACE}\HyPsd@xspace#1%
712      \let\HyPsd@xspace\HyPsd@doxspace
713    }%
714    \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.

```

715    \HyPsd@Subst{---}\textemdash#1%
716    \HyPsd@Subst{--}\textendash#1%
717 %    \HyPsd@Subst{fi}\textfi#1%
718 %    \HyPsd@Subst{fl}\textfl#1%
719    \HyPsd@Subst{!}\textexclamdown#1%
720    \HyPsd@Subst{?}\textquestiondown#1%

```

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

```

721    \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.

```

722    \ifHy@unicode
723      \HyPsd@StringSubst{\textparenleft#1%
724      \HyPsd@Subst{\textparenleft#1%
725    \else
726      \HyPsd@StringSubst{\{050\}#1%
727      \HyPsd@Subst{\{050\}#1%
728      \HyPsd@StringSubst{\050\}\string\}\#1%
729    \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.

```

730    \ifHy@unicode
731      \edef\HyPsd@SPACEOPTI{\80\040}%
732    \else
733      \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
734    \fi

```

```

735 \xdef#1{#1\@empty}%
736 \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.

```

737 \endgroup
738 \begingroup
739 \ifHy@unicode
740 \HyPsd@ConvertToUnicode#1%

```

**Try conversion back to PDFDocEncoding.**

```

741 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
742 \ltx@ifUndefined{StringEncodingConvertTest}{%
743 }{%
744 \EdefUnescapeString\HyPsd@temp#1%
745 \iftutex
746 \let\HyPsd@UnescapedString\HyPsd@temp
747 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
748 {utf16be}{ascii-print}{%
749 \EdefEscapeString\HyPsd@temp\HyPsd@temp
750 \global\let#1\HyPsd@temp
751 \HyPsd@EscapeTeX#1%
752 \Hy@unicodedefalse
753 }{%
754 \HyPsd@EscapeTeX#1%
755 }%
756 \else
757 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
758 {utf16be}{pdfdoc}{%
759 \EdefEscapeString\HyPsd@temp\HyPsd@temp
760 \global\let#1\HyPsd@temp
761 \HyPsd@EscapeTeX#1%
762 \Hy@unicodedefalse
763 }{}%
764 \fi
765 }%
766 \fi
767 \fi

```

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

```

768 \pdfstringdefPostHook#1%
769 \endgroup
770 }

```

\Hy@pdfstringdef

```

771 \def\Hy@pdfstringdef#1#2{%
772 \pdfstringdef\Hy@gtemp{#2}%
773 \let#1\Hy@gtemp
774 }

```

## 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

```
775 \ifpackageloaded{linguex}{%
776   \let\HyLinguex@OrgB\b
777   \let\HyLinguex@OrgC\c
778   \let\HyLinguex@OrgD\d
779   \def\HyLinguex@Restore{%
780     \let\b\HyLinguex@OrgB
781     \let\c\HyLinguex@OrgC
782     \let\d\HyLinguex@OrgD
783   }%
784   \Hy@AtEndOfPackage{%
785     \pdfstringdefDisableCommands{%
786       \let\oldb\let\b\oldb}%
787     \let\oldc\let\c\oldc}%
788     \let\oldd\let\d\oldd}%
789   }%
790 }%
791 }{%
792   \let\HyLinguex@Restore\relax
793 }%
```

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

\Hy@SaveCatcodeSettings

```
794 \def\Hy@SaveCatcodeSettings#1{%
795   \expandafter\edef\csname Hy@cat@#1\endcsname{%
796     \endlinechar=\the\endlinechar\relax
797     \catcode32 \the\catcode32\relax % (space)
798     \catcode34 \the\catcode34\relax % "
799     \catcode35 \the\catcode35\relax % #
800     \catcode37 \the\catcode37\relax % (percent)
801     \catcode40 \the\catcode40\relax % (
802     \catcode41 \the\catcode41\relax % )
803     \catcode42 \the\catcode42\relax % *
804     \catcode46 \the\catcode46\relax % .
805     \catcode58 \the\catcode58\relax % :
806     \catcode60 \the\catcode60\relax % <
807     \catcode61 \the\catcode61\relax % =
808     \catcode62 \the\catcode62\relax % >
809     \catcode64 \the\catcode64\relax % @
810     \catcode91 \the\catcode91\relax % [
811     \catcode92 \the\catcode92\relax % (backslash)
812     \catcode93 \the\catcode93\relax % ]
813     \catcode123 \the\catcode123\relax % {
814     \catcode124 \the\catcode124\relax % |
815     \catcode125 \the\catcode125\relax % }
816   }%
```



```

817 \endlinechar=-1 %
818 \catcode32 10 % (space)
819 \catcode34 12 % "
820 \catcode35 6 % #
821 \catcode37 14 % (percent)
822 \catcode40 12 % (
823 \catcode41 12 % )
824 \catcode42 12 % *
825 \catcode46 12 % .
826 \catcode58 12 % :
827 \catcode60 12 % <
828 \catcode61 12 % =
829 \catcode62 12 % >
830 \catcode91 12 % [
831 \catcode92 0 % (backslash)
832 \catcode93 12 % ]
833 \catcode123 1 % {
834 \catcode124 12 % |
835 \catcode125 2 % }
836 \makeatletter
837 }

```

\Hy@RestoreCatcodeSettings

```

838 \def\Hy@RestoreCatcodeSettings#1{%
839 \csname Hy@cat@#1\endcsname
840 \expandafter\let\csname Hy@cat@#1\endcsname\relax
841 }

```

### 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.

```

842 \@ifundefined{T@PD1}{%
843 \Hy@SaveCatcodeSettings{pd1}%
844 \input{pd1enc.def}%
845 \Hy@RestoreCatcodeSettings{pd1}%
846 \HyLinguex@Restore
847 }{}
848 \DeclareFontFamily{PD1}{pdf}{}
849 \DeclareFontShape{PD1}{pdf}{m}{n}{<-> cmr10 }{}
850 \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`.

```

851 \def\HyPsd@LoadUnicode{%
852   \@ifundefined{T@PU}{%
853     \Hy@SaveCatcodeSettings{pu}%
854     \input{puenc.def}%
855     \Hy@RestoreCatcodeSettings{pu}%
856     \HyLinguex@Restore
857   }{%
858     \DeclareFontFamily{PU}{pdf}{}%
859     \DeclareFontShape{PU}{pdf}{m}{n}{<-> cmr10 }{%
860     \DeclareFontSubstitution{PU}{pdf}{m}{n}%
861     \HyPsd@LoadExtra
862     \let\HyPsd@LoadUnicode\relax
863   }

```

`\HyPsd@LoadExtra`

```

864 \def\HyPsd@LoadExtra{%
865   \ifHy@psdextra
866     \ltx@iffileloaded{puenc.def}{%
867       \ltx@iffileloaded{puenc-greekbasic.def}{}%
868       \Hy@SaveCatcodeSettings{pu}%
869       \input{puenc-greekbasic.def}%
870       \Hy@RestoreCatcodeSettings{pu}%
871       \Hy@SaveCatcodeSettings{psdextra}%
872       \input{psdextra.def}%
873       \Hy@RestoreCatcodeSettings{psdextra}%
874       \let\HyPsd@LoadExtra\relax
875     }{%
876     \fi
877   }

```

## 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  $\mathrm{T}_{\mathrm{E}}\mathrm{X}$ 's stomach, the second contains the replacement for PDF strings.

```

878 \def\texorpdfstring{%
879   \ifHy@pdfstring
880     \expandafter\@secondoftwo
881   \else
882     \expandafter\@firstoftwo
883   \fi
884 }

```

## 6.4.2 Hooks for `\pdfstringdef`

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

```
885 \@ifundefined{pdfstringdefPreHook}{%
886   \let\pdfstringdefPreHook\@empty
887 }{}
888 \@ifundefined{pdfstringdefPostHook}{%
889   \let\pdfstringdefPostHook\@gobble
890 }{}
```

`\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`.

```
891 \def\pdfstringdefDisableCommands{%
892   \begingroup
893   \makeatletter
894   \HyPsd@DisableCommands
895 }
```

`\HyPsd@DisableCommands`

```
896 \long\def\HyPsd@DisableCommands#1{%
897   \ltx@GlobalAppendToMacro\pdfstringdefPreHook{#1}%
898   \endgroup
899 }
```

`\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`.

```
900 \def\pdfstringdefWarn#1{%
901   \expandafter\noexpand\csname<>-string#1\endcsname
902 }
```

## 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.

```
903 \begingroup
904 \catcode0=12 %
905 \def\x{\endgroup
906 \def\HyPsd@ignorespaces{%
907 \romannumeral\expandafter`\expandafter^^@%
908 \romannumeral^^^@%
909 }%
910 }%
911 \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.

```
912 \newif\ifHy@next
913 \</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.

```
914 \*package>
```

### 6.5.3 CJK patch

```
915 \RequirePackage{intcalc}[2007/09/27]
```

`\HyPsd@CJKhook`

```
916 \def\HyPsd@CJKhook{%
```

```

917 \ltx@ifpackageloaded{CJK}{%
918   \let\CJK@kern\relax
919   \let\CJKkern\relax
920   \let\CJK@CJK\relax
921   \ifHy@CJKbookmarks
922     \HyPsd@CJHook@bookmarks
923   \fi
924   \HyPsd@CJHook@unicode
925 }{}%
926 }

```

#### 6.5.4 CJK bookmarks

\HyPsd@CJHook 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 ( $\geq 0x40$ ).

```

927 \begingroup
928   \catcode"7F=\active
929   \toks@{%
930     \let\CJK@ignorespaces\empty
931     \def\CJK@char#1{\@gobbletwo}%
932     \let\CJK@charx\@gobblefour
933     \let\CJK@punctchar\@gobblefour
934     \def\CJK@punctcharx#1{\@gobblefour}%
935     \catcode"7F=\active
936     \def^^7f#1^^7f#2^^7f{%
937       \string #1\HyPsd@DecimalToOctal{#2}%
938     }%
939     % ... ?
940     \ifHy@unicode
941       \def\Hy@cjkpu{\80}%
942     \else
943       \let\Hy@cjkpu\@empty
944     \fi
945     \HyPsd@CJActiveChars
946   }%
947   \count@=127 %
948   \@whilenum\count@<255 \do{%
949     \advance\count@ by 1 %
950     \lccode`\~=\count@
951     \lowercase{%
952       \toks@\expandafter{\the\toks@ ~}%
953     }%
954   }%
955   \toks@\expandafter{\the\toks@ !}%
956   \xdef\HyPsd@CJHook@bookmarks{%
957     \the\toks@

```

```

958 }%
959 \endgroup

```

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

```

960 \def\HyPsd@CJKActiveChars#1{%
961   \ifx#1!%
962     \let\HyPsd@CJKActiveChars\relax
963   \else
964     \edef#1{\noexpand\Hy@cjkp\string#1}%
965   \fi
966   \HyPsd@CJKActiveChars
967 }

```

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

```

968 \def\HyPsd@DecimalToOctal#1{%
969   \ifcase #1 %
970     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
971     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
972     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
973     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
974     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
975     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
976     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
977     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
978     \or @\or A\or B\or C\or D\or E\or F\or G%
979     \or H\or I\or J\or K\or L\or M\or N\or O%
980     \or P\or Q\or R\or S\or T\or U\or V\or W%
981     \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
982     \or \140\or a\or b\or c\or d\or e\or f\or g%
983     \or h\or i\or j\or k\or l\or m\or n\or o%
984     \or p\or q\or r\or s\or t\or u\or v\or w%
985     \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
986     \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
987     \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
988     \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
989     \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
990     \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
991     \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
992     \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
993     \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
994     \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
995     \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
996     \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
997     \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
998     \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
999     \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1000    \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1001    \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1002    \fi
1003 }

```

## 6.5.5 CJK unicode

\HyPsd@CJKhook@unicode

```
1004 \def\HyPsd@CJKhook@unicode{%
1005   \let\Unicode\HyPsd@CJK@Unicode
1006   \let\CJKnumber\HyPsd@CJKnumber
1007   \let\CJKdigits\HyPsd@CJKdigits
1008 }
```

\HyPsd@CJK@Unicode

```
1009 \def\HyPsd@CJK@Unicode#1#2{%
1010   \ifnum#1<256 %
1011     \HyPsd@DecimalToOctalFirst{#1}%
1012     \HyPsd@DecimalToOctalSecond{#2}%
1013   \else
1014     \933%
1015     \expandafter\expandafter\expandafter\HyPsd@HighA
1016     \intcalcDiv{#1}{4}!%
1017     \933%
1018     \ifcase\intcalcMod{#1}{4} %
1019       4\or 5\or 6\or 7%
1020     \fi
1021     \HyPsd@DecimalToOctalSecond{#2}%
1022   \fi
1023 }

1024 \def\HyPsd@HighA#1!{%
1025   \expandafter\expandafter\expandafter\HyPsd@HighB
1026   \IntCalcDiv#1!64!!%
1027   \expandafter\expandafter\expandafter\HyPsd@HighD
1028   \IntCalcMod#1!64!!%
1029 }
1030 \def\HyPsd@HighB#1!{%
1031   \expandafter\expandafter\expandafter\HyPsd@HighC
1032   \IntCalcDec#1!!%
1033 }
1034 \def\HyPsd@HighC#1!{%
1035   \IntCalcDiv#1!4!%
1036   \@backslashchar
1037   \IntCalcMod#1!4!%
1038 }
1039 \def\HyPsd@HighD#1!{%
1040   \ifcase\IntCalcDiv#1!8! %
1041     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1042   \fi
1043   \ifcase\IntCalcMod#1!8! %
1044     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1045   \fi
1046 }
1047 \def\HyPsd@DecimalToOctalFirst#1{%
1048   \9%
1049   \ifcase#1 %
1050     000\or 001\or 002\or 003\or 004\or 005\or 006\or 007%
1051     \or 010\or 011\or 012\or 013\or 014\or 015\or 016\or 017%
```

```

1052 \or 020\or 021\or 022\or 023\or 024\or 025\or 026\or 027%
1053 \or 030\or 031\or 032\or 033\or 034\or 035\or 036\or 037%
1054 \or 040\or 041\or 042\or 043\or 044\or 045\or 046\or 047%
1055 \or 050\or 051\or 052\or 053\or 054\or 055\or 056\or 057%
1056 \or 060\or 061\or 062\or 063\or 064\or 065\or 066\or 067%
1057 \or 070\or 071\or 072\or 073\or 074\or 075\or 076\or 077%
1058 \or 100\or 101\or 102\or 103\or 104\or 105\or 106\or 107%
1059 \or 120\or 111\or 112\or 113\or 114\or 115\or 116\or 117%
1060 \or 120\or 121\or 122\or 123\or 124\or 125\or 126\or 127%
1061 \or 130\or 131\or 132\or 133\or 134\or 135\or 136\or 137%
1062 \or 140\or 141\or 142\or 143\or 144\or 145\or 146\or 147%
1063 \or 150\or 151\or 152\or 153\or 154\or 155\or 156\or 157%
1064 \or 160\or 161\or 162\or 163\or 164\or 165\or 166\or 167%
1065 \or 170\or 171\or 172\or 173\or 174\or 175\or 176\or 177%
1066 \or 200\or 201\or 202\or 203\or 204\or 205\or 206\or 207%
1067 \or 210\or 211\or 212\or 213\or 214\or 215\or 216\or 217%
1068 \or 220\or 221\or 222\or 223\or 224\or 225\or 226\or 227%
1069 \or 230\or 231\or 232\or 233\or 234\or 235\or 236\or 237%
1070 \or 240\or 241\or 242\or 243\or 244\or 245\or 246\or 247%
1071 \or 250\or 251\or 252\or 253\or 254\or 255\or 256\or 257%
1072 \or 260\or 261\or 262\or 263\or 264\or 265\or 266\or 267%
1073 \or 270\or 271\or 272\or 273\or 274\or 275\or 276\or 277%
1074 \or 300\or 301\or 302\or 303\or 304\or 305\or 306\or 307%
1075 \or 310\or 311\or 312\or 313\or 314\or 315\or 316\or 317%
1076 \or 320\or 321\or 322\or 323\or 324\or 325\or 326\or 327%
1077 \or 330\or 331\or 332\or 333\or 334\or 335\or 336\or 337%
1078 \or 340\or 341\or 342\or 343\or 344\or 345\or 346\or 347%
1079 \or 350\or 351\or 352\or 353\or 354\or 355\or 356\or 357%
1080 \or 360\or 361\or 362\or 363\or 364\or 365\or 366\or 367%
1081 \or 370\or 371\or 372\or 373\or 374\or 375\or 376\or 377%
1082 \fi
1083 }
1084 \def\HyPsd@DecimalToOctalSecond#1{%
1085 \ifcase #1 %
1086 \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1087 \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1088 \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1089 \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1090 \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1091 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1092 \or \060\or \061\or \062\or \063\or \064\or \065\or \066\or \067%
1093 \or \070\or \071\or \072\or \073\or \074\or \075\or \076\or \077%
1094 \or \100\or \101\or \102\or \103\or \104\or \105\or \106\or \107%
1095 \or \110\or \111\or \112\or \113\or \114\or \115\or \116\or \117%
1096 \or \120\or \121\or \122\or \123\or \124\or \125\or \126\or \127%
1097 \or \130\or \131\or \132\or \133\or \134\or \135\or \136\or \137%
1098 \or \140\or \141\or \142\or \143\or \144\or \145\or \146\or \147%
1099 \or \150\or \151\or \152\or \153\or \154\or \155\or \156\or \157%
1100 \or \160\or \161\or \162\or \163\or \164\or \165\or \166\or \167%
1101 \or \170\or \171\or \172\or \173\or \174\or \175\or \176\or \177%
1102 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1103 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1104 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1105 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%

```



```

1106 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1107 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1108 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1109 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1110 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1111 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1112 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1113 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1114 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1115 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1116 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1117 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1118 \fi
1119 }

1120 \def\HyPsd@CJKnumber#1{%
1121 \ifnum#1<\z@
1122 \CJK@minus
1123 \expandafter\HyPsd@@CJKnumber\expandafter{\number-\number#1}%
1124 \else
1125 \expandafter\HyPsd@@CJKnumber\expandafter{\number#1}%
1126 \fi
1127 }

1128 \def\HyPsd@@CJKnumber#1{%
1129 \ifcase#1 %
1130 \CJK@zero\or\CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1131 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine\or
1132 \CJK@ten\or\CJK@ten\CJK@one\or\CJK@ten\CJK@two\or
1133 \CJK@ten\CJK@three\or\CJK@ten\CJK@four\or\CJK@ten\CJK@five\or
1134 \CJK@ten\CJK@six\or\CJK@ten\CJK@seven\or\CJK@ten\CJK@eight\or
1135 \CJK@ten\CJK@nine
1136 \else
1137 \ifnum#1<10000 %
1138 \HyPsd@CJKnumberFour#1!\@empty{20}%
1139 \@empty
1140 \else
1141 \ifnum#1<100000000 %
1142 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1143 \IntCalcDiv#1!10000!%
1144 !\{20}%
1145 \CJK@tenthousand
1146 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1147 \IntCalcMod#1!10000!%
1148 !\CJK@zero{10}%
1149 \@empty
1150 \else
1151 \expandafter\HyPsd@CJKnumberLarge
1152 \number\IntCalcDiv#1!100000000!\expandafter!%
1153 \number\IntCalcMod#1!100000000!!%
1154 \fi
1155 \fi
1156 \fi
1157 }

1158 \def\HyPsd@CJKnumberLarge#1!#2!{%
1159 \HyPsd@CJKnumberFour#1!\{20}%

```

```

1160 \CJK@hundredmillion
1161 \ifnum#2=\z@
1162 \else
1163 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1164 \IntCalcDiv#2!10000!%
1165 !\CJK@zero{10}%
1166 \CJK@tenthousand
1167 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1168 \IntCalcMod#2!10000!%
1169 !\CJK@zero{10}%
1170 \@empty
1171 \fi
1172 }
1173 \def\HyPsd@CJKnumberFour#1!#2#3{%
1174 \ifnum#1=\z@
1175 \expandafter\@gobble
1176 \else
1177 \ifnum#1<1000 %
1178 #2%
1179 \HyPsd@CJKnumberThree#1!#{#3}%
1180 \else
1181 \HyPsd@@CJKnumber{\IntCalcDiv#1!1000!}%
1182 \CJK@thousand
1183 \expandafter\expandafter\expandafter\HyPsd@CJKnumberThree
1184 \IntCalcMod#1!1000!%
1185 !\CJK@zero{10}%
1186 \fi
1187 \fi
1188 }
1189 \def\HyPsd@CJKnumberThree#1!#2#3{%
1190 \ifnum#1=\z@
1191 \else
1192 \ifnum#1<100 %
1193 #2%
1194 \HyPsd@CJKnumberTwo#1!#{#3}%
1195 \else
1196 \HyPsd@@CJKnumber{\IntCalcDiv#1!100!}%
1197 \CJK@hundred
1198 \expandafter\expandafter\expandafter\HyPsd@CJKnumberTwo
1199 \IntCalcMod#1!100!%
1200 !\CJK@zero{10}%
1201 \fi
1202 \fi
1203 }
1204 \def\HyPsd@CJKnumberTwo#1!#2#3{%
1205 \ifnum#1=\z@
1206 \else
1207 \ifnum#1<#3 %
1208 #2%
1209 \HyPsd@@CJKnumber{#1}%
1210 \else
1211 \HyPsd@@CJKnumber{\IntCalcDiv#1!10!}%
1212 \CJK@ten
1213 \ifnum\IntCalcMod#1!10!=\z@

```

```

1214     \else
1215     \HyPsd@@CJKnumber{\IntCalcMod#1!10!}%
1216     \fi
1217 \fi
1218 \fi
1219 }

1220 \def\HyPsd@CJKdigits#1{%
1221 \ifx*#1\relax
1222 \expandafter\HyPsd@@CJKdigits\expandafter\CJK@zero
1223 \else
1224 \HyPsd@@CJKdigits\CJK@null{#1}%
1225 \fi
1226 }

1227 \def\HyPsd@@CJKdigits#1#2{%
1228 \ifx\#2\%
1229 \else
1230 \HyPsd@@@CJKdigits#1#2\@nil
1231 \fi
1232 }%
1233 \def\HyPsd@@@CJKdigits#1#2#3\@nil{%
1234 \HyPsd@CJKdigit#1{#2}%
1235 \ifx\#3\%
1236 \expandafter\@gobble
1237 \else
1238 \expandafter\@firstofone
1239 \fi
1240 {%
1241 \HyPsd@@@CJKdigits#1#3\@nil
1242 }%
1243 }

1244 \def\HyPsd@CJKdigit#1#2{%
1245 \ifcase#2 %
1246 #1\or
1247 \CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1248 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine
1249 \fi
1250 }

```

### 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 L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> 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 (L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> 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\@typeset@protect
    \@inmathwarn#1%

```

```

\else
  \noexpand#1\expandafter\@gobble
\fi}
\def\@changed@cmd#1#2{%
  \ifx\protect\@typeset@protect
    \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\expandafter\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}

1251 \def\HyPsd@inmathwarn#1#2{%
1252   \ifx#2\expandafter
1253     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
1254       \HyPsd@GLYPHERR
1255       \expandafter\@gobble\string#1%
1256       >%
1257       \expandafter\expandafter\expandafter\HyPsd@EndWithElse
1258     \else
1259       \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
1260     \fi
1261   \else
1262     \expandafter#2%
1263   \fi
1264 }
1265 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
1266 \def\HyPsd@EndWithElse#1\else\else{}

\HyPsd@add@accent

1267 \def\HyPsd@add@accent#1#2{%
1268   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
1269   #2%
1270 }%

```

### 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`.

```
1271 \def\HyPsd@LetUnexpandableSpace#1{%
1272   \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
1273 }
```

`\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.

```
1274 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace
```

### 6.5.8 Marker for commands

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

```
1275 \edef\HyPsd@XSPACE{\string#\string X}
1276 \edef\HyPsd@ITALCORR{\string#\string I}
1277 \edef\HyPsd@GLYPHERR{\string#\string G}
```

### 6.5.9 `\hspace` fix

`\HyPsd@hspace`

```
1278 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*\END}
```

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

```
1279 \def\HyPsd@@hspace#1*#2\END{%
1280   \ifx\|#2\%
1281     \HyPsd@hspacetest{#1}%
1282   \else
1283     \expandafter\HyPsd@hspacetest
1284   \fi
1285 }
```

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

```
1286 \def\HyPsd@hspacetest#1{\ifdim\dimexpr#1\relax>\z@\space\fi}
```

### 6.5.10 Fix for AMS classes

```
1287 \ltx@ifundefined{tocsection}{%
1288   \let\HyPsd@AMSclassfix\relax
1289 }{%
1290   \def\HyPsd@AMSclassfix{%
```

```

1291 \let\tocpart\HyPsd@tocsection
1292 \let\tocchapter\HyPsd@tocsection
1293 \let\tocappendix\HyPsd@tocsection
1294 \let\tocsection\HyPsd@tocsection
1295 \let\tocsubsection\HyPsd@tocsection
1296 \let\tocsubsubsection\HyPsd@tocsection
1297 \let\tocparagraph\HyPsd@tocsection
1298 }%
1299 \def\HyPsd@tocsection#1#2#3{%
1300 \if @#2@\else\if @#1@\else#1 \fi#2. \fi
1301 #3%
1302 }%
1303 }

```

### 6.5.11 Reference commands

`\HyPsd@href`

```

1304 \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.

```

1305 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%

```

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

```

1306 \def\HyPsd@@ref#1*#2\END{%
1307 \ifx\#2\%
1308 \HyPsd@@@ref{#1}%
1309 \else
1310 \expandafter\HyPsd@@@ref
1311 \fi
1312 }%

```

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

```

1313 \def\HyPsd@@@ref#1{%
1314 \expandafter\ifx\csname r@#1\endcsname\relax
1315 ??%
1316 \else
1317 \expandafter\expandafter\expandafter
1318 \@car\csname r@#1\endcsname\@nil
1319 \fi
1320 }

```

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

```

1321 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}

```

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

```

1322 \def\HyPsd@@pageref#1*#2\END{%
1323 \ifx\#2\%
1324 \HyPsd@@@pageref{#1}%
1325 \else
1326 \expandafter\HyPsd@@@pageref
1327 \fi
1328 }

```

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

```

1329 \def\HyPsd@@@pageref#1{%
1330   \expandafter\ifx\csname r@#1\endcsname\relax
1331     ??%
1332   \else
1333     \expandafter\expandafter\expandafter\expandafter
1334     \expandafter\expandafter\expandafter\@car
1335     \expandafter\expandafter\expandafter\@gobble
1336     \csname r@#1\endcsname{}\@nil
1337   \fi
1338 }
```

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

```

1339 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*\END}
```

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

```

1340 \def\HyPsd@@nameref#1*#2\END{%
1341   \ifx\#2\%
1342     \HyPsd@@@nameref{#1}%
1343   \else
1344     \expandafter\HyPsd@@@nameref
1345   \fi
1346 }
```

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

```

1347 \def\HyPsd@@@nameref#1{%
1348   \expandafter\ifx\csname r@#1\endcsname\relax
1349     ??%
1350   \else
1351     \expandafter\expandafter\expandafter\expandafter
1352     \expandafter\expandafter\expandafter\@car
1353     \expandafter\expandafter\expandafter\@gobbletwo
1354     \csname r@#1\endcsname{}\@nil
1355   \fi
1356 }
```

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

```

1357 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}
```

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

```

1358 \def\HyPsd@@autoref#1*#2\END{%
1359   \ifx\#2\%
1360     \HyPsd@@@autoref{#1}%
1361   \else
1362     \expandafter\HyPsd@@@autoref
1363   \fi
1364 }
```

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

```

1365 \def\HyPsd@@@autoref#1{%
1366   \expandafter\ifx\csname r@#1\endcsname\relax
```

```

1367   ??%
1368   \else
1369     \expandafter\expandafter\expandafter\HyPsd@autorefname
1370       \csname r@#1\endcsname\}\}\}\@nil
1371     \expandafter\expandafter\expandafter
1372       \@car\csname r@#1\endcsname\@nil
1373   \fi
1374 }

```

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

```

1375 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1376   \ifx\#4\%
1377   \else
1378     \HyPsd@@autorefname#4.\@nil
1379   \fi
1380 }

```

`\HyPsd@@autorefname`

```

1381 \def\HyPsd@@autorefname#1.#2\@nil{%
1382   \ltx@ifundefined{#1autorefname}{%
1383     \ltx@ifundefined{#1name}{%
1384       }{%
1385         \csname#1name\endcsname\space
1386       }%
1387     }{%
1388       \csname#1autorefname\endcsname\space
1389     }%
1390 }

```

### 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 causes 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 `\HyPsdLetCommand` 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 unmachted `\if...` tokens, the cases `\let\if...\iftrue` and `\let\if...\iffalse` are checked and ignored.

```

\HyPsd@DefCommand
\HyPsd@LetCommand 1391 \begingroup
1392   \def\x#1#2{%
1393     \endgroup
1394     \let#1\def
1395     \def\HyPsd@DefCommand##1##2###{%
1396       #1%
1397       \expandafter\noexpand
1398       \csname\expandafter\@gobble\string##1\@empty\endcsname
1399       \@gobble
1400     }%
1401     \let#2\let
1402     \def\HyPsd@@LetCommand##1{%
1403       \expandafter\ifx\csname##1\expandafter\endcsname
1404         \csname iftrue\endcsname
1405         \pdfstringdefWarn\let
1406         \expandafter\@gobble
1407       \else
1408         \expandafter\ifx\csname##1\expandafter\endcsname
1409           \csname iffalse\endcsname
1410           \pdfstringdefWarn\let
1411           \expandafter\expandafter\expandafter\@gobble
1412         \else
1413           #2%
1414           \expandafter\noexpand
1415           \csname##1\expandafter\expandafter\expandafter\endcsname
1416         \fi
1417       \fi
1418     }%
1419   }%
1420   \expandafter\x\csname <def>-command\expandafter\endcsname
1421     \csname <let>-command\endcsname
1422   \def\HyPsd@LetCommand#1{%
1423     \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1424     \expandafter\expandafter\expandafter{%
1425       \expandafter\@gobble\string#1\@empty
1426     }%
1427   }

```

### 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).

```
1428 \def\HyPsd@ifnextchar#1{%
1429   \pdfstringdefWarn#1%
1430   \expandafter\@gobbletwo\@gobble
1431 }
```

#### 6.5.14 `\@protected@testopt@ifnextchar`

`\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`.

```
1432 \def\HyPsd@protected@testopt#1{%
1433   \pdfstringdefWarn#1%
1434   \@gobbletwo
1435 }
```

## 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:

```
1436 \def\HyPsd@Warning#1{%
1437   \begingroup
1438   \let\space\ltx@space
1439   \Hy@Warning{#1}%
1440   \endgroup
1441 }
```

### 6.6.2 Protecting spaces

```
1442 \RequirePackage{etexcmds}[2007/09/09]
1443 \ifetex@unexpanded
1444   \expandafter\@secondoftwo
1445 \else
1446   \expandafter\@firstoftwo
1447 \fi
1448 {%
```

`\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`.

```
1449 \def\HyPsd@ProtectSpaces#1{%
1450   \iftrue
```

```

1451 \expandafter\HyPsd@@ProtectSpacesFi
1452 \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1453 \fi
1454 }%

```

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

```

1455 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%
1456 \fi
1457 \ifx\scrollmode#2\scrollmode
1458 \HyPsd@RemoveMask#1\HyPsd@End#3%
1459 \else
1460 \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1461 \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1462 \fi
1463 }%

```

### 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.

```

1464 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1465 \toks@ \expandafter{#1}%
1466 \xdef#2{\the\toks@}%
1467 }%

1468 }{%
1469 \let\HyPsd@fi\fi
1470 \def\HyPsd@ProtectSpaces#1{%
1471 \xdef#1{%
1472 \iftrue
1473 \expandafter\HyPsd@@ProtectSpacesFi
1474 \expandafter|\expandafter\@empty#1| %
1475 \HyPsd@fi
1476 }%
1477 \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1478 }%
1479 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1480 \fi
1481 \etex@unexpanded{#1}%
1482 \ifx\scrollmode#2\scrollmode
1483 \else
1484 \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1485 \HyPsd@fi
1486 }%
1487 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1488 \xdef#2{\etex@unexpanded\expandafter{#1}}%
1489 }%
1490 }

```

### 6.6.3 Remove grouping braces

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

```
1491 \def\HyPsd@RemoveBraces#1{%
1492   \ifx\scrollmode#1\scrollmode
1493   \else
1494     \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1495   \fi
1496 }
```

`\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 `\ltx@ReturnAfterFi`.

```
1497 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1498   \fi
1499   \def\Hy@temp@A{#1#2}%
1500   \def\Hy@temp@B{#3}%
1501   \ifx\Hy@temp@A\Hy@temp@B
1502     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1503       \HyPsd@String#1%
1504     }%
1505     \ifx\scrollmode#2\scrollmode
1506     \else
1507       \Hy@ReturnAfterFiFiEnd{%
1508         \HyPsd@RemoveBraces{#2}%
1509       }%
1510     \fi
1511   \else
1512     \def\Hy@temp@A{#1}%
1513     \HyPsd@AppendItalcorr\HyPsd@String
1514     \ifx\Hy@temp@A\@empty
1515       \Hy@ReturnAfterElseFiFiEnd{%
1516         \HyPsd@RemoveBraces{#2}%
1517       }%
1518     \else
1519       \HyPsd@ProtectSpaces\Hy@temp@A
1520       \HyPsd@AppendItalcorr\Hy@temp@A
1521       \Hy@ReturnAfterFiFiEnd{%
1522         \expandafter\HyPsd@RemoveBraces\expandafter
1523           {\Hy@temp@A#2}%
1524       }%
1525     \fi
1526   \fi
1527   \Hy@ReturnEnd
1528 }
```

`\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`.

```

1529 \def\HyPsd@AppendItalcrr#1{%
1530   \expandafter\HyPsd@@AppendItalcrr\expandafter{\/#1}%
1531 }
1532 \def\HyPsd@@AppendItalcrr#1#2{%
1533   \expandafter\def\expandafter#2\expandafter{#2#1}%
1534 }
```

#### 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>.

```

1535 \ltx@ifundefined{directlua}{%
1536 }{%
1537   \expandafter\ifx\csname\endcsname\relax\fi
1538 }
```

#### 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`.

```

1539 \begingroup
1540   \catcode`\Q=\active
1541   \let Q\ltx@empty
1542   \gdef\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1543     \global\let\HyPsd@Rest\relax
1544     \ifcat\relax\noexpand#1\relax
1545       \ifx#1\protect
1546       \else
1547         \ifx#1\penalty
1548           \setbox\z@=\hbox{%
1549             \afterassignment\HyPsd@AfterCountRemove
1550             \count@=#2\HyPsd@End
1551           }%
1552         \else
1553           \ifx#1\kern
1554             \setbox\z@=\hbox{%
1555               \afterassignment\HyPsd@AfterDimenRemove
1556               \dimen@=#2\HyPsd@End
1557             }%

```

```

1558     \else
1559     \ifx#1\hskip
1560     \setbox\z@=\hbox{%
1561     \afterassignment\HyPsd@AfterSkipRemove
1562     \skip@=#2\HyPsd@end
1563     }%
1564     \else
1565     \HyPsd@CatcodeWarning{#1}%
1566     \fi
1567   \fi
1568 \fi
1569 \fi
1570 \else
1571 \ifcat\noexpand#1\noexpandQ% active character
1572 \expandafter\expandafter\expandafter\def
1573 \expandafter\expandafter\expandafter\HyPsd@String
1574 \expandafter\expandafter\expandafter{%
1575 \expandafter\HyPsd@String\string#1%
1576 }%
1577 \else
1578 \ifcat#1A% letter
1579 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1580 \HyPsd@String#1%
1581 }%
1582 \else
1583 \ifcat#1 % SPACE
1584 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1585 \HyPsd@String\HyPsd@SPACEOPTI
1586 }%
1587 \else
1588 \ifcat$#1%
1589 \HyPsd@CatcodeWarning{math shift}%
1590 \else
1591 \ifcat&#1%
1592 \HyPsd@CatcodeWarning{alignment tab}%
1593 \else
1594 \ifcat^#1%
1595 \HyPsd@CatcodeWarning{superscript}%
1596 \else
1597 \ifcat_#1%
1598 \HyPsd@CatcodeWarning{subscript}%
1599 \else
1600 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1601 \HyPsd@String#1%
1602 }%
1603 \fi
1604 \fi
1605 \fi
1606 \fi
1607 \fi
1608 \fi
1609 \fi
1610 \fi
1611 \ifx\HyPsd@Rest\relax

```

```

1612 \ifx\scrollmode#2\scrollmode
1613 \else
1614 \Hy@ReturnAfterFiFiEnd{%
1615 \HyPsd@CheckCatcodes#2\HyPsd@End
1616 }%
1617 \fi
1618 \else
1619 \ifx\HyPsd@Rest\@empty
1620 \else
1621 \Hy@ReturnAfterFiFiEnd{%
1622 \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1623 }%
1624 \fi
1625 \fi
1626 \Hy@ReturnEnd
1627 }%
1628 \endgroup

```

### Remove counts, dimens, skips.

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

```

1629 \def\HyPsd@AfterCountRemove#1\HyPsd@End{%
1630 \gdef\HyPsd@Rest{#1}%
1631 }

```

`\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.

```

1632 \def\HyPsd@AfterDimenRemove#1\HyPsd@End{%
1633 \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@>1ex %
1634 \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1635 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1636 \else
1637 \ifdim\dimen@=\z@
1638 \else
1639 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1640 \fi
1641 \gdef\HyPsd@Rest{#1}%
1642 \fi
1643 }

```

`\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).

```

1644 \def\HyPsd@AfterSkipRemove#1\HyPsd@End{%
1645 \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>1ex %
1646 \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1647 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1648 \else
1649 \ifdim\skip@=\z@
1650 \else
1651 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1652 \fi

```

```

1653 \gdef\HyPsd@Rest{#1}%
1654 \fi
1655 }

```

### Catcode warnings.

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

```

1656 \def\HyPsd@CatcodeWarning#1{%
1657 \HyPsd@Warning{%
1658 Token not allowed in a PDF string (%)
1659 \ifHy@unicode
1660 Unicode%
1661 \else
1662 PDFDocEncoding%
1663 \fi
1664 }:%
1665 \MessageBreak removing `\'HyPsd@RemoveCmdPrefix#1'%
1666 }%
1667 }
1668 \begingroup
1669 \catcode`\|=0 %
1670 \catcode`\|=12 %
1671 |gdef|HyPsd@RemoveCmdPrefix#1{%
1672 |expandafter|HyPsd@@RemoveCmdPrefix
1673 |string#1|@empty\<>-|@empty|@empty
1674 }%
1675 |gdef|HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1676 |endgroup

```

\HyPsd@RemoveSpaceWarning

```

1677 \def\HyPsd@RemoveSpaceWarning#1{%
1678 \HyPsd@Warning{%
1679 Token not allowed in a PDF string (%)
1680 \ifHy@unicode
1681 Unicode%
1682 \else
1683 PDFDocEncoding%
1684 \fi
1685 }:%
1686 \MessageBreak #1\MessageBreak
1687 removed%
1688 }%
1689 }

```

\HyPsd@ReplaceSpaceWarning

```

1690 \def\HyPsd@ReplaceSpaceWarning#1{%
1691 \HyPsd@Warning{%
1692 Token not allowed in a PDF string (%)
1693 \ifHy@unicode
1694 Unicode%
1695 \else
1696 PDFDocEncoding%
1697 \fi
1698 }:%

```



```

1699 \MessageBreak #1\MessageBreak
1700 replaced by space%
1701 }%
1702 }

```

### 6.6.5 Check for wrong glyphs

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

```

1703 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1704 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1705 \HyPsd@String#1%
1706 }%
1707 \ifx\\#2\\%
1708 \else
1709 \ltx@ReturnAfterFi{%
1710 \HyPsd@GlyphProcessWarning#2\@empty
1711 }%
1712 \fi
1713 }
1714 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1715 \HyPsd@@@GlyphProcessWarning#1++>%
1716 \HyPsd@GlyphProcess#2\@empty
1717 }
1718 \def\HyPsd@@@GlyphProcessWarning#1+#2+#3>{%
1719 \ifx\\#2\\%
1720 \HyPsd@Warning{%
1721 Glyph not defined in %
1722 P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1723 removing ` \@backslashchar#1'%
1724 }%
1725 \else
1726 \HyPsd@Warning{%
1727 Composite letter ` \@backslashchar#1+#2'\MessageBreak
1728 not defined in P\ifHy@unicode U\else D1\fi\space encoding,%
1729 \MessageBreak
1730 removing ` \@backslashchar#1'%
1731 }%
1732 \fi
1733 }

```

### 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`.

```

1734 \def\HyPsd@spaceopti#1{ % first space
1735 \ifx\HyPsd@spaceopti#1%
1736 \040%
1737 \else
1738 #1%
1739 \fi

```

```
1740 }%
```

### 6.6.6 Replacing tokens

`\HyPsd@Subst` To save tokens `\HyPsd@StringSubst` is a 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.
1741 \def\HyPsd@Subst#1#2#3{%
1742 \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
1743 \fi
1744 ##1%
1745 \ifx\scrollmode##2\scrollmode
1746 \else
1747 #2%
1748 \HyPsd@@ReplaceFi##2\END
1749 \fi
1750 }%
1751 \xdef##3{%
1752 \iftrue
1753 \expandafter\HyPsd@@ReplaceFi#3#1\END
1754 \fi
1755 }%
1756 }
```

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

```
1757 \def\HyPsd@StringSubst#1{%
1758 \expandafter\HyPsd@Subst\expandafter{\string#1}%
1759 }
```

`\HyPsd@EscapeTeX`

```
1760 \begingroup
1761 \lccode`\!=`%%
1762 \lccode`\|=`%%
1763 \lccode`\(= `{%
1764 \lccode`\)=`}%
1765 \lccode`0=\ltx@zero
1766 \lccode`1=\ltx@zero
1767 \lccode`3=\ltx@zero
1768 \lccode`4=\ltx@zero
1769 \lccode`5=\ltx@zero
1770 \lccode`7=\ltx@zero
1771 \lowercase{\endgroup
1772 \def\HyPsd@EscapeTeX#1{%
1773 \HyPsd@Subst!{|045}#1%
1774 \HyPsd@Subst({|173}#1%
1775 \HyPsd@Subst){|175}#1%
1776 }%
1777 }
```

### 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.

```

1778 \def\HyPsd@doxspace#1{%
1779   \ifx#1\relax\else
1780     \ifx#1.\else
1781       \ifx#1:\else
1782         \ifx#1,\else
1783           \ifx#1;\else
1784             \ifx#1!\else
1785               \ifx#1?\else
1786                 \ifx#1/\else
1787                   \ifx#1-\else
1788                     \ifx#1'\else
1789                       \HyPsd@SPACEOPTI
1790                     \fi
1791                   \fi
1792                 \fi
1793               \fi
1794             \fi
1795           \fi
1796         \fi
1797       \fi
1798     \fi
1799   \fi
1800   #1%
1801 }%
```

### 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.

```

1802 \beginingroup
1803   \catcode`\|=0 %
1804   \catcode`\|=12 %
```

`\HyPsd@ConvertToUnicode`

```

1805 |gdef|HyPsd@ConvertToUnicode#1{%
1806   |xdef#1{%
1807     |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1808   }%
1809   |ifx#1|@empty
1810   |else
1811     |xdef#1{%
1812       \376\377%
1813       #1%
1814     }%
1815   |fi
1816 }%
```

\HyPsd@DoConvert

```

1817 |gdef|HyPsd@DoConvert#1{%
1818   |ifx#1|@empty
1819   |else
1820     |ltx@ReturnAfterFi{%
1821       |ifx#1\%%
1822       \%%
1823       |expandafter|HyPsd@DoEscape
1824     |else
1825       |HyPsd@Char{#1}%
1826       |expandafter|HyPsd@DoConvert
1827     |fi
1828   }%
1829 |fi
1830 }%

```

\HyPsd@DoEscape

```

1831 |gdef|HyPsd@DoEscape#1{%
1832   |ifx#19%
1833   |expandafter|HyPsd@GetTwoBytes
1834   |else
1835     |ltx@ReturnAfterFi{%
1836       |ifx#18%
1837       00%
1838       |expandafter|HyPsd@GetTwoBytes
1839     |else
1840       #1%
1841       |expandafter|HyPsd@GetOneByte
1842     |fi
1843   }%
1844 |fi
1845 }%

```

\HyPsd@GetTwoBytes

```

1846 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1847   #1\#2#3#4%
1848   |HyPsd@DoConvert
1849 }%

```

\HyPsd@GetOneByte

```

1850 |gdef|HyPsd@GetOneByte#1#2{%
1851   #1#2%
1852   |HyPsd@DoConvert
1853 }%
1854 |endgroup

```

\HyPsd@@GetNextTwoTokens  $\TeX$  does only allow nine parameters, so we need another macro to get more arguments.

```

1855 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1856   \xdef#4{#4#1#2}%
1857   \HyPsd@@ConvertToUnicode#3\END#4%
1858 }

```

\HyPsd@Char

```
1859 \begingroup
1860 \catcode0=9 %
1861 \catcode`\^=7 %
1862 \catcode`\^^=12 %
1863 \def\x{~~~~0000}%
1864 \expandafter\endgroup
1865 \ifx\x\@empty
1866 \def\HyPsd@Char#1{%
1867 \ifnum`#1<128 %
1868 \@backslashchar 000#1%
1869 \else
1870 \ifnum`#1<65536 %
1871 \expandafter\HyPsd@CharTwoByte\number`#1%
1872 \else
1873 \expandafter\expandafter\expandafter\HyPsd@CharSurrogate
1874 \intcalcSub{`#1}{65536}!%
1875 \fi
1876 \fi
1877 }%
1878 \def\HyPsd@CharTwoByte#1!{%
1879 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1880 \IntCalcDiv#1!256!!%
1881 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1882 \IntCalcMod#1!256!!%
1883 }%
1884 \def\HyPsd@CharOctByte#1!{%
1885 \@backslashchar
1886 \IntCalcDiv#1!64!%
1887 \intcalcDiv{\IntCalcMod#1!64!}{8}%
1888 \IntCalcMod#1!8!%
1889 }%
1890 \def\HyPsd@CharSurrogate#1!{%
1891 \@backslashchar 33%
1892 \IntCalcDiv#1!262144!%
1893 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1894 \intcalcDiv{\IntCalcMod#1!262144!}{1024}!%
1895 \@backslashchar 33%
1896 \expandafter\expandafter\expandafter\IntCalcAdd
1897 \intcalcDiv{\IntCalcMod#1!1024!}{256}!4!%
1898 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1899 \IntCalcMod#1!256!!%
1900 }%
1901 \else
1902 \def\HyPsd@Char#1{%
1903 \@backslashchar 000#1%
1904 }%
1905 \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.

```
1906 \ifcsname UTFviii@loop\endcsname
1907 \def\HyPsd@expand@utfvii{%
```

```

1908 \count@"C2
1909 \@tempcnta"F5
1910 \def\UTFviii@tmp{\expandafter\def\expandafter~\expandafter{~}}%
1911 \UTFviii@loop
1912 }
1913 \else
1914 \def\HyPsd@expand@utfvii{}
1915 \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`

```

1916 \begingroup
1917 \lccode`~=`^^f4\relax
1918 \lowercase{\endgroup
1919 \def\HyPsd@UTFviii{%
1920 \HyPsd@expand@utfvii
1921 \let\UTFviii@two@octets\HyPsd@UTFviii@two
1922 \let\UTFviii@three@octets\HyPsd@UTFviii@three
1923 \let\UTFviii@four@octets\HyPsd@UTFviii@four
1924 \ifx~\HyPsd@UTFviii@ccxliv@undef
1925 \let~\HyPsd@UTFviii@ccxliv@def
1926 \fi
1927 \let\unichar\HyPsd@unichar
1928 }%
1929 }%
1930 \def\HyPsd@UTFviii@ccxliv@undef{\@inpenc@undefined@{utf8}}%
1931 \edef\HyPsd@UTFviii@ccxliv@def{%
1932 \noexpand\UTFviii@four@octets\string ^^f4%
1933 }%

```

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.

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

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

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

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

$$(5)$$

```

1934 \def\HyPsd@UTFviii@two#1#2{%
1935 \expandafter\HyPsd@UTFviii@@two

```

```

1936 \number\dimexpr.25\dimexpr`#1sp\expandafter\relax\expandafter| %
1937 \number`#1\expandafter| %
1938 \number\dimexpr.125\dimexpr`#2sp\expandafter\relax\expandafter| %
1939 \number`#2 \@nil
1940 }%
1941 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
1942 \expandafter\8%
1943 \number\numexpr #1-48\expandafter\relax
1944 \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1945 \number\numexpr #3-8*%
1946 \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1947 \number\numexpr #4-8*#3\relax
1948 }%

```

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

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

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

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

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

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

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

$$(12)$$

```

1949 \def\HyPsd@UTFviii@three#1#2#3{%
1950 \expandafter\HyPsd@UTFviii@@three
1951 \number\dimexpr.25\dimexpr`#1sp\expandafter\relax\expandafter| %
1952 \number`#1\expandafter| %
1953 \number\ifnum\numexpr`#2-128\relax <32 0\else 1\fi\expandafter| %
1954 \number\dimexpr.25\dimexpr`#2sp\expandafter\relax\expandafter| %
1955 \number`#2\expandafter| %
1956 \number\dimexpr.125\dimexpr`#3sp\expandafter\relax\expandafter| %
1957 \number`#3 \@nil
1958 }%
1959 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1960 \expandafter\9%
1961 \number\numexpr #1-56\expandafter\relax
1962 \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
1963 \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
1964 \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
1965 \number\numexpr #6-16\expandafter\relax
1966 \number\numexpr #7-8*#6\relax
1967 }%

```

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

```

```

1968 \def\HyPsd@UTFviii@four#1#2{%

```

```

1969 \expandafter\HyPsd@@UTFviii@four\number
1970 \numexpr-1+(\`#1-240)*4+\dimexpr.0625\dimexpr`#2sp-128sp%
1971 \expandafter|\number
1972 \numexpr`#2-16*\dimexpr.0625\dimexpr`#2sp| %
1973 }%
1974 \def\HyPsd@@UTFviii@four#1|#2|#3{%
1975 \933\number\dimexpr.25\dimexpr#1sp\relax\relax
1976 \csname\number\dimexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1977 \ifodd#2 %
1978 \number\dimexpr(#2-1)/2\relax
1979 \else
1980 \number\dimexpr#2/2\relax
1981 \fi
1982 \number\dimexpr\ifodd#2 4+\fi
1983 \dimexpr.0625\dimexpr`#3sp-128sp\relax\relax\relax
1984 \933%
1985 \expandafter\HyPsd@@@UTFviii@four\number
1986 \numexpr`#3-16*\dimexpr.0625\dimexpr`#3sp| %
1987 }%
1988 \def\HyPsd@@@UTFviii@four#1|#2{%
1989 \number\dimexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
1990 \csname\number\dimexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1991 \number\dimexpr.125\dimexpr`#2sp-128sp\relax\relax
1992 \number\dimexpr`#2-8*\dimexpr.125\dimexpr`#2sp\relax\relax\relax
1993 }%

```

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

```

1994 \def\HyPsd@unichar#1{%
1995 \ifHy@unicode
1996 \ifnum#1>"10FFFF %
1997 \HyPsd@UnicodeReplacementCharacter % illegal
1998 \else
1999 \ifnum#1>"FFFF %

```

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

```

2000 \expandafter\HyPsd@unichar\expandafter{%
2001 \number\dimexpr 55296+%
2002 \dimexpr.0009765625\dimexpr\dimexpr\number#1sp-\p@
2003 \relax\relax\relax
2004 }%

```

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

```

2005 \expandafter\HyPsd@unichar\expandafter{%
2006 \number\dimexpr#1-9216%
2007 -1024*\dimexpr.0009765625\dimexpr\dimexpr\number#1sp-\p@
2008 \relax\relax\relax
2009 }%
2010 \else
2011 \ifnum#1>"7FFF %
2012 \9%
2013 \expandafter\HyPsd@unichar@first@byte\expandafter{%
2014 \number
2015 \dimexpr.00390625\dimexpr\dimexpr\number#1sp\relax\relax
2016 }%

```



```

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

```

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

```

2054 \def\HyPsd@utf@viii@undeferr#1#2#3#4#5#6{%
2055 \ifx\@gobble#1%
2056 \else
2057 [Please insert \textbackslash PrerenderUnicode%
2058 \textbraceleft#1\textbraceright\space
2059 into preamble]%
2060 \fi
2061 }%

```

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

\HyPsd@DieFace Die faces are provided by

Package	Macro
ifsym	\Cube
epsdice	\epsdice
hhcount	\fcdice

\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.

```

2062 \def\HyPsd@DieFace#1{%
2063   \ifHy@unicode
2064     \ifnum#1<1 %
2065       \HyPsd@UnicodeReplacementCharacter
2066     \else
2067       \ifnum#1>6 %
2068         \9046\205%
2069         \expandafter\expandafter\expandafter
2070         \HyPsd@DieFaceLarge\intcalcSub{#1}{6}!%
2071       \else
2072         \9046\20\intcalcDec{#1}%
2073       \fi
2074     \fi
2075   \else
2076     .% Die faces are not part of PDFDocEncoding
2077   \fi
2078 }
```

\HyPsd@DieFaceLarge

```

2079 \def\HyPsd@DieFaceLarge#1!{%
2080   \ifnum#1>6 %
2081     \expandafter\ltx@firstoftwo
2082   \else
2083     \expandafter\ltx@secondoftwo
2084   \fi
2085   {%
2086     \9046\205%
2087     \expandafter\expandafter\expandafter
2088     \HyPsd@DieFaceLarge\IntCalcSub#1!6!!%
2089   }{%
2090     \9046\20\IntCalcDec#1!%
2091   }%
2092 }
```

#### 6.6.11 Support for moon phases of package china2e

```

2093 \def\HyPsd@MoonPha#1{%
2094   \ifcase\intcalcNum{#1} %
2095     \HyPsd@UnicodeReplacementCharacter
2096   \or % 1
2097   % U+1F31A NEW MOON WITH FACE; \MoonPha{1} (china2e)
2098   \9330\074\9337\032%
2099   \or % 2
2100   \HyPsd@UnicodeReplacementCharacter
2101   \or % 3
2102   % U+1F31D FULL MOON WITH FACE; \MoonPha{3} (china2e)
```

```

2103 \9330\074\9337\035%
2104 \or % 4
2105 % U+1F31C LAST QUARTER MOON WITH FACE; \MoonPha{4} (china2e)
2106 \9330\074\9337\034%
2107 \else
2108 \HyPsd@UnicodeReplacementCharacter
2109 \fi
2110 }
2111 %* \HyPsd@MoonPha -> \MoonPha

```

## 6.6.12 Support for package pifont

\HyPsd@ding

```

2112 \def\HyPsd@ding#1{%
2113 \ifHy@unicode
2114 \ifnum#1<32 %
2115 \HyPsd@UnicodeReplacementCharacter
2116 \else
2117 \ifnum#1>254 %
2118 \HyPsd@UnicodeReplacementCharacter
2119 \else
2120 \ifnum#1<127 %
2121 \expandafter\expandafter\expandafter
2122 \HyPsd@@ding\intcalcNum{#1}!%
2123 \else
2124 \ifnum#1>160 %
2125 \expandafter\expandafter\expandafter
2126 \HyPsd@@ding\intcalcNum{#1}!%
2127 \else
2128 \HyPsd@UnicodeReplacementCharacter
2129 \fi
2130 \fi
2131 \fi
2132 \fi
2133 \else
2134 .% Dingbats are not part of PDFDocEncoding
2135 \fi
2136 }

```

\HyPsd@@ding

```

2137 \def\HyPsd@@ding#1!{%
2138 \ltx@ifundefined{HyPsd@ding@#1}{%
2139 \ifnum#1<127 %
2140 \9047%
2141 \HyPsd@DecimalToOctalSecond{\IntCalcSub#1!32!}%
2142 \else
2143 \ifnum#1<168 %
2144 \9047\14\IntCalcSub#1!160!%
2145 \else
2146 \ifnum#1>181 %
2147 \9047\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!64!}%
2148 \else
2149 % 172..181 -> U+2460..U+2469
2150 \9044\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!76!}%
2151 \fi

```

```

2152 \fi
2153 \fi
2154 }{%
2155 \csname HyPsd@ding@#1\endcsname
2156 }%
2157 }

2158 \@namedef{HyPsd@ding@32}{\space}
2159 % U+260E BLACK TELEPHONE
2160 \@namedef{HyPsd@ding@37}{\9046\016}% U+260E
2161 % U+261B BLACK RIGHT POINTING INDEX
2162 \@namedef{HyPsd@ding@42}{\9046\033}% U+261B
2163 % U+261E WHITE RIGHT POINTING INDEX
2164 \@namedef{HyPsd@ding@43}{\9046\036}% U+261E
2165 % U+2605 BLACK STAR
2166 \@namedef{HyPsd@ding@72}{\9046\005}% U+2605
2167 % U+25CF BLACK CIRCLE
2168 \@namedef{HyPsd@ding@108}{\9045\317}% U+25CF
2169 % U+25A0 BLACK SQUARE
2170 \@namedef{HyPsd@ding@110}{\9045\240}% U+25A0
2171 % U+25B2 BLACK UP-POINTING TRIANGLE
2172 \@namedef{HyPsd@ding@115}{\9045\262}% U+25B2
2173 % U+25BC BLACK DOWN-POINTING TRIANGLE
2174 \@namedef{HyPsd@ding@116}{\9045\274}% U+25BC
2175 % U+25C6 BLACK DIAMOND
2176 \@namedef{HyPsd@ding@117}{\9045\306}% U+25C6
2177 % U+25D7 RIGHT HALF BLACK CIRCLE
2178 \@namedef{HyPsd@ding@119}{\9045\327}% U+25D7
2179 \@namedef{HyPsd@ding@168}{\textclubsuitblack}%
2180 \@namedef{HyPsd@ding@169}{\textdiamondsuitblack}%
2181 \@namedef{HyPsd@ding@170}{\textheartsuitblack}%
2182 \@namedef{HyPsd@ding@171}{\textspadesuitblack}%
2183 \@namedef{HyPsd@ding@213}{\textrightarrow}%
2184 \@namedef{HyPsd@ding@214}{\textleftarrow}%
2185 \@namedef{HyPsd@ding@215}{\textupdownarrow}%
2186 \@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.

```

2187 \@ifpackageloaded{subfigure}{%
2188 \ltx@ifundefined{sub@label}{%
2189 \Hy@hypertextnamesfalse
2190 }{%
2191 \renewcommand*{\sub@label}[1]{%
2192 \@bsphack
2193 \subfig@oldlabel{#1}%
2194 \if@filesw
2195 \begingroup
2196 \edef\@currentlabstr{%
2197 \expandafter\strip@prefix\meaning\@currentlabelname

```

```

2198     }%
2199     \protected@write\@auxout{}\@auxout{\string\newlabel{sub@#1}{%
2200     \string\newlabel{sub@#1}{%
2201     {\@nameuse{@@thesub\@capttype}}%
2202     {\thepage}%
2203     {%
2204     \expandafter\strip@period\@currentlabstr
2205     \relax.\relax\@@@%
2206     }%
2207     {\@currentHref}%
2208     }%
2209     }%
2210     }%
2211     \endgroup
2212     \fi
2213     \@esphack
2214     }%
2215     }%
2216     }{}

```

## 7.2 Package xr and xr-hyper

The beta version of xr that supports `\XR@addURL` is called `xr-hyper`. Therefore we test for the macro itself and not for the package name:

```

2217 \ltx@ifundefined{XR@addURL}{%
2218 }{%

```

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.

```

2219 \def\XR@addURL#1{\XR@dURL#1{}{}{}%
2220 \def\XR@dURL#1#2#3#4#5\{%
2221   {#1}{#2}%
2222   \if!#4!%
2223   \else
2224     {#3}{#4}{\XR@URL}%
2225   \fi
2226   }%
2227 }

2228 \def\Hy@true{true}
2229 \def\Hy@false{false}

```

Providing dummy definitions.

```

2230 \let\literalps@out\@gobble
2231 \newcommand\pdfbookmark[3]{}
2232 \def\Acrobatmenu#1#2{\leavevmode#2}
2233 \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

```
2234 \let\HyperRaiseLinkHook\@empty
2235 \def\HyperRaiseLinkDefault{\baselineskip}
```

`\HyperRaiseLinkHook` allows the user to reassign `\HyperRaiseLinkLength`.

```
2236 \newcount\Hy@SavedSpaceFactor
2237 \def\Hy@SaveSpaceFactor{%
2238   \global\Hy@SavedSpaceFactor=\ifhmode\spacefactor\else\z@\fi
2239 }
2240 \def\Hy@RestoreSpaceFactor{%
2241   \relax
2242   \ifhmode
2243     \ifnum\Hy@SavedSpaceFactor>\z@
2244       \spacefactor=\Hy@SavedSpaceFactor
2245     \fi
2246   \fi
2247 }
2248 \def\Hy@SaveSavedSpaceFactor{%
2249   \edef\Hy@RestoreSavedSpaceFactor{%
2250     \global\Hy@SavedSpaceFactor=\the\Hy@SavedSpaceFactor\relax
2251   }%
2252 }
2253 \def\Hy@raisedlink#1{%
2254   \ifvmode
2255     #1%
2256   \else
2257     \Hy@SaveSpaceFactor
2258     \penalty\@M
2259     \smash{%
2260       \begingroup
2261         \let\HyperRaiseLinkLength\@tempdima
2262         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
2263         \HyperRaiseLinkHook
2264       \expandafter\endgroup
2265       \expandafter\raise\the\HyperRaiseLinkLength\hbox{%
2266         \Hy@RestoreSpaceFactor
2267         #1%
2268         \Hy@SaveSpaceFactor
2269       }%
2270     }%
2271     \Hy@RestoreSpaceFactor
2272   \fi
2273 }
```

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

```

2274 \def\Hy@SaveLastskip{%
2275   \let\Hy@RestoreLastskip\relax
2276   \ifvmode
2277     \ifdim\lastskip=\z@
2278       \ifnum\lastnodetype=1 %
2279         \let\Hy@RestoreLastskip\relax
2280       \else
2281         \let\Hy@RestoreLastskip\nobreak
2282       \fi
2283     \else
2284       \begingroup
2285       \skip@=-\lastskip
2286       \edef\x{%
2287         \endgroup
2288         \def\noexpand\Hy@RestoreLastskip{%
2289           \noexpand\ifvmode
2290             \noexpand\nobreak
2291             \vskip\the\skip@
2292             \vskip\the\lastskip\relax
2293           \noexpand\fi
2294         }%
2295       }%
2296       \x
2297     \fi
2298   \else
2299     \ifhmode
2300       \ifdim\lastskip=\z@
2301         \let\Hy@RestoreLastskip\nobreak
2302       \else
2303         \begingroup
2304         \skip@=-\lastskip
2305         \edef\x{%
2306           \endgroup
2307           \def\noexpand\Hy@RestoreLastskip{%
2308             \noexpand\ifhmode
2309               \noexpand\nobreak
2310               \hskip\the\skip@
2311               \hskip\the\lastskip\relax
2312             \noexpand\fi
2313           }%
2314         }%
2315         \x
2316       \fi
2317     \fi
2318   \fi
2319 }%

```

## 9 Options

```

2320 \SetupKeyvalOptions{%
2321   family=Hyp,%
2322   prefix=HyOpt%
2323 }

```

## 9.1 Help macros

`\IfHyperBooleanExists`

```
2324 \def\IfHyperBooleanExists#1{%
2325   \ltx@ifundefined{Hy@#1false}\ltx@secondoftwo{%
2326     \ltx@ifundefined{KV@Hyp@#1@default}\ltx@secondoftwo\ltx@firstoftwo
2327   }%
2328 }

2329 \@namedef{KV@Hyp@stoppeearly@default}{}
```

`\IfHyperBoolean`

```
2330 \def\IfHyperBoolean#1{%
2331   \IfHyperBooleanExists{#1}{%
2332     \csname ifHy@#1\endcsname
2333     \expandafter\ltx@firstoftwo
2334   \else
2335     \expandafter\ltx@secondoftwo
2336   \fi
2337 } \ltx@secondoftwo
2338 }
```

`\Hy@boolkey`

```
2339 \def\Hy@boolkey#1#2{%
2340   \edef\Hy@tempa{#2}%
2341   \lowercase\expandafter{%
2342     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2343   }%
2344   \ifx\Hy@tempa\@empty
2345     \let\Hy@tempa\Hy@true
2346   \fi
2347   \ifx\Hy@tempa\Hy@true
2348   \else
2349     \ifx\Hy@tempa\Hy@false
2350   \else
2351     \let\Hy@tempa\relax
2352   \fi
2353 \fi
2354 \ifx\Hy@tempa\relax
2355   \Hy@WarnOptionValue{#2}{#1}{`true' or `false'}%
2356 \else
2357   \Hy@Info{Option `#1' set ``\Hy@tempa'}%
2358   \csname Hy@#1\Hy@tempa\endcsname
2359 \fi
2360 }
```

`\Hy@WarnOptionValue`

```
2361 \def\Hy@WarnOptionValue#1#2#3{%
2362   \Hy@Warning{%
2363     Unexpected value `#1'\MessageBreak
2364     of option `#2' instead of\MessageBreak
2365     #3%
2366   }%
2367 }
```



\Hy@DisableOption

```

2368 \def\Hy@DisableOption#1{%
2369   \ltx@ifundefined{KV@Hyp@#1@default}{%
2370     \define@key{Hyp}{#1}%
2371   }{%
2372     \define@key{Hyp}{#1}[]%
2373   }%
2374   {\Hy@WarnOptionDisabled{#1}}%
2375 }
2376

```

\Hy@WarnOptionDisabled

```

2377 \def\Hy@WarnOptionDisabled#1{%
2378   \Hy@Warning{%
2379     Option `#1' has already been used,\MessageBreak
2380     setting the option has no effect%
2381   }%
2382 }

```

\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.

```

2383 \def\Hy@CheckOptionValue#1#2#3{%
2384   \begingroup
2385   \edef\x{#1}%
2386   \@onelevel@sanitize\x
2387   \let\y=y%
2388   \def\do##1##2{%
2389     \def\z{##1}%
2390     \@onelevel@sanitize\z
2391     \ifx\x\z
2392       \let\y=n%
2393       \let\do\@gobbletwo
2394     \fi
2395   }%
2396   #3%
2397   \ifx\y y%
2398     \def\do##1##2{%
2399       *`##1'%
2400       \ifx\##2\\\else\space(##2)\fi
2401       \MessageBreak
2402     }%
2403     \Hy@Warning{%
2404       Values of option `#2':\MessageBreak
2405       #3%
2406       * An empty value disables the option.\MessageBreak
2407       Unknown value `\'%
2408     }%
2409   \fi
2410   \endgroup
2411 }

```

\Hy@DefNameKey #1: option name

#2: \do list with known values, first argument of \do is value, second argument

is a comment.

```
2412 \def\Hy@DefNameKey#1{%
2413   \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
2414 }
```

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

```
2415 \def\Hy@@DefNameKey#1#2#3{%
2416   \define@key{Hyp}{#2}{%
2417     \edef#1{##1}%
2418     \ifx#1\@empty
2419       \else
2420         \Hy@CheckOptionValue{##1}{#2}{#3}%
2421       \fi
2422     }%
2423   \let#1\@empty
2424 }
```

\Hy@UseNameKey

```
2425 \def\Hy@UseNameKey#1#2{%
2426   \ifx#2\@empty
2427     \else
2428       /#1/#2%
2429     \fi
2430 }
```

## 9.2 Defining the options

```
2431 \define@key{Hyp}{implicit}[true]{%
2432   \Hy@boolkey{implicit}{#1}%
2433 }
2434 \define@key{Hyp}{draft}[true]{%
2435   \Hy@boolkey{draft}{#1}%
2436 }
2437 \define@key{Hyp}{final}[true]{%
2438   \Hy@boolkey{final}{#1}%
2439 }
2440 \let\KV@Hyp@nolinks\KV@Hyp@draft
2441 \def\Hy@ObsoletePaperOption#1{%
2442   \Hy@WarningNoLine{%
2443     Option `#1' is no longer used%
2444   }%
2445   \define@key{Hyp}{#1}[true]{}%
2446 }
2447 \def\Hy@temp#1{%
2448   \define@key{Hyp}{#1}[true]{%
2449     \Hy@ObsoletePaperOption{#1}%
2450   }%
2451 }
2452 \Hy@temp{a4paper}
2453 \Hy@temp{a5paper}
2454 \Hy@temp{b5paper}
```

```

2455 \Hy@temp{letterpaper}
2456 \Hy@temp{legalpaper}
2457 \Hy@temp{executivepaper}

2458 \define@key{Hyp}{setpagesize}[true]{%
2459   \Hy@boolkey{setpagesize}{#1}%
2460 }
2461 \define@key{Hyp}{debug}[true]{%
2462   \Hy@boolkey{debug}{#1}%
2463 }
2464 \define@key{Hyp}{linktocpage}[true]{%
2465   \Hy@boolkey{linktocpage}{#1}%
2466   \ifHy@linktocpage
2467     \let\Hy@linktoc\Hy@linktoc@page
2468   \else
2469     \let\Hy@linktoc\Hy@linktoc@section
2470   \fi
2471 }
2472 \chardef\Hy@linktoc@none=0 %
2473 \chardef\Hy@linktoc@section=1 %
2474 \chardef\Hy@linktoc@page=2 %
2475 \chardef\Hy@linktoc@all=3 %
2476 \ifHy@linktocpage
2477   \let\Hy@linktoc\Hy@linktoc@page
2478 \else
2479   \let\Hy@linktoc\Hy@linktoc@section
2480 \fi
2481 \define@key{Hyp}{linktoc}{%
2482   \@ifundefined{Hy@linktoc@#1}{%
2483     \Hy@Warning{%
2484       Unexpected value `#1' of \MessageBreak
2485       option `linktoc' instead of `none',\MessageBreak
2486       `section', `page' or `all'%
2487     }%
2488   }{%
2489     \expandafter\let\expandafter\Hy@linktoc
2490     \csname Hy@linktoc@#1\endcsname
2491   }%
2492 }
2493 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
2494 \let\XR@ext\relax
2495 \define@key{Hyp}{verbose}[true]{%
2496   \Hy@boolkey{verbose}{#1}%
2497 }
2498 \define@key{Hyp}{typexml}[true]{%
2499   \Hy@boolkey{typexml}{#1}%
2500 }

```

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.

```

2501 \define@key{Hyp}{raiselinks}[true]{%
2502   \Hy@boolkey{raiselinks}{#1}%
2503 }

```

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

```

2504 \def\Hy@setbreaklinks#1{%
2505   \csname breaklinks#1\endcsname
2506 }

2507 \def\Hy@breaklinks@unsupported{%
2508   \ifx\Hy@setbreaklinks\@gobble
2509     \ifHy@breaklinks
2510       \Hy@WarningNoLine{%
2511         You have enabled option `breaklinks'.\MessageBreak
2512         But driver `\'Hy@driver.def' does not support this.\MessageBreak
2513         Expect trouble with the link areas of broken links%
2514       }%
2515     \fi
2516   \fi
2517 }

2518 \define@key{Hyp}{breaklinks}[true]{%
2519   \Hy@boolkey{breaklinks}{#1}%
2520   \let\Hy@setbreaklinks\@gobble
2521 }

2522 \define@key{Hyp}{localanchorname}[true]{%
2523   \Hy@WarningNoLine{%
2524     Option `localanchorname' is deprecated%
2525   }%
2526   \Hy@boolkey{localanchorname}{#1}%
2527 }

```

Determines whether an automatic anchor is put on each page

```

2528 \define@key{Hyp}{pageanchor}[true]{%
2529   \Hy@boolkey{pageanchor}{#1}%
2530 }

```

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.

```

2531 \define@key{Hyp}{plainpages}[true]{%
2532   \Hy@boolkey{plainpages}{#1}%
2533 }

```

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?

```

2534 \define@key{Hyp}{naturalnames}[true]{%
2535   \Hy@boolkey{naturalnames}{#1}%
2536 }

```

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

```

2537 \define@key{Hyp}{hypertextnames}[true]{%
2538   \Hy@boolkey{hypertextnames}{#1}%
2539 }

```

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

```

2540 \define@key{Hyp}{nesting}[true]{%
2541   \Hy@boolkey{nesting}{#1}%
2542 }

2543 \define@key{Hyp}{destlabel}[true]{%

```

```

2544 \Hy@boolkey{destlabel}{#1}%
2545 }

2546 \define@key{Hyp}{unicode}{true}{%
2547 \Hy@boolkey{unicode}{#1}%
2548 \ifHy@unicode
2549 \def\HyPsd@pdfencoding{unicode}%
2550 \HyPsd@LoadUnicode
2551 \else
2552 \def\HyPsd@pdfencoding{pdfdoc}%
2553 \fi
2554 }
2555 \Hy@AtBeginDocument{%
2556 \ifx\HyPsd@LoadUnicode\relax
2557 \else
2558 \def\HyPsd@LoadUnicode{%
2559 \Hy@Error{%
2560 Unicode support for bookmarks is not available.\MessageBreak
2561 Activate unicode support by using one of the options\MessageBreak
2562 `unicode', `pdfencoding=unicode', `pdfencoding=auto'\MessageBreak
2563 in the preamble%
2564 } \@ehc
2565 \global\let\HyPsd@LoadUnicode\relax
2566 \global\Hy@unicodedefalse
2567 \global\let\Hy@unicodetrue\Hy@unicodedefalse
2568 }%
2569 \fi
2570 }

2571 \define@key{Hyp}{pdfencoding}{%
2572 \edef\HyPsd@temp{#1}%
2573 \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2574 \let\HyPsd@pdfencoding\HyPsd@temp
2575 \Hy@unicodedefalse
2576 \else
2577 \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2578 \z@
2579 \else
2580 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2581 \z@
2582 \else
2583 \@ne
2584 \fi
2585 \fi
2586 \let\HyPsd@pdfencoding\HyPsd@temp
2587 \hypersetup{unicode}%
2588 \ifHy@unicode
2589 \def\HyPsd@pdfencoding{#1}%
2590 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
2591 \HyPsd@LoadStringEncoding
2592 \fi
2593 \else
2594 \Hy@Warning{Cannot switch to unicode bookmarks}%
2595 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2596 \fi

```

```

2597 \else
2598 \@onelevel@sanitize\HyPsd@temp
2599 \Hy@Warning{%
2600   Values of option `pdfencoding':\MessageBreak
2601   `pdfdoc', `unicode', `auto'.\MessageBreak
2602   Ignoring unknown value `\'HyPsd@temp'%
2603 }%
2604 \fi
2605 \fi
2606 }
2607 \def\HyPsd@pdfencoding@auto{auto}
2608 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2609 \def\HyPsd@pdfencoding@unicode{unicode}

change 2020-08-14, use unicode by default:
2610 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
2611 \HyPsd@LoadUnicode
2612 \def\HyPsd@LoadStringEnc{%
2613   \RequirePackage{stringenc}[2009/12/15]%
2614   \let\HyPsd@LoadStringEnc\relax
2615 }
2616 \Hy@AtBeginDocument{%
2617   \ifpackageloaded{stringenc}{%
2618     \let\HyPsd@LoadStringEnc\relax
2619   }{%
2620     \def\HyPsd@LoadStringEnc{%
2621       \Hy@WarningNoLine{%
2622         Missing package `stringenc'. Use `pdfencoding=auto'\MessageBreak
2623         in the preamble or load the package there%
2624       }%
2625     }%
2626   }%
2627 }
2628 \define@key{Hyp}{psdextra}[true]{%
2629   \Hy@boolkey{psdextra}{#1}%
2630   \HyPsd@LoadExtra
2631 }
2632 \def\hypersetup{\kvsetkeys{Hyp}}
2633 \newif\ifHy@setpdfversion
2634 \define@key{Hyp}{pdfversion}{%
2635   \ifundefined{Hy@pdfversion@#1}{%
2636     \PackageWarning{hyperref}{%
2637       Unsupported PDF version `#1'.\MessageBreak
2638       Valid values: 1.2-1.7, 2.0%
2639     }%
2640   }{%
2641     \Hy@setpdfversiontrue
2642     \@nameuse{Hy@pdfversion@#1}%
2643   }%
2644 }

```

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

```

2645 \@namedef{Hy@pdfversion@1.2}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
norversion{2}}%
2646 \@namedef{Hy@pdfversion@1.3}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
norversion{3}}%
2647 \@namedef{Hy@pdfversion@1.4}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
norversion{4}}%
2648 \@namedef{Hy@pdfversion@1.5}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
norversion{5}}%
2649 \@namedef{Hy@pdfversion@1.6}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
norversion{6}}%
2650 \@namedef{Hy@pdfversion@1.7}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
norversion{7}}%
2651 \@namedef{Hy@pdfversion@2.0}{\def\Hy@pdf@majorversion{2}\def\Hy@pdf@mi-
norversion{0}}%
2652 \def\Hy@pdf@majorversion{1}\def\Hy@pdf@minorversion{5}
Legacy name, earlier releases assumed 1.x
2653 \let\Hy@pdfversion\Hy@pdf@minorversion
2654 \def\Hy@pdf@majorminor@version{\numexpr100*\Hy@pdf@majorversion+\Hy@pdf@mi-
norversion\relax}
2655 \def\Hy@pdf@majorminor@version{\numexpr100*\Hy@pdf@majorversion+\Hy@pdf@mi-
norversion\relax}
if pdfminorversion is defined, make sure pdfmajorversion is too.
2656 \@ifundefined{pdfminorversion}{}{%
2657 \@ifundefined{pdfmajorversion}{}{%
2658 \newcount\pdfmajorversion
2659 \pdfmajorversion=1
2660 }{}%
2661 }
2662 \ifx\pdfmajorversion\@undefined\else
2663 \def\Hy@pdf@majorversion{\pdfmajorversion}
2664 \fi

```

## 10 Options for different drivers

```

2665 \newif\ifHy@DviMode
2666 \let\Hy@DviErrMsg\ltx@empty
2667 \ifpdf
2668 \def\Hy@DviErrMsg{pdfTeX or LuaTeX is running in PDF mode}%
2669 \else
2670 \ifxetex
2671 \def\Hy@DviErrMsg{XeTeX is running}%
2672 \else
2673 \ifvtex
2674 \ifnum\OpMode=\z@
2675 \Hy@DviModetrue
2676 \else
2677 \def\Hy@DviErrMsg{VTeX is running, but not in DVI mode}%
2678 \fi
2679 \else
2680 \Hy@DviModetrue
2681 \fi
2682 \fi
2683 \fi
2684 \def\HyOpt@CheckDvi#1{%

```

```

2685 \ifHy@DviMode
2686 \expandafter\ltx@firstofone
2687 \else
2688 \Hy@Error{%
2689   Wrong DVI mode driver option `#1',\MessageBreak
2690   because \Hy@DviErrMsg
2691 } \@ehc
2692 \expandafter\ltx@gobble
2693 \fi
2694 }

2695 \DeclareVoidOption{tex4ht}{%
2696 \Hy@texhttrue
2697 \kvsetkeys{Hyp}{colorlinks=true}%
2698 \def\BeforeTeXIVht{\RequirePackage{color}}%
2699 \def\Hy@driver{htex4ht}%
2700 \def\MaybeStopEarly{%
2701 \Hy@Message{Stopped early}%
2702 \Hy@AtBeginDocument{%
2703   \PDF@FinishDoc
2704   \gdef\PDF@FinishDoc{}%
2705 }%
2706 \endinput
2707 }%
2708 }

2709 \DeclareVoidOption{pdftex}{%
2710 \ifpdf
2711 \def\Hy@driver{hpdftex}%
2712 \PassOptionsToPackage{pdftex}{color}%
2713 \else
2714 \Hy@Error{%
2715   Wrong driver option `pdftex',\MessageBreak
2716   because pdfTeX in PDF mode is not detected%
2717 } \@ehc
2718 \fi
2719 }

2720 \DeclareVoidOption{luatex}{%
2721 \ifpdf
2722 \ifx\pdfextension\@undefined
2723 \def\Hy@driver{hpdftex}%
2724 \PassOptionsToPackage{pdftex}{color}%
2725 \else
2726 \def\Hy@driver{hluatex}%
2727 \PassOptionsToPackage{luatex}{color}%
2728 \fi
2729 \else
2730 \Hy@Error{%
2731   Wrong driver option `luatex',\MessageBreak
2732   because luaTeX in PDF mode is not detected%
2733 } \@ehc
2734 \fi
2735 }

2736 \DeclareVoidOption{nativepdf}{%
2737 \HyOpt@CheckDvi{nativepdf}{%
2738 \def\Hy@driver{hdvips}%

```



```

2739 \PassOptionsToPackage{dvips}{color}%
2740 }%
2741 }
2742 \DeclareVoidOption{dvipdfm}{%
2743 \HyOpt@CheckDvi{dvipdfm}{%
2744 \def\Hy@driver{hdvipdfm}%
2745 }%
2746 }
2747 \DeclareVoidOption{dvipdfmx}{%
2748 \HyOpt@CheckDvi{dvipdfmx}{%
2749 \def\Hy@driver{hdvipdfm}%
2750 \PassOptionsToPackage{dvipdfmx}{color}%
2751 }%
2752 }
2753 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2754 \expandafter\ifx\csname if#1\expandafter\endcsname
2755 \csname iftrue\endcsname
2756 \chardef\SpecialDvipdfmxOutlineOpen\@ne
2757 \else
2758 \chardef\SpecialDvipdfmxOutlineOpen\z@
2759 \fi
2760 }
2761 \DeclareVoidOption{xetex}{%
2762 \ifxetex
2763 \def\Hy@driver{hxdetex}%
2764 \else
2765 \Hy@Error{%
2766 Wrong driver option `xetex',\MessageBreak
2767 because XeTeX is not detected%
2768 }\@ehc
2769 \fi
2770 }
2771 \DeclareVoidOption{pdfmark}{%
2772 \HyOpt@CheckDvi{pdfmark}{%
2773 \def\Hy@driver{hdpvips}%
2774 }%
2775 }
2776 \DeclareVoidOption{dvips}{%
2777 \HyOpt@CheckDvi{dvips}{%
2778 \def\Hy@driver{hdvips}%
2779 \PassOptionsToPackage{dvips}{color}%
2780 }%
2781 }
2782 \DeclareVoidOption{hypertex}{%
2783 \HyOpt@CheckDvi{hypertex}{%
2784 \def\Hy@driver{hypertex}%
2785 }%
2786 }
2787 \let\Hy@MaybeStopNow\relax
2788 \DeclareVoidOption{vtex}{%
2789 \ifvtex
2790 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2791 \def\Hy@driver{hvtex}%
2792 \else

```

```

2793 \ifnum\OpMode=10\relax
2794 \def\Hy@driver{hvtexhtm}%
2795 \def\MaybeStopEarly{%
2796   \Hy@Message{Stopped early}%
2797   \Hy@AtBeginDocument{%
2798     \PDF@FinishDoc
2799     \gdef\PDF@FinishDoc{}%
2800   }%
2801   \endinput
2802 }%
2803 \else
2804 \Hy@Error{%
2805   Wrong driver option `vtex',\MessageBreak
2806   because of wrong OpMode (\the\OpMode)%
2807 }\@ehc
2808 \fi
2809 \fi
2810 \else
2811 \Hy@Error{%
2812   Wrong driver option `vtex',\MessageBreak
2813   because VTeX is not running%
2814 }\@ehc
2815 \fi
2816 }
2817 \DeclareVoidOption{vtxpdfmark}{%
2818 \ifvtex
2819 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2820 \def\Hy@driver{hvtexmrk}%
2821 \else
2822 \Hy@Error{%
2823   Wrong driver option `vtxpdfmark',\MessageBreak
2824   because of wrong OpMode (\the\OpMode)%
2825 }\@ehc
2826 \fi
2827 \else
2828 \Hy@Error{%
2829   Wrong driver option `vtxpdfmark,\MessageBreak
2830   because VTeX is not running%
2831 }\@ehc
2832 \fi
2833 }
2834 \DeclareVoidOption{dviwindo}{%
2835 \HyOpt@CheckDvi{dviwindo}{%
2836 \def\Hy@driver{hdviwind}%
2837 \kvsetkeys{Hyp}{colorlinks}%
2838 \PassOptionsToPackage{dviwindo}{color}%
2839 }%
2840 }
2841 \DeclareVoidOption{dvipsone}{%
2842 \HyOpt@CheckDvi{dvipsone}{%
2843 \def\Hy@driver{hdvipson}%
2844 \PassOptionsToPackage{dvipsone}{color}%
2845 }%
2846 }

```

```

2847 \DeclareVoidOption{textures}{%
2848   \HyOpt@CheckDvi{textures}{%
2849     \def\Hy@driver{htexture}%
2850   }%
2851 }
2852 \DeclareVoidOption{latex2html}{%
2853   \Hy@Warning{Option `latex2html` is obsolete. \MessageBreak
2854     A current html.sty will do all necessary (re)definitions%
2855   }%
2856 }

No more special treatment for ps2pdf. Let it sink or swim.
2857 \DeclareVoidOption{ps2pdf}{%
2858   \HyOpt@CheckDvi{ps2pdf}{%
2859     \def\Hy@driver{hdvips}%
2860     \PassOptionsToPackage{dvips}{color}%
2861   }%
2862 }

2863 \let\HyOpt@DriverFallback\ltx@empty
2864 \define@key{Hyp}{driverfallback}{%
2865   \ifHy@DviMode
2866     \def\HyOpt@DriverFallback{#1}%
2867     \Hy@Match\HyOpt@DriverFallback{}{%
2868       ~(|dvipdfm|dvipdfmx|dvips|dvipsone|dviwindo|hypertex|ps2pdf|
2869         latex2html|tex4ht)$%
2870     }{}{%
2871       \Hy@Warning{%
2872         Invalid driver `#1' for option\MessageBreak
2873         `driverfallback'%
2874       }%
2875       \let\HyOpt@DriverFallback\ltx@empty
2876     }%
2877   \fi
2878 }

2879 \let\HyOpt@CustomDriver\ltx@empty
2880 \define@key{Hyp}{customdriver}{%
2881   \IfFileExists{#1.def}{%
2882     \def\HyOpt@CustomDriver{#1}%
2883   }{%
2884     \Hy@Warning{%
2885       Missing driver file `#1.def',\MessageBreak
2886       ignoring custom driver%
2887     }%
2888   }%
2889 }

```

## 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.

```

2890 \define@key{Hyp}{hyperfigures}[true]{%
2891   \Hy@boolkey{hyperfigures}{#1}%
2892 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```
2893 \define@key{Hyp}{hyperfootnotes}[true]{%
2894   \Hy@boolkey{hyperfootnotes}{#1}%
2895 }
```

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

```
2896 \def\back@none{none}
2897 \def\back@section{section}
2898 \def\back@page{page}
2899 \def\back@slide{slide}
2900 \define@key{Hyp}{backref}[section]{%
2901   \lowercase{\def\Hy@tempa{#1}}%
2902   \ifx\Hy@tempa\@empty
2903     \let\Hy@tempa\back@section
2904   \fi
2905   \ifx\Hy@tempa\Hy@false
2906     \let\Hy@tempa\back@none
2907   \fi
2908   \ifx\Hy@tempa\back@slide
2909     \let\Hy@tempa\back@section
2910   \fi
2911   \ifx\Hy@tempa\back@page
2912     \PassOptionsToPackage{hyperpageref}{backref}%
2913     \Hy@backreftrue
2914   \else
2915     \ifx\Hy@tempa\back@section
2916       \PassOptionsToPackage{hyperref}{backref}%
2917       \Hy@backreftrue
2918     \else
2919       \ifx\Hy@tempa\back@none
2920         \Hy@backreffalse
2921       \else
2922         \Hy@WarnOptionValue{#1}{backref}{%
2923           `section', `slide', `page', `none',\MessageBreak
2924           or `false'}%
2925       \fi
2926     \fi
2927   \fi
2928 }
2929 \define@key{Hyp}{pagebackref}[true]{%
2930   \edef\Hy@tempa{#1}%
2931   \lowercase\expandafter{%
2932     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2933   }%
2934   \ifx\Hy@tempa\@empty
2935     \let\Hy@tempa\Hy@true
2936   \fi
2937   \ifx\Hy@tempa\Hy@true
2938     \PassOptionsToPackage{hyperpageref}{backref}%
2939     \Hy@backreftrue
2940   \else
2941     \ifx\Hy@tempa\Hy@false
2942       \Hy@backreffalse
2943     \else
```

```

2944 \Hy@WarnOptionValue{#1}{pagebackref}{`true' or `false'}%
2945 \fi
2946 \fi
2947 }

```

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

```

2948 \define@key{Hyp}{hyperindex}[true]{%
2949 \Hy@boolkey{hyperindex}{#1}%
2950 }

```

Configuration of encap char.

```

2951 \define@key{Hyp}{encap}[|]{%
2952 \def\HyInd@EncapChar{#1}%
2953 }

```

## 12 Language options

The \autoref feature depends on the language.

```

2954 \def\HyLang@afrikaans{%
2955 \def\equationautorefname{Vergelyking}%
2956 \def\footnoteautorefname{Voetnota}%
2957 \def\itemautorefname{Item}%
2958 \def\figureautorefname{Figuur}%
2959 \def\tableautorefname{Tabel}%
2960 \def\partautorefname{Deel}%
2961 \def\appendixautorefname{Bylae}%
2962 \def\chapterautorefname{Hoofstuk}%
2963 \def\sectionautorefname{Afdeling}%
2964 \def\subsectionautorefname{Subafdeling}%
2965 \def\subsubsectionautorefname{Subsubafdeling}%
2966 \def\paragraphautorefname{Paragraaf}%
2967 \def\subparagraphautorefname{Subparagraaf}%
2968 \def\FancyVerbLineautorefname{Lyn}%
2969 \def\theoremautorefname{Teorema}%
2970 \def\pageautorefname{Bladsy}%
2971 }
2972 \def\HyLang@english{%
2973 \def\equationautorefname{Equation}%
2974 \def\footnoteautorefname{footnote}%
2975 \def\itemautorefname{item}%
2976 \def\figureautorefname{Figure}%
2977 \def\tableautorefname{Table}%
2978 \def\partautorefname{Part}%
2979 \def\appendixautorefname{Appendix}%
2980 \def\chapterautorefname{chapter}%
2981 \def\sectionautorefname{section}%
2982 \def\subsectionautorefname{subsection}%
2983 \def\subsubsectionautorefname{subsubsection}%
2984 \def\paragraphautorefname{paragraph}%
2985 \def\subparagraphautorefname{subparagraph}%
2986 \def\FancyVerbLineautorefname{line}%
2987 \def\theoremautorefname{Theorem}%
2988 \def\pageautorefname{page}%

```

```

2989 }
2990 \def\HyLang@french{%
2991   \def\equationautorefname{'equation}%
2992   \def\footnoteautorefname{note}%
2993   \def\itemautorefname{item}%
2994   \def\figureautorefname{figure}%
2995   \def\tableautorefname{tableau}%
2996   \def\partautorefname{partie}%
2997   \def\appendixautorefname{annexe}%
2998   \def\chapterautorefname{chapitre}%
2999   \def\sectionautorefname{section}%
3000   \def\subsectionautorefname{sous-section}%
3001   \def\subsubsectionautorefname{sous-sous-section}%
3002   \def\paragraphautorefname{paragraphe}%
3003   \def\subparagraphautorefname{sous-paragraphe}%
3004   \def\FancyVerbLineautorefname{ligne}%
3005   \def\theoremautorefname{th\`eor\`eme}%
3006   \def\pageautorefname{page}%
3007 }
3008 \def\HyLang@german{%
3009   \def\equationautorefname{Gleichung}%
3010   \def\footnoteautorefname{Fu\ss note}%
3011   \def\itemautorefname{Punkt}%
3012   \def\figureautorefname{Abbildung}%
3013   \def\tableautorefname{Tabelle}%
3014   \def\partautorefname{Teil}%
3015   \def\appendixautorefname{Anhang}%
3016   \def\chapterautorefname{Kapitel}%
3017   \def\sectionautorefname{Abschnitt}%
3018   \def\subsectionautorefname{Unterabschnitt}%
3019   \def\subsubsectionautorefname{Unterunterabschnitt}%
3020   \def\paragraphautorefname{Absatz}%
3021   \def\subparagraphautorefname{Unterabsatz}%
3022   \def\FancyVerbLineautorefname{Zeile}%
3023   \def\theoremautorefname{Theorem}%
3024   \def\pageautorefname{Seite}%
3025 }
3026 \def\HyLang@italian{%
3027   \def\equationautorefname{Equazione}%
3028   \def\footnoteautorefname{nota}%
3029   \def\itemautorefname{punto}%
3030   \def\figureautorefname{Figura}%
3031   \def\tableautorefname{Tabella}%
3032   \def\partautorefname{Parte}%
3033   \def\appendixautorefname{Appendice}%
3034   \def\chapterautorefname{Capitolo}%
3035   \def\sectionautorefname{sezione}%
3036   \def\subsectionautorefname{sottosezione}%
3037   \def\subsubsectionautorefname{sottosottosezione}%
3038   \def\paragraphautorefname{paragrafo}%
3039   \def\subparagraphautorefname{sottoparagrafo}%
3040   \def\FancyVerbLineautorefname{linea}%
3041   \def\theoremautorefname{Teorema}%
3042   \def\pageautorefname{Pag.\@}%

```

```

3043 }
3044 \def\HyLang@magyar{%
3045   \def\equationautorefname{Egyenlet}%
3046   \def\footnoteautorefname{1\abjegyzet}%
3047   \def\itemautorefname{Elem}%
3048   \def\figureautorefname{\Abra}%
3049   \def\tableautorefname{T\abl\azat}%
3050   \def\partautorefname{R\esz}%
3051   \def\appendixautorefname{F\uggel\ek}%
3052   \def\chapterautorefname{fejezet}%
3053   \def\sectionautorefname{szakasz}%
3054   \def\subsectionautorefname{alszakasz}%
3055   \def\subsubsectionautorefname{alalszakasz}%
3056   \def\paragraphautorefname{bekezd\es}%
3057   \def\subparagraphautorefname{albekezd\es}%
3058   \def\FancyVerbLineautorefname{sor}%
3059   \def\theoremautorefname{T\etel}%
3060   \def\pageautorefname{oldal}%
3061 }
3062 \def\HyLang@portuges{%
3063   \def\equationautorefname{Equa\c c\~ao}%
3064   \def\footnoteautorefname{Nota de rodap\e}%
3065   \def\itemautorefname{Item}%
3066   \def\figureautorefname{Figura}%
3067   \def\tableautorefname{Tabela}%
3068   \def\partautorefname{Parte}%
3069   \def\appendixautorefname{Ap\~endice}%
3070   \def\chapterautorefname{Cap\itulo}%
3071   \def\sectionautorefname{Se\c c\~ao}%
3072   \def\subsectionautorefname{Subse\c c\~ao}%
3073   \def\subsubsectionautorefname{Subsubse\c c\~ao}%
3074   \def\paragraphautorefname{par\agrafo}%
3075   \def\subparagraphautorefname{subpar\agrafo}%
3076   \def\FancyVerbLineautorefname{linha}%
3077   \def\theoremautorefname{Teorema}%
3078   \def\pageautorefname{P\agina}%
3079 }

```

Next commented section for Russian is provided by Olga Lapko.

Next follow the checked reference names with commented variants and explanations. 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`.

```

3080 \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`?

```

3081   \def\equationautorefname{\cyr\cyrv\cyrrery\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`.

```

3082 % \def\equationautorefname{%
3083 %   \cyr\cyrv\cyrrery\cyrr\cyra\cyrrh\cyre\cyrn\cyri\cyre
3084 % }%

```

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

```

3085 \def\footnoteautorefname{%
3086   \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr.\ \cyrp\cyrr\cyri\cyrm.%
3087 }%

```

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

```

3088 % \def\footnoteautorefname{%
3089 %   \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr\cyro\cyrch\cyrn\cyro\cyre\ %
3090 %   \cyrp\cyrr\cyri\cyrm\cyre\cyrch\cyra\cyrn\cyri\cyre
3091 % }%

```

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

```

3092 % \def\Nomfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyra}%
3093 % \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 \autorefname{auto}” etc.

```

3094 \def\itemautorefname{\cyr\cyrp.}%
3095 % \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.

```

3096 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%
3097 \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.

```

3098 \def\partautorefname{\cyr\cyrch.}%
3099 \def\chapterautorefname{\cyr\cyrg\cyrl.}%
3100 \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 \autorefname{auto}” etc.

```

3101 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyrl.}%
3102 % \def\appendixautorefname{%
3103 %   \cyr\cyrp\cyrr\cyri\cyrl\cyro\cyrrh\cyre\cyrn\cyri\cyre
3104 % }%

```

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.

```

3105 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
3106 \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.

```
3107 \def\paragraphautorefname{\cyr\cyrp.}%
3108 \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.

```
3109 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
3110 % \def\subparagraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
```

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.

```
3111 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%
```

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

```
3112 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
3113 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%
```

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

```
3114 % \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\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 ...

```
3115 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%
```

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

```
3116 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
3117 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%
```

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

```
3118 \def\pageautorefname{\cyr\cyrs.}%
3119 }
```

```
3120 \def\HyLang@spanish{%
3121 \def\equationautorefname{Ecuaci'on}%
3122 \def\footnoteautorefname{Nota a pie de p'agina}%
3123 \def\itemautorefname{Elemento}%
3124 \def\figureautorefname{Figura}%
3125 \def\tableautorefname{Tabla}%
3126 \def\partautorefname{Parte}%
3127 \def\appendixautorefname{Ap'endice}%
3128 \def\chapterautorefname{Cap'itulo}%
3129 \def\sectionautorefname{Secci'on}%
3130 \def\subsectionautorefname{Subsecci'on}%
3131 \def\subsubsectionautorefname{Subsubsecci'on}%
3132 \def\paragraphautorefname{P'arrafo}%
3133 \def\subparagraphautorefname{Subp'arrafo}%
3134 \def\FancyVerbLineautorefname{L'inea}%
3135 \def\theoremautorefname{Teorema}%
```

```

3136 \def\pageautorefname{P\'agina}%
3137 }

3138 \def\HyLang@catalan{%
3139 \def\equationautorefname{Equaci\'o}%
3140 \def\footnoteautorefname{Nota al peu de p\'agina}%
3141 \def\itemautorefname{Element}%
3142 \def\figureautorefname{Figura}%
3143 \def\tableautorefname{Taula}%
3144 \def\partautorefname{Part}%
3145 \def\appendixautorefname{Ap\'endix}%
3146 \def\chapterautorefname{Cap\'itol}%
3147 \def\sectionautorefname{Secci\'o}%
3148 \def\subsectionautorefname{Subsecci\'o}%
3149 \def\subsubsectionautorefname{Subsubsecci\'o}%
3150 \def\paragraphautorefname{Par\'agraf}%
3151 \def\subparagraphautorefname{Subpar\'agraf}%
3152 \def\FancyVerbLineautorefname{L\'inia}%
3153 \def\theoremautorefname{Teorema}%
3154 \def\pageautorefname{P\'agina}%
3155 }

3156 \def\HyLang@vietnamese{%
3157 \def\equationautorefname{Ph\`uhorn{}\`ohorn{}ng tr\`inh}%
3158 \def\footnoteautorefname{Ch\`u th\`ich}%
3159 \def\itemautorefname{m\`d{u}c}%
3160 \def\figureautorefname{H\`inh}%
3161 \def\tableautorefname{B\`h{a}ng}%
3162 \def\partautorefname{Ph\`acircumflex{}n}%
3163 \def\appendixautorefname{Ph\`d{u} l\`d{u}c}%
3164 \def\chapterautorefname{ch\`uhorn{}\`ohorn{}ng}%
3165 \def\sectionautorefname{m\`d{u}c}%
3166 \def\subsectionautorefname{m\`d{u}c}%
3167 \def\subsubsectionautorefname{m\`d{u}c}%
3168 \def\paragraphautorefname{\`dj{}o\`d{a}n}%
3169 \def\subparagraphautorefname{\`dj{}o\`d{a}n}%
3170 \def\FancyVerbLineautorefname{d\`ong}%
3171 \def\theoremautorefname{D\`J{}\`d{i}nh l\`y}%
3172 \def\pageautorefname{Trang}%
3173 }

```

Greek, see github issue 52

```

3174 \def\HyLang@greek{%
3175 \def\equationautorefname{\textEpsilon\textxi\acconos\textiota\textsigma\textomega\textsigma\texteta}%
3176 \def\footnoteautorefname{\textupsilon\textpi\textomicron\textsigma\texteta\textmu\textepsilon\acconos\textiota\textomega\textsigma\texteta}%
3177 \def\itemautorefname{\textalpha\textnu\texttau\textiota\textkappa\textepsilon\acconos\textiota\textmu\textepsilon\textnu\textomicron}%
3178 \def\figureautorefname{\textSigma\textchi\acconos\texteta\textmu\textalpha}%
3179 \def\tableautorefname{\textPi\acconos\textiota\textnu\textalpha\textkappa\textalpha}%
3180 \def\partautorefname{\textMu\acconos\textepsilon\textrho\textomicron\textvarsigma}%

```

```

3181 \def\appendixautorefname{\textPi\textalpha\textrho\acctonos\textalpha\textrho\texttau\texteta\textmu\textalpha}%
3182 \def\chapterautorefname{\textkappa\textepsilon\textphi\acctonos\textalpha\textlambda\textalpha\textiota\textomicron}%
3183 \def\sectionautorefname{\textepsilon\textnu\acctonos\textomicron\texttau\texteta\texttau\textalpha}%
3184 \def\subsectionautorefname{\textupsilon\textpi\textomicron\textepsilon\textnu\acctonos\textomicron\texttau\texteta\texttau\textalpha}%
3185 \def\subsubsectionautorefname{\textupsilon\textpi\textomicron\textupsilon\textpi\textomicron\textupsilon\textpi\textomicron\textupsilon\textpi\textomicron\textupsilon\textpi\textomicron}%
3186 \def\paragraphautorefname{\textpi\textalpha\textrho\acctonos\textalpha\textgamma\textrho\textalpha\textphi\textomicron\textvarsigma}%
3187 \def\subparagraphautorefname{\textupsilon\textpi\textomicron\textpi\textalpha\textrho\acctonos\textalpha\textgamma\textrho\textalpha\textphi\textomicron\textvarsigma}%
3188 \def\FancyVerbLineautorefname{\textgamma\textrho\textalpha\textmu\textmu\acctonos\texteta}%
3189 \def\theoremautorefname{\textTheta\textepsilon\acctonos\textomega\textrho\texteta\textmu\textalpha}%
3190 \def\pageautorefname{\textsigma\textepsilon\textlambda\acctonos\textiota\textdelta\textalpha}%
3191 }
3192 \def\HyLang@dutch{%
3193 \def\equationautorefname{Vergelijking}%
3194 \def\footnoteautorefname{voetnoot}%
3195 \def\itemautorefname{punt}%
3196 \def\figureautorefname{Figuur}%
3197 \def\tableautorefname{Tabel}%
3198 \def\partautorefname{Deel}%
3199 \def\appendixautorefname{Bijlage}%
3200 \def\chapterautorefname{hoofdstuk}%
3201 \def\sectionautorefname{paragraaf}%
3202 \def\subsectionautorefname{deelparagraaf}%
3203 \def\subsubsectionautorefname{deel-deelparagraaf}%
3204 \def\paragraphautorefname{alinea}%
3205 \def\subparagraphautorefname{deelalinea}%
3206 \def\FancyVerbLineautorefname{regel}%
3207 \def\theoremautorefname{Stelling}%
3208 \def\pageautorefname{pagina}%
3209 }
3210 \def\HyLang@norsk{%
3211 \def\equationautorefname{Ligning}%
3212 \def\footnoteautorefname{fotnote}%
3213 \def\itemautorefname{element}%
3214 \def\figureautorefname{Figur}%
3215 \def\tableautorefname{Tabell}%
3216 \def\partautorefname{Del}%
3217 \def\appendixautorefname{Tillegg}%
3218 \def\chapterautorefname{kapittel}%
3219 \def\sectionautorefname{seksjon}%
3220 \def\subsectionautorefname{underseksjon}%
3221 \def\subsubsectionautorefname{under-underseksjon}%
3222 \def\paragraphautorefname{avsnitt}%
3223 \def\subparagraphautorefname{underavsnitt}%
3224 \def\FancyVerbLineautorefname{Linje}%

```

```

3225 \def\theoremautorefname{Teorem}%
3226 \def\pageautorefname{side}%
3227 }
3228 \def\HyLang@danish{%
3229 \def\equationautorefname{Ligning}%
3230 \def\footnoteautorefname{fodnote}%
3231 \def\itemautorefname{element}%
3232 \def\figureautorefname{Figur}%
3233 \def\tableautorefname{Tabel}%
3234 \def\partautorefname{Del}%
3235 \def\appendixautorefname{Bilag}%
3236 \def\chapterautorefname{kapitel}%
3237 \def\sectionautorefname{sektion}%
3238 \def\subsectionautorefname{under-sektion}%
3239 \def\subsubsectionautorefname{under-under-sektion}%
3240 \def\paragraphautorefname{afsnit}%
3241 \def\subparagraphautorefname{underafsnit}%
3242 \def\FancyVerbLineautorefname{linje}%
3243 \def\theoremautorefname{Teorem}%
3244 \def\pageautorefname{side}%
3245 }

```

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

```

3246 \def\HyLang@addto#1#2{%
3247   #2%
3248   \@temptokena{#2}%
3249   \ifx#1\relax
3250     \let#1\@empty
3251   \fi
3252   \ifx#1\@undefined
3253     \edef#1{\the\@temptokena}%
3254   \else
3255     \toks@\expandafter{#1}%
3256     \edef#1{\the\toks@\the\@temptokena}%
3257   \fi
3258   \@temptokena{}\toks@\@temptokena
3259 }
3260 \def\HyLang@DeclareLang#1#2#3{%
3261 \ifpackagewith{babel}{#1}{%
3262   \expandafter\HyLang@addto
3263     \csname extras#1\expandafter\endcsname
3264     \csname HyLang@#2\endcsname
3265   \begingroup
3266     \edef\x{\endgroup
3267       #3%
3268     }%
3269     \x
3270   \@namedef{HyLang@#1@done}{}%
3271 }{}%
3272 \begingroup
3273 \edef\x##1##2{%
3274   \noexpand\ifx##2\relax
3275     \errmessage{No definitions for language #2' found!}%

```

```

3276 \noexpand\fi
3277 \endgroup
3278 \noexpand\define@key{Hyp}{#1}[]{}%
3279 \noexpand\@ifundefined{HyLang@#1@done}{}%
3280 \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
3281 #3%
3282 \noexpand\@namedef{HyLang@#1@done}{}%
3283 }{}%
3284 }%
3285 }%
3286 \expandafter\x\csname extras#1\expandafter\endcsname
3287 \csname HyLang@#2\endcsname
3288 }
3289 \HyLang@DeclareLang{english}{english}{}
3290 \HyLang@DeclareLang{UKenglish}{english}{}
3291 \HyLang@DeclareLang{british}{english}{}
3292 \HyLang@DeclareLang{USenglish}{english}{}
3293 \HyLang@DeclareLang{american}{english}{}
3294 \HyLang@DeclareLang{german}{german}{}
3295 \HyLang@DeclareLang{austrian}{german}{}
3296 \HyLang@DeclareLang{ngerman}{german}{}
3297 \HyLang@DeclareLang{naustrian}{german}{}
3298 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
3299 \HyLang@DeclareLang{brazil}{portuges}{}
3300 \HyLang@DeclareLang{brazilian}{portuges}{}
3301 \HyLang@DeclareLang{portuguese}{portuges}{}
3302 \HyLang@DeclareLang{spanish}{spanish}{}
3303 \HyLang@DeclareLang{catalan}{catalan}{}
3304 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
3305 \HyLang@DeclareLang{french}{french}{}
3306 \HyLang@DeclareLang{frenchb}{french}{}
3307 \HyLang@DeclareLang{francais}{french}{}
3308 \HyLang@DeclareLang{acadian}{french}{}
3309 \HyLang@DeclareLang{canadien}{french}{}
3310 \HyLang@DeclareLang{italian}{italian}{}
3311 \HyLang@DeclareLang{magyar}{magyar}{}
3312 \HyLang@DeclareLang{hungarian}{magyar}{}
3313 \HyLang@DeclareLang{greek}{greek}{}
3314 \HyLang@DeclareLang{dutch}{dutch}{}
3315 \HyLang@DeclareLang{norsk}{norsk}{}
3316 \HyLang@DeclareLang{norwegian}{norsk}{}
3317 \HyLang@DeclareLang{danish}{danish}{}

```

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

```

3318 \DeclareVoidOption{vietnamese}{}%
3319 \HyLang@addto\extrasvietnamese\HyLang@vietnamese
3320 \Hy@AtEndOfPackage{%
3321 \@ifundefined{T@PU}{}{}%
3322 \input{puvnenc.def}%
3323 }%
3324 }%
3325 }
3326 \DeclareVoidOption{vietnam}{}%
3327 \HyLang@addto\extrasvietnam\HyLang@vietnamese

```

```

3328 \Hy@AtEndOfPackage{%
3329   \@ifundefined{T@PU}{}{%
3330     \input{puvnenc.def}%
3331   }%
3332 }%
3333 }

```

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

```

3334 \DeclareVoidOption{arabic}{%
3335   \Hy@AtEndOfPackage{%
3336     \@ifundefined{T@PU}{}{%
3337       \input{puarenc.def}%
3338     }%
3339   }%
3340 }

```

## 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.

```

3341 \define@key{Hyp}{colorlinks}[true]{%
3342   \Hy@boolkey{colorlinks}{#1}%
3343 }
3344 \DeclareVoidOption{hidelinks}{%
3345   \Hy@colorlinksfalse
3346   \Hy@ocgcolorlinksfalse
3347   \Hy@frenchlinksfalse
3348   \def\Hy@colorlink##1{\begingroup}%
3349   \def\Hy@endcolorlink{\endgroup}%
3350   \def\@pdfborder{0 0 0}%
3351   \let\@pdfborderstyle\ltx@empty
3352 }
3353 \define@key{Hyp}{ocgcolorlinks}[true]{%
3354   \Hy@boolkey{ocgcolorlinks}{#1}%
3355 }
3356 \Hy@AtBeginDocument{%
3357   \begingroup
3358   \@ifundefined{OBJ@OCG@view}{%
3359     \ifHy@ocgcolorlinks
3360       \Hy@Warning{%
3361         Driver does not support `ocgcolorlinks',\MessageBreak
3362         using `colorlinks' instead%
3363       }%
3364     \fi
3365   }{}%
3366   \endgroup
3367 }
3368 \define@key{Hyp}{frenchlinks}[true]{%
3369   \Hy@boolkey{frenchlinks}{#1}%
3370 }

```

## 14 Bookmarking

```

3371 \begingroup\expandafter\expandafter\expandafter\endgroup
3372 \expandafter\ifx\csname chapter\endcsname\relax
3373   \def\toclevel@part{0}%
3374 \else
3375   \def\toclevel@part{-1}%
3376 \fi
3377 \def\toclevel@chapter{0}
3378 \def\toclevel@section{1}
3379 \def\toclevel@subsection{2}
3380 \def\toclevel@subsubsection{3}
3381 \def\toclevel@paragraph{4}
3382 \def\toclevel@subparagraph{5}
3383 \def\toclevel@figure{0}
3384 \def\toclevel@table{0}

3385 \define@key{Hyp}{bookmarks}[true]{%
3386   \Hy@boolkey{bookmarks}{#1}%
3387 }

3388 \define@key{Hyp}{bookmarksopen}[true]{%
3389   \Hy@boolkey{bookmarksopen}{#1}%
3390 }

```

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.

```

3391 \let\Hy@bookmarksdepth\c@tocdepth
3392 \define@key{Hyp}{bookmarksdepth}[]{%
3393   \begingroup
3394     \edef\x{#1}%
3395     \ifx\x\empty
3396       \global\let\Hy@bookmarksdepth\c@tocdepth
3397     \else
3398       \@ifundefined{toclevel@\x}{%
3399         \@onelevel@sanitize\x
3400         \edef\y{\expandafter\@car\x\@nil}%
3401         \ifcase 0\expandafter\ifx\y-1\fi
3402           \expandafter\ifnum\expandafter`\y>47 %
3403             \expandafter\ifnum\expandafter`\y<58 1\fi\fi\relax
3404           \Hy@Warning{Unknown document division name (\x)}%
3405         \else
3406           \setbox\z@=\hbox{%
3407             \count@=\x
3408             \xdef\Hy@bookmarksdepth{\the\count@}%
3409           }%
3410         \fi
3411       }{%
3412         \setbox\z@=\hbox{%

```

```

3413      \count@=\csname toplevel@\x\endcsname
3414      \xdef\Hy@bookmarksdepth{\the\count@}%
3415      }%
3416      }%
3417      \fi
3418      \endgroup
3419      }

```

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

```

3420 \define@key{Hyp}{bookmarksopenlevel}{%
3421   \def\@bookmarksopenlevel{#1}%
3422 }
3423 \def\@bookmarksopenlevel{\maxdimen}
3424 % `bookmarkstype' to specify which `toc' file to mimic
3425 \define@key{Hyp}{bookmarkstype}{%
3426   \def\Hy@bookmarkstype{#1}%
3427 }
3428 \def\Hy@bookmarkstype{toc}

```

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

```

3429 \define@key{Hyp}{bookmarksnumbered}[true]{%
3430   \Hy@boolkey{bookmarksnumbered}{#1}%
3431 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

3432 \define@key{Hyp}{CJKbookmarks}[true]{%
3433   \Hy@boolkey{CJKbookmarks}{#1}%
3434 }
3435 \def\Hy@temp#1{%
3436   \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
3437 }
3438 \def\Hy@@temp#1#2#3{%
3439   \define@key{Hyp}{#2color}{%
3440     \HyColor@HyperrefColor{##1}{#1}%
3441   }%
3442   \def##1{#3}%
3443 }
3444 \Hy@temp{link}{red}
3445 \Hy@temp{anchor}{black}
3446 \Hy@temp{cite}{green}
3447 \Hy@temp{file}{cyan}
3448 \Hy@temp{url}{magenta}
3449 \Hy@temp{menu}{red}
3450 \Hy@temp{run}{\@filecolor}
3451 \define@key{Hyp}{pagecolor}{%
3452   \Hy@WarningPageColor
3453 }
3454 \def\Hy@WarningPageColor{%
3455   \Hy@WarningNoLine{Option `pagecolor' is not available anymore}%
3456   \global\let\Hy@WarningPageColor\relax
3457 }
3458 \define@key{Hyp}{allcolors}{%
3459   \HyColor@HyperrefColor{#1}\@linkcolor
3460   \HyColor@HyperrefColor{#1}\@anchorcolor

```



```

3461 \HyColor@HyperrefColor{#1}\@citecolor
3462 \HyColor@HyperrefColor{#1}\@filecolor
3463 \HyColor@HyperrefColor{#1}\@urlcolor
3464 \HyColor@HyperrefColor{#1}\@menucolor
3465 \HyColor@HyperrefColor{#1}\@runcolor
3466 }

3467 \def\hyperbaseurl#1{\def\@baseurl{#1}}
3468 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
3469 \let\@baseurl\@empty
3470 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
3471 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
3472 \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.

```

3473 \let\@pdfpagetransition\relax
3474 \define@key{Hyp}{pdfpagetransition}{%
3475   \def\@pdfpagetransition{#1}%
3476 }

```

`\@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.

```

3477 \let\@pdfpageduration\relax
3478 \define@key{Hyp}{pdfpageduration}{%
3479   \def\@pdfpageduration{#1}%
3480   \Hy@Match\@pdfpageduration{}{%
3481     ^([0-9]+\.[0-9]*|[0-9]*\.[0-9]+)$%
3482   }{%
3483     \Hy@Warning{%
3484       Invalid value '\@pdfpageduration'\MessageBreak
3485       of option `pdfpageduration'\MessageBreak
3486       is replaced by an empty value%
3487     }%
3488     \let\@pdfpageduration\ltx@empty
3489   }%
3490 }

```

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).

```

3491 \def\Hy@ColorList{cite,file,link,menu,run,url}
3492 \@for\Hy@temp:=\Hy@ColorList\do{%

```

```

3493 \edef\Hy@temp{%
3494   \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
3495     \noexpand\HyColor@HyperrefBorderColor
3496       {##1}%
3497     \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
3498     {hyperref}%
3499     {\Hy@temp bordercolor}%
3500   }%
3501 }%
3502 \Hy@temp
3503 }
3504 \define@key{Hyp}{pagebordercolor}{%
3505   \Hy@WarningPageBorderColor
3506 }
3507 \def\Hy@WarningPageBorderColor{%
3508   \Hy@WarningNoLine{Option `pagebordercolor' is not available anymore}%
3509   \global\let\Hy@WarningPageBorderColor\relax
3510 }
3511 \define@key{Hyp}{allbordercolors}{%
3512   \def\Hy@temp##1##2{%
3513     \HyColor@HyperrefBorderColor{#1}##1{hyperref}{##2bordercolor}%
3514   }%
3515   \Hy@temp\@citebordercolor{cite}%
3516   \Hy@temp\@filebordercolor{file}%
3517   \Hy@temp\@linkbordercolor{link}%
3518   \Hy@temp\@menubordercolor{menu}%
3519   \Hy@temp\@runbordercolor{run}%
3520   \Hy@temp\@urlbordercolor{url}%
3521 }
3522 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
3523 \Hy@DefNameKey{pdfhighlight}{%
3524   \do{/I}{Invert}%
3525   \do{/N}{None}%
3526   \do{/O}{Outline}%
3527   \do{/P}{Push}%
3528 }
3529 \def\Hy@setpdfhighlight{%
3530   \ifx\@pdfhighlight\@empty
3531   \else
3532     /H\@pdfhighlight
3533   \fi
3534 }
3535 \define@key{Hyp}{pdfborder}{%
3536   \let\Hy@temp\@pdfborder
3537   \def\@pdfborder{#1}%
3538   \Hy@Match\@pdfborder{}{%
3539     ~\HyPat@NonNegativeReal/ %
3540     \HyPat@NonNegativeReal/ %
3541     \HyPat@NonNegativeReal/%
3542     ( ?[\HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)*])?%%
3543   }{}{%
3544     \Hy@Warning{%
3545       Invalid value `'\@pdfborder'\MessageBreak
3546       for option `pdfborder'.\MessageBreak

```

```

3547     Option setting is ignored%
3548 }%
3549 \let\@pdfborder\Hy@temp
3550 }%
3551 }
3552 \define@key{Hyp}{pdfborderstyle}{%
3553 \let\Hy@temp\@pdfborderstyle
3554 \def\@pdfborderstyle{#1}%
3555 \Hy@Match\@pdfborderstyle}{%
3556 ~%
3557 ( */Type */Border%
3558 | */W +\HyPat@NonNegativeReal/%
3559 | */S */[SDBIU]%
3560 | */D *[ \(\HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)?)?]%
3561 )* *$%
3562 }{}{%
3563 \Hy@Warning{%
3564     Invalid value `\'@pdfborderstyle'\MessageBreak
3565     for option `pdfborderstyle'.\MessageBreak
3566     Option setting is ignored%
3567 }%
3568 \let\@pdfborderstyle\Hy@temp
3569 }%
3570 }
3571 \def\Hy@setpdfborder{%
3572 \ifx\@pdfborder\@empty
3573 \else
3574 /Border[\@pdfborder]%
3575 \fi
3576 \ifx\@pdfborderstyle\@empty
3577 \else
3578 /BS<<\@pdfborderstyle>>%
3579 \fi
3580 }
3581 \Hy@DefNameKey{pdfpagemode}{%
3582 \do{UseNone}{}%
3583 \do{UseOutlines}{}%
3584 \do{UseThumbs}{}%
3585 \do{FullScreen}{}%
3586 \do{UseOC}{PDF 1.5}%
3587 \do{UseAttachments}{PDF 1.6}%
3588 }
3589 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
3590 \do{UseNone}{}%
3591 \do{UseOutlines}{}%
3592 \do{UseThumbs}{}%
3593 \do{FullScreen}{}%
3594 \do{UseOC}{PDF 1.5}%
3595 \do{UseAttachments}{PDF 1.6}%
3596 }
3597 \Hy@DefNameKey{pdfdirection}{%
3598 \do{L2R}{Left to right}%
3599 \do{R2L}{Right to left}%
3600 }

```

```

3601 \Hy@DefNameKey{pdfviewarea}{%
3602   \do{MediaBox}{}%
3603   \do{CropBox}{}%
3604   \do{BleedBox}{}%
3605   \do{TrimBox}{}%
3606   \do{ArtBox}{}%
3607 }
3608 \Hy@DefNameKey{pdfviewclip}{%
3609   \do{MediaBox}{}%
3610   \do{CropBox}{}%
3611   \do{BleedBox}{}%
3612   \do{TrimBox}{}%
3613   \do{ArtBox}{}%
3614 }
3615 \Hy@DefNameKey{pdfprintarea}{%
3616   \do{MediaBox}{}%
3617   \do{CropBox}{}%
3618   \do{BleedBox}{}%
3619   \do{TrimBox}{}%
3620   \do{ArtBox}{}%
3621 }
3622 \Hy@DefNameKey{pdfprintclip}{%
3623   \do{MediaBox}{}%
3624   \do{CropBox}{}%
3625   \do{BleedBox}{}%
3626   \do{TrimBox}{}%
3627   \do{ArtBox}{}%
3628 }
3629 \Hy@DefNameKey{pdfprintscaling}{%
3630   \do{AppDefault}{}%
3631   \do{None}{}%
3632 }
3633 \Hy@DefNameKey{pdfduplex}{%
3634   \do{Simplex}{}%
3635   \do{DuplexFlipShortEdge}{}%
3636   \do{DuplexFlipLongEdge}{}%
3637 }
3638 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
3639   \do{true}{}%
3640   \do{false}{}%
3641 }
3642 \define@key{Hyp}{pdfprintpagerange}{%
3643   \def\@pdfprintpagerange{#1}%
3644 }
3645 \Hy@DefNameKey{pdfnumcopies}{%
3646   \do{2}{two copies}%
3647   \do{3}{three copies}%
3648   \do{4}{four copies}%
3649   \do{5}{five copies}%
3650 }
3651 \define@key{Hyp}{pdfusetitle}[true]{%
3652   \Hy@boolkey{pdfusetitle}{#1}%
3653 }
3654 \def\HyXeTeX@CheckUnicode{%

```

```

3655 \ifxetex
3656 \ifHy@unicode
3657 \else
3658 \Hy@WarningNoLine{%
3659 XeTeX driver only supports unicode.\MessageBreak
3660 Enabling option `unicode'%
3661 }%
3662 \kvsetkeys{Hyp}{unicode}%
3663 \fi
3664 \else
3665 \let\HyXeTeX@CheckUnicode\relax
3666 \fi
3667 }
3668 \def\HyPsd@PrerenderUnicode#1{%
3669 \begingroup
3670 \expandafter\ifx\csname PrerenderUnicode\endcsname\relax
3671 \else
3672 \sbox0{%
3673 \let\GenericInfo\@gobbletwo
3674 \let\GenericWarning\@gobbletwo
3675 \let\GenericError\@gobblefour
3676 \PrerenderUnicode{#1}%
3677 }%
3678 \fi
3679 \endgroup
3680 }
3681 \define@key{Hyp}{pdftitle}{%
3682 \HyXeTeX@CheckUnicode
3683 \HyPsd@PrerenderUnicode{#1}%
3684 \pdfstringdef\@pdftitle{#1}%
3685 }
3686 \define@key{Hyp}{pdfauthor}{%
3687 \HyXeTeX@CheckUnicode
3688 \HyPsd@PrerenderUnicode{#1}%
3689 \pdfstringdef\@pdfauthor{#1}%
3690 }
3691 \define@key{Hyp}{pdfproducer}{%
3692 \HyXeTeX@CheckUnicode
3693 \HyPsd@PrerenderUnicode{#1}%
3694 \pdfstringdef\@pdfproducer{#1}%
3695 }
3696 \define@key{Hyp}{pdfcreator}{%
3697 \HyXeTeX@CheckUnicode
3698 \HyPsd@PrerenderUnicode{#1}%
3699 \pdfstringdef\@pdfcreator{#1}%
3700 }
3701 \define@key{Hyp}{addtopdfcreator}{%
3702 \HyXeTeX@CheckUnicode
3703 \HyPsd@PrerenderUnicode{#1}%
3704 \pdfstringdef\@pdfcreator{\@pdfcreator, #1}%
3705 }
3706 \define@key{Hyp}{pdfcreationdate}{%
3707 \begingroup
3708 \Hy@unicodedefalse

```

```

3709 \pdfstringdef\@pdfcreationdate{#1}%
3710 \endgroup
3711 }
3712 \define@key{Hyp}{pdfmoddate}{%
3713 \begingroup
3714 \Hy@unicodetfalse
3715 \pdfstringdef\@pdfmoddate{#1}%
3716 \endgroup
3717 }
3718 \define@key{Hyp}{pdfsubject}{%
3719 \HyXeTeX@CheckUnicode
3720 \HyPsd@PrerenderUnicode{#1}%
3721 \pdfstringdef\@pdfsubject{#1}%
3722 }
3723 \define@key{Hyp}{pdfkeywords}{%
3724 \HyXeTeX@CheckUnicode
3725 \HyPsd@PrerenderUnicode{#1}%
3726 \pdfstringdef\@pdfkeywords{#1}%
3727 }
3728 \define@key{Hyp}{pdftrapped}{%
3729 \lowercase{\edef\Hy@temp{#1}}%
3730 \ifx\Hy@temp\HyInfo@trapped@true
3731 \def\@pdftrapped{True}%
3732 \else
3733 \ifx\Hy@temp\HyInfo@trapped@false
3734 \def\@pdftrapped{False}%
3735 \else
3736 \ifx\Hy@temp\HyInfo@trapped@unknown
3737 \def\@pdftrapped{Unknown}%
3738 \else
3739 \ifx\Hy@temp\@empty
3740 \else
3741 \Hy@Warning{%
3742 Unsupported value `#1'\MessageBreak
3743 for option `pdftrapped'%
3744 }%
3745 \fi
3746 \def\@pdftrapped{}%
3747 \fi
3748 \fi
3749 \fi
3750 }
3751 \def\HyInfo@trapped@true{true}
3752 \def\HyInfo@trapped@false{false}
3753 \def\HyInfo@trapped@unknown{unknown}
3754 \def\HyInfo@TrappedUnsupported{%
3755 \ifx\@pdftrapped\@empty
3756 \else
3757 \Hy@WarningNoLine{`pdftrapped' is not supported by this driver}%
3758 \gdef\HyInfo@TrappedUnsupported{}%
3759 \fi
3760 }
3761 \define@key{Hyp}{pdfinfo}{%
3762 \kvsetkeys{pdfinfo}{#1}%

```

```

3763 }
3764 \def\Hy@temp#1{%
3765   \lowercase{\Hy@temp@A{#1}}{#1}%
3766 }
3767 \def\Hy@temp@A#1#2{%
3768   \define@key{pdfinfo}{#2}{%
3769     \hypersetup{pdf#1={#1}}}%
3770   }%
3771 }
3772 \Hy@temp{Title}
3773 \Hy@temp{Author}
3774 \Hy@temp{Keywords}
3775 \Hy@temp{Subject}
3776 \Hy@temp{Creator}
3777 \Hy@temp{Producer}
3778 \Hy@temp{CreationDate}
3779 \Hy@temp{ModDate}
3780 \Hy@temp{Trapped}
3781 \newif\ifHyInfo@AddonUnsupported
3782 \kv@set@family@handler{pdfinfo}{%
3783   \HyInfo@AddonHandler{#1}{#2}%
3784 }
3785 \let\HyInfo@do\relax
3786 \def\HyInfo@AddonHandler#1#2{%
3787   \ifx\kv@value\relax
3788     \Hy@Warning{%
3789       Option `pdfinfo': ignoring key `\'kv@key' without value%
3790     }%
3791   \else
3792     \EdefEscapeName\HyInfo@KeyEscaped{\kv@key}%
3793     \EdefUnescapeName\HyInfo@Key{\HyInfo@KeyEscaped}%
3794     \expandafter\ifx\csname KV@pdfinfo@\HyInfo@Key\endcsname\relax
3795       \ifHyInfo@AddonUnsupported
3796         \Hy@Warning{%
3797           This driver does not support additional\MessageBreak
3798           information entries, therefore\MessageBreak
3799           `\'kv@key' is ignored%
3800         }%
3801       \else
3802         \def\HyInfo@tmp###1{%
3803           \kv@define@key{pdfinfo}{##1}{%
3804             \HyXeTeX@CheckUnicode
3805             \HyPsd@PrerenderUnicode{####1}%
3806             \pdfstringdef\HyInfo@Value{####1}%
3807             \global\expandafter
3808             \let\csname HyInfo@Value@##1\endcsname
3809               \HyInfo@Value
3810           }%
3811         }%
3812         \expandafter\HyInfo@tmp\expandafter{\HyInfo@Key}%
3813         \global\expandafter
3814         \let\csname KV@pdfinfo@\HyInfo@Key\endcsname
3815           \csname KV@pdfinfo@\HyInfo@Key\endcsname
3816         \xdef\HyInfo@AddonList{%

```

```

3817     \HyInfo@AddonList
3818     \HyInfo@do{\HyInfo@Key}%
3819   }%
3820   \kv@parse@normalized{%
3821     \HyInfo@Key={#2}%
3822   }{%
3823     \kv@processor@default{pdfinfo}%
3824   }%
3825   \fi
3826 \else
3827   \kv@parse@normalized{%
3828     \HyInfo@Key={#2}%
3829   }{%
3830     \kv@processor@default{pdfinfo}%
3831   }%
3832   \fi
3833 \fi
3834 }
3835 \def\HyInfo@GenerateAddons{%
3836   \ifHyInfo@AddonUnsupported
3837     \def\HyInfo@Addons{}%
3838   \else
3839     \begingroup
3840     \toks@{}%
3841     \def\HyInfo@do##1{%
3842       \EdefEscapeName\HyInfo@Key{##1}%
3843       \edef\x{%
3844         \toks@{%
3845           \the\toks@
3846           /\HyInfo@Key(\csname HyInfo@Value@##1\endcsname)%
3847         }%
3848       }%
3849       \x
3850     }%
3851     \HyInfo@AddonList
3852     \edef\x{\endgroup
3853       \def\noexpand\HyInfo@Addons{\the\toks@}%
3854     }%
3855     \x
3856   \fi
3857 }
3858 \global\let\HyInfo@AddonList\ltx@empty
3859 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \}
3860 \define@key{Hyp}{pdfinkmargin}{\setpdfinkmargin{#1}}
3861 \let\setpdfinkmargin\@gobble
3862 \def\calculate@pdfview#1 #2\{%
3863   \def\@pdfview{#1}%
3864   \ifx\#2\%
3865     \def\@pdfviewparams{-32768}%
3866   \else
3867     \def\@pdfviewparams{ #2}%
3868   \fi
3869 }
3870 \def\Hy@number#1{%

```



```

3871 \the\numexpr#1\relax
3872 }%
3873 \define@key{Hyp}{pdfstartpage}{%
3874 \ifx\#1\%
3875 \let\@pdfstartpage\ltx@empty
3876 \else
3877 \edef\@pdfstartpage{\Hy@number{#1}}%
3878 \fi
3879 }%
3880 \define@key{Hyp}{pdfstartview}{%
3881 \ifx\#1\%
3882 \let\@pdfstartview\ltx@empty
3883 \else
3884 \def\@pdfstartview{/#1}%
3885 \fi
3886 }
3887 \def\HyPat@NonNegativeReal/{%
3888 \ *([0-9]+\.[0-9]*|0-9*\.[0-9]+) *%
3889 }
3890 \define@key{Hyp}{pdfremotestartview}{%
3891 \ifx\#1\%
3892 \def\@pdfremotestartview{/Fit}%
3893 \else
3894 \edef\@pdfremotestartview{#1}%
3895 \Hy@Match\@pdfremotestartview{}{%
3896 ^{XYZ(%
3897 ()| %
3898 (null|-?\HyPat@NonNegativeReal/) %
3899 (null|-?\HyPat@NonNegativeReal/) %
3900 (null|\HyPat@NonNegativeReal/)%)
3901 )| % end of "XYZ"
3902 Fit(%
3903 ()| %
3904 B| %
3905 (H|V|BH|BV)(%
3906 ()| %
3907 (null|\HyPat@NonNegativeReal/)%)
3908 )| %
3909 R %
3910 \HyPat@NonNegativeReal/ %
3911 \HyPat@NonNegativeReal/ %
3912 \HyPat@NonNegativeReal/ %
3913 \HyPat@NonNegativeReal/ %
3914 ) % end of "Fit"
3915 )$%
3916 }{}{%
3917 \Hy@Warning{%
3918 Invalid value ``\@pdfremotestartview'\MessageBreak
3919 of `pdfremotestartview'\MessageBreak
3920 is replaced by `Fit'%
3921 }%
3922 \let\@pdfremotestartview\@empty
3923 }%
3924 \ifx\@pdfremotestartview\@empty

```

```

3925     \def\@pdfremotestartview{/Fit}%
3926     \else
3927         \edef\@pdfremotestartview{/ \@pdfremotestartview}%
3928     \fi
3929 \fi
3930 }
3931 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
3932 \define@key{Hyp}{pdftoolbar}[true]{%
3933     \Hy@boolkey{pdftoolbar}{#1}%
3934 }
3935 \define@key{Hyp}{pdfmenubar}[true]{%
3936     \Hy@boolkey{pdfmenubar}{#1}%
3937 }
3938 \define@key{Hyp}{pdfwindowui}[true]{%
3939     \Hy@boolkey{pdfwindowui}{#1}%
3940 }
3941 \define@key{Hyp}{pdffitwindow}[true]{%
3942     \Hy@boolkey{pdffitwindow}{#1}%
3943 }
3944 \define@key{Hyp}{pdfcenterwindow}[true]{%
3945     \Hy@boolkey{pdfcenterwindow}{#1}%
3946 }
3947 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
3948     \Hy@boolkey{pdfdisplaydoctitle}{#1}%
3949 }
3950 \define@key{Hyp}{pdfa}[true]{%
3951     \Hy@boolkey{pdfa}{#1}%
3952 }
3953 \define@key{Hyp}{pdfnewwindow}[true]{%
3954     \def\Hy@temp{#1}%
3955     \ifx\Hy@temp\@empty
3956         \Hy@pdfnewwindowsetfalse
3957     \else
3958         \Hy@pdfnewwindowsettrue
3959         \Hy@boolkey{pdfnewwindow}{#1}%
3960     \fi
3961 }
3962 \def\Hy@SetNewWindow{%
3963     \ifHy@pdfnewwindowset
3964         /NewWindow %
3965     \ifHy@pdfnewwindow true\else false\fi
3966 \fi
3967 }
3968 \Hy@DefNameKey{pdfpagelayout}{%
3969     \do{SinglePage}{}%
3970     \do{OneColumn}{}%
3971     \do{TwoColumnLeft}{}%
3972     \do{TwoColumnRight}{}%
3973     \do{TwoPageLeft}{PDF 1.5}%
3974     \do{TwoPageRight}{PDF 1.5}%
3975 }
3976 \define@key{Hyp}{pdflang}{%
3977     \edef\@pdflang{#1}%
3978     \def\Hy@temp{\relax}%

```

```

3979 \ifx\@pdflang\Hy@temp
3980 \let\@pdflang\relax
3981 \fi
3982 \ifx\@pdflang\relax
3983 \else
3984 \ifx\@pdflang\ltx@empty
3985 \else

```

Test according to ABNF of RFC 3066.

```

3986 \Hy@Match\@pdflang{icase}{%
3987 ~%
3988 [a-z]{1,8}%
3989 (-[a-z0-9]{1,8})*%
3990 $%
3991 }{%

```

Test according to ABNF of RFC 5646.

```

3992 \Hy@Match\@pdflang{icase}{%
3993 ~%
3994 (%
3995 % langtag
3996 (% language
3997 [a-z]{2,3}%
3998 ([a-z]{3}(-[a-z]{3}){0,2})?% extlang
3999 |[a-z]{4}% reserved for future use
4000 |[a-z]{5,8}% registered language subtag
4001 )%
4002 (-[a-z]{4})?% script
4003 (-([a-z]{2}|[0-9]{3}))?% region
4004 (-([a-z]{5,8}|[0-9][a-z0-9]{3}))?% variant
4005 (-[0-9a-wyz](-[a-z0-9]{2,8})+)*% extension
4006 (-x(-[a-z0-9]{1,8})+)?% privateuse
4007 % privateuse
4008 |x(-[a-z0-9]{1,8})+%
4009 % grandfathered/irregular
4010 |en-GB-oed%
4011 |i-(ami|bnn|default|enochian|hak|klinton|lux|
4012 mingo|navajo|pwn|tao|tay|tsu)%
4013 |sgn-(BE-FR|BE-NL|CH-DE)%
4014 % grandfathered/regular
4015 |art-lojban%
4016 |cel-gaulish%
4017 |no-(bok|nyn)%
4018 |zh-(guoyu|hakka|min|min-nan|xiang)%
4019 )%
4020 $%
4021 }{%

```

Test for unique extensions.

```

4022 \Hy@Match{-\@pdflang}{icase}{-[a-wyz0-9]-}{%
4023 \Hy@Match\@pdflang{icase}{~x-}{}%
4024 % remove privateuse
4025 \edef\Hy@temp{-\@pdflang}%
4026 \Hy@Match\Hy@temp{icase}{%
4027 ~%

```

```

4028      (%)
4029      (-[a-wyz0-9]|-[a-z0-9]{2,8})*%
4030      )%
4031      -x-%
4032      }{%
4033      \edef\Hy@temp{%
4034      \expandafter\strip@prefix\pdfastmatch1%
4035      }%
4036      }{}%
4037      \Hy@Match\Hy@temp{icase}{%
4038      (-[a-wyz0-9]-).*\ltx@backslashchar1%
4039      }{%
4040      \Hy@Warning{%
4041      Invalid language identifier `#1'\MessageBreak
4042      for option `pdfang', because it violates\MessageBreak
4043      well-formedness defined in RFC 4646\MessageBreak
4044      by duplicate singleton subtags%
4045      }%
4046      \let\@pdfang\relax
4047      }{}%
4048      }%
4049      }{}%

```

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

```

4050      \ifx\@pdfang\relax
4051      \else
4052      \Hy@Match\@pdfang{icase}{%
4053      ~%
4054      [a-zA-Z]{2}-%
4055      (%
4056      aa|AA|%
4057      [qQ][m-zA-Z]|%
4058      [xX][a-zA-Z]|%
4059      zz|ZZ%
4060      )%
4061      (-|%)%
4062      }{%
4063      \Hy@Warning{%
4064      Invalid language identifier `#1'\MessageBreak
4065      for option `pdfang' because of invalid country code%
4066      \MessageBreak
4067      in second subtag (RFC 3066)%
4068      }%
4069      \let\@pdfang\relax
4070      }{}%
4071      \fi
4072      }{%
4073      \Hy@Warning{%
4074      Invalid language identifier `#1'\MessageBreak
4075      for option `pdfang', because it violates\MessageBreak
4076      well-formedness defined in RFC 5646%
4077      }%
4078      \let\@pdfang\relax
4079      }%
4080      }{%

```

```

4081 \Hy@Warning{%
4082   Invalid language identifier `#1'\MessageBreak
4083   for option `pdflang' (RFC 3066)%
4084 }%
4085 \let\@pdflang\relax
4086 }%
4087 \fi
4088 \fi
4089 }
4090 \define@key{Hyp}{pdfpagelabels}[true]{%
4091   \Hy@boolkey{pdfpagelabels}{#1}%
4092 }
4093 \define@key{Hyp}{pdfescapeform}[true]{%
4094   \Hy@boolkey{pdfescapeform}{#1}%
4095 }

```

Default values:

```

4096 \def\@linkbordercolor{1 0 0}
4097 \def\@urlbordercolor{0 1 1}
4098 \def\@menubordercolor{1 0 0}
4099 \def\@filebordercolor{0 .5 .5}
4100 \def\@runbordercolor{0 .7 .7}
4101 \def\@citebordercolor{0 1 0}
4102 \def\@pdfhighlight{/I}
4103 \let\@pdftitle\ltx@empty
4104 \let\@pdfauthor\ltx@empty
4105 \let\@pdfproducer\relax
4106 \def\@pdfcreator{LaTeX with hyperref}
4107 \let\@pdfcreationdate\ltx@empty
4108 \let\@pdfmoddate\ltx@empty
4109 \let\@pdfsubject\ltx@empty
4110 \let\@pdfkeywords\ltx@empty
4111 \let\@pdftrapped\ltx@empty
4112 \let\@pdfpagescrop\ltx@empty
4113 \def\@pdfstartview{/Fit}
4114 \def\@pdfremotestartview{/Fit}
4115 \def\@pdfstartpage{1}
4116 \let\@pdfprintpagerange\ltx@empty
4117 \let\@pdflang\relax
4118 \let\PDF@SetupDoc\@empty
4119 \let\PDF@FinishDoc\@empty
4120 \let\phantomsection\@empty
4121 \let\special@paper\@empty
4122 \def\HyperDestNameFilter#1{#1}
4123 \Hy@AtBeginDocument{%
4124   \begingroup
4125   \edef\x{\@ifundefined{stockheight}\paperheight\stockheight}%
4126   \dimen@=\x\relax
4127   \ifdim\dimen@>\z@
4128   \else
4129     \dimen@=11in\relax
4130   \Hy@WarningNoLine{%
4131     Height of page (\expandafter\string\x) %
4132     is invalid (\the\x),\MessageBreak
4133     using 11in%

```

```

4134 }%
4135 \fi
4136 \dimen@=0.99626401\dimen@
4137 \xdef\Hy@pageheight{\strip@pt\dimen@}%
4138 \endgroup
4139 }
4140 \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.

```

4141 \let\hyper@normalise\ExecuteOptions
4142 \let\ExecuteOptions\hypersetup
4143 \Hy@RestoreCatcodes
4144 \InputIfFileExists{hyperref.cfg}{-}{-}
4145 \Hy@SetCatcodes
4146 \let\ExecuteOptions\hyper@normalise
4147 \ifx\Hy@MaybeStopNow\relax
4148 \else
4149 \Hy@stoppedearlytrue
4150 \expandafter\Hy@MaybeStopNow
4151 \fi
4152 \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.

```

4153 \SetupKeyvalOptions{family=Hyp}
4154 \DeclareLocalOptions{%
4155   a4paper,a5paper,b5paper,letterpaper,legalpaper,executivepaper%
4156 }

```

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

```

4157 \@ifpackagewith{hyperref}{tex4ht}{%
4158 }{%
4159   \@ifpackageloaded{tex4ht}{%
4160     \PassOptionsToPackage{tex4ht}{hyperref}%
4161   }{%
4162     \ltx@ifundefined{HCode}{%
4163     }{%
4164       \begingroup
4165       \def\Hy@pkg{tex4ht}%
4166       \def\Hy@temp@A#1\RequirePackage[#2]#3#4\Hy@NIL{%
4167         \def\Hy@param{#2#3}%
4168         \ifx\Hy@param\ltx@empty
4169           \expandafter\ltx@gobble
4170         \else
4171           \def\Hy@param{#3}%
4172           \ifx\Hy@param\Hy@pkg
4173             \PassOptionsToPackage{#2}{tex4ht}%
4174             \expandafter\expandafter\expandafter\@gobble
4175           \else
4176             \expandafter\expandafter\expandafter\ltx@firstofone
4177           \fi
4178         \fi
4179       }\Hy@temp@A#4\Hy@NIL}%

```

```

4180     }%
4181     \expandafter
4182     \Hy@temp@A\@documentclasshook\RequirePackage[]{}\Hy@NIL
4183     \endgroup
4184     \PassOptionsToPackage{tex4ht}{hyperref}%
4185     }%
4186 }%
4187 }

4188 \let\ReadBookmarks\relax
4189 \ProcessKeyvalOptions{Hyp}

```

After processing options.

## 15.1 Package xspace support

```

4190 \def\Hy@xspace@end{%
4191 \ltx@ifundefined{xspaceaddexceptions}{%
4192 \Hy@AtBeginDocument{%
4193 \ltx@ifundefined{xspaceaddexceptions}{%
4194 }{%
4195 \def\Hy@xspace@end{%
4196 \ltx@gobble{end for xspace}%
4197 }%
4198 \xspaceaddexceptions{%
4199 \Hy@xspace@end,\hyper@linkend,\hyper@anchorend
4200 }%
4201 }%
4202 }%
4203 }{%
4204 \def\Hy@xspace@end{%
4205 \ltx@gobble{end for xspace}%
4206 }%
4207 \xspaceaddexceptions{\Hy@xspace@end,\hyper@linkend,\hyper@anchorend}%
4208 }

```

## 15.2 Option draft

```

4209 \Hy@AtBeginDocument{%
4210 \ifHy@draft
4211 \let\hyper@@anchor\@gobble
4212 \gdef\hyper@link#1#2#3{#3\Hy@xspace@end}%
4213 \def\hyper@anchorstart#1#2{#2\Hy@xspace@end}%
4214 \def\hyper@anchorend{\Hy@xspace@end}%
4215 \let\hyper@linkstart\@gobbletwo
4216 \def\hyper@linkend{\Hy@xspace@end}%
4217 \def\hyper@linkurl#1#2{#1\Hy@xspace@end}%
4218 \def\hyper@linkfile#1#2#3{#1\Hy@xspace@end}%
4219 \def\hyper@link@[#1]#2#3#4{#4\Hy@xspace@end}%
4220 \def\Acrobatmenu#1#2{\leavevmode#2\Hy@xspace@end}%
4221 \let\PDF@SetupDoc\@empty
4222 \let\PDF@FinishDoc\@empty
4223 \let\@fifthoffive\@secondoftwo
4224 \let\@secondoffive\@secondoftwo
4225 \let\ReadBookmarks\relax
4226 \let\WriteBookmarks\relax

```

```

4227 \Hy@WarningNoLine{Draft mode on}%
4228 \fi
4229 \Hy@DisableOption{draft}%
4230 \Hy@DisableOption{nolinks}%
4231 \Hy@DisableOption{final}%
4232 }

```

### 15.3 PDF/A

```

4233 \Hy@DisableOption{pdfa}
4234 \ifHy@pdfa
4235 \ifnum \Hy@pdf@major@minor@version < 104
4236 \kvsetkeys{Hyp}{pdfversion=1.4}%
4237 \fi
4238 \Hy@DisableOption{pdfversion}%
4239 \def\Hy@Acrobatmenu#1#2{%
4240 \leavevmode
4241 \begingroup
4242 \edef\x{#1}%
4243 \@onelevel@sanitize\x
4244 \ifx\x\Hy@NextPage
4245 \let\y=Y%
4246 \else
4247 \ifx\x\Hy@PrevPage
4248 \let\y=Y%
4249 \else
4250 \ifx\x\Hy@FirstPage
4251 \let\y=Y%
4252 \else
4253 \ifx\x\Hy@LastPage
4254 \let\y=Y%
4255 \else
4256 \let\y=N%
4257 \fi
4258 \fi
4259 \fi
4260 \fi
4261 \expandafter\endgroup
4262 \ifx\y Y%
4263 \else
4264 \Hy@Error{%
4265 PDF/A: Named action `#1' is not permitted%
4266 }\@ehc
4267 {#2}%
4268 \expandafter\@gobble
4269 \fi
4270 }%
4271 \def\Hy@temp#1{%
4272 \expandafter\def\csname Hy@#1\endcsname{#1}%
4273 \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
4274 }%
4275 \Hy@temp{NextPage}%
4276 \Hy@temp{PrevPage}%
4277 \Hy@temp{FirstPage}%
4278 \Hy@temp{LastPage}%

```



```

4279 \else
4280 \def\Hy@Acrobatmenu#1#2{\leavevmode}%
4281 \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.

```

4282 \def\Hy@wrapper@babel#1#2{%
4283 \begingroup
4284 \Hy@safe@activestru
4285 \set@display@protect
4286 \edef\x{#2}%
4287 \@onelevel@sanitize\x
4288 \toks@{#1}%
4289 \edef\x{\endgroup\the\toks@{\x}}%
4290 \x
4291 }
4292 \def\Hy@WrapperDef#1{%
4293 \begingroup
4294 \escapechar=\m@ne
4295 \xdef\Hy@gtemp{%
4296 \expandafter\noexpand\csname HyWrap@string#1\endcsname
4297 }%
4298 \endgroup
4299 \edef#1{%
4300 \noexpand\Hy@wrapper@babel
4301 \expandafter\noexpand\Hy@gtemp
4302 }%
4303 \expandafter\def\Hy@gtemp
4304 }
4305 \ifHy@hyperfigures
4306 \Hy@Info{Hyper figures ON}%
4307 \else
4308 \Hy@Info{Hyper figures OFF}%
4309 \fi
4310 \ifHy@nesting
4311 \Hy@Info{Link nesting ON}%
4312 \else
4313 \Hy@Info{Link nesting OFF}%
4314 \fi
4315 \ifHy@hyperindex
4316 \Hy@Info{Hyper index ON}%
4317 \else
4318 \Hy@Info{Hyper index OFF}%
4319 \fi
4320 \ifHy@plainpages
4321 \Hy@Info{Plain pages ON}%
4322 \else
4323 \Hy@Info{Plain pages OFF}%
4324 \fi

```

```

4325 \ifHy@backref
4326   \Hy@Info{Backreferencing ON}%
4327 \else
4328   \Hy@Info{Backreferencing OFF}%
4329 \fi
4330 \ifHy@typexml
4331   \Hy@AtEndOfPackage{%
4332     \RequirePackage{color}%
4333     \RequirePackage{nameref}[2012/07/28]%
4334   }%
4335 \fi
4336 \Hy@DisableOption{typexml}
4337 \ifHy@implicit
4338   \Hy@InfoNoLine{Implicit mode ON; LaTeX internals redefined}%
4339 \else
4340   \Hy@InfoNoLine{Implicit mode OFF; no redefinition of LaTeX internals}%
4341   \def\MaybeStopEarly{%
4342     \Hy@Message{Stopped early}%
4343     \Hy@AtBeginDocument{%
4344       \PDF@FinishDoc
4345       \gdef\PDF@FinishDoc{}}%
4346   }%
4347   \endinput
4348 }%
4349 \Hy@AtBeginDocument{%
4350   \let\autoref\ref
4351   \let\autopageref\pageref
4352   \ifx\@pdfpagemode\@empty
4353     \gdef\@pdfpagemode{UseNone}%
4354   \fi
4355   \global\Hy@backreffalse
4356 }%
4357 \Hy@AtEndOfPackage{%
4358   \global\let\ReadBookmarks\relax
4359   \global\let\WriteBookmarks\relax
4360 }%
4361 \fi
4362 \Hy@DisableOption{implicit}

```

#### 15.4.1 Driver loading

```

4363 \Hy@AtEndOfPackage{%
4364   \ifpackageloaded{tex4ht}{%
4365     \def\Hy@driver{htex4ht}%
4366     \Hy@texhttrue
4367   }{}%

```

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.

```

4368   \ifx\Hy@driver\@empty
4369   \else
4370     \ifx\pdfextension\@undefined
4371       \def\Hy@temp{hpdfTEX}%
4372     \else
4373       \def\Hy@temp{hluatex}%

```

```

4374 \fi
4375 \ifpdf
4376 \ifx\Hy@driver\Hy@temp
4377 \else
4378 \Hy@WarningNoLine{%
4379 Wrong driver ``\Hy@driver.def';\MessageBreak
4380 pdfTeX is running in PDF mode.\MessageBreak
4381 Forcing driver ``\Hy@temp.def'%
4382 }%
4383 \let\Hy@driver\Hy@temp
4384 \fi
4385 \else
4386 \ifx\Hy@driver\Hy@temp
4387 \Hy@WarningNoLine{%
4388 Wrong driver ``\Hy@driver.def';\MessageBreak
4389 pdfTeX is not running in PDF mode.\MessageBreak
4390 Using default driver%
4391 }%
4392 \let\Hy@driver\@empty
4393 \fi
4394 \fi
4395 \fi
4396 \ifHy@texht
4397 \else
4398 \ifx\Hy@driver\@empty
4399 \else
4400 \def\Hy@temp{hxtex}%
4401 \ifxetex
4402 \ifx\Hy@driver\Hy@temp
4403 \else
4404 \Hy@WarningNoLine{%
4405 Wrong driver ``\Hy@driver.def';\MessageBreak
4406 XeTeX is running.\MessageBreak
4407 Forcing driver ``\Hy@temp.def' for XeTeX%
4408 }%
4409 \let\Hy@driver\Hy@temp
4410 \fi
4411 \fi
4412 \fi
4413 \fi
4414 \ifx\Hy@driver\@empty
4415 \else
4416 \def\Hy@temp{hvtexhtm}%
4417 \ifnum\ifvtex\OpMode\else\m@ne\fi=10 %
4418 \ifx\Hy@driver\Hy@temp
4419 \else
4420 \Hy@WarningNoLine{%
4421 Wrong driver ``\Hy@driver.def';\MessageBreak
4422 VTeX is running in HTML mode.\MessageBreak
4423 Forcing driver ``\Hy@temp.def'%
4424 }%
4425 \let\Hy@driver\Hy@temp
4426 \fi
4427 \else

```

```

4428 \ifx\Hy@driver\Hy@temp
4429 \Hy@WarningNoLine{%
4430 Wrong driver ``\Hy@driver.def';\MessageBreak
4431 VTeX is not running in HTML mode.\MessageBreak
4432 Using default driver%
4433 }%
4434 \let\Hy@driver\@empty
4435 \fi
4436 \fi
4437 \fi

```

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

```

4438 \let\HyOpt@DriverType\ltx@empty
4439 \ifx\HyOpt@CustomDriver\ltx@empty
4440 \ifx\Hy@driver\@empty
4441 \def\HyOpt@DriverType{ (autodetected)}%
4442 \providecommand*{\Hy@defaultdriver}{hdvips}%
4443 \ifpdf
4444 \ifx\pdfextension\@undefined
4445 \def\Hy@driver{hpdftex}%
4446 \else
4447 \def\Hy@driver{hluatex}%
4448 \fi
4449 \else
4450 \ifxetex
4451 \def\Hy@driver{hxetex}%
4452 \else
4453 \ifnum\ifvtex\OpMode\else\m@ne\fi=10 %
4454 \def\Hy@driver{hvtexhtm}%
4455 \def\MaybeStopEarly{%
4456 \Hy@Message{Stopped early}%
4457 \Hy@AtBeginDocument{%
4458 \PDF@FinishDoc
4459 \gdef\PDF@FinishDoc{}}%
4460 }%
4461 \endinput
4462 }%
4463 \else
4464 \ifnum\ifvtex\OpMode\else\m@ne\fi=\@ne
4465 \def\Hy@driver{hvtex}%
4466 \else
4467 \ifnum\ifvtex\OpMode\else\m@ne\fi=\tw@
4468 \def\Hy@driver{hvtex}%
4469 \else
4470 \ifx\HyOpt@DriverFallback\ltx@empty
4471 \let\Hy@driver\Hy@defaultdriver
4472 \def\HyOpt@DriverType{ (default)}%
4473 \else
4474 \begingroup
4475 \toks@{\expandafter{\HyOpt@DriverFallback}%
4476 \edef\x{\endgroup
4477 \noexpand\kvsetkeys{Hyp}{\the\toks@}%
4478 }%
4479 \x
4480 \ifx\Hy@driver\ltx@empty

```

```

4481         \let\Hy@driver\Hy@defaultdriver
4482         \def\HyOpt@DriverType{ (default)}%
4483     \else
4484         \def\HyOpt@DriverType{ (fallback)}%
4485     \fi
4486 \fi
4487 \fi
4488 \fi
4489 \fi
4490 \fi
4491 \fi
4492 \ifx\Hy@driver\Hy@defaultdriver
4493     \def\Hy@temp{hdvwind}%
4494     \ifx\Hy@temp\Hy@driver
4495         \kvsetkeys{Hyp}{colorlinks}%
4496         \PassOptionsToPackage{dviwindo}{color}%
4497     \fi
4498 \fi
4499 \fi
4500 \else
4501     \def\HyOpt@DriverType{ (custom)}%
4502     \let\Hy@driver\HyOpt@CustomDriver
4503 \fi
4504 \Hy@InfoNoLine{Driver\HyOpt@DriverType: \Hy@driver}%
4505 \chardef\Hy@VersionChecked=0 %
4506 \input{\Hy@driver.def}%
4507 \ifcase\Hy@VersionChecked
4508     \Hy@VersionCheck{\Hy@driver.def}%
4509 \fi
4510 \let\@unprocessedoptions\relax
4511 \Hy@RestoreCatcodes
4512 \Hy@DisableOption{tex4ht}%
4513 \Hy@DisableOption{pdftex}%
4514 \Hy@DisableOption{nativepdf}%
4515 \Hy@DisableOption{dvipdfm}%
4516 \Hy@DisableOption{dvipdfmx}%
4517 \Hy@DisableOption{dvipdfmx-outline-open}%
4518 \Hy@DisableOption{pdfmark}%
4519 \Hy@DisableOption{dvips}%
4520 \Hy@DisableOption{hypertex}%
4521 \Hy@DisableOption{vtex}%
4522 \Hy@DisableOption{vtexpdfmark}%
4523 \Hy@DisableOption{dviwindo}%
4524 \Hy@DisableOption{dvipsone}%
4525 \Hy@DisableOption{textures}%
4526 \Hy@DisableOption{latex2html}%
4527 \Hy@DisableOption{ps2pdf}%
4528 \Hy@DisableOption{xetex}%
4529 \Hy@DisableOption{driverfallback}%
4530 \Hy@DisableOption{customdriver}%
4531 \Hy@DisableOption{pdfversion}%
4532 }

```

Support for open outlines is enabled for XeTeX >= 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.

```

4533 \newif\ifHy@DvipdfmxOutlineOpen
4534 \ifxetex
4535   \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
4536   \else
4537     \chardef\SpecialDvipdfmxOutlineOpen\@ne
4538     \Hy@DvipdfmxOutlineOpenttrue
4539   \fi
4540 \fi
4541 \begingroup\expandafter\expandafter\expandafter\endgroup
4542 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
4543 \else
4544   \ifnum\SpecialDvipdfmxOutlineOpen>\z@
4545     \Hy@DvipdfmxOutlineOpenttrue
4546   \fi
4547 \fi

```

### 15.4.2 Bookmarks

```

4548 \def\WriteBookmarks{0}
4549 \def\@bookmarkopenstatus#1{%
4550   \ifHy@bookmarksopen

```

The purpose of the \@firstofone-number-space-construct is that no \relax will be inserted by T<sub>E</sub>X before the \else:

```

4551   \ifnum#1<\expandafter\@firstofone\expandafter
4552     {\number\@bookmarkopenlevel} % explicit space
4553   \else
4554     -%
4555   \fi
4556 \else
4557   -%
4558 \fi
4559 }
4560 \ifHy@bookmarks
4561   \Hy@Info{Bookmarks ON}%
4562   \ifx\@pdfpagemode\@empty
4563     \def\@pdfpagemode{UseOutlines}%
4564   \fi
4565 \else
4566   \let\@bookmarkopenstatus\ltx@gobble
4567   \Hy@Info{Bookmarks OFF}%
4568   \Hy@AtEndOfPackage{%
4569     \global\let\ReadBookmarks\relax
4570     \global\let\WriteBookmarks\relax
4571   }%
4572   \ifx\@pdfpagemode\@empty
4573     \def\@pdfpagemode{UseNone}%
4574   \fi
4575 \fi
4576 \Hy@DisableOption{bookmarks}

```

Add wrapper for setting standard catcodes (babel's shorthands).

```

4577 \def\Hy@CatcodeWrapper#1{%
4578   \let\Hy@endWrap\ltx@empty
4579   \def\TMP@EnsureCode##1##2{%

```

```

4580 \edef\Hy@EndWrap{%
4581   \Hy@EndWrap
4582   \catcode##1 \the\catcode##1\relax
4583 }%
4584 \catcode##1 ##2\relax
4585 }%
4586 \TMP@EnsureCode{10}{12}% ^^J
4587 \TMP@EnsureCode{33}{12}% !
4588 \TMP@EnsureCode{34}{12}% "
4589 \TMP@EnsureCode{36}{3}% $ (math)
4590 \TMP@EnsureCode{38}{4}% & (alignment)
4591 \TMP@EnsureCode{39}{12}% '
4592 \TMP@EnsureCode{40}{12}% (
4593 \TMP@EnsureCode{41}{12}% )
4594 \TMP@EnsureCode{42}{12}% *
4595 \TMP@EnsureCode{43}{12}% +
4596 \TMP@EnsureCode{44}{12}% ,
4597 \TMP@EnsureCode{45}{12}% -
4598 \TMP@EnsureCode{46}{12}% .
4599 \TMP@EnsureCode{47}{12}% /
4600 \TMP@EnsureCode{58}{12}% :
4601 \TMP@EnsureCode{59}{12}% ;
4602 \TMP@EnsureCode{60}{12}% <
4603 \TMP@EnsureCode{61}{12}% =
4604 \TMP@EnsureCode{62}{12}% >
4605 \TMP@EnsureCode{63}{12}% ?
4606 \TMP@EnsureCode{91}{12}% [
4607 \TMP@EnsureCode{93}{12}% ]
4608 \TMP@EnsureCode{94}{7}% ^ (superscript)
4609 \TMP@EnsureCode{95}{8}% _ (subscript)
4610 \TMP@EnsureCode{96}{12}% `
4611 \TMP@EnsureCode{124}{12}% |
4612 \TMP@EnsureCode{126}{13}% ~ (active)
4613 #1\relax
4614 \Hy@EndWrap
4615 }

```

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

```

4616 \Hy@AtBeginDocument{%
4617   \ifHy@ocgcolorlinks
4618     \kvsetkeys{Hyp}{colorlinks}%
4619     \ifHy@pdfa
4620       \Hy@Warning{%
4621         PDF/A: Optional Content Groups are prohibited,\MessageBreak
4622         using `colorlinks' instead of `ocgcolorlinks'%
4623       }%
4624       \Hy@ocgcolorlinksfalse
4625     \fi
4626   \fi
4627   \ifHy@ocgcolorlinks
4628   \else
4629     \Hy@DisableOption{ocgcolorlinks}%
4630   \fi
4631   \ifHy@colorlinks

```

```

4632 \def\@pdfborder{0 0 0}%
4633 \let\@pdfborderstyle\@empty
4634 \ifHy@typexml
4635 \else
4636 \Hy@CatcodeWrapper{%
4637 \RequirePackage{color}%
4638 }%
4639 \fi
4640 \def\Hy@colorlink#1{%
4641 \begingroup
4642 \HyColor@UseColor#1%
4643 }%
4644 \def\Hy@endcolorlink{\endgroup}%
4645 \Hy@Info{Link coloring ON}%
4646 \else
4647 \ifHy@frenchlinks
4648 \def\Hy@colorlink#1{\begingroup\fontshape{\scdefault}\selectfont}%
4649 \def\Hy@endcolorlink{\endgroup}%
4650 \Hy@Info{French linking ON}%
4651 \else

```

for grouping consistency:

```

4652 \def\Hy@colorlink#1{\begingroup}%
4653 \def\Hy@endcolorlink{\endgroup}%
4654 \Hy@Info{Link coloring OFF}%
4655 \fi
4656 \fi
4657 \Hy@DisableOption{colorlinks}%
4658 \Hy@DisableOption{frenchlinks}%
4659 \ifHy@texht
4660 \else
4661 \ifHy@typexml
4662 \else
4663 \Hy@CatcodeWrapper{%
4664 \RequirePackage{nameref}[2012/07/28]%
4665 }%
4666 \fi

```

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

```

4667 \ifHy@implicit
4668 \let \T@Ref\HyRef@Ref
4669 \def\@refstar#1{%
4670 \NR@ref@showkeys{#1}%
4671 \HyRef@StarSetRef{#1}\@firstoffive
4672 }
4673 \def\@pagerefstar#1{%
4674 \NR@ref@showkeys{#1}%
4675 \HyRef@StarSetRef{#1}\@secondoffive
4676 }
4677 \def\@namerefstar#1{%
4678 \NR@ref@showkeys{#1}%
4679 \HyRef@StarSetRef{#1}\@thirdoffive
4680 }
4681 \def\@Refstar#1{%

```



```

4682 \NR@ref@showkeys{#1}%
4683 \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
4684 }%
4685 \else
4686 \fi
4687 \fi
4688 }
4689 \Hy@AtBeginDocument{%
4690 \ifx\ReadBookmarks\relax
4691 \else
4692 \Hy@CatcodeWrapper\ReadBookmarks
4693 \fi
4694 }
4695 \ifHy@backref
4696 \RequirePackage{backref}%
4697 \else
4698 \let\Hy@backout\@gobble
4699 \fi
4700 \Hy@DisableOption{backref}
4701 \Hy@DisableOption{pagebackref}
4702 \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`.

```

4703 \begingroup
4704 \endlinechar=-1 %
4705 \catcode`\^^A=14 %
4706 \catcode`\^^M\active
4707 \catcode`\%\active
4708 \catcode`\#\active
4709 \catcode`\_\active
4710 \catcode`\$\active
4711 \catcode`\&\active
4712 \gdef\hyper@normalise{^^A
4713 \begingroup
4714 \catcode`\^^M\active
4715 \def^^M{ }^^A
4716 \catcode`\%\active
4717 \let%\@percentchar
4718 \let%\@percentchar
4719 \catcode`\#\active
4720 \def#{\hyper@hash}^^A
4721 \def\#{\hyper@hash}^^A
4722 \@makeother\&^^A
4723 \edef&{\string&}^^A
4724 \edef\&{\string&}^^A

```

```

4725 \edef\textunderscore{\string_}^^A
4726 \let\_ \textunderscore
4727 \catcode\_ \active
4728 \let\_ \textunderscore
4729 \let~\hyper@tilde
4730 \let\~\hyper@tilde
4731 \let\textasciitilde\hyper@tilde
4732 \let\\\@backslashchar
4733 \edef$\string$^^A
4734 \Hy@safe@activetrue
4735 \hyper@n@rmalise
4736 }^^A
4737 \catcode\_#=6 ^^A
4738 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
4739 \gdef\hyper@n@rmalise#1#2{^^A
4740 \def\Hy@tempa{#2}^^A
4741 \ifx\Hy@tempa\Hy@ActiveCarriageReturn
4742 \ltx@ReturnAfterElseFi{^^A
4743 \hyper@@normalise{#1}^^A
4744 }^^A
4745 \else
4746 \ltx@ReturnAfterFi{^^A
4747 \hyper@@normalise{#1}{#2}^^A
4748 }^^A
4749 \fi
4750 }^^A
4751 \gdef\hyper@@normalise#1#2{^^A
4752 \edef\Hy@tempa{^^A
4753 \endgroup
4754 \noexpand#1{\Hy@RemovePercentCr#2%^^M\@nil}^^A
4755 }^^A
4756 \Hy@tempa
4757 }^^A
4758 \gdef\Hy@RemovePercentCr#1%^^M#2\@nil{^^A
4759 #1^^A
4760 \ifx\limits#2\limits
4761 \else
4762 \ltx@ReturnAfterFi{^^A
4763 \Hy@RemovePercentCr #2\@nil
4764 }^^A
4765 \fi
4766 }^^A
4767 \endgroup
4768 \providecommand*\hyper@chars{%
4769 \let\#\hyper@hash
4770 \let\%\@percentchar
4771 \Hy@safe@activetrue
4772 }

4773 \def\hyperlink#1#2{%
4774 \hyper@@link{#1}{#2}%
4775 }

4776 \def\Hy@VerboseLinkStart#1#2{%
4777 \ifHy@verbose

```

```

4778 \begingroup
4779 \Hy@safe@activetrue
4780 \xdef\Hy@VerboseGlobalTemp{(#1) `#2'}%
4781 \Hy@Info{Reference \Hy@VerboseGlobalTemp}%
4782 \xdef\Hy@VerboseGlobalTemp{%
4783   \Hy@VerboseGlobalTemp, %
4784   line \the\inputlineno
4785 }%
4786 \endgroup
4787 \let\Hy@VerboseLinkInfo\Hy@VerboseGlobalTemp
4788 \@onelevel@sanitize\Hy@VerboseLinkInfo
4789 \fi
4790 }

4791 \def\Hy@VerboseLinkInfo{<VerboseLinkInfo>}
4792 \def\Hy@VerboseLinkStop{%
4793   \ifHy@verbose
4794     \begingroup
4795     \edef\x{\endgroup
4796       \write\m@ne{%
4797         Package `hyperref' Info: %
4798         End of reference \Hy@VerboseLinkInfo.%
4799       }}%
4800   }%
4801   \x
4802 \fi
4803 }

4804 \def\Hy@VerboseAnchor#1{%
4805   \ifHy@verbose
4806     \begingroup
4807     \Hy@safe@activetrue
4808     \Hy@Info{Anchor ``HyperDestNameFilter{#1}'}%
4809     \endgroup
4810   \fi
4811 }

4812 \def\Hy@AllowHyphens{%
4813   \relax
4814   \ifhmode
4815     \penalty\@M
4816     \hskip\z@skip
4817   \fi
4818 }

4819 \DeclareRobustCommand*{\href}[1][]{%
4820   \begingroup
4821   \setkeys{href}{#1}%
4822   \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
4823 }
4824 \def\Hy@href#1{%
4825   \hyper@normalise\href@
4826 }
4827 \begingroup
4828 \catcode`\$=6 %
4829 \catcode`\#=12 %
4830 \gdef\href@#1{\expandafter\href@split$1##\}%

```

```

4831 \gdef\href@split$1#\$2#\$3\\\$4{%
4832   \hyper@@link{$1}{$2}{$3}\\$4}%
4833   \endgroup
4834 }%
4835 \endgroup

```

Option ‘page’.

```

4836 \define@key{href}{page}{%
4837   \def\Hy@href@page{#1}%
4838 }
4839 \let\Hy@href@page\@empty
4840 \newcount\c@Hy@tempcnt
4841 \def\theHy@tempcnt{\the\c@Hy@tempcnt}
4842 \def\Hy@MakeRemoteAction{%
4843   \ifx\Hy@href@page\@empty
4844     \def\Hy@href@page{0}%
4845   \else
4846     \setcounter{Hy@tempcnt}{\Hy@href@page}%
4847     \ifnum\c@Hy@tempcnt<\@ne
4848       \Hy@Warning{%
4849         Invalid page number (\theHy@tempcnt)\MessageBreak
4850         for remote PDF file.\MessageBreak
4851         Using page 1%
4852       }%
4853     \def\Hy@href@page{0}%
4854   \else
4855     \global\advance\c@Hy@tempcnt\m@ne
4856     \edef\Hy@href@page{\theHy@tempcnt}%
4857   \fi
4858 \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.

```

4859 \ifx\Hy@href@nextactionraw\@empty
4860 \else
4861   \Hy@pdfnewwindowsettrue
4862   \Hy@pdfnewwindowtrue
4863 \fi
4864 }

```

Option ‘pdfremotestartview’.

```

4865 \define@key{href}{pdfremotestartview}{%
4866   \setkeys{Hyp}{pdfremotestartview={#1}}%
4867 }

```

Option ‘pdfnewwindow’.

```

4868 \let\KV@href@pdfnewwindow\KV@Hyp@pdfnewwindow
4869 \let\KV@href@pdfnewwindow@default\KV@Hyp@pdfnewwindow@default

```

Option ‘ismap’.

```

4870 \newif\ifHy@href@ismap
4871 \define@key{href}{ismap}[true]{%
4872   \ltx@ifundefined{Hy@href@ismap#1}{%
4873     \Hy@Error{%
4874       Invalid value (#1) for key `ismap'.\MessageBreak
4875       Permitted values are `true' or `false'.\MessageBreak

```

```

4876 Ignoring `ismap'%
4877 }\@ehc
4878 }{%
4879 \csname Hy@href@ismap#1\endcsname
4880 }%
4881 }

```

Option ‘nextactionraw’.

```

4882 \let\Hy@href@nextactionraw\@empty
4883 \define@key{href}{nextactionraw}{%
4884 \edef\Hy@href@nextactionraw{#1}%
4885 \ifx\Hy@href@nextactionraw\@empty
4886 \else
4887 \Hy@Match\Hy@href@nextactionraw{}{%
4888 ~(\HyPat@ObjRef/|<<.*[/S[/].+>>|%
4889 \[( ?\HyPat@ObjRef/|<<.*[/S[/].+>>)+ ?])$%
4890 }{}{%
4891 \Hy@Warning{Invalid value for `nextactionraw':\MessageBreak
4892 \Hy@href@nextactionraw\MessageBreak
4893 The action is discarded%
4894 }%
4895 }%
4896 \ifx\Hy@href@nextactionraw\@empty
4897 \else
4898 \edef\Hy@href@nextactionraw{/Next \Hy@href@nextactionraw}%
4899 \fi
4900 \fi
4901 }
4902 \def\HyPat@ObjRef/{.+}

```

Load package `url.sty` and save the meaning of the original `\url` in `\nolinkurl`.

```

4903 \RequirePackage{url}
4904 \let\HyOrg@url\url
4905 \def\Hurl{\begingroup \Url}
4906 \DeclareRobustCommand*{\nolinkurl}{\hyper@normalise\nolinkurl@}
4907 \def\nolinkurl@#1{\Hurl{#1}}
4908 \DeclareRobustCommand*{\url}{\hyper@normalise\url@}
4909 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}
4910 \DeclareRobustCommand*{\hyperimage}{\hyper@normalise\hyper@image}
4911 \providecommand\hyper@image[2]{#2}
4912 \def\hypertarget#1#2{%
4913 \ifHy@nesting
4914 \hyper@@anchor{#1}{#2}%
4915 \else
4916 \hyper@@anchor{#1}{\relax}#2%
4917 \fi
4918 }

```

`\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.

```

4919 \DeclareRobustCommand*\hyperref{%
4920   \@ifnextchar[{\Hy@babelnormalise\label@hyperref}\@hyperref
4921 }
4922 \def\Hy@babelnormalise#1[#2]{%
4923   \begingroup
4924     \Hy@safe@activetrue
4925     \let\protect\@unexpandable@protect
4926     \edef\Hy@tempa{%
4927       \endgroup
4928       \noexpand#1[{#2}]%
4929     }%
4930     \Hy@tempa
4931 }
4932 \def\@hyperref{\hyper@normalise\@hyperref}
4933 \def\@hyperref#1#2#3{%
4934   \edef\ref@one{\ifx\#2\#2\else#2.\fi#3}%
4935   \expandafter\tryhyper@link\ref@one\{#1}%
4936 }
4937 \def\tryhyper@link#1\#2{%
4938   \hyper@@link{#2}{#1}%
4939 }

4940 \def\hyperdef{\@ifnextchar[{\label@hyperdef}\@hyperdef}]
4941 \def\@hyperdef#1#2#3{%, category, name, text
4942   \ifx\#1\%
4943     \def\Hy@AnchorName{#2}%
4944   \else
4945     \def\Hy@AnchorName{#1.#2}%
4946   \fi
4947   \ifHy@nesting
4948     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
4949   \else
4950     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#3%
4951   \fi
4952 }

```

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.

```

4953 \let\hyperrefundefinedlink\@firstofone
4954 \def\label@hyperref#1{%
4955   \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
4956 }%
4957 \def\label@@hyperref#1#2#3{%
4958   \ifx#1\relax
4959     \protect\G@refundefinedtrue
4960     \@latex@warning{%
4961       Hyper reference `#2' on page \thepage \space undefined%
4962     }%
4963     \begingroup
4964       \hyperrefundefinedlink{#3}%
4965     \endgroup

```

```

4966 \else
4967   \hyper@@link{\expandafter\@fifthoffive#1}%
4968   {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
4969 \fi
4970 }
4971 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
4972                               % anchor text
4973   \@bsphack
4974   \ifx\#2\%
4975     \def\Hy@AnchorName{#3}%
4976   \else
4977     \def\Hy@AnchorName{#2.#3}%
4978   \fi
4979   \if@filesw
4980     \protected@write\@auxout{}{%
4981       \string\newlabel{#1}{#2}{#3}{\Hy@AnchorName}}%
4982   }%
4983 \fi
4984 \@esphack
4985 \ifHy@nesting
4986   \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
4987 \else
4988   \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#4%
4989 \fi
4990 }

```

`\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`

```

4991 \ExplSyntaxOn
4992 \cs_new:Npn \hyperget #1 #2
4993 {
4994   \use:c { __hyp_get_#1:n } { #2}
4995 }
4996
4997 \cs_new:Npn \__hyp_get_anchor:n #1
4998 {
4999   \HyperDestNameFilter
5000   {
5001     \cs_if_exist:cTF {r@#1}
5002     {
5003       \tl_item:cn {r@#1}{4}
5004     }
5005     {
5006       Doc-Start
5007     }
5008   }
5009 }
5010 \cs_new:Npn \__hyp_get_pageanchor:n #1
5011 {

```

```

5012 \HyperDestNameFilter
5013 {
5014   \cs_if_exist:cTF {r@#1}
5015   {
5016     page. \tl_item:cn {r@#1}{2}
5017   }
5018   {
5019     Doc-Start
5020   }
5021 }
5022 }
5023 \cs_new:Npn \__hyp_get_currentanchor:n #1
5024 {
5025   \HyperDestNameFilter { \@currentHref }
5026 }
5027 \ExplSyntaxOff

```

## 16.1 Link box support for XeTeX

```

5028 \newdimen\XeTeXLinkMargin
5029 \setlength{\XeTeXLinkMargin}{2pt}
5030 \ifxetex
5031   \font\XeTeXLink@font=pzdr at 1sp\relax
5032   \newcommand*{\XeTeXLink@space}{%
5033     \begingroup
5034       \XeTeXLink@font
5035       \@xxxii
5036     \endgroup
5037   }%
5038   \newcommand{\XeTeXLinkBox}[1]{%
5039     \begingroup
5040       \leavevmode
5041       \sbox\z@{#1}%
5042       \begingroup
5043         \dimen@=\dp\z@
5044         \advance\dimen@\XeTeXLinkMargin
5045         \setbox\tw@=\llap{%
5046           \hb@xt@\XeTeXLinkMargin{%
5047             \lower\dimen@\hbox{\XeTeXLink@space}%
5048             \hss
5049           }%
5050         }%
5051         \dp\tw@=\dp\z@
5052         \ht\tw@=\ht\z@
5053         \copy\tw@
5054       \endgroup
5055       \copy\z@
5056       \dimen@=\ht\z@
5057       \advance\dimen@\XeTeXLinkMargin
5058       \setbox\tw@=\rlap{%
5059         \hb@xt@\XeTeXLinkMargin{%
5060           \hss
5061           \raise\dimen@\hbox{\XeTeXLink@space}%
5062         }%

```



```

5063 }%
5064 \dp\tw@=\dp\z@
5065 \ht\tw@=\ht\z@
5066 \copy\tw@
5067 \endgroup
5068 }%
5069 \else
5070 \newcommand*{\XeTeXLinkBox}[1]{%
5071 \begingroup
5072 \leavevmode
5073 \sbox\z@{#1}%
5074 \copy\z@
5075 \endgroup
5076 }%
5077 \fi

```

## 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.

```

5078 \def\hyper@@link{\let\Hy@reserved@a\relax
5079 \@@ifnextchar{\hyper@link@}{\hyper@link@[link]}}%
5080 }
5081 % #1: type
5082 % #2: URL
5083 % #3: destination name
5084 % #4: text
5085 \def\hyper@link@[#1]#2#3#4{%
5086 \ltx@ifempty{#4}{% link text
5087 \Hy@Warning{Suppressing empty link}%
5088 }{%
5089 \begingroup
5090 \protected@edef\Hy@tempa{#2}%
5091 \edef\Hy@tempb{#3}%
5092 \ifx\Hy@tempa\ltx@empty
5093 \ifx\Hy@tempb\ltx@empty
5094 \Hy@Warning{Suppressing link with empty target}%
5095 \toks@{%
5096 \endgroup
5097 \ltx@secondoftwo
5098 }%
5099 \else
5100 \toks@{%
5101 \endgroup
5102 \hyper@link{#1}%
5103 }%
5104 \fi
5105 \else
5106 \toks@{%
5107 \endgroup
5108 \expandafter\hyper@readexternallink#2\{#1}%
5109 }%

```

```

5110 \fi
5111 \Hy@safe@activesfalse
5112 \toks@\expandafter{%
5113   \the\expandafter\toks@
5114   \expandafter{\Hy@tempb}{#4}%
5115 }%
5116 \the\toks@
5117 }%
5118 }

```

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.

```

5119 \def\hyper@readexternallink#1\\#2#3#4{%
5120   \begingroup
5121     \let\\relax
5122   \expandafter\endgroup
5123   \expandafter\@hyper@@readexternallink#1\\{#2}{#3}{#4}%
5124 }
5125 \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.

```

5126 \@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%
5127 }

```

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

```

5128 \def\@pdftempwordfile{file}%
5129 \def\@pdftempwordrun{run}%
5130 \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:`

```

5131 \ifx\\#6\\%
5132   \@hyper@linkfile file:#7\\{#3}{#2}{#7}%
5133 \else
5134   \ifx\\#4\\%
5135     \@hyper@linkfile file:#7\\{#3}{#2}{#7}%
5136   \else

```

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

```

5137 \def\@pdftempa{#4}%
5138 \ifx\@pdftempa\@pdftempwordfile
5139 \@hyper@linkfile#7\{\#3}\#2}\#7}%
5140 \else

```

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

```

5141 \ifx\@pdftempa\@pdftempwordrun
5142 \ifHy@pdfa
5143 \Hy@Error{%
5144 PDF/A: Launch action is prohibited%
5145 }\@ehc
5146 \begingroup
5147 \leavevmode
5148 #2%
5149 \endgroup
5150 \else
5151 \@hyper@launch#7\{\#3}\#2}%
5152 \fi
5153 \else

```

otherwise its a URL

```

5154 \hyper@linkurl{\#3}\#7\ifx\#2\else\hyper@hash#2\fi}%
5155 \fi
5156 \fi
5157 \fi
5158 \fi
5159 }

```

By default, turn run: into file:

```

5160 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
5161 \hyper@linkurl{\#2}\#3}%
5162 \Hy@linkfileprefix
5163 #1%
5164 \ifx\#3\%
5165 \else
5166 \hyper@hash
5167 #3%
5168 \fi
5169 }%
5170 }

```

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

```

5171 \def\@hyper@linkfile file:#1\#2#3#4{%
5172 %file url,link string, name, original uri
5173 \filename@parse{\#1}%
5174 \ifx\filename@ext\relax
5175 \edef\filename@ext{\XR@ext}%
5176 \fi
5177 \def\use@file{\filename@area\filename@base.\filename@ext}%
5178 \Hy@IfStringEndsWith\filename@ext\XR@ext{%
5179 \hyper@linkfile{\#2}\use@file{\#3}%
5180 }{%
5181 \ifx\@baseurl\@empty

```

```

5182     \hyper@linkurl{#2}{%
5183         #4\ifx\\#3\\\else\hyper@hash#3\fi
5184     }%
5185     \else
5186         \hyper@linkurl{#2}{\use@file\ifx\\#3\\\else\hyper@hash#3\fi}%
5187     \fi
5188 }%
5189 }

5190 \def\Hy@IfStringEndsWith#1#2{%
5191     \begingroup
5192     \edef\x{#1}%
5193     \@onelevel@sanitize\x
5194     \edef\x{.\x$}%
5195     \edef\y{#2}%
5196     \@onelevel@sanitize\y
5197     \edef\y{.\y$}%
5198     \expandafter\def\expandafter\z\expandafter##\expandafter1\y##2\@nil{%
5199         \endgroup
5200         \ifx\relax##2\relax
5201             \expandafter\ltx@secondoftwo
5202         \else
5203             \expandafter\ltx@firstoftwo
5204         \fi
5205     }%
5206     \expandafter\expandafter\expandafter\z\expandafter\x\y\@nil
5207 }

5208 \def\Hy@StringLocalhost{localhost}
5209 \@onelevel@sanitize\Hy@StringLocalhost
5210 \def\Hy@CleanupFile#1{%
5211     \edef#1{#1}%
5212     \expandafter\Hy@@CleanupFile#1\hbox{//\hbox\@nil{#1}%
5213 }
5214 \def\Hy@@CleanupFile#1//#2/#3\hbox#4\@nil#5{%
5215     \begingroup
5216     \toks@{\endgroup}%
5217     \def\x{#1}%
5218     \ifx\x\@empty
5219         \def\x{#2}%
5220     \ifx\x\@empty
5221         \toks@{\endgroup\def#5{/#3}}%
5222     \else
5223         \@onelevel@sanitize\x
5224         \ifx\x\Hy@StringLocalhost
5225             \toks@{\endgroup\def#5{/#3}}%
5226         \fi
5227     \fi
5228     \fi
5229     \the\toks@
5230 }

```

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.

```

5231 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
5232 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
5233   \ifx\#1\%
5234     #2\Hy@Warning{Ignoring empty anchor}%
5235   \else
5236     \def\anchor@spot{#2#3}%
5237     \let\put@me@back\@empty
5238     \ifx\relax#2\relax
5239     \else
5240       \ifHy@nesting
5241       \else
5242         \ifcat a\noexpand#2\relax
5243         \else
5244           \ifcat 0\noexpand#2 \relax
5245           \else
5246             % \typeout{Anchor start is not alphanumeric %
5247             %   on input line\the\inputlineno%
5248             % }%
5249             \let\anchor@spot\@empty
5250             \def\put@me@back{#2#3}%
5251           \fi
5252         \fi
5253       \fi
5254     \fi
5255     \ifHy@activeanchor
5256     \anchor@spot
5257     \else
5258       \hyper@anchor{#1}%
5259     \fi
5260     \expandafter\put@me@back
5261   \fi
5262   \let\anchor@spot\@empty
5263 }
5264 \let\anchor@spot\ltx@empty

```

## 18 Option ‘destlabel’

```

5265 \ifHy@destlabel

\hyper@newdestlabel

5266 \def\hyper@newdestlabel#1#2{%
5267   \begingroup
5268   \Hy@safe@activetrue
5269   \edef\x{\endgroup
5270     \noexpand\@newl@bel{HyDL}{#1}{#2}%
5271   }%
5272   \x
5273 }%

\hyper@destlabel@hook

```

```
5274 \providecommand*{\hyper@destlabel@hook}{}%
```

\Hy@DestRename

```
5275 \newcommand*{\Hy@DestRename}[2]{%
5276   \ltx@ifundefined{HyDL!#1}{%
5277     \begingroup
5278     \Hy@safe@activetrue
5279     \edef\dest@name{#1}%
5280     \edef\label@name{#2}%
5281     \hyper@destlabel@hook
5282     \Hy@IsNotEmpty{dest@name}{%
5283       \Hy@IsNotEmpty{label@name}{%
5284         \global\expandafter
5285         \let\csname HyDL!#1\endcsname\ltx@empty
5286         \if@filesw
5287           \protected@write\@auxout{}{%
5288             \string\hyper@newdestlabel
5289             {#1}%
5290             {\label@name}%
5291           }%
5292         \fi
5293       }%
5294     }%
5295   \endgroup
5296 }{%}%
5297 }%
```

\HyperDestRename

```
5298 \newcommand*{\HyperDestRename}[2]{%
5299   \AtBeginDocument{%
5300     \Hy@DestRename{#1}{#2}%
5301   }%
5302 }%
5303 \AtBeginDocument{%
5304   \let\HyperDestRename\Hy@DestRename
5305 }%
```

\Hy@IsNotEmpty

```
5306 \def\Hy@IsNotEmpty#1{%
5307   \ltx@ifundefined{#1}\ltx@gobble{%
5308     \expandafter\ifx\csname#1\endcsname\ltx@empty
5309     \expandafter\ltx@gobble
5310   \else
5311     \expandafter\ltx@firstofone
5312   \fi
5313 }%
5314 }%

5315 \ltx@GlobalAppendToMacro\label@hook{%
5316   \HyperDestRename\@currentHref\label@name
5317 }%
```

\HyperDestLabelReplace

```
5318 \def\HyperDestLabelReplace#1{%
```

```

5319 \ltx@ifundefined{HyDL@#1}{%
5320   #1%
5321 }{%
5322   \csname HyDL@#1\endcsname
5323 }%
5324 }%

\HyperDestNameFilter

5325 \let\HyperDestNameFilter\HyperDestLabelReplace

5326 \else

\hyper@newdestlabel

5327 \let\hyper@newdestlabel\ltx@gobbletwo

\HyperDestLabelReplace

5328 \let\HyperDestLabelReplace\ltx@firstofone

\HyperDestRename

@gobbletwo

5329 \fi

5330 \Hy@DisableOption{destlabel}

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

5331 \AddLineBeginAux{%
5332 \string\providecommand\string\hyper@newdestlabel[2]{}%
5333 }

```

## 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.

```
5334 \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
5335 \def\HyField@NewFlag#1#2{%
5336 \lowercase{\HyField@NewOption{#2}}%
5337 \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5338 }

\HyField@NewFlagOnly
5339 \def\HyField@NewFlagOnly#1#2{%
5340 \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5341 }

\HyField@NewOption #1: option name
5342 \def\HyField@NewOption#1{%
5343 \expandafter\newif\csname ifFld@#1\endcsname
5344 \define@key{Field}{#1}[true]{%
5345 \lowercase{\Field@boolkey{##1}}{#1}%
5346 }%
5347 }

\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
5348 \def\HyField@NewBitsetFlag#1#2#3#4{%
5349 \begingroup
5350 \count@=#4\relax
5351 \advance\count@\m@ne
5352 \def\x##1{%
5353 \endgroup
5354 \expandafter\def\csname HyField@#3@##1\endcsname{##1}%
5355 \expandafter\ifx\csname HyField@#3@##1\endcsname\relax
5356 \expandafter\edef\csname HyField@#3@##1\endcsname{%
5357 (\number#4) #2%
5358 }%
5359 \else
5360 \expandafter\edef\csname HyField@#3@##1\endcsname{%
5361 \csname HyField@#3@##1\endcsname
5362 /#2%
5363 }%
5364 \fi
5365 }%
5366 \expandafter\x\expandafter{\the\count@}%
5367 }

\HyField@UseFlag The bit set is HyField@#1
5368 \def\HyField@UseFlag#1#2{%
5369 \lowercase{\HyField@@UseFlag{#2}}{#1}%
5370 }

```



\HyField@@UseFlag

```
5371 \def\HyField@@UseFlag#1#2{%
5372   \bitsetSetValue{HyField@#2}{%
5373     \csname HyField@#2@#1\endcsname
5374   }{%
5375     \csname ifFld@#1\endcsname 1\else 0\fi
5376   }%
5377 }
```

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

```
5378 \def\HyField@SetFlag#1#2{%
5379   \lowercase{\HyField@@SetFlag{#2}}{#1}%
5380 }
```

\HyField@@SetFlag

```
5381 \def\HyField@@SetFlag#1#2{%
5382   \bitsetSetValue{HyField@#2}{%
5383     \csname HyField@#2@#1\endcsname
5384   }{1}%
5385 }
```

\HyField@PrintFlags

```
5386 \def\HyField@PrintFlags#1#2{%
5387   \ifHy@verbose
5388     \begingroup
5389     \let\Hy@temp\@empty
5390     \let\MessageBreak\relax
5391     \expandafter\@for\expandafter\x\expandafter:\expandafter=%
5392     \bitsetGetSetBitList{HyField@#1}\do{%
5393       \edef\Hy@temp{%
5394         \Hy@temp
5395         \csname HyField@#1@\x\endcsname\MessageBreak
5396       }%
5397     }%
5398     \edef\x{\endgroup
5399     \noexpand\Hy@Info{%
5400       Field flags: %
5401       \expandafter\ifx\@car#1\@nil S\else/\fi
5402       #1 %
5403       \bitsetGetDec{HyField@#1} %
5404       (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
5405       \Hy@temp
5406       for #2%
5407     }%
5408   }\x
5409   \fi
5410 }
```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```
5411 \HyField@NewFlag{Ff}{ReadOnly}{1}
5412 \HyField@NewFlag{Ff}{Required}{2}
5413 \HyField@NewFlag{Ff}{NoExport}{3}
```

“Table 8.75 Field flags specific to button fields”

```
5414 \HyField@NewFlag{Ff}{NoToggleToOff}{15}  
5415 \HyField@NewFlag{Ff}{Radio}{16}  
5416 \HyField@NewFlag{Ff}{Pushbutton}{17}  
5417 \HyField@NewFlag{Ff}{RadiosInUnison}{26}
```

“Table 8.77 Field flags specific to text fields”

```
5418 \HyField@NewFlag{Ff}{Multiline}{13}  
5419 \HyField@NewFlag{Ff}{Password}{14}  
5420 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4  
5421 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4  
5422 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4  
5423 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4  
5424 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5
```

“Table 8.79 field flags specific to choice fields”

```
5425 \HyField@NewFlag{Ff}{Combo}{18}  
5426 \HyField@NewFlag{Ff}{Edit}{19}  
5427 \HyField@NewFlag{Ff}{Sort}{20}  
5428 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4  
5429 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4  
5430 \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.

```
5431 \newif\ifFld@popdown  
5432 \define@key{Field}{popdown}[true]{%  
5433   \lowercase{\Field@boolkey{#1}}{popdown}%  
5434 }
```

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.

```
5435 \HyField@NewFlag{F}{Invisible}{1}  
5436 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2  
5437 \HyField@NewFlag{F}{Print}{3}% PDF 1.2  
5438 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2  
5439 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3  
5440 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3  
5441 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4  
5442 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5  
5443 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7  
  
5444 \ifHy@pdfa  
5445   \def\HyField@PDFAFldWarning#1#2{%  
5446     \Hy@Warning{%  
5447       PDF/A: Annotation flag `#1' must\MessageBreak  
5448       be set to `#2'%  
5449     }%  
5450   }%  
5451   \Fld@invisiblefalse  
5452   \def\Fld@invisibletrue{%
```

```

5453 \HyField@PDFAFIagWarning{invisible}{false}%
5454 }%
5455 \Fld@hiddenfalse
5456 \def\Fld@hiddentrue{%
5457 \HyField@PDFAFIagWarning{hidden}{false}%
5458 }%
5459 \Fld@printtrue
5460 \def\Fld@printfalse{%
5461 \HyField@PDFAFIagWarning{print}{true}%
5462 }%
5463 \Fld@nozoomtrue
5464 \def\Fld@nozoomfalse{%
5465 \HyField@PDFAFIagWarning{nozoom}{true}%
5466 }%
5467 \Fld@norotatetrue
5468 \def\Fld@norotatefalse{%
5469 \HyField@PDFAFIagWarning{norotate}{true}%
5470 }%
5471 \Fld@noviewfalse
5472 \def\Fld@noviewtrue{%
5473 \HyField@PDFAFIagWarning{noview}{false}%
5474 }%
5475 \fi

```

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

```

5476 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
5477 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
5478 \HyField@NewFlag{Submit}{GetMethod}{4}
5479 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
5480 \HyField@NewFlagOnly{Submit}{XFDF}{6}
5481 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
5482 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
5483 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
5484 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
5485 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
5486 \HyField@NewFlag{Submit}{ExclFKey}{12}
5487 \HyField@NewFlag{Submit}{EmbedForm}{14}

5488 \define@key{Field}{export}{%
5489 \lowercase{\def\Hy@temp{#1}}%
5490 \@ifundefined{Fld@export@Hy@temp}{%
5491 \@onelevel@sanitize\Hy@temp
5492 \Hy@Error{%
5493 Unknown export format '\Hy@temp'.\MessageBreak
5494 Known formats are `FDF', `HTML', `XFDF', and `PDF'%
5495 }\@ehc
5496 }{%
5497 \let\Fld@export\Hy@temp
5498 }%
5499 }

5500 \def\Fld@export{fdf}
5501 \@namedef{Fld@export@fdf}{0}%
5502 \@namedef{Fld@export@html}{1}%
5503 \@namedef{Fld@export@xfdf}{2}%

```

```
5504 \@namedef{Fld@export@pdf}{3}%
```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```
5505 \def\HyField@FlagsSubmit{%
5506   \bitsetReset{HyField@Submit}%
5507   \ifcase\@nameuse{Fld@export@\Fld@export} %
5508     % FDF
5509     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5510     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5511     \HyField@UseFlag{Submit}{IncludeAppendSaves}%
5512     \HyField@UseFlag{Submit}{IncludeAnnotations}%
5513     \HyField@UseFlag{Submit}{CanonicalFormat}%
5514     \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
5515     \HyField@UseFlag{Submit}{ExclFKey}%
5516     \HyField@UseFlag{Submit}{EmbedForm}%
5517   \or % HTML
5518     \HyField@SetFlag{Submit}{ExportFormat}%
5519     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5520     \HyField@UseFlag{Submit}{GetMethod}%
5521     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5522     \HyField@UseFlag{Submit}{CanonicalFormat}%
5523   \or % XFDF
5524     \HyField@SetFlag{Submit}{XFDF}%
5525     \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5526     \HyField@UseFlag{Submit}{SubmitCoordinates}%
5527     \HyField@UseFlag{Submit}{CanonicalFormat}%
5528   \or % PDF
5529     \HyField@SetFlag{Submit}{SubmitPDF}%
5530     \HyField@UseFlag{Submit}{GetMethod}%
5531   \fi
5532   \HyField@PrintFlags{Submit}{submit button field}%
5533   \bitsetIsEmpty{HyField@Submit}{%
5534     \let\Fld@submitflags\ltx@empty
5535   }{%
5536     \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
5537   }%
5538 }
```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```
5539 \def\HyField@FlagsAnnot#1{%
5540   \bitsetReset{HyField@F}%
5541   \HyField@UseFlag{F}{Invisible}%
5542   \HyField@UseFlag{F}{Hidden}%
5543   \HyField@UseFlag{F}{Print}%
5544   \HyField@UseFlag{F}{NoZoom}%
5545   \HyField@UseFlag{F}{NoRotate}%
5546   \HyField@UseFlag{F}{NoView}%
5547   \HyField@UseFlag{F}{Locked}%
5548   \HyField@UseFlag{F}{ToggleNoView}%

```

```

5549 \HyField@UseFlag{F}{LockedContents}%
5550 \HyField@PrintFlags{F}{#1}%
5551 \bitsetIsEmpty{HyField@F}{%
5552   \let\Fld@annotflags\ltx@empty
5553 }{%
5554   \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
5555 }%
5556 }

```

#### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

5557 \def\HyField@FlagsPushButton{%
5558   \HyField@FlagsAnnot{push button field}%
5559   \bitsetReset{HyField@Ff}%
5560   \HyField@UseFlag{Ff}{ReadOnly}%
5561   \HyField@UseFlag{Ff}{Required}%
5562   \HyField@UseFlag{Ff}{NoExport}%
5563   \HyField@SetFlag{Ff}{Pushbutton}%
5564   \HyField@PrintFlags{Ff}{push button field}%
5565   \bitsetIsEmpty{HyField@Ff}{%
5566     \let\Fld@flags\ltx@empty
5567   }{%
5568     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5569   }%
5570 }

```

#### 19.1.5 Check box field

\HyField@FlagsCheckBox

```

5571 \def\HyField@FlagsCheckBox{%
5572   \HyField@FlagsAnnot{check box field}%
5573   \bitsetReset{HyField@Ff}%
5574   \HyField@UseFlag{Ff}{ReadOnly}%
5575   \HyField@UseFlag{Ff}{Required}%
5576   \HyField@UseFlag{Ff}{NoExport}%
5577   \HyField@PrintFlags{Ff}{check box field}%
5578   \bitsetIsEmpty{HyField@Ff}{%
5579     \let\Fld@flags\ltx@empty
5580   }{%
5581     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5582   }%
5583 }

```

#### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```

5584 \def\HyField@FlagsRadioButton{%
5585   \HyField@FlagsAnnot{radio button field}%
5586   \bitsetReset{HyField@Ff}%
5587   \HyField@UseFlag{Ff}{ReadOnly}%
5588   \HyField@UseFlag{Ff}{Required}%
5589   \HyField@UseFlag{Ff}{NoExport}%

```

```

5590 \HyField@UseFlag{Ff}{NoToggleToOff}%
5591 \HyField@SetFlag{Ff}{Radio}%
5592 \HyField@UseFlag{Ff}{RadiosInUnison}%
5593 \HyField@PrintFlags{Ff}{radio button field}%
5594 \bitsetIsEmpty{HyField@Ff}{%
5595   \let\Fld@flags\ltx@empty
5596 }{%
5597   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5598 }%
5599 }

```

### 19.1.7 Text fields

\HyField@FlagsText

```

5600 \def\HyField@FlagsText{%
5601   \HyField@FlagsAnnot{text field}%
5602   \bitsetReset{HyField@Ff}%
5603   \HyField@UseFlag{Ff}{ReadOnly}%
5604   \HyField@UseFlag{Ff}{Required}%
5605   \HyField@UseFlag{Ff}{NoExport}%
5606   \HyField@UseFlag{Ff}{Multiline}%
5607   \HyField@UseFlag{Ff}{Password}%
5608   \HyField@UseFlag{Ff}{FileSelect}%
5609   \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5610   \HyField@UseFlag{Ff}{DoNotScroll}%
5611   \ifFld@comb
5612     \ifcase0\ifFld@multiline
5613       \else\ifFld@password
5614       \else\ifFld@fileselect
5615       \else 1\fi\fi\fi\relax
5616     \Hy@Error{%
5617       Field option `comb' cannot used together with\MessageBreak
5618       `multiline', `password', or `fileselect'%
5619     }\@ehc
5620   \else
5621     \HyField@UseFlag{Ff}{Comb}%
5622   \fi
5623   \fi
5624   \HyField@UseFlag{Ff}{RichText}%
5625   \HyField@PrintFlags{Ff}{text field}%
5626   \bitsetIsEmpty{HyField@Ff}{%
5627     \let\Fld@flags\ltx@empty
5628   }{%
5629     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5630   }%
5631 }

```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```

5632 \def\HyField@FlagsChoice{%
5633   \HyField@FlagsAnnot{choice field}%
5634   \bitsetReset{HyField@Ff}%

```

```

5635 \HyField@UseFlag{Ff}{ReadOnly}%
5636 \HyField@UseFlag{Ff}{Required}%
5637 \HyField@UseFlag{Ff}{NoExport}%
5638 \HyField@UseFlag{Ff}{Combo}%
5639 \ifFld@combo
5640   \HyField@UseFlag{Ff}{Edit}%
5641 \fi
5642 \HyField@UseFlag{Ff}{Sort}%
5643 \HyField@UseFlag{Ff}{MultiSelect}%
5644 \ifFld@combo
5645   \ifFld@edit
5646     \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5647   \fi
5648 \fi
5649 \HyField@UseFlag{Ff}{CommitOnSelChange}%
5650 \HyField@PrintFlags{Ff}{choice field}%
5651 \bitsetIsEmpty{HyField@Ff}{%
5652   \let\Fld@flags\ltx@empty
5653 }{%
5654   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5655 }%
5656 }

```

## 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`.

```

5657 \def\HyField@PDFChoices#1{%
5658   \begingroup
5659   \global\let\Fld@choices\ltx@empty
5660   \let\HyTmp@optlist\ltx@empty
5661   \let\HyTmp@optitem\relax
5662   \count@=0 %
5663   \kv@parse{#1}{%
5664     \Hy@pdfstringdef\kv@key\kv@key
5665     \ifx\kv@value\relax
5666       \ifnum\Hy@pdf@majorminor@version<103 % implementation note 122, PDF spec 1.7
5667         \xdef\Fld@choices{\Fld@choices[(\kv@key)(\kv@key)]}%
5668       \else
5669         \xdef\Fld@choices{\Fld@choices(\kv@key)}%
5670       \fi
5671     \else
5672       \Hy@pdfstringdef\kv@value\kv@value
5673       \xdef\Fld@choices{\Fld@choices[(\kv@value)(\kv@key)]}%
5674     \fi
5675   \edef\HyTmp@optlist{%
5676     \HyTmp@optlist
5677     \HyTmp@optitem{the\count@}{\kv@key}0%
5678   }%
5679   \advance\count@ by 1 %
5680   \@gobbletwo

```

```

5681 }%
5682 \xdef\Fld@choices{/Opt[\Fld@choices]]%
5683 \ifFld@multiselect
5684   \HyField@@PDFChoices{DV}\Fld@default
5685   \HyField@@PDFChoices{V}\Fld@value
5686 \else
5687   \ifx\Fld@default\relax
5688   \else
5689     \pdfstringdef\Hy@gtemp\Fld@default
5690     \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
5691   \fi
5692   \ifx\Fld@value\relax
5693   \else
5694     \pdfstringdef\Hy@gtemp\Fld@value
5695     \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
5696   \fi
5697 \fi
5698 \endgroup
5699 }

```

\HyField@@PDFChoices

```

5700 \def\HyField@@PDFChoices#1#2{%
5701   \ifx#2\relax
5702   \else
5703     \count@=0 %
5704     \def\HyTmp@optitem##1##2##3{%
5705       \def\HyTmp@key{##2}%
5706       \ifx\HyTmp@key\Hy@gtemp
5707         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5708           \HyTmp@optlist
5709           \HyTmp@optitem{##1}{##2}1%
5710         }%
5711         \let\HyTmp@found=Y%
5712       \else
5713         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5714           \HyTmp@optlist
5715           \HyTmp@optitem{##1}{##2}##3%
5716         }%
5717       \fi
5718     }%
5719     \expandafter\comma@parse\expandafter{#2}{%
5720       \pdfstringdef\Hy@gtemp\comma@entry
5721       \let\HyTmp@found=N %
5722       \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
5723       \HyTmp@optlist
5724       \ifx\HyTmp@found Y%
5725         \advance\count@ by 1 %
5726       \else
5727         \@onelevel@sanitize\comma@entry
5728         \PackageWarning{hyperref}{%
5729           \string\ChoiceBox: Ignoring value `\'comma@entry',%
5730           \MessageBreak
5731           it cannot be found in the choices%
5732         }%

```



```

5733 \fi
5734 \@gobble
5735 }%
5736 \def\HyTmp@optitem##1##2##3{%
5737 \ifnum##3=1 %
5738 (##2)%
5739 \fi
5740 }%
5741 \ifcase\count@
5742 \or
5743 \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
5744 \else
5745 \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
5746 \ifx#1V%
5747 \def\HyTmp@optitem##1##2##3{%
5748 \ifnum##3=1 %
5749 \@firstofone{ ##1}%
5750 \fi
5751 }%
5752 \edef\HyTmp@optlist{\HyTmp@optlist}%
5753 \xdef\Fld@choices{%
5754 \Fld@choices
5755 /I[\expandafter\@firstofone\HyTmp@optlist]%
5756 }%
5757 \fi
5758 \fi
5759 \fi
5760 }

```

### 19.3 Forms

\HyField@SetKeys

```

5761 \def\HyField@SetKeys{%
5762 \kvsetkeys{Field}%
5763 }

5764 \newif\ifFld@checked
5765 \newif\ifFld@disabled
5766 \Fld@checkedfalse
5767 \Fld@disabledfalse
5768 \newcount\Fld@menulength
5769 \newdimen\Fld@Width
5770 \newdimen\Fld@charsize
5771 \Fld@charsize=10\p@
5772 \def\Fld@maxlen{0}
5773 \def\Fld@align{0}
5774 \def\Fld@color{0 0 0 rg}
5775 \def\Fld@bcolor{1 1 1}
5776 \def\Fld@bordercolor{1 0 0}
5777 \def\Fld@bordersep{1\p@}
5778 \def\Fld@borderwidth{1}
5779 \def\Fld@borderstyle{S}
5780 \def\Fld@cbsymbol{4}
5781 \def\Fld@radiosymbol{H}

```

```

5782 \def\Fld@rotation{0}
5783 \def\Form{\@ifnextchar[{\@Form}{\@Form[]}}
5784 \def\endForm{\@endForm}
5785 \newif\ifForm@html
5786 \Form@htmlfalse
5787 \def\Form@boolkey#1#2{%
5788   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5789 }
5790 \define@key{Form}{action}{%
5791   \hyper@normalise\Hy@DefFormAction{#1}%
5792 }
5793 \def\Hy@DefFormAction{\def\Form@action}
5794 \def\enc@html{html}
5795 \define@key{Form}{encoding}{%
5796   \def\Hy@tempa{#1}%
5797   \ifx\Hy@tempa\enc@html
5798     \Form@htmltrue
5799     \def\Fld@export{html}%
5800   \else
5801     \Hy@Warning{%
5802       Form `encoding' key with \MessageBreak
5803       unknown value `#1'%
5804     }%
5805     \Form@htmlfalse
5806   \fi
5807 }
5808 \define@key{Form}{method}{%
5809   \lowercase{\def\Hy@temp{#1}}%
5810   \@ifundefined{Form@method@\Hy@temp}{%
5811     \@onelevel@sanitize\Hy@temp
5812     \Hy@Error{%
5813       Unknown method ``\Hy@temp'.\MessageBreak
5814       Known values are `post' and `get'%
5815     }\@ehc
5816   }{%
5817     \let\Form@method\Hy@temp
5818     \ifcase\@nameuse{Form@method@\Hy@temp} %
5819       \Fld@getmethodfalse
5820     \else
5821       \Fld@getmethodtrue
5822     \fi
5823   }%
5824 }
5825 \def\Form@method{}
5826 \@namedef{Form@method@post}{0}
5827 \@namedef{Form@method@get}{1}
5828 \newif\ifHyField@NeedAppearances
5829 \def\HyField@NeedAppearancesfalse{%
5830   \global\let\ifHyField@NeedAppearances\iffalse
5831 }
5832 \def\HyField@NeedAppearancetrue{%
5833   \global\let\ifHyField@NeedAppearances\iftrue
5834 }
5835 \HyField@NeedAppearancetrue

```

```

5836 \define@key{Form}{NeedAppearances}[true]{%
5837 \edef\Hy@tempa{#1}%
5838 \ifx\Hy@tempa\Hy@true
5839 \HyField@NeedAppearancetrue
5840 \else
5841 \ifx\Hy@tempa\Hy@false
5842 \HyField@NeedAppearancesfalse
5843 \else
5844 \Hy@Error{%
5845 Unexpected value `\'Hy@tempa'\MessageBreak
5846 of option `NeedAppearances' instead of\MessageBreak
5847 `true' or `false'%
5848 }\@ehc
5849 \fi
5850 \fi
5851 }
5852 \def\Fld@boolkey#1#2{%
5853 \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5854 }
5855 \ifHy@texht
5856 \newtoks\Fld@toks
5857 \Fld@toks={ }%
5858 \def\Fld@addtoks#1#2{%
5859 \edef\@processme{\Fld@toks{\the\Fld@toks\space #1="#2"}}%
5860 \@processme
5861 }%
5862 \else
5863 \def\Hy@WarnHTMLFieldOption#1{%
5864 \Hy@Warning{%
5865 HTML field option `#1'\MessageBreak
5866 is ignored%
5867 }%
5868 }%
5869 \fi
5870 \def\Fld@checkequals#1=#2=#3\\{%
5871 \def\@currDisplay{#1}%
5872 \ifx\\#2\\%
5873 \def\@currValue{#1}%
5874 \else
5875 \def\@currValue{#2}%
5876 \fi
5877 \expandafter\Hy@pdfstringdef\expandafter\@currValue\expandafter{\@currValue}%
5878 }
5879 \define@key{Field}{loc}{%
5880 \def\Fld@loc{#1}%
5881 }
5882 \define@key{Field}{checked}[true]{%
5883 \lowercase{\Fld@boolkey{#1}}{checked}%
5884 }
5885 \define@key{Field}{disabled}[true]{%
5886 \lowercase{\Fld@boolkey{#1}}{disabled}%
5887 }
5888 \ifHy@texht
5889 \define@key{Field}{accesskey}{%

```

```

5890 \Field@addtoks{accesskey}{#1}%
5891 }%
5892 \define@key{Field}{tabkey}{%
5893 \Field@addtoks{tabkey}{#1}%
5894 }%
5895 \else
5896 \define@key{Field}{accesskey}{%
5897 \Hy@WarnHTMLFieldOption{accesskey}%
5898 }%
5899 \define@key{Field}{tabkey}{%
5900 \Hy@WarnHTMLFieldOption{tabkey}%
5901 }%
5902 \fi
5903 \define@key{Field}{name}{%
5904 \def\Fld@name{#1}%
5905 }
5906 \let\Fld@altname\relax
5907 \define@key{Field}{altname}{%
5908 \def\Fld@altname{#1}%
5909 }
5910 \let\Fld@mappingname\relax
5911 \define@key{Field}{mappingname}{%
5912 \def\Fld@mappingname{#1}%
5913 }
5914 \define@key{Field}{width}{%
5915 \def\Fld@width{#1}%
5916 \Field@Width#1\setbox0=\hbox{m}%
5917 }
5918 \define@key{Field}{maxlen}{%
5919 \def\Fld@maxlen{#1}%
5920 }
5921 \define@key{Field}{menulength}{%
5922 \Fld@menulength=#1\relax
5923 }
5924 \define@key{Field}{height}{%
5925 \def\Fld@height{#1}%
5926 }
5927 \define@key{Field}{charsize}{%
5928 \setlength{\Fld@charsize}{#1}%
5929 }
5930 \define@key{Field}{borderwidth}{%
5931 \Hy@defaultbp\Fld@borderwidth{#1}%
5932 }
5933 \def\Hy@defaultbp#1#2{%
5934 \begingroup
5935 \afterassignment\Hy@defaultbpAux
5936 \dimen@=#2bp\relax{#1}{#2}%
5937 }
5938 \def\Hy@defaultbpAux#1\relax#2#3{%
5939 \ifx!#1!%
5940 \endgroup
5941 \def#2{#3}%
5942 \else
5943 \edef\x{\endgroup

```

```

5944 \def\noexpand#2{%
5945 \strip@pt\dimexpr\dimen@*800/803\relax
5946 }%
5947 }\x
5948 \fi
5949 }%
5950 \define@key{Field}{borderstyle}{%
5951 \let\Hy@temp\Fld@borderstyle
5952 \def\Fld@borderstyle{#1}%
5953 \Hy@Match\Fld@borderstyle}{}%
5954 ~[SDBIU]$%
5955 }{}{%
5956 \Hy@Warning{%
5957 Invalid value `\'@pdfborderstyle'\MessageBreak
5958 for option `pdfborderstyle'. Valid values:\MessageBreak
5959 \space\space S (Solid), D (Dashed), B (Beveled),\MessageBreak
5960 \space\space I (Inset), U (Underline)\MessageBreak
5961 Option setting is ignored%
5962 }%
5963 \let\Fld@borderstyle\Hy@temp
5964 }%
5965 }
5966 \define@key{Field}{bordersep}{%
5967 \def\Fld@bordersep{#1}%
5968 }
5969 \define@key{Field}{default}{%
5970 \Hy@pdfstringdef\Fld@default{#1}%
5971 }
5972 \define@key{Field}{align}{%
5973 \def\Fld@align{#1}%
5974 }
5975 \define@key{Field}{value}{%
5976 \Hy@pdfstringdef\Fld@value{#1}%
5977 }
5978 \define@key{Field}{checkboxsymbol}{%
5979 \Fld@DingDef\Fld@cbsymbol{#1}%
5980 }
5981 \define@key{Field}{radiosymbol}{%
5982 \Fld@DingDef\Fld@radiosymbol{#1}%
5983 }
5984 \def\Fld@DingDef#1#2{%
5985 \let\Fld@temp\ltx@empty
5986 \Fld@@DingDef#2\ding{}\@nil
5987 \let#1\Fld@temp
5988 }
5989 \def\Fld@@DingDef#1\ding#2#3\@nil{%
5990 \expandafter\def\expandafter\Fld@temp\expandafter{%
5991 \Fld@temp
5992 #1%
5993 }%
5994 \ifx\#3\%
5995 \expandafter\@gobble
5996 \else
5997 \begingroup

```

```

5998 \lccode`0=#2\relax
5999 \lowercase{\endgroup
6000 \expandafter\def\expandafter\Fld@temp\expandafter{%
6001 \Fld@temp
6002 0%
6003 }%
6004 }%
6005 \expandafter\@firstofone
6006 \fi
6007 {%
6008 \Fld@@DingDef#3\@nil
6009 }%
6010 }

6011 \define@key{Field}{rotation}{%
6012 \def\Fld@rotation{#1}%
6013 }

6014 \define@key{Field}{backgroundcolor}{%
6015 \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
6016 }
6017 \define@key{Field}{bordercolor}{%
6018 \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
6019 }
6020 \define@key{Field}{color}{%
6021 \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
6022 }

6023 \let\Fld@onclick@code\ltx@empty
6024 \let\Fld@format@code\ltx@empty
6025 \let\Fld@validate@code\ltx@empty
6026 \let\Fld@calculate@code\ltx@empty
6027 \let\Fld@keystroke@code\ltx@empty
6028 \let\Fld@onfocus@code\ltx@empty
6029 \let\Fld@onblur@code\ltx@empty
6030 \let\Fld@onmousedown@code\ltx@empty
6031 \let\Fld@onmouseup@code\ltx@empty
6032 \let\Fld@onenter@code\ltx@empty
6033 \let\Fld@onexit@code\ltx@empty
6034 \def\Hy@temp#1{%
6035 \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
6036 }
6037 \def\Hy@@temp#1#2{%
6038 \ifHy@pdfa
6039 \define@key{Field}{#2}{%
6040 \Hy@Error{%
6041 PDF/A: Additional action `#2' is prohibited%
6042 }\@ehc
6043 }%
6044 \else
6045 \define@key{Field}{#2}{%
6046 \def#1{##1}%
6047 }%
6048 \fi
6049 }
6050 \Hy@temp{keystroke}

```

```

6051 \Hy@temp{format}
6052 \Hy@temp{validate}
6053 \Hy@temp{calculate}
6054 \Hy@temp{onfocus}
6055 \Hy@temp{onblur}
6056 \Hy@temp{onenter}
6057 \Hy@temp{onexit}

6058 \let\Fld@calculate@sortkey\ltx@empty
6059 \define@key{Field}{calculatesortkey}[1]{%
6060   \def\Fld@calculate@sortkey{#1}%
6061 }

6062 \ifHy@texht
6063   \def\Hy@temp#1{%
6064     \define@key{Field}{#1}{%
6065       \Field@addtoks{#1}{##1}%
6066     }%
6067   }%
6068 \else
6069   \def\Hy@temp#1{%
6070     \define@key{Field}{#1}{%
6071       \Hy@WarnHTMLFieldOption{#1}%
6072     }%
6073   }%
6074 \fi
6075 \Hy@temp{ondblclick}
6076 \Hy@temp{onmousedown}
6077 \Hy@temp{onmouseup}
6078 \Hy@temp{onmouseover}
6079 \Hy@temp{onmousemove}
6080 \Hy@temp{onmouseout}
6081 \Hy@temp{onkeydown}
6082 \Hy@temp{onkeyup}
6083 \Hy@temp{onselect}
6084 \Hy@temp{onchange}
6085 \Hy@temp{onkeypress}
6086 \ifHy@texht
6087   \define@key{Field}{onclick}{%
6088     \Field@addtoks{onclick}{#1}%
6089   }%
6090 \else
6091   \ifHy@pdfa
6092     \define@key{Field}{onclick}{%
6093       \Hy@Error{%
6094         PDF/A: Action `onclick' is prohibited%
6095       }\@ehc
6096     }%
6097   \else
6098     \define@key{Field}{onclick}{%
6099       \def\Fld@onclick@code{#1}%
6100     }%
6101   \fi
6102 \fi
6103 \DeclareRobustCommand\TextField{%

```

```

6104 \@ifnextchar[{\@TextField}{\@TextField[]}%
6105 }
6106 \DeclareRobustCommand\ChoiceMenu{%
6107 \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
6108 }
6109 \DeclareRobustCommand\CheckBox{%
6110 \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
6111 }
6112 \DeclareRobustCommand\PushButton{%
6113 \@ifnextchar[{\@PushButton}{\@PushButton[]}%
6114 }
6115 \DeclareRobustCommand\Gauge{%
6116 \@ifnextchar[{\@Gauge}{\@Gauge[]}%
6117 }
6118 \DeclareRobustCommand\Submit{%
6119 \@ifnextchar[{\@Submit}{\@Submit[]}%
6120 }
6121 \DeclareRobustCommand\Reset{%
6122 \@ifnextchar[{\@Reset}{\@Reset[]}%
6123 }
6124 \def\LayoutTextField#1#2{% label, field
6125 \def\Hy@temp{#1}%
6126 \ifx\Hy@temp\@empty
6127 #2%
6128 \else
6129 #1 #2%
6130 \fi
6131 }
6132 \def\LayoutChoiceField#1#2{% label, field
6133 \def\Hy@temp{#1}%
6134 \ifx\Hy@temp\@empty
6135 #2%
6136 \else
6137 #1 #2%
6138 \fi
6139 }
6140 \def\LayoutCheckField#1#2{% label, field
6141 \def\Hy@temp{#1}%
6142 \ifx\Hy@temp\@empty
6143 #2%
6144 \else
6145 #1 #2%
6146 \fi
6147 }
6148 \def\LayoutPushButtonField#1{% button
6149 #1%
6150 }
6151 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6152 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6153 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6154 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6155 \def\MakeButtonField#1{%
6156 \sbox0{%
6157 \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%

```



```

6158 }%
6159 \@tempdima\ht0 %
6160 \advance\@tempdima by \Fld@borderwidth bp %
6161 \advance\@tempdima by \Fld@borderwidth bp %
6162 \ht0\@tempdima
6163 \@tempdima\dp0 %
6164 \advance\@tempdima by \Fld@borderwidth bp %
6165 \advance\@tempdima by \Fld@borderwidth bp %
6166 \dp0\@tempdima
6167 \box0\relax
6168 }
6169 \def\DefaultHeightofSubmit{14pt}
6170 \def\DefaultWidthofSubmit{2cm}
6171 \def\DefaultHeightofReset{14pt}
6172 \def\DefaultWidthofReset{2cm}
6173 \def\DefaultHeightofCheckBox{\normalbaselineskip}
6174 \def\DefaultWidthofCheckBox{\normalbaselineskip}
6175 \def\DefaultHeightofChoiceMenu{\normalbaselineskip}
6176 \def\DefaultWidthofChoiceMenu{\normalbaselineskip}
6177 \def\DefaultHeightofText{\normalbaselineskip}
6178 \def\DefaultHeightofTextMultiline{4\normalbaselineskip}
6179 \def\DefaultWidthofText{3cm}
6180 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
6181 \def\DefaultOptionsofReset{print,name=Reset,noexport}
6182 \def\DefaultOptionsofPushButton{print}
6183 \def\DefaultOptionsofCheckBox{print}
6184 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

6185 \def\DefaultOptionsofListBox{print}
6186 \def\DefaultOptionsofComboBox{print,edit,sort}
6187 \def\DefaultOptionsofPopdownBox{print}
6188 \def\DefaultOptionsofRadio{print,notogletoooff}

```

## 20 Setup

```

6189 \ifHy@hyperfigures
6190 \Hy@Info{Hyper figures ON}%
6191 \else
6192 \Hy@Info{Hyper figures OFF}%
6193 \fi
6194 \ifHy@nesting
6195 \Hy@Info{Link nesting ON}%
6196 \else
6197 \Hy@Info{Link nesting OFF}%
6198 \fi
6199 \ifHy@hyperindex
6200 \Hy@Info{Hyper index ON}%
6201 \else
6202 \Hy@Info{Hyper index OFF}%
6203 \fi
6204 \ifHy@backref
6205 \Hy@Info{backreferencing ON}%

```

```

6206 \else
6207 \Hy@Info{backreferencing OFF}%
6208 \fi
6209 \ifHy@colorlinks
6210 \Hy@Info{Link coloring ON}%
6211 \else
6212 \Hy@Info{Link coloring OFF}%
6213 \fi
6214 \ifHy@ocgcolorlinks
6215 \Hy@Info{Link coloring with OCG ON}%
6216 \else
6217 \Hy@Info{Link coloring with OCG OFF}%
6218 \fi
6219 \ifHy@pdfa
6220 \Hy@Info{PDF/A mode ON}%
6221 \else
6222 \Hy@Info{PDF/A mode OFF}%
6223 \fi

```

## 21 Low-level utility macros

We need unrestricted access to the #, ~ and " characters, so make them nice macros.

```

6224 \edef\hyper@hash{\string#}
6225 \edef\hyper@tilde{\string~}
6226 \edef\hyper@quote{\string"}

```

Support \label before \begin{document}.

```

6227 \def\@currentHref{Doc-Start}
6228 \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.

```

6229 \Hy@AtBeginDocument{%
6230 \Hy@pdfstringtrue
6231 \PDF@SetupDoc
6232 \let\PDF@SetupDoc\@empty
6233 \Hy@DisableOption{pdfpagescrop}%
6234 \Hy@DisableOption{pdfpagemode}%
6235 \Hy@DisableOption{pdfnonfullscreenpagemode}%
6236 \Hy@DisableOption{pdfdirection}%
6237 \Hy@DisableOption{pdfviewarea}%
6238 \Hy@DisableOption{pdfviewclip}%
6239 \Hy@DisableOption{pdfprintarea}%
6240 \Hy@DisableOption{pdfprintclip}%
6241 \Hy@DisableOption{pdfprintscaling}%
6242 \Hy@DisableOption{pdfduplex}%
6243 \Hy@DisableOption{pdfpicktraybypdfsize}%
6244 \Hy@DisableOption{pdfprintpagerange}%
6245 \Hy@DisableOption{pdfnumcopies}%
6246 \Hy@DisableOption{pdfstartview}%
6247 \Hy@DisableOption{pdfstartpage}%
6248 \Hy@DisableOption{pdftoolbar}%
6249 \Hy@DisableOption{pdfmenubar}%

```

```

6250 \Hy@DisableOption{pdfwindowui}%
6251 \Hy@DisableOption{pdffitwindow}%
6252 \Hy@DisableOption{pdfcenterwindow}%
6253 \Hy@DisableOption{pdfdisplaydoctitle}%
6254 \Hy@DisableOption{pdfpagelayout}%
6255 \Hy@DisableOption{pdflang}%
6256 \Hy@DisableOption{baseurl}%
6257 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
6258 \Hy@pdfstringfalse
6259 }

```

Ignore star from referencing macros: This is only needed if LaTeX doesn't define the starred variants itself.

```

6260 \@ifundefined{@kernel@ref}
6261 {\LetLtxMacro\NoHy@OrgRef\ref
6262 \DeclareRobustCommand*{\ref}{%
6263 \@ifstar\NoHy@OrgRef\NoHy@OrgRef
6264 }
6265 \LetLtxMacro\NoHy@OrgPageRef\pageref
6266 \DeclareRobustCommand*{\pageref}{%
6267 \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
6268 }{}

```

## 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.

```

6269 \def\NoHyper{%
6270 \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6271 \def\hyper@@anchor##1##2{##2\Hy@xspace@end}%
6272 \global\let\hyper@livelink\hyper@link
6273 \gdef\hyper@link##1##2##3{##3\Hy@xspace@end}%
6274 \let\hyper@anchor\ltx@gobble
6275 \let\hyper@anchorstart\ltx@gobble
6276 \def\hyper@anchorend{\Hy@xspace@end}%
6277 \let\hyper@linkstart\ltx@gobbletwo
6278 \def\hyper@linkend{\Hy@xspace@end}%
6279 \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6280 \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6281 \let\Hy@backout\@gobble
6282 }
6283 \def\stop@hyper{%
6284 \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6285 \let\Hy@backout\@gobble
6286 \let\hyper@@anchor\ltx@gobble
6287 \def\hyper@link##1##2##3{##3\Hy@xspace@end}%
6288 \let\hyper@anchor\ltx@gobble
6289 \let\hyper@anchorstart\ltx@gobble
6290 \def\hyper@anchorend{\Hy@xspace@end}%
6291 \let\hyper@linkstart\ltx@gobbletwo
6292 \def\hyper@linkend{\Hy@xspace@end}%

```

```

6293 \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6294 \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6295 }
6296 \def\endNoHyper{%
6297 \global\let\hyper@link\hyper@livelink
6298 }
6299 \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:

```

6300 (*nohyperref)
6301 \RequirePackage{letltxmacro}[2008/06/13]
6302 \let\hyper@@anchor\@gobble
6303 \def\hyper@link#1#2#3{#3}%
6304 \let\hyper@anchorstart\@gobble
6305 \let\hyper@anchorend\@empty
6306 \let\hyper@linkstart\@gobbletwo
6307 \let\hyper@linkend\@empty
6308 \def\hyper@linkurl#1#2{#1}%
6309 \def\hyper@linkfile#1#2#3{#1}%
6310 \def\hyper@link@{#1#2#3}%
6311 \let\PDF@SetupDoc\@empty
6312 \let\PDF@FinishDoc\@empty
6313 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

6314 \def\Acrobatmenu#1#2{\leavevmode#2}
6315 \let\pdfstringdefDisableCommands\@gobbletwo
6316 \let\texorpdfstring\@firstoftwo
6317 \let\pdfbookmark\@undefined
6318 \newcommand\pdfbookmark[3]{}{}
6319 \let\phantomsection\@empty
6320 \let\hypersetup\@gobble
6321 \let\hyperbaseurl\@gobble
6322 \newcommand*{\href}[3]{}{#3}
6323 \let\hyperdef\@gobbletwo
6324 \let\hyperlink\@gobble
6325 \let\hypertarget\@gobble
6326 \def\hyperref{%
6327 \ifnextchar\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
6328 }
6329 \long\def\@gobbleopt[#1]{}
6330 \let\hyperpage\@empty

```

Ignore star from referencing macros. This is only needed in older formats.

```

6331 \if@t@r\fmtversion{2022-06-01}
6332 {}%

```

```

6333 {%
6334   \LetLtxMacro\NoHy@OrgRef\ref
6335   \DeclareRobustCommand*{\ref}{%
6336     \@ifstar\NoHy@OrgRef\NoHy@OrgRef
6337   }
6338   \LetLtxMacro\NoHy@OrgPageRef\pageref
6339   \DeclareRobustCommand*{\pageref}{%
6340     \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
6341   }%
6342 }
6343 \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}`

```

6344 (*package)
6345 \Hy@AtBeginDocument{%

```

First the code to deal with removing the hyperref package from a document.

Write some stuff into the aux file so if the next run is done without hyperref, then `\newlabel` is defined to cope with the extra arguments. change 2022-03-28: removed the code for `\contentsline`, it is no longer needed as `\contentsline` has now always four arguments.

```

6346 \if@filesw
6347   \ifHy@typexml
6348     \immediate\closeout\@mainaux
6349     \immediate\openout\@mainaux\jobname.aux\relax
6350     \immediate\write\@auxout{<relaxxml>\relax}%
6351   \fi
6352   \immediate\write\@auxout{%
6353     \string\providecommand\string\HyperFirstAtBeginDocument{%
6354       \string\AtBeginDocument}^^J%
6355     \string\HyperFirstAtBeginDocument{%
6356       \string\ifx\string\hyper@anchor\string\@undefined^^J%
6357       \string\global\string\let\string\oldnewlabel\string\newlabel^^J%
6358       \string\gdef\string\newlabel\string#1\string#2{%
6359         \string\newlabelxx{\string#1}\string#2}^^J%
6360       \string\gdef\string\newlabelxx%
6361         \string#1\string#2\string#3\string#4\string#5\string#6{%
6362         \string\oldnewlabel{\string#1}{\string#2}{\string#3}}^^J%

```

But the new aux file will be read again at the end, with the normal definitions expected, so better put things back as they were.

```

6363     \string\AtEndDocument{%
6364       \string\ifx\string\hyper@anchor\string\@undefined^^J%
6365       \string\let\string\newlabel\string\oldnewlabel^^J%
6366       \string\fi%
6367     }^^J%

```

If the document is being run with hyperref put this definition into the aux file, so we can spot it on the next run.

```

6368     \string\fi%
6369   }^^J%
6370   \string\global\string\let\string\hyper@last\relax^^J%
6371   \string\gdef\string\HyperFirstAtBeginDocument\string#1{\string#1}%
6372 }%
6373 \fi
6374 \let\HyperFirstAtBeginDocument\ltx@firstofone

```

Now the code to deal with adding the hyperref package to a document with aux and toc written the standard way.

If hyperref was used last time, do nothing. change 2022-03-28: removed the test for an old toc. \contentsline has now always four arguments.

```

6375 \ifx\hyper@last\@undefined
6376   \def\newlabel#1#2{\@newl@bel r{#1}{#2}{ }{ }{ }{ }}%
6377 \fi
6378 }

```

## 25 Title strings

If options pdftitle and pdfauthor are not used, these informations for the pdf information dictionary can be extracted by the \title and \author.

```

6379 \ifHy@pdfusetitle
6380   \let\HyOrg@title\title
6381   \let\HyOrg@author\author
6382   \def\title{\@ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
6383   \def\Hy@scanopttitle[#1]{%
6384     \gdef\Hy@title{#1}%
6385     \HyOrg@title{#1}%
6386   }%
6387   \def\Hy@scantitle#1{%
6388     \gdef\Hy@title{#1}%
6389     \HyOrg@title{#1}%
6390   }%
6391   \def\author{\@ifnextchar{\Hy@scanoptauthor}{\Hy@scanauthor}}%
6392   \def\Hy@scanoptauthor[#1]{%
6393     \gdef\Hy@author{#1}%
6394     \HyOrg@author{#1}%
6395   }%
6396   \def\Hy@scanauthor#1{%
6397     \gdef\Hy@author{#1}%
6398     \HyOrg@author{#1}%
6399   }%

```

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.

```

6400 \begingroup
6401   \def\process@me#1\@nil#2{%
6402     \expandafter\let\expandafter\x\csname @#2\endcsname
6403     \edef\y{\expandafter\strip@prefix\meaning\x}%
6404     \def\c##1#1##2\@nil{%
6405       \ifx\\##1\\%
6406       \else

```

```

6407     \expandafter\gdef\csname Hy@#2\expandafter\endcsname
6408         \expandafter{\x}%
6409     \fi
6410 }%
6411     \expandafter\c\y\relax#1\@nil
6412 }%
6413     \expandafter\process@me\string\@latex@\@nil{title}%
6414     \expandafter\process@me\string\@latex@\@nil{author}%
6415 \endgroup
6416 \fi
6417 \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.

```

6418 \def\Hy@UseMaketitleString#1{%
6419     \ltx@ifundefined{Hy@#1}{-}%
6420     \begingroup
6421         \let\Hy@saved@hook\pdfstringdefPreHook
6422         \pdfstringdefDisableCommands{%
6423             \expandafter\let\expandafter\\ \csname Hy@newline@#1\endcsname
6424             \let\newline\\%
6425             \def\and{; }%
6426             \let\thanks\@gobble%
6427         }%
6428         \expandafter\ifx\csname @pdf#1\endcsname\@empty
6429             \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
6430                 \csname Hy@#1\endcsname\@empty
6431             }%
6432         \fi
6433         \global\let\pdfstringdefPreHook\Hy@saved@hook
6434     \endgroup
6435 }%
6436 }
6437 \def\Hy@newline@title#1{ #1}
6438 \def\Hy@newline@author#1{, #1}
6439 \def\Hy@UseMaketitleInfos{%
6440     \Hy@UseMaketitleString{title}%
6441     \Hy@UseMaketitleString{author}%
6442 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

6443 \RequirePackage{atbegshi}[2007/09/09]
6444 \let\Hy@EveryPageHook\ltx@empty
6445 \let\Hy@EveryPageBoxHook\ltx@empty
6446 \let\Hy@FirstPageHook\ltx@empty
6447 \AtBeginShipout{%
6448   \Hy@EveryPageHook
6449   \ifx\Hy@EveryPageBoxHook\ltx@empty
6450     \else
6451       \setbox\AtBeginShipoutBox=\vbox{%
6452         \offinterlineskip
6453         \Hy@EveryPageBoxHook
6454         \box\AtBeginShipoutBox
6455       }%
6456   \fi
6457 }
6458 \ltx@iffileloaded{hpdftex.def}{%
6459   \AtBeginShipout{%
6460     \Hy@FirstPageHook
6461     \global\let\Hy@FirstPageHook\ltx@empty
6462   }%
6463 }{%
6464   \AtBeginShipoutFirst{%
6465     \Hy@FirstPageHook
6466   }%
6467 }
6468 \g@addto@macro\Hy@FirstPageHook{%
6469   \PDF@FinishDoc
6470 \global\let\PDF@FinishDoc\ltx@empty
6471 }

```

### 27.1 PDF /PageLabels

Internal macros of this module are marked with \HyPL@.

```

6472 \ifHy@pdfpagelabels
6473   \begingroup\expandafter\expandafter\expandafter\endgroup
6474   \expandafter\ifx\csname thepage\endcsname\relax
6475     \Hy@pdfpagelabelsfalse
6476     \Hy@WarningNoLine{%
6477       Option `pdfpagelabels' is turned off\MessageBreak
6478       because \string\thepage\space is undefined%
6479     }%
6480     \csname fi\endcsname
6481     \csname iffalse\expandafter\endcsname
6482   \fi

```

\thispdfpagelabel The command \thispdfpagelabel allows to label a special page without the redefinition of \thepage for the page.

```

6483 \def\thispdfpagelabel#1{%
6484   \gdef\HyPL@thisLabel{#1}%
6485 }%
6486 \global\let\HyPL@thisLabel\relax

```



`\HyPL@Labels` The page labels are collected in `\HyPL@Labels` and set at the end of the document.

```
6487 \let\HyPL@Labels\ltx@empty
```

`\Hy@abspage` We have to know the the absolute page number and introduce a new counter for that.

```
6488 \newcount\Hy@abspage
```

```
6489 \Hy@abspage=0 %
```

For comparisons with the values of the previous page, some variables are needed:

```
6490 \def\HyPL@LastType{init}%
```

```
6491 \def\HyPL@LastNumber{0}%
```

```
6492 \let\HyPL@LastPrefix\ltx@empty
```

Definitions for the PDF names of the L<sup>A</sup>T<sub>E</sub>X pendants.

```
6493 \def\HyPL@arabic{D}%
```

```
6494 \def\HyPL@Roman{R}%
```

```
6495 \def\HyPL@roman{r}%
```

```
6496 \def\HyPL@Alph{A}%
```

```
6497 \def\HyPL@alph{a}%
```

```
6498 \let\HyPL@SlidesSetPage\ltx@empty
```

```
6499 \ltx@ifclassloaded{slides}{%
```

```
6500 \def\HyPL@SlidesSetPage{%
```

```
6501 \advance\c@page\ltx@one
```

```
6502 \ifnum\value{page}>\ltx@one
```

```
6503 \protected@edef\HyPL@SlidesOptionalPage{%
```

```
6504 \Hy@SlidesFormatOptionalPage{\thepage}%
```

```
6505 }%
```

```
6506 \else
```

```
6507 \let\HyPL@SlidesOptionalPage\ltx@empty
```

```
6508 \fi
```

```
6509 \advance\c@page-\ltx@one
```

```
6510 \def\HyPL@page{%
```

```
6511 \csname the\Hy@SlidesPage\endcsname
```

```
6512 \HyPL@SlidesOptionalPage
```

```
6513 }%
```

```
6514 }%
```

```
6515 }{}%
```

`\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.

```
6516 \def\HyPL@EveryPage{%
```

```
6517 \begingroup
```

```
6518 \ifx\HyPL@thisLabel\relax
```

```
6519 \let\HyPL@page\thepage
```

```
6520 \HyPL@SlidesSetPage
```

```
6521 \else
```

```
6522 \let\HyPL@page\HyPL@thisLabel
```

```
6523 \global\let\HyPL@thisLabel\relax
```

```
6524 \fi
```

```
6525 \let\HyPL@Type\relax
```

```
6526 \ifnum\c@page>0 %
```

```
6527 \ifx\HyPL@SlidesSetPage\ltx@empty
```

```
6528 \expandafter\HyPL@CheckThePage\HyPL@page\@nil
```

```

6529 \fi
6530 \fi
6531 \let\Hy@temp Y%
6532 \ifx\HyPL@Type\HyPL@LastType
6533 \else
6534 \let\Hy@temp N%
6535 \fi
6536 \ifx\HyPL@Type\relax
6537 \pdfstringdef\HyPL@Prefix{\HyPL@page}%
6538 \else
6539 \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6540 \fi
6541 \ifx\HyPL@Prefix\HyPL@LastPrefix
6542 \else
6543 \let\Hy@temp N%
6544 \fi
6545 \if Y\Hy@temp
6546 \advance\c@page by -1 %
6547 \ifnum\HyPL@LastNumber=\the\c@page\relax
6548 \else
6549 \let\Hy@temp N%
6550 \fi
6551 \Hy@StepCount\c@page
6552 \fi
6553 \if N\Hy@temp
6554 \ifx\HyPL@Type\relax
6555 \HyPL@storePageLabel{/P(\HyPL@Prefix)}%
6556 \else
6557 \HyPL@storePageLabel{%
6558 \ifx\HyPL@Prefix\@empty
6559 \else
6560 /P(\HyPL@Prefix)%
6561 \fi
6562 /S/\csname HyPL\HyPL@Type\endcsname
6563 \ifnum\the\c@page=1 %
6564 \else
6565 \space/St \the\c@page
6566 \fi
6567 }%
6568 \fi
6569 \fi
6570 \xdef\HyPL@LastNumber{\the\c@page}%
6571 \global\let\HyPL@LastType\HyPL@Type
6572 \global\let\HyPL@LastPrefix\HyPL@Prefix
6573 \endgroup
6574 \Hy@GlobalStepCount\Hy@abspage
6575 }%

```

\HyPL@CheckThePage Macro \HyPL@CheckThePage calls \HyPL@@CheckThePage that does the job.

```

6576 \def\HyPL@CheckThePage#1\@nil{%
6577 \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6578 }%

```

\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 @ara-

bic\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.

```

6579 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6580 \def\Hy@tempa{#4}%
6581 \def\Hy@tempb{\csname\endcsname\c@page}%
6582 \ifx\Hy@tempa\Hy@tempb
6583 \expandafter\ifx\csname HyPL#3\endcsname\relax
6584 \else
6585 \def\HyPL@Type{#3}%
6586 \def\HyPL@Prefix{#2}%
6587 \fi
6588 \else
6589 \begingroup
6590 \let\Hy@next\endgroup
6591 \let\HyPL@found\@undefined
6592 \def\arabic{\HyPL@Format{arabic}}%
6593 \def\Roman{\HyPL@Format{Roman}}%
6594 \def\roman{\HyPL@Format{roman}}%
6595 \def\Alph{\HyPL@Format{Alph}}%
6596 \def\alph{\HyPL@Format{alph}}%
6597 \protected@edef\Hy@temp{#1}%
6598 \ifx\HyPL@found\relax
6599 \toks@\expandafter{\Hy@temp}%
6600 \edef\Hy@next{\endgroup
6601 \noexpand\HyPL@@@CheckThePage\the\toks@
6602 \noexpand\HyPL@found\relax\noexpand\@nil
6603 }%
6604 \fi
6605 \Hy@next
6606 \fi
6607 }%
```

**\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.

```

6608 \def\HyPL@Format#1#2{%
6609 \ifx\HyPL@found\@undefined
6610 \expandafter\ifx\csname c@#2\endcsname\c@page
6611 \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
6612 \else
6613 \expandafter\noexpand\csname#1\endcsname{#2}%
6614 \fi
6615 \else
6616 \expandafter\noexpand\csname#1\endcsname{#2}%
6617 \fi
6618 }%
```

**\HyPL@@@CheckThePage** If the second check method is successful, \HyPL@@@CheckThePage scans the result of \HyPL@Format and stores the found values.

```

6619 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6620 \def\Hy@tempa{#3}%

```

```

6621 \def\Hy@tempb{\HyPL@found\relax}%
6622 \ifx\Hy@tempa\Hy@tempb
6623 \def\HyPL@Type{@#2}%
6624 \def\HyPL@Prefix{#1}%
6625 \fi
6626 }%

```

`\HyPL@StorePageLabel` Dummy for drivers that does not support `/PageLabel`.

```

6627 \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`.

```

6628 \def\HyPL@Useless{0<</S/D>>}%
6629 \@onelevel@sanitize\HyPL@Useless

```

`\HyPL@SetPageLabels` The page labels are written to the PDF catalog. The command `\Hy@PutCatalog` is defined in the driver files.

```

6630 \def\HyPL@SetPageLabels{%
6631 \@onelevel@sanitize\HyPL@Labels
6632 \ifx\HyPL@Labels\@empty
6633 \else
6634 \ifx\HyPL@Labels\HyPL@Useless
6635 \else
6636 \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
6637 \fi
6638 \fi
6639 }%

```

```

6640 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6641 \fi

```

Option ‘pdfpagelabels’ has been used and is now disabled.

```

6642 \Hy@DisableOption{pdfpagelabels}
6643 </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`

```

6644 <*pdfTeX>
6645 \pdf@ifdraftmode{%
6646 \let\Hy@PutCatalog\ltx@gobble
6647 }{%
6648 \let\Hy@PutCatalog\pdfcatalog
6649 }
6650 </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.

TeX 6.59g is the first version, that implements `\special{!pdfpagelabels...}`.  
For this version `\TeXversion` reports 660.

```

6651 <*vtex>
6652 \providecommand*\XR@ext}{pdf}
6653 \edef\Hy@TeXversion{%
6654   \ifx\TeXversion\@undefined
6655     \z@
6656   \else
6657     \ifx\TeXversion\relax
6658       \z@
6659     \else
6660       \TeXversion
6661     \fi
6662   \fi
6663 }
6664 \begingroup
6665   \ifnum\Hy@TeXversion<660 %
6666     \gdef\Hy@PutCatalog#1{%
6667       \Hy@WarningNoLine{%
6668         TeX 6.59g or above required for pdfpagelabels%
6669       }%
6670     }%
6671   \else
6672     \gdef\Hy@PutCatalog#1{%
6673       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6674     }%
6675     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
6676       \ifx\#2\%
6677         \else
6678           \immediate\special{!pdfpagelabels #2}%
6679         \fi
6680       }%
6681     \fi
6682 \endgroup
6683 </vtex>

6684 <*pdftex | vtex>

```

`\HyPL@StorePageLabel` This macro adds the entry `#1` to `\HyPL@Labels`.

```

6685 \ifHy@pdfpagelabels
6686   \def\HyPL@StorePageLabel#1{%
6687     \toks@ \expandafter{\HyPL@Labels}%
6688     \xdef\HyPL@Labels{%
6689       \the\toks@
6690       \the\Hy@abspage<<#1>>%
6691     }%
6692   }%

```

Package `atveryend` is used to get behind the final `\clearpage` and to avoid a `\clearpage` in `\AtEndDocument`. Then the PDF catalog entry for `\PageLabels` is set.

```

6693 \RequirePackage{atveryend}[2009/12/07]%
6694 \AtVeryEndDocument{%
6695   \HyPL@SetPageLabels

```

```

6696 }%
6697 \fi
6698 </pdfTeX | vTeX>

```

### 27.1.2 xetex

```

6699 < *xetex >
6700 \HyPsd@LoadUnicode
6701 \Hy@unicodetrue
6702 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
6703 \else
6704 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6705 \fi
6706 \HyPsd@LoadStringEncoding
6707 \define@key{Hyp}{unicode}[true]{%
6708 \Hy@boolkey{unicode}{#1}%
6709 \ifHy@unicode
6710 \else
6711 \Hy@Warning{%
6712 XeTeX driver only supports `unicode=true'. Ignoring\MessageBreak
6713 option setting `unicode=false'%
6714 }%
6715 \Hy@unicodetrue
6716 \fi
6717 }
6718 \define@key{Hyp}{pdfencoding}{%
6719 \edef\HyPsd@temp{#1}%
6720 \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6721 \let\HyPsd@pdfencoding\HyPsd@temp
6722 \else
6723 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6724 \let\HyPsd@pdfencoding\HyPsd@temp
6725 \else
6726 \Hy@Warning{%
6727 XeTeX driver only supports\MessageBreak
6728 `pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6729 setting `pdfencoding=\HyPsd@temp'%
6730 }%
6731 \fi
6732 \fi
6733 }
6734 \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:

```

6735 \def\setpdfinkmargin#1{%
6736 \begingroup
6737 \setlength{\dimen@}{#1}%
6738 \special{dvipdfmx:config g \strip@pt\dimen@}%
6739 \endgroup}
6740 </xetex>

```

set the pdf version

```

6741 < *dvipdfm | xetex >
6742 \special{pdf:majorversion \Hy@pdf@majorversion}

```

```

6743 \special{pdf:minorversion \Hy@pdf@minorversion}
6744 </dvipdfm | xetex>

```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```

6745 (*pdfmarkbase)
6746 \begingroup
6747 \ifundefined{headerps@out}{%}{%
6748 \toks@ \expandafter{\Hy@FirstPageHook}%
6749 \xdef\Hy@FirstPageHook{%
6750 \noexpand\headerps@out{%
6751 systemdict /pdfmark known%
6752 {%
6753 userdict /?pdfmark systemdict /exec get put%
6754 }{%
6755 userdict /?pdfmark systemdict /pop get put %
6756 userdict /pdfmark systemdict /cleartomark get put%
6757 }%
6758 ifelse%
6759 }%
6760 \the\toks@
6761 }%
6762 }%
6763 \endgroup
6764 </pdfmarkbase>

```

\Hy@PutCatalog

```

6765 <dvipdfm | xetex>\def\Hy@PutCatalog#1{\@pdfm@mark{docview <<#1>>}}
6766 (*pdfmarkbase)
6767 \def\Hy@PutCatalog#1{%
6768 \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} <<#1>>}}%
6769 }
6770 </pdfmarkbase>

6771 (*pdfmarkbase | dvipdfm | xetex)
6772 \ifHy@pdfpagelabels

```

\HyPL@StorePageLabel This macro writes a string to the .aux file.

```

6773 \def\HyPL@StorePageLabel#1{%
6774 \if@filesw
6775 \begingroup
6776 \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6777 \immediate\write\@mainaux{%
6778 \string\HyPL@Entry{\Hy@tempa}%
6779 }%
6780 \endgroup
6781 \fi
6782 }%

```

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.

```

6783 \Hy@AtBeginDocument{%
6784 \if@filesw
6785 \immediate\write\@mainaux{%

```

```

6786     \string\providecommand\string*\string\HyPL@Entry[1]{}%
6787   }%
6788 \fi
6789 \ifx\HyPL@Labels\@empty
6790   \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6791 \else
6792   \HyPL@SetPageLabels
6793 \fi
6794 \let\HyPL@Entry\@gobble
6795 }%

\HyPL@Entry
6796 \def\HyPL@Entry#1{%
6797   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6798     \HyPL@Labels
6799     #1%
6800   }%
6801 }%

6802 \fi
6803 </pdfmarkbase | dvipdfm | xetex>
6804 <*packageEnd>
6805 \ifx\MaybeStopEarly\relax
6806 \else
6807   \Hy@stoppedearlytrue
6808   \expandafter\MaybeStopEarly
6809 \fi
6810 \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 ‘naturalnames’ option uses whatever L<sup>A</sup>T<sub>E</sub>X provides, which may be useable. But then its up to you to make sure these are legal PDF and HTML names. The ‘hypertextnames=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

```

6811 \def\Hy@CounterExists#1{%
6812   \begingroup\expandafter\expandafter\expandafter\endgroup

```



```

6813 \expandafter\ifx\csname c@#1\endcsname\relax
6814 \expandafter\@gobble
6815 \else
6816 \begingroup\expandafter\expandafter\expandafter\endgroup
6817 \expandafter\ifx\csname the#1\endcsname\relax
6818 \expandafter\expandafter\expandafter\@gobble
6819 \else
6820 \expandafter\expandafter\expandafter\@firstofone
6821 \fi
6822 \fi
6823 }
6824 \Hy@CounterExists{section}{%
6825 \providecommand\theHequation{\theHsection.\arabic{equation}}}%
6826 }
6827 \providecommand\theHequation{\arabic{equation}}}%
6828 \Hy@CounterExists{part}{%
6829 \providecommand\theHpart{\arabic{part}}}%
6830 }
6831 \ltx@ifundefined{thechapter}{%
6832 \providecommand\theHsection {\arabic{section}}}%
6833 \providecommand\theHfigure {\arabic{figure}}}%
6834 \providecommand\theHtable {\arabic{table}}}%
6835 }{%
6836 \providecommand\theHchapter {\arabic{chapter}}}%
6837 \providecommand\theHfigure {\theHchapter.\arabic{figure}}}%
6838 \providecommand\theHtable {\theHchapter.\arabic{table}}}%
6839 \providecommand\theHsection {\theHchapter.\arabic{section}}}%
6840 }
6841 \providecommand\theHsubsection {\theHsection.\arabic{subsection}}
6842 \providecommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
6843 \providecommand\theHparagraph {\theHsubsubsection.\arabic{paragraph}}
6844 \providecommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
6845 \providecommand\theHtheorem {\theHsection.\arabic{theorem}}
6846 \providecommand\theHthm {\theHsection.\arabic{thm}}

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.

6847 \let\H@item\item
6848 \newcounter{Item}
6849 \def\theHItem{\arabic{Item}}
6850 \def\item{%
6851 \@hyper@itemfalse
6852 \if@nmbrlist\@hyper@itemtrue\fi
6853 \H@item
6854 }

6855 \providecommand\theHenumi {\theHItem}
6856 \providecommand\theHenumii {\theHItem}
6857 \providecommand\theHenumiii {\theHItem}
6858 \providecommand\theHenumiv {\theHItem}
6859 \providecommand\theHHfootnote {\arabic{Hfootnote}}
6860 \providecommand\theHmpfootnote{\arabic{mpfootnote}}
6861 \@ifundefined{theHHmpfootnote}{%
6862 \let\theHHmpfootnote\theHHfootnote

```

```
6863 }{}
```

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.

```
6864 \let\H@refstepcounter\refstepcounter
6865 \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`

```
6866 \newif\if@hyper@item
6867 \newif\if@skiphyperref
6868 \@hyper@itemfalse
6869 \@skiphyperreffalse
6870 \ExplSyntaxOn
6871 \def\refstepcounter#1{%
6872   \legacy_if:nF {Hy@pdfstring}
6873   {
6874     \H@refstepcounter{#1}%
6875     \bool_lazy_and:nnT
6876       { \l__hyp_target_create_bool }
6877       { ! \legacy_if_p:n{@skiphyperref} }
6878     {
6879       \legacy_if:nTF {@hyper@item}
6880       {
6881         \stepcounter{Item}%
6882         \hyper@refstepcounter{Item}%
6883         \@hyper@itemfalse
6884       }
6885       {
6886         \hyper@refstepcounter{#1}%
6887       }
6888     }
6889   }
6890 }
6891 \ExplSyntaxOff
6892 \let\Hy@saved@refstepcounter\refstepcounter
```

AMS $\text{\LaTeX}$  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.

```
6893 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}
```

`\hyper@refstepcounter`

```
6894 \def\hyper@refstepcounter#1{%
6895   \edef\This@name{#1}%
6896   \ifx\This@name\name@of@eq
6897     \@ifundefined{theHequation}{%
6898       \make@stripped@name{\theequation}%
6899       \let\theHequation\newname
6900     }{}%
```

```

6901 \fi
6902 \HyCnt@ProvideTheHCounter{#1}%
6903 \hyper@makecurrent{#1}%
6904 \ifmeasuring@
6905 \else
6906   \Hy@raisedlink{%
6907     \hyper@anchorstart{\@currentHref}\hyper@anchorend
6908   }%
6909 \fi
6910 }

```

`\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.

```

6911 \def\HyCnt@ProvideTheHCounter#1{%
6912   \@ifundefined{theH#1}{%
6913     \expandafter\def\csname theH#1\endcsname{}%
6914     \def\Hy@temp{\@elt{#1}}%
6915     \ltx@onelevel@sanitize\Hy@temp
6916     \let\HyOrg@elt\@elt
6917     \edef\@elt{%
6918       \noexpand\HyCnt@LookForParentCounter
6919       \expandafter\noexpand\csname theH#1\endcsname
6920     }%
6921     \cl@ckpt
6922     \let\@elt\HyOrg@elt
6923     \expandafter
6924     \ltx@LocalAppendToMacro\csname theH#1\endcsname\expandafter\endcsname
6925     \expandafter{%
6926       \expandafter\@arabic\csname c@#1\endcsname
6927     }%
6928   }{}%
6929 }

```

`\Hy@LookForParentCounter`

```

6930 \def\HyCnt@LookForParentCounter#1#2{%
6931   \expandafter\let\expandafter\Hy@temp@A\csname cl@#2\endcsname
6932   \ltx@ifundefined{cl@#2}{%
6933   }{%
6934     \ltx@onelevel@sanitize\Hy@temp@A
6935     \edef\Hy@temp@A{%
6936       \noexpand\in@{\Hy@temp}{\Hy@temp@A}%
6937     }\Hy@temp@A
6938     \ifin@
6939     \ltx@ifundefined{theH#2}{%
6940       \expandafter\ltx@LocalAppendToMacro\expandafter#1%
6941       \expandafter{%
6942         \expandafter\@arabic\csname c@#2\endcsname.%
6943       }%

```

```

6944    }{%
6945      \expandafter\ltx@LocalAppendToMacro\expandafter#1%
6946      \expandafter{%
6947        \csname theH#2\endcsname.%
6948      }%
6949    }%
6950  \fi
6951 }%
6952 }

```

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`.

```

6953 \begingroup\expandafter\expandafter\expandafter\endgroup
6954 \expandafter\ifx\csname chapter\endcsname\relax
6955   \def\Hy@chapterstring{section}%
6956 \else
6957   \def\Hy@chapterstring{chapter}%
6958 \fi
6959 \def\Hy@appendixstring{appendix}
6960 \def\Hy@chapapp{\Hy@chapterstring}
6961 \ltx@ifundefined{appendix}{%
6962 }{%
6963   \let\HyOrg@appendix\appendix
6964   \def\Hy@AlphNoErr#1{%
6965     \ifnum\value{#1}>26 %
6966       Alph\number\value{#1}%
6967     \else
6968       \ifnum\value{#1}<1 %
6969         Alph\number\value{#1}%
6970       \else
6971         \Alph{#1}%
6972       \fi
6973     \fi
6974   }%
6975   \def\appendix{%
6976     \ltx@ifundefined{chapter}{%
6977       \gdef\theHsection{\Hy@AlphNoErr{section}}%
6978     }{%
6979       \gdef\theHchapter{\Hy@AlphNoErr{chapter}}%
6980     }%
6981     \xdef\Hy@chapapp{\Hy@appendixstring}%
6982     \HyOrg@appendix
6983   }%
6984 }

```

`\Hy@Test@alph`

```

6985 \def\Hy@Test@alph#1{%
6986   \ifcase#1\or
6987     a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or

```

```

6988 k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
6989 u\or v\or w\or x\or y\or z%
6990 \else
6991 \@ctrerr
6992 \fi
6993 }

```

\Hy@Test@Alph

```

6994 \def\Hy@Test@Alph#1{%
6995 \ifcase#1\or
6996 A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
6997 K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
6998 U\or V\or W\or X\or Y\or Z%
6999 \else
7000 \@ctrerr
7001 \fi
7002 }

```

We define a hook to allow to overwrite the next destination name.

```

7003 \NewHook{__hyp/target/setname }
7004 \define@key{Hyp}{next-anchor}{%
7005 \AddToHookNext{__hyp/target/setname}%
7006 {\Hy@MakeCurrentHref{#1}}}%
7007 }

```

\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.

```

7008 \def\hyper@makecurrent#1{%
7009 \begingroup
7010 \Hy@safe@activetrue
7011 \edef\Hy@param{#1}%
7012 \ifx\Hy@param\Hy@chapterstring
7013 \let\Hy@param\Hy@chapapp
7014 \fi
7015 \ifHy@hypertextnames
7016 \let\@number\@firstofone
7017 \def\@fnsymbol##1{fnsymbol\number##1}%
7018 \def\@arabic##1{\number##1}%
7019 \ifx\@alph\Hy@Test@alph
7020 \else
7021 \def\@alph{alph\number}%
7022 \fi
7023 \ifx\@Alph\Hy@Test@Alph
7024 \else
7025 \def\@Alph{Alph\number}%
7026 \fi
7027 \ifHy@naturalnames
7028 \let\textlatin\@firstofone
7029 \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
7030 \else
7031 \xdef\HyperGlobalCurrentHref{%
7032 \csname
7033 the%

```

```

7034     \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
7035     #1%
7036     \endcsname
7037   }%
7038 \fi
7039 \xdef\HyperGlobalCurrentHref{%
7040   \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
7041 }%
7042 \else
7043   \Hy@GlobalStepCount\Hy@linkcounter
7044   \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
7045 \fi
7046 \endgroup
7047 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7048 \ifHy@localanchorname
7049   \let\@currentHref\HyperLocalCurrentHref
7050 \else
7051   \global\let\@currentHref\HyperGlobalCurrentHref
7052 \fi
7053 \UseHook{__hyp/target/setname}%
7054 }

```

`\Hy@MakeCurrentHref`

```

7055 \def\Hy@MakeCurrentHref#1{%
7056   \edef\HyperLocalCurrentHref{#1}%
7057   \@onelevel@sanitize\HyperLocalCurrentHref
7058   \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
7059   \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7060   \ifHy@localanchorname
7061     \let\@currentHref\HyperLocalCurrentHref
7062   \else
7063     \global\let\@currentHref\HyperGlobalCurrentHref
7064   \fi
7065 }

```

`\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.

```

7066 \def\Hy@MakeCurrentHrefAuto#1{%
7067   \Hy@GlobalStepCount\Hy@linkcounter
7068   \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
7069   \UseHook{__hyp/target/setname}}

```

`\@currentHlabel`

`\@currentHlabel` is only defined for compatibility with package ‘hypdvips’.

```

7070 \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.

```

7071 \def\hypergetref#1{\getrefbykeydefault{#1}{}}{??}}
7072 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}

```

## 30 Package titlesec and titletoc support

This code is contributed by Javier Bezos (Email: jbezos@arrakis.es).

Package titlesec support:

```
7073 \@ifpackageloaded{titlesec}{%
7074   \def\ttl@Hy@steplink#1{%
7075     \Hy@MakeCurrentHrefAuto{#1*}%
7076     \edef\ttl@Hy@saveanchor{%
7077       \noexpand\Hy@raisedlink{%
7078         \noexpand\hyper@anchorstart{\@currentHref}%
7079         \noexpand\hyper@anchorend
7080       \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
7081       \noexpand\ttl@Hy@PatchSaveWrite
7082     }%
7083   }%
7084 }%
7085 \def\ttl@Hy@PatchSaveWrite{%
7086   \begingroup
7087   \toks@{\expandafter{\ttl@savewrite}}%
7088   \edef\x{\endgroup
7089     \def\noexpand\ttl@savewrite{%
7090       \let\noexpand\@currentHref
7091       \noexpand\ttl@Hy@SavedCurrentHref
7092       \the\toks@
7093     }%
7094   }%
7095   \x
7096 }%
7097 \def\ttl@Hy@refstepcounter#1{%
7098   \let\ttl@b\Hy@raisedlink
7099   \def\Hy@raisedlink##1{%
7100     \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
7101   }%
7102   \refstepcounter{#1}%
7103   \let\Hy@raisedlink\ttl@b
7104 }%
7105 }
```

## 31 Package varioref support

Package nameref uses five arguments for the ref system. Fix provided by Felix Neubauer (felix.neubauer@gmx.net). This fix will no longer be needed with latex 2021-11-15.

```
7106 \@if@t@r\fmtversion{2021-11-15}
7107 {}%
7108 {
7109   \AtBeginDocument{%
7110     \def\Hy@varioref@undefined{{?}{?}}{}{}{}
7111     \@ifpackageloaded{varioref}{%
7112       \def\vref@pagenum#1#2{%
7113         \@ifundefined{r@#2}{%
7114           \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
```

```

7115     }{}%
7116     \edef#1{\getpagerefnumber{#2}}%
7117     }%
7118   }{}
7119   }
7120 }

```

## 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

```

7121 \@ifpackageloaded{longtable}{%
7122   \begingroup
7123   \def\y{\LT@array}%
7124   \@ifundefined{scr@LT@array}{%
7125     \@ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}%
7126   }{\def\y{\scr@LT@array}}%
7127   \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
7128     \expandafter\endgroup
7129     \expandafter\def\y[##1]##2{%
7130       \H@refstepcounter{#1}%
7131       \hyper@makecurrent{table}%
7132       \let\Hy@LT@currentHref\@currentHref
7133       #2\@sharp###4%
7134     }%
7135   }%
7136   \expandafter\expandafter\expandafter\x\y[{#1}]{#2}\@nil

```

Patch of `\LT@start`: add anchor before first line after `\vskip\LTpre`

```

7137   \begingroup
7138   \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
7139     \endgroup
7140     \def\LT@start{%
7141       #1%
7142       \ifvoid\LT@foot#2\fi
7143       \let\@currentHref\Hy@LT@currentHref
7144       \Hy@raisedlink{%
7145         \hyper@anchorstart{\@currentHref}\hyper@anchorend
7146       }%
7147       #3%
7148     }%
7149   }%
7150   \expandafter\x\LT@start\@nil
7151 }{}

```

## 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 40). The exception is that we move the equation incrementation inside the math environment to avoid specials outside and a wrong vertical spacing of equation environments.

```

7152 \let\new@refstepcounter\refstepcounter
7153 \let\H@equation\equation
7154 \let\H@endequation\endequation

7155 \@ifpackageloaded{amsmath}{%
7156   \long\def\Hy@temp{%
7157     \incr@eqnum
7158     \mathdisplay@push
7159     \st@rredfalse \global\@eqnswtrue
7160     \mathdisplay{equation}%
7161   }%
7162   \ifx\Hy@temp\equation
7163     \expandafter\ifx\csname if@fleqn\expandafter\endcsname
7164       \csname iftrue\endcsname
7165   \else
7166     \long\def\equation{%
7167       \mathdisplay@push
7168       \st@rredfalse \global\@eqnswtrue
7169       \mathdisplay{equation}%
7170       \incr@eqnum
7171     }%
7172   \fi
7173 \fi
7174 }{%
7175 \def\equation{%
7176   \let\refstepcounter\H@refstepcounter
7177   \H@equation
7178   \@ifundefined{theHequation}{%
7179     \make@stripped@name{\theequation}%
7180     \let\theHequation\newname
7181   }{}%
7182   \hyper@makecurrent{equation}%

```

`\mathopen` is needed in case the equation starts with an unary minus, for example.

```

7183   \mathopen{%
7184     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}}%
7185   }%
7186   \let\refstepcounter\new@refstepcounter
7187 }%
7188 \def\endequation{%
7189   \ifx\Hy@raisedlink\ltx@empty
7190     \hyper@anchorend
7191   \else
7192     \mathclose{\Hy@raisedlink{\hyper@anchorend}}}%
7193 \fi
7194 \H@endequation
7195 }%
7196 }

```

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.

```

7197 \newif\if@eqnstar
7198 \@eqnstarfalse
7199 \let\H@eqnarray\eqnarray
7200 \let\H@endeqnarray\endeqnarray
7201 \def\eqnarray{%
7202   \let\Hy@reserved@a\relax
7203   \def\@currentHref{}%
7204   \H@eqnarray
7205   \if@eqnstar
7206   \else
7207     \ifx\\\@currentHref\\%
7208     \else
7209       \@ifundefined{theHequation}{%
7210         \make@stripped@name{\theequation}%
7211         \let\theHequation\newname
7212       }{}%
7213       \hyper@makecurrent{equation}%
7214       \mathopen{%
7215         \Hy@raisedlink{%
7216           \hyper@anchorstart{\@currentHref}\hyper@anchorend
7217         }%
7218       }%
7219     \fi
7220   \fi
7221 }
7222 \def\endeqnarray{%
7223   \H@endeqnarray
7224 }

```

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.

```

7225 \@namedef{eqnarray*}{%
7226   \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
7227 }
7228 \@namedef{endeqnarray*}{%
7229   \nonumber\endeqnarray\@eqnstarfalse
7230 }

```

Then again, we have the *subeqnarray* package. Tanmoy provided some code for this:

```

7231 \ltx@ifundefined{subeqnarray}{}{}%
7232 \let\H@subeqnarray\subeqnarray
7233 \let\H@endsubeqnarray\endsubeqnarray
7234 \def\subeqnarray{%
7235   \let\Hy@reserved@a\relax
7236   \H@subeqnarray
7237   \@ifundefined{theHequation}{%
7238     \make@stripped@name{\theequation}%
7239     \let\theHequation\newname
7240   }{}%

```

```

7241 \hyper@makecurrent{equation}%
7242 \hyper@anchorstart{\@currentHref}{\hyper@anchorend
7243 }%
7244 \def\endsubeqnarray{%
7245 \H@endsubeqnarray
7246 }%
7247 \providecommand\theHsubequation{\theHequation\alph{subequation}}%
7248 }

```

The aim of this macro is to produce a sanitized version of its argument, to make it a safe label.

```

7249 \def\make@stripped@name#1{%
7250 \begingroup
7251 \escapechar\m@ne
7252 \global\let\newname\@empty
7253 \protected@edef\Hy@tempa{#1}%
7254 \edef\@tempb{%
7255 \noexpand\@tfor\noexpand\Hy@tempa:=%
7256 \expandafter\strip@prefix\meaning\Hy@tempa
7257 }%
7258 \@tempb\do{%
7259 \if{\Hy@tempa\else
7260 \if{\Hy@tempa\else
7261 \xdef\newname{\newname\Hy@tempa}%
7262 \fi
7263 \fi
7264 }%
7265 \endgroup
7266 }

```

Support for amsmath's subequations:

```

7267 \begingroup\expandafter\expandafter\expandafter\endgroup
7268 \expandafter\ifx\csname subequations\endcsname\relax
7269 \else
7270 \let\HyOrg@subequations\subequations
7271 \def\subequations{%
7272 \stepcounter{equation}%
7273 \protected@edef\theHparentequation{%
7274 \@ifundefined{theHequation}\theequation\theHequation
7275 }%
7276 \addtocounter{equation}{-1}%
7277 \HyOrg@subequations
7278 \def\theHequation{\theHparentequation\alph{equation}}%
7279 \ignorespaces
7280 }%
7281 \fi

```

Support for package `amsthm` (Daniel Müllner): also `cleveref`.

```

7282 \Hy@AtBeginDocument{%
7283 \@ifpackageloaded{cleveref}{%
7284 \let\Hy@savedthm\@thm
7285 \def\@thm{\ifhmode\unskip\fi\Hy@savedthm}%
7286 }{%
7287 \@ifpackageloaded{amsthm}{%

```

Class amsbook uses a different definition of `\@thm`, where two lines are added (thanks to Dan Luecking for his analysis):

```

\let\thm@indent\indent % indent
\thm@headfont{\scshape}% heading font small caps

7288 \def\Hy@temp#1#2#3{%
7289   \ifhmode\unskip\unskip\par\fi
7290   \normalfont
7291   \trivlist
7292   \let\thmheadnl\relax
7293   \let\thm@swap\@gobble
7294   \let\thm@indent\indent % indent
7295   \thm@headfont{\scshape}% heading font small caps
7296   \thm@notefont{\fontseries\mddefault\upshape}%
7297   \thm@headpunct{.}% add period after heading
7298   \thm@headsep 5\p@ plus\p@ minus\p@\relax
7299   \thm@space@setup
7300   #1% style overrides
7301   \@topsep \thm@preskip           % used by thm head
7302   \@topsepadd \thm@postskip       % used by \@endparenv
7303   \def\@tempa{#2}\ifx\@empty\@tempa
7304     \def\@tempa{\@oparg{\@begintheorem{#3}{}}}%
7305   \else
7306     \refstepcounter{#2}%
7307     \def\@tempa{%
7308       \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}}%
7309     }%
7310   \fi
7311   \@tempa
7312 }%
7313 \ifx\Hy@temp\@thm
7314   \def\@thm#1#2#3{%
7315     \ifhmode
7316       \unskip\unskip\par
7317     \fi
7318     \normalfont
7319     \trivlist
7320     \let\thmheadnl\relax
7321     \let\thm@swap\@gobble
7322     \let\thm@indent\indent % indent
7323     \thm@headfont{\scshape}% heading font small caps
7324     \thm@notefont{\fontseries\mddefault\upshape}%
7325     \thm@headpunct{.}% add period after heading
7326     \thm@headsep 5\p@ plus\p@ minus\p@\relax
7327     \thm@space@setup
7328     #1% style overrides
7329     \@topsep \thm@preskip           % used by thm head
7330     \@topsepadd \thm@postskip       % used by \@endparenv
7331     \def\dth@counter{#2}%
7332     \ifx\@empty\dth@counter
7333       \def\@tempa{%
7334         \@oparg{\@begintheorem{#3}{}}}%
7335       }%
7336     \else

```

```

7337 \H@refstepcounter{#2}%
7338 \hyper@makecurrent{#2}%
7339 \let\Hy@dth@currentHref\@currentHref
7340 \def\@tempa{%
7341 \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}%
7342 }%
7343 \fi
7344 \@tempa
7345 }%
7346 \else
7347 \def\@thm#1#2#3{%
7348 \ifhmode
7349 \unskip\unskip\par
7350 \fi
7351 \normalfont
7352 \trivlist
7353 \let\thmheadnl\relax
7354 \let\thm@swap\@gobble
7355 \thm@notefont{\fontseries\mddefault\upshape}%
7356 \thm@headpunct{.}% add period after heading
7357 \thm@headsep 5\p@ plus\p@ minus\p@\relax
7358 \thm@space@setup
7359 #1% style overrides
7360 \@topsep \thm@preskip % used by thm head
7361 \@topsepadd \thm@postskip % used by \@endparenv
7362 \def\dth@counter{#2}%
7363 \ifx\@empty\dth@counter
7364 \def\@tempa{%
7365 \@oparg{\@begintheorem{#3}{}}{}%
7366 }%
7367 \else
7368 \H@refstepcounter{#2}%
7369 \hyper@makecurrent{#2}%
7370 \let\Hy@dth@currentHref\@currentHref
7371 \def\@tempa{%
7372 \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}%
7373 }%
7374 \fi
7375 \@tempa
7376 }%
7377 \fi
7378 \dth@everypar={%
7379 \@minipagefalse
7380 \global\@newlistfalse
7381 \@noparitemfalse
7382 \if@inlabel
7383 \global\@inlabelfalse
7384 \begingroup
7385 \setbox\z@\lastbox
7386 \ifvoid\z@
7387 \kern-\itemindent
7388 \fi
7389 \endgroup
7390 \ifx\@empty\dth@counter

```

```

7391 \else
7392 \Hy@raisedlink{%
7393 \hyper@anchorstart{%
7394 \ltx@ifundefined{Hy@dth@currentHref}%
7395 \@currentHref\Hy@dth@currentHref
7396 }\hyper@anchorend
7397 }%
7398 \fi
7399 \unhbox\@labels
7400 \fi
7401 \if@nobreak
7402 \@nobreakfalse \clubpenalty\@M
7403 \else
7404 \clubpenalty\@clubpenalty \everypar{}%
7405 \fi
7406 }%
7407 }%

```

non `amsthm` case, remove final space on line before a theorem for githib issue 11.

```

7408 {%
7409 \let\Hy@savethm\@thm
7410 \def\@thm{\ifhmode\unskip\fi\Hy@savethm}%
7411 }%
7412 }%
7413 }

```

## 34 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.

```

7414 \@ifundefined{hyper@nopatch@footnote}{%
7415 \ifHy@hyperfootnotes
7416 \newcounter{Hfootnote}%
7417 \let\H@@footnotetext\@footnotetext
7418 \let\H@@footnotemark\@footnotemark
7419 \def\@xfootnotenext[#1]{%
7420 \begingroup
7421 \csname c@\@mpfn\endcsname #1\relax
7422 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7423 \endgroup
7424 \ifx\@footnotetext\@mpfootnotetext
7425 \expandafter\H@@mpfootnotetext
7426 \else
7427 \expandafter\H@@footnotetext
7428 \fi
7429 }%
7430 \def\@xfootnotemark[#1]{%
7431 \begingroup
7432 \c@footnote #1\relax

```

```

7433 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7434 \endgroup
7435 \H@@footnotemark
7436 }%
7437 \let\H@@mpfootnotetext\@mpfootnotetext
7438 \long\def\@mpfootnotetext#1{%
7439 \H@@mpfootnotetext{%
7440 \ifHy@nesting
7441 \expandafter\ltx@firstoftwo
7442 \else
7443 \expandafter\ltx@secondoftwo
7444 \fi
7445 {%
7446 \expandafter\hyper@@anchor\expandafter{%
7447 \Hy@footnote@currentHref
7448 }\ignorespaces #1}%
7449 }{%
7450 \Hy@raisedlink{%
7451 \expandafter\hyper@@anchor\expandafter{%
7452 \Hy@footnote@currentHref
7453 }\relax}%
7454 }\ignorespaces #1%
7455 }%
7456 }%
7457 }%
7458 \long\def\@footnotetext#1{%
7459 \H@@footnotetext{%
7460 \ifHy@nesting
7461 \expandafter\ltx@firstoftwo
7462 \else
7463 \expandafter\ltx@secondoftwo
7464 \fi
7465 {%
7466 \expandafter\hyper@@anchor\expandafter{%
7467 \Hy@footnote@currentHref
7468 }\ignorespaces #1}%
7469 }{%
7470 \Hy@raisedlink{%
7471 \expandafter\hyper@@anchor\expandafter{%
7472 \Hy@footnote@currentHref
7473 }\relax}%
7474 }%
7475 \let\@currentHref\Hy@footnote@currentHref
7476 \let\@currentlabelname\@empty
7477 \ignorespaces #1%
7478 }%
7479 }%
7480 }%

```

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.

```

7481 \def\@footnotemark{%
7482 \leavevmode
7483 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7484 \stepcounter{Hfootnote}%
7485 \global\let\Hy@saved@currentHref\@currentHref
7486 \hyper@makecurrent{Hfootnote}%
7487 \global\let\Hy@footnote@currentHref\@currentHref
7488 \global\let\@currentHref\Hy@saved@currentHref
7489 \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7490 \@makefnmark
7491 \hyper@linkend
7492 \ifhmode\spacefactor\@x@sf\fi
7493 \relax
7494 }%

```

Tabularx causes footnote problems, disable the linking if that is loaded. Since v6.82i footnotes are only disabled inside the environment ‘tabularx’.

```

7495 \@ifpackageloaded{tabularx}{%
7496 \let\HyOrg@TX@endtabularx\TX@endtabularx
7497 \def\Hy@tabularx@hook{%
7498 \let\@footnotetext\H@@footnotetext
7499 \let\@footnotemark\H@@footnotemark
7500 \let\@mpfootnotetext\H@@mpfootnotetext
7501 }%
7502 \begingroup
7503 \toks@\expandafter{\TX@endtabularx}%
7504 \xdef\Hy@gtemp{%
7505 \noexpand\Hy@tabularx@hook
7506 \the\toks@
7507 }%
7508 \endgroup
7509 \let\TX@endtabularx\Hy@gtemp
7510 }{}%

```

Support for footnotes in p columns of longtable. Here \footnote commands are splitted 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

```

7511 \@ifpackageloaded{longtable}{%
7512 \CheckCommand{\LT@p@ftntext}[1]{%
7513 \edef\@tempa{%
7514 \the\LT@p@ftn
7515 \noexpand\footnotetext[\the\c@footnote]%
7516 }%
7517 \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7518 }%
7519 \long\def\LT@p@ftntext#1{%
7520 \edef\@tempa{%
7521 \the\LT@p@ftn
7522 \begingroup
7523 \noexpand\c@footnote=\the\c@footnote\relax
7524 \noexpand\protected\xdef\noexpand\@thefnmark{%
7525 \noexpand\thempfn
7526 }%
7527 \noexpand\Hy@LT@footnotetext{%

```



```

7528     \Hy@footnote@currentHref
7529     }%
7530 }%
7531 \global\LT@p@ftn\expandafter{%
7532     \@tempa{#1}%
7533 \endgroup
7534 }%
7535 }%
7536 \long\def\Hy@LT@footnotetext#1#2{%
7537     \H@@@footnotetext{%
7538         \ifHy@nesting
7539             \hyper@@@anchor{#1}{#2}%
7540         \else
7541             \Hy@raisedlink{%
7542                 \hyper@@@anchor{#1}{\relax}%
7543             }%
7544             \def\@currentHref{#1}%
7545             \let\@currentlabelname\@empty
7546             #2%
7547         \fi
7548     }%
7549 }%
7550 }{}%

```

Footnotes for fancyvrb (Fix by Manuel Pégourié-Gonnard).

```

7551 \ifpackageloaded{fancyvrb}{%
7552     \def\V@@@footnotetext{%
7553         \insert\footins\bgroup
7554         \csname reset@font\endcsname
7555         \footnotesize
7556         \interlinepenalty\interfootnotelinepenalty
7557         \splittopskip\footnotesep
7558         \splitmaxdepth\dp\strutbox
7559         \floatingpenalty \@MM
7560         \hsize\columnwidth
7561         \@parboxrestore
7562         \def\@currentcounter{footnote}%
7563         \protected@edef\@currentlabel{\csname p@footnote\endcsname\@thefn-
7564             mark}%
7565         \@makefn-text{}%
7566         \rule{\z@}{\footnotesep}%
7567         \bgroup
7568         \aftergroup\V@@@footnotetext
7569         \Hy@raisedlink{%
7570             \expandafter\hyper@@@anchor\expandafter{%
7571                 \Hy@footnote@currentHref
7572                 }{\relax}%
7573             }%
7574             \let\@currentHref\Hy@footnote@currentHref
7575             \let\@currentlabelname\@empty
7576             \ignorespaces
7577         }%
7578     }{}%

```

KOMA-Script or newer LaTeX defines `\footref` that uses both `\ref` and `\@foot-`

notemark resulting in two links, one of them wrong.

```

7578 \def\Hy@temp#1{%
7579 \begingroup
7580 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7581 \endgroup
7582 \@footnotemark
7583 }%
7584 \ifx\Hy@temp\footref
7585 \def\footref#1{%
7586 \begingroup
7587 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7588 \endgroup
7589 \H@@@footnotemark
7590 }%
7591 \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.

```

7592 \let\HyOrg@maketitle\maketitle
7593 \def\maketitle{%
7594 \let\Hy@saved@footnotemark\@footnotemark
7595 \let\Hy@saved@footnotetext\@footnotetext
7596 \let\@footnotemark\H@@@footnotemark
7597 \let\@footnotetext\H@@@footnotetext
7598 \@ifnextchar[\Hy@maketitle@optarg{% ]
7599 \HyOrg@maketitle
7600 \Hy@maketitle@end
7601 }%
7602 }%
7603 \def\Hy@maketitle@optarg[#1]{%
7604 \HyOrg@maketitle[#1]%
7605 \Hy@maketitle@end
7606 }%
7607 \def\Hy@maketitle@end{%
7608 \ifx\@footnotemark\H@@@footnotemark
7609 \let\@footnotemark\Hy@saved@footnotemark
7610 \fi
7611 \ifx\@footnotetext\H@@@footnotetext
7612 \let\@footnotetext\Hy@saved@footnotetext
7613 \fi
7614 }%

```

`\realfootnote` Does anyone remember the function and purpose of `\realfootnote`?

```

7615 \def\realfootnote{%
7616 \@ifnextchar[\@xfootnote%]
7617 {\stepcounter{\@mpfn}%
7618 \protected@xdef\@thefnmark{\thempfn}%
7619 \H@@@footnotemark\H@@@footnotetext
7620 }%
7621 }%
7622 \fi
7623 }{}
7624 \Hy@DisableOption{hyperfootnotes}

```

```

7625 \endpackageEnd
7626 \check
7627 \checklatex
7628 \checkcommand\def\@xfootnotenext[#1]{%
7629   \begingroup
7630     \csname c@\@mpfn\endcsname #1\relax
7631     \unrestored@protected@xdef\@thefnmark{\thempfn}%
7632   \endgroup
7633   \@footnotetext
7634 }
7635 \checkcommand\def\@xfootnotemark[#1]{%
7636   \begingroup
7637     \c@footnote #1\relax
7638     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7639   \endgroup
7640   \@footnotemark
7641 }
7642 \checkcommand\def\@footnotemark{%
7643   \leavevmode
7644   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7645   \@makefnmark
7646   \ifhmode\spacefactor\@x@sf\fi
7647   \relax
7648 }
7649 \endcheck
7650 \endpackageEnd

```

## 35 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.

```

7651 \def\caption{%
7652   \ifx\@captype\@undefined
7653     \@latex@error{\noexpand\caption outside float}\@ehd
7654     \expandafter\@gobble
7655   \else
7656     \H@refstepcounter\@captype
7657     \let\Hy@tempa\@caption
7658     \@ifundefined{float@caption}{%
7659       }{%
7660         \expandafter\ifx\csname @float@c@\@captype\endcsname
7661           \float@caption
7662           \let\Hy@tempa\Hy@float@caption
7663         \fi
7664       }%
7665     \expandafter\@firstofone
7666     \fi
7667     {\@dblarg{\Hy@tempa\@captype}}}%
7668 }
7669 \long\def\@caption#1[#2]#3{%
7670   \expandafter\ifx\csname if@capstart\expandafter\endcsname
7671     \csname iftrue\endcsname
7672     \global\let\@currentHref\hc@currentHref

```

```

7673 \else
7674 \hyper@makecurrent{\@capttype}%
7675 \fi
7676 \@ifundefined{NR@gettitle}{%
7677 \def\@currentlabelname{#2}%
7678 }{%
7679 \NR@gettitle{#2}%
7680 }%
7681 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7682 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7683 }%
7684 \begingroup
7685 \@parboxrestore
7686 \if@minipage
7687 \@setminipage
7688 \fi
7689 \normalsize
7690 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7691 \csname iftrue\endcsname
7692 \global\@capstartfalse
7693 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7694 \else
7695 \@makecaption{\csname fnum@#1\endcsname}{%
7696 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7697 \ifHy@nesting
7698 \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7699 \else
7700 \Hy@raisedlink{%
7701 \expandafter\hyper@@anchor\expandafter{%
7702 \@currentHref
7703 }\relax}%
7704 }%
7705 #3%
7706 \fi
7707 }%
7708 \fi
7709 \par
7710 \endgroup
7711 }

```

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’.

```

7712 \let\Hy@float@caption\@caption
7713 \newcommand{\HyNew@float@makebox}[1]{%
7714 \HyOrg@float@makebox{%
7715 #1\relax
7716 \ifx\Hy@float@currentHref\@undefined
7717 \else
7718 \expandafter\hyper@@anchor\expandafter{%
7719 \Hy@float@currentHref

```

```

7720     }\relax}%
7721     \global\let\Hy@float@currentHref\@undefined
7722   \fi
7723 }%
7724 }%
7725 \@ifpackageloaded{float}{%
7726   \def\Hy@float@caption{%
7727     \ifx\Hy@float@currentHref\@undefined
7728       \hyper@makecurrent{\@capttype}%
7729       \global\let\Hy@float@currentHref\@currentHref
7730     \else
7731       \let\@currentHref\Hy@float@currentHref
7732     \fi
7733     \float@caption
7734   }%
7735   \let\HyOrg@float@makebox\float@makebox
7736   \let\float@makebox\HyNew@float@makebox
7737 }{}
7738 \</packageEnd>
7739 \<*check>
7740 \checklatex[1999/06/01 - 2000/06/01]
7741 \checkcommand\def\caption{%
7742   \ifx\@capttype\@undefined
7743     \@latex@error{\noexpand\caption outside float}\@ehd
7744     \expandafter\@gobble
7745   \else
7746     \refstepcounter\@capttype
7747     \expandafter\@firstofone
7748   \fi
7749   {\@dblarg{\@caption\@capttype}}}%
7750 }
7751 \checkcommand\long\def\@caption#1[#2]#3{%
7752   \par
7753   \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7754     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}}%
7755   }%
7756   \begingroup
7757     \@parboxrestore
7758     \if@minipage
7759       \@setminipage
7760     \fi
7761     \normalsize
7762     \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7763   \endgroup
7764 }
7765 \</check>
7766 \<*packageEnd>

```

## 36 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.

```

7767 \def\hyper@natlinkstart#1{%
7768   \Hy@backout{#1}%
7769   \hyper@linkstart{cite}{cite.#1}%
7770   \def\hyper@nat@current{#1}%
7771 }
7772 \def\hyper@natlinkend{%
7773   \hyper@linkend
7774 }
7775 \def\hyper@natlinkbreak#1#2{%
7776   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7777 }
7778 \def\hyper@natanchorstart#1{%
7779   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7780 }
7781 \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.

```

7782 \ltx@ifundefined{NAT@parse}{%
7783   \providecommand*\@extra@binfo{}%
7784   \providecommand*\@extra@b@citeb{}%
7785   \def\bibcite#1#2{%
7786     \@newl@bel{b}{#1}\@extra@binfo}%
7787     \hyper@link{cite}{cite.#1}\@extra@b@citeb}{#2}%
7788   }%
7789 }%
7790 \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.”.

```

7791 \let\Hy@bibcite\bibcite
7792 \begingroup
7793   \ifundefined{bbl@cite@choice}{}%
7794   \g@addto@macro\bbl@cite@choice{%
7795     \let\bibcite\Hy@bibcite
7796   }%
7797 }%
7798 \endgroup

```

`\@BIBLABEL` is working around a ‘feature’ of RevTeX.

```

7799 \providecommand*\@BIBLABEL{\@biblabel}%
7800 \def\@bibitem[#1]#2{%
7801   \@skiphyperrreftrue
7802   \H@item[%
7803     \ifx\Hy@raisedlink\@empty
7804       \hyper@anchorstart{cite.#2}\@extra@b@citeb}%
7805     \@BIBLABEL{#1}%

```

```

7806     \hyper@anchorend
7807 \else
7808     \Hy@raisedlink{%
7809         \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7810     }%
7811     \@BIBLABEL{#1}%
7812 \fi
7813 \hfill
7814 ]%
7815 \@skiphyperrfalse
7816 \if@files
7817     \begingroup
7818         \let\protect\noexpand
7819         \immediate\write\@auxout{%
7820             \string\bibcite{#2}{#1}%
7821         }%
7822     \endgroup
7823 \fi
7824 \ignorespaces
7825 }%

```

Since `\bibitem` is doing its own labelling, call the raw version of `\item`, to avoid extra spurious labels

```

7826 \def\@bibitem#1{%
7827     \@skiphyperrtrue\H@item\@skiphyperrfalse
7828     \Hy@raisedlink{%
7829         \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7830     }%
7831     \if@files
7832         \begingroup
7833             \let\protect\noexpand
7834             \immediate\write\@auxout{%
7835                 \string\bibcite{#1}{\the\value{\@listctr}}%
7836             }%
7837         \endgroup
7838     \fi
7839     \ignorespaces
7840 }%
7841 }{}

7842 \</packageEnd>
7843 \<check>
7844 \checklatex
7845 \checkcommand\def\@lbibitem[#1]#2{%
7846     \item[\@biblabel{#1}\hfill]%
7847     \if@files
7848     {%
7849         \let\protect\noexpand
7850         \immediate\write\@auxout{%
7851             \string\bibcite{#2}{#1}%
7852         }%
7853     }%
7854 \fi
7855 \ignorespaces
7856 }

```

```

7857 \checkcommand\def\@bibitem#1{%
7858   \item
7859   \if@filesw
7860     \immediate\write\@auxout{%
7861       \string\bibcite{#1}{\the\value{\@listctr}}%
7862     }%
7863   \fi
7864   \ignorespaces
7865 }
7866 \</check>
7867 \*packageEnd>

```

### 36.1 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.

```

7868 \@ifpackageloaded{harvard}{%
7869   \Hy@AtBeginDocument{%
7870     \Hy@Info{*** compatibility with harvard **** }%
7871     \Hy@raiselinksfalse
7872     \def\harvardcite#1#2#3#4{%
7873       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{cite.#1}{#2}}%
7874       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{cite.#1}{#3}}%
7875       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{cite.#1}{#4}}%
7876       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7877     }%
7878     \def\HAR@citetoaux#1{%
7879       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7880       \ifHy@backref
7881         \ifx\@empty\@currentlabel
7882           \else
7883             \@bsphack
7884             \if@filesw
7885               \protected@write\@auxout{}{%
7886                 \string\@writefile{brf}{%
7887                   \string\backcite{#1}{%
7888                     {\thepage}{\@currentlabel}{\@currentHref}%
7889                   }%
7890               }%
7891             }%
7892           \fi
7893           \@esphack
7894         \fi
7895       \fi
7896     }%
7897     \def\harvarditem{%
7898       \ifnextchar{\@harvarditem}{\@harvarditem[\null]}%
7899     }%

```



```

7900 \def\@harvarditem[#1]#2#3#4#5\par{%
7901 \item[]%
7902 \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7903 \if@filesw
7904 \begingroup
7905 \def\protect##1{\string ##1\space}%
7906 \ifthenelse{\equal{#1}{\null}}{%
7907 {\def\next{{#4}{#2}{#2}{#3}}}%
7908 {\def\next{{#4}{#2}{#1}{#3}}}%
7909 \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7910 \endgroup
7911 \fi
7912 \protect\hspace*{-\labelwidth}%
7913 \protect\hspace*{-\labelsep}%
7914 \ignorespaces
7915 #5%
7916 \ifHy@backref
7917 \newblock
7918 \backref{\csname br@#4\endcsname}%
7919 \fi
7920 \par
7921 }%

```

`\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`:

```

7922 \long\def\HAR@checkcitations#1#2#3#4{%
7923 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
7924 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7925 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
7926 \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7927 \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
7928 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7929 \else
7930 \@tempswatruetrue
7931 \fi
7932 \else
7933 \@tempswatruetrue
7934 \fi
7935 \else
7936 \@tempswatruetrue
7937 \fi
7938 }%
7939 }%
7940 }{}

```

## 36.2 Package chicago

The links by `\citeN` and `\shortciteN` should include the closing parentheses.

```

7941 \@ifpackageloaded{chicago}{%

```

```

\citeN

```

```

7942 \def\citeN{%
7943   \def\@citesep{-1000}%
7944   \def\@cite##1##2{##1}%
7945   \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
7946   \@citedata@opt
7947 }%

\shortciteN

7948 \def\shortciteN{%
7949   \def\@citesep{-1000}%
7950   \def\@cite##1##2{##1}%
7951   \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
7952   \@citedata@opt
7953 }%

\@citedata@opt

7954 \def\@citedata@opt{%
7955   \let\@cite@opt\@empty
7956   \@ifnextchar [{%
7957     \@tempswatrue
7958     \@citedatax@opt
7959   }{%
7960     \@tempswafalse
7961     \@citedatax[]%
7962   }%
7963 }%

\@citedatax@opt

7964 \def\@citedatax@opt[#1]{%
7965   \def\@cite@opt{, #1}%
7966   \@citedatax[{#1}]%
7967 }%

7968 }{}

```

## 37 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{pdf-pageduration={}}`. 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.

```

7969 \ltx@ifclassloaded{slides}{%
7970   \def\Hy@SlidesFormatOptionalPage#1{(#1)}%
7971   \def\Hy@PageAnchorSlidesPlain{%
7972     \advance\c@page\ltx@one
7973     \edef\Hy@TempPageAnchor{%
7974       \noexpand\hyper@C@anchor{%
7975         page.\the\c@slide.\the\c@overlay.\the\c@note%
7976         \ifnum\c@page=\ltx@one
7977         \else

```

```

7978     .\the\c@page
7979     \fi
7980 }%
7981 }%
7982 \advance\c@page-\ltx@one
7983 }%
7984 \def\Hy@PageAnchorSlide{%
7985   \advance\c@page\ltx@one
7986   \ifnum\c@page>\ltx@one
7987     \ltx@ifundefined{theHpage}{%
7988       \protected@edef\Hy@TheSlideOptionalPage{%
7989         \Hy@SlidesFormatOptionalPage{theHpage}%
7990       }%
7991     }{%
7992       \protected@edef\Hy@TheSlideOptionalPage{%
7993         \Hy@SlidesFormatOptionalPage{theHpage}%
7994       }%
7995     }%
7996   \else
7997     \def\Hy@TheSlideOptionalPage{}%
7998   \fi
7999   \advance\c@page-\ltx@one
8000   \pdfstringdef\@the@H@page{%
8001     \csname
8002       the%
8003       \ltx@ifundefined{theH\Hy@SlidesPage}{H}%
8004       \Hy@SlidesPage
8005     \endcsname
8006     \Hy@TheSlideOptionalPage
8007   }%
8008   \ltx@gobblethree
8009 }%
8010 \def\Hy@SlidesPage{slide}%
8011 \g@addto@macro\slide{%
8012   \def\Hy@SlidesPage{slide}%
8013 }%
8014 \g@addto@macro\overlay{%
8015   \def\Hy@SlidesPage{overlay}%
8016 }%
8017 \g@addto@macro\note{%
8018   \def\Hy@SlidesPage{note}%
8019 }%
8020 }{%
8021   \def\Hy@PageAnchorSlidesPlain{}%
8022   \def\Hy@PageAnchorSlide{}%
8023 }
8024 \def\Hy@EveryPageAnchor{%
8025   \Hy@DistillerDestFix
8026   \ifHy@pageanchor
8027     \ifHy@hypertexnames
8028       \ifHy@plainpages
8029         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
8030         \Hy@PageAnchorSlidesPlain
8031       \else

```

```

8032 \begingroup
8033 \let\@number\@firstofone
8034 \Hy@unicodedefalse
8035 \Hy@PageAnchorSlide
8036 \pdfstringdef\@the@H@page{\thepage}%
8037 \endgroup
8038 \EdefUnescapeString\@the@H@page{\@the@H@page}%
8039 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
8040 \fi
8041 \else
8042 \Hy@GlobalStepCount\Hy@pagecounter
8043 \def\Hy@TempPageAnchor{%
8044 \hyper@@anchor{page.\the\Hy@pagecounter}%
8045 }%
8046 \fi
8047 \vbox to 0pt{%
8048 \kern\voffset
8049 \kern\topmargin
8050 \kern-1bp\relax
8051 \hbox to 0pt{%
8052 \kern\hoffset
8053 \kern\ifodd\value{page}%
8054 \oddsidemargin
8055 \else
8056 \evensidemargin
8057 \fi
8058 \kern-1bp\relax
8059 \Hy@TempPageAnchor\relax
8060 \hss
8061 }%
8062 \vss
8063 }%
8064 \fi
8065 }
8066 \g@addto@macro\Hy@EveryPageBoxHook{%
8067 \Hy@EveryPageAnchor
8068 }

```

## 38 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.

```

8069 \providecommand\protected@file@percent{}
8070 \def\addcontentsline#1#2#3{% toc extension, type, tag
8071 \begingroup
8072 \let\label\@gobble
8073 \ifx\@currentHref\@empty
8074 \Hy@Warning{%
8075 No destination for bookmark of \string\addcontentsline,%

```

```

8076     \MessageBreak destination is added%
8077 }%
8078 \phantomsection
8079 \fi
8080 \expandafter\ifx\csname toplevel@#2\endcsname\relax
8081 \begingroup
8082   \def\Hy@tempa{#1}%
8083   \ifx\Hy@tempa\Hy@bookmarkstype
8084     \Hy@WarningNoLine{%
8085       bookmark level for unknown #2 defaults to 0%
8086     }%
8087   \else
8088     \Hy@Info{bookmark level for unknown #2 defaults to 0}%
8089   \fi
8090 \endgroup
8091 \expandafter\gdef\csname toplevel@#2\endcsname{0}%
8092 \fi
8093 \edef\Hy@toplevel{\csname toplevel@#2\endcsname}%
8094 \Hy@writebookmark{\csname the#2\endcsname}%
8095   {#3}%
8096   {\@currentHref}%
8097   {\Hy@toplevel}%
8098   {#1}%
8099 \ifHy@verbose
8100 \begingroup
8101   \def\Hy@tempa{#3}%
8102   \@onelevel@sanitize\Hy@tempa
8103   \let\temp@online\on@line
8104   \let\on@line\@empty
8105   \Hy@Info{%
8106     bookmark\temp@online:\MessageBreak
8107     thecounter {\csname the#2\endcsname}\MessageBreak
8108     text {\Hy@tempa}\MessageBreak
8109     reference {\@currentHref}\MessageBreak
8110     toplevel {\Hy@toplevel}\MessageBreak
8111     type {#1}%
8112   }%
8113 \endgroup
8114 \fi
8115 \addtocontents{#1}{%
8116   \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}\protected@file@per-
cent
8117 }%
8118 \endgroup
8119 }

```

\contentsline The page number might be empty. In this case the link for the page number is suppressed to avoid little link boxes.

```

8120 \def\contentsline#1#2#3#4{%
8121 \begingroup
8122   \Hy@safe@activetrue
8123 \edef\x{\endgroup
8124   \def\noexpand\Hy@tocdestname{#4}%
8125 }\x

```

```

8126 \ifx\Hy@tocdestname\ltx@empty
8127   \csname l@#1\endcsname{#2}{#3}%
8128 \else
8129   \ifcase\Hy@linktoc % none
8130     \csname l@#1\endcsname{#2}{#3}%
8131   \or % section
8132     \csname l@#1\endcsname{%
8133       \hyper@linkstart{link}{\Hy@tocdestname}{#2}\hyper@linkend
8134     }{#3}%
8135   \or % page
8136     \def\Hy@temp{#3}%
8137     \ifx\Hy@temp\ltx@empty
8138       \csname l@#1\endcsname{#2}{#3}%
8139     \else
8140       \csname l@#1\endcsname{#2}{#3}%
8141       \hyper@linkstart{link}{\Hy@tocdestname}{#3}\hyper@linkend
8142     }%
8143   \fi
8144 \else % all
8145   \def\Hy@temp{#3}%
8146   \ifx\Hy@temp\ltx@empty
8147     \csname l@#1\endcsname{%
8148       \hyper@linkstart{link}{\Hy@tocdestname}{#2}\hyper@linkend
8149     }{}%
8150   \else
8151     \csname l@#1\endcsname{%
8152       \hyper@linkstart{link}{\Hy@tocdestname}{#2}\hyper@linkend
8153     }{}%
8154     \hyper@linkstart{link}{\Hy@tocdestname}{#3}\hyper@linkend
8155   }%
8156 \fi
8157 \fi
8158 \fi
8159 }

8160 \endpackage
8161 \check
8162 \checklatex
8163 \checkcommand\def\addcontentsline#1#2#3{%
8164   \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
8165 }
8166 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
8167 \endcheck
8168 \endpackage

```

## 39 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.

```

8169 \let\H@definecounter\@definecounter
8170 \def\@definecounter#1{%
8171   \H@definecounter{#1}%
8172   \expandafter\gdef\csname theH#1\endcsname{\arabic{#1}}%

```

```
8173 }
```

But what if they have used the optional argument to e.g. `\newtheorem` to determine when the numbering is reset? OK, we'll trap that too.

```
8174 \let\H@newctr\@newctr
8175 \def\@newctr#1[#2]{%
8176   \H@newctr#1[#2]}%
8177 \expandafter\gdef\csname theH#1\endcsname{%
8178   \csname the\@ifundefined{theH#2}{H}#2\endcsname.\arabic{#1}%
8179 }%
8180 }
```

## 40 AMS $\LaTeX$ 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.

```
8181 \@ifpackageloaded{amsmath}{%
8182   \def\Hy@make@anchor{%
8183     \Hy@MakeCurrentHrefAuto{AMS}%
8184     \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
8185   }%
8186   \def\Hy@make@df@tag@@#1{%
8187     \gdef\df@tag{%
8188       \maketag@@@{\Hy@make@anchor#1}%
8189       \def\@currentlabel{#1}%
8190     }%
8191   }%
8192   \def\Hy@make@df@tag@@@#1{%
8193     \gdef\df@tag{%
8194       \tagform@{\Hy@make@anchor#1}%
8195       \toks@{\@xp{p@equation{#1}}}%
8196       \edef\@currentlabel{\the\toks@}%
8197     }%
8198   }%
8199   \let\HyOrg@make@df@tag@@\make@df@tag@@
8200   \let\HyOrg@make@df@tag@@@\make@df@tag@@@
8201   \let\make@df@tag@@\Hy@make@df@tag@@
8202   \let\make@df@tag@@@\Hy@make@df@tag@@@
8203 }{}
```

Only play with `\seteqlebal` if we are using `pdftex`. Other drivers cause problems; requested by Michael Downes (AMS).

```
8204 \@ifpackagewith{hyperref}{pdftex}{%
8205   \let\H@seteqlabel\@seteqlabel
8206   \def\@seteqlabel#1{%
8207     \H@seteqlabel{#1}%
8208     \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
8209     \Hy@raisedlink{%
8210       \hyper@anchorstart{\@currentHref}\hyper@anchorend
```

```

8211 }%
8212 }%
8213 }{}

```

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}}}

```

#### 40.1 \@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.

```

8214 \let\HyOrg@addtoreset\@addtoreset
8215 \def\@addtoreset#1#2{%
8216   \HyOrg@addtoreset{#1}{#2}%
8217   \expandafter\xdef\csname theH#1\endcsname{%
8218     \expandafter\noexpand
8219     \csname the\@ifundefined{theH#2}{}H#2\endcsname
8220     .\noexpand\the\noexpand\value{#1}%
8221   }%
8222 }

```

\numberwithin A appropriate definition of hyperref's companion counter (\theH...) is added for correct link names.

```

8223 \</packageEnd>
8224 \*check>
8225 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
8226 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
8227   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8228     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8229       \@addtoreset{#2}{#3}%
8230       \@xp\xdef\csname the#2\endcsname{%
8231         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8232       }%
8233     }%
8234   }%
8235 }%
8236 \</check>
8237 \*packageEnd>
8238 \@ifpackageloaded{amsmath}{%
8239   \renewcommand*\numberwithin[3][\arabic]{%
8240     \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8241       \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8242         \HyOrg@addtoreset{#2}{#3}%
8243         \@xp\xdef\csname the#2\endcsname{%
8244           \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%

```



```

8245 }%
8246 \@xp\xdef\csname theH#2\endcsname{%
8247 \@xp\@nx
8248 \csname the\@ifundefined{theH#3}{H#3\endcsname
8249 .\@nx#1{#2}%
8250 }%
8251 }%
8252 }%
8253 }%
8254 }{}

```

## 41 Included figures

Simply intercept the low level graphics package macro.

```

8255 \ifHy@hyperfigures
8256 \let\Hy@Gin@setfile\Gin@setfile
8257 \def\Gin@setfile#1#2#3{%
8258 \hyperimage{#3}\Hy@Gin@setfile{#1}{#2}{#3}}%
8259 }%
8260 \fi
8261 \Hy@DisableOption{hyperfigures}

```

## 42 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.

```

8262 \ifHy@hyperindex
8263 \def\HyInd@ParenLeft{({}%
8264 \def\HyInd@ParenRight{)}}%
8265 \def\hyperindexformat#1#2{%
8266 \let\HyOrg@hyperpage\hyperpage
8267 \let\hyperpage\@firstofone
8268 #1{\HyOrg@hyperpage{#2}}%
8269 \let\hyperpage\HyOrg@hyperpage
8270 }%
8271 \Hy@nextfalse
8272 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
8273 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
8274 \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
8275 \begingroup
8276 \lccode`\|=\expandafter`\HyInd@EncapChar\relax
8277 \lccode`\/=``\relax
8278 \lowercase{\endgroup
8279 \ifHy@next

```

```

8280 \let\HyInd@org@wrindex\@wrindex
8281 \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2||\}%
8282 \def\HyInd@@wrindex#1#2|#3|#4\{\%
8283 \ifx\|#3\%
8284 \HyInd@org@wrindex{#1}{#2|hyperpage}%
8285 \else
8286 \HyInd@@@wrindex{#1}{#2}#3\%
8287 \fi
8288 }%
8289 \def\HyInd@@@wrindex#1#2#3#4\{\%
8290 \def\Hy@temp@A{#3}%
8291 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8292 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8293 \relax
8294 \HyInd@org@wrindex{#1}{%
8295 #2|hyperindexformat{/#3#4}%
8296 }%
8297 \else
8298 \ifx\|#4\%
8299 \ifx\Hy@temp@A\HyInd@ParenRight
8300 \HyInd@org@wrindex{#1}{#2|#3}%
8301 \else
8302 \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
8303 \fi
8304 \else
8305 \HyInd@org@wrindex{#1}{%
8306 #2|#3hyperindexformat{/#4}%
8307 }%
8308 \fi
8309 \fi
8310 }%
8311 \else
8312 \def\@wrindex#1{\@wrindex#1||\}%
8313 \def\@wrindex#1|#2|#3\{\%
8314 \if@filesw
8315 \ifx\|#2\%
8316 \protected@write\@indexfile{\%
8317 \string\indexentry{#1|hyperpage}{\thepage}%
8318 }%
8319 \else
8320 \HyInd@@@wrindex{#1}#2\%
8321 \fi
8322 \fi
8323 \endgroup
8324 \@esphack
8325 }%
8326 \def\HyInd@@@wrindex#1#2#3\{\%
8327 \def\Hy@temp@A{#2}%
8328 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8329 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8330 \relax
8331 \protected@write\@indexfile{\%
8332 \string\indexentry{%
8333 #1|hyperindexformat{/#2#3}%

```

```

8334     }{\thepage}%
8335   }%
8336 \else
8337   \ifx\\#3\\%
8338     \ifx\Hy@temp@A\HyInd@ParenRight
8339       \HyInd@DefKey{#1}%
8340       \ltx@ifundefined{HyInd@(\HyInd@key)}{%
8341         \let\Hy@temp\ltx@empty
8342       }{%
8343         \expandafter\let\expandafter\Hy@temp
8344         \csname HyInd@(\HyInd@key)\endcsname
8345       }%
8346       \protected@write\@indexfile{}{%
8347         \string\indexentry{#1|#2\Hy@temp}{\thepage}%
8348       }%
8349     \else
8350       \protected@write\@indexfile{}{%
8351         \string\indexentry{#1|#2hyperpage}{\thepage}%
8352       }%
8353       \HyInd@DefKey{#1}%
8354       \expandafter
8355       \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8356         hyperpage%
8357       }%
8358     \fi
8359 \else
8360   \protected@write\@indexfile{}{%
8361     \string\indexentry{%
8362       #1|#2hyperindexformat{/#3}%
8363     }{\thepage}%
8364   }%
8365   \ifx\Hy@temp@A\HyInd@ParenLeft
8366     \HyInd@DefKey{#1}%
8367     \expandafter
8368     \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8369       hyperindexformat{/#3}%
8370     }%
8371   \fi
8372 \fi
8373 \fi
8374 }%
8375 \def\HyInd@DefKey#1{%
8376   \begingroup
8377   \let\protect\@unexpandable@protect
8378   \edef\Hy@temp{#1}%
8379   \ltx@onelevel@sanitize\Hy@temp
8380   \global\let\HyInd@key\Hy@temp
8381   \endgroup
8382 }%
8383 \fi
8384 }%
8385 \fi
8386 \Hy@DisableOption{hyperindex}
8387 \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.

```
8388 \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.

```
8389 \def\hyperpage#1{%
8390   \HyInd@hyperpage#1\nohyperpage{}\@nil
8391 }
8392 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
8393   \HyInd@@hyperpage{#1}%
8394   #2%
8395   \def\Hy@temp{#3}%
8396   \ifx\Hy@temp\@empty
8397   \else
8398     \ltx@ReturnAfterFi{%
8399       \HyInd@hyperpage#3\@nil
8400     }%
8401   \fi
8402 }
8403 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
8404 \def\@hyperpage#1--#2--#3\{\{%
8405   \ifx\#2\%
8406     \@commahyperpage{#1}%
8407   \else
8408     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
8409   \fi
8410 }
8411 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
8412 \def\@@commahyperpage#1, #2,#3\{\{%
8413   \ifx\#2\%
8414     \HyInd@pagelink{#1}%
8415   \else
8416     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
8417   \fi
8418 }
```

The argument of `\hyperpage` can be empty. And the line breaking algorithm of `Makeindex` can introduce spaces. So we have to remove them.

```
8419 \def\HyInd@pagelink#1{%
8420   \begingroup
8421   \toks@={}%
8422   \HyInd@removespaces#1 \@nil
8423 \endgroup
8424 }
8425 \def\HyInd@removespaces#1 #2\@nil{%
8426   \toks@=\expandafter{\the\toks@#1}%
8427   \ifx\#2\%
8428     \edef\x{\the\toks@}%
8429     \ifx\x\@empty
8430     \else
8431       \hyperlink{page.\the\toks@}{\the\toks@}%
8432     \fi
8433   \else
```

```

8434 \ltx@ReturnAfterFi{%
8435 \HyInd@removespaces#2\@nil
8436 }%
8437 \fi
8438 }

```

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.)

```

8439 \ifHy@texht
8440 \expandafter\endinput
8441 \fi
8442 \let\real@setref\@setref
8443 \def\@setref#1#2#3{% csname, extract group, refname
8444 \ifx#1\relax
8445 \protect\G@refundefinedtrue
8446 \nfss@text{\reset@font\bfseries ??}%
8447 \@latex@warning{%
8448 Reference `#3' on page \thepage \space undefined%
8449 }%
8450 \else
8451 \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
8452 \fi
8453 }

```

`\Hy@setref@link` extracts the reference information entries, because `\hyper@@link` does not expand arguments for the automatic link type detection.

```

8454 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8455 \begingroup
8456 \toks0={\hyper@@link{#5}{#4}}%
8457 \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8458 \edef\x{\endgroup
8459 \the\toks0 {\the\toks1 }}%
8460 }%
8461 \x
8462 }
8463 \def\@pagesetref#1#2#3{% csname, extract macro, ref
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 \protect\hyper@@link
8472 {\expandafter\@fifthoffive#1}%
8473 {page.\expandafter\@secondoffive#1}%
8474 {\expandafter\@secondoffive#1}%
8475 \fi
8476 }
8477 \</packageEnd>
8478 \<*check>
8479 \checklatex
8480 \checkcommand\def\@setref#1#2#3{%

```

```

8481 \ifx#1\relax
8482 \protect\G@refundefinedtrue
8483 \nfss@text{\reset@font\bfseries ??}%
8484 \@latex@warning{%
8485   Reference `#3' on page \thepage\space undefined%
8486 }%
8487 \else
8488 \expandafter#2#1\null
8489 \fi
8490 }
8491 </check>
8492 *packageEnd>

```

Now some extended referencing. `\ref*` and `\pageref*` are not linked, and `\autoref` prefixes with a tag based on the type.

```

8493 \def\HyRef@StarSetRef#1{%
8494 \begingroup
8495 \Hy@safe@activetrue
8496 \let\protect\@unexpandable@protect
8497 \edef\x{#1}%
8498 \@onelevel@sanitize\x
8499 \edef\x{\endgroup
8500   \noexpand\HyRef@@StarSetRef
8501   \expandafter\noexpand\csname r@\x\endcsname{\x}%
8502 }%
8503 \x
8504 }
8505 \def\HyRef@@StarSetRef#1#2#3{%
8506 \ifx#1\@undefined
8507 \let#1\relax
8508 \fi
8509 \real@setref#1#3{#2}%
8510 }
8511 \def\@refstar#1{%
8512 \HyRef@StarSetRef{#1}\@firstoffive
8513 }
8514 \def\@pagerefstar#1{%
8515 \HyRef@StarSetRef{#1}\@secondoffive
8516 }
8517 \def\@namerefstar#1{%
8518 \HyRef@StarSetRef{#1}\@thirdoffive
8519 }
8520 \def\@Refstar#1{%
8521 \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8522 }%
8523 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8524 \MakeUppercase#1%
8525 }%
8526 \def\HyRef@Ref#1{%
8527 \hyperref[{#1}]{\Ref*{#1}}%
8528 }%
8529 \Hy@AtBeginDocument{%
8530 \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.

```

8531 \ifundefined{hyper@nopatch@varioref}
8532 {
8533   \renewcommand\Vref@star[2][]{%
8534     \begingroup
8535     \let\T@pageref\@pagerefstar
8536     \Ref*{#2}
8537     \vpageref[#1]{#2}%
8538   \endgroup
8539 }%
8540 \renewcommand\Vr@f[2][]{%
8541   \begingroup
8542   \let\T@pageref\@pagerefstar
8543   \hyperref[{#2}]{%
8544     \Ref*{#2}
8545     \vpageref[#1]{#2}%
8546   }%
8547   \endgroup
8548 }%
8549 \renewcommand\vr@f[2][]{%
8550   \begingroup
8551   \let\T@pageref\@pagerefstar
8552   \hyperref[{#2}]{%
8553     \ref*{#2}
8554     \vpageref[#1]{#2}%
8555   }%
8556   \endgroup
8557 }%
8558 \renewcommand\vref@star[2][]{%
8559   \begingroup
8560   \let\T@pageref\@pagerefstar
8561   \ref*{#2}
8562   \vpageref[#1]{#2}%
8563   \endgroup
8564 }%
8565 }{}%
8566 }{}%
8567 }

8568 \DeclareRobustCommand*\autopageref{%
8569   \ifstar{%
8570     \HyRef@autopagerefname\pageref*%
8571   }\HyRef@autopageref
8572 }
8573 \def\HyRef@autopageref#1{%
8574   \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
8575 }
8576 \def\HyRef@autopagerefname{%
8577   \ltx@ifundefined{pageautorefname}{%
8578     \ltx@ifundefined{pagename}{%
8579       \Hy@Warning{No autoref name for `page'}%
8580     }{}%
8581     \pagename\nobreakspace

```

```

8582 }%
8583 }{%
8584 \pageautorefname\nobreakspace
8585 }%
8586 }

```

\leavevmode is added to make package wrapfigure happy, if \autoref starts a paragraph.

```

8587 \NewDocumentCommand\autoref{s}
8588 {
8589   \leavevmode
8590   \IfBooleanTF{#1}{\HyRef@autoref@gobbletwo}{\HyRef@autoref@hyper@@link}}
8591 \def\HyRef@autoref#1#2{%
8592   \begingroup
8593   \Hy@safe@activestrue
8594   \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
8595 \endgroup
8596 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
8597   \HyRef@ShowKeysRef{#2}%
8598   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8599   \edef\HyRef@thisref{%
8600     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8601   }%
8602   \expandafter\HyRef@testreftype\HyRef@thisref.\.%
8603   \Hy@safe@activesfalse
8604   #3{%
8605     \expandafter\@fifthoffive#1\@empty\@empty\@empty
8606   }{%
8607     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8608   }{%
8609     \HyRef@currentHtag
8610     \expandafter\@firstoffive#1\@empty\@empty\@empty
8611     \null
8612   }%
8613 \else
8614   \protect\G@refundefinedtrue
8615   \nfss@text{\reset@font\bfseries ??}%
8616   \@latex@warning{%
8617     Reference `#2' on page \thepage\space undefined%
8618   }%
8619 \fi
8620 }
8621 \def\HyRef@testreftype#1.#2\{\%
8622 \ltx@ifundefined{#1autorefname}{%
8623 \ltx@ifundefined{#1name}{%
8624 \HyRef@StripStar#1\*\@nil{#1}%
8625 \ltx@ifundefined{\HyRef@name autorefname}{%
8626 \ltx@ifundefined{\HyRef@name name}{%
8627 \def\HyRef@currentHtag{%
8628 \Hy@Warning{No autoref name for `#1'}%
8629 }{%
8630 \edef\HyRef@currentHtag{%
8631 \expandafter\noexpand\csname\HyRef@name name\endcsname
8632 \noexpand~%

```



```

8633     }%
8634     }%
8635   }{%
8636     \edef\HyRef@currentHtag{%
8637       \expandafter\noexpand
8638       \csname\HyRef@name\autorefname\endcsname
8639       \noexpand~%
8640     }%
8641     }%
8642   }{%
8643     \edef\HyRef@currentHtag{%
8644       \expandafter\noexpand\csname#1name\endcsname
8645       \noexpand~%
8646     }%
8647     }%
8648   }{%
8649     \edef\HyRef@currentHtag{%
8650       \expandafter\noexpand\csname#1\autorefname\endcsname
8651       \noexpand~%
8652     }%
8653     }%
8654   }
8655   \def\HyRef@StripStar#1*\#\2\@nil#3{%
8656     \def\HyRef@name{#2}%
8657     \ifx\HyRef@name\HyRef@CaseStar
8658       \def\HyRef@name{#1}%
8659     \else
8660       \def\HyRef@name{#3}%
8661     \fi
8662   }
8663   \def\HyRef@CaseStar{*\\}
8664   \def\HyRef@currentHtag{}

```

Support for package `showkeys`.

`\HyRef@ShowKeysRef`

```

8665   \let\HyRef@ShowKeysRef\@gobble
8666   \def\HyRef@ShowKeysInit{%
8667     \ifcsname SK@@label\endcsname
8668       \ifx\SK@ref\@empty
8669       \else
8670         \def\HyRef@ShowKeysRef{%
8671           \SK@\SK@\@ref
8672         }%
8673       \fi
8674     \fi
8675   }
8676   \@ifpackageloaded{showkeys}{%
8677     \HyRef@ShowKeysInit
8678   }{%
8679     \Hy@AtBeginDocument{%
8680       \@ifpackageloaded{showkeys}{%
8681         \HyRef@ShowKeysInit
8682       }{%
8683         }%

```

8684 }

Defaults for the names that `\autoref` uses.

```

8685 \providecommand*\AMSautorefname{\equationautorefname}
8686 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8687 \providecommand*\Itemautorefname{\itemautorefname}
8688 \providecommand*\itemautorefname{item}
8689 \providecommand*\equationautorefname{Equation}
8690 \providecommand*\footnoteautorefname{footnote}
8691 \providecommand*\itemautorefname{item}
8692 \providecommand*\figureautorefname{Figure}
8693 \providecommand*\tableautorefname{Table}
8694 \providecommand*\partautorefname{Part}
8695 \providecommand*\appendixautorefname{Appendix}
8696 \providecommand*\chapterautorefname{chapter}
8697 \providecommand*\sectionautorefname{section}
8698 \providecommand*\subsectionautorefname{subsection}
8699 \providecommand*\subsubsectionautorefname{subsubsection}
8700 \providecommand*\paragraphautorefname{paragraph}
8701 \providecommand*\subparagraphautorefname{subparagraph}
8702 \providecommand*\FancyVerbLineautorefname{line}
8703 \providecommand*\theoremautorefname{Theorem}
8704 \providecommand*\pageautorefname{page}
8705 \endpackage

```

## 43 Configuration files

### 43.1 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 pdfTeX offers `\pdfescapestring`.

```

8706 (*pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo)
8707 \begingroup\expandafter\expandafter\expandafter\endgroup
8708 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8709   \begingroup
8710     \catcode`\|=0 %
8711     \@makeother\|%
8712     |@firstofone{|endgroup
8713     |def|Hy@pstringdef#1#2{%
8714       |begingroup
8715         |edef~{|string~}%
8716         |xdef|Hy@gtemp{#2}%
8717       |endgroup
8718       |let#1|Hy@gtemp
8719       |@onelevel@sanitize#1%
8720       |edef#1{|expandafter|Hy@ExchangeBackslash#1|@nil}%
8721       |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%

```

```

8722 |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1|@nil}%
8723 }%
8724 |def|Hy@ExchangeBackslash#1\#2|@nil{%
8725   #1%
8726   |ifx|\#2|\%%
8727   |else
8728     \\\%
8729     |ltx@ReturnAfterFi{%
8730       |Hy@ExchangeBackslash#2|@nil
8731     }%
8732   |fi
8733 }%
8734 }%
8735 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8736   #1%
8737   \ifx\#2\%%
8738   \else
8739     \@backslashchar(%
8740     |ltx@ReturnAfterFi{%
8741       \Hy@ExchangeLeftParenthesis#2\@nil
8742     }%
8743   \fi
8744 }%
8745 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8746   #1%
8747   \ifx\#2\%%
8748   \else
8749     \@backslashchar)%
8750     |ltx@ReturnAfterFi{%
8751       \Hy@ExchangeRightParenthesis#2\@nil
8752     }%
8753   \fi
8754 }%
8755 \else
8756 \def\Hy@pstringdef#1#2{%
8757   \begingroup
8758   \edef~{\string~}%
8759   \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8760   \endgroup
8761   \let#1\Hy@gtemp
8762 }%
8763 \fi
8764 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

## 43.2 pdfTeX

```

8765 <pdfTeX>
8766 \providecommand*\XR@ext}{pdf}
8767 \Hy@setbreaklinks{true}
8768 \def\HyPat@ObjRef{%
8769   [0-9]*[1-9][0-9]* 0 R%
8770 }

```

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.

- pdfTeX 1.10a, 2003-01-16: \pdfoptionpdfminorversion
- pdfTeX 1.30, 2005-08-081: \pdfminorversion

```

8771 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8772 \def\Hy@pdfminorversion{\pdfminorversion}%
8773 \ifHy@ocgcolorlinks
8774   \ifnum\Hy@pdfmajorminor@version<105 %
8775     \kvsetkeys{Hyp}{pdfversion=1.5}%
8776   \fi
8777 \fi
8778 \ifHy@setpdfversion
8779   \ifnum\Hy@pdf@majorminor@version<105 %
8780     \ltx@ifundefined{pdfobjcompresslevel}{%
8781       }{%
8782         \ifHy@verbose
8783           \Hy@InfoNoLine{%
8784             PDF object streams are disabled, because they are%
8785             \MessageBreak
8786             not supported in requested PDF version %
8787             \Hy@pdf@majorversion.\Hy@pdf@minorversion
8788           }%
8789         \fi
8790         \pdfobjcompresslevel=\ltx@zero
8791       }%
8792     \fi
8793     \ifnum\Hy@pdfmajorminor@version=\Hy@pdf@majorminor@version\relax
8794     \else
8795       \let\Hy@temp\ltx@empty
8796       \def\Hy@temp@A#1#2{%
8797         \ifnum#1>\ltx@zero
8798           \edef\Hy@temp{%
8799             \Hy@temp
8800             \space\space
8801             \the#1\space #2%
8802             \ifnum#1=\ltx@one\else s\fi
8803             \MessageBreak
8804           }%
8805         \fi
8806       }%
8807       \Hy@temp@A\pdflastobj{PDF object}%
8808       \Hy@temp@A\pdflastxform{formXObject}%
8809       \Hy@temp@A\pdflastximage{imageXObject}%
8810       \Hy@temp@A\pdflastannot{annotation}%
8811       \ltx@ifundefined{pdflastlink}{%
8812         }{%
8813           \Hy@temp@A\pdflastlink{link}%
8814         }%
8815       \ifx\Hy@temp\ltx@empty
8816         \Hy@pdfmajorversion=\Hy@pdf@majorversion\relax
8817         \Hy@pdfminorversion=\Hy@pdf@minorversion\relax
8818       \else

```

```

8819 \let\Hy@temp@A\ltx@empty
8820 \ifnum\Hy@pdf@majorminor@version=104 %
8821 \IfFileExists{pdf14.sty}{%
8822 \def\Hy@temp@A{%
8823 \MessageBreak
8824 Or \string\RequirePackage{pdf14} can be used%
8825 \MessageBreak
8826 before \string\documentclass\space as shortcut%
8827 }%
8828 }{}%
8829 \fi
8830 \Hy@WarningNoLine{%
8831 The PDF version number could not be set,\MessageBreak
8832 because some PDF objects are already written:%
8833 \MessageBreak
8834 \Hy@temp
8835 The version should be set as early as possible:%
8836 \MessageBreak
8837 \space\space
8838 \expandafter\string\Hy@pdfmajorversion=\Hy@pdf@majorversion, %
8839 \expandafter\string\Hy@pdfminorversion=\Hy@pdf@minorversion
8840 \string\relax
8841 \ifnum\Hy@pdf@majorminor@version<105 %
8842 \ltx@ifundefined{pdfobjcompresslevel}{%
8843 }{%
8844 \MessageBreak
8845 \space\space
8846 \string\pdfobjcompresslevel=0\string\relax
8847 }%
8848 \fi
8849 \Hy@temp@A
8850 }%
8851 \fi
8852 \fi
8853 \PackageInfo{hyperref}{%
8854 \expandafter\string\Hy@pdfmajorversion.%
8855 \expandafter\string\Hy@pdfminorversion
8856 :=\number\Hy@pdf@majorversion.\number\Hy@pdf@minorversion\space
8857 }%
8858 \fi
8859 \edef\Hy@pdf@majorversion{\number\Hy@pdfmajorversion}%
8860 \edef\Hy@pdf@minorversion{\number\Hy@pdfminorversion}%
8861 \Hy@DisableOption{pdfversion}%
8862 \ifHy@ocgcolorlinks
8863 \pdf@ifdraftmode{}{%
8864 \immediate\pdfobj{%
8865 <<%
8866 /Type/OCG%
8867 /Name(View)%
8868 /Usage<<%
8869 /Print<<%
8870 /PrintState/OFF%
8871 >>%
8872 /View<<%

```

```

8873         /ViewState/ON%
8874     >>%
8875     >>%
8876     >>%
8877 }%
8878 \edef\OBJ@OCG@view{\the\pdfflastobj\space 0 R}%
8879 \immediate\pdfobj{%
8880     <<%
8881         /Type/OCG%
8882         /Name(Print)%
8883         /Usage<<%
8884         /Print<<%
8885         /PrintState/ON%
8886         >>%
8887         /View<<%
8888         /ViewState/OFF%
8889         >>%
8890         >>%
8891     >>%
8892 }%
8893 \edef\OBJ@OCG@print{\the\pdfflastobj\space 0 R}%
8894 \immediate\pdfobj{%
8895     [%
8896         \OBJ@OCG@view\space\OBJ@OCG@print
8897     ]%
8898 }%
8899 \edef\OBJ@OCGs{\the\pdfflastobj\space 0 R}%
8900 \pdfcatalog{%
8901     /OCProperties<<%
8902     /OCGs \OBJ@OCGs
8903     /D<<%
8904     /OFF[\OBJ@OCG@print]%
8905     /AS[%
8906         <<%
8907             /Event/View%
8908             /OCGs \OBJ@OCGs
8909             /Category[/View]%
8910             >>%
8911             <<%
8912                 /Event/Print%
8913                 /OCGs \OBJ@OCGs
8914                 /Category[/Print]%
8915                 >>%
8916                 <<%
8917                     /Event/Export%
8918                     /OCGs \OBJ@OCGs
8919                     /Category[/Print]%
8920                     >>%
8921                 ]%
8922             >>%
8923         >>%
8924     ]%
8925 \begingroup
8926 \edef\x{\endgroup

```

```

8927 \pdfpageresources{%
8928 \the\pdfpageresources
8929 /Properties<<%
8930 /OCView \OBJ@OCG@view
8931 /OCPrint \OBJ@OCG@print
8932 >>%
8933 }%
8934 }%
8935 \x
8936 }%
8937 \Hy@AtBeginDocument{%
8938 \def\Hy@colorlink#1{%
8939 \begingroup
8940 \ifHy@ocgcolorlinks
8941 \def\Hy@ocgcolor{#1}%
8942 \setbox0=\hbox\bgroup\color@begingroup
8943 \else
8944 \HyColor@UseColor#1%
8945 \fi
8946 }%
8947 \def\Hy@endcolorlink{%
8948 \ifHy@ocgcolorlinks
8949 \color@endgroup\egroup
8950 \mbox{%
8951 \pdfliteral page{/OC/OCPrint BDC}%
8952 \rlap{\copy0}%
8953 \pdfliteral page{EMC/OC/OCView BDC}%
8954 \begingroup
8955 \expandafter\HyColor@UseColor\Hy@ocgcolor
8956 \box0 %
8957 \endgroup
8958 \pdfliteral page{EMC}%
8959 }%
8960 \fi
8961 \endgroup
8962 }%
8963 }%
8964 \else
8965 \Hy@DisableOption{ocgcolorlinks}%
8966 \fi

```

First, allow for some changes and additions to pdftex syntax:

```

8967 \def\setpdfinkmargin#1{%
8968 \begingroup
8969 \setlength{\dimen@}{#1}%
8970 \expandafter\endgroup
8971 \expandafter\pdfinkmargin\the\dimen@\relax
8972 }
8973 \pdfinkmargin1pt %

```

First set up the default linking

```
8974 \providecommand*\@pdfview{XYZ}
```

First define the anchors:

```
8975 \Hy@WrapperDef\new@pdfink#1{%

```

```

8976 \ifhmode
8977   \@savsf\spacefactor
8978 \fi
8979 \Hy@SaveLastskip
8980 \Hy@VerboseAnchor{#1}%
8981 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8982 \Hy@DestName\Hy@pstringDest\@pdfview
8983 \Hy@RestoreLastskip
8984 \ifhmode
8985   \spacefactor\@savsf
8986 \fi
8987 }
8988 \let\pdf@endanchor\@empty

```

\Hy@DestName Wrap the call of \pdfdest name in \Hy@DestName. Then it can easier be caught by package hypdestopt.

```

8989 \def\Hy@DestName#1#2{%
8990   \pdfdest name{#1}#2\relax
8991 }

```

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.

```

8992 \providecommand*\@pdfborder{0 0 1}
8993 \providecommand*\@pdfborderstyle{}
8994 \def\Hy@undefinedname{UNDEFINED}
8995 \def\find@pdflink#1#2{%
8996   \leavevmode
8997   \protected@edef\Hy@testname{#2}%
8998   \ifx\Hy@testname\@empty
8999     \Hy@Warning{%
9000       Empty destination name,\MessageBreak
9001       using '\Hy@undefinedname'%
9002     }%
9003     \let\Hy@testname\Hy@undefinedname
9004   \else
9005     \Hy@pstringdef\Hy@testname{%
9006       \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
9007     }%
9008   \fi
9009   \Hy@StartlinkName{%
9010     \ifHy@pdfa /F 4\fi
9011     \Hy@setpdfborder
9012     \Hy@setpdfhighlight
9013     \ifx\CurrentBorderColor\relax
9014       \else
9015         /C[\CurrentBorderColor]%
9016     \fi
9017   }\Hy@testname
9018   \expandafter\Hy@colorlink\csname @#1color\endcsname
9019 }
9020 \def\Hy@StartlinkName#1#2{%
9021   \pdfstartlink attr{#1}goto name{#2}\relax

```



```

9022 }
9023 \def\close@pdfink{%
9024   \Hy@endcolorlink
9025   \Hy@VerboseLinkStop
9026   \pdfendlink
9027 }
9028 \def\hyper@anchor#1{%
9029   \new@pdfink{#1}\anchor@spot\pdf@endanchor
9030 }
9031 \def\hyper@anchorstart#1{%
9032   \new@pdfink{#1}%
9033   \Hy@activeanchortrue
9034 }
9035 \def\hyper@anchorend{%
9036   \pdf@endanchor
9037   \Hy@activeanchorfalse
9038 }
9039 \def\hyper@linkstart#1#2{%
9040   \Hy@VerboseLinkStart{#1}{#2}%
9041   \ltx@ifundefined{##1bordercolor}{%
9042     \let\CurrentBorderColor\relax
9043   }{%
9044     \edef\CurrentBorderColor{\csname @##1bordercolor\endcsname}%
9045   }%
9046   \find@pdfink{#1}{#2}%
9047 }
9048 \def\hyper@linkend{\close@pdfink}
9049 \def\hyper@link#1#2#3{%
9050   \Hy@VerboseLinkStart{#1}{#2}%
9051   \ltx@ifundefined{##1bordercolor}{%
9052     \let\CurrentBorderColor\relax
9053   }{%
9054     \edef\CurrentBorderColor{\csname @##1bordercolor\endcsname}%
9055   }%
9056   \find@pdfink{#1}{#2}#3\Hy@xspace@end
9057   \close@pdfink
9058 }
9059 \let\CurrentBorderColor\@linkbordercolor
9060 \def\hyper@linkurl#1#2{%
9061   \begingroup
9062     \Hy@pstringdef\Hy@pstringURI{#2}%
9063     \hyper@chars
9064     \leavevmode
9065     \pdfstartlink
9066     attr{%
9067       \Hy@setpdfborder
9068       \Hy@setpdfhighlight
9069       \ifx\@urlbordercolor\relax
9070         \else
9071         /C[\@urlbordercolor]%
9072       \fi
9073     }%
9074     user{%
9075       /Subtype/Link%

```

```

9076 \ifHy@pdfa /F 4\fi
9077 /A<<%
9078 /Type/Action%
9079 /S/URI%
9080 /URI(\Hy@pstringURI)%
9081 \ifHy@href@ismap
9082 /IsMap true%
9083 \fi
9084 \Hy@href@nextactionraw
9085 >>%
9086 }%
9087 \relax
9088 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9089 \close@pdfink
9090 \endgroup
9091 }
9092 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
9093 \begingroup
9094 \def\Hy@pstringF{#2}%
9095 \Hy@CleanupFile\Hy@pstringF
9096 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9097 \Hy@pstringdef\Hy@pstringD{#3}%
9098 \Hy@MakeRemoteAction
9099 \leavevmode
9100 \pdfstartlink
9101 attr{%
9102 \Hy@setpdfborder
9103 \Hy@setpdfhighlight
9104 \ifx\@filebordercolor\relax
9105 \else
9106 /C[\@filebordercolor]%
9107 \fi
9108 }%
9109 user {%
9110 /Subtype/Link%
9111 \ifHy@pdfa /F 4\fi
9112 /A<<%
9113 /F(\Hy@pstringF)%
9114 /S/GoToR%
9115 \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}

```

```

9116 \ifx\#3\%
9117 /D[\Hy@href@page\@pdfremotestartview]%

```

```

9118     \else
9119         /D(\Hy@pstringD)%
9120     \fi
9121     \Hy@href@nextactionraw
9122     >>%
9123 }%
9124 \relax
9125 \Hy@colorlink\@filecolor#1\Hy@xspace@end
9126 \close@pdflink
9127 \endgroup
9128 }
9129 \def\@hyper@launch run:#1\|#2#3{% filename, anchor text linkname
9130 \begingroup
9131     \Hy@pstringdef\Hy@pstringF{#1}%
9132     \Hy@pstringdef\Hy@pstringP{#3}%
9133     \leavevmode
9134     \pdfstartlink
9135     attr{%
9136         \Hy@setpdfborder
9137         \Hy@setpdfhighlight
9138         \ifx\@runbordercolor\relax
9139         \else
9140             /C[\@runbordercolor]%
9141         \fi
9142     }%
9143     user {%
9144         /Subtype/Link%
9145         \ifHy@pdfa /F 4\fi
9146         /A<<%
9147             /F(\Hy@pstringF)%
9148             /S/Launch%
9149             \Hy@SetNewWindow
9150             \ifx\|#3\|
9151             \else
9152                 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9153             \fi
9154             \Hy@href@nextactionraw
9155         >>%
9156     }%
9157     \relax
9158     \Hy@colorlink\@runcolor#2\Hy@xspace@end
9159     \close@pdflink
9160 \endgroup
9161 }

```

\PDF@SetupDox

```

9162 \def\PDF@SetupDoc{%
9163     \ifx\@pdfpagescrop\@empty
9164     \else
9165         \edef\process@me{%
9166             \pdfpagesattr={%
9167                 /CropBox[\@pdfpagescrop]%
9168                 \expandafter\ifx\expandafter\|the\pdfpagesattr\|
9169             \else

```

```

9170      ^~J\the\pdfpagesattr
9171      \fi
9172    }%
9173  }%
9174  \process@me
9175 \fi
9176 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9177 \pdfcatalog{%
9178   /PageMode/\@pdfpagemode
9179   \ifx\@baseurl\@empty
9180     \else
9181     /URI<</Base(\Hy@pstringB)>>%
9182   \fi
9183 }%
9184 \ifx\@pdfstartpage\@empty
9185 \else
9186   \ifx\@pdfstartview\@empty
9187   \else
9188     openaction goto page\@pdfstartpage{\@pdfstartview}%
9189   \fi
9190 \fi
9191 \edef\Hy@temp{%
9192   \ifHy@pdftoolbar\else /HideToolbar true\fi
9193   \ifHy@pdfmenubar\else /HideMenubar true\fi
9194   \ifHy@pdfwindowui\else /HideWindowUI true\fi
9195   \ifHy@pdffitwindow /FitWindow true\fi
9196   \ifHy@pdfcenterwindow /CenterWindow true\fi
9197   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9198   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9199   \Hy@UseNameKey{Direction}\@pdfdirection
9200   \Hy@UseNameKey{ViewArea}\@pdfviewarea
9201   \Hy@UseNameKey{ViewClip}\@pdfviewclip
9202   \Hy@UseNameKey{PrintArea}\@pdfprintarea
9203   \Hy@UseNameKey{PrintClip}\@pdfprintclip
9204   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9205   \Hy@UseNameKey{Duplex}\@pdfduplex
9206   \ifx\@pdfpicktraybypdfsize\@empty
9207   \else
9208     /PickTrayByPDFSize \@pdfpicktraybypdfsize
9209   \fi
9210   \ifx\@pdfprintpagerange\@empty
9211   \else
9212     /PrintPageRange[\@pdfprintpagerange]%
9213   \fi
9214   \ifx\@pdfnumcopies\@empty
9215   \else
9216     /NumCopies \@pdfnumcopies
9217   \fi
9218 }%
9219 \pdfcatalog{%
9220   \ifx\Hy@temp\@empty
9221   \else
9222     /ViewerPreferences<<\Hy@temp>>%
9223   \fi

```

```

9224 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9225 \ifx\@pdflang\relax
9226 \else
9227 /Lang(\@pdflang)%
9228 \fi
9229 }%
9230 }

```

\PDF@FinishDoc

```

9231 \def\PDF@FinishDoc{%
9232 \pdf@ifdraftmode{ }{%
9233 \Hy@UseMaketitleInfos
9234 \HyInfo@GenerateAddons
9235 \pdfinfo{%
9236 /Author(\@pdfauthor)%
9237 /Title(\@pdftitle)%
9238 /Subject(\@pdfsubject)%
9239 /Creator(\@pdfcreator)%
9240 \ifx\@pdfcreationdate\@empty
9241 \else
9242 /CreationDate(\@pdfcreationdate)%
9243 \fi
9244 \ifx\@pdfmoddate\@empty
9245 \else
9246 /ModDate(\@pdfmoddate)%
9247 \fi
9248 \ifx\@pdfproducer\relax
9249 \else
9250 /Producer(\@pdfproducer)%
9251 \fi
9252 /Keywords(\@pdfkeywords)%
9253 \ifx\@pdftrapped\@empty
9254 \else
9255 /Trapped/\@pdftrapped
9256 \fi
9257 \HyInfo@Addons
9258 }%
9259 }%
9260 \Hy@DisableOption{pdfauthor}%
9261 \Hy@DisableOption{pdftitle}%
9262 \Hy@DisableOption{pdfsubject}%
9263 \Hy@DisableOption{pdfcreator}%
9264 \Hy@DisableOption{addtopdfcreator}%
9265 \Hy@DisableOption{pdfcreationdate}%
9266 \Hy@DisableOption{pdfmoddate}%
9267 \Hy@DisableOption{pdfproducer}%
9268 \Hy@DisableOption{pdfkeywords}%
9269 \Hy@DisableOption{pdftrapped}%
9270 \Hy@DisableOption{pdfinfo}%
9271 }

```

\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.

```

9272 \def\hyper@pagetransition{%
9273   \ifx\@pdfpagetransition\relax
9274   \else
9275     \expandafter\Hy@RemoveTransPageAttr
9276     \the\pdfpageattr^^J/Trans{}>>\END
9277     \ifx\@pdfpagetransition\@empty
9278     \else
9279       \edef\@processme{%
9280         \global\pdfpageattr{%
9281           \the\pdfpageattr
9282             ^^J/Trans << /S /\@pdfpagetransition\space >>%
9283         }%
9284       }%
9285       \@processme
9286     \fi
9287   \fi
9288 }

```

**\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.

```

9289 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
9290   \ifx\#2\%
9291     \global\pdfpageattr{#1}%
9292   \else
9293     \Hy@RemoveTransPageAttr#1#4\END
9294   \fi
9295 }

```

**\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`.

```

9296 \def\hyper@pageduration{%
9297   \ifx\@pdfpageduration\relax
9298   \else
9299     \expandafter
9300     \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
9301     \ifx\@pdfpageduration\@empty
9302     \else
9303       \edef\@processme{%
9304         \global\pdfpageattr{%
9305           \the\pdfpageattr
9306             ^^J/Dur \@pdfpageduration\space
9307         }%
9308       }%
9309       \@processme
9310     \fi
9311   \fi
9312 }

```

**\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.

```

9313 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
9314   \ifx\|#2\|
9315     \global\pdfpageattr{#1}%
9316   \else
9317     \Hy@RemoveDurPageAttr#1#4\END
9318   \fi
9319 }

9320 \pdf@ifdraftmode{}{%
9321   \g@addto@macro\Hy@EveryPageHook{%
9322     \hyper@pagetransition
9323     \hyper@pageduration
9324   }%
9325 }

```

Also XeTeX support `\pdfpagewidth` and `\pdfpageheight`, but it does not provide `\pdfhorigin` and `\pdfvorigin`.

```

9326 </pdfTeX>
9327 <*pdfTeX | xetex>
9328 \Hy@AtBeginDocument{%
9329   \ifHy@setpagesize
9330     \expandafter\@firstofone
9331   \else
9332     \expandafter\@gobble
9333   \fi
9334 }%
9335 \@ifclassloaded{seminar}{%
9336 <*pdfTeX>
9337   \setlength{\pdfhorigin}{1truein}%
9338   \setlength{\pdfvorigin}{1truein}%
9339 </pdfTeX>
9340   \ifportrait
9341     \ifdim\paperwidth=\z@
9342     \else
9343       \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9344     \fi
9345     \ifdim\paperheight=\z@
9346     \else
9347       \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9348     \fi
9349   \else
9350     \ifdim\paperheight=\z@
9351     \else
9352       \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9353     \fi
9354     \ifdim\paperwidth=\z@
9355     \else
9356       \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9357     \fi
9358   \fi
9359 }{%
9360   \ltx@ifundefined{stockwidth}{%

```

```

9361 \ifdim\paperwidth>\z@
9362 \setlength{\pdfpagewidth}{\paperwidth}%
9363 \fi
9364 \ifdim\paperheight>\z@
9365 \setlength{\pdfpageheight}{\paperheight}%
9366 \fi
9367 }{%
9368 \ifdim\stockwidth>\z@
9369 \setlength{\pdfpagewidth}{\stockwidth}%
9370 \fi
9371 \ifdim\stockheight>\z@
9372 \setlength{\pdfpageheight}{\stockheight}%
9373 \fi
9374 }%
9375 }%
9376 }%
9377 \Hy@DisableOption{setpagesize}%
9378 }
9379 </pdfTeX | xetex>
9380 <*pdfTeX>
9381 \def\Acrobatmenu#1#2{%
9382 \Hy@Acrobatmenu{#1}{#2}{%
9383 \leavevmode
9384 \EdefEscapeName\Hy@temp@menu{#1}%
9385 \pdfstartlink
9386 attr{%
9387 \Hy@setpdfborder
9388 \Hy@setpdfhighlight
9389 \ifx\@menubordercolor\relax
9390 \else
9391 /C[\@menubordercolor]%
9392 \fi
9393 }%
9394 user{%
9395 /Subtype/Link%
9396 \ifHy@pdfa /F 4\fi
9397 /A<<%
9398 /S/Named%
9399 /N/\Hy@temp@menu
9400 \Hy@href@nextactionraw
9401 >>%
9402 }%
9403 \relax
9404 \Hy@colorlink\@menucolor#2%
9405 \close@pdflink
9406 }%
9407 }

```

#### 43.2.1 Fix for problem with different nesting levels

`\AtBeginShipoutFirst` adds an additional box layer around the first output page. This disturbs pdfTeX's low level link commands `\pdfstartlink` and `\pdfendlink`, if a link is broken across the first and second output page.

The problem could be fixed by replacing `\AtBeginShipoutFirst`, because the



box layer is not necessary for pdf $\TeX$ — no `\specials` need to be inserted. However it's easier to add an additional box level for the pages after the first one. Also `\AtBeginShipoutFirst` could be invoked independently from `hyperref`.

Since version 2011/10/05 v1.16 of package 'atbegshi' `\AtBeginShipoutFirst` does not add a additional box layer.

change 2020-10-01: the code has been removed as outdated.

9408  $\langle$ /pdf $\tex$  $\rangle$

### 43.3 hypertex

The Hyper $\TeX$  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 be 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.

```
9409  $\langle$ *hypertex $\rangle$ 
9410 \providecommand*{\XR@ext}{dvi}
9411 \let\PDF@FinishDoc\ltz@empty
9412 \def\PDF@SetupDoc{%
9413   \ifx\@baseurl\@empty
9414     \else
9415       \special{html:<base href="\@baseurl">}%
9416   \fi
9417 }
9418 \Hy@WrapperDef\hyper@anchor#1{%
```

```

9419 \Hy@SaveLastskip
9420 \Hy@VerboseAnchor{#1}%
9421 \begingroup
9422   \let\protect=\string
9423   \hyper@chars
9424   \special{html:<a name=%
9425     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}}%
9426 \endgroup
9427 \Hy@activeanchortrue
9428 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9429 \special{html:</a>}}%
9430 \Hy@activeanchorfalse
9431 \Hy@RestoreLastskip
9432 }
9433 \Hy@WrapperDef\hyper@anchorstart#1{%
9434   \Hy@SaveLastskip
9435   \Hy@VerboseAnchor{#1}%
9436   \begingroup
9437     \hyper@chars
9438     \special{html:<a name=%
9439       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}}%
9440 \endgroup
9441 \Hy@activeanchortrue
9442 }
9443 \def\hyper@anchorend{%
9444   \special{html:</a>}}%
9445   \Hy@activeanchorfalse
9446   \Hy@RestoreLastskip
9447 }
9448 \def\@urltype{url}
9449 \def\hyper@linkstart#1#2{%
9450   \Hy@VerboseLinkStart{#1}{#2}%
9451   \expandafter\Hy@colorlink\csname @#1color\endcsname
9452   \def\Hy@tempa{#1}%
9453   \ifx\Hy@tempa\@urltype
9454     \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9455   \else
9456     \begingroup
9457       \hyper@chars
9458       \special{html:<a href=%
9459         \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}}%
9460     \endgroup
9461   \fi
9462 }
9463 \def\hyper@linkend{%
9464   \special{html:</a>}}%
9465   \Hy@endcolorlink
9466 }
9467 \def\hyper@linkfile#1#2#3{%
9468   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
9469 }
9470 \def\hyper@linkurl#1#2{%

```

If we want to raise up the final link `\special`, we need to get its height; ask me why L<sup>A</sup>T<sub>E</sub>X constructs make this totally foul up, and make us revert to basic T<sub>E</sub>X.

I do not know.

```

9471 \leavevmode
9472 \ifHy@raiselinks
9473   \Hy@SaveSpaceFactor
9474   \Hy@SaveSavedSpaceFactor
9475   \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9476   \Hy@RestoreSavedSpaceFactor
9477   \@linkdim\dp\@tempboxa
9478   \lower\@linkdim\hbox{%
9479     \hyper@chars
9480     \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9481   }%
9482   \Hy@colorlink\@urlcolor
9483   \Hy@RestoreSpaceFactor
9484   #1%
9485   \Hy@SaveSpaceFactor
9486   \@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).

```

9487   \advance\@linkdim by -6.5\p@
9488   \raise\@linkdim\hbox{\special{html:</a>}}%
9489   \Hy@endcolorlink
9490   \Hy@RestoreSpaceFactor
9491 \else
9492   \begingroup
9493   \hyper@chars
9494   \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9495   \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9496   \special{html:</a>}}%
9497   \Hy@endcolorlink
9498   \endgroup
9499 \fi
9500 }

```

Very poor implementation of \hyper@link without considering #1.

```

9501 \def\hyper@link#1#2#3{%
9502   \Hy@VerboseLinkStart{#1}{#2}%
9503   \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}%
9504 }

9505 \def\hyper@image#1#2{%
9506   \begingroup
9507   \hyper@chars
9508   \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
9509   \endgroup
9510 }
9511 </hypertex>
9512 < *dviwindo>

```

## 43.4 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 de-

fine 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.

```

9513 \providecommand*\XR@ext}{dvi}
9514 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9515 \Hy@WrapperDef\hyper@anchor#1{%
9516   \Hy@SaveLastskip
9517   \Hy@VerboseAnchor{#1}%
9518   \begingroup
9519     \let\protect=\string
9520     \special{mark: #1}%
9521   \endgroup
9522   \Hy@activeanchortrue
9523   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9524   \Hy@activeanchorfalse
9525   \Hy@RestoreLastskip
9526 }
9527 \Hy@WrapperDef\hyper@anchorstart#1{%
9528   \Hy@SaveLastskip
9529   \Hy@VerboseAnchor{#1}%
9530   \special{mark: #1}%
9531   \Hy@activeanchortrue
9532 }
9533 \def\hyper@anchorend{%
9534   \Hy@activeanchorfalse
9535   \Hy@RestoreLastskip
9536 }
9537 \def\hyper@linkstart#1#2{%
9538   \Hy@VerboseLinkStart{#1}{#2}%
9539   \expandafter\Hy@colorlink\csname @#1color\endcsname
9540   \special{button: %
9541     10000000 %
9542     \number\baselineskip\space
9543     #2%
9544   }%
9545 }
9546 \def\hyper@linkend{%
9547   \Hy@endcolorlink
9548 }
9549 \def\hyper@link#1#2#3{%
9550   \Hy@VerboseLinkStart{#1}{#2}%
9551   \leavevmode
9552   \ifHy@raiselinks
9553     \Hy@SaveSpaceFactor
9554     \Hy@SaveSavedSpaceFactor
9555     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9556     \Hy@RestoreSavedSpaceFactor

```

```

9557 \@linkdim\dp\@tempboxa
9558 \lower\@linkdim\hbox{%
9559 \special{button: %
9560 \number\wd\@tempboxa\space
9561 \number\ht\@tempboxa\space
9562 #2%
9563 }%
9564 \expandafter\Hy@colorlink\csname @#1color\endcsname
9565 \Hy@RestoreSpaceFactor
9566 #3\Hy@xspace@end
9567 \Hy@SaveSpaceFactor
9568 \Hy@endcolorlink
9569 }%
9570 \@linkdim\ht\@tempboxa
9571 \advance\@linkdim by -6.5\p@
9572 \raise\@linkdim\hbox{}%
9573 \Hy@RestoreSpaceFactor
9574 \else
9575 \special{button: %
9576 \number\wd\@tempboxa\space
9577 \number\ht\@tempboxa\space
9578 #2%
9579 }%
9580 \expandafter\Hy@colorlink\csname @#1color\endcsname
9581 #3\Hy@xspace@end
9582 \Hy@endcolorlink
9583 \fi
9584 }
9585 \def\hyper@linkurl#1#2{%
9586 \begingroup
9587 \hyper@chars
9588 \leavevmode
9589 \ifHy@raiselinks
9590 \Hy@SaveSpaceFactor
9591 \Hy@SaveSavedSpaceFactor
9592 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9593 \Hy@RestoreSavedSpaceFactor
9594 \@linkdim\dp\@tempboxa
9595 \lower\@linkdim\hbox{%
9596 \special{button: %
9597 \number\wd\@tempboxa\space
9598 \number\ht\@tempboxa\space
9599 launch: \wwwbrowser\space
9600 #2%
9601 }%
9602 \Hy@colorlink\@urlcolor
9603 \Hy@RestoreSpaceFactor
9604 #1\Hy@xspace@end
9605 \Hy@SaveSpaceFactor
9606 \Hy@endcolorlink
9607 }%
9608 \@linkdim\ht\@tempboxa
9609 \advance\@linkdim by -6.5\p@
9610 \raise\@linkdim\hbox{}%

```

```

9611 \Hy@RestoreSpaceFactor
9612 \else
9613 \special{button: %
9614 \number\wd\@tempboxa\space
9615 \number\ht\@tempboxa\space
9616 launch: \wwwbrowser\space
9617 #2%
9618 }%
9619 \Hy@colorlink\@urlcolor
9620 #1\Hy@xspace@end
9621 \Hy@endcolorlink
9622 \fi
9623 \endgroup
9624 }
9625 \def\hyper@linkfile#1#2#3{%
9626 \begingroup
9627 \hyper@chars
9628 \leavevmode
9629 \ifHy@raiselinks
9630 \Hy@SaveSpaceFactor
9631 \Hy@SaveSavedSpaceFactor
9632 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9633 \Hy@RestoreSavedSpaceFactor
9634 \@linkdim\dp\@tempboxa
9635 \lower\@linkdim\hbox{%
9636 \special{button: %
9637 \number\wd\@tempboxa\space
9638 \number\ht\@tempboxa\space
9639 #3,%
9640 file: #2%
9641 }%
9642 \Hy@colorlink\@filecolor
9643 \Hy@RestoreSpaceFactor
9644 #1\Hy@xspace@end
9645 \Hy@SaveSpaceFactor
9646 \Hy@endcolorlink
9647 }%
9648 \@linkdim\ht\@tempboxa
9649 \advance\@linkdim by -6.5\p@
9650 \raise\@linkdim\hbox{}%
9651 \Hy@RestoreSpaceFactor
9652 \else
9653 \special{button: %
9654 \number\wd\@tempboxa\space
9655 \number\ht\@tempboxa\space
9656 #3,%
9657 file: #2%
9658 }%
9659 \Hy@colorlink\@filecolor
9660 #1\Hy@xspace@end
9661 \Hy@endcolorlink
9662 \fi
9663 \endgroup
9664 }

```

```

9665 \HyInfo@AddonUnsupportedtrue
9666 \def\PDF@FinishDoc{%
9667   \Hy@UseMaketitleInfos
9668   \HyInfo@TrappedUnsupported
9669   \special{PDF: Keywords \@pdfkeywords}%
9670   \special{PDF: Title \@pdftitle}%
9671   \special{PDF: Creator \@pdfcreator}%
9672   \ifx\@pdfcreationdate\@empty
9673   \else
9674     \special{PDF: CreationDate \@pdfcreationdate}%
9675   \fi
9676   \ifx\@pdfmoddate\@empty
9677   \else
9678     \special{PDF: ModDate \@pdfmoddate}%
9679   \fi
9680   \special{PDF: Author \@pdfauthor}%
9681   \ifx\@pdfproducer\relax
9682   \else
9683     \special{PDF: Producer \@pdfproducer}%
9684   \fi
9685   \special{PDF: Subject \@pdfsubject}%
9686   \Hy@DisableOption{pdfauthor}%
9687   \Hy@DisableOption{pdftitle}%
9688   \Hy@DisableOption{pdfsubject}%
9689   \Hy@DisableOption{pdfcreator}%
9690   \Hy@DisableOption{addtopdfcreator}%
9691   \Hy@DisableOption{pdfcreationdate}%
9692   \Hy@DisableOption{pdfcreationdate}%
9693   \Hy@DisableOption{pdfmoddate}%
9694   \Hy@DisableOption{pdfproducer}%
9695   \Hy@DisableOption{pdfkeywords}%
9696   \Hy@DisableOption{pdftrapped}%
9697   \Hy@DisableOption{pdfinfo}%
9698 }
9699 \def\PDF@SetupDoc{%
9700   \ifx\@baseurl\@empty
9701   \else
9702     \special{PDF: Base \@baseurl}%
9703   \fi
9704   \ifx\@pdfpagescrop\@empty\else
9705     \special{PDF: BBox \@pdfpagescrop}%
9706   \fi
9707   \def\Hy@temp{}%
9708   \ifx\@pdfstartpage\@empty
9709   \else
9710     \ifx\@pdfstartview\@empty
9711     \else
9712       \edef\Hy@temp{%
9713         ,Page=\@pdfstartpage
9714         ,View=\@pdfstartview
9715       }%
9716     \fi
9717   \fi
9718   \edef\Hy@temp{%

```

```

9719 \noexpand\pdfmark{%
9720 pdfmark=/DOCVIEW,%
9721 PageMode=/\@pdfpagemode
9722 \Hy@temp
9723 }%
9724 }%
9725 \Hy@temp
9726 \ifx\@pdfpagescrop\@empty
9727 \else
9728 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9729 \fi
9730 \edef\Hy@temp{%
9731 \ifHy@pdftoolbar\else /HideToolbar true\fi
9732 \ifHy@pdfmenubar\else /HideMenubar true\fi
9733 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9734 \ifHy@pdffitwindow /FitWindow true\fi
9735 \ifHy@pdfcenterwindow /CenterWindow true\fi
9736 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9737 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9738 \Hy@UseNameKey{Direction}\@pdfdirection
9739 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9740 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9741 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9742 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9743 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9744 \Hy@UseNameKey{Duplex}\@pdfduplex
9745 \ifx\@pdfpicktraybypdfsize\@empty
9746 \else
9747 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9748 \fi
9749 \ifx\@pdfprintpagerange\@empty
9750 \else
9751 /PrintPageRange[\@pdfprintpagerange]%
9752 \fi
9753 \ifx\@pdfnumcopies\@empty
9754 \else
9755 /NumCopies \@pdfnumcopies
9756 \fi
9757 }%
9758 \pdfmark{pdfmark=/PUT,%
9759 Raw={%
9760 \string{Catalog\string}<<%
9761 \ifx\Hy@temp\@empty
9762 \else
9763 /ViewerPreferences<<\Hy@temp>>%
9764 \fi
9765 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9766 \ifx\@pdflang\relax
9767 \else
9768 /Lang(\@pdflang)%
9769 \fi
9770 >>%
9771 }%
9772 }%

```



```

9773 }
9774 </dviwindo>
9775 <*dvipdfm | xetex>

```

### 43.5 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.

```

9776 \special{dvipdfmx:config C 0x0010}
9777 \providecommand*{\XR@ext}{pdf}
9778 \Hy@setbreaklinks{true}
9779 \def\HyPat@ObjRef{%
9780   @[\^ ]+}%
9781 }
9782 \newsavebox{\pdfm@box}
9783 \def\@pdfm@mark#1{\special{pdf:#1}}
9784 \Hy@WrapperDef\@pdfm@dest#1{%
9785   \Hy@SaveLastskip
9786   \Hy@VerboseAnchor{#1}%
9787   \begingroup
9788     \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9789     \def\x{XYZ}%
9790     \ifx\x\@pdfview
9791       \def\x{XYZ @xpos @ypos null}%
9792     \else
9793       \def\x{FitH}%
9794       \ifx\x\@pdfview
9795         \def\x{FitH @ypos}%
9796       \else
9797         \def\x{FitBH}%
9798         \ifx\x\@pdfview
9799           \def\x{FitBH @ypos}%
9800         \else
9801           \def\x{FitV}%
9802           \ifx\x\@pdfview
9803             \def\x{FitV @xpos}%
9804           \else
9805             \def\x{FitBV}%
9806             \ifx\x\@pdfview
9807               \def\x{FitBV @xpos}%
9808             \else
9809               \def\x{Fit}%
9810               \ifx\x\@pdfview
9811                 \let\x\@pdfview
9812               \else
9813                 \def\x{FitB}%
9814                 \ifx\x\@pdfview
9815                   \let\x\@pdfview
9816                 \else
9817                   \def\x{FitR}%
9818                   \ifx\x\@pdfview

```

```

9819         \Hy@Warning{'pdfview=FitR' is not supported}%
9820     \def\x{XYZ @xpos @ypos null}%
9821     \else
9822         \@onelevel@sanitize\@pdfview
9823         \Hy@Warning{%
9824             Unknown value '\@pdfview' for pdfview%
9825         }%
9826     \def\x{XYZ @xpos @ypos null}%
9827     \fi
9828 \fi
9829 \fi
9830 \fi
9831 \fi
9832 \fi
9833 \fi
9834 \fi
9835 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
9836 \endgroup
9837 \Hy@RestoreLastskip
9838 }
9839 \providecommand*\@pdfview{XYZ}
9840 \providecommand*\@pdfborder{0 0 1}
9841 \providecommand*\@pdfborderstyle{}
9842 \def\hyper@anchor#1{%
9843     \@pdfm@dest{#1}%
9844 }
9845 \def\hyper@anchorstart#1{%
9846     \Hy@activeanchortrue
9847     \@pdfm@dest{#1}%
9848 }
9849 \def\hyper@anchorend{%
9850     \Hy@activeanchorfalse
9851 }
9852 \newcounter{Hy@AnnotLevel}
9853 \ifHy@ocgcolorlinks
9854     \def\OBJ@OCG@view{@OCG@view}%
9855     \@pdfm@mark{%
9856         obj \OBJ@OCG@view <<%
9857         /Type/OCG%
9858         /Name(View)%
9859         /Usage<<%
9860         /Print<<%
9861         /PrintState/OFF%
9862         >>%
9863         /View<<%
9864         /ViewState/ON%
9865         >>%
9866         >>%
9867         >>%
9868     }%
9869     \@pdfm@mark{close \OBJ@OCG@view}%
9870     \def\OBJ@OCG@print{@OCG@print}%
9871     \@pdfm@mark{%

```

```

9872 obj \OBJ@OCG@print <<%
9873 /Type/OCG%
9874 /Name(Print)%
9875 /Usage<<%
9876 /Print<<%
9877 /PrintState/ON%
9878 >>%
9879 /View<<%
9880 /ViewState/OFF%
9881 >>%
9882 >>%
9883 >>%
9884 }%
9885 \@pdfm@mark{close \OBJ@OCG@print}%
9886 \def\OBJ@OCGs{@OCGs}%
9887 \@pdfm@mark{%
9888 obj \OBJ@OCGs [%
9889 \OBJ@OCG@view\space\OBJ@OCG@print
9890 ]%
9891 }%
9892 \@pdfm@mark{close \OBJ@OCGs}%
9893 \@pdfm@mark{%
9894 put @catalog <<%
9895 /OCProperties<<%
9896 /OCGs \OBJ@OCGs
9897 /D<<%
9898 /OFF[\OBJ@OCG@print]%
9899 /AS[%
9900 <<%
9901 /Event/View%
9902 /OCGs \OBJ@OCGs
9903 /Category[/View]%
9904 >>%
9905 <<%
9906 /Event/Print%
9907 /OCGs \OBJ@OCGs
9908 /Category[/Print]%
9909 >>%
9910 <<%
9911 /Event/Export%
9912 /OCGs \OBJ@OCGs
9913 /Category[/Print]%
9914 >>%
9915 ]%
9916 >>%
9917 >>%
9918 >>%
9919 }%
9920 \AtBeginShipout{%
9921 \setbox\AtBeginShipoutBox=\hbox{%
9922 \copy\AtBeginShipoutBox
9923 \@pdfm@mark{%
9924 put @resources <<%
9925 /Properties<<%

```

```

9926         /OCView \OBJ@OCG@view
9927         /OCPrint \OBJ@OCG@print
9928         >>%
9929         >>%
9930     }%
9931 }%
9932 }%
9933 \Hy@AtBeginDocument{%
9934     \def\Hy@colorlink#1{%
9935         \begingroup
9936         \ifHy@ocgcolorlinks
9937             \def\Hy@ocgcolor{#1}%
9938             \setbox0=\hbox\bgroup\color@begingroup
9939         \else
9940             \HyColor@UseColor#1%
9941         \fi
9942     }%
9943     \def\Hy@endcolorlink{%
9944         \ifHy@ocgcolorlinks
9945             \color@endgroup\egroup
9946         \mbox{%
9947             \@pdfm@mark{content /OC/OCPrint BDC}%
9948             \rlap{\copy0}%
9949             \@pdfm@mark{content EMC/OC/OCView BDC}%
9950         \begingroup
9951             \expandafter\HyColor@UseColor\Hy@ocgcolor
9952             \box0 %
9953         \endgroup
9954         \@pdfm@mark{content EMC}%
9955     }%
9956     \fi
9957 \endgroup
9958 }%
9959 }%
9960 \else
9961     \Hy@DisableOption{ocgcolorlinks}%
9962 \fi

```

Use primitive counter arithmetic here to avoid amsmath redefining `\stepcounter` (github issue/13)

```

9963 \def\Hy@BeginAnnot#1{%
9964     \global\advance\c@Hy@AnnotLevel\@ne
9965     \ifnum\c@Hy@AnnotLevel=\@ne
9966         #1%
9967     \fi
9968 }
9969 \def\Hy@endAnnot{%
9970     \ifnum\value{Hy@AnnotLevel}=\@ne
9971         \Hy@endcolorlink
9972         \@pdfm@mark{eann}%
9973     \fi
9974     \global\advance\c@Hy@AnnotLevel\m@ne
9975 }
9976 \def\Hy@undefinedname{UNDEFINED}

```

```

9977 \def\hyper@linkstart#1#2{%
9978   \Hy@VerboseLinkStart{#1}{#2}%
9979   \leavevmode
9980   \Hy@BeginAnnot{%
9981     \protected@edef\Hy@testname{#2}%
9982     \ifx\Hy@testname\@empty
9983       \Hy@Warning{%
9984         Empty destination name,\MessageBreak
9985         using ``\Hy@undefinedname'%
9986       }%
9987       \let\Hy@testname\Hy@undefinedname
9988     \else
9989       \Hy@pstringdef\Hy@testname{%
9990         \expandafter\HyperDestNameFilter\expandafter{%
9991           \Hy@testname
9992         }%
9993       }%
9994     \fi
9995     \@pdfm@mark{%
9996       bann<<%
9997       /Type/Annot%
9998       /Subtype/Link%
9999       \ifHy@pdfa /F 4\fi
10000       \Hy@setpdfborder
10001       \Hy@setpdfhighlight
10002       \expandafter\ifx\csname @#1bordercolor\endcsname\relax
10003       \else
10004         /C[\csname @#1bordercolor\endcsname]%
10005       \fi
10006       /A<<%
10007       /S/GoTo%
10008       /D(\Hy@testname)%
10009       \Hy@href@nextactionraw
10010       >>%
10011       >>%
10012     }%
10013     \expandafter\Hy@colorlink\csname @#1color\endcsname
10014   }%
10015 }
10016 \def\hyper@linkend{\Hy@EndAnnot}%
10017 \def\hyper@link#1#2#3{%
10018   \hyper@linkstart{#1}{#2}#3\Hy@xspace@end\hyper@linkend
10019 }
10020 \def\hyper@linkfile#1#2#3{%
10021   \leavevmode
10022   \Hy@BeginAnnot{%
10023     \def\Hy@pstringF{#2}%
10024     \Hy@CleanupFile\Hy@pstringF
10025     \Hy@pstringdef\Hy@pstringF\Hy@pstringF
10026     \Hy@pstringdef\Hy@pstringD{#3}%
10027     \Hy@MakeRemoteAction
10028     \@pdfm@mark{%
10029       bann<<%
10030       /Type/Annot%

```

```

10031      /Subtype/Link%
10032      \ifHy@pdfa /F 4\fi
10033      \Hy@setpdfborder
10034      \Hy@setpdfhighlight
10035      \ifx\@filebordercolor\relax
10036      \else
10037        /C[\@filebordercolor]%
10038      \fi
10039      /A<<%
10040      /S/GoToR%
10041      /F(\Hy@pstringF)%
10042      /D%
10043      \ifx\#3\%
10044        [\Hy@href@page\@pdfremotestartview]%
10045      \else
10046        (\Hy@pstringD)%
10047      \fi
10048      \Hy@SetNewWindow
10049      \Hy@href@nextactionraw
10050      >>%
10051    >>%
10052  }%
10053  \Hy@colorlink\@filecolor
10054 }%
10055 #1\Hy@xspace@end
10056 \Hy@EndAnnot
10057 }
10058 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
10059 \leavevmode
10060 \Hy@BeginAnnot{%
10061   \Hy@pstringdef\Hy@pstringF{#1}%
10062   \Hy@pstringdef\Hy@pstringP{#3}%
10063   \@pdfm@mark{%
10064     bann<<%
10065     /Type/Annot%
10066     /Subtype/Link%
10067     \ifHy@pdfa /F 4\fi
10068     \Hy@setpdfborder
10069     \Hy@setpdfhighlight
10070     \ifx\@runbordercolor\relax
10071     \else
10072       /C[\@runbordercolor]%
10073     \fi
10074     /A<<%
10075     /F(\Hy@pstringF)%
10076     /S/Launch%
10077     \Hy@SetNewWindow
10078     \ifx\#3\%
10079     \else
10080       /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
10081     \fi
10082     \Hy@href@nextactionraw
10083     >>%
10084   >>%

```

```

10085 }%
10086 \Hy@colorlink\@runcolor
10087 }%
10088 #2\Hy@xspace@end
10089 \Hy@EndAnnot
10090 }
10091 \def\hyper@linkurl#1#2{%
10092 \leavevmode
10093 \Hy@BeginAnnot{%
10094 \Hy@pstringdef\Hy@pstringURI{#2}%
10095 \@pdfm@mark{%
10096 bann<<%
10097 /Type/Annot%
10098 /Subtype/Link%
10099 \ifHy@pdfa /F 4\fi
10100 \Hy@setpdfborder
10101 \Hy@setpdfhighlight
10102 \ifx\@urlbordercolor\relax
10103 \else
10104 /C[\@urlbordercolor]%
10105 \fi
10106 /A<<%
10107 /S/URI%
10108 /URI(\Hy@pstringURI)%
10109 \ifHy@href@ismap
10110 /IsMap true%
10111 \fi
10112 \Hy@href@nextactionraw
10113 >>%
10114 >>%
10115 }%
10116 \Hy@colorlink\@urlcolor
10117 }%
10118 #1\Hy@xspace@end
10119 \Hy@EndAnnot
10120 }
10121 \def\Acrobatmenu#1#2{%
10122 \Hy@Acrobatmenu{#1}{#2}{%
10123 \Hy@BeginAnnot{%
10124 \EdefEscapeName\Hy@temp@menu{#1}%
10125 \@pdfm@mark{%
10126 bann<<%
10127 /Type/Annot%
10128 /Subtype/Link%
10129 \ifHy@pdfa /F 4\fi
10130 \Hy@setpdfborder
10131 \Hy@setpdfhighlight
10132 \ifx\@menubordercolor\relax
10133 \else
10134 /C[\@menubordercolor]%
10135 \fi
10136 /A<<%
10137 /S/Named%
10138 /N/\Hy@temp@menu

```

```

10139         \Hy@href@nextactionraw
10140         >>%
10141         >>%
10142     }%
10143     \Hy@colorlink\@menucolor
10144 }%
10145 #2\Hy@xspace@end
10146 \Hy@endAnnot
10147 }%
10148 }
10149
10150 \def\PDF@FinishDoc{%
10151     \Hy@UseMaketitleInfos
10152     \HyInfo@GenerateAddons
10153     \@pdfm@mark{%
10154         docinfo<<%
10155         /Title(\@pdftitle)%
10156         /Subject(\@pdfsubject)%
10157         /Creator(\@pdfcreator)%
10158         \ifx\@pdfcreationdate\@empty
10159         \else
10160             /CreationDate(\@pdfcreationdate)%
10161         \fi
10162         \ifx\@pdfmoddate\@empty
10163         \else
10164             /ModDate(\@pdfmoddate)%
10165         \fi
10166         /Author(\@pdfauthor)%
10167         \ifx\@pdfproducer\relax
10168         \else
10169             /Producer(\@pdfproducer)%
10170         \fi
10171         /Keywords(\@pdfkeywords)%
10172         \ifx\@pdftrapped\@empty
10173         \else
10174             /Trapped/\@pdftrapped
10175         \fi
10176         \HyInfo@Addons
10177     >>%
10178 }%
10179 \Hy@DisableOption{pdfauthor}%
10180 \Hy@DisableOption{pdftitle}%
10181 \Hy@DisableOption{pdfsubject}%
10182 \Hy@DisableOption{pdfcreator}%
10183 \Hy@DisableOption{addtopdfcreator}%
10184 \Hy@DisableOption{pdfcreationdate}%
10185 \Hy@DisableOption{pdfcreationdate}%
10186 \Hy@DisableOption{pdfmoddate}%
10187 \Hy@DisableOption{pdfproducer}%
10188 \Hy@DisableOption{pdfkeywords}%
10189 \Hy@DisableOption{pdftrapped}%
10190 \Hy@DisableOption{pdfinfo}%
10191 }
10192 \def\PDF@SetupDoc{%

```



```

10193 \edef\Hy@temp{%
10194   \ifHy@pdftoolbar\else /HideToolbar true\fi
10195   \ifHy@pdfmenubar\else /HideMenubar true\fi
10196   \ifHy@pdfwindowui\else /HideWindowUI true\fi
10197   \ifHy@pdfwindow /FitWindow true\fi
10198   \ifHy@pdfcenterwindow /CenterWindow true\fi
10199   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10200   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10201   \Hy@UseNameKey{Direction}\@pdfdirection
10202   \Hy@UseNameKey{ViewArea}\@pdfviewarea
10203   \Hy@UseNameKey{ViewClip}\@pdfviewclip
10204   \Hy@UseNameKey{PrintArea}\@pdfprintarea
10205   \Hy@UseNameKey{PrintClip}\@pdfprintclip
10206   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10207   \Hy@UseNameKey{Duplex}\@pdfduplex
10208   \ifx\@pdfpicktraybypdfsize\@empty
10209   \else
10210     /PickTrayByPDFSize \@pdfpicktraybypdfsize
10211   \fi
10212   \ifx\@pdfprintpagerange\@empty
10213   \else
10214     /PrintPageRange[\@pdfprintpagerange]%
10215   \fi
10216   \ifx\@pdfnumcopies\@empty
10217   \else
10218     /NumCopies \@pdfnumcopies
10219   \fi
10220 }%
10221 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10222 \@pdfm@mark{%
10223   docview<<%
10224     \ifx\@pdfstartpage\@empty
10225     \else
10226       \ifx\@pdfstartview\@empty
10227       \else
10228         /OpenAction[@page\@pdfstartpage\@pdfstartview]%
10229       \fi
10230     \fi
10231     \ifx\@baseurl\@empty
10232     \else
10233       /URI<</Base(\Hy@pstringB)>>%
10234     \fi
10235     /PageMode/\@pdfpagemode
10236     \ifx\Hy@temp\@empty
10237     \else
10238       /ViewerPreferences<<\Hy@temp>>%
10239     \fi
10240     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10241     \ifx\@pdflang\relax
10242     \else
10243       /Lang(\@pdflang)%
10244     \fi
10245   >>%
10246 }%

```

```

10247 \ifx\@pdfpagescrop\@empty
10248 \else
10249   \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
10250 \fi
10251 }
10252 </dvipdfm | xetex>
10253 < *dvipdfm | xetex>

```

\hyper@pagetransition

```

10254 \def\hyper@pagetransition{%
10255   \ifx\@pdfpagetransition\relax
10256   \else
10257     \ifx\@pdfpagetransition\@empty
10258     \else
10259       \special{pdf:put @thispage %
10260         <</Trans<</S/\@pdfpagetransition>>>>%
10261       }%
10262     \fi
10263   \fi
10264 }

```

\hyper@pageduration

```

10265 \def\hyper@pageduration{%
10266   \ifx\@pdfpageduration\relax
10267   \else
10268     \ifx\@pdfpageduration\@empty
10269     \else
10270       \special{pdf:put @thispage %
10271         <</Dur \@pdfpageduration>>>%
10272       }%
10273     \fi
10274   \fi
10275 }

10276 \g@addto@macro\Hy@EveryPageBoxHook{%
10277   \hyper@pagetransition
10278   \hyper@pageduration
10279 }

10280 </dvipdfm | xetex>

```

XeTeX uses pdfTeX's method \pdfpagewidth and \pdfpageheight for setting the paper size.

```

10281 < *dvipdfm>
10282 \AtBeginShipoutFirst{%
10283   \ifHy@setpagesize
10284   \begingroup
10285     \@ifundefined{stockwidth}{%
10286       \ifdim\paperwidth>\z@
10287       \ifdim\paperheight>\z@
10288         \special{papersize=\the\paperwidth,\the\paperheight}%
10289       \fi
10290     \fi
10291   }{%

```

```

10292     \ifdim\stockwidth>\z@
10293     \ifdim\stockheight>\z@
10294         \special{papersize=\the\stockwidth,\the\stockheight}%
10295     \fi
10296 \fi
10297 }%
10298 \endgroup
10299 \fi
10300 \Hy@DisableOption{setpagesize}%
10301 }
10302 </dvipdfm>

```

### 43.6 VTeX typesetting system

Provided by MicroPress, May 1998. They require VTeX version 6.02 or newer; see <http://www.micropress-inc.com/> for details.

```

10303 <*vtexhtml>
10304 \providecommand*{\XR@ext}{htm}
10305 \RequirePackage{vtexhtml}
10306 \newif\if@Localurl
10307 \let\PDF@FinishDoc\ltx@empty
10308 \def\PDF@SetupDoc{%
10309     \ifx\@baseurl\@empty
10310     \else
10311         \special{!direct <base href="\@baseurl">}%
10312     \fi
10313 }
10314 \def\@urltype{url}
10315 \def\hyper@link#1#2#3{%
10316     \Hy@VerboseLinkStart{#1}{#2}%
10317     \leavevmode
10318     \special{!direct <a href=%
10319         \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
10320     #3\Hy@xspace@end
10321     \special{!direct </a>}%
10322 }
10323 \def\hyper@linkurl#1#2{%
10324     \begingroup
10325     \hyper@chars
10326     \leavevmode
10327     \MathBSuppress=1\relax
10328     \special{!direct <a href=%
10329         \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
10330     #1\Hy@xspace@end
10331     \MathBSuppress=0\relax
10332     \special{!direct </a>}%
10333 \endgroup
10334 }
10335 \def\hyper@linkfile#1#2#3{%
10336     \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
10337 }
10338 \def\hyper@linkstart#1#2{%
10339     \Hy@VerboseLinkStart{#1}{#2}%
10340     \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype

```

```

10341 \@@Localurltrue
10342 \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
10343 \else
10344 \@@Localurlfalse
10345 \begingroup
10346 \hyper@chars
10347 \special{!aref \HyperDestNameFilter{#2}}%
10348 \endgroup
10349 \fi
10350 }
10351 \def\hyper@linkend{%
10352 \if@Localurl
10353 \special{!endaref}%
10354 \else
10355 \special{!direct </a>}%
10356 \fi
10357 }
10358 \Hy@WrapperDef\hyper@anchorstart#1{%
10359 \Hy@SaveLastskip
10360 \Hy@VerboseAnchor{#1}%
10361 \begingroup
10362 \hyper@chars
10363 \special{!aname #1}%
10364 \special{!direct <a name=%
10365 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10366 \endgroup
10367 \Hy@activeanchortrue
10368 }
10369 \def\hyper@anchorend{%
10370 \special{!direct </a>}%
10371 \Hy@activeanchorfalse
10372 \Hy@RestoreLastskip
10373 }
10374 \Hy@WrapperDef\hyper@anchor#1{%
10375 \Hy@SaveLastskip
10376 \Hy@VerboseAnchor{#1}%
10377 \begingroup
10378 \let\protect=\string
10379 \hyper@chars
10380 \leavevmode
10381 \special{!aname #1}%
10382 \special{!direct <a name=%
10383 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10384 \endgroup
10385 \Hy@activeanchortrue
10386 \bgroup\anchor@spot\egroup
10387 \special{!direct </a>}%
10388 \Hy@activeanchorfalse
10389 \Hy@RestoreLastskip
10390 }
10391 \def\@Form[#1]{%
10392 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10393 }
10394 \let\@endForm\ltx@empty

```

```

10395 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10396 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10397 }
10398 \def\@TextField[#1]#2{% parameters, label
10399 \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10400 }
10401 \def\@CheckBox[#1]#2{% parameters, label
10402 \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10403 }
10404 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10405 \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10406 }
10407 \def\@PushButton[#1]#2{% parameters, label
10408 \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10409 }
10410 \def\@Reset[#1]#2{%
10411 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10412 }
10413 \def\@Submit[#1]#2{%
10414 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10415 }
10416 \</vtexhtml>
10417 \<*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.

```

10418 \ifx\mediaheight\@undefined
10419 \else
10420 \ifx\mediaheight\relax
10421 \else
10422 \ifHy@setpagesize
10423 \providecommand*\VTeXInitMediaSize{%
10424 \ltx@ifundefined{stockwidth}{%
10425 \ifdim\paperheight>0pt %
10426 \setlength\mediaheight\paperheight
10427 \fi
10428 \ifdim\paperheight>0pt %
10429 \setlength\mediawidth\paperwidth
10430 \fi
10431 }{%
10432 \ifdim\stockheight>0pt %
10433 \setlength\mediaheight\stockheight
10434 \fi
10435 \ifdim\stockwidth>0pt %
10436 \setlength\mediawidth\stockwidth
10437 \fi
10438 }%
10439 }%
10440 \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10441 \fi
10442 \Hy@DisableOption{setpagesize}%
10443 \fi
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   \ltx@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 \ltx@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\csname @#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{VTeXversion}{..}{..}` *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. V<sub>T</sub><sub>E</sub>X 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>Author</b>	String
<b>b</b>	<b>CropBox</b>	String
<b>c</b>	<b>Creator</b>	String
<b>k</b>	<b>Keywords</b>	String
<b>l</b>	<b>PageLayout</b>	PS
<b>p</b>	<b>PageMode</b>	PS
<b>r</b>	<b>Producer</b>	String
<b>s</b>	<b>Subject</b>	String
<b>t</b>	<b>Title</b>	String
<b>u</b>	<b>URI</b>	PS
<b>v</b>	<b>ViewPreferences</b>	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{!pdfinfo p=</\@pdfpagemode>}%
10841   \ifx\@baseurl\@empty
10842   \else
10843     \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
10844   \fi
10845   \special{!pdfinfo v=<<<%
10846     \ifHy@pdftoolbar\else /HideToolbar true\fi
10847     \ifHy@pdfmenubar\else /HideMenubar true\fi
10848     \ifHy@pdfwindowui\else /HideWindowUI true\fi

```

```

10849 \ifHy@pdffitwindow /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{!pdfinfo 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>

```

### 43.7 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>

```

### 43.8 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 \ltx@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\ltx@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 \ltx@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 \begingroup
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 \ltx@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 \Hy@Info@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\ltx@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\ltx@empty
11271             \else
11272               /_objdef\string{\pdf@objdef\string}%
11273             \fi
11274             \the\pdf@toks\space\pdf@type\space pdfmark%
11275             ]%
11276           \else
11277             \ltx@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\ltx@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\ltx@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\ltx@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@breaklinkssunhbox\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\ltx@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.

### 43.9 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\ltx@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  $\backslash\text{baselineskip}$  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 \AtBeginShipoutFirst{%
11728 \ifHy@setpagesize
11729 \begingroup
11730 \@ifundefined{stockwidth}{%
11731 \ifdim\paperwidth>\z@
11732 \ifdim\paperheight>\z@
11733 \special{papersize=\the\paperwidth,\the\paperheight}%
11734 \fi
11735 \fi
11736 }{%
11737 \ifdim\stockwidth>\z@
11738 \ifdim\stockheight>\z@
11739 \special{papersize=\the\stockwidth,\the\stockheight}%
11740 \fi
11741 \fi
11742 }%
11743 \endgroup
11744 \fi
11745 \Hy@DisableOption{setpagesize}%
11746 }
11747 \def\setpdfinkmargin#1{%
11748 \begingroup
11749 \setlength{\dimen@}{#1}%

```

```

11750 \literalps@out{%
11751 /HyperBorder{\strip@pt\dimen@ \space PDFToDvips}def%
11752 }%
11753 \endgroup
11754 }
11755 </dvips>

```

### 43.10 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.

```

11756 <*vtexpdfmark>
11757 \providecommand*\XR@ext}{pdf}
11758 \let\Hy@raisedlink\ltx@empty
11759 \def\literalps@out#1{\special{pS:#1}}%
11760 \def\headerps@out#1{\immediate\special{pS:#1}}%
11761 \input{pdfmark.def}%
11762 \ifx\@pdfproducer\relax
11763 \ifnum\OpMode=\@ne
11764 \def\@pdfproducer{VTeX}%
11765 \else
11766 \def\@pdfproducer{VTeX + Distiller}%
11767 \fi
11768 \fi
11769 \providecommand*\@pdfborder{0 0 1}
11770 \providecommand*\@pdfborderstyle{}
11771 \providecommand*\@pdfview{XYZ}
11772 \providecommand*\@pdfviewparams{ H.V}

11773 \g@addto@macro\Hy@FirstPageHook{%
11774 \headerps@out{%
11775 /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.

```

11776 /HyperBorder {1} def%
11777 /H.V {pdf@hoff pdf@voff null} def%
11778 /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

11779 /H.S {%
11780 currentpoint %
11781 HyperBorder sub%
11782 /pdf@lly exch def %
11783 dup 72 add /pdf@hoff exch def %
11784 HyperBorder sub%
11785 /pdf@llx exch def%
11786 } def%

```

The  $x$  and  $y$  coordinates of the current point, minus the `\baselineskip`:  $\text{pdf@ury} = Y_c + \text{HyperBasePt} + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11787   /H.L {%
11788     2 sub%
11789   /HyperBasePt exch def %
11790   currentpoint %
11791   HyperBasePt add HyperBorder add%
11792   /pdf@ury exch def %
11793   HyperBorder add%
11794   /pdf@urx exch def%
11795 } def%
11796 /H.A {%
11797   H.L %
11798   currentpoint exch pop %
11799   vsize 72 sub exch %
11800   HyperBasePt add add%
11801   /pdf@voff exch def%
11802 } def%

pdf@ury = Yc + HyperBorder, pdf@urx = Xc + HyperBorder

11803   /H.R {%
11804     currentpoint %
11805     HyperBorder add%
11806     /pdf@ury exch def %
11807     HyperBorder add%
11808     /pdf@urx exch def %
11809     currentpoint exch pop vsize 72 sub add%
11810     /pdf@voff exch def%
11811   } def%
11812 }%
11813 }

11814 \def\setpdfinkmargin#1{%
11815   \begingroup
11816     \setlength{\dimen@}{#1}%
11817     \literalps@out{%
11818       /HyperBorder{\strip@pt\dimen@}def%
11819     }%
11820   \endgroup
11821 }

11822 </vtxpdfmark>

```

## 43.11 Textures

```

11823 <*textures>
11824 \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.

```

11825 \begingroup
11826   \obeylines %
11827   \gdef\Hy@ps@CR{\noexpand
11828     }%
11829 \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`.

```

11830 \def\literalps@out#1{%
11831   \special{postscript 0 0 transform}%
11832   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11833 }%
11834 %

```

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.

```

11835 \def\headerps@out#1{%
11836   \special{%
11837     prepostscript TeXdict begin\Hy@ps@CR
11838       #1\Hy@ps@CR
11839     end%
11840   }%
11841 }%
11842 %

```

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.

```

11843 \g@addto@macro\Hy@FirstPageHook{%
11844   \headerps@out{%
11845     /betterpdfmark {%
11846       systemdict begin %
11847         dup /BP eq%
11848         {cleartomark gsave nulldevice []}%
11849         {dup /EP eq%
11850           {cleartomark cleartomark grestore}%
11851           {cleartomark}%
11852         }ifelse%
11853       }ifelse %
11854     end%
11855   }def\Hy@ps@CR
11856   ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11857 }% end of \headerps@out

```

```

11858 }% end of \AtBeginShipoutFirst
11859 %
11860 \input{pdfmark.def}%
11861 %
11862 \ifx\@pdfproducer\relax
11863 \def\@pdfproducer{Textures + Distiller}%
11864 \fi
11865 \providecommand*\@pdfborder{0 0 1}
11866 \providecommand*\@pdfborderstyle{}
11867 \providecommand*\@pdfview{XYZ}
11868 \providecommand*\@pdfviewparams{ H.V}
11869 %

```

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  $\text{\TeX}$ .

```

11870 \Hy@AtBeginDocument{%
11871 \headerps@out{%

```

`Textures` lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```

11872 /vsize {\Hy@pageheight} def%
11873 /DvipsToPDF {} def%
11874 /PDFToDvips {} def%
11875 /BPToDvips {} def%
11876 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11877 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11878 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11879 /H.S {%
11880 currentpoint %
11881 HyperBorder add /pdf@lly exch def %
11882 dup DvipsToPDF 72 add /pdf@hoff exch def %
11883 HyperBorder sub /pdf@llx exch def%
11884 } def\Hy@ps@CR
11885 /H.L {%
11886 2 sub %
11887 PDFToDvips /HyperBase exch def %
11888 currentpoint %
11889 HyperBase sub /pdf@ury exch def%
11890 /pdf@urx exch def%
11891 } def\Hy@ps@CR
11892 /H.A {%
11893 H.L %
11894 currentpoint exch pop %
11895 vsize 72 sub exch DvipsToPDF %
11896 HyperBase sub % baseline skip
11897 sub /pdf@voff exch def%
11898 } def\Hy@ps@CR
11899 /H.R {%
11900 currentpoint %
11901 HyperBorder sub /pdf@ury exch def %
11902 HyperBorder add /pdf@urx exch def %

```

```

11903     currentpoint exch pop vsize 72 sub %
11904     exch DvipsToPDF sub /pdf@voff exch def%
11905   } def\Hy@ps@CR
11906 }%
11907 }

11908 \def\setpdfinkmargin#1{%
11909   \begingroup
11910     \setlength{\dimen@}{#1}%
11911     \literalps@out{%
11912       /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11913     }%
11914   \endgroup
11915 }

11916 \Hy@AtBeginDocument{%
11917   \ifHy@colorlinks
11918     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11919   \fi
11920 }

```

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.

```

11921 \expandafter\let\expandafter\keepPDF@SetupDoc
11922   \csname PDF@SetupDoc\endcsname
11923 \def\PDF@SetupDoc{%
11924   \ifx\@baseurl\@empty
11925   \else
11926     \special{html:<base href="\@baseurl">}%
11927   \fi
11928   \keepPDF@SetupDoc
11929 }

11930 \Hy@WrapperDef\hyper@anchor#1{%
11931   \Hy@SaveLastskip
11932   \Hy@VerboseAnchor{#1}%
11933   \begingroup
11934     \let\protect=\string
11935     \special{html:<a name=%
11936       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11937   \endgroup
11938   \Hy@activeanchortrue
11939   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11940   \special{html:</a>}%
11941   \Hy@activeanchorfalse
11942   \Hy@RestoreLastskip
11943 }

11944 \Hy@WrapperDef\hyper@anchorstart#1{%
11945   \Hy@SaveLastskip
11946   \Hy@VerboseAnchor{#1}%
11947   \begingroup
11948     \hyper@chars
11949     \special{html:<a name=%
11950       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11951   \endgroup

```

```

11952 \Hy@activeanchortrue
11953 }
11954 \def\hyper@anchorend{%
11955 \special{html:</a>}%
11956 \Hy@activeanchorfalse
11957 \Hy@RestoreLastskip
11958 }
11959 \def\@urltype{url}
11960 \def\hyper@linkstart#1#2{%
11961 \Hy@VerboseLinkStart{#1}{#2}%
11962 \expandafter\Hy@colorlink\csname @#1color\endcsname
11963 \def\Hy@tempa{#1}%
11964 \ifx\Hy@tempa\@urltype
11965 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11966 \else
11967 \begingroup
11968 \hyper@chars
11969 \special{%
11970 html:<a href=
11971 \hyper@quote\#\Hy@DestNameFilter{#2}\hyper@quote>%
11972 }%
11973 \endgroup
11974 \fi
11975 }
11976 \def\hyper@linkend{%
11977 \special{html:</a>}%
11978 \Hy@endcolorlink
11979 }
11980 \def\hyper@linkfile#1#2#3{%
11981 \hyper@linkurl{#1}{%
11982 \Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi
11983 }%
11984 }
11985 \def\hyper@linkurl#1#2{%
11986 \leavevmode
11987 \ifHy@raiselinks
11988 \Hy@SaveSpaceFactor
11989 \Hy@SaveSavedSpaceFactor
11990 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11991 \Hy@RestoreSavedSpaceFactor
11992 \@linkdim\dp\@tempboxa
11993 \lower\@linkdim\hbox{%
11994 \hyper@chars
11995 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11996 }%
11997 \Hy@colorlink\@urlcolor
11998 \Hy@RestoreSpaceFactor
11999 #1\Hy@xspace@end
12000 \Hy@SaveSpaceFactor
12001 \@linkdim\ht\@tempboxa
12002 \advance\@linkdim by -6.5\p@
12003 \raise\@linkdim\hbox{\special{html:</a>}}%
12004 \Hy@endcolorlink
12005 \Hy@RestoreSpaceFactor

```

```

12006 \else
12007 \begingroup
12008 \hyper@chars
12009 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
12010 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
12011 \special{html:</a>}%
12012 \Hy@endcolorlink
12013 \endgroup
12014 \fi
12015 }

```

Very poor implementation of `\hyper@link` without considering #1.

```

12016 \def\hyper@link#1#2#3{%
12017 \Hy@VerboseLinkStart{#1}{#2}%
12018 \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}%
12019 }
12020 \def\hyper@image#1#2{%
12021 \begingroup
12022 \hyper@chars
12023 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
12024 \endgroup
12025 }
12026 </textures>

```

### 43.12 dvipsone

```

12027 % \subsection{dvipsone driver}
12028 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
12029 % | \special| commands.
12030 <*dvipsone>
12031 \providecommand*{\XR@ext}{pdf}
12032 \let\Hy@raisedlink\ltx@empty
12033 \providecommand*\@pdfborder{0 0 1}
12034 \providecommand*\@pdfborderstyle{}
12035 \def\literalps@out#1{\special{ps:#1}}%
12036 \def\headerps@out#1{\special{headertext=#1}}%
12037 \input{pdfmark.def}%
12038 \HyInfo@AddonUnsupportedtrue
12039 \def\PDF@FinishDoc{%
12040 \Hy@UseMaketitleInfos
12041 \HyInfo@TrappedUnsupported
12042 \special{PDF: Keywords \@pdfkeywords}%
12043 \special{PDF: Title \@pdftitle}%
12044 \special{PDF: Creator \@pdfcreator}%
12045 \ifx\@pdfcreationdate\@empty
12046 \else
12047 \special{PDF: CreationDate \@pdfcreationdate}%
12048 \fi
12049 \ifx\@pdfmoddate\@empty
12050 \else
12051 \special{PDF: ModDate \@pdfmoddate}%
12052 \fi
12053 \special{PDF: Author \@pdfauthor}%
12054 \ifx\@pdfproducer\relax

```



```

12055 \else
12056 \special{PDF: Producer \@pdfproducer}%
12057 \fi
12058 \special{PDF: Subject \@pdfsubject}%
12059 \Hy@DisableOption{pdfauthor}%
12060 \Hy@DisableOption{pdftitle}%
12061 \Hy@DisableOption{pdfsubject}%
12062 \Hy@DisableOption{pdfcreator}%
12063 \Hy@DisableOption{addtopdfcreator}%
12064 \Hy@DisableOption{pdfcreationdate}%
12065 \Hy@DisableOption{pdfcreationdate}%
12066 \Hy@DisableOption{pdfmoddate}%
12067 \Hy@DisableOption{pdfproducer}%
12068 \Hy@DisableOption{pdfkeywords}%
12069 \Hy@DisableOption{pdftrapped}%
12070 \Hy@DisableOption{pdfinfo}%
12071 }
12072 \def\PDF@SetupDoc{%
12073 \def\Hy@temp{}%
12074 \ifx\@pdfstartpage\@empty
12075 \else
12076 \ifx\@pdfstartview\@empty
12077 \else
12078 \edef\Hy@temp{%
12079 ,Page=\@pdfstartpage
12080 ,View=\@pdfstartview
12081 }%
12082 \fi
12083 \fi
12084 \edef\Hy@temp{%
12085 \noexpand\pdfmark{%
12086 pdfmark=/DOCVIEW,%
12087 PageMode=/\@pdfpagemode
12088 \Hy@temp
12089 }%
12090 }%
12091 \Hy@temp
12092 \ifx\@pdfpagescrop\@empty
12093 \else
12094 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
12095 \fi
12096 \edef\Hy@temp{%
12097 \ifHy@pdftoolbar\else /HideToolbar true\fi
12098 \ifHy@pdfmenubar\else /HideMenubar true\fi
12099 \ifHy@pdfwindowui\else /HideWindowUI true\fi
12100 \ifHy@pdfwindow /FitWindow true\fi
12101 \ifHy@pdfcenterwindow /CenterWindow true\fi
12102 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
12103 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
12104 \Hy@UseNameKey{Direction}\@pdfdirection
12105 \Hy@UseNameKey{ViewArea}\@pdfviewarea
12106 \Hy@UseNameKey{ViewClip}\@pdfviewclip
12107 \Hy@UseNameKey{PrintArea}\@pdfprintarea
12108 \Hy@UseNameKey{PrintClip}\@pdfprintclip

```

```

12109 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
12110 \Hy@UseNameKey{Duplex}\@pdfduplex
12111 \ifx\@pdfpicktraybypdfsize\@empty
12112 \else
12113 /PickTrayByPDFSize \@pdfpicktraybypdfsize
12114 \fi
12115 \ifx\@pdfprintpagerange\@empty
12116 \else
12117 /PrintPageRange[\@pdfprintpagerange]%
12118 \fi
12119 \ifx\@pdfnumcopies\@empty
12120 \else
12121 /NumCopies \@pdfnumcopies
12122 \fi
12123 }%
12124 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
12125 \pdfmark{%
12126 pdfmark=/PUT,%
12127 Raw={%
12128 \string{Catalog\string}<<%
12129 \ifx\Hy@temp\@empty
12130 \else
12131 /ViewerPreferences<<\Hy@temp>>%
12132 \fi
12133 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
12134 \ifx\@pdflang\relax
12135 \else
12136 /Lang(\@pdflang)%
12137 \fi
12138 \ifx\@baseurl\@empty
12139 \else
12140 /URI<</Base(\Hy@pstringB)>>%
12141 \fi
12142 >>%
12143 }%
12144 }%
12145 }
12146 \providecommand*\@pdfview{XYZ}
12147 \providecommand*\@pdfviewparams{ %
12148 gsave revscl currentpoint grestore %
12149 72 add exch pop null exch null%
12150 }
12151 \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.
12152 \g@addto@macro\Hy@FirstPageHook{%
12153 \headerps@out{%

dvipsone lives in scaled points; does this mean 65536 or 65781?
12154 /DvipsToPDF { 65781 div } def%
12155 /PDFToDvips { 65781 mul } def%

```

```

12156 /BPToDvips{65781 mul}def%
12157 /HyperBorder { 1 PDFToDvips } def%
12158 /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.

12159 /BorderArrayPatch{%
12160   [exch{%
12161     dup dup type/integertype eq exch type/realtype eq or%
12162     {BPToDvips}if%
12163   }forall]%
12164 }def%

12165 /H.S {%
12166   currentpoint %
12167   HyperBorder add /pdf@lly exch def %
12168   dup DvipsToPDF 72 add /pdf@hoff exch def %
12169   HyperBorder sub /pdf@llx exch def%
12170 } def%

12171 /H.L {%
12172   2 sub %
12173   PDFToDvips /HyperBase exch def %
12174   currentpoint %
12175   HyperBase sub /pdf@ury exch def%
12176   /pdf@urx exch def%
12177 } def%

12178 /H.A {%
12179   H.L %
12180   currentpoint exch pop %
12181   HyperBase sub % baseline skip
12182   DvipsToPDF /pdf@voff exch def%
12183 } def%

12184 /H.R {%
12185   currentpoint %
12186   HyperBorder sub /pdf@ury exch def %
12187   HyperBorder add /pdf@urx exch def %
12188   currentpoint exch pop DvipsToPDF /pdf@voff exch def%
12189 } def%
12190 }%
12191 }

12192 \def\setpdfinkmargin#1{%
12193   \begingroup
12194     \setlength{\dimen@}{#1}%
12195     \literalps@out{%
12196       /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
12197     }%
12198   \endgroup
12199 }

12200 </dvipsone>

```

### 43.13 TeX4ht

```

12201 (*tex4ht)
12202 \providecommand*\XR@ext{\html}

```

```

12203 \let\Hy@raisedlink\ltx@empty
12204 \@ifpackageloaded{tex4ht}{%
12205   \Hy@InfoNoLine{tex4ht is already loaded}%
12206 }{%
12207   \RequirePackage[hTeX4ht]{tex4ht}%
12208 }
12209 \hyperlinkfileprefix{}
12210 \let\PDF@FinishDoc\ltx@empty
12211 \def\PDF@SetupDoc{%
12212   \ifx\@baseurl\@empty
12213   \else
12214     \special{t4ht=<base href="\@baseurl">}%
12215   \fi
12216 }
12217 \Hy@WrapperDef\hyper@anchor#1{%
12218   \Hy@SaveLastskip
12219   \Hy@VerboseAnchor{#1}%
12220   \begingroup
12221     \let\protect=\string
12222     \special{t4ht=<a name=%
12223       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12224   \endgroup
12225   \Hy@activeanchortrue
12226   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
12227   \special{t4ht=</a>}%
12228   \Hy@activeanchorfalse
12229   \Hy@RestoreLastskip
12230 }
12231 \Hy@WrapperDef\hyper@anchorstart#1{%
12232   \Hy@SaveLastskip
12233   \Hy@VerboseAnchor{#1}%
12234   \begingroup
12235     \hyper@chars\special{t4ht=<a name=%
12236       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12237   \endgroup
12238   \Hy@activeanchortrue
12239 }
12240 \def\hyper@anchorend{%
12241   \special{t4ht=</a>}%
12242   \Hy@activeanchorfalse
12243   \Hy@RestoreLastskip
12244 }
12245 \def\@urltype{url}
12246 \def\hyper@linkstart#1#2{%
12247   \Hy@VerboseLinkStart{#1}{#2}%
12248   \expandafter\Hy@colorlink\csname @#1color\endcsname
12249   \def\Hy@tempa{#1}%
12250   \ifx\Hy@tempa\@urltype
12251     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12252   \else
12253     \begingroup
12254       \hyper@chars
12255       \special{t4ht=<a href=%
12256         \hyper@quote\#HyperDestNameFilter{#2}\hyper@quote>}%

```

```

12257 \endgroup
12258 \fi
12259 }
12260 \def\hyper@linkend{%
12261 \special{t4ht=</a>}%
12262 \Hy@endcolorlink
12263 }
12264 \def\hyper@linkfile#1#2#3{%
12265 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
12266 }
12267 \def\hyper@linkurl#1#2{%
12268 \leavevmode
12269 \ifHy@raiselinks
12270 \Hy@SaveSpaceFactor
12271 \Hy@SaveSavedSpaceFactor
12272 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12273 \Hy@RestoreSavedSpaceFactor
12274 \@linkdim\dp\@tempboxa
12275 \lower\@linkdim\hbox{%
12276 \begingroup
12277 \hyper@chars
12278 \special{%
12279 t4ht=<a href=\hyper@quote#2\hyper@quote>%
12280 }%
12281 \endgroup
12282 }%
12283 \Hy@colorlink\@urlcolor
12284 \Hy@RestoreSpaceFactor
12285 #1\Hy@xspace@end
12286 \Hy@SaveSpaceFactor
12287 \Hy@endcolorlink
12288 \@linkdim\ht\@tempboxa
12289 \advance\@linkdim by -6.5\p@
12290 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
12291 \Hy@RestoreSpaceFactor
12292 \else
12293 \begingroup
12294 \hyper@chars
12295 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12296 \Hy@colorlink\@urlcolor
12297 #1\Hy@xspace@end
12298 \Hy@endcolorlink
12299 \special{t4ht=</a>}%
12300 \endgroup
12301 \fi
12302 }

Poor implementation of \hyper@link without considering #1.
12303 \def\hyper@link#1#2#3{%
12304 \Hy@VerboseLinkStart{#1}{#2}%
12305 \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}%
12306 }
12307 \def\hyper@image#1#2{%
12308 \begingroup
12309 \hyper@chars

```

```

12310 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
12311 \endgroup
12312 }
12313 \let\autoref\ref
12314 \ifx \rEfLiNK \UnDef
12315 \def\rEfLiNK #1#2{#2}%
12316 \fi
12317 \let\backref\ltx@gobble
Fix for tex4ht.
12318 \AtBeginDocument{%
12319 \expandafter
12320 \let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
12321 \expandafter\def\csname Make:Label\endcsname#1#2{%
12322 \ifhmode
12323 \Hy@SaveSpaceFactor
12324 \else
12325 \global\Hy@SavedSpaceFactor=1000 %
12326 \fi
12327 \Hy@OrgMakeLabel{#1}{%
12328 \Hy@RestoreSpaceFactor
12329 #2\Hy@xspace@end%
12330 \Hy@SaveSpaceFactor
12331 }%
12332 \Hy@RestoreSpaceFactor
12333 }%
12334 }
12335 </tex4ht>
12336 <*tex4htcfg>
12337 \IfFileExists{\jobname.cfg}{\endinput}{\}
12338 \Preamble{html}
12339 \begin{document}%
12340 \EndPreamble
12341 \def\TeX{TeX}
12342 \def\OMEGA{Omega}
12343 \def\LaTeX{LaTeX}
12344 \def\LaTeXe{LaTeX2e}
12345 \def\eTeX{e-TeX}
12346 \def\MF{Metafont}
12347 \def\MP{MetaPost}
12348 </tex4htcfg>

```

## 44 Driver-specific form support

### 44.1 pdfmarks

change 2020-06-20: added /Euro to encoding

```

12349 <*pdfmark>
12350 \long\def\@Form[#1]{%
12351 \g@addto@macro\Hy@FirstPageHook{%
12352 \headerps@out{%
12353 [%
12354 /_objdef{pdfDocEncoding}%
12355 /type/dict%
12356 /OBJ pdfmark%

```

12357 [%  
12358 {pdfDocEncoding}%  
12359 <<%  
12360 /Type/Encoding%  
12361 /Differences[%  
12362 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%  
12363 /tilde %  
12364 39/quotesingle %  
12365 96/grave %  
12366 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%  
12367 /fraction/guilsinglleft/guilsinglright/minus/perthousand%  
12368 /quotedblbase/quotedblleft/quotedblright/quoteleft%  
12369 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%  
12370 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %  
12371 160/Euro %  
12372 164/currency %  
12373 166/brokenbar %  
12374 168/dieresis/copyright/ordfeminine %  
12375 172/logicalnot/.notdef/registered/macron/degree/plusminus%  
12376 /twosuperior/threesuperior/acute/mu %  
12377 183/periodcentered/cedilla/onesuperior/ordmasculine %  
12378 188/onequarter/onehalf/threequarters %  
12379 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%  
12380 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%  
12381 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%  
12382 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%  
12383 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%  
12384 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%  
12385 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%  
12386 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%  
12387 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%  
12388 /ucircumflex/udieresis/yacute/thorn/ydieresis%  
12389 ]%  
12390 >>%  
12391 /PUT pdfmark%  
12392 [%  
12393 /\_objdef{ZaDb}%  
12394 /type/dict%  
12395 /OBJ pdfmark%  
12396 [%  
12397 {ZaDb}%  
12398 <<%  
12399 /Type/Font%  
12400 /Subtype/Type1%  
12401 /Name/ZaDb%  
12402 /BaseFont/ZapfDingbats%  
12403 >>%  
12404 /PUT pdfmark%  
12405 [%  
12406 /\_objdef{Helv}%  
12407 /type/dict%  
12408 /OBJ pdfmark%  
12409 [%  
12410 {Helv}%

```

12411 <<%
12412 /Type/Font%
12413 /Subtype/Type1%
12414 /Name/Helv%
12415 /BaseFont/Helvetica%
12416 /Encoding{pdfDocEncoding}%
12417 >>%
12418 /PUT pdfmark%
12419 [%
12420 /__objdef{aform}%
12421 /type/dict%
12422 /OBJ pdfmark%
12423 [%
12424 /__objdef{afields}%
12425 /type/array%
12426 /OBJ pdfmark%
12427 [%
12428 /__objdef{corder}%
12429 /type/array%
12430 /OBJ pdfmark%
12431 {%
12432 [%
12433 /BBox[0 0 100 100]%
12434 /__objdef{Check}%
12435 /BP pdfmark %
12436 1 0 0 setrgbcolor%
12437 /ZapfDingbats 80 selectfont %
12438 20 20 moveto%
12439 (4)show%
12440 [/EP pdfmark%
12441 [%
12442 /BBox[0 0 100 100]%
12443 /__objdef{Cross}%
12444 /BP pdfmark %
12445 1 0 0 setrgbcolor%
12446 /ZapfDingbats 80 selectfont %
12447 20 20 moveto%
12448 (8)show%
12449 [/EP pdfmark%
12450 [%
12451 /BBox[0 0 250 100]%
12452 /__objdef{Submit}%
12453 /BP pdfmark %
12454 0.6 setgray %
12455 0 0 250 100 rectfill %
12456 1 setgray %
12457 2 2 moveto %
12458 2 98 lineto %
12459 248 98 lineto %
12460 246 96 lineto %
12461 4 96 lineto %
12462 4 4 lineto %
12463 fill %
12464 0.34 setgray %

```



```

12465 248 98 moveto %
12466 248 2 lineto %
12467 2 2 lineto %
12468 4 4 lineto %
12469 246 4 lineto %
12470 246 96 lineto %
12471 fill%
12472 /Helvetica 76 selectfont %
12473 0 setgray %
12474 8 22.5 moveto%
12475 (Submit)show%
12476 [/EP pdfmark%
12477 [%
12478 /BBox[0 0 250 100]%
12479 /__objdef{SubmitP}%
12480 /BP pdfmark %
12481 0.6 setgray %
12482 0 0 250 100 rectfill %
12483 0.34 setgray %
12484 2 2 moveto %
12485 2 98 lineto %
12486 248 98 lineto %
12487 246 96 lineto %
12488 4 96 lineto %
12489 4 4 lineto %
12490 fill %
12491 1 setgray %
12492 248 98 moveto %
12493 248 2 lineto %
12494 2 2 lineto %
12495 4 4 lineto %
12496 246 4 lineto %
12497 246 96 lineto %
12498 fill%
12499 /Helvetica 76 selectfont %
12500 0 setgray %
12501 10 20.5 moveto%
12502 (Submit)show%
12503 [/EP pdfmark%
12504 } ?pdfmark%
12505 [%
12506 {aform}%
12507 <<%
12508 /Fields{afields}%
12509 /DR<<%
12510 /Font<<%
12511 /ZaDb{ZaDb}%
12512 /Helv{Helv}%
12513 >>%
12514 >>%
12515 /DA(/Helv 10 Tf 0 g)%
12516 /CO{corder}%
12517 \ifHy@pdfa
12518 \else

```

```

12519 \ifHyField@NeedAppearances
12520 /NeedAppearances true%
12521 \fi
12522 \fi
12523 >>%
12524 /PUT pdfmark%
12525 [%
12526 {Catalog}%
12527 <<%
12528 /AcroForm{aform}%
12529 >>%
12530 /PUT pdfmark%
12531 }}%
12532 \kvsetkeys{Form}{#1}%
12533 }
12534 \let\@endForm\ltx@empty
12535 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12536 \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
12537 }

12538 \newcount\HyField@AnnotCount
12539 \HyField@AnnotCount=\z@
12540 \def\HyField@AdvanceAnnotCount{%
12541 \global\advance\HyField@AnnotCount\@ne
12542 }
12543 \def\HyField@TheAnnotCount{%
12544 \the\HyField@AnnotCount
12545 }

12546 \edef\Fld@pageobjref{/P\string{ThisPage\string}}
12547 \def\HyField@AddToFields#1{%
12548 \pdfmark{%
12549 pdfmark=/APPEND,%
12550 Raw={%
12551 \string{afields\string}%
12552 \string{#1\HyField@TheAnnotCount\string}%
12553 }%
12554 }%
12555 \ifx\Fld@calculate@code\ltx@empty
12556 \else
12557 \pdfmark{%
12558 pdfmark=/APPEND,%
12559 Raw={%
12560 \string{corder\string}%
12561 \string{#1\HyField@TheAnnotCount\string}%
12562 }%
12563 }%
12564 \fi
12565 }

12566 \def\@TextField[#1]#2{% parameters, label
12567 \def\Fld@name{#2}%
12568 \let\Fld@default\ltx@empty
12569 \let\Fld@value\@empty
12570 \def\Fld@width{\DefaultWidthofText}%
12571 \def\Fld@height{%

```

```

12572 \ifFld@multiline
12573 \DefaultHeightofTextMultiline
12574 \else
12575 \DefaultHeightofText
12576 \fi
12577 }%
12578 \begingroup
12579 \expandafter\HyField@SetKeys\expandafter{%
12580 \DefaultOptionsofText,#1%
12581 }%
12582 \HyField@FlagsText
12583 \ifFld@hidden\def\Fld@width{1sp}\fi
12584 \ifx\Fld@value\empty\def\Fld@value{\Fld@default}\fi
12585 \HyField@AdvanceAnnotCount
12586 \LayoutTextField{#2}{%
12587 \leavevmode
12588 \Hy@escapeform\PDFForm@Text
12589 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
12590 pdfmark=/ANN,%
12591 objdef=text\HyField@TheAnnotCount,%
12592 Raw={\PDFForm@Text}%
12593 }%
12594 }%
12595 \HyField@AddToFields{text}%
12596 \endgroup
12597 }
12598 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12599 \def\Fld@name{#2}%
12600 \let\Fld@default\relax
12601 \let\Fld@value\relax
12602 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12603 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12604 \begingroup
12605 \Fld@menulength=0 %
12606 \@tempdima\z@
12607 \@for\@curropt:=#3\do{%
12608 \expandafter\Fld@checkequals\@curropt==\%
12609 \Hy@StepCount\Fld@menulength
12610 \settowidth{\@tempdimb}{\@currDisplay}%
12611 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12612 }%
12613 \advance\@tempdima by 15\p@
12614 \begingroup
12615 \HyField@SetKeys{#1}%
12616 \edef\x{\endgroup
12617 \noexpand\expandafter
12618 \noexpand\HyField@SetKeys
12619 \noexpand\expandafter{%
12620 \expandafter\noexpand\curname DefaultOptionsof%
12621 \ifFld@radio
12622 Radio%
12623 \else
12624 \ifFld@combo
12625 \ifFld@popdown

```

```

12626         PopdownBox%
12627         \else
12628         ComboBox%
12629         \fi
12630     \else
12631         ListBox%
12632         \fi
12633     \fi
12634     \endcsname
12635 }%
12636 }\x
12637 \HyField@SetKeys{#1}%
12638 \ifFld@hidden\def\Fld@width{1sp}\fi
12639 \ifx\Fld@value\relax
12640     \let\Fld@value\Fld@default
12641 \fi
12642 \LayoutChoiceField{#2}{%
12643     \ifFld@radio
12644         \HyField@FlagsRadioButton
12645         \@@Radio{#3}%
12646     \else
12647         \begingroup
12648         \HyField@FlagsChoice
12649         \ifdim\Fld@width<\@tempdima
12650             \ifdim\@tempdima<1cm\@tempdima1cm\fi
12651             \edef\Fld@width{\the\@tempdima}%
12652         \fi
12653         \ifFld@combo
12654         \else
12655             \@tempdima=\the\Fld@menulength\Fld@charsize
12656             \advance\@tempdima by \Fld@borderwidth bp %
12657             \advance\@tempdima by \Fld@borderwidth bp %
12658             \edef\Fld@height{\the\@tempdima}%
12659         \fi
12660         \@@ListBox{#3}%
12661         \endgroup
12662     \fi
12663 }%
12664 \endgroup
12665 }
12666 \def\@@Radio#1{%
12667     \Fld@listcount=0 %
12668     \EdefEscapeName\Fld@default{\Fld@default}%
12669     \@for\@curropt:=#1\do{%
12670         \expandafter\Fld@checkequals\@curropt==\\%
12671         \EdefEscapeName\@currValue{\@currValue}%
12672         \Hy@StepCount\Fld@listcount
12673         \@currDisplay\space
12674         \Hy@escapeform\PDFForm@Radio
12675         \ifnum\Fld@listcount=1 %
12676             \HyField@AdvanceAnnotCount
12677         \fi
12678         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12679             pdfmark=/ANN,%

```

```

12680 objdef=\ifnum\Fld@listcount=1 radio\HyField@TheAnnotCount\fi,%
12681 Raw={%
12682   \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12683 }%
12684 } % deliberate space between radio buttons
12685 \ifnum\Fld@listcount=1 %
12686   \HyField@AddToFields{radio}%
12687 \fi
12688 }%
12689 }
12690 \newcount\Fld@listcount
12691 \def\@@Listbox#1{%
12692   \HyField@PDFChoices{#1}%
12693   \Hy@escapeform\PDFForm@List
12694   \HyField@AdvanceAnnotCount
12695   \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
12696     pdfmark=/ANN,%
12697     objdef=list\HyField@TheAnnotCount,%
12698     Raw={\PDFForm@List}%
12699   }%
12700   \HyField@AddToFields{list}%
12701 }
12702 \def\@PushButton[#1]#2{% parameters, label
12703   \def\Fld@name{#2}%
12704   \begingroup
12705     \expandafter\HyField@SetKeys\expandafter{%
12706       \DefaultOptionsofPushButton,#1%
12707     }%
12708     \ifHy@pdfa
12709       \Hy@Error{%
12710         PDF/A: Push button with JavaScript is prohibited%
12711       }\@ehc
12712       \LayoutPushButtonField{%
12713         \leavevmode
12714         \MakeButtonField{#2}%
12715       }%
12716     \else
12717       \HyField@FlagsPushButton
12718       \ifFld@hidden\def\Fld@width{1sp}\fi
12719       \HyField@AdvanceAnnotCount
12720       \LayoutPushButtonField{%
12721         \leavevmode
12722         \Hy@escapeform\PDFForm@Push
12723         \pdfmark[\MakeButtonField{#2}]{%
12724           pdfmark=/ANN,%
12725           objdef=push\HyField@TheAnnotCount,%
12726           Raw={\PDFForm@Push}%
12727         }%
12728       }%
12729       \HyField@AddToFields{push}%
12730     \fi
12731   \endgroup
12732 }
12733 \def\@Submit[#1]#2{%

```

```

12734 \def\Fld@width{\DefaultWidthofSubmit}%
12735 \def\Fld@height{\DefaultHeightofSubmit}%
12736 \begingroup
12737 \expandafter\HyField@SetKeys\expandafter{%
12738   \DefaultOptionsofSubmit,#1%
12739 }%
12740 \HyField@FlagsPushButton
12741 \HyField@FlagsSubmit
12742 \ifFld@hidden\def\Fld@width{1sp}\fi
12743 \Hy@escapeform\PDFForm@Submit
12744 \HyField@AdvanceAnnotCount
12745 \pdfmark[\MakeButtonField{#2}]{%
12746   pdfmark=/ANN,%
12747   objdef=submit\HyField@TheAnnotCount,%
12748   Raw={\PDFForm@Submit /AP<</N{Submit}/D{SubmitP}>>}}%
12749 }%
12750 \HyField@AddToFields{submit}%
12751 \endgroup
12752 }
12753 \def\@Reset[#1]#2{%
12754   \def\Fld@width{\DefaultWidthofReset}%
12755   \def\Fld@height{\DefaultHeightofReset}%
12756   \begingroup
12757   \expandafter\HyField@SetKeys\expandafter{%
12758     \DefaultOptionsofReset,#1%
12759   }%
12760   \leavevmode
12761   \ifHy@pdfa
12762     \Hy@Error{%
12763       PDF/A: Reset action is prohibited%
12764     }\@ehc
12765     \MakeButtonField{#2}%
12766   \else
12767     \HyField@FlagsPushButton
12768     \ifFld@hidden\def\Fld@width{1sp}\fi
12769     \Hy@escapeform\PDFForm@Reset
12770     \HyField@AdvanceAnnotCount
12771     \pdfmark[\MakeButtonField{#2}]{%
12772       pdfmark=/ANN,%
12773       objdef=reset\HyField@TheAnnotCount,%
12774       Raw={\PDFForm@Reset}%
12775     }%
12776     \HyField@AddToFields{reset}%
12777   \fi
12778   \endgroup
12779 }%
12780 \def\@CheckBox[#1]#2{% parameters, label
12781   \def\Fld@name{#2}%
12782   \def\Fld@default{0}%
12783   \begingroup
12784     \def\Fld@width{\DefaultWidthofCheckBox}%
12785     \def\Fld@height{\DefaultHeightofCheckBox}%
12786     \expandafter\HyField@SetKeys\expandafter{%
12787       \DefaultOptionsofCheckBox,#1%

```

```

12788 }%
12789 \HyField@FlagsCheckBox
12790 \ifFld@hidden\def\Fld@width{1sp}\fi
12791 \HyField@AdvanceAnnotCount
12792 \LayoutCheckField{#2}{%
12793   \leavevmode
12794   \Hy@escapeform\PDFForm@Check
12795   \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
12796     pdfmark=/ANN,%
12797     objdef=check\HyField@TheAnnotCount,%
12798     Raw={\PDFForm@Check}%
12799   }%
12800 }%
12801 \HyField@AddToFields{check}%
12802 \endgroup
12803 }
12804 \pdfmark>

```

## 44.2 HyperTeX

```

12805 (*hypertex)
12806 \def\@Form[#1]{%
12807   \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12808 }
12809 \let\@endForm\ltx@empty
12810 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12811   \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12812 }
12813 \def\@TextField[#1]#2{% parameters, label
12814   \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12815 }
12816 \def\@CheckBox[#1]#2{% parameters, label
12817   \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12818 }
12819 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12820   \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12821 }
12822 \def\@PushButton[#1]#2{% parameters, label
12823   \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12824 }
12825 \def\@Reset[#1]#2{%
12826   \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12827 }
12828 \def\@Submit[#1]#2{%
12829   \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12830 }
12831 \endhypertex>

```

## 44.3 TeX4ht

```

12832 (*tex4ht)
12833 \def\@Form[#1]{%
12834   \kvsetkeys{Form}{#1}%
12835   \HCode{<form action="\Form@action" method="\Form@method">}%
12836 }

```

```

12837 \def\@endForm{\HCode{</form>}}
12838 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12839   \Hy@Message{Sorry, TeX4ht does not support gauges}%
12840 }
12841 \def\@TextField[#1]#2{% parameters, label
12842   \let\Hy@reserved@a\@empty
12843   \def\Fld@name{#2}%
12844   \let\Fld@default\ltx@empty
12845   \bgroup
12846     \Field@toks={ }%
12847     \kvsetkeys{Field}{#1}%
12848     \HCode{<label for="\Fld@name">#2</label>}%
12849     \ifFld@password
12850       \@@PasswordField
12851     \else
12852       \@@TextField
12853     \fi
12854   \egroup
12855 }
12856 \def\@@PasswordField{%
12857   \HCode{%
12858     <input type="password" %
12859     id="\Fld@name" %
12860     name="\Fld@name" %
12861     \ifFld@hidden type="hidden" \fi
12862     value="\Fld@default" %
12863     \the\Field@toks
12864     >%
12865   }%
12866 }
12867 \def\@@TextField{%
12868   \ifFld@multiline
12869     \HCode{<textarea %
12870       \ifFld@readonly readonly \fi
12871       id="\Fld@name" %
12872       name="\Fld@name" %
12873       \ifFld@hidden type="hidden" \fi
12874       \the\Field@toks>%
12875   }%
12876   \Fld@default
12877   \HCode{</textarea>}%
12878 \else
12879   \HCode{<input type="text" %
12880     \ifFld@readonly readonly \fi
12881     id="\Fld@name" %
12882     name="\Fld@name" %
12883     \ifFld@hidden type="hidden" \fi
12884     value="\Fld@default" %
12885     \the\Field@toks>%
12886   }%
12887 \fi
12888 }
12889 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12890   \def\Fld@name{#2}%

```



```

12891 \let\Fld@default\ltx@empty
12892 \let\Hy@reserved@a\relax
12893 \begingroup
12894   \expandafter\Fld@findlength#3\\%
12895   \Field@toks={ }%
12896   \kvsetkeys{Field}{#1}%
12897   #2%
12898   \ifFld@radio
12899     \expandafter\@@Radio#3\\%
12900   \else
12901     \expandafter\@@Menu#3\\%
12902   \fi
12903 \endgroup
12904 }
12905 \def\Fld@findlength#1\\{%
12906   \Fld@menulength=0 %
12907   \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
12908 }
12909 \def\@@Menu#1\\{%
12910   \HCode{<select size="\the\Fld@menulength" %
12911     name="\Fld@name" %
12912     \the\Field@toks>%
12913   }%
12914   \@for\@curropt:=#1\do{%
12915     \expandafter\Fld@checkequals\@curropt==\\%
12916     \HCode{<option %
12917       \ifx\@curropt\Fld@default selected \fi
12918       value="\@currValue">\@currDisplay</option>%
12919     }%
12920   }%
12921   \HCode{</select>}%
12922 }
12923 \def\@@Radio#1\\{%
12924   \@for\@curropt:=#1\do{%
12925     \expandafter\Fld@checkequals\@curropt==\\%
12926     \HCode{<input type="radio" %
12927       \ifx\@curropt\Fld@default checked \fi
12928       name="\Fld@name" %
12929       value="\@currValue" %
12930       \the\Field@toks>%
12931     }%
12932     \@currDisplay
12933   }%
12934 }
12935 \def\@PushButton[#1]#2{% parameters, label
12936   \def\Fld@name{#2}%
12937   \bgroup
12938     \Field@toks={ }%
12939     \kvsetkeys{Field}{#1}%
12940     \HCode{<input type="button" %
12941       name="\Fld@name" %
12942       value="#2" %
12943       \the\Field@toks>%
12944     }%

```

```

12945 \HCode{</button>}%
12946 \egroup
12947 }
12948 \def\@Submit[#1]#2{%
12949 \HCode{<button type="submit">#2</button>}%
12950 }
12951 \def\@Reset[#1]#2{%
12952 \HCode{<button type="reset">#2</button>}%
12953 }
12954 \def\@CheckBox[#1]#2{% parameters, label
12955 \let\Hy@reserved@a\@empty
12956 \def\Fld@name{#2}%
12957 \def\Fld@default{0}%
12958 \bgroup
12959 \Field@toks={ }%
12960 \kvsetkeys{Field}{#1}%
12961 \HCode{<input type="checkbox" %
12962 \ifFld@checked checked \fi
12963 \ifFld@disabled disabled \fi
12964 \ifFld@readonly readonly \fi
12965 name="\Fld@name" %
12966 \ifFld@hidden type="hidden" \fi
12967 value="\Fld@default" %
12968 \the\Field@toks>%
12969 #2%
12970 }%
12971 \egroup
12972 }
12973 </tex4ht>

```

## 44.4 pdfTeX

```

12974 (*pdftex)
12975 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12976 \Hy@Message{Sorry, pdftex does not support FORM gauges}%
12977 }
12978 \def\MakeFieldObject#1#2{\sbox0{#1}%
12979 \immediate\pdfxform0 %
12980 \expandafter\edef\csname #2Object\endcsname{%
12981 \the\pdflastxform\space 0 R%
12982 }%
12983 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}}%
12984 }%
12985 \let\HyField@afields\ltx@empty
12986 \let\HyField@cofields\ltx@empty
12987 \@ifundefined{pdflastlink}
12988 {%
12989 \let\HyField@AddToFields\relax
12990 \PackageInfo{hyperref}{%
12991 You need pdfTeX 1.40.0 for setting the /Fields entry.%
12992 \MessageBreak
12993 Adobe Reader/Acrobat accepts an empty /Field array,%
12994 \MessageBreak
12995 but other PDF viewers might complain%
12996 }}%

```

```

12997 {%
12998 \let\HyField@AuxAddToFields\ltx@gobble
12999 \let\HyField@AuxAddToCoFields\ltx@gobbletwo
13000 \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.
13001 \def\HyField@ABD@AuxAddToCoFields#1#2{%
13002 \begingroup
13003 \Hy@safe@activetrue
13004 \let\ltx@secondoftwo\relax
13005 \ifx\HyField@cofields\ltx@empty
13006 \xdef\HyField@cofields{%
13007 \ltx@secondoftwo{#1}{ #2 0 R}%
13008 }%
13009 \else
13010 \let\ltx@secondoftwo\relax
13011 \def\HyField@AddCoField##1##2##3{%
13012 \ifx##1\ltx@empty
13013 \ltx@secondoftwo{#1}{ #2 0 R}%
13014 \expandafter\ltx@gobble
13015 \else
13016 \ifnum\pdfstrcmp{##2}{#1}>\ltx@zero
13017 \ltx@secondoftwo{#1}{ #2 0 R}%
13018 \ltx@secondoftwo{##2}{##3}%
13019 \expandafter\expandafter\expandafter\ltx@gobble
13020 \else
13021 \ltx@secondoftwo{##2}{##3}%
13022 \fi
13023 \fi
13024 \HyField@AddCoField
13025 }%
13026 \xdef\HyField@cofields{%
13027 \expandafter\HyField@AddCoField
13028 \HyField@cofields\ltx@empty\ltx@empty\ltx@empty
13029 }%
13030 \fi
13031 \endgroup
13032 }%
13033 \Hy@AtBeginDocument{%
13034 \if@filesw
13035 \immediate\write\@mainaux{%
13036 \string\providecommand\string\HyField@AuxAddToFields[1]{}%
13037 }%
13038 \immediate\write\@mainaux{%
13039 \string\providecommand\string\HyField@AuxAddToCoFields[2]{}%
13040 }%
13041 \fi
13042 \let\HyField@AfterAuxOpen\@firstofone
13043 \def\HyField@AuxAddToFields#1{%
13044 \xdef\HyField@afields{%
13045 \ifx\HyField@afields\@empty
13046 \else
13047 \HyField@afields
13048 \space

```

```

13049     \fi
13050     #1 0 R%
13051   }%
13052 }%
13053 \let\HyField@AuxAddToCoFields\HyField@ABD@AuxAddToCoFields
13054 }%
13055 \def\HyField@AddToFields{%
13056   \expandafter\HyField@@AddToFields\expandafter{%
13057     \the\pdfastlink
13058   }%
13059   \ifx\Fld@calculate@code\ltx@empty
13060   \else
13061     \begingroup
13062     \Hy@safe@activetrue
13063     \edef\Hy@temp{%
13064       \endgroup
13065       \if@filesw
13066         \write\@mainaux{%
13067           \string\HyField@AuxAddToCoFields{%
13068             \Fld@calculate@sortkey
13069           }{%
13070             \the\pdfastlink
13071           }%
13072         }%
13073       \fi
13074     }%
13075     \Hy@temp
13076   \fi
13077 }%
13078 \def\HyField@@AddToFields#1{%
13079   \HyField@AfterAuxOpen{%
13080     \if@filesw
13081       \write\@mainaux{%
13082         \string\HyField@AuxAddToFields{#1}%
13083       }%
13084     \fi
13085   }%
13086 }%
13087 }
13088 \def\@Form[#1]{%
13089   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13090   \kvsetkeys{Form}{#1}%
13091   \pdf@ifdraftmode{}{%
13092     \Hy@FormObjects
13093     \ifnum\pdfTeXversion>13 %
13094       \pdfrefobj\OBJ@pdfdocencoding
13095       \pdfrefobj\OBJ@ZaDb
13096       \pdfrefobj\OBJ@Helv
13097     \fi
13098     \AtVeryEndDocument{%
13099       \immediate\pdfobj{%
13100         <<%
13101         /Fields[\HyField@afields]%
13102         \ifx\HyField@cofields\ltx@empty

```

```

13103     \else
13104     /CO[\romannumeral-`\Q\HyField@cofields]%
13105     \fi
13106     /DR<<%
13107     /Font<<%
13108     /ZaDb \OBJ@ZaDb\space 0 R%
13109     /Helv \OBJ@Helv\space 0 R%
13110     >>%
13111     >>%
13112     /DA(/Helv 10 Tf 0 g)%
13113     \ifHy@pdfa
13114     \else
13115     \ifHyField@NeedAppearances
13116     /NeedAppearances true%
13117     \fi
13118     \fi
13119     >>%
13120     }%
13121     \edef\OBJ@acroform{\the\pdflastobj}%
13122     \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
13123     }%
13124     }%
13125     \MakeFieldObject{%
Same as \ding{123} of package pifont.
13126     \begingroup
13127     \fontfamily{pzd}%
13128     \fontencoding{U}%
13129     \fontseries{m}%
13130     \fontshape{n}%
13131     \selectfont
13132     \char123 %
13133     \endgroup
13134     }{Ding}%
13135     \MakeFieldObject{%
13136     \fbox{\textcolor{yellow}{\textsf{Submit}}}%
13137     }{Submit}%
13138     \MakeFieldObject{%
13139     \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
13140     }{SubmitP}%
13141     }
13142     \let\@endForm\ltx@empty
13143     \let\HyAnn@AbsPageLabel\ltx@empty
13144     \let\Fld@pageobjref\ltx@empty
13145     \ltx@ifUndefined{pdfpageref}{%
13146     }{%
13147     \ltx@ifpackageloaded{zref-abspage}{%
13148     \newcount\HyAnn@Count
13149     \HyAnn@Count=\ltx@zero
13150     \def\HyAnn@AbsPageLabel{%
13151     \global\advance\HyAnn@Count by\ltx@one
13152     \zref@labelbyprops{HyAnn@\the\HyAnn@Count}{abspage}%
13153     \zref@refused{HyAnn@\the\HyAnn@Count}%
13154     }%
13155     \def\Fld@pageobjref{%

```

```

13156 \zref@ifrefundefined{HyAnn@the\HyAnn@Count}{%
13157 }{%
13158 \zref@ifrefcontainsprop{HyAnn@the\HyAnn@Count}{abspage}{%
13159 /P \pdfpageref
13160 \zref@extractdefault{HyAnn@the\HyAnn@Count}{abspage}{1} %
13161 \space 0 R%
13162 }{%
13163 }%
13164 }%
13165 }%
13166 }{%
13167 }%
13168 }

13169 \def\@TextField[#1]#2{% parameters, label
13170 \def\Fld@name{#2}%
13171 \let\Fld@default\ltx@empty
13172 \let\Fld@value\@empty
13173 \def\Fld@width{\DefaultWidthofText}%
13174 \def\Fld@height{%
13175 \ifFld@multiline
13176 \DefaultHeightofTextMultiline
13177 \else
13178 \DefaultHeightofText
13179 \fi
13180 }%
13181 \begingroup
13182 \expandafter\HyField@SetKeys\expandafter{%
13183 \DefaultOptionsofText,#1%
13184 }%
13185 \PDFForm@Name
13186 \HyField@FlagsText
13187 \ifFld@hidden\def\Fld@width{1sp}\fi
13188 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13189 \LayoutTextField{#2}{%
13190 \leavevmode
13191 \HyAnn@AbsPageLabel
13192 \Hy@escapeform\PDFForm@Text
13193 \pdfstartlink user {\PDFForm@Text}\relax
13194 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
13195 \HyField@AddToFields
13196 }%
13197 \endgroup
13198 }

13199 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13200 \def\Fld@name{#2}%
13201 \let\Fld@default\relax
13202 \let\Fld@value\relax
13203 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13204 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13205 \begingroup
13206 \Fld@menulength=0 %
13207 \@tempdima\z@
13208 \@for\@curropt:=#3\do{%
13209 \expandafter\Fld@checkequals\@curropt==\%

```

```

13210 \Hy@StepCount\Fld@menulength
13211 \settowidth{\@tempdimb}{\@currDisplay}%
13212 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13213 }%
13214 \advance\@tempdima by 15\p@
13215 \begingroup
13216 \HyField@SetKeys{#1}%
13217 \edef\x{\endgroup
13218 \noexpand\expandafter
13219 \noexpand\HyField@SetKeys
13220 \noexpand\expandafter{%
13221 \expandafter\noexpand\cname DefaultOptionsof%
13222 \ifFld@radio
13223 Radio%
13224 \else
13225 \ifFld@combo
13226 \ifFld@popdown
13227 PopdownBox%
13228 \else
13229 ComboBox%
13230 \fi
13231 \else
13232 ListBox%
13233 \fi
13234 \fi
13235 \endcname
13236 }%
13237 }\x
13238 \HyField@SetKeys{#1}%
13239 \PDFForm@Name
13240 \ifFld@hidden\def\Fld@width{1sp}\fi
13241 \ifx\Fld@value\relax
13242 \let\Fld@value\Fld@default
13243 \fi
13244 \LayoutChoiceField{#2}{%
13245 \ifFld@radio
13246 \HyField@FlagsRadioButton
13247 \@@Radio{#3}%
13248 \else
13249 \begingroup
13250 \HyField@FlagsChoice
13251 \ifdim\Fld@width<\@tempdima
13252 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13253 \edef\Fld@width{\the\@tempdima}%
13254 \fi
13255 \ifFld@combo
13256 \else
13257 \@tempdima=\the\Fld@menulength\Fld@charsize
13258 \advance\@tempdima by \Fld@borderwidth bp %
13259 \advance\@tempdima by \Fld@borderwidth bp %
13260 \edef\Fld@height{\the\@tempdima}%
13261 \fi
13262 \@@ListBox{#3}%
13263 \endgroup

```

```

13264 \fi
13265 }%
13266 \endgroup
13267 }
13268 \def\@@Radio#1{%
13269 \Fld@listcount=0 %
13270 \EdefEscapeName\Fld@default{\Fld@default}%
13271 \@for\@curropt:=#1\do{%
13272 \expandafter\Fld@checkequals\@curropt==\\%
13273 \EdefEscapeName\@currValue{\@currValue}%
13274 \Hy@StepCount\Fld@listcount
13275 \@currDisplay\space
13276 \leavevmode
13277 \HyAnn@AbsPageLabel
13278 \Hy@escapeform\PDFForm@Radio
13279 \pdfstartlink user {%
13280 \PDFForm@Radio
13281 /AP<<%
13282 /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.

```

13283 /\@currValue\space \DingObject
13284 >>%
13285 >>%
13286 }%
13287 \relax
13288 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
13289 \ifnum\Fld@listcount=1 %
13290 \HyField@AddToFields
13291 \fi
13292 \space % deliberate space between radio buttons
13293 }%
13294 }
13295 \newcount\Fld@listcount
13296 \def\@@Listbox#1{%
13297 \HyField@PDFChoices{#1}%
13298 \leavevmode
13299 \HyAnn@AbsPageLabel
13300 \Hy@escapeform\PDFForm@List
13301 \pdfstartlink user {\PDFForm@List}\relax
13302 \MakeChoiceField{\Fld@width}{\Fld@height}%
13303 \pdfendlink
13304 \HyField@AddToFields
13305 }
13306 \def\@PushButton[#1]#2{% parameters, label
13307 \def\Fld@name{#2}%
13308 \begingroup
13309 \expandafter\HyField@SetKeys\expandafter{%
13310 \DefaultOptionsofPushButton,#1%
13311 }%
13312 \PDFForm@Name
13313 \ifHy@pdfa

```



```

13314 \Hy@Error{%
13315 PDF/A: Push button with JavaScript is prohibited%
13316 } \@ehc
13317 \LayoutPushButtonField{%
13318 \leavevmode
13319 \MakeButtonField{#2}%
13320 }%
13321 \else
13322 \HyField@FlagsPushButton
13323 \ifFld@hidden\def\Fld@width{1sp}\fi
13324 \LayoutPushButtonField{%
13325 \leavevmode
13326 \HyAnn@AbsPageLabel
13327 \Hy@escapeform\PDFForm@Push
13328 \pdfstartlink user {\PDFForm@Push}\relax
13329 \MakeButtonField{#2}%
13330 \pdfendlink
13331 \HyField@AddToFields
13332 }%
13333 \fi
13334 \endgroup
13335 }
13336 \def\@Submit[#1]#2{%
13337 \def\Fld@width{\DefaultWidthofSubmit}%
13338 \def\Fld@height{\DefaultHeightofSubmit}%
13339 \begingroup
13340 \expandafter\HyField@SetKeys\expandafter{%
13341 \DefaultOptionsofSubmit,#1%
13342 }%
13343 \HyField@FlagsPushButton
13344 \HyField@FlagsSubmit
13345 \ifFld@hidden\def\Fld@width{1sp}\fi
13346 \leavevmode
13347 \HyAnn@AbsPageLabel
13348 \Hy@escapeform\PDFForm@Submit
13349 \pdfstartlink user {%
13350 \PDFForm@Submit
13351 /AP<</N \SubmitObject/D \SubmitPObject>>%
13352 }%
13353 \relax
13354 \MakeButtonField{#2}%
13355 \pdfendlink
13356 \HyField@AddToFields
13357 \endgroup
13358 }
13359 \def\@Reset[#1]#2{%
13360 \def\Fld@width{\DefaultWidthofReset}%
13361 \def\Fld@height{\DefaultHeightofReset}%
13362 \begingroup
13363 \expandafter\HyField@SetKeys\expandafter{%
13364 \DefaultOptionsofReset,#1%
13365 }%
13366 \leavevmode
13367 \ifHy@pdfa

```

```

13368 \Hy@Error{%
13369     PDF/A: Reset action is prohibited%
13370 }@ehc
13371 \MakeButtonField{#2}%
13372 \else
13373 \HyField@FlagsPushButton
13374 \ifFld@hidden\def\Fld@width{1sp}\fi
13375 \HyAnn@AbsPageLabel
13376 \Hy@escapeform\PDFForm@Reset
13377 \pdfstartlink user {\PDFForm@Reset}\relax
13378 \MakeButtonField{#2}%
13379 \pdfendlink
13380 \HyField@AddToFields
13381 \fi
13382 \endgroup
13383 }
13384 \def\@CheckBox[#1]#2{% parameters, label
13385 \def\Fld@name{#2}%
13386 \def\Fld@default{0}%
13387 \begingroup
13388 \def\Fld@width{\DefaultWidthofCheckBox}%
13389 \def\Fld@height{\DefaultHeightofCheckBox}%
13390 \expandafter\HyField@SetKeys\expandafter{%
13391 \DefaultOptionsofCheckBox,#1%
13392 }%
13393 \PDFForm@Name
13394 \HyField@FlagsCheckBox
13395 \ifFld@hidden\def\Fld@width{1sp}\fi
13396 \LayoutCheckField{#2}{%
13397 \leavevmode
13398 \HyAnn@AbsPageLabel
13399 \Hy@escapeform\PDFForm@Check
13400 \pdfstartlink user {\PDFForm@Check}\relax
13401 \MakeCheckField{\Fld@width}{\Fld@height}%
13402 \pdfendlink
13403 \HyField@AddToFields
13404 }%
13405 \endgroup
13406 }
13407 \def\Hy@FormObjects{%
13408 \pdfobj {%
13409 <<%
13410 /Type/Encoding%
13411 /Differences[%
13412 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
13413 /ring/tilde %
13414 39/quotesingle %
13415 96/grave %
13416 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13417 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13418 /quotedblbase/quotedblleft/quotedblright/quoteleft%
13419 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
13420 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13421 160/Euro %

```

```

13422      164/currency %
13423      166/brokenbar %
13424      168/dieresis/copyright/ordfeminine %
13425      172/logicalnot/.notdef/registered/macron/degree/plusminus%
13426      /twosuperior/threesuperior/acute/mu %
13427      183/periodcentered/cedilla/onesuperior/ordmasculine %
13428      188/onequarter/onehalf/threequarters %
13429      192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13430      /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
13431      /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
13432      /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
13433      /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
13434      /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
13435      /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
13436      /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
13437      /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
13438      /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
13439      ]%
13440      >>%
13441      }%
13442      \xdef\OBJ@pdfdocencoding{\the\pdfastobj}%
13443      \pdfobj{%
13444      <<%
13445      /Type/Font%
13446      /Subtype/Type1%
13447      /Name/ZaDb%
13448      /BaseFont/ZapfDingbats%
13449      >>%
13450      }%
13451      \xdef\OBJ@ZaDb{\the\pdfastobj}%
13452      \pdfobj{%
13453      <<%
13454      /Type/Font%
13455      /Subtype/Type1%
13456      /Name/Helv%
13457      /BaseFont/Helvetica%
13458      /Encoding \OBJ@pdfdocencoding\space 0 R%
13459      >>%
13460      }%
13461      \xdef\OBJ@Helv{\the\pdfastobj}%
13462      \global\let\Hy@FormObjects\relax
13463      }
13464      </pdftex>

```

## 44.5 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.

```
13465 <*dvipdfm | xetex>
```

```
\@Gauge
```

```

13466 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13467   \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
13468 }

```

\@Form

```
13469 \def\@Form[#1]{%
13470   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13471   \kvsetkeys{Form}{#1}%
13472   \Hy@FormObjects
13473   \@pdfm@mark{obj @afields []}%
13474   \@pdfm@mark{obj @corder []}%
13475   \@pdfm@mark{%
13476     obj @aform <<%
13477     /Fields @afields%
13478     /DR<<%
13479     /Font<<%
13480     /ZaDb @OBJZaDb%
13481     /Helv @OBJHelv%
13482     >>%
13483     >>%
13484     /DA(/Helv 10 Tf 0 g)%
13485     /CO @corder%
13486     \ifHy@pdfa
13487     \else
13488       \ifHyField@NeedAppearances
13489       /NeedAppearances true%
13490       \fi
13491       \fi
13492     >>%
13493   }%
13494   \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
13495 }
```

\@endForm

```
13496 \let\@endForm\ltx@empty
```

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.

```
13497 \def\dvipdfm@setdim{%
13498   height \the\ht\pdfm@box\space
13499   width \the\wd\pdfm@box\space
13500   depth \the\dp\pdfm@box\space
13501 }
```

\HyField@AnnotCount

```
13502 \newcount\HyField@AnnotCount
13503 \HyField@AnnotCount=\z@
```

\HyField@AdvanceAnnotCount

```
13504 \def\HyField@AdvanceAnnotCount{%
13505   \global\advance\HyField@AnnotCount\@ne
13506 }
```

\HyField@TheAnnotCount

```
13507 \def\HyField@TheAnnotCount{%
13508   \the\HyField@AnnotCount
13509 }
```

\Fld@pageobjref

```
13510 \def\Fld@pageobjref{/P @thispage}%
```

\HyField@AddToFields

```
13511 \def\HyField@AddToFields#1{%
13512   \@pdfm@mark{put @afields @#1\HyField@TheAnnotCount}%
13513   \ifx\Fld@calculate@code\ltx@empty
13514   \else
13515     \@pdfm@mark{put @corder @#1\HyField@TheAnnotCount}%
13516   \fi
13517 }
```

\@TextField

```
13518 \def\@TextField[#1]#2{% parameters, label
13519   \def\Fld@name{#2}%
13520   \let\Fld@default\ltx@empty
13521   \let\Fld@value\@empty
13522   \def\Fld@width{\DefaultWidthofText}%
13523   \def\Fld@height{%
13524     \ifFld@multiline
13525       \DefaultHeightofTextMultiline
13526     \else
13527       \DefaultHeightofText
13528     \fi
13529   }%
13530   \begingroup
13531     \expandafter\HyField@SetKeys\expandafter{%
13532       \DefaultOptionsofText,#1%
13533     }%
13534     \PDFForm@Name
13535     \HyField@FlagsText
13536     \ifFld@hidden\def\Fld@width{1sp}\fi
13537     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13538     \setbox\pdfm@box=\hbox{%
13539       \MakeTextField{\Fld@width}{\Fld@height}%
13540     }%
13541     \HyField@AdvanceAnnotCount
13542     \LayoutTextField{#2}{%
13543       \leavevmode
13544       \Hy@escapeform\PDFForm@Text
13545       \@pdfm@mark{%
13546         ann @text\HyField@TheAnnotCount\space
13547         \dvipdfm@setdim << \PDFForm@Text >>%
13548       }%
13549     }%
13550     \unhbox\pdfm@box
13551     \HyField@AddToFields{text}%
13552     % record in @afields array
13553   \endgroup
13554 }
```

\@ChoiceMenu

```
13555 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13556   \def\Fld@name{#2}%
```

```

13557 \let\Fld@default\relax
13558 \let\Fld@value\relax
13559 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13560 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13561 \begingroup
13562 \Fld@menulength=0 %
13563 \@tempdima\z@
13564 \@for\@curropt:=#3\do{%
13565 \expandafter\Fld@checkequals\@curropt==\%
13566 \Hy@StepCount\Fld@menulength
13567 \settowidth{\@tempdimb}{\@currDisplay}%
13568 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13569 }%
13570 \advance\@tempdima by 15\p@
13571 \begingroup
13572 \HyField@SetKeys{#1}%
13573 \edef\x{\endgroup
13574 \noexpand\expandafter
13575 \noexpand\HyField@SetKeys
13576 \noexpand\expandafter{%
13577 \expandafter\noexpand\csname DefaultOptionsof%
13578 \ifFld@radio
13579 Radio%
13580 \else
13581 \ifFld@combo
13582 \ifFld@popdown
13583 PopdownBox%
13584 \else
13585 ComboBox%
13586 \fi
13587 \else
13588 ListBox%
13589 \fi
13590 \fi
13591 \endcsname
13592 }%
13593 }\x
13594 \HyField@SetKeys{#1}%
13595 \PDFForm@Name
13596 \ifFld@hidden\def\Fld@width{1sp}\fi
13597 \ifx\Fld@value\relax
13598 \let\Fld@value\Fld@default
13599 \fi
13600 \LayoutChoiceField{#2}{%
13601 \ifFld@radio
13602 \HyField@FlagsRadioButton
13603 \@@Radio{#3}%
13604 \else
13605 \begingroup
13606 \HyField@FlagsChoice
13607 \ifdim\Fld@width<\@tempdima
13608 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13609 \edef\Fld@width{\the\@tempdima}%
13610 \fi

```

```

13611         \ifFld@combo
13612         \else
13613             \@tempdima=\the\Fld@menulength\Fld@charsize
13614             \advance\@tempdima by \Fld@borderwidth bp %
13615             \advance\@tempdima by \Fld@borderwidth bp %
13616             \edef\Fld@height{\the\@tempdima}%
13617         \fi
13618         \@@ListBox{#3}%
13619     \endgroup
13620 \fi
13621 }%
13622 \endgroup
13623 }

\@@Radio
13624 \def\@@Radio#1{%
13625     \Fld@listcount=0 %
13626     \EdefEscapeName\Fld@default{\Fld@default}%
13627     \setbox\pdfm@box=\hbox{%
13628         \MakeRadioField{\Fld@width}{\Fld@height}%
13629     }%
13630     \@for\@curropt:=#1\do{%
13631         \expandafter\Fld@checkequals\@curropt==\%
13632         \EdefEscapeName\@currValue{\@currValue}%
13633         \Hy@StepCount\Fld@listcount
13634         \@currDisplay\space
13635         \leavevmode
13636         \Hy@escapeform\PDFForm@Radio
13637         \ifnum\Fld@listcount=1 %
13638             \HyField@AdvanceAnnotCount
13639         \fi
13640         \@pdfm@mark{%
13641             ann %
13642             \ifnum\Fld@listcount=1 %
13643                 @radio\HyField@TheAnnotCount%
13644             \space
13645         \fi
13646         \dvipdfm@setdim
13647         <<%
13648             \PDFForm@Radio
13649             /AP<</N<</\@currValue /null>>>>%
13650         >>%
13651     }%
13652     \unhcopy\pdfm@box\space% deliberate space between radio buttons
13653     \ifnum\Fld@listcount=1 %
13654         \HyField@AddToFields{radio}%
13655     \fi
13656 }%
13657 }

\Fld@listcount
13658 \newcount\Fld@listcount

\@@ListBox

```

```

13659 \def\@@Listbox#1{%
13660   \HyField@PDFChoices{#1}%
13661   \setbox\pdfm@box=\hbox{%
13662     \MakeChoiceField{\Fld@width}{\Fld@height}%
13663   }%
13664   \leavevmode
13665   \Hy@escapeform\PDFForm@List
13666   \HyField@AdvanceAnnotCount
13667   \@pdfm@mark{%
13668     ann @list\HyField@TheAnnotCount\space
13669     \dvipdfm@setdim
13670     <<\PDFForm@List>>%
13671   }%
13672   \unhbox\pdfm@box
13673   \HyField@AddToFields{list}%
13674 }

```

\@PushButton

```

13675 \def\@PushButton[#1]#2{% parameters, label
13676   \def\Fld@name{#2}%
13677   \begingroup
13678   \expandafter\HyField@SetKeys\expandafter{%
13679     \DefaultOptionsofPushButton,#1%
13680   }%
13681   \PDFForm@Name
13682   \ifHy@pdfa
13683     \Hy@Error{%
13684       PDF/A: Push button with JavaScript is prohibited%
13685     }\@ehc
13686     \LayoutPushButtonField{%
13687       \leavevmode
13688       \MakeButtonField{#2}%
13689     }%
13690   \else
13691     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13692     \HyField@FlagsPushButton
13693     \ifFld@hidden\def\Fld@width{1sp}\fi
13694     \HyField@AdvanceAnnotCount
13695     \LayoutPushButtonField{%
13696       \leavevmode
13697       \Hy@escapeform\PDFForm@Push
13698       \@pdfm@mark{%
13699         ann @push\HyField@TheAnnotCount\space
13700         \dvipdfm@setdim
13701         <<\PDFForm@Push>>%
13702       }%
13703     }%
13704     \unhbox\pdfm@box
13705     \HyField@AddToFields{push}%
13706   \fi
13707 \endgroup
13708 }

```

\@Submit



```

13709 \def\@Submit[#1]#2{%
13710   \def\Fld@width{\DefaultWidthofSubmit}%
13711   \def\Fld@height{\DefaultHeightofSubmit}%
13712   \begingroup
13713     \expandafter\HyField@SetKeys\expandafter{%
13714       \DefaultOptionsofSubmit,#1%
13715     }%
13716     \HyField@FlagsPushButton
13717     \HyField@FlagsSubmit
13718     \ifFld@hidden\def\Fld@width{1sp}\fi
13719     \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13720     \leavevmode
13721     \Hy@escapeform\PDFForm@Submit
13722     \HyField@AdvanceAnnotCount
13723     \@pdfm@mark{%
13724       ann @submit\HyField@TheAnnotCount\space
13725       \dvi pdfm@setdim
13726       <<\PDFForm@Submit>>%
13727     }%
13728     \unhbox\pdfm@box%
13729     \HyField@AddToFields{submit}%
13730   \endgroup
13731 }

```

\@Reset

```

13732 \def\@Reset[#1]#2{%
13733   \def\Fld@width{\DefaultWidthofReset}%
13734   \def\Fld@height{\DefaultHeightofReset}%
13735   \begingroup
13736     \expandafter\HyField@SetKeys\expandafter{%
13737       \DefaultOptionsofReset,#1%
13738     }%
13739     \leavevmode
13740     \ifHy@pdfa
13741       \Hy@Error{%
13742         PDF/A: Reset action is prohibited%
13743       }\@ehc
13744       \MakeButtonField{#2}%
13745     \else
13746       \HyField@FlagsPushButton
13747       \ifFld@hidden\def\Fld@width{1sp}\fi
13748       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13749       \Hy@escapeform\PDFForm@Reset
13750       \HyField@AdvanceAnnotCount
13751       \@pdfm@mark{%
13752         ann @reset\HyField@TheAnnotCount\space
13753         \dvi pdfm@setdim
13754         <<\PDFForm@Reset>>%
13755       }%
13756       \unhbox\pdfm@box
13757       \HyField@AddToFields{reset}%
13758     \fi
13759   \endgroup
13760 }

```

\@CheckBox

```
13761 \def\@CheckBox[#1]#2{% parameters, label
13762 \def\Fld@name{#2}%
13763 \def\Fld@default{0}%
13764 \begingroup
13765 \def\Fld@width{\DefaultWidthofCheckBox}%
13766 \def\Fld@height{\DefaultHeightofCheckBox}%
13767 \expandafter\HyField@SetKeys\expandafter{%
13768 \DefaultOptionsofCheckBox,#1%
13769 }%
13770 \PDFForm@Name
13771 \HyField@FlagsCheckBox
13772 \ifFld@hidden\def\Fld@width{1sp}\fi
13773 \setbox\pdfm@box=\hbox{%
13774 \MakeCheckField{\Fld@width}{\Fld@height}%
13775 }%
13776 \HyField@AdvanceAnnotCount
13777 \LayoutCheckField{#2}{%
13778 \leavevmode
13779 \Hy@escapeform\PDFForm@Check
13780 \@pdfm@mark{%
13781 ann @check\HyField@TheAnnotCount\space
13782 \dvi pdfm@setdim
13783 <<\PDFForm@Check>>%
13784 }%
13785 \unhbox\pdfm@box
13786 \HyField@AddToFields{check}%
13787 }%
13788 \endgroup
13789 }

13790 \def\Hy@FormObjects{%
13791 \@pdfm@mark{obj @OBJpdfdocencoding%
13792 <<%
13793 /Type/Encoding%
13794 /Differences[
13795 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13796 39/quotesingle %
13797 96/grave %
13798 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13799 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13800 /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
13801 /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
13802 /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13803 160/Euro %
13804 164/currency %
13805 166/brokenbar %
13806 168/dieresis/copyright/ordfeminine %
13807 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13808 /twosuperior/threesuperior/acute/mu %
13809 183/periodcentered/cedilla/onesuperior/ordmasculine %
13810 188/onequarter/onehalf/threequarters %
13811 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13812 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
```

```

13813      /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
13814      /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
13815      /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
13816      /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
13817      /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
13818      /eth/ntilde/ograde/oacute/ocircumflex/otilde/odieresis%
13819      /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
13820      /thorn/ydieresis%
13821      ]%
13822      >>%
13823      }%
13824      \@pdfm@mark{obj @OBJZaDb%
13825      <<%
13826      /Type/Font%
13827      /Subtype/Type1%
13828      /Name/ZaDb%
13829      /BaseFont/ZapfDingbats%
13830      >>%
13831      }%
13832      \@pdfm@mark{obj @OBJHelv%
13833      <<%
13834      /Type/Font%
13835      /Subtype/Type1%
13836      /Name/Helv%
13837      /BaseFont/Helvetica%
13838      /Encoding @OBJpdfdocencoding%
13839      >>%
13840      }%
13841      \global\let\Hy@FormObjects\relax
13842      }
13843      </dvipdfm | xetex>

```

## 44.6 Common forms part

```

13844      (*pdfform)

\Fld@pageobjref

13845      \providecommand*{\Fld@pageobjref}{}

\Hy@escapestring

13846      \@ifundefined{pdf@escapestring}
13847      {%
13848      \let\Hy@escapestring\@firstofone
13849      \def\Hy@escapeform#1{%
13850      \ifHy@pdfescapeform
13851      \def\Hy@escapestring##1{%
13852      \noexpand\Hy@escapestring{\noexpand##1}%
13853      }%
13854      \edef\Hy@temp{#1}%
13855      \expandafter\Hy@@@escapeform\Hy@temp\Hy@escapestring{}\@nil
13856      \def\Hy@escapestring##1{%
13857      \@ifundefined{Hy@esc@\string##1}{%
13858      ##1%
13859      \ThisShouldNotHappen

```

```

13860     }{%
13861         \csname Hy@esc@\string##1\endcsname
13862     }%
13863 }%
13864 \else
13865     \let\Hy@escapestring\@firstofone
13866 \fi
13867 }%
13868 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
13869     \ifx\|#3\|
13870     \else
13871         \expandafter
13872         \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13873         \ltx@ReturnAfterFi{%
13874             \Hy@@escapeform#3\@nil
13875         }%
13876     \fi
13877 }%
13878 }{%
13879 \def\Hy@escapeform#1{%
13880     \ifHy@pdfescapeform
13881         \let\Hy@escapestring\pdfescapestring
13882     \else
13883         \let\Hy@escapestring\@firstofone
13884     \fi
13885 }%
13886 \Hy@escapeform{}%
13887 }

```

#### \PDFForm@Name

```

13888 \def\PDFForm@Name{%
13889     \PDFForm@@Name\Fld@name
13890     \ifx\Fld@altname\relax
13891     \else
13892         \PDFForm@@Name\Fld@altname
13893     \fi
13894     \ifx\Fld@mappingname\relax
13895     \else
13896         \PDFForm@@Name\Fld@mappingname
13897     \fi
13898 }

```

#### \PDFForm@@Name

```

13899 \def\PDFForm@@Name#1{%
13900     \begingroup
13901     \ifnum\Hy@pdf@major@minor@version<105 % implementation note 117, PDF spec 1.7
13902         \ifHy@unicode
13903             \Hy@unicodetfalse
13904         \fi
13905     \fi
13906     \pdfstringdef\Hy@gtemp#1%
13907 \endgroup
13908 \let#1\Hy@gtemp
13909 }

```

\Fld@additionalactions

```
13910 \def\Fld@@additionalactions{%
```

K input (keystroke) format

```
13911 \ifx\Fld@keystroke@code\@empty
```

```
13912 \else
```

```
13913 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
```

```
13914 \fi
```

F display format

```
13915 \ifx\Fld@format@code\@empty
```

```
13916 \else
```

```
13917 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
```

```
13918 \fi
```

V validation

```
13919 \ifx\Fld@validate@code\@empty
```

```
13920 \else
```

```
13921 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
```

```
13922 \fi
```

C calculation

```
13923 \ifx\Fld@calculate@code\@empty
```

```
13924 \else
```

```
13925 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
```

```
13926 \fi
```

Fo receiving the input focus

```
13927 \ifx\Fld@onfocus@code\@empty
```

```
13928 \else
```

```
13929 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
```

```
13930 \fi
```

Bl loosing the input focus (blurred)

```
13931 \ifx\Fld@onblur@code\@empty
```

```
13932 \else
```

```
13933 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
```

```
13934 \fi
```

D pressing the mouse button (down)

```
13935 \ifx\Fld@onmousedown@code\@empty
```

```
13936 \else
```

```
13937 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
```

```
13938 \fi
```

U releasing the mouse button (up)

```
13939 \ifx\Fld@onmouseup@code\@empty
```

```
13940 \else
```

```
13941 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
```

```
13942 \fi
```

E cursor enters the annotation's active area.

```
13943 \ifx\Fld@onenter@code\@empty
```

```
13944 \else
```

```
13945 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
```

```
13946 \fi
```

X cursor exits the annotation's active area.

```
13947 \ifx\Fld@onexit@code\@empty
13948 \else
13949 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13950 \fi
13951 }
13952 \def\Fld@additionalactions{%
13953 \if-\Fld@@additionalactions-%
13954 \else
13955 \ifHy@pdfa
13956 \else
13957 /AA<<\Fld@@additionalactions>>%
13958 \fi
13959 \fi
13960 }
```

\Fld@annotnames

```
13961 \def\Fld@annotnames{%
13962 /T(\Fld@name)%
13963 \ifx\Fld@altname\relax
13964 \else
13965 /TU(\Fld@altname)%
13966 \fi
13967 \ifx\Fld@mappingname\relax
13968 \else
13969 /TM(\Fld@mappingname)%
13970 \fi
13971 }
```

\PDFForm@Check

```
13972 \def\PDFForm@Check{%
13973 /Subtype/Widget%
13974 \Fld@annotflags
13975 \Fld@pageobjref
13976 \Fld@annotnames
13977 /FT/Btn%
13978 \Fld@flags
13979 /Q \Fld@align
13980 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13981 /AP<< /N <</Yes<<>>>> >> %new string /Yes is from below
13982 /MK<<%
13983 \ifnum\Fld@rotation=\z@
13984 \else
13985 /R \Fld@rotation
13986 \fi
13987 \ifx\Fld@bordercolor\relax
13988 \else
13989 /BC[\Fld@bordercolor]%
13990 \fi
13991 \ifx\Fld@bcolor\relax
13992 \else
13993 /BG[\Fld@bcolor]%
13994 \fi
13995 /CA(\Hy@escapestring{\Fld@cbsymbol})%
```

```

13996 >>%
13997 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13998 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13999 /H/P%
14000 \ifFld@checked /V/Yes/AS/Yes\else /V/Off/AS/Off\fi
14001 \Fld@additionalactions
14002 }

```

#### \PDFForm@Push

```

14003 \ifHy@pdfa
14004 \else
14005 \def\PDFForm@Push{%
14006 /Subtype/Widget%
14007 \Fld@annotflags
14008 \Fld@pageobjref
14009 \Fld@annotnames
14010 /FT/Btn%
14011 \Fld@flags
14012 /H/P%
14013 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14014 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14015 \ifx\Fld@bordercolor\relax\else 1\fi
14016 \space
14017 \else
14018 /MK<<%
14019 \ifnum\Fld@rotation=\z@
14020 \else
14021 /R \Fld@rotation
14022 \fi
14023 \ifx\Fld@bordercolor\relax
14024 \else
14025 /BC[\Fld@bordercolor]%
14026 \fi
14027 >>%
14028 \fi
14029 /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
14030 \Fld@additionalactions
14031 }%
14032 \fi

```

#### \PDFForm@List

```

14033 \def\PDFForm@List{%
14034 /Subtype/Widget%
14035 \Fld@annotflags
14036 \Fld@pageobjref
14037 \Fld@annotnames
14038 /FT/Ch%
14039 \Fld@flags
14040 /Q \Fld@align
14041 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14042 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14043 \ifx\Fld@bordercolor\relax\else 1\fi
14044 \ifx\Fld@bcolor\relax \else 1\fi
14045 \space

```

```

14046 \else
14047 /MK<<%
14048 \ifnum\Fld@rotation=\z@
14049 \else
14050 /R \Fld@rotation
14051 \fi
14052 \ifx\Fld@bordercolor\relax
14053 \else
14054 /BC[\Fld@bordercolor]%
14055 \fi
14056 \ifx\Fld@bcolor\relax
14057 \else
14058 /BG[\Fld@bcolor]%
14059 \fi
14060 >>%
14061 \fi
14062 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14063 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14064 \Fld@choices
14065 \Fld@additionalactions
14066 }

```

#### \PDFForm@Radio

```

14067 \def\PDFForm@Radio{%
14068 /Subtype/Widget%
14069 \Fld@annotflags
14070 \Fld@pageobjref
14071 \Fld@annotnames
14072 /FT/Btn%
14073 \Fld@flags
14074 /H/P%
14075 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14076 /MK<<%
14077 \ifnum\Fld@rotation=\z@
14078 \else
14079 /R \Fld@rotation
14080 \fi
14081 \ifx\Fld@bordercolor\relax
14082 \else
14083 /BC[\Fld@bordercolor]%
14084 \fi
14085 \ifx\Fld@bcolor\relax
14086 \else
14087 /BG[\Fld@bcolor]%
14088 \fi
14089 /CA(\Hy@escapestring{\Fld@radiosymbol})%
14090 >>%
14091 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
14092 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%

```

New code, the default value is used for all buttons

```

14093 \ifx\Fld@default\@empty
14094 /V/Off%
14095 /DV/Off%

```



```

14096 \else
14097 /V/\Fld@default
14098 /DV/\Fld@default
14099 \fi
14100 \Fld@additionalactions
14101 }

```

#### \PDFForm@Text

```

14102 \def\PDFForm@Text{%
14103 /Subtype/Widget%
14104 \Fld@annotflags
14105 \Fld@pageobjref
14106 \Fld@annotnames
14107 /FT/Tx%
14108 \Fld@flags
14109 /Q \Fld@align
14110 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
14111 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14112     \ifx\Fld@bordercolor\relax\else 1\fi
14113     \ifx\Fld@bcolor\relax \else 1\fi
14114     \space
14115 \else
14116 /MK<<%
14117     \ifnum\Fld@rotation=\z@
14118     \else
14119     /R \Fld@rotation
14120     \fi
14121     \ifx\Fld@bordercolor\relax
14122     \else
14123     /BC[\Fld@bordercolor]%
14124     \fi
14125     \ifx\Fld@bcolor\relax
14126     \else
14127     /BG[\Fld@bcolor]%
14128     \fi
14129     >>%
14130 \fi
14131 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14132     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14133 /DV(\Hy@escapestring{\Fld@default})%
14134 /V(\Hy@escapestring{\Fld@value})%
14135 \Fld@additionalactions
14136 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
14137 }

```

#### \PDFForm@Submit

```

14138 \def\PDFForm@Submit{%
14139 /Subtype/Widget%
14140 \Fld@annotflags
14141 \Fld@pageobjref
14142 \Fld@annotnames
14143 /FT/Btn%
14144 \Fld@flags
14145 /H/P%

```

```

14146 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14147 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14148     \ifx\Fld@bordercolor\relax\else 1\fi
14149     \space
14150 \else
14151     /MK<<%
14152     \ifnum\Fld@rotation=\z@
14153     \else
14154     /R \Fld@rotation
14155     \fi
14156     \ifx\Fld@bordercolor\relax
14157     \else
14158     /BC[\Fld@bordercolor]%
14159     \fi
14160 >>%
14161 \fi
14162 /A<<%
14163 /S/SubmitForm%
14164 /F<<%
14165     /FS/URL%
14166     /F(\Hy@escapestring{\Form@action})%
14167 >>%
14168 \Fld@submitflags
14169 >>%
14170 \Fld@additionalactions
14171 }

```

\PDFForm@Reset

```

14172 \ifHy@pdfa
14173 \else
14174 \def\PDFForm@Reset{%
14175     /Subtype/Widget%
14176     \Fld@annotflags
14177     \Fld@pageobjref
14178     \Fld@annotnames
14179     /FT/Btn%
14180     \Fld@flags
14181     /H/P%
14182     /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
14183     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14184         \ifx\Fld@bordercolor\relax\else 1\fi
14185         \space
14186     \else
14187     /MK<<%
14188     \ifnum\Fld@rotation=\z@
14189     \else
14190     /R \Fld@rotation
14191     \fi
14192     \ifx\Fld@bordercolor\relax
14193     \else
14194     /BC[\Fld@bordercolor]%
14195     \fi
14196 %     /CA (Clear)
14197 %     /AC (Done)

```

```

14198     >>%
14199     \fi
14200     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14201     /A<</S/ResetForm>>%
14202     \Fld@additionalactions
14203   }%
14204 \fi

14205 </pdfform>
14206 <*packageEnd>

```

## 45 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`

```

14207 \def\phantomsection{%
14208   \Hy@MakeCurrentHrefAuto{section*}%
14209   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
14210 }
14211 </packageEnd>

```

### 45.1 Bookmarks

```
14212 <*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  $\varepsilon\text{-TeX}$ , the order of the `\BOOKMARK` commands written to the `\@outlinefile` could appear wrong, because of mis-feature of  $\varepsilon\text{-TeX}$ '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.

```

14213 \def\Hy@writebookmark#1#2#3#4#5{%
14214   % section number, text, label, level, file
14215   \ifx\WriteBookmarks\relax%
14216   \else

```

```

14217 \ifnum#4>\Hy@bookmarksdepth\relax
14218 \else
14219 \@@writetorep{#1}{#2}{#3}{#4}{#5}%
14220 \fi
14221 \fi
14222 }
14223 \def\Hy@currentbookmarklevel{0}
14224 \def\Hy@numberline#1{#1 }
14225 \def\@@writetorep#1#2#3#4#5{%
14226 \begingroup
14227 \edef\Hy@tempa{#5}%
14228 \ifx\Hy@tempa\Hy@bookmarkstype
14229 \edef\Hy@level{#4}%
14230 \ifx\Hy@levelcheck Y%
14231 \@tempcnta\Hy@level\relax
14232 \advance\@tempcnta by -1 %
14233 \ifnum\Hy@currentbookmarklevel<\@tempcnta
14234 \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
14235 \advance\@tempcnta by 1 %
14236 \Hy@Warning{%
14237 Difference (\the\@tempcnta) between bookmark levels is %
14238 greater \MessageBreak than one, level fixed%
14239 }%
14240 \@tempcnta\Hy@currentbookmarklevel
14241 \advance\@tempcnta by 1 %
14242 \edef\Hy@level{\the\@tempcnta}%
14243 \fi
14244 \else
14245 \global\let\Hy@levelcheck Y%
14246 \fi
14247 \global\let\Hy@currentbookmarklevel\Hy@level
14248 \@tempcnta\Hy@level\relax
14249 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
14250 \advance\@tempcnta by -1 %
14251 \edef\Hy@tempa{#3}%
14252 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
14253 \ifx\Hy@tempa\Hy@tempb
14254 \Hy@Warning{%
14255 The anchor of a bookmark and its parent's must not%
14256 \MessageBreak be the same. Added a new anchor%
14257 }%
14258 \phantomsection
14259 \fi
14260 \ifHy@bookmarksnumbered
14261 \let\numberline\Hy@numberline
14262 \let\booknumberline\Hy@numberline
14263 \let\partnumberline\Hy@numberline
14264 \let\chapternumberline\Hy@numberline
14265 \else
14266 \let\numberline\@gobble
14267 \let\booknumberline\@gobble
14268 \let\partnumberline\@gobble
14269 \let\chapternumberline\@gobble
14270 \fi

```

```

14271 \pdfstringdef\Hy@tempa{#2}%
14272 \HyPsd@SanitizeForOutFile\Hy@tempa
14273 \if@filesw
14274 \stepcounter{bookmark@seq@number}%
14275 \@ifundefined{@outlinefile}{%
14276 }{%
14277 \protected@write\@outlinefile{}{%
14278 \protect\BOOKMARK
14279 [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
14280 {\Hy@tempa}{\Hy@tempb}%
14281 \@percentchar\space\thebookmark@seq@number
14282 }%
14283 }%
14284 \fi
14285 \fi
14286 \endgroup
14287 }
14288 \newcounter{bookmark@seq@number}

14289 \begingroup
14290 \lccode`=(`{%
14291 \lccode`)=`}%
14292 \lccode`1=\z@
14293 \lccode`2=\z@
14294 \lccode`3=\z@
14295 \lccode`5=\z@
14296 \lccode`7=\z@
14297 \lccode`#= \z@
14298 \lccode``=\z@
14299 \lccode`\{=\z@
14300 \lccode`\}= \z@
14301 \lowercase{%
14302 \endgroup
14303 \def\HyPsd@SanitizeForOutFile#1{%
14304 \@onelevel@sanitize\Hy@tempa
14305 \escapechar`\\%
14306 \edef\Hy@tempa{%
14307 \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa\@nil
14308 }%
14309 \edef\Hy@tempa{%
14310 \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa\@nil
14311 }%
14312 }%
14313 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
14314 #1%
14315 \ifx\#2\\%
14316 \expandafter\ltx@gobble
14317 \else
14318 \expandafter\ltx@firstofone
14319 \fi
14320 {%
14321 \string\173%
14322 \HyPsd@SanitizeOut@BraceLeft#2\@nil
14323 }%
14324 }%

```

```

14325 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
14326   #1%
14327   \ifx\|#2\|%
14328     \expandafter\ltx@gobble
14329   \else
14330     \expandafter\ltx@firstofone
14331   \fi
14332   {%
14333     \string\175%
14334     \HyPsd@SanitizeOut@BraceRight#2\@nil
14335   }%
14336 }%
14337 }

```

In the call of `\BOOKMARK` the braces around `#4` are omitted, because it is not likely, that the level number contains `]`.

```

14338 \newcommand{\currentpdfbookmark}{%
14339   \pdfbookmark[\Hy@currentbookmarklevel]%
14340 }
14341 \newcommand{\subpdfbookmark}{%
14342   \@tempcnta\Hy@currentbookmarklevel
14343   \Hy@StepCount\@tempcnta
14344   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
14345 }
14346 \newcommand{\belowpdfbookmark}[2]{%
14347   \@tempcnta\Hy@currentbookmarklevel
14348   \Hy@StepCount\@tempcnta
14349   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
14350   \advance\@tempcnta by -1 %
14351   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
14352 }

```

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.

```

14353 \renewcommand\pdfbookmark[3][0]{%
14354   \Hy@writebookmark{}{#2}{#3.#1}{#1}{toc}%
14355   \hyper@anchorstart{#3.#1}\hyper@anchorend
14356 }
14357 \def\BOOKMARK{%
14358   \ifnextchar{\@BOOKMARK}{\@@BOOKMARK[1][-]}%
14359 }
14360 \def\@BOOKMARK[#1]{%
14361   \ifnextchar{\@@BOOKMARK[#1]}{\@@BOOKMARK[#1][-]}%
14362 }

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the `texinfopdf` macros.

#### 45.1.1 Rerun warning

`\Hy@OutlineRerunCheck`

```

14363 \RequirePackage{rerunfilecheck}[2009/12/10]
14364 \def\Hy@OutlineRerunCheck{%
14365   \RerunFileCheck{\jobname.out}{%

```

```

14366 \immediate\closeout\@outlinefile
14367 }{%
14368 Rerun to get outlines right\MessageBreak
14369 or use package `bookmark'%
14370 }%
14371 }

```

### 45.1.2 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 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.

```

14372 (*vtex)
14373 \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.

```

14374 \begingroup
14375 \catcode\`'=12 %
14376 \ifnum\Hy@VTeXversion<650 %
14377 \catcode\`=12 %
14378 \gdef\hv@pdf@char#1#2#3{%
14379 \char
14380 \ifcase'#1#2#3 %
14381 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
14382 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
14383 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
14384 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
14385 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
14386 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
14387 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
14388 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
14389 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
14390 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
14391 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
14392 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
14393 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
14394 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
14395 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
14396 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
14397 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
14398 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
14399 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
14400 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
14401 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
14402 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
14403 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
14404 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
14405 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
14406 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
14407 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%

```

```

14408 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
14409 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
14410 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
14411 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
14412 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
14413 \fi
14414 }%
14415 \else
14416 \gdef\hv@pdf@char{\char'}%
14417 \fi
14418 \endgroup

```

\@@BOOKMARK

```

14419 \def\@@BOOKMARK[#1][#2]#3#4#5{%
14420 \expandafter\edef\csname @count@#3\endcsname{%
14421 \the\@serial@counter
14422 }%
14423 \edef\@mycount{\the\@serial@counter}%
14424 \Hy@StepCount\@serial@counter
14425 \edef\@parcount{%
14426 \expandafter\ifx\csname @count@#5\endcsname\relax
14427 0%
14428 \else
14429 \csname @count@#5\endcsname
14430 \fi
14431 }%
14432 \immediate\special{%
14433 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
14434 s=\ifx#2-c\else o\fi,t=#4%
14435 }%
14436 }%

```

\ReadBookmarks

```

14437 \def\ReadBookmarks{%
14438 \begingroup
14439 \def\0{\hv@pdf@char 0}%
14440 \def\1{\hv@pdf@char 1}%
14441 \def\2{\hv@pdf@char 2}%
14442 \def\3{\hv@pdf@char 3}%
14443 \def\({}%
14444 \def\)}{%
14445 \def\do##1{%
14446 \ifnum\catcode`##1=\active
14447 \@makeother##1%
14448 \else
14449 \ifnum\catcode`##1=6 %
14450 \@makeother##1%
14451 \fi
14452 \fi
14453 }%
14454 \dospecials
14455 \Hy@safe@activestrue
14456 \InputIfFileExists{\jobname.out}{\}{}%
14457 \endgroup

```



```

14458 \ifx\WriteBookmarks\relax
14459 \else
14460 \if@filesw
14461 \newwrite\@outlinefile
14462 \Hy@OutlineRerunCheck
14463 \immediate\openout\@outlinefile=\jobname.out\relax
14464 \ifHy@typexml
14465 \immediate\write\@outlinefile{<relaxxml>\relax}%
14466 \fi
14467 \fi
14468 \fi
14469 }

14470 </vtex>

14471 <*\vtex>
14472 \def\ReadBookmarks{%
14473 \pdf@ifdraftmode{ }{%
14474 \begingroup
14475 \def\do##1{%
14476 \ifnum\catcode`##1=\active
14477 \@makeother##1%
14478 \else
14479 \ifnum\catcode`##1=6 %
14480 \@makeother##1%
14481 \fi
14482 \fi
14483 }%
14484 \dospecials
14485 \Hy@safe@activetrue
14486 \escapechar=`\%
14487 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14488 \calc@bm@number{##5}%
14489 }%
14490 \InputIfFileExists{\jobname.out}{ }{%
14491 \ifx\WriteBookmarks\relax
14492 \global\let\WriteBookmarks\relax
14493 \fi
14494 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14495 \def\Hy@temp{##4}%
14496 <*\pdfTeX>
14497 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14498 \Hy@OutlineName{}\Hy@pstringName{%
14499 ##2\check@bm@number{##3}%
14500 }{%
14501 \expandafter\strip@prefix\meaning\Hy@temp
14502 }%
14503 </pdfTeX>
14504 <*\pdfmark>
14505 \pdfmark{%
14506 pdfmark=/OUT,%
14507 Count={##2\check@bm@number{##3}},%
14508 Dest={##3},%
14509 Title=\expandafter\strip@prefix\meaning\Hy@temp
14510 }%

```

```

14511 </pdfmark>
14512 <*dvipdfm | xetex>
14513   \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14514   \@pdfm@mark{%
14515     outline \ifHy@DvipdfmxOutlineOpen
14516       [%
14517       \ifnum##21>\z@
14518       \else
14519       -%
14520       \fi
14521       ] %
14522       \fi
14523       ##1<<%
14524       /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
14525       /A<<%
14526       /S/GoTo%
14527       /D(\Hy@pstringName)%
14528       >>%
14529       >>%
14530     }%
14531 </dvipdfm | xetex>
14532 }%
14533 \begingroup
14534   \def\WriteBookmarks{0}%
14535   \InputIfFileExists{\jobname.out}{-}{-}%
14536 \endgroup
14537 %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
14538 \endgroup
14539 }%
14540 \ifx\WriteBookmarks\relax
14541 \else
14542   \if@files
14543     \newwrite\@outlinefile
14544     \Hy@OutlineRerunCheck
14545     \immediate\openout\@outlinefile=\jobname.out\relax
14546     \ifHy@typexml
14547       \immediate\write\@outlinefile{<relaxxml>\relax}%
14548     \fi
14549   \fi
14550 \fi
14551 }
14552 <*pdfTeX>
14553 \def\Hy@OutlineName#1#2#3#4{%
14554   \pdfoutline goto name{#2}count#3{#4}%
14555 }
14556 </pdfTeX>
14557 \def\check@bm@number#1{%
14558   \expandafter\ifx\csname B_#1\endcsname\relax
14559     0%
14560   \else
14561     \csname B_#1\endcsname
14562   \fi
14563 }
14564 \def\calc@bm@number#1{%

```

```

14565 \@tempcnta=\check@bm@number{#1}\relax
14566 \advance\@tempcnta by 1 %
14567 \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
14568 }
14569 \</!vtex>

14570 \ifHy@implicit
14571 \else
14572 \expandafter\endinput
14573 \fi

14574 \</outlines>
14575 \<*outlines | hypertex>

14576 \newlength\Hy@SectionHShift
14577 \def\Hy@SectionAnchorHref#1{%
14578 \ifx\protect\@typeset@protect
14579 \Hy@@@SectionAnchor{#1}%
14580 \fi
14581 }
14582 \DeclareRobustCommand*{\Hy@@@SectionAnchor}[1]{%
14583 \leavevmode
14584 \hbox to 0pt{%
14585 \kern-\Hy@SectionHShift
14586 \Hy@raisedlink{%
14587 \hyper@anchorstart{#1}\hyper@anchorend
14588 }%
14589 \hss
14590 }%
14591 }
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 \ltx@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       \ltx@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>

```

## 46 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 46.1 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}{\textddagger}  
 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-  
 left  
 14816 \DeclareTextCommand{\guilsinglleft}{PD1}{\210}% U+2039  
 14817 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
 singlright  
 14818 \DeclareTextCommand{\guilsinglright}{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{\Y}{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; guillemotleft  
 14885 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
 14886 % U+00AC NOT SIGN; logicalnot  
 14887 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
 14888 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
 No glyph \255 in PDFDocEncoding.  
 14889 % U+00AE REGISTERED SIGN; registered  
 14890 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
 14891 % U+00AF MACRON; \*macron, overscore  
 14892 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
 14893 % U+00B0 DEGREE SIGN; degree  
 14894 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
 14895 % U+00B1 PLUS-MINUS SIGN; plusminus  
 14896 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
 14897 % U+00B2 SUPERSCRIPT TWO; twosuperior  
 14898 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}%\* U+00B2  
 14899 % U+00B3 SUPERSCRIPT THREE; threesuperior  
 14900 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}%\* U+00B3  
 14901 % U+00B4 ACUTE ACCENT; acute  
 14902 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
 14903 % U+00B5 MICRO SIGN; mu, mul  
 14904 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
 14905 % U+00B6 PILCROW SIGN; paragraph  
 14906 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
 14907 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
 14908 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
 14909 % U+00B8 CEDILLA; cedilla  
 14910 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
 14911 % U+00B9 SUPERSCRIPT ONE; onesuperior  
 14912 \DeclareTextCommand{\textonesuperior}{PD1}{\271}%\* U+00B9  
 14913 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
 14914 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
 14915 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
 14916 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
 14917 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
 14918 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
 14919 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
 14920 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
 14921 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
 14922 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
 14923 % U+00BF INVERTED QUESTION MARK; questiondown  
 14924 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
 14925 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
 14926 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
 14927 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
 14928 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
 14929 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
 14930 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
 14931 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
 14932 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
 14933 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis

14934 \DeclareTextCompositeCommand{"}{PD1}{A}{\304}% U+00C4  
14935 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14936 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14937 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14938 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14939 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14940 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14941 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14942 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
14943 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14944 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
14945 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14946 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
14947 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14948 \DeclareTextCompositeCommand{"}{PD1}{E}{\313}% U+00CB  
14949 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14950 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
14951 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14952 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
14953 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14954 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
14955 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14956 \DeclareTextCompositeCommand{"}{PD1}{I}{\317}% U+00CF  
14957 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14958 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
14959 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14960 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14961 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
14962 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14963 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
14964 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14965 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
14966 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14967 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
14968 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14969 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
14970 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14971 \DeclareTextCompositeCommand{"}{PD1}{O}{\326}% U+00D6  
14972 % U+00D7 MULTIPLICATION SIGN; multiply  
14973 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14974 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14975 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14976 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14977 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331}% U+00D9  
14978 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14979 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
14980 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14981 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB  
14982 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14983 \DeclareTextCompositeCommand{"}{PD1}{U}{\334}% U+00DC  
14984 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14985 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
14986 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
14987 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE

14988 \DeclareTextCommand{\textThorn}{PD1}{\336}%\* U+00DE  
14989 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14990 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
14991 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14992 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340}% U+00E0  
14993 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14994 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
14995 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14996 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
14997 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14998 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
14999 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
15000 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344}% U+00E4  
15001 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
15002 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
15003 % U+00E6 LATIN SMALL LETTER AE; ae  
15004 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
15005 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
15006 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7  
15007 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
15008 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350}% U+00E8  
15009 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
15010 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351}% U+00E9  
15011 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
15012 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352}% U+00EA  
15013 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
15014 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353}% U+00EB  
15015 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
15016 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354}% U+00EC  
15017 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354}% U+00EC  
15018 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
15019 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
15020 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
15021 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
15022 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
15023 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
15024 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
15025 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
15026 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
15027 % U+00F0 LATIN SMALL LETTER ETH; eth  
15028 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
15029 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
15030 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1  
15031 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
15032 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362}% U+00F2  
15033 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
15034 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363}% U+00F3  
15035 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
15036 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364}% U+00F4  
15037 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
15038 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365}% U+00F5  
15039 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
15040 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366}% U+00F6  
15041 % U+00F7 DIVISION SIGN; divide

```

15042 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7
15043 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash
15044 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8
15045 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave
15046 \DeclareTextCompositeCommand{\`}{PD1}{u}{\371}% U+00F9
15047 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute
15048 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372}% U+00FA
15049 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex
15050 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373}% U+00FB
15051 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis
15052 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374}% U+00FC
15053 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute
15054 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375}% U+00FD
15055 % U+00FE LATIN SMALL LETTER THORN; thorn; \th, \thorn (wasysym)
15056 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE
15057 \DeclareTextCommand{\textthorn}{PD1}{\376}%* U+00FE
15058 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis
15059 \DeclareTextCompositeCommand{\"}{PD1}{y}{\377}% U+00FF
15060 \DeclareTextCommand{\ij}{PD1}{ij}% ligature U+0069 U+006A

```

Glyphs that consist of several characters.

```

15061 \DeclareTextCommand{\SS}{PD1}{SS}%
15062 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}%

```

Aliases (german.sty)

```

15063 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}%
15064 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}%
15065 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}%
15066 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}%
15067 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}%
15068 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}%
15069 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}%
15070 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}%

```

Aliases (math names)

```

15071 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}%
15072 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}%
15073 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}%
15074 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}%
15075 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}%
15076 \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).

```

15077 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
15078 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute
15079 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
15080 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute
15081 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute
15082 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
15083 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
15084 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
15085 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
15086 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
15087 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute

```

```

15088 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
15089 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
15090 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot
15091 </pd1enc>

```

## 46.2 PU encoding

```

15092 <*puenc>
15093 \DeclareFontEncoding{PU}{}{}

```

### 46.2.1 NFSS2 accents

```

15094 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
15095 \DeclareTextCommand{\`}{PU}[1]{#1\83\000}% U+0300
15096 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
15097 \DeclareTextCommand{\'}{PU}[1]{#1\83\001}% U+0301
15098 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
15099 \DeclareTextCommand{\^}{PU}[1]{#1\83\002}% U+0302
15100 % U+0303 COMBINING TILDE; tildecmb, *tildecmb
15101 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303
15102 % U+0304 COMBINING MACRON; macroncmb
15103 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304
15104 % U+0306 COMBINING BREVE; brevecmb
15105 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306
15106 \ifx\CYRDZE\@undefined \else
15107 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306
15108 \fi
15109 % U+0307 COMBINING DOT ABOVE; dotaccentcmb
15110 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307
15111 % U+0308 COMBINING DIAERESIS; dieresiscmb
15112 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308
15113 % U+030A COMBINING RING ABOVE; ringcmb
15114 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A
15115 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb
15116 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B
15117 % U+030C COMBINING CARON; caroncmb
15118 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C
15119 </puenc>
15120 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
15121 (puextra)\DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F
15122 <*puenc>
15123 \ifx\CYRDZE\@undefined \else
15124 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F
15125 \fi
15126 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
15127 \DeclareTextCommand{\textinvbreve}{PU}[1]{#1\83\021}% U+0311
15128 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311
15129 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcomb
15130 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323
15131 % U+0324 COMBINING DIAERESIS BELOW; dieresisbelowcmb; \textsubum-
    laut (tipa)
15132 \DeclareTextCommand{\textsubumlaut}{PU}[1]{#1\83\044}% U+0324
15133 % U+0325 COMBINING RING BELOW; ringbelowcmb; \textsubring (tipa)
15134 \DeclareTextCommand{\textsubring}{PU}[1]{#1\83\045}% U+0325
15135 % U+0327 COMBINING CEDILLA; cedillacmb

```

```

15136 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327
15137 % U+0328 COMBINING OGONEK; ogonekcmb
15138 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328
15139 % U+032D COMBINING CIRCUMFLEX ACCENT BELOW;
15140 % \textsubcircum (tipa)
15141 \DeclareTextCommand{\textsubcircum}{PU}[1]{#1\83\055}% U+032D
15142 % U+032E COMBINING BREVE BELOW; brevebelowcmb
15143 \DeclareTextCommand{\textsubbreve}{PU}[1]{#1\83\056}% U+032E
15144 % U+0330 COMBINING TILDE BELOW; tildebelowcmb; \textsubtilde (tipa)
15145 \DeclareTextCommand{\textsubtilde}{PU}[1]{#1\83\060}% U+0330
15146 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
15147 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331
15148 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb
15149 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361
15150 % U+20DD COMBINING ENCLOSING CIRCLE
15151 \DeclareTextCommand{\textcircled}{PU}[1]{#1\9040\335}% U+20DD

```

Double accents.

```

15152 \DeclareTextCommand{\textacutemacron}{PU}[1]{#1\83\001\83\004}% U+0301 U+0304
15153 \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.

```

15154 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textasciigrave}%
15155 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}%
15156 \DeclareTextCompositeCommand{\^}{PU}{\@empty}{\textasciicircum}%
15157 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}%
15158 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}%
15159 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}%
15160 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}%
15161 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}%
15162 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}%
15163 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}%
15164 (/puenc)
15165 (puextra)\DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}%
15166 (*puenc)
15167 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}%
15168 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}%
15169 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}%
15170 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\@empty}{\83\021}% U+0311
15171 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\@empty}{\83\044}% U+0324
15172 \DeclareTextCompositeCommand{\textsubring}{PU}{\@empty}{\textringlow}%
15173 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\@empty}{\textcircum-
low}%
15174 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\@empty}{\83\056}% U+032E
15175 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\@empty}{\texttildebelow}%
15176 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}%
15177 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}%
15178 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}%
15179 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}%
15180 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}%
15181 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\@empty}{\83\001\83\004}% U+0301 U
15182 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\@empty}{\83\000\83\004}% U+0300 U
15183 \DeclareTextCompositeCommand{\`}{PU}{\ }{\textasciigrave}%

```

```

15184 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}%
15185 \DeclareTextCompositeCommand{\^}{PU}{\ }{\textasciicircum}%
15186 \DeclareTextCompositeCommand{\~}{PU}{\ }{\texttilde}%
15187 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}%
15188 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}%
15189 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}%
15190 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}%
15191 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}%
15192 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}%
15193 </puenc>
15194 <puextra>\DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}%
15195 <*puenc>
15196 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}%
15197 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}%
15198 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}%
15199 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\ }{\{ \83\021\}}% U+0311
15200 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\ }{\{ \83\044\}}% U+0324
15201 \DeclareTextCompositeCommand{\textsubring}{PU}{\ }{\textringlow}%
15202 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\ }{\textcircumlow}%
15203 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\ }{\{ \83\056\}}% U+032E
15204 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\ }{\texttildebelow}%
15205 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}%
15206 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}%
15207 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}%
15208 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}%
15209 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}%
15210 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\ }{\{ \83\001\83\004\}}% U+0301 U+0304
15211 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\ }{\{ \83\000\83\004\}}% U+0300 U+0304

```

Accents for capitals (see encoding TS1)

```

15212 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}%
15213 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}%
15214 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}%
15215 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}%
15216 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}%
15217 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}%
15218 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\">{#1}}%
15219 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}%
15220 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}%
15221 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}%
15222 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}%
15223 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}%
15224 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.\{#1}}%
15225 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}%
15226 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}%

```

#### 46.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

```

15227 % U+0009 (CHARACTER TABULATION)
15228 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
15229 % U+000A (LINE FEED)
15230 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A
15231 % U+000D (CARRIAGE RETURN)
15232 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D

```



\80\040: U+0020 SPACE; space, spacehackarabic  
 \80\041: U+0021 EXCLAMATION MARK; exclam  
 15233 % U+0022 QUOTATION MARK; quotedbl  
 15234 \DeclareTextCommand{\textquotedbl}{PU}{"}% \80\042 U+0022  
 15235 % U+0023 NUMBER SIGN; numbersign  
 15236 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023  
 15237 % U+0024 DOLLAR SIGN; dollar  
 15238 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024  
 15239 %\* \textdollar -> \mathdollar  
 15240 %\* \textdollar -> \EyesDollar (marvosym)  
 15241 % U+0025 PERCENT SIGN; percent  
 15242 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025  
 15243 % U+0026 AMPERSAND; ampersand  
 15244 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026  
 15245 %\* \textampersand -> \binampersand (stmaryrd)  
 15246 %\* \textampersand -> \with (cml)  
 15247 % U+0027 APOSTROPHE; quotesingle  
 15248 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027  
 15249 % U+0028 LEFT PARENTHESIS; parenleft  
 15250 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028  
 15251 % U+0029 RIGHT PARENTHESIS; parenright  
 15252 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029  
 15253 % U+002A ASTERISK; asterisk; (?)  
 15254 \DeclareTextCommand{\textasteriskcentered}{PU}{\80\052}% U+002A  
 15255 % U+002B PLUS SIGN; plus; \MVPlus (marvosym)  
 15256 \DeclareTextCommand{\textMVPlus}{PU}{\80\053}%\* U+002B  
 15257 % U+002C COMMA; comma; \MVComma (marvosym)  
 15258 \DeclareTextCommand{\textMVComma}{PU}{\80\054}%\* U+002C  
 15259 % U+002D HYPHEN-MINUS; hyphen; \MVMinus (marvosym)  
 15260 \DeclareTextCommand{\textMVMinus}{PU}{\80\055}%\* U+002D  
 15261 % U+002E FULL STOP; period; \MVPeriod (marvosym)  
 15262 \DeclareTextCommand{\textMVPeriod}{PU}{\80\056}%\* U+002E  
 15263 % U+002F SOLIDUS; slash; \MVDivision (marvosym)  
 15264 \DeclareTextCommand{\textMVDivision}{PU}{\80\057}%\* U+002F  
 15265 % U+0030 DIGIT ZERO; zero; \MVZero (marvosym)  
 15266 \DeclareTextCommand{\textMVZero}{PU}{\80\060}%\* U+0030  
 15267 % U+0031 DIGIT ONE; one; \MVOne (marvosym)  
 15268 \DeclareTextCommand{\textMVOne}{PU}{\80\061}%\* U+0031  
 15269 % U+0032 DIGIT TWO; two; \MVTwo (marvosym)  
 15270 \DeclareTextCommand{\textMVTwo}{PU}{\80\062}%\* U+0032  
 15271 % U+0033 DIGIT THREE; three; \MVThree (marvosym)  
 15272 \DeclareTextCommand{\textMVThree}{PU}{\80\063}%\* U+0033  
 15273 % U+0034 DIGIT FOUR; four; \MVFfour (marvosym)  
 15274 \DeclareTextCommand{\textMVFfour}{PU}{\80\064}%\* U+0034  
 15275 % U+0035 DIGIT FIVE; five; \MVFfive (marvosym)  
 15276 \DeclareTextCommand{\textMVFfive}{PU}{\80\065}%\* U+0035  
 15277 % U+0036 DIGIT SIX; six; \MVSix (marvosym)  
 15278 \DeclareTextCommand{\textMVSix}{PU}{\80\066}%\* U+0036  
 15279 % U+0037 DIGIT SEVEN; seven; \MVSeven (marvosym)  
 15280 \DeclareTextCommand{\textMVSeven}{PU}{\80\067}%\* U+0037  
 15281 % U+0038 DIGIT EIGHT; eight; \MVEight (marvosym)  
 15282 \DeclareTextCommand{\textMVEight}{PU}{\80\070}%\* U+0038  
 15283 % U+0039 DIGIT NINE; nine; \MVNine (marvosym)  
 15284 \DeclareTextCommand{\textMVNine}{PU}{\80\071}%\* U+0039

$\backslash 80\backslash 072$ : U+003A COLON; colon  
 $\backslash 80\backslash 073$ : U+003B SEMICOLON; semicolon  
15285 % U+003C LESS-THAN SIGN; less  
15286  $\backslash \text{DeclareTextCommand}\{\backslash \text{textless}\}\{\text{PU}\}\{<\}\%$   $\backslash 80\backslash 074$  U+003C  
 $\backslash 80\backslash 075$ : U+003D EQUALS SIGN; equal  
15287 % U+003E GREATER-THAN SIGN; greater  
15288  $\backslash \text{DeclareTextCommand}\{\backslash \text{textgreater}\}\{\text{PU}\}\{>\}\%$   $\backslash 80\backslash 076$  U+003E  
 $\backslash 80\backslash 077$ : U+003F QUESTION MARK; question  
15289 % U+0040 COMMERCIAL AT; at;  $\backslash \text{MVAt}$  (marvosym)  
15290  $\backslash \text{DeclareTextCommand}\{\backslash \text{textMVAt}\}\{\text{PU}\}\{\backslash 80\backslash 100\}\%$  U+0040  
 $\backslash 80\backslash 101$ : U+0041 LATIN CAPITAL LETTER A; A  
...  
 $\backslash 80\backslash 132$ : U+005A LATIN CAPITAL LETTER Z; Z  
 $\backslash 80\backslash 133$ : U+005B LEFT SQUARE BRACKET; bracketleft  
15291 % U+005C REVERSE SOLIDUS; backslash  
15292  $\backslash \text{DeclareTextCommand}\{\backslash \text{textbackslash}\}\{\text{PU}\}\{\backslash 80\backslash 134\}\%$  U+005C  
 $\backslash 80\backslash 135$ : U+005D RIGHT SQUARE BRACKET; bracketright  
15293 % U+005E CIRCUMFLEX ACCENT; asciicircum  
15294  $\backslash \text{DeclareTextCommand}\{\backslash \text{textasciicircum}\}\{\text{PU}\}\{\backslash 80\backslash 136\}\%$  U+005E  
15295 % U+005F LOW LINE; underscore  
15296  $\backslash \text{DeclareTextCommand}\{\backslash \text{textunderscore}\}\{\text{PU}\}\{\backslash 80\backslash 137\}\%$  U+005F  
15297 %\*  $\backslash \text{textunderscore} \rightarrow \backslash \text{mathunderscore}$  (LaTeX)  
15298 % U+0060 GRAVE ACCENT; grave  
15299  $\backslash \text{DeclareTextCommand}\{\backslash \text{textasciigrave}\}\{\text{PU}\}\{\backslash 80\backslash 140\}\%$  U+0060  
 $\backslash 80\backslash 141$ : U+0061 LATIN SMALL LETTER A; a  
...  
 $\backslash 80\backslash 150$ : U+0068 LATIN SMALL LETTER H; h  
15300 % U+0069 LATIN SMALL LETTER I; i  
15301  $\backslash \text{DeclareTextCompositeCommand}\{\backslash \cdot\}\{\text{PU}\}\{\backslash i\}\{i\}\%$   $\backslash 80\backslash 151$  U+0069  
15302  $\backslash \text{DeclareTextCompositeCommand}\{\backslash \cdot\}\{\text{PU}\}\{\backslash i\}\{i\}\%$   $\backslash 80\backslash 151$  U+0069  
 $\backslash 80\backslash 152$ : U+006A LATIN SMALL LETTER J; j  
...  
 $\backslash 80\backslash 172$ : U+007A LATIN SMALL LETTER Z; z  
15303 % U+007B LEFT CURLY BRACKET; braceleft  
15304  $\backslash \text{DeclareTextCommand}\{\backslash \text{textbraceleft}\}\{\text{PU}\}\{\backslash 80\backslash 173\}\%$  U+007B  
15305 % U+007C VERTICAL LINE; \*bar, verticalbar  
15306  $\backslash \text{DeclareTextCommand}\{\backslash \text{textbar}\}\{\text{PU}\}\{\backslash |\}\%$   $\backslash 80\backslash 174$  U+007C  
15307 %\*  $\backslash \text{textbar} \rightarrow \backslash \text{textvertline}$  (tipa)  
15308 % U+007D RIGHT CURLY BRACKET; braceright  
15309  $\backslash \text{DeclareTextCommand}\{\backslash \text{textbraceright}\}\{\text{PU}\}\{\backslash 80\backslash 175\}\%$  U+007D  
15310 % U+007E TILDE; asciitilde  
15311  $\backslash \text{DeclareTextCommand}\{\backslash \text{textasciitilde}\}\{\text{PU}\}\{\backslash 80\backslash 176\}\%$  U+007E

#### 46.2.3 Latin-1 Supplement: U+0080 to U+00FF

$\backslash 80\backslash 240$ : U+00A0 NO-BREAK SPACE; nbspace, nonbreakingspace  
15312 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
15313  $\backslash \text{DeclareTextCommand}\{\backslash \text{textexclamdown}\}\{\text{PU}\}\{\backslash 80\backslash 241\}\%$  U+00A1  
15314 % U+00A2 CENT SIGN; cent

```

15315 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2
15316 % U+00A3 POUND SIGN; sterling
15317 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3
15318 %* \textsterling -> \mathsterling (LaTeX)
15319 %* \textsterling -> \pounds (LaTeX)
15320 % U+00A4 CURRENCY SIGN; currency
15321 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4
15322 % U+00A5 YEN SIGN; yen
15323 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5
15324 % U+00A6 BROKEN BAR; brokenbar
15325 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6
15326 %* \textbrokenbar -> \brokenvert (wasysym)
15327 % U+00A7 SECTION SIGN; section
15328 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7
15329 %* \textsection -> \mathsection (LaTeX)
15330 %* \textsection -> \S (LaTeX)
15331 % U+00A8 DIAERESIS; dieresis
15332 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8
15333 % U+00A9 COPYRIGHT SIGN; copyright
15334 \DeclareTextCommand{\textcopyright}{PU}{\80\251}%* U+00A9
15335 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine
15336 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA
15337 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-
    motleft
15338 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB
15339 % U+00AC NOT SIGN; logicalnot
15340 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC
15341 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC
\80\255: U+00AD SOFT HYPHEN; sftyphen, softyphen
15342 % U+00AE REGISTERED SIGN; registered
15343 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE
15344 % U+00AF MACRON; *macron, overscore
15345 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF
15346 % U+00B0 DEGREE SIGN; degree
15347 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0
15348 % U+00B1 PLUS-MINUS SIGN; plusminus
15349 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1
15350 % U+00B2 SUPERSCRIPT TWO; twosuperior
15351 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}%* U+00B2
15352 % U+00B3 SUPERSCRIPT THREE; threesuperior
15353 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}%* U+00B3
15354 % U+00B4 ACUTE ACCENT; acute
15355 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4
15356 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4
15357 % U+00B5 MICRO SIGN; mu, mul
15358 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5
15359 % U+00B6 PILCROW SIGN; paragraph
15360 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6
15361 %* \textparagraph -> \mathparagraph (LaTeX)
15362 % U+00B7 MIDDLE DOT; middot, *periodcentered
15363 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7
15364 %* \textperiodcentered -> \MultiplicationDot (marvosym)
15365 %* \textperiodcentered -> \Squaredot (marvosym)
15366 % U+00B8 CEDILLA; cedilla

```

15367 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
15368 % U+00B9 SUPERSCRIPT ONE; onesuperior  
15369 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}%\* U+00B9  
15370 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
15371 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA  
15372 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
motright  
15373 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
15374 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
15375 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
15376 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
15377 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
15378 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
15379 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
15380 % U+00BF INVERTED QUESTION MARK; questiondown  
15381 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
15382 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
15383 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
15384 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
15385 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
15386 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
15387 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
15388 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
15389 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
15390 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
15391 \DeclareTextCompositeCommand{\\"}{PU}{A}{\80\304}% U+00C4  
15392 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
15393 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
15394 % U+00C6 LATIN CAPITAL LETTER AE; AE  
15395 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
15396 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
15397 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
15398 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
15399 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
15400 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
15401 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
15402 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
15403 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
15404 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
15405 \DeclareTextCompositeCommand{\\"}{PU}{E}{\80\313}% U+00CB  
15406 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
15407 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
15408 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
15409 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
15410 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
15411 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
15412 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
15413 \DeclareTextCompositeCommand{\\"}{PU}{I}{\80\317}% U+00CF  
15414 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
15415 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
15416 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
15417 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
15418 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
15419 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2

15420 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
 15421 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
 15422 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
 15423 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
 15424 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
 15425 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
 15426 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
 15427 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6  
 15428 % U+00D7 MULTIPLICATION SIGN; multiply  
 15429 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
 15430 %\* \textmultiply -> \vartimes (stmaryrd)  
 15431 %\* \textmultiply -> \MVMultiplication (marvosym)  
 15432 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
 15433 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
 15434 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
 15435 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9  
 15436 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
 15437 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
 15438 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
 15439 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
 15440 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
 15441 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
 15442 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
 15443 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
 15444 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)  
 15445 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
 15446 \DeclareTextCommand{\textThorn}{PU}{\80\336}%\* U+00DE  
 15447 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
 15448 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
 15449 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
 15450 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
 15451 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
 15452 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
 15453 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
 15454 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
 15455 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
 15456 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
 15457 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
 15458 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
 15459 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
 15460 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
 15461 % U+00E6 LATIN SMALL LETTER AE; ae  
 15462 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
 15463 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
 15464 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
 15465 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
 15466 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
 15467 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
 15468 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
 15469 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
 15470 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
 15471 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
 15472 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
 15473 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave

15474 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
15475 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
15476 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
15477 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15478 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15479 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
15480 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15481 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15482 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
15483 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15484 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15485 % U+00F0 LATIN SMALL LETTER ETH; eth  
15486 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
15487 %\* \dh -> \eth (wsuipa, phonetic)  
15488 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
15489 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
15490 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
15491 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
15492 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
15493 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
15494 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
15495 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
15496 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
15497 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
15498 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
15499 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
15500 % U+00F7 DIVISION SIGN; divide  
15501 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
15502 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
15503 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
15504 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
15505 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
15506 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
15507 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
15508 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
15509 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
15510 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
15511 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
15512 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
15513 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
15514 % U+00FE LATIN SMALL LETTER THORN; thorn;  
15515 % \th, \thorn (wasysym), \textthorn (tipa)  
15516 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
15517 \DeclareTextCommand{\textthorn}{PU}{\80\376}%\* U+00FE  
15518 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
15519 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

#### 46.2.4 Latin Extended-A: U+0080 to U+017F

15520 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
15521 \DeclareTextCompositeCommand{=} {PU}{A}{\81\000}% U+0100  
15522 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
15523 \DeclareTextCompositeCommand{=} {PU}{a}{\81\001}% U+0101  
15524 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve

15525 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
15526 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
15527 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
15528 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
15529 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
15530 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
15531 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
15532 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
15533 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
15534 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
15535 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
15536 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
15537 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
15538 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
15539 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109  
15540 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
15541 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
15542 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
15543 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
15544 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
15545 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
15546 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
15547 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
15548 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
15549 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
15550 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
15551 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
15552 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
15553 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
15554 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron;  
15555 % \textcrd (tipa)  
15556 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
15557 \DeclareTextCommand{\textcrd}{PU}{\81\021}% U+0111  
15558 %\* \textcrd -> \crossd (wsuipa)  
15559 % An alternate glyph with the stroke through the bowl:  
15560 %\* \textcrd -> \textbard (tipa)  
15561 %\* \textcrd -> \bard (wsuipa)  
15562 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
15563 \DeclareTextCompositeCommand{=} {PU}{E}{\81\022}% U+0112  
15564 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
15565 \DeclareTextCompositeCommand{=} {PU}{e}{\81\023}% U+0113  
15566 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
15567 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
15568 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
15569 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
15570 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
15571 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
15572 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
15573 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
15574 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
15575 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
15576 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
15577 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119

15578 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
 15579 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
 15580 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
 15581 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
 15582 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
 15583 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
 15584 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
 15585 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
 15586 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
 15587 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
 15588 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
 15589 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
 15590 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotac-  
 cent  
 15591 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
 15592 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
 15593 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
 15594 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcom-  
 maaccent  
 15595 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
 15596 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
 15597 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
 15598 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
 15599 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
 15600 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
 15601 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
 15602 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
 15603 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
 15604 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar; \hbar (Ams)  
 15605 \DeclareTextCommand{\texthbar}{PU}{\81\047}%\* U+0127  
 15606 %\* \texthbar -> \textcrh (tipa)  
 15607 %\* \texthbar -> \crossh (wsuipa)  
 15608 %\* \texthbar -> \planck (phonetic)  
 15609 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde  
 15610 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
 15611 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
 15612 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
 15613 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
 15614 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
 15615 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
 15616 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
 15617 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
 15618 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
 15619 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
 15620 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
 15621 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
 15622 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
 15623 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
 15624 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
 15625 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
 15626 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
 15627 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
 15628 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
 15629 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent



15630 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
 15631 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
 15632 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
 15633 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
 15634 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
 15635 % U+0133 LATIN SMALL LIGATURE IJ; ij  
 15636 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
 15637 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
 15638 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
 15639 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
 15640 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
 15641 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
 15642 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaac-  
 cent  
 15643 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136  
 15644 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
 15645 \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 choosen `\textkra`.

15646 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic  
 15647 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138  
 15648 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute  
 15649 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139  
 15650 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute  
 15651 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
 15652 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaac-  
 cent  
 15653 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B  
 15654 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent  
 15655 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C  
 15656 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron  
 15657 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D  
 15658 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron  
 15659 \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`.

15660 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotac-  
 cent  
 15661 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F  
 15662 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent  
 15663 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140  
 15664 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
 15665 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141  
 15666 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
 15667 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142  
 15668 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute  
 15669 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143  
 15670 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute  
 15671 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144  
 15672 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaac-  
 cent

15673 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145  
15674 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent  
15675 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146  
15676 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron  
15677 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147  
15678 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron  
15679 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148  
15680 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napostrophe, quoterightn  
15681 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149  
15682 % U+014A LATIN CAPITAL LETTER ENG; Eng  
15683 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A  
15684 % U+014B LATIN SMALL LETTER ENG; eng  
15685 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
15686 %\* \ng -> \eng (wsuipa)  
15687 %\* \ng -> \engma (phonetic)  
15688 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
15689 \DeclareTextCompositeCommand{=} {PU}{O}{\81\114}% U+014C  
15690 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
15691 \DeclareTextCompositeCommand{=} {PU}{o}{\81\115}% U+014D  
15692 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
15693 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
15694 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
15695 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
15696 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblacute, Ohungarumlaut  
15697 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
15698 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odblacute, ohungarumlaut  
15699 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
15700 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
15701 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
15702 % U+0153 LATIN SMALL LIGATURE OE; oe  
15703 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
15704 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
15705 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124}% U+0154  
15706 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
15707 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125}% U+0155  
15708 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaaccent  
15709 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
15710 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
15711 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157  
15712 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
15713 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
15714 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
15715 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
15716 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
15717 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
15718 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
15719 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
15720 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
15721 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
15722 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex

15723 \DeclareTextCompositeCommand{\~}{PU}{s}{\81\135}% U+015D  
15724 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
15725 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
15726 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
15727 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
15728 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
15729 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
15730 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
15731 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
15732 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaac-  
cent  
15733 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
15734 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
15735 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
15736 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
15737 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
15738 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
15739 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
15740 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
15741 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
15742 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
15743 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
15744 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
15745 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
15746 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
15747 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
15748 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
15749 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
15750 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
15751 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
15752 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
15753 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
15754 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
15755 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
15756 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
15757 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
15758 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
15759 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
15760 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udbla-  
cute, Uhungarumlaut  
15761 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
15762 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udbla-  
cute, uhungarumlaut  
15763 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
15764 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
15765 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172  
15766 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
15767 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
15768 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
15769 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
15770 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
15771 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
15772 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
15773 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176

15774 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
 15775 \DeclareTextCompositeCommand{\~}{PU}{y}{\81\167}% U+0177  
 15776 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 15777 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178  
 15778 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
 15779 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
 15780 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
 15781 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
 15782 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
 15783 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B  
 15784 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
 15785 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C  
 15786 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 15787 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
 15788 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 15789 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
 15790 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
 15791 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

#### 46.2.5 Latin Extended-B: U+0180 to U+024F

15792 % U+0180 LATIN SMALL LETTER B WITH STROKE; bstroke; \textcrb (tipa)  
 15793 \DeclareTextCommand{\textcrb}{PU}{\81\200}% U+0180  
 15794 %\* \textcrb -> \crossb (wsuipa)  
 15795 % An alternate glyph with the stroke through the bowl:  
 15796 %\* \textcrb -> \textbarb (tipa)  
 15797 %\* \textcrb -> \barb (wsuipa)  
 15798 % U+0181 LATIN CAPITAL LETTER B WITH HOOK; Bhook; \hausab (pho-  
 netic)  
 15799 \DeclareTextCommand{\texthausaB}{PU}{\81\201}%\* U+0181  
 15800 % U+0188 LATIN SMALL LETTER C WITH HOOK; chook; \texthtc (tipa)  
 15801 \DeclareTextCommand{\texthtc}{PU}{\81\210}% U+0188  
 15802 % U+018A LATIN CAPITAL LETTER D WITH HOOK; Dhook; \hausad (pho-  
 netic)  
 15803 \DeclareTextCommand{\texthausaD}{PU}{\81\212}%\* U+018A  
 15804 % U+018E LATIN CAPITAL LETTER REVERSED E; Eversed  
 15805 \DeclareTextCommand{\textEversed}{PU}{\81\216}% U+018E  
 15806 \DeclareTextCommand{\textrevE}{PU}{\81\216}% U+018E  
 15807 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 15808 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
 15809 %\* \textflorin -> \Florin (marvosym)  
 15810 % U+0195 LATIN SMALL LETTER HV; hv; \texthvlig (tipa)  
 15811 \DeclareTextCommand{\texthvlig}{PU}{\81\225}% U+0195  
 15812 %\* \texthvlig -> \hv (wsuipa)  
 15813 % U+0198 LATIN CAPITAL LETTER K WITH HOOK; Khook; \hausak (pho-  
 netic)  
 15814 \DeclareTextCommand{\texthausaK}{PU}{\81\230}%\* U+0198  
 15815 % U+0199 LATIN SMALL LETTER K WITH HOOK; khook; \texthtk (tipa)  
 15816 \DeclareTextCommand{\texthtk}{PU}{\81\231}% U+0199  
 15817 %\* \texthtk -> \hausak (phonetic)  
 15818 % U+019A LATIN SMALL LETTER L WITH BAR; lbar;  
 15819 % \textbarl (tipa), \barl (wsuipa)  
 15820 \DeclareTextCommand{\textbarl}{PU}{\81\232}%\* U+019A  
 15821 % U+019B LATIN SMALL LETTER LAMBDA WITH STROKE/  
 15822 % LATIN SMALL LETTER BARRED LAMBDA; lambdastroke;

15823 % \textcrlambda (tipa)  
15824 \DeclareTextCommand{\textcrlambda}{PU}{\81\233}% U+019B  
15825 %\* \textcrlambda -> \crossnilambda (wsuipa)  
15826 %\* \textcrlambda -> \barlambda (phonetic)  
15827 %\* \textcrlambda -> \lambdabar (txfonts/pxfonts)  
15828 %\* \textcrlambda -> \lambdaslash (txfonts/pxfonts)  
15829 % U+019E LATIN SMALL LETTER N WITH LONG RIGHT LEG; nlegright-long;  
15830 % \textnrleg (tipx)  
15831 \DeclareTextCommand{\textPUnrleg}{PU}{\81\236}% U+019E  
15832 %\* \textPUnrleg -> \textnrleg (tipx)  
15833 % U+01A5 LATIN SMALL LETTER P WITH HOOK; phook; \texthtp (tipa)  
15834 \DeclareTextCommand{\texthtp}{PU}{\81\245}% U+01A5  
15835 % U+01AB LATIN SMALL LETTER T WITH PALATAL HOOK; tpalatalhook;  
15836 % \textlhookt (tipa)  
15837 \DeclareTextCommand{\textlhookt}{PU}{\81\253}% U+01AB  
15838 % U+01AD LATIN SMALL LETTER T WITH HOOK; thook; \texthtt (tipa)  
15839 \DeclareTextCommand{\texthtt}{PU}{\81\255}% U+01AD  
15840 % U+01B9 LATIN SMALL LETTER EZH REVERSED/  
15841 % LATIN SMALL LETTER REVERSED YOGH; \textrevyogh (tipa)  
15842 \DeclareTextCommand{\textrevyogh}{PU}{\81\271}% U+01B9  
15843 % U+01BB LATIN LETTER TWO WITH STROKE; twostroke; \textcrtwo (tipa)  
15844 \DeclareTextCommand{\textcrtwo}{PU}{\81\273}% U+01BB  
15845 % U+01BE LATIN LETTER INVERTED GLOTTAL STOP WITH STROKE;  
15846 % glottalinvertedstroke; \textcrinvglotstop (tipa)  
15847 \DeclareTextCommand{\textcrinvglotstop}{PU}{\81\276}% U+01BE  
15848 % U+01BF LATIN LETTER WYNN; wynn; \textwynn (tipa)  
15849 \DeclareTextCommand{\textwynn}{PU}{\81\277}% U+01BF  
15850 % U+01C0 LATIN LETTER DENTAL CLICK/LATIN LETTER PIPE; clickden-  
tal;  
15851 % \textpipe (tipa)  
15852 \DeclareTextCommand{\textpipe}{PU}{\81\300}% U+01C0  
15853 %\* \textpipe -> \textpipevar (tipx)  
15854 % U+01C1 LATIN LETTER LATERAL CLICK/LATIN LETTER  
15855 % DOUBLE PIPE; clicklateral; \textdoublepipe (tipa)  
15856 \DeclareTextCommand{\textdoublepipe}{PU}{\81\301}% U+01C1  
15857 %\* \textdoublepipe -> \textdoublepipevar (tipx)  
15858 % U+01C2 LATIN LETTER ALVEOLAR CLICK/LATIN LETTER PIPE DOU-  
BLE BAR;  
15859 % clickalveolar; \textdoublebarpipe (tipa)  
15860 \DeclareTextCommand{\textdoublebarpipe}{PU}{\81\302}% U+01C2  
15861 %\* \textdoublebarpipe -> \textdoublebarpipevar (tipx)  
15862 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
15863 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
15864 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
15865 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
15866 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
15867 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
15868 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
15869 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
15870 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
15871 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
15872 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
15873 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron

15874 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
15875 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
15876 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
15877 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
15878 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
15879 % U+01DD LATIN SMALL LETTER TURNED E; eturned; \inve (wasysym)  
15880 \DeclareTextCommand{\textinve}{PU}{\81\335}%\* U+01DD  
15881 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
15882 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
15883 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
15884 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
15885 %\* \textgslash -> \textcrg (tipa)  
15886 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
15887 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
15888 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
15889 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
15890 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
15891 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8  
15892 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
15893 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
15894 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
15895 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
15896 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
15897 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
15898 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
15899 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15900 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15901 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
15902 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
15903 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
15904 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
15905 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
15906 \DeclareTextCompositeCommand{\`}{PU}{N}{\81\370}% U+01F8  
15907 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
15908 \DeclareTextCompositeCommand{\`}{PU}{n}{\81\371}% U+01F9  
15909 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
15910 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC  
15911 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
15912 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD  
15913 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE;  
15914 % \*Oslashacute, Ostrokeacute  
15915 \DeclareTextCompositeCommand{\'}{PU}{\O}{\81\376}% U+01FE  
15916 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE;  
15917 % \*oslashacute, ostrokeacute  
15918 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF  
15919 </puenc>  
15920 <\*puextra>  
15921 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
15922 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
15923 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
15924 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
15925 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
15926 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
15927 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave

15928 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
15929 </puextra>  
15930 <\*puenc>  
15931 % U+0206 LATIN CAPITAL LETTER E WITH INVERTED BREVE; Einvert-  
edbreve  
15932 \DeclareTextCompositeCommand{\textinvbreve}{PU}{E}{\82\006}% U+0206  
15933 % U+0207 LATIN SMALL LETTER E WITH INVERTED BREVE; einverted-  
breve  
15934 \DeclareTextCompositeCommand{\textinvbreve}{PU}{e}{\82\007}% U+0207  
15935 </puenc>  
15936 <\*puextra>  
15937 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
15938 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
15939 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
15940 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15941 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
15942 </puextra>  
15943 <\*puenc>  
15944 % U+020A LATIN CAPITAL LETTER I WITH INVERTED BREVE; Iinverted-  
breve  
15945 \DeclareTextCompositeCommand{\textinvbreve}{PU}{I}{\82\012}% U+020A  
15946 % U+020B LATIN SMALL LETTER I WITH INVERTED BREVE; iinverted-  
breve  
15947 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
15948 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B  
15949 </puenc>  
15950 <\*puextra>  
15951 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
15952 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
15953 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
15954 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
15955 </puextra>  
15956 <\*puenc>  
15957 % U+020E LATIN CAPITAL LETTER O WITH INVERTED BREVE; Oinvert-  
edbreve  
15958 \DeclareTextCompositeCommand{\textinvbreve}{PU}{O}{\82\016}% U+020E  
15959 % U+020F LATIN SMALL LETTER O WITH INVERTED BREVE; oinverted-  
breve  
15960 \DeclareTextCompositeCommand{\textinvbreve}{PU}{o}{\82\017}% U+020F  
15961 </puenc>  
15962 <\*puextra>  
15963 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
15964 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
15965 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
15966 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
15967 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
15968 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
15969 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
15970 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
15971 </puextra>  
15972 <\*puenc>  
15973 % U+0216 LATIN CAPITAL LETTER U WITH INVERTED BREVE; Uinvert-  
edbreve  
15974 \DeclareTextCompositeCommand{\textinvbreve}{PU}{U}{\82\026}% U+0216

15975 % U+0217 LATIN SMALL LETTER U WITH INVERTED BREVE; uninverted-  
       breve  
 15976 \DeclareTextCompositeCommand{\textinvbreve}{PU}{u}{\82\027}% U+0217  
 15977 % U+021E LATIN CAPITAL LETTER H WITH CARON  
 15978 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
 15979 % U+021F LATIN SMALL LETTER H WITH CARON  
 15980 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
 15981 % U+0221 LATIN SMALL LETTER D WITH CURL; \textctd (tipa)  
 15982 \DeclareTextCommand{\textctd}{PU}{\82\041}% U+0221  
 15983 % U+0225 LATIN SMALL LETTER Z WITH HOOK; \textcommatailz (tipa)  
 15984 \DeclareTextCommand{\textcommatailz}{PU}{\82\045}% U+0225  
 15985 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
 15986 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
 15987 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
 15988 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
 15989 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
 15990 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
 15991 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
 15992 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
 15993 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
 15994 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
 15995 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
 15996 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
 15997 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
 15998 \DeclareTextCompositeCommand{=} {PU}{Y}{\82\062}% U+0232  
 15999 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
 16000 \DeclareTextCompositeCommand{=} {PU}{y}{\82\063}% U+0233  
 16001 % U+0235 LATIN SMALL LETTER N WITH CURL; \textctn (tipa)  
 16002 \DeclareTextCommand{\textctn}{PU}{\82\065}% U+0235  
 16003 % U+0236 LATIN SMALL LETTER T WITH CURL; \textctt (tipa)  
 16004 \DeclareTextCommand{\textctt}{PU}{\82\066}% U+0236  
 16005 % U+0237 LATIN SMALL LETTER DOTLESS J  
 16006 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237  
 16007 % U+0238 LATIN SMALL LETTER DB DIGRAPH; \textdblig (tipx)  
 16008 \DeclareTextCommand{\textPUdblig}{PU}{\82\070}% U+0238  
 16009 %\* \textPUdblig -> \textdblig (tipx)  
 16010 % U+0239 LATIN SMALL LETTER QP DIGRAPH; \textqplig (tipx)  
 16011 \DeclareTextCommand{\textPUqplig}{PU}{\82\071}% U+0239  
 16012 %\* \textPUqplig -> \textqplig (tipx)  
 16013 % U+023C LATIN SMALL LETTER C WITH STROKE; \slashc (wsuipa)  
 16014 \DeclareTextCommand{\textslashc}{PU}{\82\074}%\* U+023C  
 16015 %\* \textslashc -> \textcentoldstyle (textcomp)  
 16016 % With bar instead of stroke:  
 16017 %\* \textslashc -> \textbarc (tipa)

#### 46.2.6 IPA Extensions: U+0250 to U+02AF

16018 % U+0250 LATIN SMALL LETTER TURNED A; aturned; \textturna (tipa)  
 16019 \DeclareTextCommand{\textturna}{PU}{\82\120}% U+0250  
 16020 %\* \textturna -> \inva (wasysym)  
 16021 % U+0251 LATIN SMALL LETTER ALPHA/LATIN SMALL LETTER  
 16022 % SCRIPT A; ascript; \textscripta (tipa), \scripta (wsuipa)  
 16023 \DeclareTextCommand{\textscripta}{PU}{\82\121}%\* U+0251  
 16024 %\* \textscripta -> \vara (phonetic)  
 16025 % U+0252 LATIN SMALL LETTER TURNED ALPHA; ascriptturned;



16026 % \textturnscripta (tipa)  
16027 \DeclareTextCommand{\textturnscripta}{PU}{\82\122}% U+0252  
16028 %\* \textturnscripta -> \invscripta (wsuipa)  
16029 %\* \textturnscripta -> \rotvara (phonetic)  
16030 % U+0253 LATIN CAPITAL LETTER B WITH HOOK; bhook; \texthtb (tipa)  
16031 \DeclareTextCommand{\texthtb}{PU}{\82\123}% U+0253  
16032 %\* \texthtb -> \hookb (wsuipa)  
16033 %\* \texthtb -> \hausab (phonetic)  
16034 % U+0254 LATIN SMALL LETTER OPEN O; oopen;  
16035 % \textopeno (tipa), \openo (wasysym)  
16036 \DeclareTextCommand{\textopeno}{PU}{\82\124}% U+0254  
16037 %\* \textopeno -> \varopeno (phonetic)  
16038 % U+0255 LATIN SMALL LETTER C WITH CURL; ccurl; \textctc (tipa)  
16039 \DeclareTextCommand{\textctc}{PU}{\82\125}% U+0255  
16040 %\* \textctc -> \curlyc (wsuipa)  
16041 % U+0256 LATIN SMALL LETTER D WITH TAIL; dtail; \textrtaild (tipa)  
16042 \DeclareTextCommand{\textrtaild}{PU}{\82\126}% U+0256  
16043 %\* \textrtaild -> \taild (wsuipa)  
16044 % U+0257 LATIN SMALL LETTER D WITH HOOK; dhook; \texthtd (tipa)  
16045 \DeclareTextCommand{\texthtd}{PU}{\82\127}% U+0257  
16046 %\* \texthtd -> \hookd (wsuipa)  
16047 %\* \texthtd -> \hausad (phonetic)  
16048 % U+0258 LATIN SMALL LETTER REVERSED E; ereversed;  
16049 % \textreve (tipa), \reve (wsuipa)  
16050 \DeclareTextCommand{\textreve}{PU}{\82\130}% U+0258  
16051 % U+0259 LATIN SMALL LETTER SCHWA; schwa;  
16052 % \textschwa (tipa), \schwa (wsuipa, phonetic)  
16053 \DeclareTextCommand{\textschwa}{PU}{\82\131}% U+0259  
16054 % U+025A LATIN SMALL LETTER SCHWA WITH HOOK; schwahook;  
16055 % \textrhookschwa (tipa)  
16056 \DeclareTextCommand{\textrhookschwa}{PU}{\82\132}% U+025A  
16057 %\* \textrhookschwa -> \er (wsuipa)  
16058 % U+025B LATIN SMALL LETTER OPEN E/LATIN SMALL LETTER EP-  
SILON; eopen;  
16059 % \niepsilon (wsuipa)  
16060 \DeclareTextCommand{\textniepsilon}{PU}{\82\133}% U+025B  
16061 %\* \textniepsilon -> \epsi (phonetic)  
16062 % U+025C LATIN SMALL LETTER REVERSED OPEN E; eopenreversed;  
16063 % \textrevepsilon (tipa), \revepsilon (wsuipa)  
16064 \DeclareTextCommand{\textrevepsilon}{PU}{\82\134}% U+025C  
16065 % U+025D LATIN SMALL LETTER REVERSED OPEN E WITH HOOK; eopen-  
reversedhook;  
16066 % \textrhookrevepsilon (tipa)  
16067 \DeclareTextCommand{\textrhookrevepsilon}{PU}{\82\135}% U+025D  
16068 %\* \textrhookrevepsilon -> \hookrevepsilon (wsuipa)  
16069 % U+025E LATIN SMALL LETTER CLOSED REVERSED OPEN E; eopenre-  
versedclosed;  
16070 % \textcloserevepsilon (tipa)  
16071 \DeclareTextCommand{\textcloserevepsilon}{PU}{\82\136}% U+025E  
16072 %\* \textcloserevepsilon -> \closedrevepsilon (wsuipa)  
16073 % U+025F LATIN SMALL LETTER DOTLESS J WITH STROKE; jdot-  
lessstroke;  
16074 % \textbardotlessj (tipa)  
16075 \DeclareTextCommand{\textbardotlessj}{PU}{\82\137}% U+025F

16076 %\* \textbardotlessj -> \barj (phonetic)  
 16077 % U+0260 LATIN SMALL LETTER G WITH HOOK; ghook; \texthtg (tipa)  
 16078 \DeclareTextCommand{\texthtg}{PU}{\82\140}% U+0260  
 16079 %\* \texthtg -> \hookg (wsuipa)  
 16080 % U+0261 LATIN SMALL LETTER SCRIPT G; gscript;  
 16081 % \textscriptg (tipa), \scriptg (wsuipa)  
 16082 \DeclareTextCommand{\textscriptg}{PU}{\82\141}%\* U+0261  
 16083 %\* \textscriptg -> \varg (phonetic)  
 16084 % U+0262 LATIN LETTER SMALL CAPITAL G; \textscg (tipa), \scg (wsuipa)  
 16085 \DeclareTextCommand{\textscg}{PU}{\82\142}%\* U+0262  
 16086 % U+0263 LATIN SMALL LETTER GAMMA; gammalatinssmall;  
 16087 % \ipagamma (wsuipa), \vod (phonetic)  
 16088 \DeclareTextCommand{\textipagamma}{PU}{\82\143}%\* U+0263  
 16089 %\* \textipagamma -> \vod (pnonetic)  
 16090 % U+0264 LATIN SMALL LETTER RAMS HORN; ramshorn;  
 16091 % \babygamma (wsuipa)  
 16092 \DeclareTextCommand{\textbabygamma}{PU}{\82\144}%\* U+0264  
 16093 % U+0265 LATIN SMALL LETTER TURNED H; hturned; \textturnh (tipa)  
 16094 \DeclareTextCommand{\textturnh}{PU}{\82\145}% U+0265  
 16095 %\* \textturnh -> \invh (wsuipa)  
 16096 %\* \textturnh -> \udesc (phonetic)  
 16097 % U+0266 LATIN SMALL LETTER H WITH HOOK; hhook; \texthth (tipa)  
 16098 \DeclareTextCommand{\texthth}{PU}{\82\146}% U+0266  
 16099 %\* \texthth -> \hookh (wsuipa)  
 16100 %\* \texthth -> \voicedh (phonetic)  
 16101 % U+0267 LATIN SMALL LETTER HENG WITH HOOK; henghook; \tex-  
 ththeng (tipa)  
 16102 \DeclareTextCommand{\texththeng}{PU}{\82\147}% U+0267  
 16103 %\* \texththeng -> \hookheng (wsuipa)  
 16104 % U+0268 LATIN SMALL LETTER I WITH STROKE;  
 16105 % \textbari (tipa), \bari (wsuipa)  
 16106 \DeclareTextCommand{\textbari}{PU}{\82\150}%\* U+0268  
 16107 %\* \textbari -> \ibar (phonetic)  
 16108 % U+0269 LATIN SMALL LETTER IOTA; iotalatin; \niiota (wsuipa)  
 16109 \DeclareTextCommand{\textniiota}{PU}{\82\151}%\* U+0269  
 16110 %\* \textniiota -> \vari (phonetic)  
 16111 % U+026A LATIN LETTER SMALL CAPITAL I; \textsci (tipa), \sci (wsuipa)  
 16112 \DeclareTextCommand{\textsci}{PU}{\82\152}%\* U+026A  
 16113 % U+026B LATIN SMALL LETTER L WITH MIDDLE TILDE; lmiddletilde;  
 16114 % \textltilde (tipa)  
 16115 \DeclareTextCommand{\textltilde}{PU}{\82\153}% U+026B  
 16116 %\* \textltilde -> \tildel (wsuipa)  
 16117 % U+026C LATIN SMALL LETTER L WITH BELT; lbelt; \textbeltl (tipa)  
 16118 \DeclareTextCommand{\textbeltl}{PU}{\82\154}% U+026C  
 16119 %\* \textbeltl -> \latfric (wsuipa)  
 16120 % U+026D LATIN SMALL LETTER L WITH RETROFLEX HOOK;  
 16121 % \hookretroflex; \textrtaill (tipa)  
 16122 \DeclareTextCommand{\textrtaill}{PU}{\82\155}% U+026D  
 16123 %\* \textrtaill -> \taill (wsuipa)  
 16124 % U+026E LATIN SMALL LETTER LEZH; lezh; \textlyoghlig (tipa)  
 16125 \DeclareTextCommand{\textlyoghlig}{PU}{\82\156}% U+026E  
 16126 %\* \textlyoghlig -> \lz (wsuipa)  
 16127 % U+026F LATIN SMALL LETTER TURNED M; mturned; \textturnm (tipa)  
 16128 \DeclareTextCommand{\textturnm}{PU}{\82\157}% U+026F

16129 %\* \textturnm -> \invm (wsuipa)  
16130 %\* \textturnm -> \rotm (phonetic)  
16131 % U+0270 LATIN SMALL LETTER TURNED M WITH LONG LEG; mlongleg-  
turned;  
16132 % \textturnmrleg (tipa)  
16133 \DeclareTextCommand{\textturnmrleg}{PU}{\82\160}% U+0270  
16134 %\* \textturnmrleg -> \legm (wsuipa)  
16135 % U+0271 LATIN SMALL LETTER M WITH HOOK; mhook; \textltailm (tipa)  
16136 \DeclareTextCommand{\textltailm}{PU}{\82\161}% U+0271  
16137 %\* \textltailm -> \labdentainas (wsuipa)  
16138 %\* \textltailm -> \emgma (phonetic)  
16139 % U+0272 LATIN SMALL LETTER N WITH LEFT HOOK; nhookleft; \textl-  
tailn (tipa)  
16140 \DeclareTextCommand{\textltailn}{PU}{\82\162}% U+0272  
16141 %\* \textltailn -> \nj (wsuipa)  
16142 %\* \textltailn -> \enya (phonetic)  
16143 % U+0273 LATIN SMALL LETTER N WITH RETROFLEX HOOK;  
16144 % nhookretroflex; \textrtailn (tipa)  
16145 \DeclareTextCommand{\textrtailn}{PU}{\82\163}% U+0273  
16146 %\* \textrtailn -> \tailn (wsuipa)  
16147 % U+0274 LATIN LETTER SMALL CAPITAL N; \textscn (tipa), \scn (wsuipa)  
16148 \DeclareTextCommand{\textscn}{PU}{\82\164}% U+0274  
16149 % U+0275 LATIN CAPITAL LETTER O WITH MIDDLE TILDE/  
16150 % LATIN CAPITAL LETTER BARRED O; obarred;  
16151 % \textbaro (tipa), \baro (wsuipa)  
16152 % But \baro from stmaryrd is different!  
16153 \DeclareTextCommand{\textbaro}{PU}{\82\165}% U+0275  
16154 % U+0276 LATIN LETTER SMALL CAPITAL OE; \textscelig (tipa)  
16155 \DeclareTextCommand{\textscelig}{PU}{\82\166}% U+0276  
16156 % U+0277 LATIN SMALL LETTER CLOSED OMEGA; omegalatinclosed;  
16157 % \textcloseomega (tipa)  
16158 \DeclareTextCommand{\textcloseomega}{PU}{\82\167}% U+0277  
16159 %\* \textcloseomega -> \closedniomega (wsuipa)  
16160 %\* \textcloseomega -> \varomega (phonetic)  
16161 % U+0278 LATIN SMALL LETTER PHI; philatin; \niphy (wsuipa)  
16162 \DeclareTextCommand{\textniphy}{PU}{\82\170}% U+0278  
16163 % U+0279 LATIN SMALL LETTER TURNED R; rturned; \textturnr (tipa)  
16164 \DeclareTextCommand{\textturnr}{PU}{\82\171}% U+0279  
16165 %\* \textturnr -> \invr (wsuipa)  
16166 %\* \textturnr -> \rotr (phonetic)  
16167 % U+027A LATIN SMALL LETTER TURNED R WITH LONG LEG;  
16168 % rlonglegturned; \textturnlongleg (tipa)  
16169 \DeclareTextCommand{\textturnlongleg}{PU}{\82\172}% U+027A  
16170 %\* \textturnlongleg -> \invleg (wsuipa)  
16171 % U+027B LATIN SMALL LETTER TURNED R WITH HOOK; rhookturned;  
16172 % \textturnrrtail (tipa)  
16173 \DeclareTextCommand{\textturnrrtail}{PU}{\82\173}% U+027B  
16174 %\* \textturnrrtail -> \tailinvr (wsuipa)  
16175 % U+027C LATIN SMALL LETTER R WITH LONG LEG; rlongleg; \textlon-  
glegr (tipa)  
16176 \DeclareTextCommand{\textlongleg}{PU}{\82\174}% U+027C  
16177 %\* \textlongleg -> \leg (wsuipa)  
16178 % U+027D LATIN SMALL LETTER R WITH TAIL; rhook; \textrtailr (tipa)  
16179 \DeclareTextCommand{\textrtailr}{PU}{\82\175}% U+027D

16180 %\* \textrtailr -> \tailr (wsuipa)  
16181 % U+027E LATIN SMALL LETTER R WITH FISHHOOK; rfishhook;  
16182 % \textfishhookr (tipa)  
16183 \DeclareTextCommand{\textfishhookr}{PU}{\82\176}% U+027E  
16184 %\* \textfishhookr -> \flapr (wsuipa)  
16185 %\* \textfishhookr -> \flap (phonetic)  
16186 % U+027F LATIN SMALL LETTER REVERSED R WITH FISHHOOK; rfishhookreversed;  
16187 % \textlhtlongi (tipa)  
16188 \DeclareTextCommand{\textlhtlongi}{PU}{\82\177}% U+027F  
16189 % U+0280 LATIN LETTER SMALL CAPITAL R; \textscr (tipa), \scr (wsuipa)  
16190 \DeclareTextCommand{\textscr}{PU}{\82\200}%\* U+0280  
16191 % U+0281 LATIN LETTER SMALL CAPITAL INVERTED R; Rsmallinverted;  
16192 % \textinvscr (tipa), \invscr (wsuipa)  
16193 \DeclareTextCommand{\textinvscr}{PU}{\82\201}%\* U+0281  
16194 % U+0282 LATIN SMALL LETTER S WITH HOOK; shook; \textrtails (tipa)  
16195 \DeclareTextCommand{\textrtails}{PU}{\82\202}% U+0282  
16196 %\* \textrtails -> \tails (wsuipa)  
16197 % U+0283 LATIN SMALL LETTER ESH; esh; \textesh (tipa), \esh (wsuipa)  
16198 \DeclareTextCommand{\textesh}{PU}{\82\203}%\* U+0283  
16199 % U+0284 LATIN SMALL LETTER DOTLESS J WITH STROKE AND HOOK;  
16200 % dotlessjstrokehook; \texthtbardotlessj (tipa)  
16201 \DeclareTextCommand{\texthtbardotlessj}{PU}{\82\204}% U+0284  
16202 % U+0285 LATIN SMALL LETTER SQUAT REVERSED ESH; eshsquatreversed;  
16203 % \textvibyi (tipa)  
16204 \DeclareTextCommand{\textvibyi}{PU}{\82\205}% U+0285  
16205 % U+0286 LATIN SMALL LETTER ESH WITH CURL; eshcurl; \textctesh (tipa)  
16206 \DeclareTextCommand{\textctesh}{PU}{\82\206}% U+0286  
16207 %\* \textctesh -> \curlyesh (wsuipa)  
16208 % U+0287 LATIN SMALL LETTER TURNED T; tturned; \textturnt (tipa)  
16209 \DeclareTextCommand{\textturnt}{PU}{\82\207}% U+0287  
16210 %\* \textturnt -> \clickt (wsuipa)  
16211 % U+0288 LATIN SMALL LETTER T WITH RETROFLEX HOOK; retroflexhook;  
16212 % \texttrtailt (tipa)  
16213 \DeclareTextCommand{\texttrtailt}{PU}{\82\210}% U+0288  
16214 %\* \texttrtailt -> \tailt (wsuipa)  
16215 % U+0289 LATIN SMALL LETTER U BAR; ubar;  
16216 % \textbaru (tipa), \baru (wsuipa)  
16217 \DeclareTextCommand{\textbaru}{PU}{\82\211}%\* U+0289  
16218 %\* \textbaru -> \ubar (phonetic)  
16219 % U+028A LATIN SMALL LETTER UPSILON; \niupsilon (wsuipa)  
16220 \DeclareTextCommand{\textniupsilon}{PU}{\82\212}%\* U+028A  
16221 %\* \textniupsilon -> \rotOmega (phonetic)  
16222 % U+028B LATIN SMALL LETTER V WITH HOOK/LATIN SMALL LETTER SCRIPT V;  
16223 % vhook; \textscriptv (tipa), \scriptv (wsuipa)  
16224 \DeclareTextCommand{\textscriptv}{PU}{\82\213}%\* U+028B  
16225 % U+028C LATIN SMALL LETTER TURNED V; vturned; \textturnv (tipa)  
16226 \DeclareTextCommand{\textturnv}{PU}{\82\214}%\* U+028C  
16227 %\* \textturnv -> \invv (wsuipa)  
16228 %\* \textturnv -> \pwedge (phonetic)  
16229 % U+028D LATIN SMALL LETTER TURNED W; wturned; \textturnw (tipa)

16230 \DeclareTextCommand{\textturnw}{PU}{\82\215}%\* U+028D  
16231 %\* \textturnw -> \invw (wsuipa)  
16232 %\* \textturnw -> \rotw (phonetic)  
16233 % U+028E LATIN SMALL LETTER TURNED Y; yturned; \textturny (tipa)  
16234 \DeclareTextCommand{\textturny}{PU}{\82\216}%\* U+028E  
16235 %\* \textturny -> \invy (wsuipa)  
16236 %\* \textturny -> \roty (phonetic)  
16237 % U+028F LATIN LETTER SMALL CAPITAL Y; \textscy (tipa), \scy (wsuipa)  
16238 \DeclareTextCommand{\textscy}{PU}{\82\217}%\* U+028F  
16239 % U+0290 LATIN SMALL LETTER Z WITH RETROFLEX HOOK; zretroflex-hook;  
16240 % \textrtailz (tipa)  
16241 \DeclareTextCommand{\textrtailz}{PU}{\82\220}% U+0290  
16242 %\* \textrtailz -> \tailz (wsuipa)  
16243 % U+0291 LATIN SMALL LETTER Z WITH CURL; zcurl; \textctz (tipa)  
16244 \DeclareTextCommand{\textctz}{PU}{\82\221}% U+0291  
16245 %\* \textctz -> \curlyz (wsuipa)  
16246 % U+0292 LATIN SMALL LETTER EZH/LATIN SMALL LETTER YOGH; ezh;  
16247 % \textyogh (tipa), \yogh (wsuipa)  
16248 \DeclareTextCommand{\textyogh}{PU}{\82\222}%\* U+0292  
16249 % U+0293 LATIN SMALL LETTER EZH WITH CURL/LATIN SMALL LETTER YOGH CURL;  
16250 % ezhcurl; \textctyogh (tipa)  
16251 \DeclareTextCommand{\textctyogh}{PU}{\82\223}% U+0293  
16252 %\* \textctyogh -> \curlyyogh (wsuipa)  
16253 % U+0294 LATIN LETTER GLOTTAL STOP; glottalstop;  
16254 % \textglotstop (tipa), \glotstop (wsuipa)  
16255 \DeclareTextCommand{\textglotstop}{PU}{\82\224}%\* U+0294  
16256 %\* \textglotstop -> \ejective (wsuipa)  
16257 %\* \textglotstop -> \glottal (phonetic)  
16258 % U+0295 LATIN LETTER PHARYNGEAL VOICED FRICATIVE/  
16259 % LATIN LETTER REVERSED GLOTTAL STOP; glottalstopreversed;  
16260 % \textrevglotstop (tipa), \revglotstop (wsuipa)  
16261 \DeclareTextCommand{\textrevglotstop}{PU}{\82\225}%\* U+0295  
16262 %\* \textrevglotstop -> \reveject (wsuipa)  
16263 % U+0296 LATIN LETTER INVERTED GLOTTAL STOP; glottalstopinverted;  
16264 % \textinvglotstop (tipa), \invglotstop (wsuipa)  
16265 \DeclareTextCommand{\textinvglotstop}{PU}{\82\226}%\* U+0296  
16266 % U+0297 LATIN LETTER STRETCHED C; cstretched; \textstretchc (tipa)  
16267 \DeclareTextCommand{\textstretchc}{PU}{\82\227}% U+0297  
16268 %\* \textstretchc -> \clickc (wsuipa)  
16269 %\* \textstretchc -> \textstretchcvar (tipx)  
16270 % U+0298 LATIN LETTER BILABIAL CLICK; bilabialclick;  
16271 % \textbullseye (tipa)  
16272 \DeclareTextCommand{\textbullseye}{PU}{\82\230}% U+0298  
16273 %\* \textbullseye -> \clickb (wsuipa)  
16274 %\* \textbullseye -> \textObullseye (tipx)  
16275 % U+0299 LATIN LETTER SMALL CAPITAL B; \textscb (tipa)  
16276 \DeclareTextCommand{\textscb}{PU}{\82\231}% U+0299  
16277 % U+029A LATIN SMALL LETTER CLOSED OPEN E; eopenclosed;  
16278 % \textclosepsilon (tipa)  
16279 \DeclareTextCommand{\textclosepsilon}{PU}{\82\232}% U+029A  
16280 % U+029B LATIN LETTER SMALL CAPITAL G WITH HOOK; Gsmallhook;  
16281 % \texthtscg (tipa)

16282 \DeclareTextCommand{\texthtscg}{PU}{\82\233}% U+029B  
 16283 % U+029C LATIN LETTER SMALL CAPITAL H; \textsch (tipa)  
 16284 \DeclareTextCommand{\textsch}{PU}{\82\234}% U+029C  
 16285 % U+029D LATIN SMALL LETTER J WITH CROSSED-TAIL; jcros-  
 tail; \textcdj (tipa)  
 16286 \DeclareTextCommand{\textctj}{PU}{\82\235}% U+029D  
 16287 %\* \textctj -> \textctjvar (tipx)  
 16288 % U+029E LATIN SMALL LETTER TURNED K; kturned; \textturnk (tipa)  
 16289 \DeclareTextCommand{\textturnk}{PU}{\82\236}% U+029E  
 16290 %\* \textturnk -> \textturnsck (tipx)  
 16291 % U+029F LATIN LETTER SMALL CAPITAL L; \textscsl (tipa)  
 16292 \DeclareTextCommand{\textscsl}{PU}{\82\237}% U+029F  
 16293 % U+02A0 LATIN SMALL LETTER Q WITH HOOK; qhook; \texthtq (tipa)  
 16294 \DeclareTextCommand{\texthtq}{PU}{\82\240}% U+02A0  
 16295 % U+02A1 LATIN LETTER GLOTTAL STOP WITH STROKE; glottalstop-  
 stroke;  
 16296 % \textbarglotstop (tipa)  
 16297 \DeclareTextCommand{\textbarglotstop}{PU}{\82\241}% U+02A1  
 16298 % U+02A2 LATIN LETTER REVERSED GLOTTAL STOP WITH STROKE/  
 16299 % LATIN LETTER REVERSED GLOTTAL STOP BAR; glottalstopstrokere-  
 versed;  
 16300 % \textbarrevglotstop (tipa)  
 16301 \DeclareTextCommand{\textbarrevglotstop}{PU}{\82\242}% U+02A2  
 16302 % U+02A3 LATIN SMALL LETTER DZ DIGRAPH; dzaltone; \textdzlig (tipa)  
 16303 \DeclareTextCommand{\textdzlig}{PU}{\82\243}% U+02A3  
 16304 %\* \textdzlig -> \dz (wsupipa)  
 16305 % U+02A4 LATIN SMALL LETTER DEZH DIGRAPH; dezh; \textdyogh-  
 lig (tipa)  
 16306 \DeclareTextCommand{\textdyoghlig}{PU}{\82\244}% U+02A4  
 16307 % U+02A5 LATIN SMALL LETTER DZ DIGRAPH WITH CURL; dzcurl;  
 16308 % \textdctzlig (tipa)  
 16309 \DeclareTextCommand{\textdctzlig}{PU}{\82\245}% U+02A5  
 16310 % U+02A6 LATIN SMALL LETTER TS DIGRAPH; ts; \texttslig (tipa)  
 16311 \DeclareTextCommand{\texttslig}{PU}{\82\246}% U+02A6  
 16312 % U+02A7 LATIN SMALL LETTER TESH DIGRAPH; tesh; \textteshlig (tipa)  
 16313 \DeclareTextCommand{\textteshlig}{PU}{\82\247}% U+02A7  
 16314 %\* \textteshlig -> \tesh (wsuipa)  
 16315 % U+02A8 LATIN SMALL LETTER TC DIGRAPH WITH CURL; tccurl;  
 16316 % \texttctclig (tipa)  
 16317 \DeclareTextCommand{\texttctclig}{PU}{\82\250}% U+02A8  
 16318 % U+02AE LATIN SMALL LETTER TURNED H WITH FISHHOOK;  
 16319 % \textlhtlongy (tipa)  
 16320 \DeclareTextCommand{\textlhtlongy}{PU}{\82\256}% U+02AE  
 16321 % U+02AF LATIN SMALL LETTER TURNED H WITH FISHHOOK AND TAIL;  
 16322 % \textvibyy (tipa)  
 16323 \DeclareTextCommand{\textvibyy}{PU}{\82\257}% U+02AF

#### 46.2.7 Spacing Modifier Letters: U+02B0 to U+02FF

16324 % U+02BD MODIFIER LETTER REVERSED COMMA;  
 16325 % commareversedmod, afi64937; \textrevapostrophe (tipa)  
 16326 \DeclareTextCommand{\textrevapostrophe}{PU}{\82\275}% U+02BD  
 16327 % U+02C0 MODIFIER LETTER GLOTTAL STOP; glottalstopmod;  
 16328 % \textraiseglotstop (tipa)  
 16329 \DeclareTextCommand{\textraiseglotstop}{PU}{\82\300}% U+02C0

16330 % U+02C2 MODIFIER LETTER LEFT ARROWHEAD; arrowheadleftmod;  
 16331 % \textlptr (tipa)  
 16332 \DeclareTextCommand{\textlptr}{PU}{\82\302}% U+02C2  
 16333 % U+02C3 MODIFIER LETTER RIGHT ARROWHEAD; arrowheadrightmod;  
 16334 % \textrptr (tipa)  
 16335 \DeclareTextCommand{\textrptr}{PU}{\82\303}% U+02C3  
 16336 % U+02C7 CARON; caron  
 16337 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
 16338 % U+02C8 MODIFIER LETTER VERTICAL LINE; verticallinemod;  
 16339 % \textprimstress (tipa)  
 16340 \DeclareTextCommand{\textprimstress}{PU}{\82\310}% U+02C8  
 16341 % U+02CC MODIFIER LETTER LOW VERTICAL LINE; verticallinelowmod;  
 16342 % \textsecstress (tipa)  
 16343 \DeclareTextCommand{\textsecstress}{PU}{\82\314}% U+02CC  
 16344 % U+02D0 MODIFIER LETTER TRIANGULAR COLON; colontriangularmod;  
 16345 % \textlengthmark (tipa)  
 16346 \DeclareTextCommand{\textlengthmark}{PU}{\82\320}% U+02D0  
 16347 % U+02D1 MODIFIER LETTER HALF TRIANGULAR COLON; colontriangularhalfmod;  
 16348 % \texthalflength (tipa)  
 16349 \DeclareTextCommand{\texthalflength}{PU}{\82\321}% U+02D1  
 16350 % U+02D8 BREVE; breve  
 16351 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
 16352 % U+02D9 DOT ABOVE; dotaccent  
 16353 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
 16354 % U+02DA RING ABOVE; ring  
 16355 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
 16356 % U+02DB OGONEK; ogonek  
 16357 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
 16358 % U+02DC SMALL TILDE; ilde, \*tilde  
 16359 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
 16360 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
 16361 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
 16362 \DeclareTextCommand{\textacutedbl}{PU}{\82\335}% U+02DD  
 16363 % U+02F3 MODIFIER LETTER LOW RING  
 16364 \DeclareTextCommand{\textringlow}{PU}{\82\363}% U+02F3  
 16365 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
 16366 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5  
 16367 % U+02F7 MODIFIER LETTER LOW TILDE  
 16368 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7  
 16369 % U+02F9 MODIFIER LETTER BEGIN HIGH TONE; \textopencorner (tipa)  
 16370 \DeclareTextCommand{\textopencorner}{PU}{\82\371}% U+02F9  
 16371 % U+02FA MODIFIER LETTER END HIGH TONE; \textcorner (tipa)  
 16372 \DeclareTextCommand{\textcorner}{PU}{\82\372}% U+02FA

#### 46.2.8 Combining Diacritical Marks: U+0300 to U+036F

16373 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 16374 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F  
 16375 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 16376 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311  
 16377 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcmb  
 16378 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323  
 16379 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 16380 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331

```
16381 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-
      blecmb
```

```
16382 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361
```

#### 46.2.9 Greek and Coptic: U+0370 to U+03FF

Greek is only loaded if `\textBeta` is defined.

```
16383 \ifx\textBeta\@undefined \else
16384 \input{puenc-greekbasic.def}
16385 \fi
16386 \end{puenc}
16387 \end{pugreek}
16388 % U+0374 GREEK NUMERAL SIGN; numeralsigngreek
16389 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}% U+0374
16390 \DeclareTextCommand{\textdexiakeraia}{PU}{\83\164}% U+0374
16391 % U+0375 GREEK LOWER NUMERAL SIGN; numeralsignlowergreek
16392 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}% U+0375
16393 \DeclareTextCommand{\textaristerikeraia}{PU}{\83\165}% U+0375
16394 % U+0386 GREEK CAPITAL LETTER ALPHA WITH TONOS; Alphanos
16395 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}% U+0386
16396 % U+0388 GREEK CAPITAL LETTER EPSILON WITH TONOS; Epsilontonos
16397 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}% U+0388
16398 % U+0389 GREEK CAPITAL LETTER ETA WITH TONOS; Etatonos
16399 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}% U+0389
16400 % U+038A GREEK CAPITAL LETTER IOTA WITH TONOS; Iotatonos
16401 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}% U+038A
16402 % U+038C GREEK CAPITAL LETTER OMICRON WITH TONOS; Omi-
      crontonos
16403 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}% U+038C
16404 % U+038E GREEK CAPITAL LETTER UPSILON WITH TONOS; Upsilonnos
16405 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}% U+038E
16406 % U+038F GREEK CAPITAL LETTER OMEGA WITH TONOS; Omegatonos
16407 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}% U+038F
16408 % U+0390 GREEK SMALL LETTER IOTA WITH DIALYTIKA AND TONOS;
16409 % iotadieresisnos
16410 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}% U+0390
16411 % U+0391 GREEK CAPITAL LETTER ALPHA; Alpha
16412 \DeclareTextCommand{\textAlpha}{PU}{\83\221}% U+0391
16413 % U+0392 GREEK CAPITAL LETTER BETA; Beta
16414 \DeclareTextCommand{\textBeta}{PU}{\83\222}% U+0392
16415 % U+0393 GREEK CAPITAL LETTER GAMMA; Gamma; \Gamma (LaTeX)
16416 \DeclareTextCommand{\textGamma}{PU}{\83\223}% U+0393
16417 % U+0394 GREEK CAPITAL LETTER DELTA; Deltagreek, *Delta; \Delta (La-
      TeX)
16418 \DeclareTextCommand{\textDelta}{PU}{\83\224}% U+0394
16419 % U+0395 GREEK CAPITAL LETTER EPSILON; Epsilon
16420 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}% U+0395
16421 % U+0396 GREEK CAPITAL LETTER ZETA; Zeta
16422 \DeclareTextCommand{\textZeta}{PU}{\83\226}% U+0396
16423 % U+0397 GREEK CAPITAL LETTER ETA; Eta
16424 \DeclareTextCommand{\textEta}{PU}{\83\227}% U+0397
16425 % U+0398 GREEK CAPITAL LETTER THETA; Theta; \Theta (LaTeX)
16426 \DeclareTextCommand{\textTheta}{PU}{\83\230}% U+0398
16427 % U+0399 GREEK CAPITAL LETTER IOTA; Iota
16428 \DeclareTextCommand{\textIota}{PU}{\83\231}% U+0399
```



16429 % U+039A GREEK CAPITAL LETTER KAPPA; Kappa  
16430 \DeclareTextCommand{\textKappa}{PU}{\83\232}% U+039A  
16431 % U+039B GREEK CAPITAL LETTER LAMDA; Lambda; \Lambda (LaTeX)  
16432 \DeclareTextCommand{\textLambda}{PU}{\83\233}%\* U+039B  
16433 % U+039C GREEK CAPITAL LETTER MU; Mu  
16434 \DeclareTextCommand{\textMu}{PU}{\83\234}% U+039C  
16435 % U+039D GREEK CAPITAL LETTER NU; Nu  
16436 \DeclareTextCommand{\textNu}{PU}{\83\235}% U+039D  
16437 % U+039E GREEK CAPITAL LETTER XI; Xi; \Xi (LaTeX)  
16438 \DeclareTextCommand{\textXi}{PU}{\83\236}%\* U+039E  
16439 % U+039F GREEK CAPITAL LETTER OMICRON; Omicron  
16440 \DeclareTextCommand{\textOmicron}{PU}{\83\237}% U+039F  
16441 % U+03A0 GREEK CAPITAL LETTER PI; Pi  
16442 \DeclareTextCommand{\textPi}{PU}{\83\240}%\* U+03A0  
16443 % U+03A1 GREEK CAPITAL LETTER RHO; Rho  
16444 \DeclareTextCommand{\textRho}{PU}{\83\241}% U+03A1  
16445 % U+03A3 GREEK CAPITAL LETTER SIGMA; Sigma; \Sigma (LaTeX)  
16446 \DeclareTextCommand{\textSigma}{PU}{\83\243}%\* U+03A3  
16447 % U+03A4 GREEK CAPITAL LETTER TAU; Tau  
16448 \DeclareTextCommand{\textTau}{PU}{\83\244}% U+03A4  
16449 % U+03A5 GREEK CAPITAL LETTER UPSILON; Upsilon; \Upsilon (LaTeX)  
16450 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}%\* U+03A5  
16451 % U+03A6 GREEK CAPITAL LETTER PHI; Phi; \Phi (LaTeX)  
16452 \DeclareTextCommand{\textPhi}{PU}{\83\246}%\* U+03A6  
16453 % U+03A7 GREEK CAPITAL LETTER CHI; Chi  
16454 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
16455 % U+03A8 GREEK CAPITAL LETTER PSI; Psi; \Psi (LaTeX)  
16456 \DeclareTextCommand{\textPsi}{PU}{\83\250}%\* U+03A8  
16457 % U+03A9 GREEK CAPITAL LETTER OMEGA; Omegagreek, \*Omega;  
16458 % \Omega (LaTeX)  
16459 \DeclareTextCommand{\textOmega}{PU}{\83\251}%\* U+03A9  
16460 % U+03AA GREEK CAPITAL LETTER IOTA WITH DIALYTIKA; Iotadieresis  
16461 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}% U+03AA  
16462 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}% U+03AA  
16463 % U+03AB GREEK CAPITAL LETTER UPSILON WITH DIALYTIKA; Up-  
silonadieresis  
16464 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}% U+03AB  
16465 % U+03AC GREEK SMALL LETTER ALPHA WITH TONOS; alphanos  
16466 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}%\* U+03AC  
16467 % U+03AD GREEK SMALL LETTER EPSILON WITH TONOS; epsilontonos  
16468 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}% U+03AD  
16469 % U+03AE GREEK SMALL LETTER ETA WITH TONOS; etatonos  
16470 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}% U+03AE  
16471 % U+03AF GREEK SMALL LETTER IOTA WITH TONOS; iotatonos  
16472 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}% U+03AF  
16473 % U+03B0 GREEK SMALL LETTER UPSILON WITH DIALYTIKA  
16474 % AND TONOS; upsilonadieresis  
16475 \DeclareTextCompositeCommand{"}{PU}{\textupsilonacute}{\83\260}% U+03B0  
16476 % U+03B1 GREEK SMALL LETTER ALPHA; alpha; \alpha (LaTeX)  
16477 \DeclareTextCommand{\textalpha}{PU}{\83\261}%\* U+03B1  
16478 % U+03B2 GREEK SMALL LETTER BETA; beta; \beta (LaTeX)  
16479 \DeclareTextCommand{\textbeta}{PU}{\83\262}%\* U+03B2  
16480 % U+03B3 GREEK SMALL LETTER GAMMA; gamma; \gamma (LaTeX)  
16481 \DeclareTextCommand{\textgamma}{PU}{\83\263}%\* U+03B3

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16482 % U+03B4 GREEK SMALL LETTER DELTA; delta; \delta (LaTeX)
16483 \DeclareTextCommand{\textdelta}{PU}{\83\264}%* U+03B4
16484 % U+03B5 GREEK SMALL LETTER EPSILON; epsilon; \epsilon (LaTeX)
16485 \DeclareTextCommand{\textepsilon}{PU}{\83\265}%* U+03B5
16486 % U+03B6 GREEK SMALL LETTER ZETA; zeta; \zeta (LaTeX)
16487 \DeclareTextCommand{\textzeta}{PU}{\83\266}%* U+03B6
16488 % U+03B7 GREEK SMALL LETTER ETA; eta; \eta (LaTeX)
16489 \DeclareTextCommand{\texteta}{PU}{\83\267}%* U+03B7
16490 % U+03B8 GREEK SMALL LETTER THETA; theta; \theta (LaTeX)
16491 \DeclareTextCommand{\texttheta}{PU}{\83\270}%* U+03B8
16492 % U+03B9 GREEK SMALL LETTER IOTA; iota; \iota (LaTeX)
16493 \DeclareTextCommand{\textiota}{PU}{\83\271}%* U+03B9
16494 % U+03BA GREEK SMALL LETTER KAPPA; kappa; \kappa (LaTeX)
16495 \DeclareTextCommand{\textkappa}{PU}{\83\272}%* U+03BA
16496 % U+03BB GREEK SMALL LETTER LAMDA; lambda; \lambda (LaTeX)
16497 \DeclareTextCommand{\textlambda}{PU}{\83\273}%* U+03BB
16498 % U+03BC GREEK SMALL LETTER MU; mugreek, *mu; \mu (LaTeX)
16499 \DeclareTextCommand{\textmugreek}{PU}{\83\274}%* U+03BC
16500 % U+03BD GREEK SMALL LETTER NU; nu; \nu (LaTeX)
16501 \DeclareTextCommand{\textnu}{PU}{\83\275}%* U+03BD
16502 % U+03BE GREEK SMALL LETTER XI; xi; \xi (LaTeX)
16503 \DeclareTextCommand{\textxi}{PU}{\83\276}%* U+03BE
16504 % U+03BF GREEK SMALL LETTER OMICRON; omicron
16505 \DeclareTextCommand{\textomicron}{PU}{\83\277}% U+03BF
16506 % U+03C0 GREEK SMALL LETTER PI; pi; \pi (LaTeX)
16507 \DeclareTextCommand{\textpi}{PU}{\83\300}%* U+03C0
16508 % U+03C1 GREEK SMALL LETTER RHO; rho; \rho (LaTeX)
16509 \DeclareTextCommand{\textrho}{PU}{\83\301}%* U+03C1
16510 % U+03C2 GREEK SMALL LETTER FINAL SIGMA; *sigma1, sigmafinal
16511 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}%* U+03C2
16512 % U+03C3 GREEK SMALL LETTER SIGMA; sigma; \sigma (LaTeX)
16513 \DeclareTextCommand{\textsigma}{PU}{\83\303}%* U+03C3
16514 % U+03C4 GREEK SMALL LETTER TAU; tau; \tau (LaTeX)
16515 \DeclareTextCommand{\texttau}{PU}{\83\304}%* U+03C4
16516 % U+03C5 GREEK SMALL LETTER UPSILON; upsilon; \upsilon (LaTeX)
16517 \DeclareTextCommand{\textupsilon}{PU}{\83\305}%* U+03C5
16518 % U+03C6 GREEK SMALL LETTER PHI; phi; \phi (LaTeX)
16519 \DeclareTextCommand{\textphi}{PU}{\83\306}%* U+03C6
16520 % U+03C7 GREEK SMALL LETTER CHI; chi; \chi (LaTeX)
16521 \DeclareTextCommand{\textchi}{PU}{\83\307}%* U+03C7
16522 % U+03C8 GREEK SMALL LETTER PSI; psi; \psi (LaTeX)
16523 \DeclareTextCommand{\textpsi}{PU}{\83\310}%* U+03C8
16524 % U+03C9 GREEK SMALL LETTER OMEGA; omega; \omega (LaTeX)
16525 \DeclareTextCommand{\textomega}{PU}{\83\311}%* U+03C9
16526 % U+03CA GREEK SMALL LETTER IOTA WITH DIALYTIKA; iotadieresis
16527 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}% U+03CA
16528 % U+03CB GREEK SMALL LETTER UPSILON WITH DIALYTIKA; up-
    silondieresis
16529 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}% U+03CB
16530 % U+03CC GREEK SMALL LETTER OMICRON WITH TONOS; omicrontonos
16531 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}% U+03CC
16532 % U+03CD GREEK SMALL LETTER UPSILON WITH TONOS; upsilontonos
16533 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}% U+03CD
16534 \DeclareTextCompositeCommand{'}{PU}{\textupsilon}{\83\315}% U+03CD

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16535 % U+03CE GREEK SMALL LETTER OMEGA WITH TONOS; omegatonos
16536 \DeclareTextCompositeCommand{\'}{PU}{\textomega}{\83\316}% U+03CE
16537 % U+03D8 GREEK LETTER ARCHAIC KOPPA;
16538 \DeclareTextCommand{\textQoppa}{PU}{\83\330}% U+03D8
16539 % U+03D9 GREEK SMALL LETTER ARCHAIC KOPPA;
16540 \DeclareTextCommand{\textqoppa}{PU}{\83\331}% U+03D9
16541 % U+03DA GREEK LETTER STIGMA; Stigmatreek
16542 \DeclareTextCommand{\textStigmatreek}{PU}{\83\332}% U+03DA
16543 \DeclareTextCommand{\textStigma}{PU}{\83\332}% U+03DA
16544 % U+03DB GREEK SMALL LETTER STIGMA
16545 \DeclareTextCommand{\textstigmatreek}{PU}{\83\333}% U+03DB
16546 \DeclareTextCommand{\textstigma}{PU}{\83\333}% U+03DB
16547 % U+03DC GREEK LETTER DIGAMMA; Digammagreek
16548 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}% U+03DC
16549 \DeclareTextCommand{\textDigamma}{PU}{\83\334}% U+03DC
16550 % U+03DD GREEK SMALL LETTER DIGAMMA
16551 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}% U+03DD
16552 \DeclareTextCommand{\textdigamma}{PU}{\83\335}% U+03DD
16553 %* \textdigammagreek -> \digamma (AmS)
16554 % U+03DE GREEK LETTER KOPPA; Koppagreek
16555 \DeclareTextCommand{\textKoppa}{PU}{\83\336}% U+03DE
16556 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}% U+03DE
16557 % U+03DF GREEK SMALL LETTER KOPPA
16558 \DeclareTextCommand{\textkoppa}{PU}{\83\337}% U+03DF
16559 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}% U+03DF
16560 % U+03E0 GREEK LETTER SAMPI; Sampigreek
16561 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}% U+03E0
16562 \DeclareTextCommand{\textSampi}{PU}{\83\340}% U+03E0
16563 % U+03E1 GREEK SMALL LETTER SAMPI
16564 \DeclareTextCommand{\textsampigreek}{PU}{\83\341}% U+03E1
16565 \DeclareTextCommand{\textsampi}{PU}{\83\341}% U+03E1
16566 % U+03F6 GREEK REVERSED LUNATE EPSILON SYMBOL;
16567 % \backepsilon (AmS)
16568 \DeclareTextCommand{\textbackepsilon}{PU}{\83\366}% U+03F6
16569 \pugreek

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#### 46.2.10 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.

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16570 (*puenc)
16571 \ifx\CYRDZE\@undefined \else
16572 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE
16573 \DeclareTextCompositeCommand{\'}{PU}{\CYRE}{\84\000}% U+0400
16574 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, *afi10023
16575 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401
16576 \DeclareTextCompositeCommand{\"}{PU}{\CYRE}{\84\001}% U+0401
16577 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, *afi10051
16578 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402
16579 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, *afi10052
16580 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403
16581 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, *afi10053
16582 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404
16583 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, *afi10054

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16584 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405  
16585 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I;  
16586 % Icyrillic, \*afii10055  
16587 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406  
16588 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, \*afii10056  
16589 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407  
16590 \DeclareTextCompositeCommand{"}{PU}{\CYRII}{\84\007}% U+0407  
16591 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, \*afii10057  
16592 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408  
16593 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, \*afii10058  
16594 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409  
16595 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, \*afii10059  
16596 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A  
16597 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, \*afii10060  
16598 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B  
16599 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, \*afii10061  
16600 \DeclareTextCompositeCommand{'}{PU}{\CYRK}{\84\014}% U+040C  
16601 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
16602 \DeclareTextCompositeCommand`{PU}{\CYRI}{\84\015}% U+040D  
16603 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
16604 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
16605 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E  
16606 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
16607 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
16608 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
16609 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
16610 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018  
16611 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
16612 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
16613 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
16614 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
16615 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
16616 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
16617 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
16618 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
16619 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
16620 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
16621 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
16622 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
16623 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
16624 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
16625 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
16626 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
16627 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
16628 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
16629 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
16630 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
16631 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
16632 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
16633 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
16634 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
16635 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
16636 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
16637 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032

16638 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
16639 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
16640 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
16641 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
16642 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
16643 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
16644 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
16645 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
16646 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
16647 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
16648 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
16649 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
16650 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
16651 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
16652 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
16653 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
16654 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
16655 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
16656 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
16657 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
16658 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
16659 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
16660 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
16661 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN;  
16662 % Hardsigncyrillic, \*afii10044  
16663 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
16664 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
16665 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
16666 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN;  
16667 % Softsigncyrillic, \*afii10046  
16668 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
16669 % U+042D CYRILLIC CAPITAL LETTER E; Eversedcyrillic, \*afii10047  
16670 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
16671 % U+042E CYRILLIC CAPITAL LETTER YU; IUCyrillic, \*afii10048  
16672 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
16673 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
16674 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
16675 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
16676 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
16677 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
16678 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
16679 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
16680 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
16681 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
16682 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
16683 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
16684 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
16685 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
16686 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
16687 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhacyrillic  
16688 \DeclareTextCommand{\cyrz}{PU}{\84\066}% U+0436  
16689 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
16690 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
16691 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic

16692 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
16693 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
16694 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
16695 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
16696 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
16697 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
16698 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
16699 \DeclareTextCommand{\cyr}{PU}{\84\073}% U+043B  
16700 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
16701 \DeclareTextCommand{\cyr}{PU}{\84\074}% U+043C  
16702 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
16703 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
16704 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
16705 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
16706 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
16707 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
16708 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
16709 \DeclareTextCommand{\cyr}{PU}{\84\100}% U+0440  
16710 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
16711 \DeclareTextCommand{\cyr}{PU}{\84\101}% U+0441  
16712 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
16713 \DeclareTextCommand{\cyr}{PU}{\84\102}% U+0442  
16714 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
16715 \DeclareTextCommand{\cyr}{PU}{\84\103}% U+0443  
16716 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
16717 \DeclareTextCommand{\cyr}{PU}{\84\104}% U+0444  
16718 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
16719 \DeclareTextCommand{\cyr}{PU}{\84\105}% U+0445  
16720 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
16721 \DeclareTextCommand{\cyr}{PU}{\84\106}% U+0446  
16722 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
16723 \DeclareTextCommand{\cyr}{PU}{\84\107}% U+0447  
16724 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
16725 \DeclareTextCommand{\cyr}{PU}{\84\110}% U+0448  
16726 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
16727 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
16728 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyrillic  
16729 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
16730 %\* \cyrhrdsn -> \hardsign (tipa)  
16731 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
16732 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
16733 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
16734 \DeclareTextCommand{\cyr}{PU}{\84\114}% U+044C  
16735 %\* \cyr}{PU}{\84\114}% U+044C  
16736 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
16737 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
16738 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
16739 \DeclareTextCommand{\cyr}{PU}{\84\116}% U+044E  
16740 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
16741 \DeclareTextCommand{\cyr}{PU}{\84\117}% U+044F  
16742 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
16743 \DeclareTextCompositeCommand{\`}{PU}{\cyre}{\84\120}% U+0450  
16744 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic

16745 \DeclareTextCommand{\cyryo}{PU}{\84\121}% U+0451  
16746 \DeclareTextCompositeCommand{\}{PU}{\cyre}{\84\121}% U+0451  
16747 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
16748 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452  
16749 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
16750 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% U+0453  
16751 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
16752 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454  
16753 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
16754 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
16755 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I;  
16756 % \*afii10103, icyrillic  
16757 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456  
16758 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
16759 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457  
16760 \DeclareTextCompositeCommand{\"}{PU}{\cyrii}{\84\127}% U+0457  
16761 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
16762 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
16763 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
16764 \DeclareTextCommand{\cyrkje}{PU}{\84\131}% U+0459  
16765 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
16766 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
16767 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
16768 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
16769 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
16770 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
16771 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
16772 \DeclareTextCompositeCommand{\`}{PU}{\cyri}{\84\135}% U+045D  
16773 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
16774 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
16775 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
16776 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
16777 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
16778 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
16779 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
16780 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
16781 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
16782 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
16783 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
16784 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
16785 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463  
16786 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
16787 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
16788 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
16789 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
16790 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslitlecyrillic  
16791 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
16792 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslitlecyrillic  
16793 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
16794 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslitlei-  
otifiedcyrillic  
16795 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
16796 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslitleioti-  
fiedcyrillic

16797 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
 16798 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
 16799 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
 16800 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
 16801 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
 16802 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-  
 cyrillic  
 16803 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
 16804 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotified-  
 cyrillic  
 16805 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
 16806 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
 16807 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
 16808 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
 16809 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
 16810 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
 16811 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
 16812 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
 16813 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
 16814 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
 16815 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
 16816 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
 16817 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
 16818 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
 16819 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
 16820 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
 16821 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
 16822 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE  
 16823 % GRAVE ACCENT; Izhitsadblgravecyrillic  
 16824 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
 16825 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE  
 16826 % GRAVE ACCENT; izhitsadblgravecyrillic  
 16827 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
 16828 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
 16829 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
 16830 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
 16831 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
 16832 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyril-  
 lic  
 16833 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
 16834 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
 16835 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
 16836 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatit-  
 locyrillic  
 16837 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
 16838 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlo-  
 cyrillic  
 16839 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
 16840 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
 16841 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
 16842 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
 16843 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
 16844 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
 16845 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480



16846 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
 16847 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
 16848 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
 16849 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482  
 \84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrilliccmb  
 \84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalization-cyrilliccmb  
 \84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneumatacyrilliccmb  
 \84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumatacyrilliccmb  
 \84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
 \84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
 \84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN  
 16850 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 16851 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
 16852 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 16853 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 16854 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 16855 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 16856 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 16857 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 16858 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 16859 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 16860 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 16861 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 16862 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturn-cyrillic, \*afii10050  
 16863 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 16864 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, gheupturncyrillic  
 16865 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 16866 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestroke-cyrillic  
 16867 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 16868 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 16869 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 16870 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK;  
 16871 % Ghemiddlehookcyrillic  
 16872 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 16873 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK;  
 16874 % ghemiddlehookcyrillic  
 16875 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 16876 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER;  
 16877 % Zhedescendercyrillic  
 16878 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 16879 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER;  
 16880 % zhedescendercyrillic  
 16881 \DeclareTextCommand{\cyrzhds}{PU}{\84\227}% U+0497  
 16882 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescendercyrillic  
 16883 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 16884 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498

16885 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescender-cyrillic  
 16886 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499  
 16887 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 16888 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescendercyrillic  
 16889 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
 16890 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescendercyrillic  
 16891 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
 16892 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE;  
 16893 % Kavertikalstrokecyrillic  
 16894 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
 16895 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE;  
 16896 % kavertikalstrokecyrillic  
 16897 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
 16898 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
 16899 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
 16900 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
 16901 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
 16902 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
 16903 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
 16904 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
 16905 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
 16906 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescendercyrillic  
 16907 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
 16908 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescendercyrillic  
 16909 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
 16910 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
 16911 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
 16912 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
 16913 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
 16914 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemiddlehookcyrillic  
 16915 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
 16916 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic  
 16917 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
 16918 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic  
 16919 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
 16920 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
 16921 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
 16922 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic  
 16923 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
 16924 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
 16925 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic  
 16926 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
 16927 \DeclareTextCompositeCommand{\k}{PU}{\cyrs}{\84\253}% U+04AB  
 16928 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescen-

dercyrillic  
 16929 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
 16930 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic  
 16931 \DeclareTextCommand{\cyrtasc}{PU}{\84\255}% U+04AD  
 16932 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
 16933 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
 16934 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; usstraightcyrillic  
 16935 \DeclareTextCommand{\cyry}{PU}{\84\257}% U+04AF  
 16936 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic  
 16937 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
 16938 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; usstraightstrokecyrillic  
 16939 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% U+04B1  
 16940 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadesendercyrillic  
 16941 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
 16942 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic  
 16943 \DeclareTextCommand{\cyrhds}{PU}{\84\263}% U+04B3  
 16944 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
 16945 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
 16946 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
 16947 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
 16948 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER;  
 16949 % Chedescendercyrillic  
 16950 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
 16951 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
 16952 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
 16953 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE;  
 16954 % Cheverticalstrokecyrillic  
 16955 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
 16956 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE;  
 16957 % cheverticalstrokecyrillic  
 16958 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
 16959 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
 16960 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
 16961 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
 16962 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
 16963 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasiancyrillic  
 16964 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
 16965 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyrillic  
 16966 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
 16967 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCENDER; Chedescenderabkhasiancyrillic  
 16968 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
 16969 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
 16970 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCENDER; chedescenderabkhasiancyrillic  
 16971 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF

16972 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
 16973 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
 16974 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
 16975 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
 16976 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
 16977 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
 16978 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
 16979 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
 16980 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
 16981 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
 16982 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
 16983 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
 16984 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
 16985 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
 16986 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6  
 16987 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
 16988 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
 16989 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
 16990 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
 16991 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakas-  
 siancyrillic  
 16992 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
 16993 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-  
 cyrillic  
 16994 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
 16995 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
 16996 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
 16997 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
 16998 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
 \84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
 16999 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevecyrillic  
 17000 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
 17001 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevecyrillic  
 17002 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
 17003 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyri-  
 lic  
 17004 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\322}% U+04D2  
 17005 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
 17006 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\323}% U+04D3  
 17007 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
 17008 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
 17009 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
 17010 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
 17011 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevecyrillic  
 17012 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
 17013 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevecyrillic  
 17014 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
 17015 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
 17016 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
 17017 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
 17018 \DeclareTextCommand{\cyrschw}{PU}{\84\331}% U+04D9  
 17019 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS;  
 17020 % Schwadiesiscyrillic  
 17021 \DeclareTextCompositeCommand{\U}{PU}{\CYRSCHWA}{\84\332}% U+04DA

17022 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS;  
 17023 % schwadiesiscyrillic  
 17024 \DeclareTextCompositeCommand{"}{PU}{\cyrschwa}{\84\333}% U+04DB  
 17025 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhedieresiscyrillic  
 17026 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% U+04DC  
 17027 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieresiscyrillic  
 17028 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\335}% U+04DD  
 17029 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieresiscyrillic  
 17030 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% U+04DE  
 17031 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresiscyrillic  
 17032 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% U+04DF  
 17033 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasiancyrillic  
 17034 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
 17035 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyrillic  
 17036 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
 17037 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
 17038 \DeclareTextCompositeCommand{=}{PU}{\CYRI}{\84\342}% U+04E2  
 17039 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
 17040 \DeclareTextCompositeCommand{=}{PU}{\cyri}{\84\343}% U+04E3  
 17041 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic  
 17042 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% U+04E4  
 17043 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic  
 17044 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% U+04E5  
 17045 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyrillic  
 17046 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6  
 17047 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
 17048 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7  
 17049 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
 17050 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
 17051 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
 17052 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
 17053 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS;  
 17054 % Obarreddieresiscyrillic  
 17055 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
 17056 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS;  
 17057 % obarreddieresiscyrillic  
 17058 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
 17059 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
 17060 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
 17061 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
 17062 \DeclareTextCompositeCommand{"}{PU}{\cyreref}{\84\355}% U+04ED  
 17063 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
 17064 \DeclareTextCompositeCommand{=}{PU}{\CYRU}{\84\356}% U+04EE  
 17065 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
 17066 \DeclareTextCompositeCommand{=}{PU}{\cyru}{\84\357}% U+04EF  
 17067 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic

```

17068 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0
17069 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic
17070 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1
17071 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhun-
garumlautcyrillic
17072 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\362}% U+04F2
17073 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhun-
garumlautcyrillic
17074 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\363}% U+04F3
17075 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chediere-
siscyrillic
17076 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% U+04F4
17077 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresis-
cyrillic
17078 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5
17079 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER
17080 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6
17081 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER
17082 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7
17083 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudiere-
siscyrillic
17084 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8
17085 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudiere-
siscyrillic
17086 \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
17087 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK
17088 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC
17089 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK
17090 \DeclareTextCommand{\cyrhkh}{PU}{\84\375}% U+04FD
17091 \fi
\84\376: U+04FE CYRILLIC CAPITAL LETTER HA WITH STROKE
\84\377: U+04FF CYRILLIC SMALL LETTER HA WITH STROKE

```

#### 46.2.11 Hebrew: U+0590 to U+05FF

Macro names are taken from `he8enc.def`. `hebrew` is only loaded if `\hebdalet` is defined

```

17092 \ifx\hebdalet\@undefined\else
17093 % U+05C3 HEBREW PUNCTUATION SOF PASUQ
17094 \DeclareTextCommand{\sofpasuq}{PU}{\85\303}% U+05C3
17095 % U+05D0 HEBREW LETTER ALEF
17096 \DeclareTextCommand{\hebalef}{PU}{\85\320}% U+05D0
17097 % U+05D1 HEBREW LETTER BET
17098 \DeclareTextCommand{\hebbet}{PU}{\85\321}% U+05D1
17099 % U+05D2 HEBREW LETTER GIMEL
17100 \DeclareTextCommand{\hebgimel}{PU}{\85\322}% U+05D2
17101 % U+05D3 HEBREW LETTER DALET
17102 \DeclareTextCommand{\hebdalet}{PU}{\85\323}% U+05D3

```

17103 % U+05D4 HEBREW LETTER HE  
17104 \DeclareTextCommand{\hebhe}{PU}{\85\324}% U+05D4  
17105 % U+05D5 HEBREW LETTER VAV  
17106 \DeclareTextCommand{\hebvav}{PU}{\85\325}% U+05D5  
17107 % U+05D6 HEBREW LETTER ZAYIN  
17108 \DeclareTextCommand{\hebzayin}{PU}{\85\326}% U+05D6  
17109 % U+05D7 HEBREW LETTER HET  
17110 \DeclareTextCommand{\hebhet}{PU}{\85\327}% U+05D7  
17111 % U+05D8 HEBREW LETTER TET  
17112 \DeclareTextCommand{\hebtet}{PU}{\85\330}% U+05D8  
17113 % U+05D9 HEBREW LETTER YOD  
17114 \DeclareTextCommand{\hebyod}{PU}{\85\331}% U+05D9  
17115 % U+05DA HEBREW LETTER FINAL KAF  
17116 \DeclareTextCommand{\hebfinalkaf}{PU}{\85\332}% U+05DA  
17117 % U+05DB HEBREW LETTER KAF  
17118 \DeclareTextCommand{\hebkaf}{PU}{\85\333}% U+05DB  
17119 % U+05DC HEBREW LETTER LAMED  
17120 \DeclareTextCommand{\heblamed}{PU}{\85\334}% U+05DC  
17121 % U+05DD HEBREW LETTER FINAL MEM  
17122 \DeclareTextCommand{\hebfinalmem}{PU}{\85\335}% U+05DD  
17123 % U+05DE HEBREW LETTER MEM  
17124 \DeclareTextCommand{\hebmeme}{PU}{\85\336}% U+05DE  
17125 % U+05DF HEBREW LETTER FINAL NUN  
17126 \DeclareTextCommand{\hebfinalnun}{PU}{\85\337}% U+05DF  
17127 % U+05E0 HEBREW LETTER NUN  
17128 \DeclareTextCommand{\hebnun}{PU}{\85\340}% U+05E0  
17129 % U+05E1 HEBREW LETTER SAMEKH  
17130 \DeclareTextCommand{\hebsamekh}{PU}{\85\341}% U+05E1  
17131 % U+05E2 HEBREW LETTER AYIN  
17132 \DeclareTextCommand{\hebayin}{PU}{\85\342}% U+05E2  
17133 % U+05E3 HEBREW LETTER FINAL PE  
17134 \DeclareTextCommand{\hebfinalpe}{PU}{\85\343}% U+05E3  
17135 % U+05E4 HEBREW LETTER PE  
17136 \DeclareTextCommand{\hebpe}{PU}{\85\344}% U+05E4  
17137 % U+05E5 HEBREW LETTER FINAL TSADI  
17138 \DeclareTextCommand{\hebfinaltsadi}{PU}{\85\345}% U+05E5  
17139 % U+05E6 HEBREW LETTER TSADI  
17140 \DeclareTextCommand{\hebtsadi}{PU}{\85\346}% U+05E6  
17141 % U+05E7 HEBREW LETTER QOF  
17142 \DeclareTextCommand{\hebqof}{PU}{\85\347}% U+05E7  
17143 % U+05E8 HEBREW LETTER RESH  
17144 \DeclareTextCommand{\hebresh}{PU}{\85\350}% U+05E8  
17145 % U+05E9 HEBREW LETTER SHIN  
17146 \DeclareTextCommand{\hebshin}{PU}{\85\351}% U+05E9  
17147 %\* \hebshin -> \hebsin (he8)  
17148 % U+05EA HEBREW LETTER TAV  
17149 \DeclareTextCommand{\hebtav}{PU}{\85\352}% U+05EA  
17150 % U+05F0 HEBREW LIGATURE YIDDISH DOUBLE VAV  
17151 \DeclareTextCommand{\doublevav}{PU}{\85\360}% U+05F0  
17152 % U+05F1 HEBREW LIGATURE YIDDISH VAV YOD  
17153 \DeclareTextCommand{\vavyod}{PU}{\85\361}% U+05F1  
17154 % U+05F2 HEBREW LIGATURE YIDDISH DOUBLE YOD  
17155 \DeclareTextCommand{\doubleyod}{PU}{\85\362}% U+05F2  
17156 \fi

#### 46.2.12 Thai: U+0E00 to U+0E7F

17157 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
17158 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

#### 46.2.13 Phonetic Extensions: U+1D00 to U+1D7F

17159 % U+1D00 LATIN LETTER SMALL CAPITAL A; \textasca (tipa)  
17160 \DeclareTextCommand{\textasca}{PU}{\9035\000}% U+1D00  
17161 % U+1D05 LATIN LETTER SMALL CAPITAL D; \scd (wsuipa)  
17162 \DeclareTextCommand{\textscd}{PU}{\9035\005}%\* U+1D05  
17163 % U+1D07 LATIN LETTER SMALL CAPITAL E; \textsce (tipa)  
17164 \DeclareTextCommand{\textsce}{PU}{\9035\007}% U+1D07  
17165 % U+1D0A LATIN LETTER SMALL CAPITAL J; \textscj (tipa)  
17166 \DeclareTextCommand{\textscj}{PU}{\9035\012}% U+1D0A  
17167 % U+1D0B LATIN LETTER SMALL CAPITAL K; \textस्क (tipx)  
17168 \DeclareTextCommand{\textPUस्क}{PU}{\9035\013}% U+1D0B  
17169 %\* \textPUस्क -> \textस्क (tipx)  
17170 % U+1D0D LATIN LETTER SMALL CAPITAL M; \textscm (tipx)  
17171 \DeclareTextCommand{\textPUscm}{PU}{\9035\015}% U+1D0D  
17172 %\* \textPUscm -> \textscm (tipx)  
17173 % U+1D18 LATIN LETTER SMALL CAPITAL P; \textscp (tipx)  
17174 \DeclareTextCommand{\textPUscp}{PU}{\9035\030}% U+1D18  
17175 %\* \textPUscp -> \textscp (tipx)  
17176 % U+1D19 LATIN LETTER SMALL CAPITAL REVERSED R; \textrevscr (tipx)  
17177 \DeclareTextCommand{\textPUrevscr}{PU}{\9035\031}% U+1D19  
17178 %\* \textPUrevscr -> \textrevscr (tipx)  
17179 % U+1D1C LATIN LETTER SMALL CAPITAL U; \textscu (tipa), \scu (wsuipa)  
17180 \DeclareTextCommand{\textscu}{PU}{\9035\034}%\* U+1D1C  
17181 % U+1D62 LATIN SUBSCRIPT SMALL LETTER I  
17182 \DeclareTextCommand{\textiinferior}{PU}{\9035\142}%\* U+1D62  
17183 % U+1D63 LATIN SUBSCRIPT SMALL LETTER R  
17184 \DeclareTextCommand{\textrinferior}{PU}{\9035\143}%\* U+1D63  
17185 % U+1D64 LATIN SUBSCRIPT SMALL LETTER U  
17186 \DeclareTextCommand{\textuinferior}{PU}{\9035\144}%\* U+1D64  
17187 % U+1D65 LATIN SUBSCRIPT SMALL LETTER V  
17188 \DeclareTextCommand{\textvinferior}{PU}{\9035\145}%\* U+1D65  
17189 % U+1D66 GREEK SUBSCRIPT SMALL LETTER BETA  
17190 \DeclareTextCommand{\textbetainferior}{PU}{\9035\146}%\* U+1D66  
17191 % U+1D67 GREEK SUBSCRIPT SMALL LETTER GAMMA  
17192 \DeclareTextCommand{\textgammainferior}{PU}{\9035\147}%\* U+1D67  
17193 % U+1D68 GREEK SUBSCRIPT SMALL LETTER RHO  
17194 \DeclareTextCommand{\textrhoinferior}{PU}{\9035\150}%\* U+1D68  
17195 % U+1D69 GREEK SUBSCRIPT SMALL LETTER PHI  
17196 \DeclareTextCommand{\textphiinferior}{PU}{\9035\151}%\* U+1D69  
17197 % U+1D6A GREEK SUBSCRIPT SMALL LETTER CHI  
17198 \DeclareTextCommand{\textchiinferior}{PU}{\9035\152}%\* U+1D6A  
17199 % U+1D7B LATIN SMALL CAPITAL LETTER I WITH STROKE;  
17200 % \barsci (wsuipa)  
17201 \DeclareTextCommand{\textbarsci}{PU}{\9035\173}%\* U+1D7B  
17202 % U+1D7D LATIN SMALL LETTER P WITH STROKE; \barp (wsuipa)  
17203 \DeclareTextCommand{\textbarp}{PU}{\9035\175}%\* U+1D7D  
17204 % U+1D7E LATIN SMALL CAPITAL LETTER U WITH STROKE;  
17205 % \barscu (wsuipa)  
17206 \DeclareTextCommand{\textbarscu}{PU}{\9035\176}%\* U+1D7E



#### 46.2.14 Phonetic Extensions Supplement: U+1D80 to U+1DBF

```

17207 % U+1D8F LATIN SMALL LETTER A WITH RETROFLEX HOOK; \tex-
      trhooka (tipx)
17208 \DeclareTextCommand{\textPURhooka}{PU}{\9035\217}% U+1D8F
17209 %* \textPURhooka -> \textrhooka (tipx)
17210 % U+1D91 LATIN SMALL LETTER D WITH HOOK AND TAIL; \texthtr-
      taild (tipa)
17211 \DeclareTextCommand{\texthtrtaild}{PU}{\9035\221}%* U+1D91
17212 % U+1D92 LATIN SMALL LETTER E WITH RETROFLEX HOOK; \tex-
      trhooke (tipx)
17213 \DeclareTextCommand{\textPURhooke}{PU}{\9035\222}% U+1D92
17214 %* \textPURhooke -> \textrhooke (tipx)
17215 % U+1D93 LATIN SMALL LETTER OPEN E WITH RETROFLEX HOOK;
17216 % \textrhookepsilon (tipx)
17217 \DeclareTextCommand{\textPURhookepsilon}{PU}{\9035\223}% U+1D93
17218 %* \textPURhookepsilon -> \textrhookepsilon (tipx)
17219 % U+1D97 LATIN SMALL LETTER OPEN O WITH RETROFLEX HOOK;
17220 % \textrhookopeno (tipx)
17221 \DeclareTextCommand{\textPURhookopeno}{PU}{\9035\227}% U+1D97
17222 %* \textPURhookopeno -> \textrhookopeno (tipx)

```

#### 46.2.15 Latin Extended Additional: U+1E00 to U+1EFF

```

17223 % U+1E00 LATIN CAPITAL LETTER A WITH RING BELOW; Aringbelow
17224 \DeclareTextCompositeCommand{\textsubring}{PU}{A}{\9036\000}% U+1E00
17225 % U+1E01 LATIN SMALL LETTER A WITH RING BELOW; aringbelow
17226 \DeclareTextCompositeCommand{\textsubring}{PU}{a}{\9036\001}% U+1E01
17227 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent
17228 \DeclareTextCompositeCommand{\.}{PU}{B}{\9036\002}% U+1E02
17229 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent
17230 \DeclareTextCompositeCommand{\.}{PU}{b}{\9036\003}% U+1E03
17231 % U+1E04 LATIN CAPITAL LETTER B WITH DOT BELOW; Bdotbelow
17232 \DeclareTextCompositeCommand{\d}{PU}{B}{\9036\004}% U+1E04
17233 % U+1E05 LATIN SMALL LETTER B WITH DOT BELOW; bdotbelow
17234 \DeclareTextCompositeCommand{\d}{PU}{b}{\9036\005}% U+1E05
17235 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow
17236 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06
17237 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow
17238 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07
17239 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent
17240 \DeclareTextCompositeCommand{\.}{PU}{D}{\9036\012}% U+1E0A
17241 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent
17242 \DeclareTextCompositeCommand{\.}{PU}{d}{\9036\013}% U+1E0B
17243 % U+1E0C LATIN CAPITAL LETTER D WITH DOT BELOW; Ddotbelow
17244 \DeclareTextCompositeCommand{\d}{PU}{D}{\9036\014}% U+1E0C
17245 % U+1E0D LATIN SMALL LETTER D WITH DOT BELOW; ddotbelow
17246 \DeclareTextCompositeCommand{\d}{PU}{d}{\9036\015}% U+1E0D
17247 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow
17248 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E
17249 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow
17250 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F
17251 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla
17252 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10
17253 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla

```

17254 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
17255 % U+1E12 LATIN CAPITAL LETTER D WITH CIRCUMFLEX BELOW; Dcir-  
cumflexbelow  
17256 \DeclareTextCompositeCommand{\textsubcircum}{PU}{D}{\9036\022}% U+1E12  
17257 % U+1E13 LATIN SMALL LETTER D WITH CIRCUMFLEX BELOW; dcir-  
cumflexbelow  
17258 \DeclareTextCompositeCommand{\textsubcircum}{PU}{d}{\9036\023}% U+1E13  
17259 % U+1E14 LATIN CAPITAL LETTER E WITH MACRON AND GRAVE;  
17260 % Emacrongrave  
17261 \DeclareTextCompositeCommand{\textgravemacron}{PU}{E}{\9036\024}% U+1E14  
17262 % U+1E15 LATIN SMALL LETTER E WITH MACRON AND GRAVE;  
17263 % emacrongrave  
17264 \DeclareTextCompositeCommand{\textgravemacron}{PU}{e}{\9036\025}% U+1E15  
17265 % U+1E16 LATIN CAPITAL LETTER E WITH MACRON AND ACUTE;  
17266 % Emacronacute  
17267 \DeclareTextCompositeCommand{\textacutemacron}{PU}{E}{\9036\026}% U+1E16  
17268 % U+1E17 LATIN SMALL LETTER E WITH MACRON AND ACUTE;  
17269 % emacronacute  
17270 \DeclareTextCompositeCommand{\textacutemacron}{PU}{e}{\9036\027}% U+1E17  
17271 % U+1E18 LATIN CAPITAL LETTER E WITH CIRCUMFLEX BELOW; Ecir-  
cumflexbelow  
17272 \DeclareTextCompositeCommand{\textsubcircum}{PU}{E}{\9036\030}% U+1E18  
17273 % U+1E19 LATIN SMALL LETTER E WITH CIRCUMFLEX BELOW; ecir-  
cumflexbelow  
17274 \DeclareTextCompositeCommand{\textsubcircum}{PU}{e}{\9036\031}% U+1E19  
17275 % U+1E1A LATIN CAPITAL LETTER E WITH TILDE BELOW; Etildebelow  
17276 \DeclareTextCompositeCommand{\textsubtilde}{PU}{E}{\9036\032}% U+1E1A  
17277 % U+1E1B LATIN SMALL LETTER E WITH TILDE BELOW; etildebelow  
17278 \DeclareTextCompositeCommand{\textsubtilde}{PU}{e}{\9036\033}% U+1E1B  
17279 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
17280 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
17281 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
17282 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
17283 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
17284 \DeclareTextCompositeCommand{\=}{PU}{G}{\9036\040}% U+1E20  
17285 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
17286 \DeclareTextCompositeCommand{\=}{PU}{g}{\9036\041}% U+1E21  
17287 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
17288 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22  
17289 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
17290 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23  
17291 % U+1E24 LATIN CAPITAL LETTER H WITH DOT BELOW; Hdotbelow  
17292 \DeclareTextCompositeCommand{\d}{PU}{H}{\9036\044}% U+1E24  
17293 % U+1E25 LATIN SMALL LETTER H WITH DOT BELOW; hdotbelow  
17294 \DeclareTextCompositeCommand{\d}{PU}{h}{\9036\045}% U+1E25  
17295 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
17296 \DeclareTextCompositeCommand{\"}{PU}{H}{\9036\046}% U+1E26  
17297 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
17298 \DeclareTextCompositeCommand{\"}{PU}{h}{\9036\047}% U+1E27  
17299 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
17300 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28  
17301 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
17302 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
17303 % U+1E2A LATIN CAPITAL LETTER H WITH BREVE BELOW; Hbrevebelow

17304 \DeclareTextCompositeCommand{\textsubbreve}{PU}{H}{\9036\052}% U+1E2A  
17305 % U+1E2B LATIN SMALL LETTER H WITH BREVE BELOW; hbrevebelow  
17306 \DeclareTextCompositeCommand{\textsubbreve}{PU}{h}{\9036\053}% U+1E2B  
17307 % U+1E2C LATIN CAPITAL LETTER I WITH TILDE BELOW; Itildebelow  
17308 \DeclareTextCompositeCommand{\textsubtilde}{PU}{I}{\9036\054}% U+1E2C  
17309 % U+1E2D LATIN SMALL LETTER I WITH TILDE BELOW; itildebelow  
17310 \DeclareTextCompositeCommand{\textsubtilde}{PU}{i}{\9036\055}% U+1E2D  
17311 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
17312 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30  
17313 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
17314 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31  
17315 % U+1E32 LATIN CAPITAL LETTER K WITH DOT BELOW; Kdotbelow  
17316 \DeclareTextCompositeCommand{\d}{PU}{K}{\9036\062}% U+1E32  
17317 % U+1E33 LATIN SMALL LETTER K WITH DOT BELOW; kdotbelow  
17318 \DeclareTextCompositeCommand{\d}{PU}{k}{\9036\063}% U+1E33  
17319 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
17320 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
17321 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
17322 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35  
17323 % U+1E36 LATIN CAPITAL LETTER L WITH DOT BELOW; Ldotbelow  
17324 \DeclareTextCompositeCommand{\d}{PU}{L}{\9036\066}% U+1E36  
17325 % U+1E37 LATIN SMALL LETTER L WITH DOT BELOW; ldotbelow  
17326 \DeclareTextCompositeCommand{\d}{PU}{l}{\9036\067}% U+1E37  
17327 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
17328 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
17329 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
17330 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
17331 % U+1E3C LATIN CAPITAL LETTER L WITH CIRCUMFLEX BELOW; Lcir-  
cumflexbelow  
17332 \DeclareTextCompositeCommand{\textsubcircum}{PU}{L}{\9036\074}% U+1E3C  
17333 % U+1E3D LATIN SMALL LETTER L WITH CIRCUMFLEX BELOW; lcir-  
cumflexbelow  
17334 \DeclareTextCompositeCommand{\textsubcircum}{PU}{l}{\9036\075}% U+1E3D  
17335 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
17336 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E  
17337 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
17338 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F  
17339 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
17340 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
17341 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
17342 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
17343 % U+1E42 LATIN CAPITAL LETTER M WITH DOT BELOW; Mdotbelow  
17344 \DeclareTextCompositeCommand{\d}{PU}{M}{\9036\102}% U+1E42  
17345 % U+1E43 LATIN SMALL LETTER M WITH DOT BELOW; mdotbelow  
17346 \DeclareTextCompositeCommand{\d}{PU}{m}{\9036\103}% U+1E43  
17347 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
17348 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
17349 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
17350 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
17351 % U+1E46 LATIN CAPITAL LETTER N WITH DOT BELOW; Ndotbelow  
17352 \DeclareTextCompositeCommand{\d}{PU}{N}{\9036\106}% U+1E46  
17353 % U+1E47 LATIN SMALL LETTER N WITH DOT BELOW; ndotbelow  
17354 \DeclareTextCompositeCommand{\d}{PU}{n}{\9036\107}% U+1E47  
17355 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow

17356 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
17357 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
17358 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
17359 % U+1E4A LATIN CAPITAL LETTER N WITH CIRCUMFLEX BELOW; Ncir-  
cumflexbelow  
17360 \DeclareTextCompositeCommand{\textsubcircum}{PU}{N}{\9036\112}% U+1E4A  
17361 % U+1E4B LATIN SMALL LETTER N WITH CIRCUMFLEX BELOW; ncir-  
cumflexbelow  
17362 \DeclareTextCompositeCommand{\textsubcircum}{PU}{n}{\9036\113}% U+1E4B  
17363 % U+1E50 LATIN CAPITAL LETTER O WITH MACRON AND GRAVE;  
17364 % Omacrongrave  
17365 \DeclareTextCompositeCommand{\textgravemacron}{PU}{O}{\9036\120}% U+1E50  
17366 % U+1E51 LATIN SMALL LETTER O WITH MACRON AND GRAVE;  
17367 % omacrongrave  
17368 \DeclareTextCompositeCommand{\textgravemacron}{PU}{o}{\9036\121}% U+1E51  
17369 % U+1E52 LATIN CAPITAL LETTER O WITH MACRON AND ACUTE;  
17370 % Omacronacute  
17371 \DeclareTextCompositeCommand{\textacutemacron}{PU}{O}{\9036\122}% U+1E52  
17372 % U+1E53 LATIN SMALL LETTER O WITH MACRON AND ACUTE;  
17373 % omacronacute  
17374 \DeclareTextCompositeCommand{\textacutemacron}{PU}{o}{\9036\123}% U+1E53  
17375 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
17376 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
17377 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
17378 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
17379 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
17380 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
17381 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
17382 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
17383 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
17384 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
17385 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
17386 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
17387 % U+1E5A LATIN CAPITAL LETTER R WITH DOT BELOW; Rdotbelow  
17388 \DeclareTextCompositeCommand{\d}{PU}{R}{\9036\132}% U+1E5A  
17389 % U+1E5B LATIN SMALL LETTER R WITH DOT BELOW; rdotbelow  
17390 \DeclareTextCompositeCommand{\d}{PU}{r}{\9036\133}% U+1E5B  
17391 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
17392 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
17393 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
17394 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
17395 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
17396 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
17397 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
17398 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
17399 % U+1E62 LATIN CAPITAL LETTER S WITH DOT BELOW; Sdotbelow  
17400 \DeclareTextCompositeCommand{\d}{PU}{S}{\9036\142}% U+1E62  
17401 % U+1E63 LATIN SMALL LETTER S WITH DOT BELOW; sdotbelow  
17402 \DeclareTextCompositeCommand{\d}{PU}{s}{\9036\143}% U+1E63  
17403 % U+1E6A LATIN CAPITAL LETTER T WITH DOT ABOVE; Tdotaccent  
17404 \DeclareTextCompositeCommand{\.}{PU}{T}{\9036\152}% U+1E6A  
17405 % U+1E6B LATIN SMALL LETTER T WITH DOT ABOVE; tdotaccent  
17406 \DeclareTextCompositeCommand{\.}{PU}{t}{\9036\153}% U+1E6B  
17407 % U+1E6C LATIN CAPITAL LETTER T WITH DOT BELOW; Tdotbelow

17408 \DeclareTextCompositeCommand{\d}{PU}{T}{\9036\154}% U+1E6C  
17409 % U+1E6D LATIN SMALL LETTER T WITH DOT BELOW; tdotbelow  
17410 \DeclareTextCompositeCommand{\d}{PU}{t}{\9036\155}% U+1E6D  
17411 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
17412 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
17413 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
17414 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
17415 % U+1E70 LATIN CAPITAL LETTER T WITH CIRCUMFLEX BELOW; Tcir-  
cumflexbelow  
17416 \DeclareTextCompositeCommand{\textsubcircum}{PU}{T}{\9036\160}% U+1E70  
17417 % U+1E71 LATIN SMALL LETTER T WITH CIRCUMFLEX BELOW; tcir-  
cumflexbelow  
17418 \DeclareTextCompositeCommand{\textsubcircum}{PU}{t}{\9036\161}% U+1E71  
17419 % U+1E72 LATIN CAPITAL LETTER U WITH DIAERESIS BELOW; Udiere-  
sisbelow  
17420 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{U}{\9036\162}% U+1E72  
17421 % U+1E73 LATIN SMALL LETTER U WITH DIAERESIS BELOW; udiere-  
sisbelow  
17422 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{u}{\9036\163}% U+1E73  
17423 % U+1E74 LATIN CAPITAL LETTER U WITH TILDE BELOW; Utildebelow  
17424 \DeclareTextCompositeCommand{\textsubtilde}{PU}{U}{\9036\164}% U+1E74  
17425 % U+1E75 LATIN SMALL LETTER U WITH TILDE BELOW; utildebelow  
17426 \DeclareTextCompositeCommand{\textsubtilde}{PU}{u}{\9036\165}% U+1E75  
17427 % U+1E76 LATIN CAPITAL LETTER U WITH CIRCUMFLEX BELOW; Ucir-  
cumflexbelow  
17428 \DeclareTextCompositeCommand{\textsubcircum}{PU}{U}{\9036\166}% U+1E76  
17429 % U+1E77 LATIN SMALL LETTER U WITH CIRCUMFLEX BELOW; ucir-  
cumflexbelow  
17430 \DeclareTextCompositeCommand{\textsubcircum}{PU}{u}{\9036\167}% U+1E77  
17431 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
17432 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
17433 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
17434 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
17435 % U+1E7E LATIN CAPITAL LETTER V WITH DOT BELOW; Vdotbelow  
17436 \DeclareTextCompositeCommand{\d}{PU}{V}{\9036\176}% U+1E7E  
17437 % U+1E7F LATIN SMALL LETTER V WITH DOT BELOW; vdotbelow  
17438 \DeclareTextCompositeCommand{\d}{PU}{v}{\9036\177}% U+1E7F  
17439 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
17440 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80  
17441 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
17442 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81  
17443 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
17444 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
17445 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
17446 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
17447 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
17448 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84  
17449 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
17450 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85  
17451 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
17452 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86  
17453 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
17454 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87  
17455 % U+1E88 LATIN CAPITAL LETTER W WITH DOT BELOW; wdotbelow

17456 \DeclareTextCompositeCommand{\d}{PU}{W}{\9036\210}% U+1E88  
17457 % U+1E89 LATIN SMALL LETTER W WITH DOT BELOW; wdotbelow  
17458 \DeclareTextCompositeCommand{\d}{PU}{w}{\9036\211}% U+1E89  
17459 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
17460 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A  
17461 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
17462 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B  
17463 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
17464 \DeclareTextCompositeCommand{"}{PU}{X}{\9036\214}% U+1E8C  
17465 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
17466 \DeclareTextCompositeCommand{"}{PU}{x}{\9036\215}% U+1E8D  
17467 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
17468 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E  
17469 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
17470 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F  
17471 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
17472 \DeclareTextCompositeCommand{\^}{PU}{Z}{\9036\220}% U+1E90  
17473 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
17474 \DeclareTextCompositeCommand{\^}{PU}{z}{\9036\221}% U+1E91  
17475 % U+1E92 LATIN CAPITAL LETTER Z WITH DOT BELOW; Zdotbelow  
17476 \DeclareTextCompositeCommand{\d}{PU}{Z}{\9036\222}% U+1E92  
17477 % U+1E93 LATIN SMALL LETTER Z WITH DOT BELOW; zdotbelow  
17478 \DeclareTextCompositeCommand{\d}{PU}{z}{\9036\223}% U+1E93  
17479 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
17480 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
17481 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
17482 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
17483 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
17484 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
17485 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
17486 \DeclareTextCompositeCommand{"}{PU}{t}{\9036\227}% U+1E97  
17487 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
17488 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
17489 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
17490 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
17491 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdotaccent  
17492 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B  
17493 % U+1EA0 LATIN CAPITAL LETTER A WITH DOT BELOW; Adotbelow  
17494 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
17495 % U+1EA1 LATIN SMALL LETTER A WITH DOT BELOW; adotbelow  
17496 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1  
17497 % U+1EB8 LATIN CAPITAL LETTER E WITH DOT BELOW; Edotbelow  
17498 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8  
17499 % U+1EB9 LATIN SMALL LETTER E WITH DOT BELOW; edotbelow  
17500 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9  
17501 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
17502 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
17503 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
17504 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
17505 % U+1ECA LATIN CAPITAL LETTER I WITH DOT BELOW; Idotbelow  
17506 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA  
17507 % U+1ECB LATIN SMALL LETTER I WITH DOT BELOW; idotbelow  
17508 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB

17509 % U+1ECC LATIN CAPITAL LETTER O WITH DOT BELOW; Odotbelow  
 17510 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC  
 17511 % U+1ECD LATIN SMALL LETTER O WITH DOT BELOW; odotbelow  
 17512 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD  
 17513 % U+1EE4 LATIN CAPITAL LETTER U WITH DOT BELOW; Udotbelow  
 17514 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4  
 17515 % U+1EE5 LATIN SMALL LETTER U WITH DOT BELOW; udotbelow  
 17516 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
 17517 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
 17518 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2  
 17519 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
 17520 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
 17521 % U+1EF4 LATIN CAPITAL LETTER Y WITH DOT BELOW; Ydotbelow  
 17522 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4  
 17523 % U+1EF5 LATIN SMALL LETTER Y WITH DOT BELOW; ydotbelow  
 17524 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
 17525 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
 17526 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
 17527 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
 17528 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

#### 46.2.16 General Punctuation: U+2000 to U+206F

17529 % U+200C ZERO WIDTH NON-JOINER; \*afii61664, zerowidthnonjoiner  
 17530 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
 17531 % U+2013 EN DASH; endash  
 17532 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
 17533 % U+2014 EM DASH; emdash  
 17534 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 17535 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 17536 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 17537 %\* \textbardbl -> \textdoublevertline (tipa)  
 17538 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 17539 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 17540 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 17541 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 17542 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 17543 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 17544 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 17545 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 17546 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 17547 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 17548 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 17549 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 17550 % U+2020 DAGGER; dagger  
 17551 \DeclareTextCommand{\textdagger}{PU}{\9040\040}%\* U+2020  
 17552 %\* \textdagger -> \dag (LaTeX)  
 17553 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)  
 17554 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
 17555 %\* \textdaggerdbl -> \ddagger (LaTeX)  
 17556 %\* \textdaggerdbl -> \ddag (LaTeX)  
 17557 % U+2022 BULLET; bullet  
 17558 \DeclareTextCommand{\textbullet}{PU}{\9040\042}%\* U+2022  
 17559 % U+2025 TWO DOT LEADER; \hdotfor (MnSymbol)  
 17560 \DeclareTextCommand{\texthdotfor}{PU}{\9040\045}%\* U+2025

17561 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 17562 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
 17563 %\* \textellipsis -> \mathellipsis  
 17564 % U+2030 PER MILLE SIGN; perthousand  
 17565 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 17566 % U+2031 PER TEN THOUSAND SIGN  
 17567 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
 17568 % U+2032 PRIME; minute; \prime (MnSymbol)  
 17569 \DeclareTextCommand{\textprime}{PU}{\9040\062}%\* U+2032  
 17570 % U+2033 DOUBLE PRIME; \second (mathabx)  
 17571 \DeclareTextCommand{\textsecond}{PU}{\9040\063}%\* U+2033  
 17572 % U+2034 TRIPLE PRIME; \third (mathabx)  
 17573 \DeclareTextCommand{\textthird}{PU}{\9040\064}%\* U+2034  
 17574 % U+2035 REVERSED PRIME; \backprime (AmS)  
 17575 \DeclareTextCommand{\textbackprime}{PU}{\9040\065}%\* U+2035  
 17576 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 lingleft  
 17577 \DeclareTextCommand{\guilsingleft}{PU}{\9040\071}% U+2039  
 17578 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
 lingright  
 17579 \DeclareTextCommand{\guilsingright}{PU}{\9040\072}% U+203A  
 17580 % U+203B REFERENCE MARK; referencemark  
 17581 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
 17582 % U+203D INTERROBANG  
 17583 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
 17584 % U+2044 FRACTION SLASH; fraction  
 17585 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
 17586 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
 17587 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
 17588 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
 17589 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
 17590 % U+2052 COMMERCIAL MINUS SIGN  
 17591 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052  
 17592 % U+2056 THREE DOT PUNCTUATION; \lefttherefore (MnSymbol)  
 17593 \DeclareTextCommand{\textlefttherefore}{PU}{\9040\126}%\* U+2056  
 17594 % U+2057 QUADRUPLE PRIME; \fourth (mathabx)  
 17595 \DeclareTextCommand{\textfourth}{PU}{\9040\127}%\* U+2057  
 17596 % U+2058 FOUR DOT PUNCTUATION; \diamonddots (MnSymbol)  
 17597 \DeclareTextCommand{\textdiamonddots}{PU}{\9040\130}%\* U+2058

#### 46.2.17 Superscripts and Subscripts: U+2070 to U+209F

17598 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
 17599 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}%\* U+2070  
 17600 % U+2071 SUPERSCRIPT LATIN SMALL LETTER I  
 17601 \DeclareTextCommand{\textisuperior}{PU}{\9040\161}%\* U+2071  
 17602 % U+2074 SUPERSCRIPT FOUR; foursuperior  
 17603 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}%\* U+2074  
 17604 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
 17605 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}%\* U+2075  
 17606 % U+2076 SUPERSCRIPT SIX; sixsuperior  
 17607 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}%\* U+2076  
 17608 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
 17609 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}%\* U+2077  
 17610 % U+2078 SUPERSCRIPT EIGHT; eightsuperior



17611 \DeclareTextCommand{\texteightssuperior}{PU}{\9040\170}%\* U+2078  
17612 % U+2079 SUPERSCRIPT NINE; ninesuperior  
17613 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}%\* U+2079  
17614 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
17615 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}%\* U+207A  
17616 % U+207B SUPERSCRIPT MINUS  
17617 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}%\* U+207B  
17618 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
17619 \DeclareTextCommand{\textequalssuperior}{PU}{\9040\174}%\* U+207C  
17620 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftssuperior  
17621 \DeclareTextCommand{\textparenleftssuperior}{PU}{\9040\175}%\* U+207D  
17622 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightssuperior  
17623 \DeclareTextCommand{\textparenrightssuperior}{PU}{\9040\176}%\* U+207E  
17624 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
17625 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}%\* U+207F  
17626 % U+2080 SUBSCRIPT ZERO; zeroinferior  
17627 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}%\* U+2080  
17628 % U+2081 SUBSCRIPT ONE; oneinferior  
17629 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}%\* U+2081  
17630 % U+2082 SUBSCRIPT TWO; twoinferior  
17631 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}%\* U+2082  
17632 % U+2083 SUBSCRIPT THREE; threeinferior  
17633 \DeclareTextCommand{\textthreeminferior}{PU}{\9040\203}%\* U+2083  
17634 % U+2084 SUBSCRIPT FOUR; fourinferior  
17635 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}%\* U+2084  
17636 % U+2085 SUBSCRIPT FIVE; fiveinferior  
17637 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}%\* U+2085  
17638 % U+2086 SUBSCRIPT SIX; sixinferior  
17639 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}%\* U+2086  
17640 % U+2087 SUBSCRIPT SEVEN; seveninferior  
17641 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}%\* U+2087  
17642 % U+2088 SUBSCRIPT EIGHT; eightinferior  
17643 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}%\* U+2088  
17644 % U+2089 SUBSCRIPT NINE; nineinferior  
17645 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}%\* U+2089  
17646 % U+208A SUBSCRIPT PLUS SIGN  
17647 \DeclareTextCommand{\textplusinferior}{PU}{\9040\212}%\* U+208A  
17648 % U+208B SUBSCRIPT MINUS  
17649 \DeclareTextCommand{\textminusinferior}{PU}{\9040\213}%\* U+208B  
17650 % U+208C SUBSCRIPT EQUALS SIGN  
17651 \DeclareTextCommand{\textequalsinferior}{PU}{\9040\214}%\* U+208C  
17652 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
17653 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}%\* U+208D  
17654 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
17655 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}%\* U+208E  
17656 % U+2090 LATIN SUBSCRIPT SMALL LETTER A  
17657 \DeclareTextCommand{\textainferior}{PU}{\9040\220}%\* U+2090  
17658 % U+2091 LATIN SUBSCRIPT SMALL LETTER E  
17659 \DeclareTextCommand{\texteinferior}{PU}{\9040\221}%\* U+2091  
17660 % U+2092 LATIN SUBSCRIPT SMALL LETTER O  
17661 \DeclareTextCommand{\textoinferior}{PU}{\9040\222}%\* U+2092  
17662 % U+2093 LATIN SUBSCRIPT SMALL LETTER X  
17663 \DeclareTextCommand{\textxinferior}{PU}{\9040\223}%\* U+2093  
17664 % U+2094 LATIN SUBSCRIPT SMALL LETTER SCHWA

17665 \DeclareTextCommand{\textschwainferior}{PU}{\9040\224}%\* U+2094  
 17666 % U+2095 LATIN SUBSCRIPT SMALL LETTER H  
 17667 \DeclareTextCommand{\texthinferior}{PU}{\9040\225}%\* U+2095  
 17668 % U+2096 LATIN SUBSCRIPT SMALL LETTER K  
 17669 \DeclareTextCommand{\textkinferior}{PU}{\9040\226}%\* U+2096  
 17670 % U+2097 LATIN SUBSCRIPT SMALL LETTER L  
 17671 \DeclareTextCommand{\textlinferior}{PU}{\9040\227}%\* U+2097  
 17672 % U+2098 LATIN SUBSCRIPT SMALL LETTER M  
 17673 \DeclareTextCommand{\textminferior}{PU}{\9040\230}%\* U+2098  
 17674 % U+2099 LATIN SUBSCRIPT SMALL LETTER N  
 17675 \DeclareTextCommand{\textninferior}{PU}{\9040\231}%\* U+2099  
 17676 % U+209A LATIN SUBSCRIPT SMALL LETTER P  
 17677 \DeclareTextCommand{\textpinferior}{PU}{\9040\232}%\* U+209A  
 17678 % U+209B LATIN SUBSCRIPT SMALL LETTER S  
 17679 \DeclareTextCommand{\textsinferior}{PU}{\9040\233}%\* U+209B  
 17680 % U+209C LATIN SUBSCRIPT SMALL LETTER T  
 17681 \DeclareTextCommand{\texttinferior}{PU}{\9040\234}%\* U+209C

#### 46.2.18 Currency Symbols: U+20A0 to U+20CF

17682 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
 17683 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
 17684 % U+20A4 LIRA SIGN; afi08941, \*lira  
 17685 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 17686 % U+20A6 NAIRA SIGN  
 17687 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 17688 % U+20A7 PESETA SIGN; peseta  
 17689 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
 17690 % U+20A9 WON SIGN; won  
 17691 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
 17692 % U+20AB DONG SIGN; dong  
 17693 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
 17694 % U+20AC EURO SIGN; \*Euro, euro  
 17695 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
 17696 %\* \texteuro -> \EurDig (marvosym)  
 17697 %\* \texteuro -> \EURdig (marvosym)  
 17698 %\* \texteuro -> \EurHv (marvosym)  
 17699 %\* \texteuro -> \EURhv (marvosym)  
 17700 %\* \texteuro -> \EurCr (marvosym)  
 17701 %\* \texteuro -> \EURcr (marvosym)  
 17702 %\* \texteuro -> \EurTm (marvosym)  
 17703 %\* \texteuro -> \EURtm (marvosym)  
 17704 %\* \texteuro -> \Eur (marvosym)  
 17705 % U+20B0 GERMAN PENNY SIGN; \Deleatur (marvosym)  
 17706 \DeclareTextCommand{\textDeleatur}{PU}{\9040\260}%\* U+20B0  
 17707 %\* \textDeleatur -> \Denarius (marvosym)  
 17708 % U+20B1 PESO SIGN  
 17709 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 17710 % U+20B2 GUARANI SIGN  
 17711 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

#### 46.2.19 Letterlike Symbols: U+2100 to U+214F

17712 % U+2103 DEGREE CELSIUS; centigrade  
 17713 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 17714 % U+210F PLANCK CONSTANT OVER TWO PI; \hslash (AmS)

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17715 \DeclareTextCommand{\textslash}{PU}{\9041\017}%* U+210F
17716 % U+2111 BLACK-LETTER CAPITAL I (=imaginary part); Ifraktur; \Im (La-
      TeX)
17717 \DeclareTextCommand{\textIm}{PU}{\9041\021}%* U+2111
17718 % U+2113 SCRIPT SMALL L (=ell, liter); afii61289, lsquare; \ell (LaTeX)
17719 \DeclareTextCommand{\textell}{PU}{\9041\023}%* U+2113
17720 % U+2116 NUMERO SIGN; *afii61352, numero
17721 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116
17722 % U+2117 SOUND RECORDING COPYRIGHT
17723 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117
17724 % U+2118 SCRIPT CAPITAL P (=Weierstrass elliptic function);
17725 % weierstrass; \wp (LaTeX)
17726 \DeclareTextCommand{\textwp}{PU}{\9041\030}%* U+2118
17727 % U+211C BLACK-LETTER CAPITAL R (=real part); Rfraktur; \Re (LaTeX)
17728 \DeclareTextCommand{\textRe}{PU}{\9041\034}%* U+211C
17729 % U+211E PRESCRIPTION TAKE; prescription
17730 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E
17731 % U+2120 SERVICE MARK
17732 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120
17733 % U+2122 TRADE MARK SIGN; trademark
17734 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122
17735 % U+2126 OHM SIGN; Ohm, Omega
17736 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126
17737 % U+2127 INVERTED OHM SIGN
17738 \DeclareTextCommand{\textmho}{PU}{\9041\047}%* U+2127
17739 %* \textmho -> \agemO (wasysym)
17740 % U+2129 TURNED GREEK SMALL LETTER IOTA; \riota (phonetic)
17741 \DeclareTextCommand{\textriota}{PU}{\9041\051}%* U+2129
17742 % U+212B ANGSTROM SIGN; angstrom
17743 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B
17744 % U+212E ESTIMATED SYMBOL; estimated
17745 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E
17746 %* \textestimated -> \EstimatedSign (marvosym)
17747 %* \textestimated -> \Ecommerce (marvosym)
17748 % U+2132 TURNED CAPITAL F; \Finv (AmS)
17749 \DeclareTextCommand{\textFinv}{PU}{\9041\062}%* U+2132
17750 % U+2135 ALEF SYMBOL; aleph; \aleph (LaTeX)
17751 \DeclareTextCommand{\textaleph}{PU}{\9041\065}%* U+2135
17752 % U+2136 BET SYMBOL; \beth (AmS, MnSymbol)
17753 \DeclareTextCommand{\textbeth}{PU}{\9041\066}%* U+2136
17754 % U+2137 GIMEL SYMBOL; \gimel (AmS, MnSymbol)
17755 \DeclareTextCommand{\textgimel}{PU}{\9041\067}%* U+2137
17756 % U+2138 DALET SYMBOL; \daleth (AmS, MnSymbol)
17757 \DeclareTextCommand{\textdaleth}{PU}{\9041\070}%* U+2138
17758 % U+213B FACSIMILE SIGN; \fax (marvosym)
17759 \DeclareTextCommand{\textfax}{PU}{\9041\073}%* U+213B
17760 % U+2141 TURNED SANS-SERIF CAPITAL G (=game); \Game
17761 \DeclareTextCommand{\textGame}{PU}{\9041\101}%* U+2141
17762 % U+214B TURNED AMPERSAND; \invamp (txfonts/pxfonts)
17763 \DeclareTextCommand{\textinvamp}{PU}{\9041\113}% U+214B
17764 %* \textinvamp -> \bindnasrepma (stmaryrd)
17765 %* \textinvamp -> \parr (cml)

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#### 46.2.20 Number Forms: U+2150 to U+218F

17766 % U+2150 VULGAR FRACTION ONE SEVENTH  
 17767 \DeclareTextCommand{\textoneseventh}{PU}{\9041\120}% U+2150  
 17768 % U+2151 VULGAR FRACTION ONE NINTH  
 17769 \DeclareTextCommand{\textoneninth}{PU}{\9041\121}% U+2151  
 17770 % U+2152 VULGAR FRACTION ONE TENTH  
 17771 \DeclareTextCommand{\textonetenth}{PU}{\9041\122}% U+2152  
 17772 % U+2153 VULGAR FRACTION ONE THIRD; onethird  
 17773 \DeclareTextCommand{\textonethird}{PU}{\9041\123}% U+2153  
 17774 % U+2154 VULGAR FRACTION TWO THIRDS; twothirds  
 17775 \DeclareTextCommand{\texttwothirds}{PU}{\9041\124}% U+2154  
 17776 % U+2155 VULGAR FRACTION ONE FIFTH  
 17777 \DeclareTextCommand{\textonefifth}{PU}{\9041\125}% U+2155  
 17778 % U+2156 VULGAR FRACTION TWO FIFTHS  
 17779 \DeclareTextCommand{\texttwofifths}{PU}{\9041\126}% U+2156  
 17780 % U+2157 VULGAR FRACTION THREE FIFTHS  
 17781 \DeclareTextCommand{\textthreefifths}{PU}{\9041\127}% U+2157  
 17782 % U+2158 VULGAR FRACTION FOUR FIFTHS  
 17783 \DeclareTextCommand{\textfourfifths}{PU}{\9041\130}% U+2158  
 17784 % U+2159 VULGAR FRACTION ONE SIXTH  
 17785 \DeclareTextCommand{\textonesixth}{PU}{\9041\131}% U+2159  
 17786 % U+215A VULGAR FRACTION FIVE SIXTHS  
 17787 \DeclareTextCommand{\textfivesixths}{PU}{\9041\132}% U+215A  
 17788 % U+215B VULGAR FRACTION ONE EIGHTH; oneeighth  
 17789 \DeclareTextCommand{\textoneeighth}{PU}{\9041\133}% U+215B  
 17790 % U+215C VULGAR FRACTION THREE EIGHTHS; threeeighths  
 17791 \DeclareTextCommand{\textthreeeighths}{PU}{\9041\134}% U+215C  
 17792 % U+215D VULGAR FRACTION FIVE EIGHTHS; fiveeighths  
 17793 \DeclareTextCommand{\textfiveeighths}{PU}{\9041\135}% U+215D  
 17794 % U+215E VULGAR FRACTION SEVEN EIGHTHS; seveneighths  
 17795 \DeclareTextCommand{\textseveneighths}{PU}{\9041\136}% U+215E  
 17796 % U+2184 LATIN SMALL LETTER REVERSED C  
 17797 \DeclareTextCommand{\textrevc}{PU}{\9041\204}% U+2184  
 17798 % U+2189 VULGAR FRACTION ZERO THIRDS  
 17799 \DeclareTextCommand{\textzerthirds}{PU}{\9041\211}% U+2189

#### 46.2.21 Arrows: U+2190 to U+21FF

17800 % U+2190 LEFTWARDS ARROW; arrowleft  
 17801 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}%\* U+2190  
 17802 % U+2191 UPWARDS ARROW; arrowup  
 17803 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}%\* U+2191  
 17804 % U+2192 RIGHTWARDS ARROW; arrowright  
 17805 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}%\* U+2192  
 17806 %\* \textrightarrow -> \MVRightArrow (marvosym)  
 17807 %\* \textrightarrow -> \MVRightarrow (marvosym)  
 17808 % U+2193 DOWNWARDS ARROW; arrowdown  
 17809 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}%\* U+2193  
 17810 %\* \textdownarrow -> \MVAArrowDown (marvosym)  
 17811 %\* \textdownarrow -> \Force (marvosym)  
 17812 % U+2194 LEFT RIGHT ARROW; arrowboth; \leftrightarrow (LaTeX)  
 17813 \DeclareTextCommand{\textleftrightarrow}{PU}{\9041\224}%\* U+2194  
 17814 % U+2195 UP DOWN ARROW; arrowupdn; \updownarrow (LaTeX)  
 17815 \DeclareTextCommand{\textupdownarrow}{PU}{\9041\225}%\* U+2195  
 17816 % U+2196 NORTH WEST ARROW; arrowupleft; \nwarrow (LaTeX)  
 17817 \DeclareTextCommand{\textnwarrow}{PU}{\9041\226}%\* U+2196

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17818 % U+2197 NORTH EAST ARROW; arrowupright; \nearrow (LaTeX)
17819 \DeclareTextCommand{\textnearrow}{PU}{\9041\227}%* U+2197
17820 %* \textnearrow -> \textglobrise (tipa)
17821 % U+2198 SOUTH EAST ARROW; arrowdownright; \searrow (LaTeX)
17822 \DeclareTextCommand{\textsearrow}{PU}{\9041\230}%* U+2198
17823 %* \textsearrow -> \textglobfall (tipa)
17824 % U+2199 SOUTH WEST ARROW; arrowdownleft; \swarrow (LaTeX)
17825 \DeclareTextCommand{\textswarrow}{PU}{\9041\231}%* U+2199
17826 % U+219A LEFTWARDS ARROW WITH STROKE; \leftarrow (AmS)
17827 \DeclareTextCommand{\textleftarrow}{PU}{\9041\232}%* U+219A
17828 % U+219B RIGHTWARDS ARROW WITH STROKE; \rightarrow (AmS)
17829 \DeclareTextCommand{\textrightarrow}{PU}{\9041\233}%* U+219B
17830 % U+219E LEFTWARDS TWO HEADED ARROW; \twoheadleftarrow (AmS)
17831 \DeclareTextCommand{\texttwoheadleftarrow}{PU}{\9041\236}%* U+219E
17832 % \twoheadleftarrow (txfonts/pxfonts)
17833 \DeclareTextCommand{\textntwoheadleftarrow}{PU}{\9041\236\83\070}%* U+219E U+0338
17834 % U+219F UPWARDS TWO HEADED ARROW; \twoheaduparrow (MnSymbol)
17835 \DeclareTextCommand{\texttwoheaduparrow}{PU}{\9041\237}%* U+219F
17836 % U+21A0 RIGHTWARDS TWO HEADED ARROW;
17837 % \twoheadrightarrow (AmS)
17838 \DeclareTextCommand{\texttwoheadrightarrow}{PU}{\9041\240}%* U+21A0
17839 % \twoheadrightarrow (txfonts/pxfonts)
17840 \DeclareTextCommand{\textntwoheadrightarrow}{PU}{\9041\240\83\070}%* U+21A0 U+0338
17841 % U+21A1 DOWNWARDS TWO HEADED ARROW; \twoheaddownarrow (Mn-
      Symbol)
17842 \DeclareTextCommand{\texttwoheaddownarrow}{PU}{\9041\241}%* U+21A1
17843 % U+21A2 LEFTWARDS ARROW WITH TAIL; \leftarrowtail (AmS)
17844 \DeclareTextCommand{\textleftarrowtail}{PU}{\9041\242}%* U+21A2
17845 % U+21A3 RIGHTWARDS ARROW WITH TAIL; \rightarrowtail (AmS)
17846 \DeclareTextCommand{\textrightarrowtail}{PU}{\9041\243}%* U+21A3
17847 % U+21A6 RIGHTWARDS ARROW FROM BAR; \mapsto (LaTeX)
17848 \DeclareTextCommand{\textmapsto}{PU}{\9041\246}%* U+21A6
17849 % U+21A9 LEFTWARDS ARROW WITH HOOK; \hookleftarrow (LaTeX)
17850 \DeclareTextCommand{\texthookleftarrow}{PU}{\9041\251}%* U+21A9
17851 % U+21AA RIGHTWARDS ARROW WITH HOOK; \hookrightarrow (LaTeX)
17852 \DeclareTextCommand{\texthookrightarrow}{PU}{\9041\252}%* U+21AA
17853 % U+21AB LEFTWARDS ARROW WITH LOOP; \looparrowleft (AmS)
17854 \DeclareTextCommand{\textlooparrowleft}{PU}{\9041\253}%* U+21AB
17855 % U+21AC RIGHTWARDS ARROW WITH LOOP; \looparrowright (AmS)
17856 \DeclareTextCommand{\textlooparrowright}{PU}{\9041\254}%* U+21AC
17857 % U+21AE LEFT RIGHT ARROW WITH STROKE; \leftrightarrow (AmS)
17858 \DeclareTextCommand{\textleftrightarrow}{PU}{\9041\256}%* U+21AE
17859 % U+21AF DOWNWARDS ZIGZAG ARROW; \lightning (stmaryrd)
17860 \DeclareTextCommand{\textlightning}{PU}{\9041\257}%* U+21AF
17861 %* \textlightning -> \Lightning (marvosym)
17862 % U+21B5 DOWNWARDS ARROW WITH CORNER LEFTWARDS;
17863 % \dls (mathabx)
17864 \DeclareTextCommand{\textdls}{PU}{\9041\265}%* U+21B5
17865 % U+21B6 ANTICLOCKWISE TOP SEMICIRCLE ARROW;
17866 % \curvearrowleft (AmS)
17867 \DeclareTextCommand{\textcurvearrowleft}{PU}{\9041\266}%* U+21B6
17868 % U+21B7 CLOCKWISE TOP SEMICIRCLE ARROW; \curvearrowright (AmS)
17869 \DeclareTextCommand{\textcurvearrowright}{PU}{\9041\267}%* U+21B7
17870 % U+21BC LEFTWARDS HARPOON WITH BARB UPWARDS; harpoonleft-

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        barbup;
17871 % \leftharpoonup (LaTeX)
17872 \DeclareTextCommand{\textleftharpoonup}{PU}{\9041\274}%* U+21BC
17873 % U+21BD LEFTWARDS HARPOON WITH BARB DOWNWARDS;
17874 % \leftharpoondown (LaTeX)
17875 \DeclareTextCommand{\textleftharpoondown}{PU}{\9041\275}%* U+21BD
17876 % U+21BE UPWARDS HARPOON WITH BARB RIGHTWARDS;
17877 % \upharpoonright (AmS)
17878 \DeclareTextCommand{\textupharpoonright}{PU}{\9041\276}%* U+21BE
17879 % U+21BF UPWARDS HARPOON WITH BARB LEFTWARDS;
17880 % \upharpoonleft (AmS)
17881 \DeclareTextCommand{\textupharpoonleft}{PU}{\9041\277}%* U+21BF
17882 % U+21C0 RIGHTWARDS HARPOON WITH BARB UPWARDS; harpoonright-
        barbup
17883 % \rightharpoonup (LaTeX)
17884 \DeclareTextCommand{\textrightharpoonup}{PU}{\9041\300}%* U+21C0
17885 % U+21C1 RIGHTWARDS HARPOON WITH BARB DOWNWARDS;
17886 % \rightharpoondown (LaTeX)
17887 \DeclareTextCommand{\textrightharpoondown}{PU}{\9041\301}%* U+21C1
17888 % U+21C2 DOWNWARDS HARPOON WITH BARB RIGHTWARDS;
17889 % \downharpoonright (AmS)
17890 \DeclareTextCommand{\textdownharpoonright}{PU}{\9041\302}%* U+21C2
17891 % U+21C3 DOWNWARDS HARPOON WITH BARB LEFTWARDS;
17892 % \downharpoonleft (AmS)
17893 \DeclareTextCommand{\textdownharpoonleft}{PU}{\9041\303}%* U+21C3
17894 % U+21C4 RIGHTWARDS ARROW OVER LEFTWARDS ARROW;
17895 % \rightarrowoverleftarrow{\rightarrow} (MnSymbol)
17896 \DeclareTextCommand{\textrightarrowoverleftarrow}{PU}{\9041\304}%* U+21C4
17897 % U+21C5 UPWARDS ARROW LEFTWARDS OF DOWNWARDS ARROW; ar-
        rowupleftofdown;
17898 % \updownarrows (MnSymbol)
17899 \DeclareTextCommand{\textupdownarrows}{PU}{\9041\305}%* U+21C5
17900 % U+21C6 LEFTWARDS ARROW OVER RIGHTWARDS ARROW; arrowleft-
        overrightarrow;
17901 % \leftrightarrows (AmS)
17902 \DeclareTextCommand{\textleftrightarrows}{PU}{\9041\306}%* U+21C6
17903 % U+21C7 LEFTWARDS PAIRED ARROWS; \leftleftarrows (AmS)
17904 \DeclareTextCommand{\textleftleftarrows}{PU}{\9041\307}%* U+21C7
17905 % U+21C8 UPWARDS PAIRED ARROWS; \upuparrows (AmS)
17906 \DeclareTextCommand{\textupuparrows}{PU}{\9041\310}%* U+21C8
17907 % U+21C9 RIGHTWARDS PAIRED ARROWS; \rightrightarrows (AmS)
17908 \DeclareTextCommand{\textrightarrows}{PU}{\9041\311}%* U+21C9
17909 % U+21CA DOWNWARDS PAIRED ARROWS; \downdownarrows (AmS)
17910 \DeclareTextCommand{\textdowndownarrows}{PU}{\9041\312}%* U+21CA
17911 % U+21CB LEFTWARDS HARPOON OVER RIGHTWARDS HARPOON;
17912 % \leftrightharpoons (AmS);
17913 \DeclareTextCommand{\textleftrightharpoons}{PU}{\9041\313}%* U+21CB
17914 % U+21CC RIGHTWARDS HARPOON OVER LEFTWARDS HARPOON;
17915 % \rightleftharpoons (LaTeX, AmS)
17916 \DeclareTextCommand{\textrightleftharpoons}{PU}{\9041\314}%* U+21CC
17917 % U+21CD LEFTWARDS DOUBLE ARROW WITH STROKE; \rightarrow-
        blstroke;
17918 % \nLeftarrow (AmS)
17919 \DeclareTextCommand{\textnLeftarrow}{PU}{\9041\315}%* U+21CD

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17920 % U+21CE LEFT RIGHT DOUBLE ARROW WITH STROKE; \nLeftrightarrow (AmS)
17921 \DeclareTextCommand{\textnLeftrightarrow}{PU}{\9041\316}%* U+21CE
17922 % U+21CF RIGHTWARDS DOUBLE ARROW WITH STROKE; arrowrightdblstroke;
17923 % \nRrightarrow (AmS)
17924 \DeclareTextCommand{\textnRrightarrow}{PU}{\9041\317}%* U+21CF
17925 % U+21D0 LEFTWARDS DOUBLE ARROW; arrowdblleft, arrowleftdbl;
17926 % \Leftarrow (LaTeX)
17927 \DeclareTextCommand{\textLeftarrow}{PU}{\9041\320}%* U+21D0
17928 % U+21D1 UPWARDS DOUBLE ARROW; arrowdblup; \Uparrow (LaTeX)
17929 \DeclareTextCommand{\textUparrow}{PU}{\9041\321}%* U+21D1
17930 % U+21D2 RIGHTWARDS DOUBLE ARROW; arrowdblright, dblarrowright;
17931 % \Rrightarrow (LaTeX)
17932 \DeclareTextCommand{\textRrightarrow}{PU}{\9041\322}%* U+21D2
17933 %* \textRrightarrow -> \Conclusion (marvosym)
17934 % U+21D3 DOWNWARDS DOUBLE ARROW; arrowdbldown; \Downarrow (LaTeX)
17935 \DeclareTextCommand{\textDownarrow}{PU}{\9041\323}%* U+21D3
17936 % U+21D4 LEFT RIGHT DOUBLE ARROW; arrowdblboth;
17937 % \Leftrightarrow (LaTeX)
17938 \DeclareTextCommand{\textLeftrightarrow}{PU}{\9041\324}%* U+21D4
17939 %* \textLeftrightarrow -> \Equivalence (marvosym)
17940 % U+21D5 UP DOWN DOUBLE ARROW; \Updownarrow (LaTeX)
17941 \DeclareTextCommand{\textUpdownarrow}{PU}{\9041\325}%* U+21D5
17942 % U+21D6 NORTH WEST DOUBLE ARROW; \Nwarrow (MnSymbol)
17943 \DeclareTextCommand{\textNwarrow}{PU}{\9041\326}%* U+21D6
17944 % U+21D7 NORTH EAST DOUBLE ARROW; \Nearrow (MnSymbol)
17945 \DeclareTextCommand{\textNearrow}{PU}{\9041\327}%* U+21D7
17946 % U+21D8 SOUTH EAST DOUBLE ARROW; \Searrow (MnSymbol)
17947 \DeclareTextCommand{\textSearrow}{PU}{\9041\330}%* U+21D8
17948 % U+21D9 SOUTH WEST DOUBLE ARROW; \Swarrow (MnSymbol)
17949 \DeclareTextCommand{\textSwarrow}{PU}{\9041\331}%* U+21D9
17950 % U+21DA LEFTWARDS TRIPLE ARROW; \Lleftarrow (AmS)
17951 \DeclareTextCommand{\textLleftarrow}{PU}{\9041\332}%* U+21DA
17952 % U+21DB RIGHTWARDS TRIPLE ARROW; \Rrightarrow (MnSymbol)
17953 \DeclareTextCommand{\textRrightarrow}{PU}{\9041\333}%* U+21DB
17954 % U+21DC LEFTWARDS SQUIGGLE ARROW; \leftsquigarrow (mathabx)
17955 \DeclareTextCommand{\textleftsquigarrow}{PU}{\9041\334}%* U+21DC
17956 % U+21DD RIGHTWARDS SQUIGGLE ARROW; \rightsquigarrow (mathabx)
17957 \DeclareTextCommand{\textright squigarrow}{PU}{\9041\335}%* U+21DD
17958 % U+21E0 LEFTWARDS DASHED ARROW; arrowdashleft;
17959 % \dashleftarrow (AmS)
17960 \DeclareTextCommand{\textdashleftarrow}{PU}{\9041\340}%* U+21E0
17961 %* \textdashleftarrow -> \dashedleftarrow (MnSymbol)
17962 % U+21E1 UPWARDS DASHED ARROW; arrowdashup; \dasheduparrow (MnSymbol)
17963 \DeclareTextCommand{\textdasheduparrow}{PU}{\9041\341}%* U+21E1
17964 % U+21E2 RIGHTWARDS DASHED ARROW; arrowdashright; \dashrightarrow (AmS)
17965 \DeclareTextCommand{\textdashrightarrow}{PU}{\9041\342}%* U+21E2
17966 %* \textdashrightarrow -> \dashedrightarrow (MnSymbol)
17967 % U+21E3 DOWNWARDS DASHED ARROW; arrowdashdown; \dasheddownarrow (MnSymbol)

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17968 \DeclareTextCommand{\textdasheddownarrow}{PU}{\9041\343}%* U+21E3
17969 % U+21E8 RIGHTWARDS WHITE ARROW; \pointer (wasysym)
17970 \DeclareTextCommand{\textpointer}{PU}{\9041\350}%* U+21E8
17971 % U+21F5 DOWNWARDS ARROW LEFTWARDS OF UPWARDS ARROW;
17972 % \downuparrows (MnSymbol)
17973 \DeclareTextCommand{\textdownuparrows}{PU}{\9041\365}%* U+21F5
17974 % U+21FD LEFTWARDS OPEN-HEADED ARROW; \leftarrowtriangle (stmaryrd)
17975 \DeclareTextCommand{\textleftarrowtriangle}{PU}{\9041\375}%* U+21FD
17976 % U+21FE RIGHTWARDS OPEN-HEADED ARROW; \rightarrowtriangle (stmaryrd)
17977 \DeclareTextCommand{\textrightarrowtriangle}{PU}{\9041\376}%* U+21FE
17978 % U+21FF LEFT RIGHT OPEN-HEADED ARROW; \leftrightarrowtriangle
17979 \DeclareTextCommand{\textleftrightarrowtriangle}{PU}{\9041\377}%* U+21FF

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#### 46.2.22 Mathematical Operators: U+2200 to U+22FF

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17980 % U+2200 FOR ALL; forall; \forall (LaTeX)
17981 \DeclareTextCommand{\textforall}{PU}{\9042\000}%* U+2200
17982 % U+2201 COMPLEMENT; \complement (AmS)
17983 \DeclareTextCommand{\textcomplement}{PU}{\9042\001}%* U+2201
17984 % U+2202 PARTIAL DIFFERENTIAL; partialdiff; \partial (LaTeX)
17985 \DeclareTextCommand{\textpartial}{PU}{\9042\002}%* U+2202
17986 % U+2203 THERE EXISTS; existential; \exists (LaTeX)
17987 \DeclareTextCommand{\textexists}{PU}{\9042\003}%* U+2203
17988 % U+2204 THERE DOES NOT EXIST; \nexists (AmS)
17989 \DeclareTextCommand{\textnexists}{PU}{\9042\004}%* U+2204
17990 % U+2205 EMPTY SET; emptyset; \emptyset (LaTeX), \varnothing (AmS)
17991 \DeclareTextCommand{\textemptyset}{PU}{\9042\005}%* U+2205
17992 %* \textemptyset -> \varnothing (AmS)
17993 % U+2206 INCREMENT; increment, Delta; \triangle (LaTeX)
17994 \DeclareTextCommand{\texttriangle}{PU}{\9042\006}%* U+2206
17995 % U+2207 NABLA; nabla, gradient; \nabla (LaTeX)
17996 \DeclareTextCommand{\textnabla}{PU}{\9042\007}%* U+2207
17997 % U+2208 ELEMENT OF; element; \in (LaTeX)
17998 \DeclareTextCommand{\textin}{PU}{\9042\010}%* U+2208
17999 % U+2209 NOT AN ELEMENT OF; notelement, notelementof; \notin (LaTeX)
18000 \DeclareTextCommand{\textnotin}{PU}{\9042\011}%* U+2209
18001 % U+220A SMALL ELEMENT OF; \smallin (mathdesign)
18002 \DeclareTextCommand{\textsmallin}{PU}{\9042\012}%* U+220A
18003 % U+220B CONTAINS AS MEMBER; suchthat; \ni (LaTeX)
18004 \DeclareTextCommand{\textni}{PU}{\9042\013}%* U+220B
18005 %* \textni -> \owns (mathabx)
18006 % U+220C DOES NOT CONTAIN AS MEMBER; \notowner (mathabx)
18007 \DeclareTextCommand{\textnotowner}{PU}{\9042\014}%* U+220C
18008 %* \textnotowner -> \notni (txfonts/pxfonts)
18009 % U+220D SMALL CONTAINS AS MEMBER; \smallowns (mathdesign)
18010 \DeclareTextCommand{\textsmallowns}{PU}{\9042\015}%* U+220D
18011 % U+220F N-ARY PRODUCT; \prod (LaTeX)
18012 \DeclareTextCommand{\textprod}{PU}{\9042\017}%* U+220F
18013 % U+2210 N-ARY COPRODUCT; \amalg (LaTeX)
18014 \DeclareTextCommand{\textamalg}{PU}{\9042\020}%* U+2210
18015 % U+2211 N-ARY SUMMATION; summation; \sum (LaTeX)
18016 \DeclareTextCommand{\textsum}{PU}{\9042\021}%* U+2211
18017 % U+2212 MINUS SIGN; minus
18018 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212

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18019 % U+2213 MINUS-OR-PLUS SIGN; minusplus; \mp (LaTeX)
18020 \DeclareTextCommand{\textmp}{PU}{\9042\023}%* U+2213
18021 % U+2214 DOT PLUS; \dotplus (AmS)
18022 \DeclareTextCommand{\textdotplus}{PU}{\9042\024}%* U+2214
18023 % U+2215 DIVISION SLASH; divisionslash; \Divides (marvosym)
18024 \DeclareTextCommand{\textDivides}{PU}{\9042\025}%* U+2215
18025 % \DividesNot (marvosym)
18026 \DeclareTextCommand{\textDividesNot}{PU}{\9042\025\9040\322}%* U+2215 U+20D2
18027 % U+2216 SET MINUS; \setminus (LaTeX)
18028 \DeclareTextCommand{\textsetminus}{PU}{\9042\026}%* U+2216
18029 % U+2217 ASTERISK OPERATOR; asteriskmath; \ast (LaTeX)
18030 \DeclareTextCommand{\textast}{PU}{\9042\027}%* U+2217
18031 % U+2218 RING OPERATOR; \circ (LaTeX)
18032 \DeclareTextCommand{\textcirc}{PU}{\9042\030}%* U+2218
18033 % U+2219 BULLET OPERATOR; bulletoperator; \bullet (LaTeX)
18034 \DeclareTextCommand{\textbulletoperator}{PU}{\9042\031}% U+2219
18035 % U+221A SQUARE ROOT; radical
18036 \DeclareTextCommand{\textsqrt}{PU}{\9042\032}%* U+221A
18037 % U+221D PROPORTIONAL TO; proportional; \propto (LaTeX)
18038 \DeclareTextCommand{\textpropto}{PU}{\9042\035}%* U+221D
18039 %* \textpropto -> \varprop (wasysym)
18040 % U+221E INFINITY; infinity; \infty (LaTeX)
18041 \DeclareTextCommand{\textinfty}{PU}{\9042\036}%* U+221E
18042 % U+2220 ANGLE; angle; \angle (LaTeX)
18043 \DeclareTextCommand{\textangle}{PU}{\9042\040}%* U+2220
18044 % U+2221 MEASURED ANGLE; \measuredangle (mathabx, MnSymbol)
18045 \DeclareTextCommand{\textmeasuredangle}{PU}{\9042\041}%* U+2221
18046 % U+2222 SPHERICAL ANGLE; \sphericalangle (AmS)
18047 \DeclareTextCommand{\textsphericalangle}{PU}{\9042\042}%* U+2222
18048 %* \textsphericalangle -> \varangle (wasysym)
18049 %* \textsphericalangle -> \Anglesign (marvosym)
18050 %* \textsphericalangle -> \AngleSign (marvosym)
18051 % U+2223 DIVIDES; divides; \mid (LaTeX)
18052 \DeclareTextCommand{\textmid}{PU}{\9042\043}%* U+2223
18053 % U+2224 DOES NOT DIVIDE; \nmid (AmS)
18054 \DeclareTextCommand{\textnmid}{PU}{\9042\044}%* U+2224
18055 %* \textnmid -> \notdivides (mathabx)
18056 % U+2225 PARALLEL TO; parallel; \parallel (LaTeX)
18057 \DeclareTextCommand{\textparallel}{PU}{\9042\045}%* U+2225
18058 % U+2226 NOT PARALLEL TO; notparallel; \nparallel (AmS)
18059 \DeclareTextCommand{\textnparallel}{PU}{\9042\046}%* U+2226
18060 %* \textnparallel -> nUpdownline (MnSymbol)
18061 % U+2227 LOGICAL AND; logicaland; \wedge (LaTeX)
18062 \DeclareTextCommand{\textwedge}{PU}{\9042\047}%* U+2227
18063 % \owedge (stmaryrd)
18064 \DeclareTextCommand{\textowedge}{PU}{\9042\047\9040\335}%* U+2227 U+20DD
18065 %* \textowedge -> \varowedge (stmaryrd)
18066 % U+2228 LOGICAL OR; logicalor; \vee (LaTeX)
18067 \DeclareTextCommand{\textvee}{PU}{\9042\050}%* U+2228
18068 % \ovee (stmaryrd)
18069 \DeclareTextCommand{\textovee}{PU}{\9042\050\9040\335}%* U+2228 U+20DD
18070 %* \textovee -> \varovee (stmaryrd)
18071 % U+2229 INTERSECTION; intersection; \cap (LaTeX)
18072 \DeclareTextCommand{\textcap}{PU}{\9042\051}%* U+2229

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18073 % U+222A UNION; union; \cup (LaTeX)
18074 \DeclareTextCommand{\textcup}{PU}{\9042\052}%* U+222A
18075 % U+222B INTEGRAL; integral; \int (LaTeX)
18076 \DeclareTextCommand{\textint}{PU}{\9042\053}%* U+222B
18077 %* \textint -> \varint (wasysym)
18078 % U+222C DOUBLE INTEGRAL; dblintegral; \iint (AmS)
18079 \DeclareTextCommand{\textiint}{PU}{\9042\054}%* U+222C
18080 % U+222D TRIPLE INTEGRAL; \iiint (AmS)
18081 \DeclareTextCommand{\textiiint}{PU}{\9042\055}%* U+222D
18082 % U+222E CONTOUR INTEGRAL; contourintegral; \oint (LaTeX)
18083 \DeclareTextCommand{\textoint}{PU}{\9042\056}%* U+222E
18084 %* \textoint -> \varoint (wasysym)
18085 % U+222F SURFACE INTEGRAL; \oiint (wasysym)
18086 \DeclareTextCommand{\textoint}{PU}{\9042\057}%* U+222F
18087 % U+2232 CLOCKWISE CONTOUR INTEGRAL;
18088 % \ointclockwise (txfonts/pxfonts)
18089 \DeclareTextCommand{\textointclockwise}{PU}{\9042\062}%* U+2232
18090 % U+2233 ANTICLOCKWISE CONTOUR INTEGRAL; \ointctrclockwise (tx-
18091 % fonts/pxfonts)
18091 \DeclareTextCommand{\textointctrclockwise}{PU}{\9042\063}%* U+2233
18092 % U+2234 THEREFORE; therefore; \therefore (AmS)
18093 \DeclareTextCommand{\texttherefore}{PU}{\9042\064}%* U+2234
18094 %* \texttherefore -> uptherefore (MnSymbol)
18095 % U+2235 BECAUSE; because; \because (AmS)
18096 \DeclareTextCommand{\textbecause}{PU}{\9042\065}%* U+2235
18097 %* \textbecause -> \downtherefore (MnSymbol)
18098 % U+2236 RATIO; \vdots (MnSymbol)
18099 \DeclareTextCommand{\textvdots}{PU}{\9042\066}%* U+2236
18100 % U+2237 PROPORTION; \squaredots (MnSymbol)
18101 \DeclareTextCommand{\textsquaredots}{PU}{\9042\067}%* U+2237
18102 % U+2238 DOT MINUS; \dotminus (MnSymbol)
18103 \DeclareTextCommand{\textdotminus}{PU}{\9042\070}%* U+2238
18104 %* \textdotminus -> \textdotdiv (mathabx)
18105 % U+2239 EXCESS; \eqcolon (txfonts/pxfonts)
18106 \DeclareTextCommand{\texteqcolon}{PU}{\9042\071}%* U+2239
18107 % U+223C TILDE OPERATOR; similar; \sim (LaTeX)
18108 \DeclareTextCommand{\textsim}{PU}{\9042\074}%* U+223C
18109 %* \textsim -> \AC (wasysym)
18110 % U+223D REVERSED TILDE; reversedtilde; \backsim (AmS)
18111 \DeclareTextCommand{\textbacksim}{PU}{\9042\075}%* U+223D
18112 % \nbacksim (txfonts/pxfonts)
18113 \DeclareTextCommand{\textnbacksim}{PU}{\9042\075\83\070}%* U+223D U+0338
18114 % U+2240 WREATH PRODUCT; \wr (LaTeX)
18115 \DeclareTextCommand{\textwr}{PU}{\9042\100}%* U+2240
18116 %* \textwr -> \wreath (MnSymbol)
18117 % U+2241 NOT TILDE; \nsim (AmS)
18118 \DeclareTextCommand{\textnsim}{PU}{\9042\101}%* U+2241
18119 % U+2242 MINUS TILDE; \eqsim (MnSymbol)
18120 \DeclareTextCommand{\texteqsim}{PU}{\9042\102}%* U+2242
18121 % \neqsim (MnSymbol)
18122 \DeclareTextCommand{\textneqsim}{PU}{\9042\102\83\070}%* U+2242 U+0338
18123 % U+2243 ASYMPTOTICALLY EQUAL TO; asymptoticallyequal; \simeq (La-
18124 % TeX)
18124 \DeclareTextCommand{\textsimeq}{PU}{\9042\103}%* U+2243

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18125 % U+2244 NOT ASYMPTOTICALLY EQUAL TO; \nsimeq (txfonts/pxfonts)
18126 \DeclareTextCommand{\textnsimeq}{PU}{\9042\104}%* U+2244
18127 % U+2245 APPROXIMATELY EQUAL TO; approximatelyequal; \cong (LaTeX)
18128 \DeclareTextCommand{\textcong}{PU}{\9042\105}%* U+2245
18129 % U+2247 NEITHER APPROXIMATELY NOR ACTUALLY EQUAL TO;
18130 % \ncong (AmS)
18131 \DeclareTextCommand{\textncong}{PU}{\9042\107}%* U+2247
18132 % U+2248 ALMOST EQUAL TO; approxequal; \approx (LaTeX)
18133 \DeclareTextCommand{\textapprox}{PU}{\9042\110}%* U+2248
18134 % U+2249 NOT ALMOST EQUAL TO; \napprox (txfonts/pxfonts)
18135 \DeclareTextCommand{\textnapprox}{PU}{\9042\111}%* U+2249
18136 %* \textnapprox -> \nthickapprox (txfonts/pxfonts)
18137 % U+224A ALMOST EQUAL OR EQUAL TO; \approxeq (AmS)
18138 \DeclareTextCommand{\textapproxeq}{PU}{\9042\112}%* U+224A
18139 % \napproxeq (txfonts/pxfonts)
18140 \DeclareTextCommand{\textnapproxeq}{PU}{\9042\112\83\070}%* U+224A U+0338
18141 % U+224B TRIPLE TILDE; \triplesim (MnSymbol)
18142 \DeclareTextCommand{\texttriplesim}{PU}{\9042\113}%* U+224B
18143 %* \texttriplesim -> \VHF (wasysym)
18144 % \ntriplesim (MnSymbol)
18145 \DeclareTextCommand{\textntriplesim}{PU}{\9042\113\83\070}%* U+224B U+0338
18146 % U+224C ALL EQUAL TO; allequal; \backcong (MnSymbol)
18147 \DeclareTextCommand{\textbackcong}{PU}{\9042\114}%* U+224C
18148 % \nbackcong (MnSymbol)
18149 \DeclareTextCommand{\textnbackcong}{PU}{\9042\114\83\070}%* U+224C U+0338
18150 % U+224D EQUIVALENT TO; \asymp (LaTeX)
18151 \DeclareTextCommand{\textasymp}{PU}{\9042\115}%* U+224D
18152 % \nasymp (txfonts/pxfonts)
18153 \DeclareTextCommand{\textnasymp}{PU}{\9042\115\83\070}%* U+224D U+0338
18154 %* \textnasymp -> \notasympt (mathabx)
18155 % U+224E GEOMETRICALLY EQUIVALENT TO; \Bumpeq (AmS)
18156 \DeclareTextCommand{\textBumpeq}{PU}{\9042\116}%* U+224E
18157 % \nBumpeq (txfonts/pxfonts)
18158 \DeclareTextCommand{\textnBumpeq}{PU}{\9042\116\83\070}%* U+224E U+0338
18159 % U+224F DIFFERENCE BETWEEN; \bumpeq (AmS)
18160 \DeclareTextCommand{\textbumpeq}{PU}{\9042\117}%* U+224F
18161 % \nbumpeq (txfonts/pxfonts)
18162 \DeclareTextCommand{\textnbumpeq}{PU}{\9042\117\83\070}%* U+224F U+0338
18163 % U+2250 APPROACHES THE LIMIT; approaches; \doteq (LaTeX)
18164 \DeclareTextCommand{\textdoteq}{PU}{\9042\120}%* U+2250
18165 % \ndoteq (MnSymbol)
18166 \DeclareTextCommand{\textndoteq}{PU}{\9042\120\83\070}%* U+2250 U+0338
18167 % U+2251 GEOMETRICALLY EQUAL TO; geometricallyequal;
18168 % \doteqdot (AmS)
18169 \DeclareTextCommand{\textdoteqdot}{PU}{\9042\121}%* U+2251
18170 %* \textdoteqdot -> \Doteq (MnSymbol)
18171 % \nDoteq (MnSymbol)
18172 \DeclareTextCommand{\textnDoteq}{PU}{\9042\121\83\070}%* U+2251 U+0338
18173 % U+2252 APPROXIMATELY EQUAL TO OR THE IMAGE OF; approx-
qualorimage;
18174 % \fallingdotseq (AmS)
18175 \DeclareTextCommand{\textfallingdotseq}{PU}{\9042\122}%* U+2252
18176 % \nfallingdotseq (MnSymbol)
18177 \DeclareTextCommand{\textnfallingdotseq}{PU}{\9042\122\83\070}%* U+2252 U+0338

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18178 % U+2253 IMAGE OF OR APPROXIMATELY EQUAL TO; imageorapproximatelyequal;  
18179 % \risingdotseq (AmS)  
18180 \DeclareTextCommand{\textrisingdoteq}{PU}{\9042\123}%\* U+2253  
18181 % \nrisingdoteq (MnSymbol)  
18182 \DeclareTextCommand{\textnrisingdoteq}{PU}{\9042\123\83\070}%\* U+2253 U+0338  
18183 % U+2254 COLON EQUALS; \colonequals (colonequals)  
18184 \DeclareTextCommand{\textcolonequals}{PU}{\9042\124}%\* U+2254  
18185 % U+2255 EQUALS COLON; \equalscolon (colonequals)  
18186 \DeclareTextCommand{\textequalscolon}{PU}{\9042\125}%\* U+2255  
18187 % U+2256 RING IN EQUAL TO; \eqcirc (AmS)  
18188 \DeclareTextCommand{\texteqcirc}{PU}{\9042\126}%\* U+2256  
18189 % \neqcirc (MnSymbol)  
18190 \DeclareTextCommand{\textneqcirc}{PU}{\9042\126\83\070}%\* U+2256 U+0338  
18191 % U+2257 RING EQUAL TO; \circeq (AmS)  
18192 \DeclareTextCommand{\textcirceq}{PU}{\9042\127}%\* U+2257  
18193 % \ncirceq (MnSymbol)  
18194 \DeclareTextCommand{\textncirceq}{PU}{\9042\127\83\070}%\* U+2257 U+0338  
18195 % U+2259 ESTIMATES; \hateq (MnSymbol)  
18196 \DeclareTextCommand{\texthateq}{PU}{\9042\131}%\* U+2259  
18197 %\* \texthateq -> \corresponds (mathabx)  
18198 %\* \texthateq -> \Corresponds (marvosym)  
18199 % \nhateq (MnSymbol)  
18200 \DeclareTextCommand{\textnhateq}{PU}{\9042\131\83\070}%\* U+2259 U+0338  
18201 % U+225C DELTA EQUAL TO; \triangleeq (AmS)  
18202 \DeclareTextCommand{\texttriangleeq}{PU}{\9042\134}%\* U+225C  
18203 % U+2260 NOT EQUAL TO; notequal; \ne (LaTeX), \neq (LaTeX)  
18204 \DeclareTextCommand{\textneq}{PU}{\9042\140}%\* U+2260  
18205 \DeclareTextCommand{\textne}{PU}{\9042\140}%\* U+2260  
18206 %\* \textneq -> \nequal (MnSymbol)  
18207 % U+2261 IDENTICAL TO; equivalence; \equiv (LaTeX)  
18208 \DeclareTextCommand{\textequiv}{PU}{\9042\141}%\* U+2261  
18209 %\* \textequiv -> \Congruent (marvosym)  
18210 % U+2262 NOT IDENTICAL TO; notidentical; \nequiv (txfonts/pxfonts)  
18211 \DeclareTextCommand{\textnequiv}{PU}{\9042\142}%\* U+2262  
18212 %\* \textnequiv -> \NotCongruent (marvosym)  
18213 %\* \textnequiv -> \notequiv (mathabx)  
18214 % U+2264 LESS-THAN OR EQUAL TO; lessequal; \le (LaTeX), \leq (LaTeX)  
18215 \DeclareTextCommand{\textleq}{PU}{\9042\144}%\* U+2264  
18216 \DeclareTextCommand{\textle}{PU}{\9042\144}%\* U+2264  
18217 %\* \textleq -> \LessOrEqual (marvosym)  
18218 % U+2265 GREATER-THAN OR EQUAL TO; greaterequal;  
18219 % \ge (LaTeX), \geq (LaTeX)  
18220 \DeclareTextCommand{\textgeq}{PU}{\9042\145}%\* U+2265  
18221 \DeclareTextCommand{\textge}{PU}{\9042\145}%\* U+2265  
18222 %\* \textgeq -> \LargerOrEqual (marvosym)  
18223 % U+2266 LESS-THAN OVER EQUAL TO; lessorequal; \leqq (AmS)  
18224 \DeclareTextCommand{\textleqq}{PU}{\9042\146}%\* U+2266  
18225 % \nleqq (txfonts/pxfonts)  
18226 \DeclareTextCommand{\textnleqq}{PU}{\9042\146\83\070}%\* U+2266 U+0338  
18227 % U+2267 GREATER-THAN OVER EQUAL TO; greaterorequal; \geqq (AmS)  
18228 \DeclareTextCommand{\textgeqq}{PU}{\9042\147}%\* U+2267  
18229 % \ngeqq (txfonts/pxfonts)  
18230 \DeclareTextCommand{\textngeqq}{PU}{\9042\147\83\070}%\* U+2267 U+0338

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18231 % U+2268 LESS-THAN BUT NOT EQUAL TO; \lneqq (AmS)
18232 \DeclareTextCommand{\textlneqq}{PU}{\9042\150}%* U+2268
18233 % U+2269 GREATER-THAN BUT NOT EQUAL TO; \gneqq (AmS)
18234 \DeclareTextCommand{\textgneqq}{PU}{\9042\151}%* U+2269
18235 % U+226A MUCH LESS-THAN; muchless; \ll (LaTeX)
18236 \DeclareTextCommand{\textll}{PU}{\9042\152}%* U+226A
18237 % \nll (txfonts/pxfonts)
18238 \DeclareTextCommand{\textnll}{PU}{\9042\152\83\070}%* U+226A U+0338
18239 % U+226B MUCH GREATER-THAN; muchgreater; \gg (LaTeX)
18240 \DeclareTextCommand{\textgg}{PU}{\9042\153}%* U+226B
18241 % \ngg (txfonts/pxfonts)
18242 \DeclareTextCommand{\textngg}{PU}{\9042\153\83\070}%* U+226B U+0338
18243 % U+226C BETWEEN; \between (AmS)
18244 \DeclareTextCommand{\textbetween}{PU}{\9042\154}%* U+226C
18245 % U+226E NOT LESS-THAN; notless; \nless (AmS)
18246 \DeclareTextCommand{\textnless}{PU}{\9042\156}%* U+226E
18247 % U+226F NOT GREATER-THAN; notgreater; \ngtr (AmS)
18248 \DeclareTextCommand{\textngtr}{PU}{\9042\157}%* U+226F
18249 % U+2270 NEITHER LESS-THAN NOR EQUAL TO; notlessnorequal;
18250 % \nleq (AmS)
18251 \DeclareTextCommand{\textnleq}{PU}{\9042\160}%* U+2270
18252 % U+2271 NEITHER GREATER-THAN NOR EQUAL TO; notgreaternorequal; \ngeq (AmS)
18253 \DeclareTextCommand{\textngeq}{PU}{\9042\161}%* U+2271
18254 % U+2272 LESS-THAN OR EQUIVALENT TO; lessorequivalent; \lessim (AmS)
18255 \DeclareTextCommand{\textlessim}{PU}{\9042\162}%* U+2272
18256 %* \textlessim -> \apprle (wasysym)
18257 % U+2273 GREATER-THAN OR EQUIVALENT TO; greaterorequivalent; \gtrsim (AmS)
18258 \DeclareTextCommand{\textgtrsim}{PU}{\9042\163}%* U+2273
18259 %* \textgtrsim -> \apprge (wasysym)
18260 % U+2274 NEITHER LESS-THAN NOR EQUIVALENT TO; \nlessim (txfonts/pxfonts)
18261 \DeclareTextCommand{\textnlessim}{PU}{\9042\164}%* U+2274
18262 % U+2275 NEITHER GREATER-THAN NOR EQUIVALENT TO; \ngtrsim (txfonts/pxfonts)
18263 \DeclareTextCommand{\textngtrsim}{PU}{\9042\165}%* U+2275
18264 % U+2276 LESS-THAN OR GREATER-THAN; lessorgreater; \lessgtr (AmS)
18265 \DeclareTextCommand{\textlessgtr}{PU}{\9042\166}%* U+2276
18266 % U+2277 GREATER-THAN OR LESS-THAN; greaterorless; \gtrless (AmS)
18267 \DeclareTextCommand{\textgtrless}{PU}{\9042\167}%* U+2277
18268 % U+2278 NEITHER LESS-THAN NOR GREATER-THAN; \ngtrless (txfonts/pxfonts)
18269 \DeclareTextCommand{\textngtrless}{PU}{\9042\170}%* U+2278
18270 % U+2279 NEITHER GREATER-THAN NOR LESS-THAN; \nlessgtr (txfonts/pxfonts)
18271 \DeclareTextCommand{\textnlessgtr}{PU}{\9042\171}%* U+2279
18272 % U+227A PRECEDES; precedes; \prec (LaTeX)
18273 \DeclareTextCommand{\textprec}{PU}{\9042\172}%* U+227A
18274 % U+227B SUCCEEDS; succeeds; \succ (LaTeX)
18275 \DeclareTextCommand{\textsucc}{PU}{\9042\173}%* U+227B
18276 % U+227C PRECEDES OR EQUAL TO; \preccurlyeq (AmS)
18277 \DeclareTextCommand{\textpreccurlyeq}{PU}{\9042\174}%* U+227C
18278 % U+227D SUCCEEDS OR EQUAL TO; \succcurlyeq (AmS)

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18279 \DeclareTextCommand{\textsuccurlyeq}{PU}{\9042\175}%* U+227D
18280 % U+227E PRECEDES OR EQUIVALENT TO; \precsim (AmS)
18281 \DeclareTextCommand{\textprecsim}{PU}{\9042\176}%* U+227E
18282 % \nprecsim (txfonts/pxfonts)
18283 \DeclareTextCommand{\textnprecsim}{PU}{\9042\176\83\070}%* U+227E U+0338
18284 % U+227F SUCCEEDS OR EQUIVALENT TO; \succsim (AmS)
18285 \DeclareTextCommand{\textsuccsim}{PU}{\9042\177}%* U+227F
18286 % \nsuccsim (txfonts/pxfonts)
18287 \DeclareTextCommand{\textnsuccsim}{PU}{\9042\177\83\070}%* U+227F U+0338
18288 % U+2280 DOES NOT PRECEDE; notprecedes; \nprec (AmS)
18289 \DeclareTextCommand{\textnprec}{PU}{\9042\200}%* U+2280
18290 % U+2281 DOES NOT SUCCEED; notsucceds; \nsucc (AmS)
18291 \DeclareTextCommand{\textnsucc}{PU}{\9042\201}%* U+2281
18292 % U+2282 SUBSET OF; propersubset; \subset (LaTeX)
18293 \DeclareTextCommand{\textsubset}{PU}{\9042\202}%* U+2282
18294 % U+2283 SUPERSET OF; propersuperset; \supset (LaTeX)
18295 \DeclareTextCommand{\textsupset}{PU}{\9042\203}%* U+2283
18296 % U+2284 NOT A SUBSET OF; notsubset; \nsubset (mathabx)
18297 \DeclareTextCommand{\textnsubset}{PU}{\9042\204}%* U+2284
18298 % U+2285 NOT A SUPERSET OF; notsuperset; \nsupset (mathabx)
18299 \DeclareTextCommand{\textnsupset}{PU}{\9042\205}%* U+2285
18300 % U+2286 SUBSET OF OR EQUAL TO; reflexsubset; \subseteq (LaTeX)
18301 \DeclareTextCommand{\textsubseteq}{PU}{\9042\206}%* U+2286
18302 % U+2287 SUPERSET OF OR EQUAL TO; reflexsuperset; \supseteq (LaTeX)
18303 \DeclareTextCommand{\textsupseteq}{PU}{\9042\207}%* U+2287
18304 % U+2288 NEITHER A SUBSET OF NOR EQUAL TO; \nsubseteq (AmS)
18305 \DeclareTextCommand{\textnsubseteq}{PU}{\9042\210}%* U+2288
18306 % U+2289 NEITHER A SUPERSET OF NOR EQUAL TO; \nsupseteq (AmS)
18307 \DeclareTextCommand{\textnsupseteq}{PU}{\9042\211}%* U+2289
18308 % U+228A SUBSET OF WITH NOT EQUAL TO; subsetnotequal; \subset-
    neq (AmS)
18309 \DeclareTextCommand{\textsubsetneq}{PU}{\9042\212}%* U+228A
18310 % U+228B SUPERSET OF WITH NOT EQUAL TO; supersetnotequal; \supset-
    neq (AmS)
18311 \DeclareTextCommand{\textsupsetneq}{PU}{\9042\213}%* U+228B
18312 % U+228D MULTISET MULTIPLICATION; \cupdot (MnSymbol)
18313 \DeclareTextCommand{\textcupdot}{PU}{\9042\215}%* U+228D
18314 % U+228E MULTISET UNION; \cupplus (MnSymbol)
18315 \DeclareTextCommand{\textcupplus}{PU}{\9042\216}%* U+228E
18316 % U+228F SQUARE IMAGE OF; \sqsubset (latexsym, ...)
18317 \DeclareTextCommand{\textsqsubset}{PU}{\9042\217}%* U+228F
18318 % \nsqsubset (txfonts/pxfonts)
18319 \DeclareTextCommand{\textnsqsubset}{PU}{\9042\217\83\070}%* U+228F U+0338
18320 % U+2290 SQUARE ORIGINAL OF; \sqsupset (latexsym, ...)
18321 \DeclareTextCommand{\textsqsupset}{PU}{\9042\220}%* U+2290
18322 % \nsqsupset (txfonts/pxfonts)
18323 \DeclareTextCommand{\textnsqsupset}{PU}{\9042\220\83\070}%* U+2290 U+0338
18324 % U+2291 SQUARE IMAGE OF OR EQUAL TO; \sqsubseteq (LaTeX)
18325 \DeclareTextCommand{\textsqsubseteq}{PU}{\9042\221}%* U+2291
18326 % \nsqsubseteq (txfonts/pxfonts)
18327 \DeclareTextCommand{\textnsqsubseteq}{PU}{\9042\221\83\070}%* U+2291 U+0338
18328 % U+2292 SQUARE ORIGINAL OF OR EQUAL TO; \sqsupseteq (LaTeX)
18329 \DeclareTextCommand{\textsqsupseteq}{PU}{\9042\222}%* U+2292
18330 % \nsqsupseteq (txfonts/pxfonts)

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18331 \DeclareTextCommand{\textnsqsupseteq}{PU}{\9042\222\83\070}%* U+2292 U+0338
18332 % U+2293 SQUARE CAP; \sqcap (LaTeX)
18333 \DeclareTextCommand{\textsqcap}{PU}{\9042\223}%* U+2293
18334 % U+2294 SQUARE CUP; \sqcup (LaTeX)
18335 \DeclareTextCommand{\textsqcup}{PU}{\9042\224}%* U+2294
18336 % U+2295 CIRCLED PLUS; circleplus; \oplus (LaTeX)
18337 \DeclareTextCommand{\textoplus}{PU}{\9042\225}%* U+2295
18338 %* \textoplus -> \varoplus (stmaryrd)
18339 % U+2296 CIRCLED MINUS; minuscircle; \ominus (LaTeX)
18340 \DeclareTextCommand{\textominus}{PU}{\9042\226}%* U+2296
18341 %* \textominus -> \varominus (stmaryrd)
18342 % U+2297 CIRCLED TIMES; circlemultiply; \otimes (LaTeX)
18343 \DeclareTextCommand{\textotimes}{PU}{\9042\227}%* U+2297
18344 %* \textotimes -> \varotimes (stmaryrd)
18345 % U+2298 CIRCLED DIVISION SLASH; \oslash (LaTeX)
18346 \DeclareTextCommand{\textoslash}{PU}{\9042\230}%* U+2298
18347 %* \textoslash -> \varoslash (stmaryrd)
18348 % U+2299 CIRCLED DOT OPERATOR; circle(d?)ot; \odot (LaTeX)
18349 \DeclareTextCommand{\textodot}{PU}{\9042\231}%* U+2299
18350 %* \textodot -> \varodot (stmaryrd)
18351 % U+229A CIRCLED RING OPERATOR; \circledcirc (AmS)
18352 \DeclareTextCommand{\textcircledcirc}{PU}{\9042\232}%* U+229A
18353 %* \textcircledcirc -> \ocirc (mathabx)
18354 %* \textcircledcirc -> \varocircle (stmaryrd)
18355 % U+229B CIRCLED ASTERISK OPERATOR; \circledast (AmS)
18356 \DeclareTextCommand{\textcircledast}{PU}{\9042\233}%* U+229B
18357 %* \textcircledast -> \varoast (stmaryrd)
18358 %* \textcircledast -> \oasterisk (mathabx)
18359 % U+229D CIRCLED DASH; \circleddash (AmS)
18360 \DeclareTextCommand{\textcircleddash}{PU}{\9042\235}%* U+229D
18361 % U+229E SQUARED PLUS; \boxplus (AmS)
18362 \DeclareTextCommand{\textboxplus}{PU}{\9042\236}%* U+229E
18363 % U+229F SQUARED MINUS; \boxminus (AmS)
18364 \DeclareTextCommand{\textboxminus}{PU}{\9042\237}%* U+229F
18365 % U+22A0 SQUARED TIMES; \boxtimes (AmS)
18366 \DeclareTextCommand{\textboxtimes}{PU}{\9042\240}%* U+22A0
18367 % U+22A1 SQUARED DOT OPERATOR; \boxdot (AmS)
18368 \DeclareTextCommand{\textboxdot}{PU}{\9042\241}%* U+22A1
18369 % U+22A2 RIGHT TACK; \vdash (LaTeX)
18370 \DeclareTextCommand{\textvdash}{PU}{\9042\242}%* U+22A2
18371 %* \textvdash -> \rightvdash (MnSymbol)
18372 % U+22A3 LEFT TACK; tackleft; \dashv (LaTeX)
18373 \DeclareTextCommand{\textdashv}{PU}{\9042\243}%* U+22A3
18374 %* \textdashv -> \leftvdash (MnSymbol)
18375 % \ndashv (mathabx)
18376 \DeclareTextCommand{\textndashv}{PU}{\9042\243\83\070}%* U+22A3 U+0338
18377 %* \textndashv -> \nleftvdash (MnSymbol)
18378 % U+22A4 DOWN TACK (=top); tackdown; \top (LaTeX)
18379 \DeclareTextCommand{\texttop}{PU}{\9042\244}%* U+22A4
18380 %* \texttop -> \downvdash (MnSymbol)
18381 % \ndownvdash (MnSymbol)
18382 \DeclareTextCommand{\textndownvdash}{PU}{\9042\244\83\070}%* U+22A4 U+0338
18383 % U+22A5 UP TACK (=base, bottom); \bot (LaTeX)
18384 \DeclareTextCommand{\textbot}{PU}{\9042\245}%* U+22A5

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18385 %* \textbot -> \upvdash (MnSymbol)
18386 % \nupvdash (MnSymbol)
18387 \DeclareTextCommand{\textnupvdash}{PU}{\9042\245\83\070}%* U+22A5 U+0338
18388 %* \textnupvdash -> \nperp (MnSymbol)
18389 % U+22A8 TRUE; \vDash (AmS)
18390 \DeclareTextCommand{\textvDash}{PU}{\9042\250}%* U+22A8
18391 %* \textvDash -> \models (LaTeX)
18392 %* \textvDash -> \rightmodels (MnSymbol)
18393 % U+22A9 FORCES; \Vdash (AmS)
18394 \DeclareTextCommand{\textVdash}{PU}{\9042\251}%* U+22A9
18395 %* \textVdash -> \rightVdash (MnSymbol)
18396 % U+22AA TRIPLE VERTICAL BAR RIGHT TURNSTILE; \Vvdash (AmS)
18397 \DeclareTextCommand{\textVvdash}{PU}{\9042\252}%* U+22AA
18398 % \nVdash (mathabx)
18399 \DeclareTextCommand{\textnVdash}{PU}{\9042\252\83\070}%* U+22AA U+0338
18400 % U+22AB DOUBLE VERTICAL BAR DOUBLE RIGHT TURNSTILE;
18401 % \VDash (mathabx)
18402 \DeclareTextCommand{\textVDash}{PU}{\9042\253}%* U+22AB
18403 %* \textVDash -> \rightModels (MnSymbol)
18404 % U+22AC DOES NOT PROVE; \nvDash (AmS)
18405 \DeclareTextCommand{\textnvDash}{PU}{\9042\254}%* U+22AC
18406 %* \textnvDash -> \nrighnvDash (MnSymbol)
18407 % U+22AD NOT TRUE; \nVDash (AmS)
18408 \DeclareTextCommand{\textnVDash}{PU}{\9042\255}%* U+22AD
18409 %* \textnVDash -> \nrighmodels (MnSymbol)
18410 %* \textnVDash -> \nmodels (MnSymbol)
18411 % U+22AE DOES NOT FORCE; \nVdash (txfonts/pxfonts)
18412 \DeclareTextCommand{\textnVdash}{PU}{\9042\256}%* U+22AE
18413 %* \textnVdash -> \nrighVdash (MnSymbol)
18414 % U+22AF NEGATED DOUBLE VERTICAL BAR DOUBLE RIGHT TURN-
      STILE; \nVDash (AmS)
18415 \DeclareTextCommand{\textnVDash}{PU}{\9042\257}%* U+22AF
18416 %* \textnVDash -> \nrighModels (MnSymbol)
18417 % U+22B2 NORMAL SUBGROUP OF; \lhd (latexsym, ...)
18418 \DeclareTextCommand{\textlhd}{PU}{\9042\262}%* U+22B2
18419 %* \textlhd -> \lessclosed (MnSymbol)
18420 % U+22B3 CONTAINS AS NORMAL SUBGROUP; \rhd (latexsym, ...)
18421 \DeclareTextCommand{\textrhd}{PU}{\9042\263}%* U+22B3
18422 %* \textrhd -> \gtrclosed (MnSymbol)
18423 % U+22B4 NORMAL SUBGROUP OF OR EQUAL TO; \unlhd (latexsym, ...)
18424 \DeclareTextCommand{\textunlhd}{PU}{\9042\264}%* U+22B4
18425 %* \textunlhd -> \leqclosed (MnSymbol)
18426 %* \textunlhd -> \trianglelefteq (MnSymbol)
18427 % U+22B5 CONTAINS AS NORMAL SUBGROUP OR EQUAL TO; \unrhd (la-
      texsym, ...)
18428 \DeclareTextCommand{\textunrhd}{PU}{\9042\265}%* U+22B5
18429 %* \textunrhd -> \geqclosed (MnSymbol)
18430 %* \textunrhd -> \trianglerighteq (MnSymbol)
18431 % U+22B6 ORIGINAL OF; \multimapdotbothA (txfonts/pxfonts)
18432 \DeclareTextCommand{\textmultimapdotbothA}{PU}{\9042\266}%* U+22B6
18433 % U+22B7 IMAGE OF; \multimapdotbothB (txfonts/pxfonts)
18434 \DeclareTextCommand{\textmultimapdotbothB}{PU}{\9042\267}%* U+22B7
18435 % U+22B8 MULTIMAP; \multimap (AmS, txfonts/pxfonts)
18436 \DeclareTextCommand{\textmultimap}{PU}{\9042\270}%* U+22B8

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18437 % U+22BB XOR; \veebar (AmS)
18438 \DeclareTextCommand{\textveebar}{PU}{\9042\273}%* U+22BB
18439 % U+22BC NAND; \barwedge (mathabx)
18440 \DeclareTextCommand{\textbarwedge}{PU}{\9042\274}%* U+22BC
18441 % U+22C6 STAR OPERATOR; \star (LaTeX)
18442 \DeclareTextCommand{\textstar}{PU}{\9042\306}%* U+22C6
18443 % U+22C7 DIVISION TIMES; \divideontimes (AmS)
18444 \DeclareTextCommand{\textdivideontimes}{PU}{\9042\307}%* U+22C7
18445 % U+22C8 BOWTIE; \bowtie (LaTeX)
18446 \DeclareTextCommand{\textbowtie}{PU}{\9042\310}%* U+22C8
18447 %* \textbowtie -> \Bowtie (wasysym)
18448 % U+22C9 LEFT NORMAL FACTOR SEMIDIRECT PRODUCT; \ltimes (AmS)
18449 \DeclareTextCommand{\textltimes}{PU}{\9042\311}%* U+22C9
18450 % U+22CA RIGHT NORMAL FACTOR SEMIDIRECT PRODUCT;
18451 % \rtimes (AmS)
18452 \DeclareTextCommand{\textrtimes}{PU}{\9042\312}%* U+22CA
18453 % U+22CB LEFT SEMIDIRECT PRODUCT; \leftthreetimes (AmS)
18454 \DeclareTextCommand{\textleftthreetimes}{PU}{\9042\313}%* U+22CB
18455 % U+22CC RIGHT SEMIDIRECT PRODUCT; \rightthreetimes (AmS)
18456 \DeclareTextCommand{\textrightthreetimes}{PU}{\9042\314}%* U+22CC
18457 % U+22CD REVERSED TILDE EQUALS; \backsimeq (AmS)
18458 \DeclareTextCommand{\textbacksimeq}{PU}{\9042\315}%* U+22CD
18459 % \nbacksimeq (txfonts/pxfonts)
18460 \DeclareTextCommand{\textnbacksimeq}{PU}{\9042\315\83\070}%* U+22CD U+0338
18461 % U+22CE CURLY LOGICAL OR; curlyor; \curlyvee (AmS)
18462 \DeclareTextCommand{\textcurlyvee}{PU}{\9042\316}%* U+22CE
18463 %* \textcurlyvee -> \varcurlyvee (stmaryrd)
18464 % U+22CF CURLY LOGICAL AND; curlyand; \curlywedge (AmS)
18465 \DeclareTextCommand{\textcurlywedge}{PU}{\9042\317}%* U+22CF
18466 %* \textcurlywedge -> \varcurlywedge (stmaryrd)
18467 % U+22D0 DOUBLE SUBSET; \Subset (AmS)
18468 \DeclareTextCommand{\textSubset}{PU}{\9042\320}%* U+22D0
18469 % \nSubset (txfonts/pxfonts)
18470 \DeclareTextCommand{\textnSubset}{PU}{\9042\320\83\070}%* U+22D0 U+0338
18471 % U+22D1 DOUBLE SUPERSET; \Supset (AmS)
18472 \DeclareTextCommand{\textSupset}{PU}{\9042\321}%* U+22D1
18473 % \nSupset (txfonts/pxfonts)
18474 \DeclareTextCommand{\textnSupset}{PU}{\9042\321\83\070}%* U+22D1 U+0338
18475 % U+22D2 DOUBLE INTERSECTION; \Cap (AmS)
18476 \DeclareTextCommand{\textCap}{PU}{\9042\322}%* U+22D2
18477 %* \textCap -> \doublecap (mathabx)
18478 % U+22D3 DOUBLE UNION; \Cup (AmS)
18479 \DeclareTextCommand{\textCup}{PU}{\9042\323}%* U+22D3
18480 %* \textCup -> \doublecup (mathabx)
18481 % U+22D4 PITCHFORK; \pitchfork (mathabx)
18482 \DeclareTextCommand{\textpitchfork}{PU}{\9042\324}%* U+22D4
18483 % U+22D6 LESS-THAN WITH DOT; \lessdot (AmS)
18484 \DeclareTextCommand{\textlessdot}{PU}{\9042\326}%* U+22D6
18485 % U+22D7 GREATER-THAN WITH DOT; \gtrdot (AmS)
18486 \DeclareTextCommand{\textgtrdot}{PU}{\9042\327}%* U+22D7
18487 % U+22D8 VERY MUCH LESS-THAN; \lll (AmS)
18488 \DeclareTextCommand{\textlll}{PU}{\9042\330}%* U+22D8
18489 % U+22D9 VERY MUCH GREATER-THAN; \ggg (AmS)
18490 \DeclareTextCommand{\textggg}{PU}{\9042\331}%* U+22D9

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18491 % U+22DA LESS-THAN EQUAL TO OR GREATER-THAN; lessequalorgreater;
18492 % \lesseqgtr (AmS)
18493 \DeclareTextCommand{\textlesseqgtr}{PU}{\9042\332}%* U+22DA
18494 % U+22DB GREATER-THAN EQUAL TO OR LESS-THAN; greaterqualorless;
18495 % \gtreqless (AmS)
18496 \DeclareTextCommand{\textgtreqless}{PU}{\9042\333}%* U+22DB
18497 % U+22DE EQUAL TO OR PRECEDES; \curlyeqprec (MnSymbol)
18498 \DeclareTextCommand{\textcurlyeqprec}{PU}{\9042\336}%* U+22DE
18499 % \ncurlyeqprec (mathabx)
18500 \DeclareTextCommand{\textncurlyeqprec}{PU}{\9042\336\83\070}%* U+22DE U+0338
18501 % U+22DF EQUAL TO OR SUCCEEDS; \curlyeqsucc (MnSymbol)
18502 \DeclareTextCommand{\textcurlyeqsucc}{PU}{\9042\337}%* U+22DF
18503 % \ncurlyeqsucc (mathabx)
18504 \DeclareTextCommand{\textncurlyeqsucc}{PU}{\9042\337\83\070}%* U+22DF U+0338
18505 % U+22E0 DOES NOT PRECEDE OR EQUAL; \npreccurlyeq (txfonts/pxfonts)
18506 \DeclareTextCommand{\textnpreccurlyeq}{PU}{\9042\340}%* U+22E0
18507 % U+22E1 DOES NOT SUCCEED OR EQUAL; \nsucccurlyeq (txfonts/pxfonts)
18508 \DeclareTextCommand{\textnsucccurlyeq}{PU}{\9042\341}%* U+22E1
18509 % U+22E2 NOT SQUARE IMAGE OF OR EQUAL TO; \nsqsubseteq (tx-
    fonts/pxfonts)
18510 \DeclareTextCommand{\textnqsubseteq}{PU}{\9042\342}%* U+22E2
18511 % U+22E3 NOT SQUARE ORIGINAL OF OR EQUAL TO; \nsqsupseteq (tx-
    fonts/pxfonts)
18512 \DeclareTextCommand{\textnqsupseteq}{PU}{\9042\343}%* U+22E3
18513 % U+22E4 SQUARE IMAGE OF OR NOT EQUAL TO; \sqsubsetneq (mathabx)
18514 \DeclareTextCommand{\textsqsubsetneq}{PU}{\9042\344}%* U+22E4
18515 %* \textsqsubsetneq -> \varsqsubsetneq (mathabx)
18516 % U+22E5 SQUARE ORIGINAL OF OR NOT EQUAL TO; \sqsupsetneq (math-
    abx)
18517 \DeclareTextCommand{\textsqsupsetneq}{PU}{\9042\345}%* U+22E5
18518 %* \textsqsupsetneq -> \varsqsupsetneq (mathabx)
18519 % U+22E6 LESS-THAN BUT NOT EQUIVALENT TO; \lnsim (AmS)
18520 \DeclareTextCommand{\textlnsim}{PU}{\9042\346}%* U+22E6
18521 % U+22E7 GREATER-THAN BUT NOT EQUIVALENT TO; \gnsim (AmS)
18522 \DeclareTextCommand{\textgnsim}{PU}{\9042\347}%* U+22E7
18523 % U+22E8 PRECEDES BUT NOT EQUIVALENT TO; \preccsim (AmS)
18524 \DeclareTextCommand{\textpreccsim}{PU}{\9042\350}%* U+22E8
18525 % U+22E9 SUCCEEDS BUT NOT EQUIVALENT TO; \succsim (AmS)
18526 \DeclareTextCommand{\textsuccsim}{PU}{\9042\351}%* U+22E9
18527 % U+22EA NOT NORMAL SUBGROUP OF; \ntriangleleft (AmS)
18528 \DeclareTextCommand{\textntriangleleft}{PU}{\9042\352}%* U+22EA
18529 %* \textntriangleleft -> \nlessclosed (MnSymbol)
18530 % U+22EB DOES NOT CONTAIN AS NORMAL SUBGROUP; \ntriang-
    leright (AmS)
18531 \DeclareTextCommand{\textntriangleright}{PU}{\9042\353}%* U+22EB
18532 %* \textntriangleright -> \ngtrclosed (MnSymbol)
18533 % U+22EC NOT NORMAL SUBGROUP OF OR EQUAL TO;
18534 % \ntrianglelefteq (AmS)
18535 \DeclareTextCommand{\textntrianglelefteq}{PU}{\9042\354}%* U+22EC
18536 % U+22ED DOES NOT CONTAIN AS NORMAL SUBGROUP OR EQUAL;
18537 % \ntrianglerighteq (AmS)
18538 \DeclareTextCommand{\textntrianglerighteq}{PU}{\9042\355}%* U+22ED
18539 %* \textntrianglerighteq -> \textngeqclosed
18540 % U+22EE VERTICAL ELLIPSIS; ellipsisvertical; \vdots (LaTeX)

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18541 \DeclareTextCommand{\textvdots}{PU}{\9042\356}%* U+22EE
18542 % U+22EF MIDLINE HORIZONTAL ELLIPSIS; \cdots (LaTeX)
18543 \DeclareTextCommand{\textcdots}{PU}{\9042\357}%* U+22EF
18544 % U+22F0 UP RIGHT DIAGONAL ELLIPSIS; \udots (MnSymbol)
18545 \DeclareTextCommand{\textudots}{PU}{\9042\360}%* U+22F0
18546 % U+22F1 DOWN RIGHT DIAGONAL ELLIPSIS; \ddots (LaTeX)
18547 \DeclareTextCommand{\textddots}{PU}{\9042\361}%* U+22F1
18548 % U+22F6 ELEMENT OF WITH OVERBAR; \barin (mathabx)
18549 \DeclareTextCommand{\textbarin}{PU}{\9042\366}%* U+22F6

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#### 46.2.23 Miscellaneous Technical: U+2300 to U+23FF

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18550 % U+2300 DIAMETER SIGN; \diameter (mathabx,wasysym)
18551 \DeclareTextCommand{\textdiameter}{PU}{\9043\000}%* U+2300
18552 % U+2310 REVERSED NOT SIGN; \backneg (MnSymbol)
18553 \DeclareTextCommand{\textbackneg}{PU}{\9043\020}%* U+2310
18554 % U+2311 SQUARE LOZENGE; \wasylozenge (wasysym)
18555 \DeclareTextCommand{\textwasylozenge}{PU}{\9043\021}%* U+2311
18556 % U+2319 TURNED NOT SIGN; \invbackneg (MnSymbol)
18557 \DeclareTextCommand{\textinvbackneg}{PU}{\9043\031}%* U+2319
18558 % U+231A WATCH; \clock (wasysym)
18559 \DeclareTextCommand{\textclock}{PU}{\9043\032}%* U+231A
18560 %* \textclock -> \Clocklogo (marvosym)
18561 %* \textclock -> \ClockLogo (marvosym)
18562 % U+231C TOP LEFT CORNER; \ulcorner (AmS)
18563 \DeclareTextCommand{\textulcorner}{PU}{\9043\034}%* U+231C
18564 % U+231D TOP RIGHT CORNER; \urcorner (AmS)
18565 \DeclareTextCommand{\texturcorner}{PU}{\9043\035}%* U+231D
18566 % U+231E BOTTOM LEFT CORNER; \llcorner (AmS)
18567 \DeclareTextCommand{\textllcorner}{PU}{\9043\036}%* U+231E
18568 % U+231F BOTTOM RIGHT CORNER; \lrcorner (AmS)
18569 \DeclareTextCommand{\textlrcorner}{PU}{\9043\037}%* U+231F
18570 % U+2322 FROWN; \frown (LaTeX)
18571 \DeclareTextCommand{\textfrown}{PU}{\9043\042}%* U+2322
18572 % U+2323 SMILE; \smile (LaTeX)
18573 \DeclareTextCommand{\textsmile}{PU}{\9043\043}%* U+2323
18574 % U+2328 KEYBOARD; \Keyboard (marvosym)
18575 \DeclareTextCommand{\textKeyboard}{PU}{\9043\050}%* U+2328
18576 % U+2329 LEFT-POINTING ANGLE BRACKET; \angleleft; \langle (LaTeX)
18577 \DeclareTextCommand{\textlangle}{PU}{\9043\051}%* U+2329
18578 % U+232A RIGHT-POINTING ANGLE BRACKET; \angleright; \rangle (LaTeX)
18579 \DeclareTextCommand{\textrangle}{PU}{\9043\052}%* U+232A
18580 % U+2339 APL FUNCTIONAL SYMBOL QUAD DIVIDE; \APLinv (wasysym)
18581 \DeclareTextCommand{\textAPLinv}{PU}{\9043\071}%* U+2339
18582 % U+233C APL FUNCTIONAL SYMBOL QUAD CIRCLE; \Tumbler (mar-
      vosym)
18583 \DeclareTextCommand{\textTumbler}{PU}{\9043\074}%* U+233C
18584 % U+233D APL FUNCTIONAL SYMBOL CIRCLE STILE; \baro (stmaryrd)
18585 \DeclareTextCommand{\textstmaryrdbaro}{PU}{\9043\075}% U+233D
18586 %* \textstmaryrdbaro -> \baro (stmaryrd)
18587 % U+233F APL FUNCTIONAL SYMBOL SLASH BAR; \notslash (wasysym)
18588 \DeclareTextCommand{\textnotslash}{PU}{\9043\077}%* U+233F
18589 % U+2340 APL FUNCTIONAL SYMBOL BACKSLASH BAR;
18590 % \notbackslash (wasysym)
18591 \DeclareTextCommand{\textnotbackslash}{PU}{\9043\100}%* U+2340

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18592 % U+2342 APL FUNCTIONAL SYMBOL QUAD BACKSLASH; \boxbackslash (mathabx)

18593 \DeclareTextCommand{\textboxbackslash}{PU}{\9043\102}%\* U+2342

18594 % U+2347 APL FUNCTIONAL SYMBOL QUAD LEFTWARDS ARROW;

18595 % \APLleftarrowbox (wasysym)

18596 \DeclareTextCommand{\textAPLleftarrowbox}{PU}{\9043\107}%\* U+2347

18597 % U+2348 APL FUNCTIONAL SYMBOL QUAD RIGHTWARDS ARROW;

18598 % \APLrightarrowbox (wasysym)

18599 \DeclareTextCommand{\textAPLrightarrowbox}{PU}{\9043\110}%\* U+2348

18600 % U+2350 APL FUNCTIONAL SYMBOL QUAD UPWARDS ARROW; \APLuparrowbox (wasysym)

18601 \DeclareTextCommand{\textAPLuparrowbox}{PU}{\9043\120}%\* U+2350

18602 % U+2357 APL FUNCTIONAL SYMBOL QUAD DOWNWARDS ARROW;

18603 % \APLdownarrowbox (wasysym)

18604 \DeclareTextCommand{\textAPLdownarrowbox}{PU}{\9043\127}%\* U+2357

18605 % U+235E APL FUNCTIONAL SYMBOL QUOTE QUAD;

18606 % \APLinput (wasysym)

18607 \DeclareTextCommand{\textAPLinput}{PU}{\9043\136}%\* U+235E

18608 % U+2370 APL FUNCTIONAL SYMBOL QUAD QUESTION; \Request (china2e)

18609 \DeclareTextCommand{\textRequest}{PU}{\9043\160}%\* U+2370

18610 % U+2393 DIRECT CURRENT SYMBOL FORM TWO; \Beam (marvosym)

18611 \DeclareTextCommand{\textBeam}{PU}{\9043\223}%\* U+2393

18612 % U+2394 SOFTWARE-FUNCTION SYMBOL; \hexagon (wasysym)

18613 \DeclareTextCommand{\texthexagon}{PU}{\9043\224}%\* U+2394

18614 % U+2395 APL FUNCTIONAL SYMBOL QUAD; \APLbox (wasysym)

18615 \DeclareTextCommand{\textAPLbox}{PU}{\9043\225}%\* U+2395

18616 % U+23ED BLACK RIGHT-POINTING DOUBLE TRIANGLE WITH VERTICAL BAR;

18617 % \ForwardToIndex (marvosym)

18618 \DeclareTextCommand{\textForwardToIndex}{PU}{\9043\355}%\* U+23ED

18619 % U+23EE BLACK LEFT-POINTING DOUBLE TRIANGLE WITH VERTICAL BAR;

18620 % \RewindToIndex (marvosym)

18621 \DeclareTextCommand{\textRewindToIndex}{PU}{\9043\356}%\* U+23EE

#### 46.2.24 Control Pictures: U+2400 to U+243F

18622 % U+2422 BLANK SYMBOL

18623 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422

18624 % U+2423 OPEN BOX; blank

18625 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

#### 46.2.25 Optical Character Recognition: U+2440 to U+245F

18626 % U+244A OCR DOUBLE BACKSLASH; \bbslash (stmaryrd)

18627 \DeclareTextCommand{\textbbslash}{PU}{\9044\112}%\* U+244A

18628 %\* \textbbslash -> \varparallelinv (txfonts/pxfonts)

#### 46.2.26 Enclosed Alphanumerics: U+2460 to U+24FF

18629 % U+2460 CIRCLED DIGIT ONE; onecircle

18630 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460

18631 % U+2461 CIRCLED DIGIT TWO; twocircle

18632 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461

18633 % U+2462 CIRCLED DIGIT THREE; threecircle

18634 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462

18635 % U+2463 CIRCLED DIGIT FOUR; fourcircle

18636 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
18637 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
18638 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
18639 % U+2465 CIRCLED DIGIT SIX; sixcircle  
18640 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
18641 % U+2466 CIRCLED DIGIT SEVEN; sevencircle  
18642 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
18643 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
18644 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
18645 % U+2468 CIRCLED DIGIT NINE; ninecircle  
18646 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
18647 % U+2469 CIRCLED NUMBER TEN; tencircle  
18648 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
18649 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
18650 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
18651 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
18652 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
18653 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
18654 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
18655 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
18656 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
18657 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
18658 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
18659 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
18660 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
18661 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
18662 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
18663 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
18664 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
18665 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
18666 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
18667 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
18668 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
18669 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
18670 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
18671 % \CircledA (marvosym)  
18672 \DeclareTextCommand{\textCircledA}{PU}{\9044\266}%\* U+24B6  
18673 %\* \textCircledA -> \CleaningA  
18674 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
18675 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
18676 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
18677 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
18678 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
18679 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
18680 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
18681 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
18682 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
18683 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
18684 % \CleaningF (marvosym)  
18685 \DeclareTextCommand{\textCleaningF}{PU}{\9044\273}%\* U+24BB  
18686 % \CleaningFF (marvosym)  
18687 \DeclareTextCommand{\textCleaningFF}{PU}{\9044\273\83\062}%\* U+24BB U+0332  
18688 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
18689 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC

18690 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
 18691 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
 18692 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle  
 18693 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
 18694 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
 18695 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
 18696 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
 18697 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
 18698 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
 18699 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
 18700 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
 18701 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
 18702 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
 18703 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
 18704 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
 18705 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
 18706 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
 18707 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
 18708 % \CleaningP (marvosym)  
 18709 \DeclareTextCommand{\textCleaningP}{PU}{\9044\305}%\* U+24C5  
 18710 % \CleaningPP (marvosym)  
 18711 \DeclareTextCommand{\textCleaningPP}{PU}{\9044\305\83\062}%\* U+24C5 U+0332  
 18712 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
 18713 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
 18714 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
 18715 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
 18716 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
 18717 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
 18718 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
 18719 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
 18720 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
 18721 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
 18722 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
 18723 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
 18724 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
 18725 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
 18726 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
 18727 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
 18728 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
 18729 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
 18730 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
 18731 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
 18732 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
 18733 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
 18734 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
 18735 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
 18736 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
 18737 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
 18738 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
 18739 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
 18740 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
 18741 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
 18742 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
 18743 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5

18744 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
 18745 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
 18746 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
 18747 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
 18748 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
 18749 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
 18750 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
 18751 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
 18752 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
 18753 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
 18754 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
 18755 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
 18756 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
 18757 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
 18758 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
 18759 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
 18760 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
 18761 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
 18762 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
 18763 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
 18764 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
 18765 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
 18766 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
 18767 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
 18768 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
 18769 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
 18770 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
 18771 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
 18772 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
 18773 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
 18774 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
 18775 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
 18776 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
 18777 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
 18778 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
 18779 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
 18780 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
 18781 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
 18782 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
 18783 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
 18784 % U+24EA CIRCLED DIGIT ZERO  
 18785 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

#### 46.2.27 Box Drawing: U+2500 to 257F

18786 % U+2504 BOX DRAWINGS LIGHT TRIPLE DASH HORIZONTAL; \Cutting-  
 Line (marvosym)  
 18787 \DeclareTextCommand{\textCuttingLine}{PU}{\9045\004}%\* U+2504  
 18788 %\* \textCuttingLine -> \Kutline (marvosym)  
 18789 %\* \textCuttingLine -> \CutLine (marvosym)  
 18790 %\* \textCuttingLine -> \Cutline (marvosym)

#### 46.2.28 Geometric Shapes: U+25A0 to U+25FF

18791 % U+25B2 BLACK UP-POINTING TRIANGLE; \UParrow (wasysym)  
 18792 \DeclareTextCommand{\textUParrow}{PU}{\9045\262}%\* U+25B2

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18793 %* \textUParrow -> \MoveUp (marvosym)
18794 % U+25B3 WHITE UP-POINTING TRIANGLE; whiteuppointingtriangle;
18795 % \bigtriangleup (LaTeX)
18796 \DeclareTextCommand{\textbigtriangleup}{PU}{\9045\263}%* U+25B3
18797 %* \textbigtriangleup -> \APLup (wasysym)
18798 %* \textbigtriangleup -> \Bleech (marvosym)
18799 % U+25B6 BLACK RIGHT-POINTING TRIANGLE; \Forward (marvosym)
18800 \DeclareTextCommand{\textForward}{PU}{\9045\266}%* U+25B6
18801 % U+25B7 WHITE RIGHT-POINTING TRIANGLE (= z notation range restric-
tion);
18802 % whiterightpointingtriangle; \triangleright (LaTeX)
18803 \DeclareTextCommand{\texttriangleright}{PU}{\9045\267}%* U+25B7
18804 % U+25BA BLACK RIGHT-POINTING POINTER; \RHD (wasysym)
18805 \DeclareTextCommand{\textRHD}{PU}{\9045\272}%* U+25BA
18806 % U+25BC BLACK DOWN-POINTING TRIANGLE; \DOWNarrow (wasysym)
18807 \DeclareTextCommand{\textDOWNarrow}{PU}{\9045\274}%* U+25BC
18808 %* \textDOWNarrow -> \MoveDown (marvosym)
18809 % U+25BD WHITE DOWN-POINTING TRIANGLE; whitedownpointingtrian-
gle;
18810 % \bigtriangledown (LaTeX)
18811 \DeclareTextCommand{\textbigtriangledown}{PU}{\9045\275}%* U+25BD
18812 %* \textbigtriangledown -> \APLdown (wasysym)
18813 % U+25C0 BLACK LEFT-POINTING TRIANGLE; \Rewind (marvosym)
18814 \DeclareTextCommand{\textRewind}{PU}{\9045\300}%* U+25C0
18815 % U+25C1 WHITE RIGHT-POINTING TRIANGLE (= z notation domain re-
striction);
18816 % whiteleftpointingtriangle; \triangleleft (LaTeX)
18817 \DeclareTextCommand{\texttriangleleft}{PU}{\9045\301}%* U+25C1
18818 % U+25C4 BLACK LEFT-POINTING POINTER; \LHD (wasysym)
18819 \DeclareTextCommand{\textLHD}{PU}{\9045\304}%* U+25C4
18820 % U+25C7 WHITE DIAMOND; whitediamond; \diamond (LaTeX)
18821 \DeclareTextCommand{\textdiamond}{PU}{\9045\307}%* U+25C7
18822 %* \textdiamond -> \Diamond (wasysym)
18823 % U+25CA LOZENGE; lozenge; \lozenge (AMS)
18824 \DeclareTextCommand{\textlozenge}{PU}{\9045\312}%* U+25CA
18825 % U+25D6 LEFT HALF BLACK CIRCLE; \LEFTCIRCLE (wasysym)
18826 \DeclareTextCommand{\textLEFTCIRCLE}{PU}{\9045\326}%* U+25D6
18827 % U+25D7 RIGHT HALF BLACK CIRCLE; \RIGHTCIRCLE (wasysym)
18828 \DeclareTextCommand{\textRIGHTCIRCLE}{PU}{\9045\327}%* U+25D7
18829 % U+25E6 WHITE BULLET; *openbullet, whitebullet
18830 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}%* U+25E6
18831 % U+25EB WHITE SQUARE WITH VERTICAL BISECTING LINE;
18832 % \boxbar (stmaryrd)
18833 \DeclareTextCommand{\textboxbar}{PU}{\9045\353}%* U+25EB
18834 % U+25EF LARGE CIRCLE; largecircle
18835 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}%* U+25EF
18836 %* \textbigcircle -> \varbigcirc (stmaryrd)
18837 %

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#### 46.2.29 Miscellaneous Symbols: U+2600 to U+26FF

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18838 % U+2601 CLOUD; \Cloud (ifsym)
18839 \DeclareTextCommand{\textCloud}{PU}{\9046\001}%* U+2601
18840 % U+2605 BLACK STAR; \FiveStar (bbding)
18841 \DeclareTextCommand{\textFiveStar}{PU}{\9046\005}%* U+2605

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18842 % U+2606 WHITE STAR; \FiveStarOpen (bding)  
18843 \DeclareTextCommand{\textFiveStarOpen}{PU}{\9046\006}%\* U+2606  
18844 % U+260E BLACK TELEPHONE; telephoneblack; \Phone (bding)  
18845 \DeclareTextCommand{\textPhone}{PU}{\9046\016}%\* U+260E  
18846 %\* \textPhone -> \Telefon (marvosym)  
18847 % U+2610 BALLOT BOX; \boxempty (stmaryrd)  
18848 \DeclareTextCommand{\textboxempty}{PU}{\9046\020}%\* U+2610  
18849 %\* \textboxempty -> \Box (wasysym)  
18850 % U+2611 BALLOT BOX WITH CHECK; \Checkedbox (marvosym)  
18851 \DeclareTextCommand{\textCheckedbox}{PU}{\9046\021}%\* U+2611  
18852 %\* \textCheckedbox -> \CheckedBox (marvosym)  
18853 % U+2612 BALLOT BOX WITH X; \Crossedbox (marvosym)  
18854 \DeclareTextCommand{\textCrossedbox}{PU}{\9046\022}%\* U+2612  
18855 %\* \textCrossedbox -> \XBox (wasysym)  
18856 %\* \textCrossedbox -> \CrossedBox (marvosym)  
18857 % U+2615 HOT BEVERAGE; \Coffeecup (marvosym)  
18858 \DeclareTextCommand{\textCoffeecup}{PU}{\9046\025}%\* U+2615  
18859 % U+261A BLACK LEFT POINTING INDEX; \HandCuffLeft (bding)  
18860 \DeclareTextCommand{\textHandCuffLeft}{PU}{\9046\032}%\* U+261A  
18861 % U+261B BLACK RIGHT POINTING INDEX; \HandCuffRight (bding)  
18862 \DeclareTextCommand{\textHandCuffRight}{PU}{\9046\033}%\* U+261B  
18863 % U+261C WHITE LEFT POINTING INDEX; \HandLeft (bding)  
18864 \DeclareTextCommand{\textHandLeft}{PU}{\9046\034}%\* U+261C  
18865 %\* \textHandLeft -> \rightpointleft (fourier)  
18866 % U+261E WHITE RIGHT POINTING INDEX; \HandRight (bding)  
18867 \DeclareTextCommand{\textHandRight}{PU}{\9046\036}%\* U+261E  
18868 %\* \textHandRight -> \leftpointright (fourier)  
18869 %\* \textHandRight -> \PointingHand (marvosym)  
18870 %\* \textHandRight -> \Pointinghand (marvosym)  
18871 % U+2622 RADIOACTIVE SIGN; \Radioactivity (marvosym)  
18872 \DeclareTextCommand{\textRadioactivity}{PU}{\9046\042}%\* U+2622  
18873 %\* \textRadioactivity -> \Radiation (ifsym)  
18874 % U+2623 BIOHAZARD SIGN; \Biohazard (marvosym)  
18875 \DeclareTextCommand{\textBiohazard}{PU}{\9046\043}%\* U+2623  
18876 % U+2625 ANKH; \Ankh (marvosym)  
18877 \DeclareTextCommand{\textAnkh}{PU}{\9046\045}%\* U+2625  
18878 % U+262F YIN YANG; \YinYang (marvosym)  
18879 \DeclareTextCommand{\textYinYang}{PU}{\9046\057}%\* U+262F  
18880 %\* \textYinYang -> \Yinyang (marvosym)  
18881 %\* \textYinYang -> \YingYang (marvosym)  
18882 %\* \textYinYang -> \Yingyang (marvosym)  
18883 % U+2639 WHITE FROWNING FACE; \frownie (wasysym)  
18884 \DeclareTextCommand{\textfrownie}{PU}{\9046\071}%\* U+2639  
18885 %\* \textfrownie -> \Frowny (marvosym)  
18886 % U+263A WHITE SMILING FACE; \smiley (wasysym)  
18887 \DeclareTextCommand{\textsmiley}{PU}{\9046\072}%\* U+263A  
18888 %\* \textsmiley -> \Smiley (marvosym)  
18889 % U+263B BLACK SMILING FACE; \blacksmiley (wasysym)  
18890 \DeclareTextCommand{\textblacksmiley}{PU}{\9046\073}%\* U+263B  
18891 % U+263C WHITE SUN WITH RAYS; \sun (wasysym)  
18892 \DeclareTextCommand{\textsun}{PU}{\9046\074}%\* U+263C  
18893 %\* \textsun -> \Sun (marvosym)  
18894 % U+263D FIRST QUARTER MOON; \leftmoon (wasysym, mathabx)  
18895 \DeclareTextCommand{\textleftmoon}{PU}{\9046\075}%\* U+263D

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18896 % U+263E LAST QUARTER MOON; \rightmoon (wasysym, mathabx)
18897 \DeclareTextCommand{\textrightmoon}{PU}{\9046\076}%* U+263E
18898 % U+263F MERCURY; \mercury (wasysym)
18899 \DeclareTextCommand{\textmercury}{PU}{\9046\077}%* U+263F
18900 %* \textmercury -> \Mercury (marvosym)
18901 % U+2640 FEMALE SIGN; female; \female (wasysym)
18902 \DeclareTextCommand{\textPUfemale}{PU}{\9046\100}% U+2640
18903 %* \textPUfemale -> \textfemale (tipx)
18904 %* \textPUfemale -> \female (wasysym)
18905 %* \textPUfemale -> \venus (wasysym)
18906 %* \textPUfemale -> \Venus (marvosym)
18907 %* \textPUfemale -> \Female (marvosym)
18908 % U+2641 EARTH; \earth (wasysym)
18909 \DeclareTextCommand{\textearth}{PU}{\9046\101}%* U+2641
18910 %* \textearth -> \Earth (marvosym)
18911 % U+2642 MALE SIGN; male, mars; \male (wasysym)
18912 \DeclareTextCommand{\textmale}{PU}{\9046\102}%* U+2642
18913 %* \textmale -> \mars (wasysym)
18914 %* \textmale -> \Mars (marvosym)
18915 %* \textmale -> \Male (marvosym)
18916 % U+2643 JUPITER; \jupiter (wasysym)
18917 \DeclareTextCommand{\textjupiter}{PU}{\9046\103}%* U+2643
18918 %* \textjupiter -> \Jupiter (marvosym)
18919 % U+2644 SATURN; \saturn (wasysym)
18920 \DeclareTextCommand{\textsaturn}{PU}{\9046\104}%* U+2644
18921 %* \textsaturn -> \Saturn (marvosym)
18922 % U+2645 URANUS; \uranus (wasysym)
18923 \DeclareTextCommand{\texturanus}{PU}{\9046\105}%* U+2645
18924 %* \texturanus -> \Uranus (marvosym)
18925 % U+2646 NEPTUNE; \neptune (wasysym)
18926 \DeclareTextCommand{\textneptune}{PU}{\9046\106}%* U+2646
18927 %* \textneptune -> \Neptune (marvosym)
18928 % U+2647 PLUTO; \pluto (wasysym)
18929 \DeclareTextCommand{\textpluto}{PU}{\9046\107}%* U+2647
18930 %* \textpluto -> \Pluto (marvosym)
18931 % U+2648 ARIES; \aries (wasysym)
18932 \DeclareTextCommand{\textaries}{PU}{\9046\110}%* U+2648
18933 %* \textaries -> \Aries (marvosym)
18934 % U+2649 TAURUS; \taurus (wasysym)
18935 \DeclareTextCommand{\texttaurus}{PU}{\9046\111}%* U+2649
18936 %* \texttaurus -> \Taurus (marvosym)
18937 % U+264A GEMINI; \gemini (wasysym)
18938 \DeclareTextCommand{\textgemini}{PU}{\9046\112}%* U+264A
18939 %* \textgemini -> \Gemini (marvosym)
18940 % U+264B CANCER; \cancer (wasysym)
18941 \DeclareTextCommand{\textcancer}{PU}{\9046\113}%* U+264B
18942 %* \textcancer -> \Cancer (marvosym)
18943 % U+264C LEO; \leo (wasysym)
18944 \DeclareTextCommand{\textleo}{PU}{\9046\114}%* U+264C
18945 %* \textleo -> \Leo (marvosym)
18946 % U+264D VIRGO; \virgo (wasysym)
18947 \DeclareTextCommand{\textvirgo}{PU}{\9046\115}%* U+264D
18948 %* \textvirgo -> \Virgo (marvosym)
18949 % U+264E LIBRA; \libra (wasysym)

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18950 \DeclareTextCommand{\textlibra}{PU}{\9046\116}%* U+264E
18951 %* \textlibra -> \Libra (marvosym)
18952 % U+264F SCORPIO; \scorpio (wasysym)
18953 \DeclareTextCommand{\textscorpio}{PU}{\9046\117}%* U+264F
18954 %* \textscorpio -> \Scorpio (marvosym)
18955 % U+2650 SAGITTARIUS; \sagittarius (wasysym)
18956 \DeclareTextCommand{\textsagittarius}{PU}{\9046\120}%* U+2650
18957 %* \textsagittarius -> \Sagittarius (marvosym)
18958 % U+2651 CAPRICORN; \capricornus (wasysym)
18959 \DeclareTextCommand{\textcapricornus}{PU}{\9046\121}%* U+2651
18960 %* \textcapricornus -> \Capricorn (marvosym)
18961 % U+2652 AQUARIUS; \aquarius (wasysym)
18962 \DeclareTextCommand{\textaquarius}{PU}{\9046\122}%* U+2652
18963 %* \textaquarius -> \Aquarius (marvosym)
18964 % U+2653 PISCES; \pisces (wasysym)
18965 \DeclareTextCommand{\textpisces}{PU}{\9046\123}%* U+2653
18966 %* \textpisces -> \Pisces (marvosym)
18967 % U+2660 BLACK SPADE SUIT; spade, spadesuitblack; \spadesuit (LaTeX)
18968 \DeclareTextCommand{\textspadesuitblack}{PU}{\9046\140}% U+2660
18969 %* \textspadesuitblack -> \spadesuit (MnSymbol)
18970 % U+2661 WHITE HEART SUIT; heartsuitwhite; \heartsuit (LaTeX)
18971 \DeclareTextCommand{\textheartsuitwhite}{PU}{\9046\141}% U+2661
18972 %* \textheartsuitwhite -> \Heart (marvosym)
18973 %* \textheartsuitwhite -> \heartsuit (MnSymbol)
18974 % U+2662 WHITE DIAMOND SUIT; diamondsuitwhite; \diamondsuit (LaTeX)
18975 \DeclareTextCommand{\textdiamondsuitwhite}{PU}{\9046\142}% U+2662
18976 %* \textdiamondsuitwhite -> \diamondsuit (MnSymbol)
18977 % U+2663 BLACK CLUB SUIT; club, clubsuitblack; \clubsuit (LaTeX)
18978 \DeclareTextCommand{\textclubsuitblack}{PU}{\9046\143}% U+2663
18979 %* \textclubsuitblack -> \clubsuit (MnSymbol)
18980 % U+2664 WHITE SPADE SUIT; spadesuitwhite
18981 \DeclareTextCommand{\textspadesuitwhite}{PU}{\9046\144}% U+2664
18982 % U+2665 BLACK HEART SUIT; heartsuitblack, heart
18983 \DeclareTextCommand{\textheartsuitblack}{PU}{\9046\145}% U+2665
18984 % U+2666 BLACK DIAMOND SUIT; diamond
18985 \DeclareTextCommand{\textdiamondsuitblack}{PU}{\9046\146}% U+2666
18986 % U+2667 WHITE CLUB SUIT; clubsuitwhite
18987 \DeclareTextCommand{\textclubsuitwhite}{PU}{\9046\147}% U+2667
18988 % U+2669 QUARTER NOTE; quarternote; \quarternote (wasysym, arev)
18989 \DeclareTextCommand{\textquarternote}{PU}{\9046\151}%* U+2669
18990 % U+266A EIGHTH NOTE; musicalnote; \textmusicalnote (textcomp)
18991 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A
18992 %* \textmusicalnote -> \eighthnote (wasysym, arev)
18993 % U+266B BEAMED EIGHTH NOTES; eighthnotebeamed; \twonotes (wasysym)
18994 \DeclareTextCommand{\texttwonotes}{PU}{\9046\153}%* U+266B
18995 % U+266C BEAMED SIXTEENTH NOTES; beamedsixteenthnotes; \sixteenth-
    note (arev)
18996 \DeclareTextCommand{\textsixteenthnote}{PU}{\9046\154}%* U+266C
18997 % U+266D MUSIC FLAT SIGN; musicflatsign; \flat (LaTeX)
18998 \DeclareTextCommand{\textflat}{PU}{\9046\155}%* U+266D
18999 % U+266E MUSIC NATURAL SIGN; \natural (LaTeX)
19000 \DeclareTextCommand{\textnatural}{PU}{\9046\156}%* U+266E
19001 % U+266F MUSIC SHARP SIGN; musicsharpsign; \sharp (LaTeX)
19002 \DeclareTextCommand{\textsharp}{PU}{\9046\157}%* U+266F

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19003 % U+2672 UNIVERSAL RECYCLING SYMBOL; \recycle (recycle)  
 19004 \DeclareTextCommand{\textrecycle}{PU}{\9046\162}%\* U+2672  
 19005 %\* \textrecycle -> \Recycling (marvosym)  
 19006 % U+267F WHEELCHAIR SYMBOL; \Wheelchair (marvosym)  
 19007 \DeclareTextCommand{\textWheelchair}{PU}{\9046\177}%\* U+267F  
 19008 % U+2691 BLACK FLAG; \Flag (ifsym)  
 19009 \DeclareTextCommand{\textFlag}{PU}{\9046\221}%\* U+2691  
 19010 %\* \textFlag -> \VarFlag (ifsym)  
 19011 % U+2692 HAMMER AND PICK; \MineSign (marvosym)  
 19012 \DeclareTextCommand{\textMineSign}{PU}{\9046\222}%\* U+2692  
 19013 % U+2694 CROSSED SWORDS; \dsmlilitary (dictsym)  
 19014 \DeclareTextCommand{\textdsmlilitary}{PU}{\9046\224}%\* U+2694  
 19015 %\* \textdsmlilitary -> \textxswup (fourier)  
 19016 % U+2695 STAFF OF AESCULAPIUS; \dsmedical (dictsym)  
 19017 \DeclareTextCommand{\textdsmedical}{PU}{\9046\225}%\* U+2695  
 19018 % U+2696 SCALES; \dsjuridical (dictsym)  
 19019 \DeclareTextCommand{\textdsjuridical}{PU}{\9046\226}%\* U+2696  
 19020 % U+2697 ALEMBIC; \dschemical (dictsym)  
 19021 \DeclareTextCommand{\textdschemical}{PU}{\9046\227}%\* U+2697  
 19022 % U+2698 FLOWER; \dsbiological (dictsym)  
 19023 \DeclareTextCommand{\textdsbiological}{PU}{\9046\230}%\* U+2698  
 19024 % U+269A STAFF OF HERMES; \dscommercial (dictsym)  
 19025 \DeclareTextCommand{\textdscommercial}{PU}{\9046\232}%\* U+269A  
 19026 % U+269D OUTLINED WHITE STAR; \manstar (manfnt)  
 19027 \DeclareTextCommand{\textmanstar}{PU}{\9046\235}%\* U+269D  
 19028 % U+26A0 WARNING SIGN; \danger (fourier)  
 19029 \DeclareTextCommand{\textdanger}{PU}{\9046\240}%\* U+26A0  
 19030 % U+26A2 DOUBLED FEMALE SIGN; \FemaleFemale (marvosym)  
 19031 \DeclareTextCommand{\textFemaleFemale}{PU}{\9046\242}%\* U+26A2  
 19032 % U+26A3 DOUBLED MALE SIGN; \MaleMale (marvosym)  
 19033 \DeclareTextCommand{\textMaleMale}{PU}{\9046\243}%\* U+26A3  
 19034 % U+26A4 INTERLOCKED FEMALE AND MALE SIGN; \FemaleMale (marvosym)  
 19035 \DeclareTextCommand{\textFemaleMale}{PU}{\9046\244}%\* U+26A4  
 19036 % U+26A5 MALE AND FEMALE SIGN; \Hermaphrodite (marvosym)  
 19037 \DeclareTextCommand{\textHermaphrodite}{PU}{\9046\245}%\* U+26A5  
 19038 % U+26AA MEDIUM WHITE CIRCLE; \Neural (marvosym)  
 19039 \DeclareTextCommand{\textNeutral}{PU}{\9046\252}%\* U+26AA  
 19040 % U+26AD MARRIAGE SYMBOL  
 19041 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD  
 19042 % U+26AE DIVORCE SYMBOL  
 19043 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE  
 19044 % U+26B2 NEUTER; \textuncrfemale (tipx)  
 19045 \DeclareTextCommand{\textPUuncrfemale}{PU}{\9046\262}% U+26B2  
 19046 %\* \textPUuncrfemale -> \textuncrfemale (tipx)  
 19047 % U+26B9 SEXTILE; \hexstar (wasysym)  
 19048 \DeclareTextCommand{\texthexstar}{PU}{\9046\271}%\* U+26B9  
 19049 % U+26BD SOCCER BALL; \Football (marvosym)  
 19050 \DeclareTextCommand{\textSoccerBall}{PU}{\9046\275}% U+26BD  
 19051 %\* \textSoccerBall -> \Football (marvosym)  
 19052 % U+26C5 SUN BEHIND CLOUD; \SunCloud (ifsym)  
 19053 \DeclareTextCommand{\textSunCloud}{PU}{\9046\305}%\* U+26C5  
 19054 % U+26C6 RAIN; \Rain (ifsym)  
 19055 \DeclareTextCommand{\textRain}{PU}{\9046\306}%\* U+26C6

19056 % U+26D4 NO ENTRY; \noway (fourier)  
19057 \DeclareTextCommand{\textnoway}{PU}{\9046\324}%\* U+26D4  
19058 % U+26F0 MOUNTAIN; \Mountain (ifsym)  
19059 \DeclareTextCommand{\textMountain}{PU}{\9046\360}%\* U+26F0  
19060 % U+26FA TENT; \Tent (ifsym)  
19061 \DeclareTextCommand{\textTent}{PU}{\9046\372}%\* U+26FA

#### 46.2.30 Dingbats: U+2700 to U+27BF

19062 % U+2701 UPPER BLADE SCISSORS; \ScissorRightBrokenBottom (bbling)  
19063 \DeclareTextCommand{\textScissorRightBrokenBottom}{PU}{\9047\001}% U+2701  
19064 %\* \textScissorRightBrokenBottom -> \CutLeft (marvosym)  
19065 %\* \textScissorRightBrokenBottom -> \Cutright (marvosym)  
19066 % U+2702 BLACK SCISSORS; \ScissorRight (bbling)  
19067 \DeclareTextCommand{\textScissorRight}{PU}{\9047\002}%\* U+2702  
19068 %\* \textScissorRight -> \RightScissors (marvosym)  
19069 %\* \textScissorRight -> \Leftscissors (marvosym)  
19070 % U+2703 LOWER BLADE SCISSORS; \ScissorRightBrokenTop (bbling)  
19071 \DeclareTextCommand{\textScissorRightBrokenTop}{PU}{\9047\003}%\* U+2703  
19072 % U+2704 WHITE SCISSORS; \ScissorHollowRight (bbling)  
19073 \DeclareTextCommand{\textScissorHollowRight}{PU}{\9047\004}%\* U+2704  
19074 % U+2706 TELEPHONE LOCATION SIGN; \PhoneHandset (bbling)  
19075 \DeclareTextCommand{\textPhoneHandset}{PU}{\9047\006}%\* U+2706  
19076 % U+2707 TAPE DRIVE; \Tape (bbling)  
19077 \DeclareTextCommand{\textTape}{PU}{\9047\007}%\* U+2707  
19078 % U+2708 AIRPLANE; \Plane (bbling)  
19079 \DeclareTextCommand{\textPlane}{PU}{\9047\010}%\* U+2708  
19080 % U+2709 ENVELOPE; \Envelope (bbling),  
19081 \DeclareTextCommand{\textEnvelope}{PU}{\9047\011}%\* U+2709  
19082 %\* \textEnvelope -> \Letter (marvosym)  
19083 % U+270C VICTORY HAND; \Peace (bbling)  
19084 \DeclareTextCommand{\textPeace}{PU}{\9047\014}%\* U+270C  
19085 % U+270D WRITING HAND; \WritingHand (marvosym)  
19086 \DeclareTextCommand{\textWritingHand}{PU}{\9047\015}%\* U+270D  
19087 %\* \textWritingHand -> \Writinghand (marvosym)  
19088 % U+270E LOWER RIGHT PENCIL; \PencilRightDown (bbling)  
19089 \DeclareTextCommand{\textPencilRightDown}{PU}{\9047\016}%\* U+270E  
19090 % U+270F PENCIL; \PencilRight (bbling)  
19091 \DeclareTextCommand{\textPencilRight}{PU}{\9047\017}%\* U+270F  
19092 % U+2710 UPPER RIGHT PENCIL; \PencilRightUp (bbling)  
19093 \DeclareTextCommand{\textPencilRightUp}{PU}{\9047\020}%\* U+2710  
19094 % U+2711 WHITE NIB; \NibRight (bbling)  
19095 \DeclareTextCommand{\textNibRight}{PU}{\9047\021}%\* U+2711  
19096 % U+2712 BLACK NIB; \NibSolidRight (bbling)  
19097 \DeclareTextCommand{\textNibSolidRight}{PU}{\9047\022}%\* U+2712  
19098 % U+2713 CHECK MARK; checkmark; \Checkmark (bbling)  
19099 \DeclareTextCommand{\textCheckmark}{PU}{\9047\023}%\* U+2713  
19100 %\* \textCheckmark -> \checkmark (MnSymbol)  
19101 % U+2714 HEAVY CHECK MARK; \CheckmarkBold (bbling)  
19102 \DeclareTextCommand{\textCheckmarkBold}{PU}{\9047\024}%\* U+2714  
19103 % U+2715 MULTIPLICATION X; \XSolid (bbling)  
19104 \DeclareTextCommand{\textXSolid}{PU}{\9047\025}%\* U+2715  
19105 % U+2716 HEAVY MULTIPLICATION X; \XSolidBold (bbling)  
19106 \DeclareTextCommand{\textXSolidBold}{PU}{\9047\026}%\* U+2716  
19107 % U+2717 BALLOT X; \XSolidBrush (bbling)

19108 \DeclareTextCommand{\textXSolidBrush}{PU}{\9047\027}%\* U+2717  
 19109 % U+2719 OUTLINED GREEK CROSS; \PlusOutline (bding)  
 19110 \DeclareTextCommand{\textPlusOutline}{PU}{\9047\031}%\* U+2719  
 19111 % U+271A HEAVY GREEK CROSS; \Plus (bding)  
 19112 \DeclareTextCommand{\textPlus}{PU}{\9047\032}%\* U+271A  
 19113 % U+271B OPEN CENTRE CROSS; \PlusThinCenterOpen (bding)  
 19114 \DeclareTextCommand{\textPlusThinCenterOpen}{PU}{\9047\033}%\* U+271B  
 19115 % U+271C HEAVY OPEN CENTRE CROSS; \PlusCenterOpen (bding)  
 19116 \DeclareTextCommand{\textPlusCenterOpen}{PU}{\9047\034}%\* U+271C  
 19117 % U+271D LATIN CROSS; \Cross (bding)  
 19118 \DeclareTextCommand{\textCross}{PU}{\9047\035}%\* U+271D  
 19119 % U+271E SHADOWED WHITE LATIN CROSS; \CrossOpenShadow (bding)  
 19120 \DeclareTextCommand{\textCrossOpenShadow}{PU}{\9047\036}%\* U+271E  
 19121 % U+271F OUTLINED LATIN CROSS; \CrossOutline (bding)  
 19122 \DeclareTextCommand{\textCrossOutline}{PU}{\9047\037}%\* U+271F  
 19123 % U+2720 MALTESE CROSS; \CrossMaltese (bding)  
 19124 \DeclareTextCommand{\textCrossMaltese}{PU}{\9047\040}%\* U+2720  
 19125 % U+2721 STAR OF DAVID; \DavidStar (bding)  
 19126 \DeclareTextCommand{\textDavidStar}{PU}{\9047\041}%\* U+2721  
 19127 %\* \textDavidStar -> \davidstar (wasysym)  
 19128 % U+2722 FOUR TEARDROP-SPOKED ASTERISK; \FourAsterisk (bding)  
 19129 \DeclareTextCommand{\textFourAsterisk}{PU}{\9047\042}%\* U+2722  
 19130 % U+2723 FOUR BALLOON-SPOKED ASTERISK; \JackStar (bding)  
 19131 \DeclareTextCommand{\textJackStar}{PU}{\9047\043}%\* U+2723  
 19132 % U+2724 HEAVY FOUR BALLOON-SPOKED ASTERISK; \JackStarBold (bding)  
 19133 \DeclareTextCommand{\textJackStarBold}{PU}{\9047\044}%\* U+2724  
 19134 % U+2725 FOUR CLUB-SPOKED ASTERISK; \CrossClowerTips (bding)  
 19135 \DeclareTextCommand{\textClowerTips}{PU}{\9047\045}%\* U+2725  
 19136 % U+2726 BLACK FOUR POINTED STAR; \FourStar (bding)  
 19137 \DeclareTextCommand{\textFourStar}{PU}{\9047\046}%\* U+2726  
 19138 % U+2727 WHITE FOUR POINTED STAR; \FourStarOpen (bding)  
 19139 \DeclareTextCommand{\textFourStarOpen}{PU}{\9047\047}%\* U+2727  
 19140 % U+272A CIRCLED WHITE STAR; \FiveStarOpenCircled (bding)  
 19141 \DeclareTextCommand{\textFiveStarOpenCircled}{PU}{\9047\052}%\* U+272A  
 19142 % U+272B OPEN CENTRE BLACK STAR; \FiveStarCenterOpen (bding)  
 19143 \DeclareTextCommand{\textFiveStarCenterOpen}{PU}{\9047\053}%\* U+272B  
 19144 % U+272C BLACK CENTRE WHITE STAR; \FiveStarOpenDotted (bding)  
 19145 \DeclareTextCommand{\textFiveStarOpenDotted}{PU}{\9047\054}%\* U+272C  
 19146 % U+272D OUTLINED BLACK STAR; \FiveStarOutline (bding)  
 19147 \DeclareTextCommand{\textFiveStarOutline}{PU}{\9047\055}%\* U+272D  
 19148 % U+272E HEAVY OUTLINED BLACK STAR; \FiveStarOutlineHeavy (bding)  
 19149 \DeclareTextCommand{\textFiveStarOutlineHeavy}{PU}{\9047\056}%\* U+272E  
 19150 % U+272F PINWHEEL STAR; \FiveStarConvex (bding)  
 19151 \DeclareTextCommand{\textFiveStarConvex}{PU}{\9047\057}%\* U+272F  
 19152 % U+2730 SHADOWED WHITE STAR; \FiveStarShadow (bding)  
 19153 \DeclareTextCommand{\textFiveStarShadow}{PU}{\9047\060}%\* U+2730  
 19154 % U+2731 HEAVY ASTERISK; \AsteriskBold (bding)  
 19155 \DeclareTextCommand{\textAsteriskBold}{PU}{\9047\061}%\* U+2731  
 19156 % U+2732 OPEN CENTRE ASTERISK; \AsteriskCenterOpen (bding)  
 19157 \DeclareTextCommand{\textAsteriskCenterOpen}{PU}{\9047\062}%\* U+2732  
 19158 % U+2734 EIGHT POINTED BLACK STAR; \EightStarTaper (bding)  
 19159 \DeclareTextCommand{\textEightStarTaper}{PU}{\9047\064}%\* U+2734  
 19160 % U+2735 EIGHT POINTED PINWHEEL STAR; \EightStarConvex (bding)

19161 \DeclareTextCommand{\textEightStarConvex}{PU}{\9047\065}%\* U+2735  
 19162 % U+2736 SIX POINTED BLACK STAR; \SixStar (bding)  
 19163 \DeclareTextCommand{\textSixStar}{PU}{\9047\066}%\* U+2736  
 19164 % U+2737 EIGHT POINTED RECTILINEAR BLACK STAR; \EightStar (bding)  
 19165 \DeclareTextCommand{\textEightStar}{PU}{\9047\067}%\* U+2737  
 19166 % U+2738 HEAVY EIGHT POINTED RECTILINEAR BLACK STAR; \EightStarBold (bding)  
 19167 \DeclareTextCommand{\textEightStarBold}{PU}{\9047\070}%\* U+2738  
 19168 % U+2739 TWELVE POINTED BLACK STAR; \TwelveStar (bding)  
 19169 \DeclareTextCommand{\textTwelveStar}{PU}{\9047\071}%\* U+2739  
 19170 % U+273A SIXTEEN POINTED ASTERISK; \SixteenStarLight (bding)  
 19171 \DeclareTextCommand{\textSixteenStarLight}{PU}{\9047\072}%\* U+273A  
 19172 % U+273B TEARDROP-SPOKED ASTERISK; \SixFlowerPetalRemoved (bding)  
 19173 \DeclareTextCommand{\textSixFlowerPetalRemoved}{PU}{\9047\073}%\* U+273B  
 19174 % U+273C OPEN CENTRE TEARDROP-SPOKED ASTERISK;  
 19175 % \SixFlowerOpenCenter (bding)  
 19176 \DeclareTextCommand{\textSixFlowerOpenCenter}{PU}{\9047\074}%\* U+273C  
 19177 % U+273D HEAVY TEARDROP-SPOKED ASTERISK; \Asterisk (bding)  
 19178 \DeclareTextCommand{\textAsterisk}{PU}{\9047\075}%\* U+273D  
 19179 % U+273E SIX PETALLED BLACK AND WHITE FLORETTE; \SixFlowerAlternate (bding)  
 19180 \DeclareTextCommand{\textSixFlowerAlternate}{PU}{\9047\076}%\* U+273E  
 19181 % U+273F BLACK FLORETTE; \FiveFlowerPetal (bding)  
 19182 \DeclareTextCommand{\textFiveFlowerPetal}{PU}{\9047\077}%\* U+273F  
 19183 % U+2740 WHITE FLORETTE; \FiveFlowerOpen (bding)  
 19184 \DeclareTextCommand{\textFiveFlowerOpen}{PU}{\9047\100}%\* U+2740  
 19185 % U+2741 EIGHT PETALLED OUTLINED BLACK FLORETTE; \EightFlowerPetal (bding)  
 19186 \DeclareTextCommand{\textEightFlowerPetal}{PU}{\9047\101}%\* U+2741  
 19187 % U+2742 CIRCLED OPEN CENTRE EIGHT POINTED STAR; \SunshineOpenCircled (bding)  
 19188 \DeclareTextCommand{\textSunshineOpenCircled}{PU}{\9047\102}%\* U+2742  
 19189 % U+2743 HEAVY TEARDROP-SPOKED PINWHEEL ASTERISK; \SixFlowerAltPetal (bding)  
 19190 \DeclareTextCommand{\textSixFlowerAltPetal}{PU}{\9047\103}%\* U+2743  
 19191 % U+2744 SNOWFLAKE; \SnowflakeChevron (bding)  
 19192 \DeclareTextCommand{\textSnowflakeChevron}{PU}{\9047\104}%\* U+2744  
 19193 % U+2745 TIGHT TRIFOLIATE SNOWFLAKE; \Snowflake (bding)  
 19194 \DeclareTextCommand{\textSnowflake}{PU}{\9047\105}%\* U+2745  
 19195 % U+2746 HEAVY CHEVRON SNOWFLAKE; \SnowflakeChevronBold (bding)  
 19196 \DeclareTextCommand{\textSnowflakeChevronBold}{PU}{\9047\106}%\* U+2746  
 19197 % U+2747 SPARKLE; \Sparkle (bding)  
 19198 \DeclareTextCommand{\textSparkle}{PU}{\9047\107}%\* U+2747  
 19199 % U+2748 HEAVY SPARKLE; \SparkleBold (bding)  
 19200 \DeclareTextCommand{\textSparkleBold}{PU}{\9047\110}%\* U+2748  
 19201 % U+2749 BALLOON-SPOKED ASTERISK; \AsteriskRoundedEnds (bding)  
 19202 \DeclareTextCommand{\textAsteriskRoundedEnds}{PU}{\9047\111}%\* U+2749  
 19203 % U+274A EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;  
 19204 % \EightFlowerPetalRemoved (bding)  
 19205 \DeclareTextCommand{\textEightFlowerPetalRemoved}{PU}{\9047\112}%\* U+274A  
 19206 % U+274B HEAVY EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;  
 19207 % \EightAsterisk (bding)

19208 \DeclareTextCommand{\textEightAsterisk}{PU}{\9047\113}%\* U+274B  
 19209 % U+274D SHADOWED WHITE CIRCLE; \CircleShadow (bbding)  
 19210 \DeclareTextCommand{\textCircleShadow}{PU}{\9047\115}%\* U+274D  
 19211 % U+274F LOWER RIGHT DROP-SHADOWED WHITE SQUARE;  
 19212 % \SquareShadowBottomRight (bbding)  
 19213 \DeclareTextCommand{\textSquareShadowBottomRight}{PU}{\9047\117}%\* U+274F  
 19214 % U+2750 UPPER RIGHT DROP-SHADOWED WHITE SQUARE;  
 19215 % \SquareShadowTopRight (bbding)  
 19216 \DeclareTextCommand{\textSquareTopRight}{PU}{\9047\120}%\* U+2750  
 19217 % U+2751 LOWER RIGHT SHADOWED WHITE SQUARE;  
 19218 % \SquareCastShadowBottomRight (bbding)  
 19219 \DeclareTextCommand{\textSquareCastShadowBottomRight}{PU}{\9047\121}%\* U+2751  
 19220 % U+2752 UPPER RIGHT SHADOWED WHITE SQUARE;  
 19221 % \SquareCastShadowTopRight (bbding)  
 19222 \DeclareTextCommand{\textSquareCastShadowTopRight}{PU}{\9047\122}%\* U+2752  
 19223 % U+2756 BLACK DIAMOND MINUS WHITE X; \OrnamentDiamandSolid (bb-  
 ding)  
 19224 \DeclareTextCommand{\textDiamandSolid}{PU}{\9047\126}%\* U+2756  
 19225 % U+2758 LIGHT VERTICAL BAR; \RectangleThin (bbding)  
 19226 \DeclareTextCommand{\textRectangleThin}{PU}{\9047\130}%\* U+2758  
 19227 % U+2759 MEDIUM VERTICAL BAR; \Rectangle (bbding)  
 19228 \DeclareTextCommand{\textRectangle}{PU}{\9047\131}%\* U+2759  
 19229 % U+275A HEAVY VERTICAL BAR; \RectangleBold (bbding)  
 19230 \DeclareTextCommand{\textRectangleBold}{PU}{\9047\132}%\* U+275A

#### 46.2.31 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

19231 % U+27C2 PERPENDICULAR; perpendicular; \perp (LaTeX)  
 19232 \DeclareTextCommand{\textperp}{PU}{\9047\302}%\* U+27C2  
 19233 % \notperp (mathabx)  
 19234 \DeclareTextCommand{\textnotperp}{PU}{\9047\302\83\070}%\* U+27C2 U+0338  
 19235 % U+27C7 OR WITH DOT INSIDE; \veedot (MnSymbol)  
 19236 \DeclareTextCommand{\textveedot}{PU}{\9047\307}%\* U+27C7  
 19237 % U+27D1 AND WITH DOT; \wedgedot (MnSymbol)  
 19238 \DeclareTextCommand{\textwedgedot}{PU}{\9047\321}%\* U+27D1  
 19239 % U+27DC LEFT MULTIMAP; \leftspoon (MnSymbol)  
 19240 \DeclareTextCommand{\textleftspoon}{PU}{\9047\334}%\* U+27DC  
 19241 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET  
 19242 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}%\* U+27E6  
 19243 %\* \textlbrackdbl -> \llbracket (stmaryrd)  
 19244 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET  
 19245 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}%\* U+27E7  
 19246 %\* \textrbrackdbl -> \rrbracket (stmaryrd)

#### 46.2.32 Supplemental Arrows-A: U+27F0 to U+27FF

19247 % U+27F2 ANTICLOCKWISE GAPPED CIRCLE ARROW;  
 19248 % \circlearrowleft (AmS)  
 19249 \DeclareTextCommand{\textcirclearrowleft}{PU}{\9047\362}%\* U+27F2  
 19250 % U+27F3 CLOCKWISE GAPPED CIRCLE ARROW; \circlearrowright (AmS)  
 19251 \DeclareTextCommand{\textcirclearrowright}{PU}{\9047\363}%\* U+27F3  
 19252 % U+27F5 LONG LEFTWARDS ARROW; \longleftarrow (AmS)  
 19253 \DeclareTextCommand{\textlongleftarrow}{PU}{\9047\365}%\* U+27F5  
 19254 % U+27F6 LONG RIGHTWARDS ARROW; \longrightarrow (AmS)  
 19255 \DeclareTextCommand{\textlongrightarrow}{PU}{\9047\366}%\* U+27F6  
 19256 % U+27F7 LONG LEFT RIGHT ARROW; \longleftarrowrightarrow (AmS)



```

19257 \DeclareTextCommand{\textlonglefttrightarrow}{PU}{\9047\367}%* U+27F7
19258 % U+27F8 LONG LEFTWARDS DOUBLE ARROW; \Longleftarrow (AmS)
19259 \DeclareTextCommand{\textLongleftarrow}{PU}{\9047\370}%* U+27F8
19260 % U+27F9 LONG RIGHTWARDS DOUBLE ARROW; \Longrightarrow (AmS)
19261 \DeclareTextCommand{\textLongrightarrow}{PU}{\9047\371}%* U+27F9
19262 % U+27FA LONG LEFT RIGHT DOUBLE ARROW; \Longleftrightarrow (AmS)
19263 \DeclareTextCommand{\textLongleftrightarrow}{PU}{\9047\372}%* U+27FA
19264 % U+27FC LONG RIGHTWARDS ARROW FROM BAR; \longmapsto (AmS)
19265 \DeclareTextCommand{\textlongmapsto}{PU}{\9047\374}%* U+27FC
19266 % U+27FD LONG LEFTWARDS DOUBLE ARROW FROM BAR; \Longmaps-
    from (stmaryrd)
19267 \DeclareTextCommand{\textLongmapsfrom}{PU}{\9047\375}%* U+27FD
19268 % U+27FE LONG RIGHTWARDS DOUBLE ARROW FROM BAR; \Longmap-
    sto (stmaryrd)
19269 \DeclareTextCommand{\textLongmapsto}{PU}{\9047\376}%* U+27FE

```

#### 46.2.33 Supplemental Arrows-B: U+2900 to U+297F

```

19270 % U+2921 NORTH WEST AND SOUTH EAST ARROW; \nwsearrow (MnSym-
    bol)
19271 \DeclareTextCommand{\textnwsearrow}{PU}{\9051\041}%* U+2921
19272 % U+2922 NORTH EAST AND SOUTH WEST ARROW; \neswarrow (MnSym-
    bol)
19273 \DeclareTextCommand{\textneswarrow}{PU}{\9051\042}%* U+2922
19274 % U+2923 NORTH WEST ARROW WITH HOOK; \hooknwarrow (MnSymbol)
19275 \DeclareTextCommand{\textlhooknwarrow}{PU}{\9051\043}%* U+2923
19276 % U+2924 NORTH EAST ARROW WITH HOOK; \rhooknearrow (MnSymbol)
19277 \DeclareTextCommand{\textrhooknearrow}{PU}{\9051\044}%* U+2924
19278 % U+2925 SOUTH EAST ARROW WITH HOOK; \lhooksearrow (MnSymbol)
19279 \DeclareTextCommand{\textlhooksearrow}{PU}{\9051\045}%* U+2925
19280 % U+2926 SOUTH WEST ARROW WITH HOOK; \rhookswarrow (MnSymbol)
19281 \DeclareTextCommand{\textrhookswarrow}{PU}{\9051\046}%* U+2926
19282 % U+2933 WAVE ARROW POINTING DIRECTLY RIGHT; \leadsto (wasysym)
19283 \DeclareTextCommand{\textleadsto}{PU}{\9051\063}%* U+2933
19284 % U+2934 ARROW POINTING RIGHTWARDS THEN CURVING UPWARDS;
19285 % \rcurvearrowne (MnSymbol)
19286 \DeclareTextCommand{\textrcurvearrowne}{PU}{\9051\064}%* U+2934
19287 % U+2935 ARROW POINTING RIGHTWARDS THEN CURVING DOWN-
    WARDS;
19288 % \lcurvearrowse (MnSymbol)
19289 \DeclareTextCommand{\textlcurvearrowse}{PU}{\9051\065}%* U+2935
19290 % U+2936 ARROW POINTING DOWNWARDS THEN CURVING LEFT-
    WARDS;
19291 % \lcurvearrowsw (MnSymbol)
19292 \DeclareTextCommand{\textlcurvearrowsw}{PU}{\9051\066}%* U+2936
19293 % U+2937 ARROW POINTING DOWNWARDS THEN CURVING RIGHT-
    WARDS;
19294 % \rcurvearrowse (MnSymbol)
19295 \DeclareTextCommand{\textrcurvearrowse}{PU}{\9051\067}%* U+2937
19296 % U+2938 RIGHT-SIDE ARC CLOCKWISE ARROW; \lcurvearrowdown (Mn-
    Symbol)
19297 \DeclareTextCommand{\textlcurvearrowdown}{PU}{\9051\070}%* U+2938
19298 %* \textlcurvearrowdown -> \RightTorque (marvosym)
19299 %* \textlcurvearrowdown -> \Righttorque (marvosym)
19300 % U+2939 LEFT-SIDE ARC ANTICLOCKWISE ARROW;

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19301 % \rcurvearrowdown (MnSymbol)
19302 \DeclareTextCommand{\texttrcurvearrowdown}{PU}{\9051\071}%* U+2939
19303 %* \texttrcurvearrowdown -> \LeftTorque (marvosym)
19304 %* \texttrcurvearrowdown -> \Lefttorque (marvosym)
19305 % U+293A TOP ARC ANTICLOCKWISE ARROW; \rcurvearrowleft (MnSym-
bol)
19306 \DeclareTextCommand{\texttrcurvearrowleft}{PU}{\9051\072}%* U+293A
19307 % U+293B BOTTOM ARC ANTICLOCKWISE ARROW;
19308 % \rcurvearrowright (MnSymbol)
19309 \DeclareTextCommand{\texttrcurvearrowright}{PU}{\9051\073}%* U+293B
19310 % U+294A LEFT BARB UP RIGHT BARB DOWN HARPOON; \leftrighthar-
poon (mathabx)
19311 \DeclareTextCommand{\textleftrightharpoon}{PU}{\9051\112}%* U+294A
19312 % U+294B LEFT BARB DOWN RIGHT BARB UP HARPOON; \rightlefthar-
poon (mathabx)
19313 \DeclareTextCommand{\textrightleftharpoon}{PU}{\9051\113}%* U+294B
19314 % U+294C UP BARB RIGHT DOWN BARB LEFT HARPOON;
19315 % \updownharpoonrightleft (MnSymbol)
19316 \DeclareTextCommand{\textupdownharpoonrightleft}{PU}{\9051\114}%* U+294C
19317 % U+294D UP BARB LEFT DOWN BARB RIGHT HARPOON;
19318 % \updownharpoonleftright (MnSymbol)
19319 \DeclareTextCommand{\textupdownharpoonleftright}{PU}{\9051\115}%* U+294D
19320 % U+2962 LEFTWARDS HARPOON WITH BARB UP ABOVE LEFTWARDS
19321 % HARPOON WITH BARB DOWN; \leftleftharpoons (mathabx)
19322 \DeclareTextCommand{\textleftleftharpoons}{PU}{\9051\142}%* U+2962
19323 % U+2963 UPWARDS HARPOON WITH BARB LEFT BESIDE UPWARDS
19324 % HARPOON WITH BARB RIGHT; \upupharpoons (mathabx)
19325 \DeclareTextCommand{\textupupharpoons}{PU}{\9051\143}%* U+2963
19326 % U+2964 RIGHTWARDS HARPOON WITH BARB UP ABOVE RIGHT-
WARDS HARPOON
19327 % WITH BARB DOWN; \rightrightarpoons (mathabx)
19328 \DeclareTextCommand{\textrightarpoons}{PU}{\9051\144}%* U+2964
19329 % U+2965 DOWNWARDS HARPOON WITH BARB LEFT BESIDE DOWN-
WARDS HARPOON
19330 % WITH BARB RIGHT; \downdownharpoons (mathabx)
19331 \DeclareTextCommand{\textdowndownharpoons}{PU}{\9051\145}%* U+2965
19332 % U+296A LEFTWARDS HARPOON WITH BARB UP ABOVE LONG DASH;
19333 % \leftbarharpoon (mathabx)
19334 \DeclareTextCommand{\textleftbarharpoon}{PU}{\9051\152}%* U+296A
19335 % U+296B LEFTWARDS HARPOON WITH BARB DOWN BELOW
19336 % LONG DASH; \barleftharpoon (mathabx)
19337 \DeclareTextCommand{\textbarleftharpoon}{PU}{\9051\153}%* U+296B
19338 % U+296C RIGHTWARDS HARPOON WITH BARB UP ABOVE
19339 % LONG DASH; \rightbarharpoon (mathabx)
19340 \DeclareTextCommand{\textrightbarharpoon}{PU}{\9051\154}%* U+296C
19341 % U+296D RIGHTWARDS HARPOON WITH BARB DOWN BELOW
19342 % LONG DASH; \barrightharpoon (mathabx)
19343 \DeclareTextCommand{\textbarrightharpoon}{PU}{\9051\155}%* U+296D
19344 % U+296E UPWARDS HARPOON WITH BARB LEFT BESIDE DOWN-
WARDS HARPOON
19345 % WITH BARB RIGHT; \updownharpoons (mathabx)
19346 \DeclareTextCommand{\textupdownharpoons}{PU}{\9051\156}%* U+296E
19347 % U+296F DOWNWARDS HARPOON WITH BARB LEFT BESIDE UP-
WARDS HARPOON

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19348 % WITH BARB RIGHT; \downupharpoons (mathabx)  
 19349 \DeclareTextCommand{\textdownupharpoons}{PU}{\9051\157}%\* U+296F  
 19350 % U+297F DOWN FISH TAIL  
 19351 \DeclareTextCommand{\textmoo}{PU}{\9051\177\83\066}%\* U+297F U+0336

#### 46.2.34 Miscellaneous Mathematical Symbols-B: U+2980 to U+29FF

19352 % U+2987 Z NOTATION LEFT IMAGE BRACKET; \lparenthesis (stmaryrd)  
 19353 \DeclareTextCommand{\textlparenthesis}{PU}{\9051\207}%\* U+2987  
 19354 % U+2988 Z NOTATION RIGHT IMAGE BRACKET; \rrparenthesis (stmaryrd)  
 19355 \DeclareTextCommand{\textrrparenthesis}{PU}{\9051\210}%\* U+2988  
 19356 % U+29B0 REVERSED EMPTY SET; \invdiameter (wasysym)  
 19357 \DeclareTextCommand{\textinvdiameter}{PU}{\9051\260}%\* U+29B0  
 19358 % U+29B6 CIRCLED VERTICAL BAR; \obar (stmaryrd)  
 19359 \DeclareTextCommand{\textobar}{PU}{\9051\266}%\* U+29B6  
 19360 %\* \textobar -> \textvarobar (stmaryrd)  
 19361 % U+29B8 CIRCLED REVERSE SOLIDUS; \obslash (stmaryrd)  
 19362 \DeclareTextCommand{\textobslash}{PU}{\9051\270}%\* U+29B8  
 19363 %\* \textobslash -> \circledbslash (txfonts/pxfonts)  
 19364 %\* \textobslash -> \obackslash (mathabx)  
 19365 %\* \textobslash -> \varobslash (stmaryrd)  
 19366 % U+29BA CIRCLE DIVIDED BY HORIZONTAL BAR AND TOP HALF  
 19367 % DIVIDED BY VERTICAL BAR; \obot (mathabx)  
 19368 \DeclareTextCommand{\textobot}{PU}{\9051\272}%\* U+29BA  
 19369 %\* \textobot -> \odplus (ulsy)  
 19370 % U+29BB CIRCLE WITH SUPERIMPOSED X; \NoChemicalCleaning (marvosym)  
 19371 \DeclareTextCommand{\textNoChemicalCleaning}{PU}{\9051\273}%\* U+29BB  
 19372 % U+29C0 CIRCLED LESS-THAN; \olessthan (stmaryrd)  
 19373 \DeclareTextCommand{\textolessthan}{PU}{\9051\300}%\* U+29C0  
 19374 %\* \textolessthan -> \varolessthan (stmaryrd)  
 19375 % U+29C1 CIRCLED GREATER-THAN; \ogreaterthan (stmaryrd)  
 19376 \DeclareTextCommand{\textogreaterthan}{PU}{\9051\301}%\* U+29C1  
 19377 %\* \textogreaterthan -> \varogreaterthan (stmaryrd)  
 19378 % U+29C4 SQUARED RISING DIAGONAL SLASH; \boxslash (mathabx, stmaryrd)  
 19379 \DeclareTextCommand{\textboxslash}{PU}{\9051\304}%\* U+29C4  
 19380 % U+29C5 SQUARED FALLING DIAGONAL SLASH; \boxbslash (stmaryrd)  
 19381 \DeclareTextCommand{\textboxbslash}{PU}{\9051\305}%\* U+29C5  
 19382 % U+29C6 SQUARED ASTERISK; \boxast (stmaryrd)  
 19383 \DeclareTextCommand{\textboxast}{PU}{\9051\306}%\* U+29C6  
 19384 % U+29C7 SQUARED SMALL CIRCLE; \boxcircle (stmaryrd)  
 19385 \DeclareTextCommand{\textboxcircle}{PU}{\9051\307}%\* U+29C7  
 19386 % U+29C8 SQUARED SQUARE; \boxbox (stmaryrd)  
 19387 \DeclareTextCommand{\textboxbox}{PU}{\9051\310}%\* U+29C8  
 19388 % U+29D3 BLACK BOWTIE; \Valve (marvosym)  
 19389 \DeclareTextCommand{\textValve}{PU}{\9051\323}%\* U+29D3  
 19390 % U+29DF DOUBLE-ENDED MULTIMAP; \multimapboth (txfonts/pxfonts)  
 19391 \DeclareTextCommand{\textmultimapboth}{PU}{\9051\337}%\* U+29DF  
 19392 % U+29E2 SHUFFLE PRODUCT; \shuffle (shuffle)  
 19393 \DeclareTextCommand{\textshuffle}{PU}{\9051\342}%\* U+29E2

#### 46.2.35 Supplemental Mathematical Operators: U+2A00 to U+2AFF

19394 % U+2A04 N-ARY UNION OPERATOR WITH PLUS; \uplus (LaTeX)  
 19395 \DeclareTextCommand{\textuplus}{PU}{\9052\004}%\* U+2A04  
 19396 % U+2A07 TWO LOGICAL AND OPERATOR; \bigdoublewedge (MnSymbol)

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19397 \DeclareTextCommand{\textbigdoublewedge}{PU}{\9052\007}%* U+2A07
19398 % U+2A08 TWO LOGICAL OR OPERATOR; \bigdoublevee (MnSymbol)
19399 \DeclareTextCommand{\textbigdoublevee}{PU}{\9052\010}%* U+2A08
19400 % U+2A1D JOIN; \Join (latexsym, amsfonts, amssymb, mathabx, txfonts,
19401 %   pxfonts, wasysym)
19402 \DeclareTextCommand{\textJoin}{PU}{\9052\035}%* U+2A1D
19403 % U+2A1F Z NOTATION SCHEMA COMPOSITION; \fatsemi (stmaryrd)
19404 \DeclareTextCommand{\textfatsemi}{PU}{\9052\037}%* U+2A1F
19405 % U+2A22 PLUS SIGN WITH SMALL CIRCLE ABOVE; \circplus (mathabx)
19406 \DeclareTextCommand{\textcircplus}{PU}{\9052\042}%* U+2A22
19407 % U+2A2A MINUS SIGN WITH DOT BELOW; \minusdot (MnSymbol)
19408 \DeclareTextCommand{\textminusdot}{PU}{\9052\052}%* U+2A2A
19409 %* \textminusdot -> \divdot (mathabx)
19410 % U+2A30 MULTIPLICATION SIGN WITH DOT ABOVE; \dottimes (mathabx)
19411 \DeclareTextCommand{\textdottimes}{PU}{\9052\060}%* U+2A30
19412 % U+2A32 SEMIDIRECT PRODUCT WITH BOTTOM CLOSED;
19413 %   \dtimes (mathdesign)
19414 \DeclareTextCommand{\textdtimes}{PU}{\9052\062}%* U+2A32
19415 % U+2A38 CIRCLED DIVISION SIGN; \odiv (mathabx)
19416 \DeclareTextCommand{\textodiv}{PU}{\9052\070}%* U+2A38
19417 % U+2A3C INTERIOR PRODUCT; \invneg (MnSymbol)
19418 \DeclareTextCommand{\textinvneg}{PU}{\9052\074}%* U+2A3C
19419 % U+2A4E DOUBLE SQUARE INTERSECTION; \sqdoublecap (mathabx)
19420 \DeclareTextCommand{\textsqdoublecap}{PU}{\9052\116}%* U+2A4E
19421 %* \textsqdoublecap -> \doublesqcap (MnSymbol)
19422 % U+2A40 INTERSECTION WITH DOT; \capdot (MnSymbol)
19423 \DeclareTextCommand{\textcapdot}{PU}{\9052\100}%* U+2A40
19424 % U+2A4F DOUBLE SQUARE UNION; \sqdoublecup (mathabx)
19425 \DeclareTextCommand{\textsqdoublecup}{PU}{\9052\117}%* U+2A4F
19426 %* \textsqdoublecup -> \doublesqcup (MnSymbol)
19427 % U+2A55 TWO INTERSECTING LOGICAL AND; \doublewedge (MnSymbol)
19428 \DeclareTextCommand{\textdoublewedge}{PU}{\9052\125}%* U+2A55
19429 % U+2A56 TWO INTERSECTING LOGICAL OR; \doublevee (MnSymbol)
19430 \DeclareTextCommand{\textdoublevee}{PU}{\9052\126}%* U+2A56
19431 %* \textdoublevee -> \merge (stmaryrd)
19432 % U+2A5E LOGICAL AND WITH DOUBLE OVERBAR;
19433 %   \doublebarwedge (AmS)
19434 \DeclareTextCommand{\textdoublebarwedge}{PU}{\9052\136}%* U+2A5E
19435 % U+2A63 LOGICAL OR WITH DOUBLE UNDERBAR;
19436 %   \veedoublebar (mahtabx)
19437 \DeclareTextCommand{\textveedoublebar}{PU}{\9052\143}%* U+2A63
19438 % U+2A66 EQUALS SIGN WITH DOT BELOW; \eqdot (MnSymbol)
19439 \DeclareTextCommand{\texteqdot}{PU}{\9052\146}%* U+2A66
19440 % \neqdot (MnSymbol)
19441 \DeclareTextCommand{\textneqdot}{PU}{\9052\146\83\070}%* U+2A66 U+0338
19442 % U+2A74 DOUBLE COLON EQUAL; \coloncolonequals (colonequals)
19443 \DeclareTextCommand{\textcoloncolonequals}{PU}{\9052\164}%* U+2A74
19444 % U+2A7D LESS-THAN OR SLANTED EQUAL TO; \leqslant (AmS)
19445 \DeclareTextCommand{\textleqslant}{PU}{\9052\175}%* U+2A7D
19446 % \nleqslant (txfonts/pxfonts)
19447 \DeclareTextCommand{\textnleqslant}{PU}{\9052\175\83\070}%* U+2A7D U+0338
19448 % U+2A7E GREATER-THAN OR SLANTED EQUAL TO; \geqslant (AmS)
19449 \DeclareTextCommand{\textgeqslant}{PU}{\9052\176}%* U+2A7E
19450 % \ngeqslant (txfonts/pxfonts)

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19451 \DeclareTextCommand{\textngeqslant}{PU}{\9052\176\83\070}%\* U+2A7E U+0338  
 19452 % U+2A85 LESS-THAN OR APPROXIMATE; \lessapprox (AmS)  
 19453 \DeclareTextCommand{\textlessapprox}{PU}{\9052\205}%\* U+2A85  
 19454 % \nlessapprox (txfonts/pxfonts)  
 19455 \DeclareTextCommand{\textnlessapprox}{PU}{\9052\205\83\070}%\* U+2A85 U+0338  
 19456 % U+2A86 GREATER-THAN OR APPROXIMATE; \gtrapprox (AmS)  
 19457 \DeclareTextCommand{\textgtrapprox}{PU}{\9052\206}%\* U+2A86  
 19458 % \ngtrapprox (txfonts/pxfonts)  
 19459 \DeclareTextCommand{\textngtrapprox}{PU}{\9052\206\83\070}%\* U+2A86 U+0338  
 19460 % U+2A87 LESS-THAN AND SINGLE-LINE NOT EQUAL TO; \lneq (AmS)  
 19461 \DeclareTextCommand{\textlneq}{PU}{\9052\207}%\* U+2A87  
 19462 % U+2A88 GREATER-THAN AND SINGLE-LINE NOT EQUAL TO;  
 19463 % \gneq (AmS)  
 19464 \DeclareTextCommand{\textgneq}{PU}{\9052\210}%\* U+2A88  
 19465 % U+2A89 LESS-THAN AND NOT APPROXIMATE; \lnapprox (AmS)  
 19466 \DeclareTextCommand{\textlnapprox}{PU}{\9052\211}%\* U+2A89  
 19467 % U+2A8A GREATER-THAN AND NOT APPROXIMATE; \gnapprox (AmS)  
 19468 \DeclareTextCommand{\textgnapprox}{PU}{\9052\212}%\* U+2A8A  
 19469 % U+2A8B LESS-THAN ABOVE DOUBLE-LINE EQUAL ABOVE GREATER-  
 THAN;  
 19470 % \lesseqqgtr (AmS)  
 19471 \DeclareTextCommand{\textlesseqqgtr}{PU}{\9052\213}%\* U+2A8B  
 19472 % U+2A8C GREATER-THAN ABOVE DOUBLE-LINE EQUAL ABOVE LESS-  
 THAN;  
 19473 % \gtreqless (AmS)  
 19474 \DeclareTextCommand{\textgtreqless}{PU}{\9052\214}%\* U+2A8C  
 19475 % U+2A95 SLANTED EQUAL TO OR LESS-THAN; \eqslantless (AmS)  
 19476 \DeclareTextCommand{\texteqslantless}{PU}{\9052\225}%\* U+2A95  
 19477 % U+2A96 SLANTED EQUAL TO OR GREATER-THAN; \eqslantgtr (AmS)  
 19478 \DeclareTextCommand{\texteqslantgtr}{PU}{\9052\226}%\* U+2A96  
 19479 % U+2AA6 LESS-THAN CLOSED BY CURVE; \leftslice (stmaryrd)  
 19480 \DeclareTextCommand{\textleftslice}{PU}{\9052\246}%\* U+2AA6  
 19481 % U+2AA7 GREATER-THAN CLOSED BY CURVE; \rightslice (stmaryrd)  
 19482 \DeclareTextCommand{\textright slice}{PU}{\9052\247}%\* U+2AA7  
 19483 % U+2AAF PRECEDES ABOVE SINGLE-LINE EQUALS SIGN; \preceq (Mn-  
 Symbol)  
 19484 \DeclareTextCommand{\textpreceq}{PU}{\9052\257}%\* U+2AAF  
 19485 % \npreceq (txfonts/pxfonts)  
 19486 \DeclareTextCommand{\textnpreceq}{PU}{\9052\257\83\070}%\* U+2AAF U+0338  
 19487 % U+2AB0 SUCCEEDS ABOVE SINGLE-LINE EQUALS SIGN; \succeq (Mn-  
 Symbol)  
 19488 \DeclareTextCommand{\textsucceq}{PU}{\9052\260}%\* U+2AB0  
 19489 % \nsucceq (txfonts/pxfonts)  
 19490 \DeclareTextCommand{\textnsucceq}{PU}{\9052\260\83\070}%\* U+2AB0 U+0338  
 19491 % U+2AB1 PRECEDES ABOVE SINGLE-LINE NOT EQUAL TO; \prec-  
 neq (mathabx)  
 19492 \DeclareTextCommand{\textprecneq}{PU}{\9052\261}%\* U+2AB1  
 19493 % U+2AB2 SUCCEEDS ABOVE SINGLE-LINE NOT EQUAL TO; \succ-  
 neq (mathabx)  
 19494 \DeclareTextCommand{\textsuccneq}{PU}{\9052\262}%\* U+2AB2  
 19495 % U+2AB3 PRECEDES ABOVE EQUALS SIGN; \preceqq (txfonts/pxfonts)  
 19496 \DeclareTextCommand{\textpreceqq}{PU}{\9052\263}%\* U+2AB3  
 19497 % \npreceqq (txfonts/pxfonts)  
 19498 \DeclareTextCommand{\textnpreceqq}{PU}{\9052\263\83\070}%\* U+2AB3 U+0338

19499 % U+2AB4 SUCCEEDS ABOVE EQUALS SIGN; \succeqq (txfonts/pxfonts)  
 19500 \DeclareTextCommand{\textsucceqq}{PU}{\9052\264}%\* U+2AB4  
 19501 % \nsucceqq (txfonts/pxfonts)  
 19502 \DeclareTextCommand{\textnsucceqq}{PU}{\9052\264\83\070}%\* U+2AB4 U+0338  
 19503 % U+2AB5 PRECEDES ABOVE NOT EQUAL TO; \precneqq (txfonts/pxfonts)  
 19504 \DeclareTextCommand{\textprecneqq}{PU}{\9052\265}%\* U+2AB5  
 19505 % U+2AB6 SUCCEEDS ABOVE NOT EQUAL TO; \succneqq (txfonts/pxfonts)  
 19506 \DeclareTextCommand{\textsuccneqq}{PU}{\9052\266}%\* U+2AB6  
 19507 % U+2AB7 PRECEDES ABOVE ALMOST EQUAL TO; \precapprox (AmS)  
 19508 \DeclareTextCommand{\textprecapprox}{PU}{\9052\267}%\* U+2AB7  
 19509 % \nprecapprox (txfonts/pxfonts)  
 19510 \DeclareTextCommand{\textnprecapprox}{PU}{\9052\267\83\070}%\* U+2AB7 U+0338  
 19511 % U+2AB8 SUCCEEDS ABOVE ALMOST EQUAL TO; \succapprox (AmS)  
 19512 \DeclareTextCommand{\textsuccapprox}{PU}{\9052\270}%\* U+2AB8  
 19513 % \nsuccapprox (txfonts/pxfonts)  
 19514 \DeclareTextCommand{\textnsuccapprox}{PU}{\9052\270\83\070}%\* U+2AB8 U+0338  
 19515 % U+2AB9 PRECEDES ABOVE NOT ALMOST EQUAL TO; \precnapprox (AmS)  
 19516 \DeclareTextCommand{\textprecnapprox}{PU}{\9052\271}%\* U+2AB9  
 19517 % U+2ABA SUCCEEDS ABOVE NOT ALMOST EQUAL TO; \succnapprox (AmS)  
 19518 \DeclareTextCommand{\textsuccnapprox}{PU}{\9052\272}%\* U+2ABA  
 19519 % U+2AC5 SUBSET OF ABOVE EQUALS SIGN; \subseteqq (AmS)  
 19520 \DeclareTextCommand{\textsubseteqq}{PU}{\9052\305}%\* U+2AC5  
 19521 % \nsubseteqq (txfonts/pxfonts, mathabx)  
 19522 \DeclareTextCommand{\textnsubseteqq}{PU}{\9052\305\83\070}%\* U+2AC5 U+0338  
 19523 % U+2AC6 SUPERSET OF ABOVE EQUALS SIGN; \supseteqq (AmS)  
 19524 \DeclareTextCommand{\textsupseteqq}{PU}{\9052\306}%\* U+2AC6  
 19525 % \nsupseteqq (mathabx)  
 19526 \DeclareTextCommand{\textnsupseteqq}{PU}{\9052\306\83\070}%\* U+2AC6 U+0338  
 19527 % U+2AE3 DOUBLE VERTICAL BAR LEFT TURNSTILE  
 19528 \DeclareTextCommand{\textdashV}{PU}{\9052\343}%\* U+2AE3  
 19529 %\* \textdashV -> \leftVdash (MnSymbol)  
 19530 % \ndashV (mathabx)  
 19531 \DeclareTextCommand{\textndashV}{PU}{\9052\343\83\070}%\* U+2AE3 U+0338  
 19532 %\* \textndashV -> \nleftVdash (MnSymbol)  
 19533 % U+2AE4 VERTICAL BAR DOUBLE LEFT TURNSTILE; \Dashv (mathabx)  
 19534 \DeclareTextCommand{\textDashv}{PU}{\9052\344}%\* U+2AE4  
 19535 %\* \textDashv -> \leftmodels (MnSymbol)  
 19536 % \nDashv (mathabx)  
 19537 \DeclareTextCommand{\textnDashv}{PU}{\9052\344\83\070}%\* U+2AE4 U+0338  
 19538 %\* \textnDashv -> \nleftmodels (MnSymbol)  
 19539 % U+2AE5 DOUBLE VERTICAL BAR DOUBLE LEFT TURNSTILE;  
 19540 % \DashV (mathabx)  
 19541 \DeclareTextCommand{\textDashV}{PU}{\9052\345}%\* U+2AE5  
 19542 %\* \textDashV -> \leftModels (MnSymbol)  
 19543 % \nDashV (mathabx)  
 19544 \DeclareTextCommand{\textnDashV}{PU}{\9052\345\83\070}%\* U+2AE5 U+0338  
 19545 %\* \textnDashV -> \nleftModels (MnSymbol)  
 19546 % U+2AEA DOUBLE DOWN TACK; \downmodels (MnSymbol)  
 19547 \DeclareTextCommand{\textdownmodels}{PU}{\9052\352}%\* U+2AEA  
 19548 % \ndownmodels (MnSymbol)  
 19549 \DeclareTextCommand{\textndownmodels}{PU}{\9052\352\83\070}%\* U+2AEA U+0338  
 19550 % U+2AEB DOUBLE UP TACK; \upmodels (MnSymbol)

19551 \DeclareTextCommand{\textupmodels}{PU}{\9052\353}%\* U+2AEB  
 19552 % \nupmodels (MnSymbol)  
 19553 \DeclareTextCommand{\textnupmodels}{PU}{\9052\353\83\070}%\* U+2AEB U+0338  
 19554 % U+2AEF VERTICAL LINE WITH CIRCLE ABOVE; \upspoon (MnSymbol)  
 19555 \DeclareTextCommand{\textupspoon}{PU}{\9052\357}%\* U+2AEF  
 19556 % U+2AF4 TRIPLE VERTICAL BAR BINARY RELATION;  
 19557 % \interleave (stmaryrd)  
 19558 \DeclareTextCommand{\textinterleave}{PU}{\9052\364}%\* U+2AF4  
 19559 % U+2AFD DOUBLE SOLIDUS OPERATOR; \sslash (stmaryrd)  
 19560 \DeclareTextCommand{\textsslash}{PU}{\9052\375}%\* U+2AFD  
 19561 %\* \textsslash -> \varparallel (txfonts\pxfonts)

#### 46.2.36 Miscellaneous Symbols and Arrows: U+2B00 to U+2BFF

19562 % U+2B20 WHITE PENTAGON; \pentagon (wasysym)  
 19563 \DeclareTextCommand{\textpentagon}{PU}{\9053\040}%\* U+2B20  
 19564 % U+2B21 WHITE HEXAGON; \varhexagon (wasysym)  
 19565 \DeclareTextCommand{\textvarhexagon}{PU}{\9053\041}%\* U+2B21

#### 46.2.37 Latin Extended-C: U+2C60 to U+2C7F

19566 % U+2C7C LATIN SUBSCRIPT SMALL LETTER J  
 19567 \DeclareTextCommand{\textjinferior}{PU}{\9054\174}%\* U+2C7C

#### 46.2.38 Supplemental Punctuation: U+2E00 to U+2E7F

19568 % U+2E13 DOTTED OBELOS; \slashdiv (MnSymbol)  
 19569 \DeclareTextCommand{\textslashdiv}{PU}{\9056\023}%\* U+2E13  
 19570 % U+2E18 INVERTED INTERROBANG; \textinterrobangdown (textcomp)  
 19571 \DeclareTextCommand{\textinterrobangdown}{PU}{\9056\030}% U+2E18  
 19572 % U+2E2D FIVE DOT MARK; \fivedots (MnSymbol)  
 19573 \DeclareTextCommand{\textfivedots}{PU}{\9056\055}%\* U+2E2D

#### 46.2.39 Modifier Tone Letters: U+A700 to U+A71F

19574 % U+A71B MODIFIER LETTER RAISED UP ARROW; \textupstep (tipa)  
 19575 \DeclareTextCommand{\textupstep}{PU}{\9247\033}% U+A71B  
 19576 % U+A71C MODIFIER LETTER RAISED DOWN ARROW;  
 19577 % \textdownstep (tipa)  
 19578 \DeclareTextCommand{\textdownstep}{PU}{\9247\034}% U+A71C

#### 46.2.40 Latin Extended-D: U+A720 to U+A7FF

19579 % U+A727 LATIN SMALL LETTER HENG; \textheng (tipx)  
 19580 \DeclareTextCommand{\textPUheng}{PU}{\9247\047}% U+A727  
 19581 %\* \textPUheng -> \textheng (tipx)  
 19582 % U+A72C LATIN CAPITAL LETTER LETTER CUATRILLO; \textlhookfour (tipx)  
 19583 \DeclareTextCommand{\textPULhookfour}{PU}{\9247\054}% U+A72C  
 19584 %\* \textPULhookfour -> \textlhookfour (tipx)  
 19585 % U+A730 LATIN LETTER SMALL CAPITAL F; \textscf (tipx)  
 19586 \DeclareTextCommand{\textPUscf}{PU}{\9247\060}% U+A730  
 19587 %\* \textPUscf -> \textscf (tipx)  
 19588 % U+A735 LATIN SMALL LETTER AO; \textao lig (tipx)  
 19589 \DeclareTextCommand{\textPUaolig}{PU}{\9247\065}% U+A735  
 19590 %\* \textPUaolig -> \textao lig (tipx)  
 19591 % U+A74F LATIN SMALL LETTER OO; \oo (wsuipa)  
 19592 \DeclareTextCommand{\textoo}{PU}{\9247\117}%\* U+A74F  
 19593 % U+A788 MODIFIER LETTER LOW CIRCUMFLEX ACCENT  
 19594 \DeclareTextCommand{\textcircumlow}{PU}{\9247\210}% U+A788

#### 46.2.41 Alphabetic Presentation Forms: U+FB00 to U+FB4F

19595 % U+FB01 LATIN SMALL LIGATURE FI; fi  
19596 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01  
19597 % U+FB02 LATIN SMALL LIGATURE FL; fl  
19598 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

#### 46.2.42 Musical Symbols: U+1D100 to U+1D1FF

19599 % U+1D13B MUSICAL SYMBOL WHOLE REST; \GaPa (harmony)  
19600 \DeclareTextCommand{\textGaPa}{PU}{\9330\064\9335\073}%\* U+1D13B  
19601 % U+1D13C MUSICAL SYMBOL HALF REST; \HaPa (harmony)  
19602 \DeclareTextCommand{\textHaPa}{PU}{\9330\064\9335\074}%\* U+1D13C  
19603 % U+1D13D MUSICAL SYMBOL QUARTER REST; \ViPa (harmony)  
19604 \DeclareTextCommand{\textViPa}{PU}{\9330\064\9335\075}%\* U+1D13D  
19605 % U+1D13E MUSICAL SYMBOL EIGHTH REST; \AcPa (harmony)  
19606 \DeclareTextCommand{\textAcPa}{PU}{\9330\064\9335\076}%\* U+1D13E  
19607 % U+1D13F MUSICAL SYMBOL SIXTEENTH REST; \SePa (harmony)  
19608 \DeclareTextCommand{\textSePa}{PU}{\9330\064\9335\077}%\* U+1D13F  
19609 % U+1D140 MUSICAL SYMBOL THIRTY-SECOND REST; \ZwPa (harmony)  
19610 \DeclareTextCommand{\textZwPa}{PU}{\9330\064\9335\100}%\* U+1D140  
19611 % U+1D15D MUSICAL SYMBOL WHOLE NOTE; \fullnote (wasysym)  
19612 \DeclareTextCommand{\textfullnote}{PU}{\9330\064\9335\135}%\* U+1D15D  
19613 %\* \textfullnote -> \Ganz (harmony)  
19614 % U+1D15E MUSICAL SYMBOL HALF NOTE; \halfnote (wasysym)  
19615 \DeclareTextCommand{\texthalfnote}{PU}{\9330\064\9335\136}%\* U+1D15E  
19616 %\* \texthalfnote -> \Halb (harmony)  
19617 % U+1D15F MUSICAL SYMBOL QUARTER NOTE; \Vier (harmony)  
19618 \DeclareTextCommand{\textVier}{PU}{\9330\064\9335\137}%\* U+1D15F  
19619 % U+1D160 MUSICAL SYMBOL EIGHTH NOTE; \Acht (harmony)  
19620 \DeclareTextCommand{\textAcht}{PU}{\9330\064\9335\140}%\* U+1D160  
19621 % U+1D161 MUSICAL SYMBOL SIXTEENTH NOTE; \Sech (harmony)  
19622 \DeclareTextCommand{\textSech}{PU}{\9330\064\9335\141}%\* U+1D161  
19623 % U+1D162 MUSICAL SYMBOL THIRTY-SECOND NOTE; \Zwdr (harmony)  
19624 \DeclareTextCommand{\textZwdr}{PU}{\9330\064\9335\142}%\* U+1D162

#### 46.2.43 Miscellaneous Symbols and Pictographs: U+1F300 to U+1F5FF

19625 % U+1F30D EARTH GLOBE EUROPE-AFRICA; \Mundus (marvosym)  
19626 \DeclareTextCommand{\textMundus}{PU}{\9330\074\9337\015}%\* U+1F30D  
19627 % U+1F319 CRESCENT MOON; \Moon (marvosym)  
19628 \DeclareTextCommand{\textMoon}{PU}{\9330\074\9337\031}%\* U+1F319  
19629 % U+1F468 MAN; \ManFace (marvosym)  
19630 \DeclareTextCommand{\textManFace}{PU}{\9330\075\9334\150}%\* U+1F468  
19631 % U+1F469 WOMAN; \WomanFace (marvosym)  
19632 \DeclareTextCommand{\textWomanFace}{PU}{\9330\075\9334\151}%\* U+1F469  
19633 %\* \textWomanFace -> \Womanface (marvosym)  
19634 % U+1F4E0 FAX MACHINE; \Fax (marvosym)  
19635 \DeclareTextCommand{\textFax}{PU}{\9330\075\9334\340}%\* U+1F4E0  
19636 %\* \textFax -> \Faxmachine (marvosym)  
19637 % U+1F525 FIRE; \Fire (ifsym)  
19638 \DeclareTextCommand{\textFire}{PU}{\9330\075\9335\045}%\* U+1F525

#### 46.2.44 Transport and Map Symbols: U+1F680 to U+1F6FF

19639 % U+1F6B2 BICYCLE; \Bicycle (marvosym)  
19640 \DeclareTextCommand{\textBicycle}{PU}{\9330\075\9336\262}%\* U+1F6B2



```

19641 % U+1F6B9 MENS SYMBOL; \Gentsroom (marvosym)
19642 \DeclareTextCommand{\textGentsroom}{PU}{\9330\075\9336\271}%* U+1F6B9
19643 % U+1F6BA WOMENS SYMBOL; \Ladiesroom (marvosym)
19644 \DeclareTextCommand{\textLadiesroom}{PU}{\9330\075\9336\272}%* U+1F6BA

```

#### 46.2.45 Miscellaneous

```

19645 \DeclareTextCommand{\SS}{PU}{SS}%
19646 % \textcopyleft (textcomp)
19647 \DeclareTextCommand{\textcopyleft}{PU}{\9041\204\9040\335}% U+2184 U+20DD
19648 % \ccnc (ccllicenses)
19649 \DeclareTextCommand{\textccnc}{PU}{\80\044\9040\340}%* U+0024 U+20E0
19650 % \ccnd (ccllicenses)
19651 \DeclareTextCommand{\textccnd}{PU}{=\9040\335}%* U+003D U+20DD
19652 % \ccsa (ccllicenses)
19653 \DeclareTextCommand{\textccsa}{PU}{\9047\362\9040\335}%* U+27F2 U+20DD
19654 % \Info (marvosym, china2e)
19655 \DeclareTextCommand{\textInfo}{PU}{\9330\065\9334\042\9040\336}%* U+1D422 U+20DE
19656 % \CESign (marvosym)
19657 \DeclareTextCommand{\textCESign}{PU}{\80\103\80\105}%* U+0043 U+0045
19658 %* \textCESign -> \CESign (marvosym)

```

#### 46.2.46 Aliases

Aliases (german.sty)

```

19659 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}%
19660 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}%
19661 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}%
19662 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}%
19663 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}%
19664 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}%
19665 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}%
19666 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}%

```

Aliases (math names)

```

19667 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}%*
19668 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}%*
19669 \DeclareTextCommand{\textdiv}{PU}{\textdivide}%*
19670 \DeclareTextCommand{\textpm}{PU}{\textplusminus}%*
19671 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}%*
19672 </puenc>

```

### 46.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

19673 < *puvnenc >

19674 \DeclareTextCommand{\abreve}{PU}{\81\003}% U+0103
19675 \DeclareTextCommand{\acircumflex}{PU}{\80\342}% U+00E2
19676 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}% U+00EA
19677 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}% U+00F4
19678 \DeclareTextCommand{\ohorn}{PU}{\81\241}% U+01A1
19679 \DeclareTextCommand{\uhorn}{PU}{\81\260}% U+01B0
19680 \DeclareTextCommand{\ABREVE}{PU}{\81\002}% U+0102
19681 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}% U+00C2

```

19682 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}% U+00CA  
 19683 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}% U+00D4  
 19684 \DeclareTextCommand{\OHORN}{PU}{\81\240}% U+01A0  
 19685 \DeclareTextCommand{\UHORN}{PU}{\81\257}% U+01AF  
  
 19686 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
 19687 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1  
 19688 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0  
 19689 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}% U+1EA3  
 19690 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
 19691 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}% U+1EAF  
 19692 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}% U+1EB7  
 19693 \DeclareTextCompositeCommand{\`}{PU}{\abreve}{\9036\261}% U+1EB1  
 19694 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}% U+1EB3  
 19695 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}% U+1EB5  
 19696 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}% U+1EA5  
 19697 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}% U+1EAD  
 19698 \DeclareTextCompositeCommand{\`}{PU}{\acircumflex}{\9036\247}% U+1EA7  
 19699 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}% U+1EA9  
 19700 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}% U+1EAB  
 19701 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
 19702 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9  
 19703 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
 19704 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}% U+1EBB  
 19705 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
 19706 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}% U+1EBF  
 19707 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}% U+1EC7  
 19708 \DeclareTextCompositeCommand{\`}{PU}{\ecircumflex}{\9036\301}% U+1EC1  
 19709 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}% U+1EC3  
 19710 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}% U+1EC5  
 19711 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
 19712 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB  
 19713 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
 19714 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}% U+1EC9  
 19715 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
 19716 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
 19717 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD  
 19718 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
 19719 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}% U+1ECF  
 19720 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
 19721 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}% U+1ED1  
 19722 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}% U+1ED9  
 19723 \DeclareTextCompositeCommand{\`}{PU}{\ocircumflex}{\9036\323}% U+1ED3  
 19724 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}% U+1ED5  
 19725 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}% U+1ED7  
 19726 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}% U+1EDB  
 19727 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}% U+1EE3  
 19728 \DeclareTextCompositeCommand{\`}{PU}{\ohorn}{\9036\335}% U+1EDD  
 19729 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}% U+1EDF  
 19730 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}% U+1EE1  
 19731 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
 19732 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5  
 19733 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
 19734 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}% U+1EE7  
 19735 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169

19736 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}% U+1EE9  
19737 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}% U+1EF1  
19738 \DeclareTextCompositeCommand{\`}{PU}{\uhorn}{\9036\353}% U+1EEB  
19739 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}% U+1EED  
19740 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}% U+1EEF  
19741 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
19742 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5  
19743 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
19744 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}% U+1EF7  
19745 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9  
19746 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
19747 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0  
19748 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
19749 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}% U+1EA2  
19750 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
19751 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}% U+1EAE  
19752 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}% U+1EB6  
19753 \DeclareTextCompositeCommand{\`}{PU}{\ABREVE}{\9036\260}% U+1EB0  
19754 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}% U+1EB2  
19755 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}% U+1EB4  
19756 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}% U+1EA4  
19757 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}% U+1EAC  
19758 \DeclareTextCompositeCommand{\`}{PU}{\ACIRCUMFLEX}{\9036\246}% U+1EA6  
19759 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}% U+1EA8  
19760 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}% U+1EAA  
19761 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
19762 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8  
19763 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
19764 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}% U+1EBA  
19765 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EB4  
19766 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}% U+1EBE  
19767 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}% U+1EC6  
19768 \DeclareTextCompositeCommand{\`}{PU}{\ECIRCUMFLEX}{\9036\300}% U+1EC0  
19769 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}% U+1EC2  
19770 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}% U+1EC4  
19771 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
19772 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA  
19773 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
19774 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}% U+1EC8  
19775 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
19776 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
19777 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC  
19778 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
19779 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}% U+1ECE  
19780 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
19781 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}% U+1ED0  
19782 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}% U+1ED8  
19783 \DeclareTextCompositeCommand{\`}{PU}{\OCIRCUMFLEX}{\9036\322}% U+1ED2  
19784 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}% U+1ED4  
19785 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}% U+1ED6  
19786 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}% U+1EDA  
19787 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}% U+1EE2  
19788 \DeclareTextCompositeCommand{\`}{PU}{\OHORN}{\9036\334}% U+1EDC  
19789 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}% U+1EDE

```

19790 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}% U+1EE0
19791 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA
19792 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4
19793 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9
19794 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}% U+1EE6
19795 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168
19796 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}% U+1EE8
19797 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}% U+1EF0
19798 \DeclareTextCompositeCommand{\`}{PU}{\UHORN}{\9036\352}% U+1EEA
19799 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}% U+1EEC
19800 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}% U+1EEE
19801 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD
19802 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4
19803 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2
19804 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}% U+1EF6
19805 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8
19806 </puvnenc>

```

## 46.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```

19807 <*puarenc>
19808 % U+0621;afii57409;ARABIC LETTER HAMZA
19809 \DeclareTextCommand{\hamza}{PU}{\86\041}% U+0621
19810 % U+0622;afii57410;ARABIC LETTER ALEF WITH MADDA ABOVE
19811 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% U+0622
19812 % U+0623;afii57411;ARABIC LETTER ALEF WITH HAMZA ABOVE
19813 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% U+0623
19814 % U+0624;afii57412;ARABIC LETTER WAW WITH HAMZA ABOVE
19815 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% U+0624
19816 % U+0625;afii57413;ARABIC LETTER ALEF WITH HAMZA BELOW
19817 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% U+0625
19818 % U+0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
19819 \DeclareTextCommand{\yahamza}{PU}{\86\046}% U+0626
19820 % U+0627;afii57415;ARABIC LETTER ALEF
19821 \DeclareTextCommand{\alef}{PU}{\86\047}% U+0627
19822 % U+0628;afii57416;ARABIC LETTER BEH
19823 \DeclareTextCommand{\baa}{PU}{\86\050}% U+0628
19824 % U+0629;afii57417;ARABIC LETTER TEH MARBUTA
19825 \DeclareTextCommand{\T}{PU}{\86\051}% U+0629
19826 % U+062A;afii57418;ARABIC LETTER TEH
19827 \DeclareTextCommand{\taa}{PU}{\86\052}% U+062A
19828 % U+062B;afii57419;ARABIC LETTER THEH
19829 \DeclareTextCommand{\thaa}{PU}{\86\053}% U+062B
19830 % U+062C;afii57420;ARABIC LETTER JEEM
19831 \DeclareTextCommand{\jeem}{PU}{\86\054}% U+062C
19832 % U+062D;afii57421;ARABIC LETTER HAH
19833 \DeclareTextCommand{\Haa}{PU}{\86\055}% U+062D
19834 % U+062E;afii57422;ARABIC LETTER KHAH
19835 \DeclareTextCommand{\kha}{PU}{\86\056}% U+062E
19836 % U+062F;afii57423;ARABIC LETTER DAL
19837 \DeclareTextCommand{\dal}{PU}{\86\057}% U+062F
19838 % U+0630;afii57424;ARABIC LETTER THAL

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19839 \DeclareTextCommand{\dhal}{PU}{\86\060}% U+0630  
 19840 % U+0631;afii57425;ARABIC LETTER REH  
 19841 \DeclareTextCommand{\ra}{PU}{\86\061}% U+0631  
 19842 % U+0632;afii57426;ARABIC LETTER ZAIN  
 19843 \DeclareTextCommand{\zay}{PU}{\86\062}% U+0632  
 19844 % U+0633;afii57427;ARABIC LETTER SEEN  
 19845 \DeclareTextCommand{\seen}{PU}{\86\063}% U+0633  
 19846 % U+0634;afii57428;ARABIC LETTER SHEEN  
 19847 \DeclareTextCommand{\sheen}{PU}{\86\064}% U+0634  
 19848 % U+0635;afii57429;ARABIC LETTER SAD  
 19849 \DeclareTextCommand{\sad}{PU}{\86\065}% U+0635  
 19850 % U+0636;afii57430;ARABIC LETTER DAD  
 19851 \DeclareTextCommand{\dad}{PU}{\86\066}% U+0636  
 19852 % U+0637;afii57431;ARABIC LETTER TAH  
 19853 \DeclareTextCommand{\Ta}{PU}{\86\067}% U+0637  
 19854 % U+0638;afii57432;ARABIC LETTER ZAH  
 19855 \DeclareTextCommand{\za}{PU}{\86\070}% U+0638  
 19856 % U+0639;afii57433;ARABIC LETTER AIN  
 19857 \DeclareTextCommand{\ayn}{PU}{\86\071}% U+0639  
 19858 % U+063A;afii57434;ARABIC LETTER GHAIN  
 19859 \DeclareTextCommand{\ghayn}{PU}{\86\072}% U+063A  
 19860 % U+0640;afii57440;ARABIC TATWEEL  
 19861 \DeclareTextCommand{\tatweel}{PU}{\86\100}% U+0640  
 19862 % U+0641;afii57441;ARABIC LETTER FEH  
 19863 \DeclareTextCommand{\fa}{PU}{\86\101}% U+0641  
 19864 % U+0642;afii57442;ARABIC LETTER QAF  
 19865 \DeclareTextCommand{\qaf}{PU}{\86\102}% U+0642  
 19866 % U+0643;afii57443;ARABIC LETTER KAF  
 19867 \DeclareTextCommand{\kaf}{PU}{\86\103}% U+0643  
 19868 % U+0644;afii57444;ARABIC LETTER LAM  
 19869 \DeclareTextCommand{\lam}{PU}{\86\104}% U+0644  
 19870 % U+0645;afii57445;ARABIC LETTER MEEM  
 19871 \DeclareTextCommand{\meem}{PU}{\86\105}% U+0645  
 19872 % U+0646;afii57446;ARABIC LETTER NOON  
 19873 \DeclareTextCommand{\nun}{PU}{\86\106}% U+0646  
 19874 % U+0647;afii57470;ARABIC LETTER HEH  
 19875 \DeclareTextCommand{\ha}{PU}{\86\107}% U+0647  
 19876 % U+0648;afii57448;ARABIC LETTER WAW  
 19877 \DeclareTextCommand{\waw}{PU}{\86\110}% U+0648  
 19878 % U+0649;afii57449;ARABIC LETTER ALEF MAKSURA  
 19879 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% U+0649  
 19880 % U+064A;afii57450;ARABIC LETTER YEH  
 19881 \DeclareTextCommand{\ya}{PU}{\86\112}% U+064A  
 19882 % U+064B;afii57451;ARABIC FATHATAN  
 19883 \DeclareTextCommand{\nasb}{PU}{\86\113}% U+064B  
 19884 % U+064C;afii57452;ARABIC DAMMATAN  
 19885 \DeclareTextCommand{\raff}{PU}{\86\114}% U+064C  
 19886 % U+064D;afii57453;ARABIC KASRATAN  
 19887 \DeclareTextCommand{\jarr}{PU}{\86\115}% U+064D  
 19888 % U+064E;afii57454;ARABIC FATHA  
 19889 \DeclareTextCommand{\fatha}{PU}{\86\116}% U+064E  
 19890 % U+064F;afii57455;ARABIC DAMMA  
 19891 \DeclareTextCommand{\damma}{PU}{\86\117}% U+064F  
 19892 % U+0650;afii57456;ARABIC KASRA

19893 \DeclareTextCommand{\kasra}{PU}{\86\120}% U+0650  
 19894 % U+0651;afi57457;ARABIC SHADDA  
 19895 \DeclareTextCommand{\shadda}{PU}{\86\121}% U+0651  
 19896 % U+0652;afi57458;ARABIC SUKUN  
 19897 \DeclareTextCommand{\sukun}{PU}{\86\122}% U+0652  
  
 Farsi  
 19898 % U+067E ARABIC LETTER PEH; afi57506  
 19899 \DeclareTextCommand{\peh}{PU}{\86\176}% U+067E  
 19900 % U+0686 ARABIC LETTER TCHEH; afi57507  
 19901 \DeclareTextCommand{\tcheh}{PU}{\86\206}% U+0686  
 19902 % U+0698 ARABIC LETTER JEH; afi57508  
 19903 \DeclareTextCommand{\jeh}{PU}{\86\230}% U+0698  
 19904 % U+06A9 ARABIC LETTER KEHEH  
 19905 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% U+06A9  
 19906 % U+06AF ARABIC LETTER GAF; afi57509  
 19907 \DeclareTextCommand{\gaf}{PU}{\86\257}% U+06AF  
 19908 % U+06CC ARABIC LETTER FARSI YEH  
 19909 \DeclareTextCommand{\farsiya}{PU}{\86\314}% U+06CC  
  
 19910 % U+200C ZERO WIDTH NON-JOINER; afi61664  
 19911 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% U+200C  
 19912 % U+200D ZERO WIDTH JOINER; afi301  
 19913 \DeclareTextCommand{\textEncodingNoboundary}{PU}{\9040\015}% U+200D  
  
 19914 </psdextra>  
 19915 <psdextra>  
 19916 \Hy@VersionCheck{psdextra.def}  
 19917 \newcommand\*{\psdmapshortnames}{%  
 19918 \let\MVPlus\textMVPlus  
 19919 \let\MVComma\textMVComma  
 19920 \let\MVMinus\textMVMinus  
 19921 \let\MVPeriod\textMVPeriod  
 19922 \let\MVDivision\textMVDivision  
 19923 \let\MVZero\textMVZero  
 19924 \let\MVOne\textMVOne  
 19925 \let\MVTwo\textMVTwo  
 19926 \let\MVThree\textMVThree  
 19927 \let\MVFour\textMVFour  
 19928 \let\MVFive\textMVFive  
 19929 \let\MVSix\textMVSix  
 19930 \let\MVSeven\textMVSeven  
 19931 \let\MVEight\textMVEight  
 19932 \let\MVNine\textMVNine  
 19933 \let\MVAt\textMVAt  
 19934 \let\copyright\textcopyright  
 19935 \let\twosuperior\texttwosuperior  
 19936 \let\treesuperior\texttreesuperior  
 19937 \let\onesuperior\textonesuperior  
 19938 \let\Thorn\textThorn  
 19939 \let\thorn\textthorn  
 19940 \let\hbar\texthbar  
 19941 \let\hausaB\texthausaB  
 19942 \let\hausaD\texthausaD  
 19943 \let\hausaK\texthausaK

19944 \let\barl\textbarl  
 19945 \let\inve\textinve  
 19946 \let\slashc\textslashc  
 19947 \let\scripta\textscripta  
 19948 \let\openo\textopeno  
 19949 \let\rtaild\textrtaild  
 19950 \let\reve\textreve  
 19951 \let\schwa\textschwa  
 19952 \let\niepsilon\textniepsilon  
 19953 \let\revepsilon\textrevepsilon  
 19954 \let\rhookrepsilon\texthookrepsilon  
 19955 \let\scriptg\textscriptg  
 19956 \let\scg\textscg  
 19957 \let\ipagamma\textipagamma  
 19958 \let\babygamma\textbabygamma  
 19959 \let\bari\textbari  
 19960 \let\niiota\textniiota  
 19961 \let\sci\textsci  
 19962 \let\scn\textscn  
 19963 \let\niphi\textniphi  
 19964 \let\longleg\textlongleg  
 19965 \let\scr\textscr  
 19966 \let\invscr\textinvscr  
 19967 \let\esh\textesh  
 19968 \let\baru\textbaru  
 19969 \let\niupsilon\textniupsilon  
 19970 \let\scriptv\textscriptv  
 19971 \let\turnv\textturnv  
 19972 \let\turnw\textturnw  
 19973 \let\turny\textturny  
 19974 \let\scy\textscy  
 19975 \let\yogh\textyogh  
 19976 \let\glotstop\textglotstop  
 19977 \let\revglotstop\textrevglotstop  
 19978 \let\invglotstop\textinvglotstop  
 19979 \let\Gamma\textGamma  
 19980 \let\Delta\textDelta  
 19981 \let\Theta\textTheta  
 19982 \let\Lambda\textLambda  
 19983 \let\Xi\textXi  
 19984 \let\Pi\textPi  
 19985 \let\Sigma\textSigma  
 19986 \let\Upsilon\textUpsilon  
 19987 \let\Phi\textPhi  
 19988 \let\Psi\textPsi  
 19989 \let\Omega\textOmega  
 19990 \let\alpha\textalpha  
 19991 \let\beta\textbeta  
 19992 \let\gamma\textgamma  
 19993 \let\delta\textdelta  
 19994 \let\epsilon\textepsilon  
 19995 \let\zeta\textzeta  
 19996 \let\eta\texteta  
 19997 \let\theta\texttheta

19998 \let\iota\textiota  
 19999 \let\kappa\textkappa  
 20000 \let\lambda\textlambda  
 20001 \let\mu\textmu  
 20002 \let\mugreek\textmugreek  
 20003 \let\nu\textnu  
 20004 \let\xi\textxi  
 20005 \let\pi\textpi  
 20006 \let\rho\textrho  
 20007 \let\varsigma\textvarsigma  
 20008 \let\sigma\textsigma  
 20009 \let\tau\texttau  
 20010 \let\upsilon\textupsilon  
 20011 \let\phi\textphi  
 20012 \let\chi\textchi  
 20013 \let\psi\textpsi  
 20014 \let\omega\textomega  
 20015 \let\scd\textscd  
 20016 \let\scu\textscu  
 20017 \let\iinferior\textiinferior  
 20018 \let\rinferior\extrinferior  
 20019 \let\uiinferior\textuiinferior  
 20020 \let\vinferior\textvinferior  
 20021 \let\betainferior\textbetainferior  
 20022 \let\gammainferior\textgammainferior  
 20023 \let\rhoinferior\extrhoinferior  
 20024 \let\phiinferior\textphiinferior  
 20025 \let\chiinferior\textchiinferior  
 20026 \let\barsci\textbarsci  
 20027 \let\barp\textbarp  
 20028 \let\barscu\textbarscu  
 20029 \let\htrtaild\texthtrtaild  
 20030 \let\dagger\textdagger  
 20031 \let\bullet\textbullet  
 20032 \let\hdotfor\texthdotfor  
 20033 \let\prime\textprime  
 20034 \let\second\textsecond  
 20035 \let\third\textthird  
 20036 \let\backprime\textbackprime  
 20037 \let\lefttherefore\textlefttherefore  
 20038 \let\fourth\textfourth  
 20039 \let\diamonddots\textdiamonddots  
 20040 \let\zerosuperior\textzerosuperior  
 20041 \let\isuperior\textisuperior  
 20042 \let\foursuperior\textfoursuperior  
 20043 \let\fivesuperior\textfivesuperior  
 20044 \let\sixsuperior\textsixsuperior  
 20045 \let\sevensuperior\textsevensuperior  
 20046 \let\eightsuperior\texteightsuperior  
 20047 \let\ninesuperior\textninesuperior  
 20048 \let\plussuperior\textplussuperior  
 20049 \let\minussuperior\textminussuperior  
 20050 \let\equalsuperior\textequalsuperior  
 20051 \let\parenleftsuperior\textparenleftsuperior



20052 \let\parenrightsuperior\textparenrightsuperior  
 20053 \let\nsuperior\textnsuperior  
 20054 \let\zeroinferior\textzeroinferior  
 20055 \let\oneinferior\textoneinferior  
 20056 \let\twoinferior\texttwoinferior  
 20057 \let\threeinferior\textthreeinferior  
 20058 \let\fourinferior\textfourinferior  
 20059 \let\fiveinferior\textfiveinferior  
 20060 \let\sixinferior\textsixinferior  
 20061 \let\seveninferior\textseveninferior  
 20062 \let\eightinferior\texteightinferior  
 20063 \let\nineinferior\textnineinferior  
 20064 \let\plusinferior\textplusinferior  
 20065 \let\minusinferior\textminusinferior  
 20066 \let\equalsinferior\textequalsinferior  
 20067 \let\parenleftinferior\textparenleftinferior  
 20068 \let\parenrightinferior\textparenrightinferior  
 20069 \let\ainferior\textainferior  
 20070 \let\einferior\texteinferior  
 20071 \let\oinferior\textoinferior  
 20072 \let\xinferior\textxinferior  
 20073 \let\schwainferior\textschwainferior  
 20074 \let\hinferior\texthinferior  
 20075 \let\kinferior\textkinferior  
 20076 \let\linferior\textlinferior  
 20077 \let\minferior\textminferior  
 20078 \let\ninferior\textninferior  
 20079 \let\pinferior\textpinferior  
 20080 \let\sinferior\textsinferior  
 20081 \let\tinferior\texttinferior  
 20082 \let\Deleatur\textDeleatur  
 20083 \let\hslash\texthslash  
 20084 \let\Im\textIm  
 20085 \let\ell\textell  
 20086 \let\wp\textwp  
 20087 \let\Re\textRe  
 20088 \let\mho\textmho  
 20089 \let\riota\textriota  
 20090 \let\Finv\textFinv  
 20091 \let\aleph\textaleph  
 20092 \let\beth\textbeth  
 20093 \let\gimel\textgimel  
 20094 \let\daleth\textdaleth  
 20095 \let\xrightarrow\textxrightarrow  
 20096 \let\Game\textGame  
 20097 \let\leftarrow\textleftarrow  
 20098 \let\uparrow\textuparrow  
 20099 \let\rightarrow\textrightarrow  
 20100 \let\downarrow\textdownarrow  
 20101 \let\leftrightarrow\textleftrightarrow  
 20102 \let\updownarrow\textupdownarrow  
 20103 \let\nwarrow\textnwarrow  
 20104 \let\nearrow\textnearrow  
 20105 \let\searrow\textsearrow

20106 \let\swarrow\textswarrow  
 20107 \let\nleftarrow\textnleftarrow  
 20108 \let\nrightarrow\textnrightarrow  
 20109 \let\twoheadleftarrow\texttwoheadleftarrow  
 20110 \let\ntwoheadleftarrow\textntwoheadleftarrow  
 20111 \let\twoheaduparrow\texttwoheaduparrow  
 20112 \let\twoheadrightarrow\texttwoheadrightarrow  
 20113 \let\ntwoheadrightarrow\textntwoheadrightarrow  
 20114 \let\twoheaddownarrow\texttwoheaddownarrow  
 20115 \let\leftarrowtail\textleftarrowtail  
 20116 \let\rightarrowtail\textrightarrowtail  
 20117 \let\mapsto\textmapsto  
 20118 \let\hookrightarrow\texthookrightarrow  
 20119 \let\hookrightarrow\texthookrightarrow  
 20120 \let\looparrowleft\textlooparrowleft  
 20121 \let\looparrowright\textlooparrowright  
 20122 \let\nleftrightarrow\textnleftrightarrow  
 20123 \let\lightning\textlightning  
 20124 \let\dlsh\textdlsh  
 20125 \let\curvearrowleft\textcurvearrowleft  
 20126 \let\curvearrowright\textcurvearrowright  
 20127 \let\leftharpoonup\textleftharpoonup  
 20128 \let\leftharpoondown\textleftharpoondown  
 20129 \let\upharpoonright\textupharpoonright  
 20130 \let\upharpoonleft\textupharpoonleft  
 20131 \let\upharpoonright\textupharpoonright  
 20132 \let\upharpoonleft\textupharpoonleft  
 20133 \let\downharpoonright\textdownharpoonright  
 20134 \let\downharpoonleft\textdownharpoonleft  
 20135 \let\rightleftarrows\textrightleftarrows  
 20136 \let\updownarrows\textupdownarrows  
 20137 \let\leftrightarrows\textleftrightarrows  
 20138 \let\leftleftarrows\textleftleftarrows  
 20139 \let\upuparrows\textupuparrows  
 20140 \let\rightrightarrow\textrightarrow  
 20141 \let\downrightarrow\textdownrightarrow  
 20142 \let\leftrightarrow\textleftrightarrow  
 20143 \let\rightleftarrows\textrightleftarrows  
 20144 \let\nLeftarrow\textnLeftarrow  
 20145 \let\nLeftrightarrow\textnLeftrightarrow  
 20146 \let\nRrightarrow\textnRrightarrow  
 20147 \let\Leftarrow\textLeftarrow  
 20148 \let\Uparrow\textUparrow  
 20149 \let\Rrightarrow\textRrightarrow  
 20150 \let\Downarrow\textDownarrow  
 20151 \let\Leftrightarrow\textLeftrightarrow  
 20152 \let\Updownarrow\textUpdownarrow  
 20153 \let\Nrightarrow\textNrightarrow  
 20154 \let\Nearrow\textNearrow  
 20155 \let\Searrow\textSearrow  
 20156 \let\Swarrow\textSwarrow  
 20157 \let\Lleftarrow\textLleftarrow  
 20158 \let\Rrightarrow\textRrightarrow  
 20159 \let\leftsquigarrow\textleftsquigarrow

20160  $\backslash\mathrm{rightsquigarrow}\text{rightsquigarrow}$   
 20161  $\backslash\mathrm{dashleftarrow}\text{dashleftarrow}$   
 20162  $\backslash\mathrm{dasheduparrow}\text{dasheduparrow}$   
 20163  $\backslash\mathrm{dashrightarrow}\text{dashrightarrow}$   
 20164  $\backslash\mathrm{dasheddownarrow}\text{dasheddownarrow}$   
 20165  $\backslash\mathrm{pointer}\text{pointer}$   
 20166  $\backslash\mathrm{downuparrows}\text{downuparrows}$   
 20167  $\backslash\mathrm{leftarrowtriangle}\text{leftarrowtriangle}$   
 20168  $\backslash\mathrm{rightarrowtriangle}\text{rightarrowtriangle}$   
 20169  $\backslash\mathrm{leftrightarrowtriangle}\text{leftrightarrowtriangle}$   
 20170  $\backslash\mathrm{forall}\text{forall}$   
 20171  $\backslash\mathrm{complement}\text{complement}$   
 20172  $\backslash\mathrm{partial}\text{partial}$   
 20173  $\backslash\mathrm{exists}\text{exists}$   
 20174  $\backslash\mathrm{nexists}\text{nexists}$   
 20175  $\backslash\mathrm{emptyset}\text{emptyset}$   
 20176  $\backslash\mathrm{triangle}\text{triangle}$   
 20177  $\backslash\mathrm{nabla}\text{nabla}$   
 20178  $\backslash\mathrm{in}\text{in}$   
 20179  $\backslash\mathrm{notin}\text{notin}$   
 20180  $\backslash\mathrm{smallin}\text{smallin}$   
 20181  $\backslash\mathrm{ni}\text{ni}$   
 20182  $\backslash\mathrm{notowner}\text{notowner}$   
 20183  $\backslash\mathrm{smallowns}\text{smallowns}$   
 20184  $\backslash\mathrm{prod}\text{prod}$   
 20185  $\backslash\mathrm{amalg}\text{amalg}$   
 20186  $\backslash\mathrm{sum}\text{sum}$   
 20187  $\backslash\mathrm{mp}\text{mp}$   
 20188  $\backslash\mathrm{dotplus}\text{dotplus}$   
 20189  $\backslash\mathrm{Divides}\text{Divides}$   
 20190  $\backslash\mathrm{DividesNot}\text{DividesNot}$   
 20191  $\backslash\mathrm{setminus}\text{setminus}$   
 20192  $\backslash\mathrm{ast}\text{ast}$   
 20193  $\backslash\mathrm{circ}\text{circ}$   
 20194  $\backslash\mathrm{surd}\text{surd}$   
 20195  $\backslash\mathrm{propto}\text{propto}$   
 20196  $\backslash\mathrm{infty}\text{infty}$   
 20197  $\backslash\mathrm{angle}\text{angle}$   
 20198  $\backslash\mathrm{measuredangle}\text{measuredangle}$   
 20199  $\backslash\mathrm{sphericalangle}\text{sphericalangle}$   
 20200  $\backslash\mathrm{mid}\text{mid}$   
 20201  $\backslash\mathrm{nmid}\text{nmid}$   
 20202  $\backslash\mathrm{parallel}\text{parallel}$   
 20203  $\backslash\mathrm{nparallel}\text{nparallel}$   
 20204  $\backslash\mathrm{wedge}\text{wedge}$   
 20205  $\backslash\mathrm{owedge}\text{owedge}$   
 20206  $\backslash\mathrm{vee}\text{vee}$   
 20207  $\backslash\mathrm{ovee}\text{ovee}$   
 20208  $\backslash\mathrm{cap}\text{cap}$   
 20209  $\backslash\mathrm{cup}\text{cup}$   
 20210  $\backslash\mathrm{int}\text{int}$   
 20211  $\backslash\mathrm{iint}\text{iint}$   
 20212  $\backslash\mathrm{iiint}\text{iiint}$   
 20213  $\backslash\mathrm{ooint}\text{ooint}$

20214  $\oint$   
 20215  $\ointclockwise$   
 20216  $\ointctrlockwise$   
 20217  $\therefore$   
 20218  $\because$   
 20219  $\vdots$   
 20220  $\text{squaredots}$   
 20221  $\dot{-}$   
 20222  $\text{eqcolon}$   
 20223  $\sim$   
 20224  $\backsim$   
 20225  $\nbacksim$   
 20226  $\wr$   
 20227  $\nsim$   
 20228  $\eqsim$   
 20229  $\neqsim$   
 20230  $\simeq$   
 20231  $\nsimeq$   
 20232  $\cong$   
 20233  $\ncong$   
 20234  $\approx$   
 20235  $\napprox$   
 20236  $\approxeq$   
 20237  $\napproxeq$   
 20238  $\triplesim$   
 20239  $\ntriplesim$   
 20240  $\backcong$   
 20241  $\nbackcong$   
 20242  $\asymp$   
 20243  $\nasympt$   
 20244  $\Bumpeq$   
 20245  $\nBumpeq$   
 20246  $\bumpeq$   
 20247  $\nbumpeq$   
 20248  $\doteq$   
 20249  $\ndoteq$   
 20250  $\doteqdot$   
 20251  $\nDoteq$   
 20252  $\fallingdoteq$   
 20253  $\nfallingdoteq$   
 20254  $\risingdoteq$   
 20255  $\nrisingdoteq$   
 20256  $\colonequals$   
 20257  $\equalscolon$   
 20258  $\eqcirc$   
 20259  $\neqcirc$   
 20260  $\circeq$   
 20261  $\ncirceq$   
 20262  $\hateq$   
 20263  $\nhateq$   
 20264  $\triangleeq$   
 20265  $\neq$   
 20266  $\neq$   
 20267  $\equiv$

20268 \let\nequiv\textnequiv  
 20269 \let\leq\textleq  
 20270 \let\le\textle  
 20271 \let\geq\textgeq  
 20272 \let\ge\textge  
 20273 \let\leqq\textleqq  
 20274 \let\leqq\textnleqq  
 20275 \let\geqq\textgeqq  
 20276 \let\geqq\textngeqq  
 20277 \let\leqq\textnleqq  
 20278 \let\gneqq\textgneqq  
 20279 \let\ll\textll  
 20280 \let\nll\textnll  
 20281 \let\gg\textgg  
 20282 \let\ngg\textngg  
 20283 \let\between\textbetween  
 20284 \let\nless\textnless  
 20285 \let\ngtr\textngtr  
 20286 \let\nleq\textnleq  
 20287 \let\ngel\textngeq  
 20288 \let\lessim\textlessim  
 20289 \let\gtrsim\textgtrsim  
 20290 \let\nlessim\textnlessim  
 20291 \let\ngtrsim\textngtrsim  
 20292 \let\lessgtr\textlessgtr  
 20293 \let\gtrless\textgtrless  
 20294 \let\ngtrless\textngtrless  
 20295 \let\nlessgtr\textnlessgtr  
 20296 \let\prec\textprec  
 20297 \let\succ\textsucc  
 20298 \let\preccurlyeq\textpreccurlyeq  
 20299 \let\succcurlyeq\textsucccurlyeq  
 20300 \let\prec\textprec  
 20301 \let\prec\textprec  
 20302 \let\succsim\textsuccsim  
 20303 \let\nsuccsim\textnsuccsim  
 20304 \let\prec\textprec  
 20305 \let\nsucc\textnsucc  
 20306 \let\subset\textsubset  
 20307 \let\supset\textsupset  
 20308 \let\nsubset\textnsubset  
 20309 \let\nsupset\textnsupset  
 20310 \let\subseteq\textsubseteq  
 20311 \let\supseteq\textsupseteq  
 20312 \let\nsubseteq\textnsubseteq  
 20313 \let\nsupseteq\textnsupseteq  
 20314 \let\subsetneq\textsubsetneq  
 20315 \let\supsetneq\textsupsetneq  
 20316 \let\cup\textcup  
 20317 \let\cup\textcup  
 20318 \let\sqsubset\textsqsubset  
 20319 \let\nsqsubset\textnsqsubset  
 20320 \let\sqsupset\textsqsupset  
 20321 \let\nsqsupset\textnsqsupset

20322  $\backslash\text{let}\backslash\text{sqsubseteq}\backslash\text{textsqsubseteq}$   
 20323  $\backslash\text{let}\backslash\text{nsqsubseteq}\backslash\text{textnsqsubseteq}$   
 20324  $\backslash\text{let}\backslash\text{sqsupseteq}\backslash\text{textsqsupseteq}$   
 20325  $\backslash\text{let}\backslash\text{nsqsupseteq}\backslash\text{textnsqsupseteq}$   
 20326  $\backslash\text{let}\backslash\text{sqcap}\backslash\text{textsqcap}$   
 20327  $\backslash\text{let}\backslash\text{sqcup}\backslash\text{textsqcup}$   
 20328  $\backslash\text{let}\backslash\text{oplus}\backslash\text{textoplus}$   
 20329  $\backslash\text{let}\backslash\text{ominus}\backslash\text{textominus}$   
 20330  $\backslash\text{let}\backslash\text{otimes}\backslash\text{textotimes}$   
 20331  $\backslash\text{let}\backslash\text{oslash}\backslash\text{textoslash}$   
 20332  $\backslash\text{let}\backslash\text{odot}\backslash\text{textodot}$   
 20333  $\backslash\text{let}\backslash\text{circledcirc}\backslash\text{textcircledcirc}$   
 20334  $\backslash\text{let}\backslash\text{circledast}\backslash\text{textcircledast}$   
 20335  $\backslash\text{let}\backslash\text{circleddash}\backslash\text{textcircleddash}$   
 20336  $\backslash\text{let}\backslash\text{boxplus}\backslash\text{textboxplus}$   
 20337  $\backslash\text{let}\backslash\text{boxminus}\backslash\text{textboxminus}$   
 20338  $\backslash\text{let}\backslash\text{boxtimes}\backslash\text{textboxtimes}$   
 20339  $\backslash\text{let}\backslash\text{boxdot}\backslash\text{textboxdot}$   
 20340  $\backslash\text{let}\backslash\text{vdash}\backslash\text{textvdash}$   
 20341  $\backslash\text{let}\backslash\text{dashv}\backslash\text{textdashv}$   
 20342  $\backslash\text{let}\backslash\text{ndashv}\backslash\text{textndashv}$   
 20343  $\backslash\text{let}\backslash\text{top}\backslash\text{texttop}$   
 20344  $\backslash\text{let}\backslash\text{ndownvdash}\backslash\text{textndownvdash}$   
 20345  $\backslash\text{let}\backslash\text{bot}\backslash\text{textbot}$   
 20346  $\backslash\text{let}\backslash\text{nupvdash}\backslash\text{textnupvdash}$   
 20347  $\backslash\text{let}\backslash\text{vDash}\backslash\text{textvDash}$   
 20348  $\backslash\text{let}\backslash\text{VDash}\backslash\text{textVDash}$   
 20349  $\backslash\text{let}\backslash\text{Vvdash}\backslash\text{textVvdash}$   
 20350  $\backslash\text{let}\backslash\text{nVdash}\backslash\text{textnVdash}$   
 20351  $\backslash\text{let}\backslash\text{VDash}\backslash\text{textVDash}$   
 20352  $\backslash\text{let}\backslash\text{nvDash}\backslash\text{textnvDash}$   
 20353  $\backslash\text{let}\backslash\text{nvDash}\backslash\text{textnvDash}$   
 20354  $\backslash\text{let}\backslash\text{nVdash}\backslash\text{textnVdash}$   
 20355  $\backslash\text{let}\backslash\text{nVDash}\backslash\text{textnVDash}$   
 20356  $\backslash\text{let}\backslash\text{lhs}\backslash\text{textrhs}$   
 20357  $\backslash\text{let}\backslash\text{rhd}\backslash\text{textrhd}$   
 20358  $\backslash\text{let}\backslash\text{unlhd}\backslash\text{textunlhd}$   
 20359  $\backslash\text{let}\backslash\text{unrhd}\backslash\text{textunrhd}$   
 20360  $\backslash\text{let}\backslash\text{multimapdotbothA}\backslash\text{textmultimapdotbothA}$   
 20361  $\backslash\text{let}\backslash\text{multimapdotbothB}\backslash\text{textmultimapdotbothB}$   
 20362  $\backslash\text{let}\backslash\text{multimap}\backslash\text{textmultimap}$   
 20363  $\backslash\text{let}\backslash\text{veebar}\backslash\text{textveebar}$   
 20364  $\backslash\text{let}\backslash\text{barwedge}\backslash\text{textbarwedge}$   
 20365  $\backslash\text{let}\backslash\text{star}\backslash\text{textstar}$   
 20366  $\backslash\text{let}\backslash\text{divideontimes}\backslash\text{textdivideontimes}$   
 20367  $\backslash\text{let}\backslash\text{bowtie}\backslash\text{textbowtie}$   
 20368  $\backslash\text{let}\backslash\text{ltimes}\backslash\text{textrtimes}$   
 20369  $\backslash\text{let}\backslash\text{rtimes}\backslash\text{textrtimes}$   
 20370  $\backslash\text{let}\backslash\text{leftthreetimes}\backslash\text{textleftthreetimes}$   
 20371  $\backslash\text{let}\backslash\text{rightthreetimes}\backslash\text{textrightthreetimes}$   
 20372  $\backslash\text{let}\backslash\text{backsimeq}\backslash\text{textbacksimeq}$   
 20373  $\backslash\text{let}\backslash\text{nbacksimeq}\backslash\text{textnbacksimeq}$   
 20374  $\backslash\text{let}\backslash\text{curlyvee}\backslash\text{textcurlyvee}$   
 20375  $\backslash\text{let}\backslash\text{curlywedge}\backslash\text{textcurlywedge}$

20376 \let\Subset\textSubset  
 20377 \let\NSubset\textNSubset  
 20378 \let\Supset\textSupset  
 20379 \let\NSupset\textNSupset  
 20380 \let\Cap\textCap  
 20381 \let\Cup\textCup  
 20382 \let\pitchfork\textpitchfork  
 20383 \let\lessdot\textlessdot  
 20384 \let\gtrdot\textgtrdot  
 20385 \let\lll\textlll  
 20386 \let\ggg\textggg  
 20387 \let\lesseqgtr\textlesseqgtr  
 20388 \let\gtreqless\textgtreqless  
 20389 \let\curlyeqprec\textcurlyeqprec  
 20390 \let\ncurlyeqprec\textncurlyeqprec  
 20391 \let\curlyeqsucc\textcurlyeqsucc  
 20392 \let\ncurlyeqsucc\textncurlyeqsucc  
 20393 \let\preccurlyeq\textpreccurlyeq  
 20394 \let\nsucccurlyeq\textnsucccurlyeq  
 20395 \let\sqsubseteq\textsqsubseteq  
 20396 \let\sqsupseteq\textsqsupseteq  
 20397 \let\sqsubsetneq\textsqsubsetneq  
 20398 \let\sqsupsetneq\textsqsupsetneq  
 20399 \let\lnsim\textlnsim  
 20400 \let\gnsim\textgnsim  
 20401 \let\precnsim\textprecnsim  
 20402 \let\succnsim\textsuccnsim  
 20403 \let\triangleleft\texttriangleleft  
 20404 \let\triangleright\texttriangleright  
 20405 \let\trianglelefteq\texttrianglelefteq  
 20406 \let\trianglerighteq\texttrianglerighteq  
 20407 \let\vdots\textvdots  
 20408 \let\cdots\textcdots  
 20409 \let\udots\textudots  
 20410 \let\ddots\textddots  
 20411 \let\barin\textbarin  
 20412 \let\diameter\textdiameter  
 20413 \let\backneg\textbackneg  
 20414 \let\wasylozenge\textwasylozenge  
 20415 \let\invbackneg\textinvbackneg  
 20416 \let\clock\textclock  
 20417 \let\ulcorner\textulcorner  
 20418 \let\urcorner\texturcorner  
 20419 \let\llcorner\textllcorner  
 20420 \let\lrcorner\textlrcorner  
 20421 \let\frown\textfrown  
 20422 \let\smile\textsmile  
 20423 \let\Keyboard\textKeyboard  
 20424 \let\langle\textlangle  
 20425 \let\rangle\textrangle  
 20426 \let\APLinv\textAPLinv  
 20427 \let\Tumbler\textTumbler  
 20428 \let\notslash\textnotslash  
 20429 \let\notbackslash\textnotbackslash

20430 \let\boxbackslash\textboxbackslash  
 20431 \let\APLleftarrowbox\textAPLleftarrowbox  
 20432 \let\APLrightarrowbox\textAPLrightarrowbox  
 20433 \let\APLuparrowbox\textAPLuparrowbox  
 20434 \let\APLdownarrowbox\textAPLdownarrowbox  
 20435 \let\APLinput\textAPLinput  
 20436 \let\Request\textRequest  
 20437 \let\Beam\textBeam  
 20438 \let\hexagon\texthexagon  
 20439 \let\APLbox\textAPLbox  
 20440 \let\ForwardToIndex\textForwardToIndex  
 20441 \let\RewindToIndex\textRewindToIndex  
 20442 \let\bbslash\textbbslash  
 20443 \let\CircledA\textCircledA  
 20444 \let\CleaningF\textCleaningF  
 20445 \let\CleaningFF\textCleaningFF  
 20446 \let\CleaningP\textCleaningP  
 20447 \let\CleaningPP\textCleaningPP  
 20448 \let\CuttingLine\textCuttingLine  
 20449 \let\UParrow\textUParrow  
 20450 \let\bigtriangleup\textbigtriangleup  
 20451 \let\Forward\textForward  
 20452 \let\triangleright\texttriangleright  
 20453 \let\RHD\textRHD  
 20454 \let\DOWNarrow\textDOWNarrow  
 20455 \let\bigtriangledown\textbigtriangledown  
 20456 \let\Rewind\textRewind  
 20457 \let\triangleleft\texttriangleleft  
 20458 \let\LHD\textLHD  
 20459 \let\diamond\textdiamond  
 20460 \let\lozenge\textlozenge  
 20461 \let\LEFTCIRCLE\textLEFTCIRCLE  
 20462 \let\RIGHTCIRCLE\textRIGHTCIRCLE  
 20463 \let\openbullet\textopenbullet  
 20464 \let\boxbar\textboxbar  
 20465 \let\bigcircle\textbigcircle  
 20466 \let\Cloud\textCloud  
 20467 \let\FiveStar\textFiveStar  
 20468 \let\FiveStarOpen\textFiveStarOpen  
 20469 \let\Phone\textPhone  
 20470 \let\boxempty\textboxempty  
 20471 \let\Checkedbox\textCheckedbox  
 20472 \let\Crossedbox\textCrossedbox  
 20473 \let\Coffeecup\textCoffeecup  
 20474 \let\HandCuffLeft\textHandCuffLeft  
 20475 \let\HandCuffRight\textHandCuffRight  
 20476 \let\HandLeft\textHandLeft  
 20477 \let\HandRight\textHandRight  
 20478 \let\Radioactivity\textRadioactivity  
 20479 \let\Biohazard\textBiohazard  
 20480 \let\Ankh\textAnkh  
 20481 \let\YinYang\textYinYang  
 20482 \let\frownie\textfrownie  
 20483 \let\smiley\textsmiley



20484 \let\blacksmiley\textblacksmiley  
 20485 \let\sun\textsun  
 20486 \let\leftmoon\textleftmoon  
 20487 \let\rightmoon\textrightmoon  
 20488 \let\mercury\textmercury  
 20489 \let\earth\textearth  
 20490 \let\male\textmale  
 20491 \let\jupiter\textjupiter  
 20492 \let\saturn\textsaturn  
 20493 \let\uranus\texturanus  
 20494 \let\neptune\textneptune  
 20495 \let\pluto\textpluto  
 20496 \let\aries\textaries  
 20497 \let\taurus\texttaurus  
 20498 \let\gemini\textgemini  
 20499 \let\cancer\textcancer  
 20500 \let\leo\textleo  
 20501 \let\virgo\textvirgo  
 20502 \let\libra\textlibra  
 20503 \let\scorpio\textscorpio  
 20504 \let\sagittarius\textsagittarius  
 20505 \let\capricornus\textcapricornus  
 20506 \let\aquarius\textaquarius  
 20507 \let\pisces\textpisces  
 20508 \let\quarternote\textquarternote  
 20509 \let\twonotes\texttwonotes  
 20510 \let\sixteenthnote\textsixteenthnote  
 20511 \let\flat\textflat  
 20512 \let\natural\textnatural  
 20513 \let\sharp\textsharp  
 20514 \let\recycle\textrecycle  
 20515 \let\Wheelchair\textWheelchair  
 20516 \let\Flag\textFlag  
 20517 \let\MineSign\textMineSign  
 20518 \let\ds\textds  
 20519 \let\ds\textds  
 20520 \let\ds\textds  
 20521 \let\ds\textds  
 20522 \let\ds\textds  
 20523 \let\ds\textds  
 20524 \let\manstar\textmanstar  
 20525 \let\danger\textdanger  
 20526 \let\FemaleFemale\textFemaleFemale  
 20527 \let\MaleMale\textMaleMale  
 20528 \let\FemaleMale\textFemaleMale  
 20529 \let\Hermaphrodite\textHermaphrodite  
 20530 \let\Neutral\textNeutral  
 20531 \let\hexstar\texthexstar  
 20532 \let\SunCloud\textSunCloud  
 20533 \let\Rain\textRain  
 20534 \let\noway\textnoway  
 20535 \let\Mountain\textMountain  
 20536 \let\Tent\textTent  
 20537 \let\ScissorRight\textScissorRight

20538 \let\ScissorRightBrokenTop\textScissorRightBrokenTop  
 20539 \let\ScissorHollowRight\textScissorHollowRight  
 20540 \let\PhoneHandset\textPhoneHandset  
 20541 \let\Tape\textTape  
 20542 \let\Plane\textPlane  
 20543 \let\Envelope\textEnvelope  
 20544 \let\Peace\textPeace  
 20545 \let\WritingHand\textWritingHand  
 20546 \let\PencilRightDown\textPencilRightDown  
 20547 \let\PencilRight\textPencilRight  
 20548 \let\PencilRightUp\textPencilRightUp  
 20549 \let\NibRight\textNibRight  
 20550 \let\NibSolidRight\textNibSolidRight  
 20551 \let\Checkmark\textCheckmark  
 20552 \let\CheckmarkBold\textCheckmarkBold  
 20553 \let\XSolid\textXSolid  
 20554 \let\XSolidBold\textXSolidBold  
 20555 \let\XSolidBrush\textXSolidBrush  
 20556 \let\PlusOutline\textPlusOutline  
 20557 \let\Plus\textPlus  
 20558 \let\PlusThinCenterOpen\textPlusThinCenterOpen  
 20559 \let\PlusCenterOpen\textPlusCenterOpen  
 20560 \let\Cross\textCross  
 20561 \let\CrossOpenShadow\textCrossOpenShadow  
 20562 \let\CrossOutline\textCrossOutline  
 20563 \let\CrossMaltese\textCrossMaltese  
 20564 \let\DavidStar\textDavidStar  
 20565 \let\FourAsterisk\textFourAsterisk  
 20566 \let\JackStar\textJackStar  
 20567 \let\JackStarBold\textJackStarBold  
 20568 \let\ClowerTips\textClowerTips  
 20569 \let\FourStar\textFourStar  
 20570 \let\FourStarOpen\textFourStarOpen  
 20571 \let\FiveStarOpenCircled\textFiveStarOpenCircled  
 20572 \let\FiveStarCenterOpen\textFiveStarCenterOpen  
 20573 \let\FiveStarOpenDotted\textFiveStarOpenDotted  
 20574 \let\FiveStarOutline\textFiveStarOutline  
 20575 \let\FiveStarOutlineHeavy\textFiveStarOutlineHeavy  
 20576 \let\FiveStarConvex\textFiveStarConvex  
 20577 \let\FiveStarShadow\textFiveStarShadow  
 20578 \let\AsteriskBold\textAsteriskBold  
 20579 \let\AsteriskCenterOpen\textAsteriskCenterOpen  
 20580 \let\EightStarTaper\textEightStarTaper  
 20581 \let\EightStarConvex\textEightStarConvex  
 20582 \let\SixStar\textSixStar  
 20583 \let\EightStar\textEightStar  
 20584 \let\EightStarBold\textEightStarBold  
 20585 \let\TwelveStar\textTwelveStar  
 20586 \let\SixteenStarLight\textSixteenStarLight  
 20587 \let\SixFlowerPetalRemoved\textSixFlowerPetalRemoved  
 20588 \let\SixFlowerOpenCenter\textSixFlowerOpenCenter  
 20589 \let\Asterisk\textAsterisk  
 20590 \let\SixFlowerAlternate\textSixFlowerAlternate  
 20591 \let\FiveFlowerPetal\textFiveFlowerPetal

20592 \let\FiveFlowerOpen\textFiveFlowerOpen  
 20593 \let\EightFlowerPetal\textEightFlowerPetal  
 20594 \let\SunshineOpenCircled\textSunshineOpenCircled  
 20595 \let\SixFlowerAltPetal\textSixFlowerAltPetal  
 20596 \let\SnowflakeChevron\textSnowflakeChevron  
 20597 \let\Snowflake\textSnowflake  
 20598 \let\SnowflakeChevronBold\textSnowflakeChevronBold  
 20599 \let\Sparkle\textSparkle  
 20600 \let\SparkleBold\textSparkleBold  
 20601 \let\AsteriskRoundedEnds\textAsteriskRoundedEnds  
 20602 \let\EightFlowerPetalRemoved\textEightFlowerPetalRemoved  
 20603 \let\EightAsterisk\textEightAsterisk  
 20604 \let\CircleShadow\textCircleShadow  
 20605 \let\SquareShadowBottomRight\textSquareShadowBottomRight  
 20606 \let\SquareTopRight\textSquareTopRight  
 20607 \let\SquareCastShadowBottomRight\textSquareCastShadowBottomRight  
 20608 \let\SquareCastShadowTopRight\textSquareCastShadowTopRight  
 20609 \let\DiamandSolid\textDiamandSolid  
 20610 \let\RectangleThin\textRectangleThin  
 20611 \let\Rectangle\textRectangle  
 20612 \let\RectangleBold\textRectangleBold  
 20613 \let\perp\textperp  
 20614 \let\notperp\textnotperp  
 20615 \let\veedot\textveedot  
 20616 \let\wedgedot\textwedgedot  
 20617 \let\leftspoon\textleftspoon  
 20618 \let\lbrackdbl\textlbrackdbl  
 20619 \let\rbrackdbl\textrbrackdbl  
 20620 \let\circlearrowleft\textcirclearrowleft  
 20621 \let\circlearrowright\textcirclearrowright  
 20622 \let\longleftarrow\textlongleftarrow  
 20623 \let\longrightarrow\textlongrightarrow  
 20624 \let\longleftarrow\textlongleftarrow  
 20625 \let\Longleftarrow\textLongleftarrow  
 20626 \let\Longrightarrow\textLongrightarrow  
 20627 \let\Longleftarrow\textLongleftarrow  
 20628 \let\longmapsto\textlongmapsto  
 20629 \let\Longmapsfrom\textLongmapsfrom  
 20630 \let\Longmapsto\textLongmapsto  
 20631 \let\nwsearrow\textnwsearrow  
 20632 \let\neswarrow\textneswarrow  
 20633 \let\hookrightarrow\texthookrightarrow  
 20634 \let\rhookrightarrow\texthookrightarrow  
 20635 \let\hookrightarrow\texthookrightarrow  
 20636 \let\rhookrightarrow\texthookrightarrow  
 20637 \let\leadsto\textleadsto  
 20638 \let\curvearrowright\textcurvearrowright  
 20639 \let\curvearrowleft\textcurvearrowleft  
 20640 \let\curvearrowright\textcurvearrowright  
 20641 \let\curvearrowright\textcurvearrowright  
 20642 \let\curvearrowdown\textcurvearrowdown  
 20643 \let\curvearrowdown\textcurvearrowdown  
 20644 \let\curvearrowleft\textcurvearrowleft  
 20645 \let\curvearrowright\textcurvearrowright

20646  $\backslash\text{leftrightharpoon}\backslash\text{textleftrightharpoon}$   
 20647  $\backslash\text{rightleftharpoon}\backslash\text{textrightleftharpoon}$   
 20648  $\backslash\text{updownharpoonrightleft}\backslash\text{textupdownharpoonrightleft}$   
 20649  $\backslash\text{updownharpoonleftright}\backslash\text{textupdownharpoonleftright}$   
 20650  $\backslash\text{leftleftharpoons}\backslash\text{textleftleftharpoons}$   
 20651  $\backslash\text{upupharpoons}\backslash\text{textupupharpoons}$   
 20652  $\backslash\text{rightrightarpoons}\backslash\text{textrighttrightarpoons}$   
 20653  $\backslash\text{downdownharpoons}\backslash\text{textdowndownharpoons}$   
 20654  $\backslash\text{leftbarharpoon}\backslash\text{textleftbarharpoon}$   
 20655  $\backslash\text{barleftharpoon}\backslash\text{textbarleftharpoon}$   
 20656  $\backslash\text{rightbarharpoon}\backslash\text{textrightbarharpoon}$   
 20657  $\backslash\text{barrightharpoon}\backslash\text{textbarrightharpoon}$   
 20658  $\backslash\text{updownharpoons}\backslash\text{textupdownharpoons}$   
 20659  $\backslash\text{downupharpoons}\backslash\text{textdownupharpoons}$   
 20660  $\backslash\text{moo}\backslash\text{textmoo}$   
 20661  $\backslash\text{llparenthesis}\backslash\text{textllparenthesis}$   
 20662  $\backslash\text{rrparenthesis}\backslash\text{textrrparenthesis}$   
 20663  $\backslash\text{invdiameter}\backslash\text{textinvdiameter}$   
 20664  $\backslash\text{oobar}\backslash\text{textobar}$   
 20665  $\backslash\text{obslash}\backslash\text{textobslash}$   
 20666  $\backslash\text{obot}\backslash\text{textobot}$   
 20667  $\backslash\text{NoChemicalCleaning}\backslash\text{textNoChemicalCleaning}$   
 20668  $\backslash\text{olessthan}\backslash\text{textolessthan}$   
 20669  $\backslash\text{ogreaterthan}\backslash\text{textogreaterthan}$   
 20670  $\backslash\text{boxslash}\backslash\text{textboxslash}$   
 20671  $\backslash\text{boxbslash}\backslash\text{textboxbslash}$   
 20672  $\backslash\text{boxast}\backslash\text{textboxast}$   
 20673  $\backslash\text{boxcircle}\backslash\text{textboxcircle}$   
 20674  $\backslash\text{boxbox}\backslash\text{textboxbox}$   
 20675  $\backslash\text{Valve}\backslash\text{textValve}$   
 20676  $\backslash\text{multimapboth}\backslash\text{textmultimapboth}$   
 20677  $\backslash\text{shuffle}\backslash\text{textshuffle}$   
 20678  $\backslash\text{uplus}\backslash\text{textuplus}$   
 20679  $\backslash\text{bigdoublewedge}\backslash\text{textbigdoublewedge}$   
 20680  $\backslash\text{bigdoublevee}\backslash\text{textbigdoublevee}$   
 20681  $\backslash\text{Join}\backslash\text{textJoin}$   
 20682  $\backslash\text{fatsemi}\backslash\text{textfatsemi}$   
 20683  $\backslash\text{cirplus}\backslash\text{textcirplus}$   
 20684  $\backslash\text{minusdot}\backslash\text{textminusdot}$   
 20685  $\backslash\text{dottimes}\backslash\text{textdottimes}$   
 20686  $\backslash\text{dtimes}\backslash\text{textdtimes}$   
 20687  $\backslash\text{odiv}\backslash\text{textodiv}$   
 20688  $\backslash\text{invneg}\backslash\text{textinvneg}$   
 20689  $\backslash\text{sqdoublecap}\backslash\text{textsqdoublecap}$   
 20690  $\backslash\text{capdot}\backslash\text{textcapdot}$   
 20691  $\backslash\text{sqdoublecup}\backslash\text{textsqdoublecup}$   
 20692  $\backslash\text{doublewedge}\backslash\text{textdoublewedge}$   
 20693  $\backslash\text{doublevee}\backslash\text{textdoublevee}$   
 20694  $\backslash\text{doublebarwedge}\backslash\text{textdoublebarwedge}$   
 20695  $\backslash\text{veedoublebar}\backslash\text{textveedoublebar}$   
 20696  $\backslash\text{eqdot}\backslash\text{texteqdot}$   
 20697  $\backslash\text{neqdot}\backslash\text{textneqdot}$   
 20698  $\backslash\text{coloncolonequals}\backslash\text{textcoloncolonequals}$   
 20699  $\backslash\text{leqslant}\backslash\text{textleqslant}$

20700  $\backslash\mathrm{let}\backslash\mathrm{nleqslant}\backslash\mathrm{textnleqslant}$   
 20701  $\backslash\mathrm{let}\backslash\mathrm{geqslant}\backslash\mathrm{textgeqslant}$   
 20702  $\backslash\mathrm{let}\backslash\mathrm{ngeqslant}\backslash\mathrm{textngeqslant}$   
 20703  $\backslash\mathrm{let}\backslash\mathrm{lessapprox}\backslash\mathrm{textlessapprox}$   
 20704  $\backslash\mathrm{let}\backslash\mathrm{nlessapprox}\backslash\mathrm{textnlessapprox}$   
 20705  $\backslash\mathrm{let}\backslash\mathrm{gtrapprox}\backslash\mathrm{textgtrapprox}$   
 20706  $\backslash\mathrm{let}\backslash\mathrm{ngtrapprox}\backslash\mathrm{textngtrapprox}$   
 20707  $\backslash\mathrm{let}\backslash\mathrm{ineq}\backslash\mathrm{textineq}$   
 20708  $\backslash\mathrm{let}\backslash\mathrm{gneq}\backslash\mathrm{textgneq}$   
 20709  $\backslash\mathrm{let}\backslash\mathrm{lnapprox}\backslash\mathrm{textlnapprox}$   
 20710  $\backslash\mathrm{let}\backslash\mathrm{gnapprox}\backslash\mathrm{textgnapprox}$   
 20711  $\backslash\mathrm{let}\backslash\mathrm{lesseqqgtr}\backslash\mathrm{textlesseqqgtr}$   
 20712  $\backslash\mathrm{let}\backslash\mathrm{gtreqqless}\backslash\mathrm{textgtreqqless}$   
 20713  $\backslash\mathrm{let}\backslash\mathrm{eqslantless}\backslash\mathrm{texteqslantless}$   
 20714  $\backslash\mathrm{let}\backslash\mathrm{eqslantgtr}\backslash\mathrm{texteqslantgtr}$   
 20715  $\backslash\mathrm{let}\backslash\mathrm{leftslice}\backslash\mathrm{textleftslice}$   
 20716  $\backslash\mathrm{let}\backslash\mathrm{rightslice}\backslash\mathrm{textrightslice}$   
 20717  $\backslash\mathrm{let}\backslash\mathrm{preceq}\backslash\mathrm{textpreceq}$   
 20718  $\backslash\mathrm{let}\backslash\mathrm{npreceq}\backslash\mathrm{textnpreceq}$   
 20719  $\backslash\mathrm{let}\backslash\mathrm{succeq}\backslash\mathrm{textsucceq}$   
 20720  $\backslash\mathrm{let}\backslash\mathrm{nsucceq}\backslash\mathrm{textnsucceq}$   
 20721  $\backslash\mathrm{let}\backslash\mathrm{precneq}\backslash\mathrm{textprecneq}$   
 20722  $\backslash\mathrm{let}\backslash\mathrm{succneq}\backslash\mathrm{textsuccneq}$   
 20723  $\backslash\mathrm{let}\backslash\mathrm{preceqq}\backslash\mathrm{textpreceqq}$   
 20724  $\backslash\mathrm{let}\backslash\mathrm{npreceqq}\backslash\mathrm{textnpreceqq}$   
 20725  $\backslash\mathrm{let}\backslash\mathrm{succeqq}\backslash\mathrm{textsucceqq}$   
 20726  $\backslash\mathrm{let}\backslash\mathrm{nsucceqq}\backslash\mathrm{textnsucceqq}$   
 20727  $\backslash\mathrm{let}\backslash\mathrm{precneqq}\backslash\mathrm{textprecneqq}$   
 20728  $\backslash\mathrm{let}\backslash\mathrm{succneqq}\backslash\mathrm{textsuccneqq}$   
 20729  $\backslash\mathrm{let}\backslash\mathrm{precapprox}\backslash\mathrm{textprecapprox}$   
 20730  $\backslash\mathrm{let}\backslash\mathrm{nprecapprox}\backslash\mathrm{textnprecapprox}$   
 20731  $\backslash\mathrm{let}\backslash\mathrm{succapprox}\backslash\mathrm{textsuccapprox}$   
 20732  $\backslash\mathrm{let}\backslash\mathrm{nsuccapprox}\backslash\mathrm{textnsuccapprox}$   
 20733  $\backslash\mathrm{let}\backslash\mathrm{precnapprox}\backslash\mathrm{textprecnapprox}$   
 20734  $\backslash\mathrm{let}\backslash\mathrm{succnapprox}\backslash\mathrm{textsuccnapprox}$   
 20735  $\backslash\mathrm{let}\backslash\mathrm{subseteqq}\backslash\mathrm{textsubseteqq}$   
 20736  $\backslash\mathrm{let}\backslash\mathrm{nsubseteqq}\backslash\mathrm{textnsubseteqq}$   
 20737  $\backslash\mathrm{let}\backslash\mathrm{supseteqq}\backslash\mathrm{textsupseteqq}$   
 20738  $\backslash\mathrm{let}\backslash\mathrm{nsupseteqq}\backslash\mathrm{textnsupseteqq}$   
 20739  $\backslash\mathrm{let}\backslash\mathrm{dashV}\backslash\mathrm{textdashV}$   
 20740  $\backslash\mathrm{let}\backslash\mathrm{ndashV}\backslash\mathrm{textndashV}$   
 20741  $\backslash\mathrm{let}\backslash\mathrm{Dashv}\backslash\mathrm{textDashv}$   
 20742  $\backslash\mathrm{let}\backslash\mathrm{nDashv}\backslash\mathrm{textnDashv}$   
 20743  $\backslash\mathrm{let}\backslash\mathrm{DashV}\backslash\mathrm{textDashV}$   
 20744  $\backslash\mathrm{let}\backslash\mathrm{nDashV}\backslash\mathrm{textnDashV}$   
 20745  $\backslash\mathrm{let}\backslash\mathrm{downmodels}\backslash\mathrm{textdownmodels}$   
 20746  $\backslash\mathrm{let}\backslash\mathrm{ndownmodels}\backslash\mathrm{textndownmodels}$   
 20747  $\backslash\mathrm{let}\backslash\mathrm{upmodels}\backslash\mathrm{textupmodels}$   
 20748  $\backslash\mathrm{let}\backslash\mathrm{nupmodels}\backslash\mathrm{textnupmodels}$   
 20749  $\backslash\mathrm{let}\backslash\mathrm{upspoon}\backslash\mathrm{textupspoon}$   
 20750  $\backslash\mathrm{let}\backslash\mathrm{interleave}\backslash\mathrm{textinterleave}$   
 20751  $\backslash\mathrm{let}\backslash\mathrm{slash}\backslash\mathrm{textslash}$   
 20752  $\backslash\mathrm{let}\backslash\mathrm{pentagon}\backslash\mathrm{textpentagon}$   
 20753  $\backslash\mathrm{let}\backslash\mathrm{varhexagon}\backslash\mathrm{textvarhexagon}$

20754 \let\jinferior\textjinferior  
 20755 \let\slashdiv\textslashdiv  
 20756 \let\fivedots\textfivedots  
 20757 \let\oo\textoo  
 20758 \let\GaPa\textGaPa  
 20759 \let\HaPa\textHaPa  
 20760 \let\ViPa\textViPa  
 20761 \let\AcPa\textAcPa  
 20762 \let\SePa\textSePa  
 20763 \let\ZwPa\textZwPa  
 20764 \let\fullnote\textfullnote  
 20765 \let\halfnote\texthalfnote  
 20766 \let\Vier\textVier  
 20767 \let\Acht\textAcht  
 20768 \let\Sech\textSech  
 20769 \let\Zwdr\textZwdr  
 20770 \let\Mundus\textMundus  
 20771 \let\Moon\textMoon  
 20772 \let\ManFace\textManFace  
 20773 \let\WomanFace\textWomanFace  
 20774 \let\Fax\textFax  
 20775 \let\Fire\textFire  
 20776 \let\Bicycle\textBicycle  
 20777 \let\Gentsroom\textGentsroom  
 20778 \let\Ladiesroom\textLadiesroom  
 20779 \let\ccnc\textccnc  
 20780 \let\ccsa\textccsa  
 20781 \let\Info\textInfo  
 20782 \let\CESign\textCESign  
 20783 \let\neg\textneg  
 20784 \let\times\texttimes  
 20785 \let\div\textdiv  
 20786 \let\pm\textpm  
 20787 \let\cdot\textcdot  
 20788 }% \psdmapshortnames  
 20789 \newcommand\*{\psdaliasnames}{%  
 20790 \let\epsdice\HyPsd@DieFace  
 20791 \let\fcdice\HyPsd@DieFace  
 20792 \let\MoonPha\HyPsd@MoonPha  
 20793 \let\mathdollar\textdollar  
 20794 \let\EyesDollar\textdollar  
 20795 \let\binampersand\textampersand  
 20796 \let\with\textampersand  
 20797 \let\mathunderscore\textunderscore  
 20798 \let\textvertline\textbar  
 20799 \let\mathsterling\textsterling  
 20800 \let\pounds\textsterling  
 20801 \let\brokenvert\textbrokenbar  
 20802 \let\mathsection\textsection  
 20803 \let\S\textsection  
 20804 \let\mathparagraph\textparagraph  
 20805 \let\MultiplicationDot\textperiodcentered  
 20806 \let\Squaredot\textperiodcentered  
 20807 \let\vartimes\textmultiply

20808 \let\MVMultiplication\textmultiply  
 20809 \let\eth\dh  
 20810 \let\crossd\textcrd  
 20811 \let\textbard\textcrd  
 20812 \let\bard\textcrd  
 20813 \let\textcrh\texthbar  
 20814 \let\crossh\texthbar  
 20815 \let\planck\texthbar  
 20816 \let\eng\ng  
 20817 \let\engma\ng  
 20818 \let\crossb\textcrb  
 20819 \let\textbarb\textcrb  
 20820 \let\barb\textcrb  
 20821 \let\Florin\textflorin  
 20822 \let\hv\texthvl  
 20823 \let\hausak\texthtk  
 20824 \let\crossnilambda\textcrlambda  
 20825 \let\barlambda\textcrlambda  
 20826 \let\lambdabar\textcrlambda  
 20827 \let\lambdash\textcrlambda  
 20828 \let\textnrleg\textPUnrleg  
 20829 \let\textpipevar\textpipe  
 20830 \let\textdoublepipevar\textdoublepipe  
 20831 \let\textdoublebarpipevar\textdoublebarpipe  
 20832 \let\textcrg\textgslash  
 20833 \let\textdblig\textPUdblig  
 20834 \let\textqplig\textPUqplig  
 20835 \let\textcentoldstyle\textslashc  
 20836 \let\textbarc\textslashc  
 20837 \let\inva\textturna  
 20838 \let\vara\textscripta  
 20839 \let\invscripta\textturnscripta  
 20840 \let\rotvara\textturnscripta  
 20841 \let\hookb\texthtb  
 20842 \let\hausab\texthtb  
 20843 \let\varopeno\textopeno  
 20844 \let\curlyc\textctc  
 20845 \let\taild\textrtaild  
 20846 \let\hookd\texthtd  
 20847 \let\hausad\texthtd  
 20848 \let\er\textrhookschwa  
 20849 \let\epsi\textniepsilon  
 20850 \let\hookrepsilon\texthookrepsilon  
 20851 \let\closedrepsilon\textcloserepsilon  
 20852 \let\barj\textbardotlessj  
 20853 \let\hookg\texthtg  
 20854 \let\varg\textscriptg  
 20855 \let\vod\texttipagamma  
 20856 \let\invh\textturnh  
 20857 \let\udesc\textturnh  
 20858 \let\hookh\texthth  
 20859 \let\voicedh\texthth  
 20860 \let\hookheng\texththeng  
 20861 \let\ibar\textbari

20862 \let\vari\textnniota  
 20863 \let\tildel\textltilde  
 20864 \let\latfric\textbeltl  
 20865 \let\tail\texttrtail  
 20866 \let\lz\textlyoghlig  
 20867 \let\invm\textturnm  
 20868 \let\rotr\textturnm  
 20869 \let\legm\textturnmrleg  
 20870 \let\labdentainas\textltailm  
 20871 \let\emgma\textltailm  
 20872 \let\nj\textltailn  
 20873 \let\enya\textltailn  
 20874 \let\tailn\texttrtailn  
 20875 \let\closedniomega\textcloseomega  
 20876 \let\varomega\textcloseomega  
 20877 \let\invr\textturnr  
 20878 \let\rotr\textturnr  
 20879 \let\invlegr\textturnlonglegr  
 20880 \let\tailinvr\textturnrrtail  
 20881 \let\legr\textlonglegr  
 20882 \let\tailr\texttrtailr  
 20883 \let\flapr\textfishhookr  
 20884 \let\flap\textfishhookr  
 20885 \let\tails\texttrtails  
 20886 \let\curlyesh\textctesh  
 20887 \let\clickt\textturnt  
 20888 \let\tailt\texttrtailt  
 20889 \let\ubar\textbaru  
 20890 \let\rotOmega\textniupsilon  
 20891 \let\invv\textturnv  
 20892 \let\pwedge\textturnv  
 20893 \let\invw\textturnw  
 20894 \let\rotw\textturnw  
 20895 \let\invy\textturny  
 20896 \let\roty\textturny  
 20897 \let\tailz\texttrtailz  
 20898 \let\curlyz\textctz  
 20899 \let\curlyyogh\textctyogh  
 20900 \let\ejective\textglotstop  
 20901 \let\glottal\textglotstop  
 20902 \let\reveject\textrevglotstop  
 20903 \let\clickc\textstretchc  
 20904 \let\textstretchcvar\textstretchc  
 20905 \let\clickb\textbullseye  
 20906 \let\textObullseye\textbullseye  
 20907 \let\textctjvar\textctj  
 20908 \let\textturnsck\textturnk  
 20909 \let\dz\textdzlig  
 20910 \let\tesh\textteshlig  
 20911 \let\digamma\textdigammagreek  
 20912 \let\hardsign\cyrrhdsn  
 20913 \let\softsign\cyrsftsn  
 20914 \let\hebsin\hebshin  
 20915 \let\textsck\textPUscck



20916 \let\textscm\textPUscm  
 20917 \let\textscp\textPUscp  
 20918 \let\textrevscr\textPUrevscr  
 20919 \let\textrhoaka\textPURhooka  
 20920 \let\textrhooke\textPURhooke  
 20921 \let\textrhookepsilon\textPURhookepsilon  
 20922 \let\texthookopeno\textPURhookopeno  
 20923 \let\textdoublevertline\textbardbl  
 20924 \let\dag\textdagger  
 20925 \let\ddagger\textdaggerdbl  
 20926 \let\ddag\textdaggerdbl  
 20927 \let\mathellipsis\textellipsis  
 20928 \let\EurDig\texteuro  
 20929 \let\EURdig\texteuro  
 20930 \let\EurHv\texteuro  
 20931 \let\EURhv\texteuro  
 20932 \let\EurCr\texteuro  
 20933 \let\EURcr\texteuro  
 20934 \let\EurTm\texteuro  
 20935 \let\EURtm\texteuro  
 20936 \let\Eur\texteuro  
 20937 \let\Denarius\textDeleatur  
 20938 \let\agemO\textmho  
 20939 \let\EstimatedSign\textestimated  
 20940 \let\Ecommerce\textestimated  
 20941 \let\bindnasrepma\textinvamp  
 20942 \let\parr\textinvamp  
 20943 \let\MVRightArrow\textrightarrow  
 20944 \let\MVRightarrow\textrightarrow  
 20945 \let\MVArrowDown\textdownarrow  
 20946 \let\Force\textdownarrow  
 20947 \let\textglobrise\textnearrow  
 20948 \let\textglobfall\textsearrow  
 20949 \let\Lightning\textlightning  
 20950 \let\Conclusion\textRightarrow  
 20951 \let\dashedleftarrow\textdashleftarrow  
 20952 \let\dashedrightarrow\textdashrightarrow  
 20953 \let\varnothing\textemptyset  
 20954 \let\owns\textni  
 20955 \let\notni\textnotowner  
 20956 \let\varprop\textpropto  
 20957 \let\varangle\textsphericalangle  
 20958 \let\Anglesign\textsphericalangle  
 20959 \let\AngleSign\textsphericalangle  
 20960 \let\notdivides\textnmid  
 20961 \let\varowedge\textowedge  
 20962 \let\varovee\textovee  
 20963 \let\varint\textint  
 20964 \let\varoint\textoint  
 20965 \let\downtherefore\textbecause  
 20966 \let\textdotdiv\textdotminus  
 20967 \let\AC\textsim  
 20968 \let\wreath\textwr  
 20969 \let\nthickapprox\textnapprox

20970 `\let\VHF\texttriplesim`  
 20971 `\let\notasymp\textnasymp`  
 20972 `\let\Doteq\textdoteqdot`  
 20973 `\let\corresponds\texthateq`  
 20974 `\let\Corresponds\texthateq`  
 20975 `\let\nequal\textneq`  
 20976 `\let\Congruent\textequiv`  
 20977 `\let\NotCongruent\textnequiv`  
 20978 `\let\notequiv\textnequiv`  
 20979 `\let\LessOrEqual\textleq`  
 20980 `\let\LargerOrEqual\textgeq`  
 20981 `\let\apprle\textless`  
 20982 `\let\apprge\textgtr`  
 20983 `\let\varoplus\textoplus`  
 20984 `\let\varominus\textominus`  
 20985 `\let\varotimes\textotimes`  
 20986 `\let\varoslash\textoslash`  
 20987 `\let\varodot\textodot`  
 20988 `\let\ocirc\textcircledcirc`  
 20989 `\let\varocircle\textcircledcirc`  
 20990 `\let\varoast\textcircledast`  
 20991 `\let\oasterisk\textcircledast`  
 20992 `\let\rightvdash\textvdash`  
 20993 `\let\leftvdash\textdashv`  
 20994 `\let\leftvdash\textndashv`  
 20995 `\let\downvdash\texttop`  
 20996 `\let\upvdash\textbot`  
 20997 `\let\leftperp\textnupvdash`  
 20998 `\let\models\textvDash`  
 20999 `\let\models\textvDash`  
 21000 `\let\models\textVdash`  
 21001 `\let\models\textVdash`  
 21002 `\let\models\textnvDash`  
 21003 `\let\models\textnvDash`  
 21004 `\let\models\textnvDash`  
 21005 `\let\models\textnVdash`  
 21006 `\let\models\textnVdash`  
 21007 `\let\lessclosed\textlhd`  
 21008 `\let\gtrclosed\textrhd`  
 21009 `\let\leqclosed\textunlhd`  
 21010 `\let\trianglelefteq\textunlhd`  
 21011 `\let\geqclosed\textunrhd`  
 21012 `\let\trianglerighteq\textunrhd`  
 21013 `\let\Bowtie\textbowtie`  
 21014 `\let\varcurlyvee\textcurlyvee`  
 21015 `\let\varcurlywedge\textcurlywedge`  
 21016 `\let\doublecap\textCap`  
 21017 `\let\doublecup\textCup`  
 21018 `\let\varsubsetneq\textsubsetneq`  
 21019 `\let\varsupsetneq\textsupsetneq`  
 21020 `\let\lessclosed\texttriangleleft`  
 21021 `\let\ngtrclosed\texttriangleright`  
 21022 `\let\Clocklogo\textclock`  
 21023 `\let\ClockLogo\textclock`

21024 \let\baro\textstmaryrdbaro  
 21025 \let\varparallelinv\textbbslash  
 21026 \let\CleaningA\textCircledA  
 21027 \let\Kutline\textCuttingLine  
 21028 \let\CutLine\textCuttingLine  
 21029 \let\Cutline\textCuttingLine  
 21030 \let\MoveUp\textUParrow  
 21031 \let\APLup\textbigtriangleup  
 21032 \let\Bleech\textbigtriangleup  
 21033 \let\MoveDown\textDOWNarrow  
 21034 \let\APLdown\textbigtriangledown  
 21035 \let\Diamond\textdiamond  
 21036 \let\varbigcirc\textbigcircle  
 21037 \let\Telefon\textPhone  
 21038 \let\Box\textboxempty  
 21039 \let\CheckedBox\textCheckedbox  
 21040 \let\XBox\textCrossedbox  
 21041 \let\CrossedBox\textCrossedbox  
 21042 \let\rightpointleft\textHandLeft  
 21043 \let\leftpointright\textHandRight  
 21044 \let\PointingHand\textHandRight  
 21045 \let\Pointinghand\textHandRight  
 21046 \let\Radiation\textRadioactivity  
 21047 \let\Yinyang\textYinYang  
 21048 \let\YingYang\textYinYang  
 21049 \let\Yingyang\textYinYang  
 21050 \let\Frowny\textfrownie  
 21051 \let\Smiley\textsmiley  
 21052 \let\Sun\textsun  
 21053 \let\Mercury\textmercury  
 21054 \let\textfemale\textPUfemale  
 21055 \let\female\textPUfemale  
 21056 \let\venus\textPUfemale  
 21057 \let\Venus\textPUfemale  
 21058 \let\Female\textPUfemale  
 21059 \let\Earth\textearth  
 21060 \let\mars\textmale  
 21061 \let\Mars\textmale  
 21062 \let\Male\textmale  
 21063 \let\Jupiter\textjupiter  
 21064 \let\Saturn\textsaturn  
 21065 \let\Uranus\texturanus  
 21066 \let\Neptune\textneptune  
 21067 \let\Pluto\textpluto  
 21068 \let\Aries\textaries  
 21069 \let\Taurus\texttaurus  
 21070 \let\Gemini\textgemini  
 21071 \let\Cancer\textcancer  
 21072 \let\Leo\textleo  
 21073 \let\Virgo\textvirgo  
 21074 \let\Libra\textlibra  
 21075 \let\Scorpio\textscorpio  
 21076 \let\Sagittarius\textsagittarius  
 21077 \let\Capricorn\textcapricornus

21078 \let\Aquarius\textaquarius  
 21079 \let\Pisces\textpisces  
 21080 \let\spadesuit\textspadesuitblack  
 21081 \let\Heart\textheartsuitwhite  
 21082 \let\heartsuit\textheartsuitwhite  
 21083 \let\diamondsuit\textdiamondsuitwhite  
 21084 \let\clubsuit\textclubsuitblack  
 21085 \let\eighthnote\textmusicalnote  
 21086 \let\Recycling\textrecycle  
 21087 \let\VarFlag\textFlag  
 21088 \let\textxswup\textdsmilitary  
 21089 \let\textuncrfemale\textPUuncrfemale  
 21090 \let\Football\textSoccerBall  
 21091 \let\CutLeft\textScissorRightBrokenBottom  
 21092 \let\Cutright\textScissorRightBrokenBottom  
 21093 \let\RightScissors\textScissorRight  
 21094 \let\Leftscissors\textScissorRight  
 21095 \let\Letter\textEnvelope  
 21096 \let\Writinghand\textWritingHand  
 21097 \let\checkmark\textCheckmark  
 21098 \let\DavidStar\textDavidStar  
 21099 \let\llbracket\textlbrackdbl  
 21100 \let\rrbracket\textrrbrackdbl  
 21101 \let\RightTorque\textlcurvearrowdown  
 21102 \let\Righttorque\textlcurvearrowdown  
 21103 \let\LeftTorque\textrcurvearrowdown  
 21104 \let\Lefttorque\textrcurvearrowdown  
 21105 \let\textvarobar\textobar  
 21106 \let\circledbslash\textobslash  
 21107 \let\obackslash\textobslash  
 21108 \let\varobslash\textobslash  
 21109 \let\odplus\textobot  
 21110 \let\varolessthan\textolessthan  
 21111 \let\varogreaterthan\textogreaterthan  
 21112 \let\divdot\textminusdot  
 21113 \let\doublesqcap\textsqdoublecap  
 21114 \let\doublesqcup\textsqdoublecup  
 21115 \let\merge\textdoublevee  
 21116 \let\leftVdash\textdashV  
 21117 \let\nleftVdash\textndashV  
 21118 \let\leftmodels\textDashv  
 21119 \let\nleftmodels\textnDashv  
 21120 \let\leftModels\textDashV  
 21121 \let\nleftModels\textnDashV  
 21122 \let\varparallel\textsslash  
 21123 \let\textheng\textPUheng  
 21124 \let\textlhookfour\textPUlhookfour  
 21125 \let\textscf\textPUscf  
 21126 \let\textaoig\textPUaoig  
 21127 \let\Ganz\textfullnote  
 21128 \let\Halb\texthalfnote  
 21129 \let\Womanface\textWomanFace  
 21130 \let\Faxmachine\textFax  
 21131 \let\CEsign\textCESign

```
21132 }% \psdaliasnames
21133 \psdextra
```

## 47 End of file hycheck.tex

```
21134 \*check
21135 \typeout{}
21136 \begin{document}
21137 \end{document}
21138 \check
```

## 48 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			
<code>\!</code> . . . . .	195, 220, 1761		
<code>\"</code> . . . . .	202, 227, 3051, 14377, 14698, 14710, 14722, 14848, 14934, 14948, 14956, 14971, 14983, 15000, 15014, 15025, 15026, 15040, 15052, 15059, 15112, 15158, 15187, 15218, 15391, 15405, 15413, 15427, 15441, 15458, 15472, 15483, 15484, 15499, 15511, 15519, 15777, 16462, 16464, 16475, 16527, 16529, 16576, 16590, 16746, 16760, 17004, 17006, 17021, 17024, 17026, 17028, 17030, 17032, 17042, 17044, 17046, 17048, 17055, 17058, 17060, 17062, 17068, 17070, 17076, 17078, 17084, 17086, 17296, 17298, 17448, 17450, 17464, 17466, 17486	15401, 15409, 15421, 15437, 15443, 15452, 15468, 15477, 15478, 15493, 15507, 15513, 15533, 15535, 15649, 15651, 15669, 15671, 15705, 15707, 15717, 15719, 15779, 15781, 15902, 15904, 15910, 15912, 15915, 15918, 16395, 16397, 16399, 16401, 16403, 16405, 16407, 16410, 16466, 16468, 16470, 16472, 16531, 16534, 16536, 16580, 16600, 16750, 16770, 17312, 17314, 17336, 17338, 17376, 17378, 17444, 17446, 19686, 19691, 19696, 19701, 19706, 19711, 19716, 19721, 19726, 19731, 19736, 19741, 19746, 19751, 19756, 19761, 19766, 19771, 19776, 19781, 19786, 19791, 19796, 19801	14715, 14727, 15103, 15167, 15196, 15223, 15521, 15523, 15563, 15565, 15615, 15617, 15618, 15689, 15691, 15749, 15751, 15998, 16000, 17038, 17040, 17064, 17066, 17284, 17286
<code>\#</code> . . . . .	504, 1846, 1847, 4708, 4719, 4721, 4737, 4769, 4829, 8724, 8726, 9459, 9468, 9503, 10336, 11971, 11982, 12018, 12256, 12265, 12305, 14297	<code>\(</code> . . . . . 190, 215, 313, 723, 726, 728, 1763, 14443, 14768	<code>\&gt;</code> . . . . . 197, 222
<code>\\$</code> . . . . .	184, 209, 312, 505, 4710, 4828	<code>\)</code> . . . . . 191, 216, 314, 695, 701, 704, 1764, 14444, 14770	<code>\?</code> . . . . . 318
<code>\%</code> . . . . .	506, 1761, 1821, 1822, 4707, 4716, 4718, 4770, 8726	<code>\*</code> . . . . . 316	<code>\@</code> . . . . . 3042
<code>\&amp;</code> . . . . .	185, 210, 507, 4711, 4722, 4724, 12028	<code>\+</code> . . . . . 200, 225, 317	<code>\@@@</code> . . . . . 2205
<code>\'</code> . . . . .	203, 228, 2991, 3005, 3046, 3048, 3049, 3050, 3051, 3056, 3057, 3059, 3064, 3070, 3074, 3075, 3078, 3121, 3122, 3127, 3128, 3129, 3130, 3131, 3132, 3133, 3134, 3136, 3139, 3146, 3147, 3148, 3149, 3152, 3158, 3171, 14375, 14695, 14707, 14719, 14928, 14944, 14952, 14965, 14979, 14985, 14994, 15010, 15019, 15020, 15034, 15048, 15054, 15078, 15080, 15081, 15082, 15085, 15087, 15088, 15089, 15097, 15155, 15184, 15215, 15385,	<code>\-</code> . . . . . 201, 226	<code>\@@BOOKMARK</code> . . . . . 14358, 14361, 14419, 14487, 14494
		<code>\.</code> . . . . . 198, 223, 310, 3481, 3888, 14701, 14713, 14725, 14789, 15083, 15090, 15110, 15161, 15190, 15224, 15301, 15302, 15541, 15543, 15571, 15573, 15591, 15593, 15630, 15661, 15663, 15783, 15785, 15986, 15988, 15994, 15996, 17228, 17230, 17240, 17242, 17280, 17282, 17288, 17290, 17340, 17342, 17348, 17350, 17380, 17382, 17384, 17386, 17396, 17398, 17404, 17406, 17452, 17454, 17460, 17462, 17468, 17470, 17492	<code>\@@Listbox</code> . . . . . 12660, 12691, 13262, 13296, 13618, 13659
		<code>\(</code> . . . . . 190, 215, 313, 723, 726, 728, 1763, 14443, 14768	<code>\@@Menu</code> . . . . . 12901, 12909
		<code>\)</code> . . . . . 191, 216, 314, 695, 701, 704, 1764, 14444, 14770	<code>\@@PasswordField</code> . . . . . 12850, 12856
		<code>\*</code> . . . . . 316	<code>\@@Radio</code> . . . . . 12645, 12666, 12899, 12923, 13247, 13268, 13603, 13624
		<code>\+</code> . . . . . 200, 225, 317	<code>\@@TextField</code> . . . . . 12852, 12867
		<code>\-</code> . . . . . 201, 226	<code>\@@commahyperpage</code> . . . . . 8411, 8412
		<code>\.</code> . . . . . 198, 223, 310, 3481, 3888, 14701, 14713, 14725, 14789, 15083, 15090, 15110, 15161, 15190, 15224, 15301, 15302, 15541, 15543, 15571, 15573, 15591, 15593, 15630, 15661, 15663, 15783, 15785, 15986, 15988, 15994, 15996, 17228, 17230, 17240, 17242, 17280, 17282, 17288, 17290, 17340, 17342, 17348, 17350, 17380, 17382, 17384, 17386, 17396, 17398, 17404, 17406, 17452, 17454, 17460, 17462, 17468, 17470, 17492	<code>\@@hyper@creadexternallink</code> . . . . . 5123, 5125
		<code>\(</code> . . . . . 190, 215, 313, 723, 726, 728, 1763, 14443, 14768	<code>\@@hyperref</code> . . . . . 4932, 4933
		<code>\)</code> . . . . . 191, 216, 314, 695, 701, 704, 1764, 14444, 14770	<code>\@@windex</code> . . . . . 8312, 8313
		<code>\*</code> . . . . . 316	<code>\@@writetorep</code> . . . . . 14219, 14225
		<code>\+</code> . . . . . 200, 225, 317	<code>\@Alph</code> . . . . . 7023, 7025
		<code>\-</code> . . . . . 201, 226	<code>\@BIBLABEL</code> . . . . . 7799, 7805, 7811
		<code>\.</code> . . . . . 198, 223, 310, 3481, 3888, 14701, 14713, 14725, 14789, 15083, 15090, 15110, 15161, 15190, 15224, 15301, 15302, 15541, 15543, 15571, 15573, 15591, 15593, 15630, 15661, 15663, 15783, 15785, 15986, 15988, 15994, 15996, 17228, 17230, 17240, 17242, 17280, 17282, 17288, 17290, 17340, 17342, 17348, 17350, 17380, 17382, 17384, 17386, 17396, 17398, 17404, 17406, 17452, 17454, 17460, 17462, 17468, 17470, 17492	<code>\@BOOKMARK</code> . . . . . 14358, 14360
		<code>\(</code> . . . . . 190, 215, 313, 723, 726, 728, 1763, 14443, 14768	<code>\@CheckBox</code> . . . . . 6110, 10401, 12780, 12816, 12954, 13384, 13761
		<code>\)</code> . . . . . 191, 216, 314, 695, 701, 704, 1764, 14444, 14770	<code>\@ChoiceMenu</code> . . . . . 6107, 10404, 12598, 12819, 12889, 13199, 13555
		<code>\*</code> . . . . . 316	<code>\@Form</code> . . . . . 5783, 10391, 12350, 12806, 12833, 13088, 13469
		<code>\+</code> . . . . . 200, 225, 317	<code>\@Gauge</code> . . . . . 6116, 10395, 12535, 12810, 12838, 12975, 13466
		<code>\-</code> . . . . . 201, 226	<code>\@Localurlfalse</code> . . . . . 10344
		<code>\.</code> . . . . . 198, 223, 310, 3481, 3888, 14701, 14713, 14725, 14789, 15083, 15090, 15110, 15161, 15190, 15224, 15301, 15302, 15541, 15543, 15571, 15573, 15591, 15593, 15630, 15661, 15663, 15783, 15785, 15986, 15988, 15994, 15996, 17228, 17230, 17240, 17242, 17280, 17282, 17288, 17290, 17340, 17342, 17348, 17350, 17380, 17382, 17384, 17386, 17396, 17398, 17404, 17406, 17452, 17454, 17460, 17462, 17468, 17470, 17492	<code>\@Localurltrue</code> . . . . . 10341
		<code>\(</code> . . . . . 190, 215, 313, 723, 726, 728, 1763, 14443, 14768	<code>\@M</code> . . . . . 2258, 4815, 7402
		<code>\)</code> . . . . . 191, 216, 314, 695, 701, 704, 1764, 14444, 14770	<code>\@MM</code> . . . . . 7559
		<code>\*</code> . . . . . 316	<code>\@PackageError</code> . . . . . 244
		<code>\+</code> . . . . . 200, 225, 317	<code>\@PackageInfo</code> . . . . . 247
		<code>\-</code> . . . . . 201, 226	<code>\@PackageInfoNoLine</code> . . . . . 248
		<code>\.</code> . . . . . 198, 223, 310, 3481, 3888, 14701, 14713, 14725, 14789, 15083, 15090, 15110, 15161, 15190, 15224, 15301, 15302, 15541, 15543, 15571, 15573, 15591, 15593, 15630, 15661, 15663, 15783, 15785, 15986, 15988, 15994, 15996, 17228, 17230, 17240, 17242, 17280, 17282, 17288, 17290, 17340, 17342, 17348, 17350, 17380, 17382, 17384, 17386, 17396, 17398, 17404, 17406, 17452, 17454, 17460, 17462, 17468, 17470, 17492	<code>\@PackageWarning</code> . . . . . 245
		<code>\(</code> . . . . . 190, 215, 313, 723, 726, 728, 1763, 14443, 14768	<code>\@PackageWarningNoLine</code> . . . . . 246
		<code>\)</code> . . . . . 191, 216, 314, 695, 701, 704, 1764, 14444, 14770	
		<code>\*</code> . . . . . 316	
		<code>\+</code> . . . . . 200, 225, 317	
		<code>\-</code> . . . . . 201, 226	
		<code>\.</code> . . . . . 198, 223, 310, 3481, 3888, 14701, 14713, 14725, 14789, 15083, 15090, 15110, 15161, 15190, 15224, 15301, 15302, 15541, 15543, 15571, 15573, 15591, 15593, 15630, 15661, 15663, 15783, 15785, 15986, 15988, 15994, 15996, 17228, 17230, 17240, 17242, 17280, 17282, 17288, 17290, 17340, 17342, 17348, 17350, 17380, 17382, 17384, 17386, 17396, 17398, 17404, 17406, 17452, 17454, 17460, 17462, 17468, 17470, 17492	
		<code>\(</code> . . . . . 190, 215, 313, 723, 726, 728, 1763, 14443, 14768	
		<code>\)</code> . . . . . 191, 216, 314, 695, 701, 704, 1764, 14444, 14770	
		<code>\*</code> . . . . . 316	
		<code>\+</code> . . . . . 200, 225, 317	
		<code>\-</code> . . . . . 201, 226	
		<code>\.</code> . . . . . 198, 223, 310, 3481, 3888, 14701, 14713, 14725, 14789, 15083, 15090, 15110, 15161, 15190, 15224, 15301, 15302, 15541, 15543, 15571, 15573, 15591, 15593, 15630, 15661, 15663, 15783, 15785, 15986, 15988, 15994, 15996, 17228, 17230, 17240, 17242, 17280, 17282, 17288, 17290, 17340, 17342, 17348, 17350, 17380, 17382, 17384, 17386, 17396, 17398, 17404, 17406, 17452, 17454, 17460, 17462, 17468, 17470, 17492	
		<code>\(</code> . . . . . 190, 215, 313, 723, 726, 728, 1763, 14443, 14768	
		<code>\)</code> . . . . . 191, 216, 314, 695, 701, 704, 1764, 14444, 14770	
		<code>\*</code> . . . . . 316	
		<code>\+</code> . . . . . 200, 225, 317	
		<code>\-</code> . . . . . 201, 226	
		<code>\.</code> . . . . . 198, 223, 310, 3481, 3888, 14701, 14713, 14725, 14789, 15083, 15090, 15110, 15161, 15190, 15224, 15301, 15302, 15541, 15543, 15571, 15573, 15591, 15593, 15630, 15661, 15663, 15783, 15785, 15986, 15988, 15994, 15996, 17228, 17230, 17240, 17242, 17280, 17282, 17288, 17290, 17340, 17342, 17348, 17350, 17380, 17382, 17384, 17386, 17396, 17398, 17404, 17406, 17452, 17454, 17460, 17462, 17468, 17470, 17492	
		<code>\(</code> . . . . . 190, 215, 313, 723, 726, 728, 1763, 14443, 14768	
		<code>\)</code> . . . . . 191, 216, 314, 695, 701, 704, 1764, 14444, 14770	
		<code>\*</code> . . . . . 316	
		<code>\+</code> . . . . . 200, 225, 317	
		<code>\-</code> . . . . . 201, 226	
		<code>\.</code> . . . . . 198, 223, 310, 3481, 3888, 14701, 14713, 14725, 14789, 15083, 15090, 15110, 15161, 15190, 15224, 15301, 15302, 15541, 15543, 15571, 15573, 15591, 15593, 15630, 15661, 15663, 15783, 15785, 15986, 15988, 15994, 15996, 17228, 17230, 17240, 17242, 17280, 17282, 17288, 17290, 17340, 17342, 17348, 17350, 17380, 17382, 17384, 17386, 17396, 17398, 17404, 17406, 17452, 17454, 17460, 17462, 17468, 17470, 17492	
		<code>\(</code> . . . . . 190, 215, 313, 723, 726, 728, 1763, 14443, 14768	
		<code>\)</code> . . . . . 191, 216, 314, 695, 701, 704, 1764, 14444, 14770	
		<code>\*</code> . . . . . 316	
		<code>\+</code> . . . . . 200, 225, 317	
		<code>\-</code> . . . . . 201, 226	
		<code>\.</code> . . . . . 198, 223, 310, 3481, 3888, 14701, 14713, 14725, 14789, 15083, 15090, 15110, 15161, 15190, 15224, 15301, 15302, 15541, 15543, 15571, 15573, 15591, 15593, 15630, 15661, 15663, 15783, 15785, 15986, 15988, 15994, 15996, 17228, 17230, 17240, 17242, 17280, 17282, 17288, 17290, 17340, 17342, 17348, 17350, 17380, 17382, 17384, 17386, 17396, 17398, 17404, 17406, 17452, 17454, 17460, 17462, 17468, 17470, 17492	
		<code>\(</code> . . . . . 190, 215, 313, 723, 726, 728, 1763, 14443, 14768	
		<code>\)</code> . . . . . 191, 216, 314, 695, 701, 704, 1764, 14444, 14770	
		<code>\*</code> . . . . . 316	
		<code>\+</code> . . . . . 200, 225, 317	
		<code>\-</code> . . . . . 201, 226	
		<code>\.</code> . . . . . 198, 223, 310, 3481, 3888, 14701, 14713, 14725, 14789, 15083, 15090, 15110, 15161, 15190, 15224, 15301, 15302, 15541, 15543, 15571, 15573, 15591, 15593, 15630, 15661, 15663, 15783, 15785, 15986, 15988, 15994, 15996, 17228, 17230, 17240, 17242, 17280, 17282, 17288, 17290, 17340, 17342, 17348, 17350, 17380, 17382, 17384, 17386, 17396, 17398, 17404, 17406, 17452, 17454, 17460, 17462, 17468, 17470, 17492	
		<code>\(</code> . . . . . 190, 215, 313, 723, 726, 728, 1763, 14443, 14768	
		<code>\)</code> . . . . . 191, 216, 314, 695, 701, 704, 1764, 14444, 14770	
		<code>\*</code> . . . . . 316	
		<code>\+</code> . . . . . 200, 225, 317	
		<code>\-</code> . . . . . 201, 226	
		<code>\.</code> . . . . . 198, 223, 310, 3481, 3888, 14701, 14713, 14725, 14789, 15083, 15090, 15110, 15161, 15190, 15224, 15301, 15302, 15541, 15543, 15571, 15573, 15591, 15593, 15630, 15661, 15663, 15783, 15785, 15986, 15988, 15994, 15996, 17228, 17230, 17240, 17242, 17280, 17282, 17288, 17290, 17340, 17342, 17348, 17350, 17380, 17382, 17384, 17386, 17396, 17398, 17404, 17406, 17452, 17454, 17460, 17462, 17468, 17470, 17492	
		<code>\(</code> . . . . . 190, 215, 313, 723, 726, 728, 1763, 14443, 14768	
		<code>\)</code> . . . . . 191, 216, 314, 695, 701, 7	

<code>\@PushButton</code> . . . . . 6113, 10407, 12702, 12822, 12935, 13306, 13675	<code>\@commahyperpage</code> . 8406, 8411	<code>\@extra@b@citeb</code> . . . 7784, 7787, 7804, 7809, 7829
<code>\@Refstar</code> . . . . . 4681, 8520	<code>\@ctrerr</code> . . . . . 6991, 7000	<code>\@extra@binfo</code> . 7783, 7786, 7790
<code>\@Reset</code> . . . . . 6122, 10410, 12753, 12825, 12951, 13359, 13732	<code>\@currDisplay</code> . . . . 5871, 12610, 12673, 12918, 12932, 13211, 13275, 13567, 13634	<code>\@fifthoffive</code> . . 4223, 4967, 8472, 8605
<code>\@Submit</code> . . 6119, 10413, 12733, 12828, 12948, 13336, 13709	<code>\@currValue</code> . . 5873, 5875, 5877, 12671, 12682, 12918, 12929, 13273, 13283, 13632, 13649	<code>\@filebordercolor</code> 3516, 4099, 9104, 9106, 10035, 10037, 10544, 10546, 11610
<code>\@TextField</code> . 6104, 10398, 12566, 12813, 12841, 13169, 13518	<code>\@currentHlabel</code> . . . . . 7070	<code>\@filecolor</code> 3450, 3462, 9125, 9642, 9659, 10053, 10550
<code>\@addtoreset</code> . . 8214, 8215, 8229	<code>\@currentHref</code> . . . . . . . 2207, 5025, 5316, 6227, 6907, 7049, 7051, 7061, 7063, 7070, 7078, 7080, 7090, 7132, 7143, 7145, 7184, 7203, 7207, 7216, 7242, 7339, 7370, 7395, 7475, 7485, 7487, 7488, 7544, 7573, 7672, 7698, 7702, 7729, 7731, 7888, 8073, 8096, 8109, 8116, 8184, 8208, 8210, 14209, 14601, 14614, 14625, 14652, 14669	<code>\@firstoffive</code> . . 4671, 8512, 8610
<code>\@alph</code> . . . . . 7019, 7021	<code>\@currentcounter</code> . . . . . 7562	<code>\@firstofone</code> . . . . . 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 590, 623, 1238, 4551, 4953, 5749, 5755, 6005, 6820, 7016, 7028, 7665, 7747, 8033, 8267, 9330, 13042, 13848, 13865, 13883
<code>\@anchorcolor</code> 3460, 9428, 9523, 10458, 11939, 12226	<code>\@currentlabel</code> 7563, 7881, 7888, 8189, 8196	<code>\@firstoftwo</code> 606, 882, 1446, 6316, 14659
<code>\@arabic</code> . . . . . 6926, 6942, 7018	<code>\@currentlabelname</code> . 2197, 7476, 7545, 7574, 7677	<code>\@fnssymbol</code> . . . . . 7017
<code>\@auxout</code> 2199, 4980, 5287, 6350, 6352, 7819, 7834, 7850, 7860, 7879, 7885, 7909	<code>\@currentlabstr</code> . . . . 2196, 2204	<code>\@footnotemark</code> 7418, 7481, 7499, 7582, 7594, 7596, 7608, 7609, 7640, 7642
<code>\@backslashchar</code> 1036, 1723, 1727, 1730, 1868, 1885, 1891, 1895, 1903, 4732, 8739, 8749	<code>\@curropt</code> . 12607, 12608, 12669, 12670, 12907, 12914, 12915, 12917, 12924, 12925, 12927, 13208, 13209, 13271, 13272, 13564, 13565, 13630, 13631	<code>\@for</code> . 3492, 5391, 12607, 12669, 12907, 12914, 12924, 13208, 13271, 13564, 13630
<code>\@baseurl</code> 3467, 3469, 5181, 9176, 9179, 9413, 9415, 9700, 9702, 10221, 10231, 10309, 10311, 10841, 10843, 11225, 11239, 11924, 11926, 12124, 12138, 12212, 12214	<code>\@dblarg</code> . . . . . 7667, 7749	<code>\@fourthoffive</code> . 4968, 8600, 8607
<code>\@begintheorem</code> 7304, 7308, 7334, 7341, 7365, 7372	<code>\@definecounter</code> . . . . 8169, 8170	<code>\@gobble</code> . . . . . 49, 56, 117, 530, 531, 532, 533, 570, 571, 572, 573, 592, 609, 610, 611, 620, 622, 889, 1175, 1236, 1255, 1268, 1272, 1335, 1398, 1399, 1406, 1411, 1425, 1430, 2055, 2230, 2508, 2520, 3861, 4174, 4211, 4268, 4698, 5734, 5995, 6281, 6285, 6302, 6304, 6320, 6321, 6324, 6325, 6327, 6426, 6794, 6814, 6818, 7293, 7321, 7354, 7654, 7744, 8072, 8665, 9332, 10727, 10730, 13089, 13470, 14266, 14267, 14268, 14269
<code>\@bibitem</code> . . . . . 7826, 7857	<code>\@ehc</code> . . 2564, 2691, 2717, 2733, 2768, 2807, 2814, 2825, 2831, 4266, 4877, 5145, 5495, 5619, 5815, 5848, 6042, 6095, 12711, 12764, 13316, 13370, 13685, 13743	<code>\@gobblefour</code> 536, 646, 932, 933, 934, 3675
<code>\@biblabel</code> . . . . . 7799, 7846	<code>\@ehd</code> . . 63, 263, 269, 293, 7653, 7743	<code>\@gobbleopt</code> . . . . . 6327, 6329
<code>\@bookmarkopenstatus</code> . . 4549, 4566, 14279	<code>\@elt</code> . . . 6914, 6916, 6917, 6922	<code>\@gobbletwo</code> 534, 613, 639, 647, 648, 931, 1353, 1430, 1434,
<code>\@bookmarksopenlevel</code> . . 3421, 3423, 4552	<code>\@endForm</code> . 5784, 10394, 12534, 12809, 12837, 13142, 13496	
<code>\@bsphack</code> . . . . 2192, 4973, 7883	<code>\@endpary</code> . . 7302, 7330, 7361	
<code>\@capstartfalse</code> . . . . . 7692	<code>\@eqnncr</code> . . . . . 7226	
<code>\@caption</code> 7657, 7669, 7712, 7749, 7751	<code>\@eqnstarfalse</code> . . . . . 7198, 7229	
<code>\@capytype</code> 2201, 7652, 7656, 7660, 7667, 7674, 7728, 7742, 7746, 7749	<code>\@eqnstartrue</code> . . . . . 7226	
<code>\@car</code> . . . 1318, 1334, 1352, 1372, 3400, 5401	<code>\@eqnswtrue</code> . . . . . 7159, 7168	
<code>\@chapter</code> . . . . . 14620, 14621	<code>\@esphack</code> 2213, 4984, 7893, 8324	
<code>\@cite</code> . . . . . 7944, 7950		
<code>\@cite@opt</code> 7945, 7951, 7955, 7965		
<code>\@citebordercolor</code> . . 3515, 4101		
<code>\@citecolor</code> . . . . . 3461		
<code>\@citedata@opt</code> 7946, 7952, 7954		
<code>\@citedatax</code> . . . . . 7961, 7966		
<code>\@citedatax@opt</code> . . . 7958, 7964		
<code>\@citeseppen</code> . . . . . 7943, 7949		
<code>\@clubpenalty</code> . . . . . 7404		

2393, 3673, 3674, 4215, 5680, 6306, 6315, 6323, 6327, 8589, 14611	\@inlabelfalse . . . . . 7383	\@namerefstar . . . . . 4677, 8517
\@harvarditem . . . . . 7898, 7900	\@inmathwarn . . . . . 498, 499	\@nameuse 2201, 2642, 5507, 5818
\@hyper@anchor . . . 5231, 5232	\@inpenc@undefined@ . . . . 1930	\@one 2583, 2756, 4464, 4537, 4847, 9964, 9965, 9970, 10820, 11763, 12541, 13505
\@hyper@itemfalse . . 6851, 6868, 6883	\@labels . . . . . 7399	\@newctr . . . . . 8174, 8175
\@hyper@itemtrue . . . . . 6852	\@latex@ . . . . . 6413, 6414	\@newl@bel . . . 5270, 6376, 7786
\@hyper@launch . . . 5151, 5160, 9129, 10058, 10619, 11628	\@latex@error . . . . . 7653, 7743	\@newlistfalse . . . . . 7380
\@hyper@linkfile . . . 5132, 5135, 5139, 5171	\@latex@warning . . . 4960, 8447, 8467, 8484, 8616	\@nil . . . . . 274, 301, 1230, 1233, 1241, 1318, 1336, 1354, 1370, 1372, 1375, 1378, 1381, 1939, 1941, 1957, 1959, 3400, 4754, 4758, 4763, 5198, 5206, 5212, 5214, 5401, 5986, 5989, 6008, 6401, 6404, 6411, 6413, 6414, 6528, 6576, 6577, 6579, 6602, 6619, 6673, 6675, 7127, 7136, 7138, 7150, 8390, 8392, 8399, 8422, 8425, 8435, 8451, 8454, 8624, 8655, 8735, 8741, 8745, 8751, 10692, 10694, 13855, 13868, 13874, 14307, 14310, 14313, 14322, 14325, 14334
\@hyper@readexternallink 5126, 5130	\@lbibitem . . . . . 7800, 7845	\@nobreakfalse . . . . . 7402
\@hyperdef . . . . . 4940, 4941	\@linkbordercolor . . 3517, 4096, 9059, 10448	\@nocnterr . . . . . 8228, 8241
\@hyperpage . . . . . 8403, 8404	\@linkcolor . . . . . 3459, 11278	\@nocounterr . . . . . 8227, 8240
\@hyperref . . . . . 4920, 4932	\@linkdim 456, 9477, 9478, 9486, 9487, 9488, 9557, 9558, 9570, 9571, 9572, 9594, 9595, 9608, 9609, 9610, 9634, 9635, 9648, 9649, 9650, 11992, 11993, 12001, 12002, 12003, 12274, 12275, 12288, 12289, 12290	\@noparitemfalse . . . . . 7381
\@ifclassloaded . . . . . 9335	\@listctr . . . . . 7835, 7861	\@number . . . . . 7016, 8033
\@if@t@r . . . . . 6331, 7106	\@m . . . . . 10774	\@onx . . . 8231, 8244, 8247, 8249
\@ifnextchar . . . 12, 88, 103, 123, 640, 4822, 4920, 4940, 5079, 5783, 6104, 6107, 6110, 6113, 6116, 6119, 6122, 6327, 6382, 6391, 7598, 7616, 7898, 7956, 11250, 11539, 11553, 14358, 14361	\@mainaux 6348, 6349, 6777, 6785, 13035, 13038, 13066, 13081	\@onelevel@sanitize . 2386, 2390, 2598, 3399, 4243, 4273, 4287, 4788, 5193, 5196, 5209, 5223, 5491, 5727, 5811, 6629, 6631, 7057, 8102, 8498, 9822, 14304
\@ifpackageloaded . . . . . . . . 775, 2187, 2617, 4159, 4364, 6893, 7073, 7111, 7121, 7155, 7283, 7287, 7495, 7511, 7551, 7725, 7868, 7941, 8181, 8238, 8272, 8273, 8274, 8530, 8676, 8680, 12204	\@makecaption 7693, 7695, 7762	\@oparg . 7304, 7308, 7334, 7341, 7365, 7372
\@ifpackagewith 3261, 4157, 8204	\@makefnmark . . . . . 7490, 7645	\@outlinefile 14277, 14366, 14461, 14463, 14465, 14543, 14545, 14547
\@ifstar . . . 66, 6263, 6267, 6336, 6340, 8569	\@makefntext . . . . . 7564	\@pagerefstar . 4673, 8514, 8535, 8542, 8551, 8560
\@ifundefined . . . . . 34, 340, 473, 842, 852, 885, 888, 2482, 2635, 2656, 2657, 3279, 3321, 3329, 3336, 3358, 3398, 4125, 5490, 5810, 6260, 6747, 6861, 6897, 6912, 7113, 7124, 7125, 7178, 7209, 7237, 7274, 7414, 7658, 7676, 7793, 8178, 8219, 8227, 8228, 8240, 8241, 8248, 8531, 10285, 10923, 10924, 11730, 12987, 13089, 13470, 13846, 13857, 14275, 14592, 14639	\@makeoother . . . . . 166, 167, 179, 180, 182, 183, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 4722, 8711, 14447, 14450, 14477, 14480	\@pagesetref . . . . . 8463
\@indexfile . . . 8316, 8331, 8346, 8350, 8360	\@menubordercolor . 3518, 4098, 9389, 9391, 10132, 10134, 10657, 10659, 11532	\@parboxrestore 7561, 7685, 7757
	\@menucolor . 3464, 9404, 10143, 10663	\@parcount . . . . . 14425, 14433
	\@minipagefalse . . . . . 7379	\@part . . . . . 14638, 14642
	\@mkboth . . . . . 613, 14611	\@pdfauthor . 3689, 4104, 9236, 9680, 10166, 10894, 11149, 12053
	\@mpfn . . . . . 7421, 7617, 7630	
	\@mpfootnotetext . . 7424, 7437, 7438, 7500	
	\@mycount . . . . . 14423, 14433	
	\@namedef 2158, 2160, 2162, 2164, 2166, 2168, 2170, 2172, 2174, 2176, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2329, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 3270, 3282, 5501, 5502, 5503, 5504, 5826, 5827, 7225, 7228, 7873, 7874, 7875, 7876	



\@pdfborder . . . . .	\@pdfnonfullscreenpagemode . . .	\@pdfstartpage . . . . .
. . . 3350, 3536, 3537, 3538,	. . . 9198, 9737, 10200, 10852,	. . . 3875, 3877, 4115, 9184,
3545, 3549, 3572, 3574,	11204, 12103	9188, 9708, 9713, 10224,
4632, 8992, 9840, 10446,	\@pdfnumcopies 9214, 9216, 9753,	10228, 10833, 10837, 11175,
11027, 11110, 11530, 11543,	9755, 10216, 10218, 10868,	11180, 12074, 12079
11558, 11579, 11607, 11638,	10870, 11220, 11222, 12119,	\@pdfstartview . . . . .
11667, 11769, 11865, 12033	12121	. . . 3882, 3884, 4113, 9186,
\@pdfborderstyle . . . 3351, 3553,	\@pdfpageduration . 3477, 9297,	9188, 9710, 9714, 10226,
3554, 3555, 3564, 3568,	9301, 9306, 10266, 10268,	10228, 10835, 11177, 11181,
3576, 3578, 4633, 5957,	10271, 10783, 10785, 10788,	12076, 12080
8993, 9841, 10447, 11028,	11066, 11068, 11076	\@pdfsubject . 3721, 4109, 9238,
11111, 11531, 11544, 11559,	\@pdfpagelayout . . . 9224, 9765,	9685, 10156, 10896, 11147,
11580, 11608, 11639, 11668,	10240, 10873, 10875, 11234,	12058
11770, 11866, 12034	12133	\@pdftempa . . . 5137, 5138, 5141
\@pdfcreationdate . . . . .	\@pdfpagemode 4352, 4353, 4562,	\@pdftempwordfile . . 5128, 5138
. . . 3709, 4107, 9240, 9242,	4563, 4572, 4573, 9178,	\@pdftempwordrun . 5129, 5141
9672, 9674, 10158, 10160,	9721, 10235, 10840, 11188,	\@pdftitle 3684, 4103, 9237, 9670,
11124, 11126, 12045, 12047	12087	10155, 10895, 11146, 12043
\@pdfcreator . 3699, 3704, 4106,	\@pdfpagescrop 3931, 4112, 9163,	\@pdftrapped 3731, 3734, 3737,
9239, 9671, 10157, 10897,	9167, 9704, 9705, 9726,	3746, 3755, 4111, 9253,
11148, 12044	9728, 10247, 10249, 10829,	9255, 10172, 10174, 11151
\@pdfdirection 9199, 9738, 10201,	10831, 11193, 11195, 12092,	\@pdfview . . . 3863, 8974, 8982,
10853, 11205, 12104	12094	9790, 9794, 9798, 9802,
\@pdfduplex . 9205, 9744, 10207,	\@pdfpagetransition . 3473, 9273,	9806, 9810, 9811, 9814,
10859, 11211, 12110	9277, 9282, 10255, 10257,	9815, 9818, 9822, 9824,
\@pdfhighlight 3522, 3530, 3532,	10260, 10672, 10674, 10676,	9839, 10445, 10455, 10467,
4102, 11026, 11109, 11529,	11049, 11051, 11059	10964, 10984, 11669, 11771,
11578, 11606, 11637	\@pdfpicktraybypdfsize . . . . .	11867, 12146
\@pdfkeywords 3726, 4110, 9252,	. . . 9206, 9208, 9745, 9747,	\@pdfviewarea 9200, 9739, 10202,
9669, 10171, 10902, 11150,	10208, 10210, 10860, 10862,	10854, 11206, 12105
12042	11212, 11214, 12111, 12113	\@pdfviewclip 9201, 9740, 10203,
\@pdflang 3977, 3979, 3980, 3982,	\@pdfprintarea 9202, 9741, 10204,	10855, 11207, 12106
3984, 3986, 3992, 4022,	10856, 11208, 12107	\@pdfviewparams . . 3865, 3867,
4023, 4025, 4046, 4050,	\@pdfprintclip 9203, 9742, 10205,	10964, 10984, 11670, 11772,
4052, 4069, 4078, 4085,	10857, 11209, 12108	11868, 12147
4117, 9225, 9227, 9766,	\@pdfprintpagerange . . . . .	\@percentchar 4717, 4718, 4770,
9768, 10241, 10243, 11235,	. . . 3643, 4116, 9210, 9212,	14281
11237, 12134, 12136	9749, 9751, 10212, 10214,	\@processme . . . . .
\@pdfm@dest . . 9784, 9843, 9847	10864, 10866, 11216, 11218,	. . . 5859, 5860, 9279, 9285,
\@pdfm@mark 6765, 9783, 9835,	12115, 12117	9303, 9309, 11253, 11254,
9855, 9869, 9871, 9885,	\@pdfprintscaling . . 9204, 9743,	11376, 11377, 11380, 11381
9887, 9892, 9893, 9923,	10206, 10858, 11210, 12109	\@protected@testopt . . . . . 643
9947, 9949, 9954, 9972,	\@pdfproducer . . . . .	\@protected@testopt@xargs . 644
9995, 10028, 10063, 10095,	. . . 3694, 4105, 9248, 9250,	\@refstar . . . . . 4669, 8511
10125, 10153, 10222, 10249,	9681, 9683, 10167, 10169,	\@runbordercolor . . . 3519, 4100,
13473, 13474, 13475, 13494,	10797, 10798, 10802, 10805,	9138, 9140, 10070, 10072,
13512, 13515, 13545, 13640,	10806, 10898, 10900, 11135,	10638, 10640, 11641
13667, 13698, 13723, 13751,	11139, 11664, 11665, 11762,	\@runcolor . . . 3465, 9158, 10086,
13780, 13791, 13824, 13832,	11764, 11766, 11862, 11863,	10644
14514	12054, 12056	\@safe@activesfalse . . . . . 596
\@pdfmoddate . . . . .	\@pdfremotestartview . . . . .	\@safe@activestruer . . . . . 595
. . . 3715, 4108, 9244, 9246,	. . . 3892, 3894, 3895, 3918,	\@savsf . . . . . 8977, 8985
9676, 9678, 10162, 10164,	3922, 3924, 3925, 3927,	\@schapter . . . . . 14608, 14609
11128, 11132, 12049, 12051	4114, 9117, 10044, 11618	



1116, 1117, 2032, 2168,  
 2176, 2178, 14442, 14926,  
 14928, 14930, 14932, 14934,  
 14936, 14938, 14940, 14942,  
 14944, 14946, 14948, 14950,  
 14952, 14954, 14956, 14958,  
 14959, 14961, 14963, 14965,  
 14967, 14969, 14971, 14973,  
 14975, 14977, 14979, 14981,  
 14983, 14985, 14987, 14988,  
 14990, 14992, 14994, 14996,  
 14998, 15000, 15002, 15004,  
 15006, 15008, 15010, 15012,  
 15014, 15016, 15017, 15019,  
 15020, 15022, 15023, 15025,  
 15026, 15028, 15030, 15032,  
 15034, 15036, 15038, 15040,  
 15042, 15044, 15046, 15048,  
 15050, 15052, 15054, 15056,  
 15057, 15059, 15151, 15383,  
 15385, 15387, 15389, 15391,  
 15393, 15395, 15397, 15399,  
 15401, 15403, 15405, 15407,  
 15409, 15411, 15413, 15415,  
 15417, 15419, 15421, 15423,  
 15425, 15427, 15429, 15433,  
 15435, 15437, 15439, 15441,  
 15443, 15445, 15446, 15448,  
 15450, 15452, 15454, 15456,  
 15458, 15460, 15462, 15464,  
 15466, 15468, 15470, 15472,  
 15474, 15475, 15477, 15478,  
 15480, 15481, 15483, 15484,  
 15486, 15489, 15491, 15493,  
 15495, 15497, 15499, 15501,  
 15503, 15505, 15507, 15509,  
 15511, 15513, 15516, 15517,  
 15519, 15852, 15856, 15860,  
 15863, 15865, 15867, 15869,  
 15870, 15872, 15874, 15876,  
 15878, 15880, 15882, 15884,  
 15887, 15889, 15891, 15893,  
 15895, 15897, 15899, 15900,  
 15902, 15904, 15906, 15908,  
 15910, 15912, 15915, 15918,  
 16329, 16332, 16335, 16337,  
 16340, 16343, 16346, 16349,  
 16351, 16353, 16355, 16357,  
 16359, 16361, 16362, 16364,  
 16366, 16368, 16370, 16372,  
 16507, 16509, 16511, 16513,  
 16515, 16517, 16519, 16521,  
 16523, 16525, 16527, 16529,  
 16531, 16533, 16534, 16536,

16538, 16540, 16542, 16543,  
 16545, 16546, 16548, 16549,  
 16551, 16552, 16555, 16556,  
 16558, 16559, 16561, 16562,  
 16564, 16565, 16568, 16974,  
 16976, 16978, 16980, 16982,  
 16984, 16986, 16988, 16990,  
 16992, 16994, 16996, 16998,  
 17000, 17002, 17004, 17006,  
 17008, 17010, 17012, 17014,  
 17016, 17018, 17021, 17024,  
 17026, 17028, 17030, 17032,  
 17034, 17036, 17038, 17040,  
 17042, 17044, 17046, 17048,  
 17050, 17052, 17055, 17058,  
 17060, 17062, 17064, 17066,  
 17068, 17070, 17072, 17074,  
 17076, 17078, 17080, 17082,  
 17084, 17086, 17088, 17090,  
 17094, 17096, 17098, 17100,  
 17102, 17104, 17106, 17108,  
 17110, 17112, 17114, 17116,  
 17118, 17120, 17122, 17124,  
 17126, 17128, 17130, 17132,  
 17134, 17136, 17138, 17140,  
 17142, 17144, 17146, 17149,  
 17151, 17153, 17155, 17506,  
 17508, 17510, 17512, 17514,  
 17516, 17518, 17520, 17522,  
 17524, 17526, 17528, 17884,  
 17887, 17890, 17893, 17896,  
 17899, 17902, 17904, 17906,  
 17908, 17910, 17913, 17916,  
 17919, 17921, 17924, 17927,  
 17929, 17932, 17935, 17938,  
 17941, 17943, 17945, 17947,  
 17949, 17951, 17953, 17955,  
 17957, 17960, 17963, 17965,  
 17968, 17970, 17973, 17975,  
 17977, 17979, 18026, 18064,  
 18069, 18442, 18444, 18446,  
 18449, 18452, 18454, 18456,  
 18458, 18460, 18462, 18465,  
 18468, 18470, 18472, 18474,  
 18476, 18479, 18482, 18484,  
 18486, 18488, 18490, 18493,  
 18496, 18498, 18500, 18502,  
 18504, 18506, 18508, 18510,  
 18512, 18514, 18517, 18520,  
 18522, 18524, 18526, 18528,  
 18531, 18535, 18538, 18541,  
 18543, 18545, 18547, 18549,  
 18618, 18621, 18697, 18699,  
 18701, 18703, 18705, 18707,

18709, 18711, 18713, 18715,  
 18717, 18719, 18721, 18723,  
 18725, 18727, 18729, 18731,  
 18733, 18735, 18737, 18739,  
 18741, 18743, 18745, 18747,  
 18749, 18751, 18753, 18755,  
 18757, 18759, 18761, 18763,  
 18765, 18767, 18769, 18771,  
 18773, 18775, 18777, 18779,  
 18781, 18783, 18785, 18814,  
 18817, 18819, 18821, 18824,  
 18826, 18828, 18830, 18833,  
 18835, 19053, 19055, 19057,  
 19059, 19061, 19232, 19234,  
 19236, 19238, 19240, 19242,  
 19245, 19249, 19251, 19253,  
 19255, 19257, 19259, 19261,  
 19263, 19265, 19267, 19269,  
 19373, 19376, 19379, 19381,  
 19383, 19385, 19387, 19389,  
 19391, 19393, 19520, 19522,  
 19524, 19526, 19528, 19531,  
 19534, 19537, 19541, 19544,  
 19547, 19549, 19551, 19553,  
 19555, 19558, 19560, 19635,  
 19647, 19649, 19651, 19653,  
 19655, 19675, 19676, 19677,  
 19681, 19682, 19683, 19686,  
 19688, 19690, 19701, 19703,  
 19707, 19708, 19709, 19710,  
 19711, 19712, 19713, 19714,  
 19716, 19717, 19718, 19719,  
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 19737, 19738, 19739, 19740,  
 19741, 19742, 19743, 19744,  
 19745, 19746, 19748, 19750,  
 19761, 19763, 19767, 19768,  
 19769, 19770, 19771, 19772,  
 19773, 19774, 19776, 19777,  
 19778, 19779, 19780, 19781,  
 19782, 19783, 19784, 19785,  
 19786, 19787, 19788, 19789,  
 19790, 19791, 19792, 19793,  
 19794, 19796, 19797, 19798,  
 19799, 19800, 19801, 19802,  
 19803, 19804, 19805, 19909

\9 .

2162, 2164, 2166, 2168,  
2170, 2172, 2174, 2176,  
2178, 15151, 17158, 17160,  
17162, 17164, 17166, 17168,  
17171, 17174, 17177, 17180,  
17182, 17184, 17186, 17188,  
17190, 17192, 17194, 17196,  
17198, 17201, 17203, 17206,  
17208, 17211, 17213, 17217,  
17221, 17224, 17226, 17228,  
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17298, 17300, 17302, 17304,  
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17322, 17324, 17326, 17328,  
17330, 17332, 17334, 17336,  
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17438, 17440, 17442, 17444,  
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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,  
17518, 17520, 17522, 17524,  
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17562, 17565, 17567, 17569,  
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17587, 17589, 17591, 17593,

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17611, 17613, 17615, 17617,  
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17635, 17637, 17639, 17641,  
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17651, 17653, 17655, 17657,  
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17683, 17685, 17687, 17689,  
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17709, 17711, 17713, 17715,  
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17726, 17728, 17730, 17732,  
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17761, 17763, 17767, 17769,  
17771, 17773, 17775, 17777,  
17779, 17781, 17783, 17785,  
17787, 17789, 17791, 17793,  
17795, 17797, 17799, 17801,  
17803, 17805, 17809, 17813,  
17815, 17817, 17819, 17822,  
17825, 17827, 17829, 17831,  
17833, 17835, 17838, 17840,  
17842, 17844, 17846, 17848,  
17850, 17852, 17854, 17856,  
17858, 17860, 17864, 17867,  
17869, 17872, 17875, 17878,  
17881, 17884, 17887, 17890,  
17893, 17896, 17899, 17902,  
17904, 17906, 17908, 17910,  
17913, 17916, 17919, 17921,  
17924, 17927, 17929, 17932,  
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17989, 17991, 17994, 17996,  
17998, 18000, 18002, 18004,  
18007, 18010, 18012, 18014,  
18016, 18018, 18020, 18022,  
18024, 18026, 18028, 18030,  
18032, 18034, 18036, 18038,  
18041, 18043, 18045, 18047,  
18052, 18054, 18057, 18059,  
18062, 18064, 18067, 18069,  
18072, 18074, 18076, 18079,  
18081, 18083, 18086, 18089,

18091, 18093, 18096, 18099,  
18101, 18103, 18106, 18108,  
18111, 18113, 18115, 18118,  
18120, 18122, 18124, 18126,  
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18138, 18140, 18142, 18145,  
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18164, 18166, 18169, 18172,  
18175, 18177, 18180, 18182,  
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18211, 18215, 18216, 18220,  
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18281, 18283, 18285, 18287,  
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18297, 18299, 18301, 18303,  
18305, 18307, 18309, 18311,  
18313, 18315, 18317, 18319,  
18321, 18323, 18325, 18327,  
18329, 18331, 18333, 18335,  
18337, 18340, 18343, 18346,  
18349, 18352, 18356, 18360,  
18362, 18364, 18366, 18368,  
18370, 18373, 18376, 18379,  
18382, 18384, 18387, 18390,  
18394, 18397, 18399, 18402,  
18405, 18408, 18412, 18415,  
18418, 18421, 18424, 18428,  
18432, 18434, 18436, 18438,  
18440, 18442, 18444, 18446,  
18449, 18452, 18454, 18456,  
18458, 18460, 18462, 18465,  
18468, 18470, 18472, 18474,  
18476, 18479, 18482, 18484,  
18486, 18488, 18490, 18493,  
18496, 18498, 18500, 18502,  
18504, 18506, 18508, 18510,  
18512, 18514, 18517, 18520,  
18522, 18524, 18526, 18528,  
18531, 18535, 18538, 18541,  
18543, 18545, 18547, 18549,  
18551, 18553, 18555, 18557,  
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18569, 18571, 18573, 18575,  
18577, 18579, 18581, 18583,  
18585, 18588, 18591, 18593,

18596, 18599, 18601, 18604,  
 18607, 18609, 18611, 18613,  
 18615, 18618, 18621, 18623,  
 18625, 18627, 18630, 18632,  
 18634, 18636, 18638, 18640,  
 18642, 18644, 18646, 18648,  
 18650, 18652, 18654, 18656,  
 18658, 18660, 18662, 18664,  
 18666, 18668, 18670, 18672,  
 18675, 18677, 18679, 18681,  
 18683, 18685, 18687, 18689,  
 18691, 18693, 18695, 18697,  
 18699, 18701, 18703, 18705,  
 18707, 18709, 18711, 18713,  
 18715, 18717, 18719, 18721,  
 18723, 18725, 18727, 18729,  
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 18739, 18741, 18743, 18745,  
 18747, 18749, 18751, 18753,  
 18755, 18757, 18759, 18761,  
 18763, 18765, 18767, 18769,  
 18771, 18773, 18775, 18777,  
 18779, 18781, 18783, 18785,  
 18787, 18792, 18796, 18800,  
 18803, 18805, 18807, 18811,  
 18814, 18817, 18819, 18821,  
 18824, 18826, 18828, 18830,  
 18833, 18835, 18839, 18841,  
 18843, 18845, 18848, 18851,  
 18854, 18858, 18860, 18862,  
 18864, 18867, 18872, 18875,  
 18877, 18879, 18884, 18887,  
 18890, 18892, 18895, 18897,  
 18899, 18902, 18909, 18912,  
 18917, 18920, 18923, 18926,  
 18929, 18932, 18935, 18938,  
 18941, 18944, 18947, 18950,  
 18953, 18956, 18959, 18962,  
 18965, 18968, 18971, 18975,  
 18978, 18981, 18983, 18985,  
 18987, 18989, 18991, 18994,  
 18996, 18998, 19000, 19002,  
 19004, 19007, 19009, 19012,  
 19014, 19017, 19019, 19021,  
 19023, 19025, 19027, 19029,  
 19031, 19033, 19035, 19037,  
 19039, 19041, 19043, 19045,  
 19048, 19050, 19053, 19055,  
 19057, 19059, 19061, 19063,  
 19067, 19071, 19073, 19075,  
 19077, 19079, 19081, 19084,  
 19086, 19089, 19091, 19093,  
 19095, 19097, 19099, 19102,  
 19104, 19106, 19108, 19110,

19112, 19114, 19116, 19118,  
 19120, 19122, 19124, 19126,  
 19129, 19131, 19133, 19135,  
 19137, 19139, 19141, 19143,  
 19145, 19147, 19149, 19151,  
 19153, 19155, 19157, 19159,  
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 19169, 19171, 19173, 19176,  
 19178, 19180, 19182, 19184,  
 19186, 19188, 19190, 19192,  
 19194, 19196, 19198, 19200,  
 19202, 19205, 19208, 19210,  
 19213, 19216, 19219, 19222,  
 19224, 19226, 19228, 19230,  
 19232, 19234, 19236, 19238,  
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 19295, 19297, 19302, 19306,  
 19309, 19311, 19313, 19316,  
 19319, 19322, 19325, 19328,  
 19331, 19334, 19337, 19340,  
 19343, 19346, 19349, 19351,  
 19353, 19355, 19357, 19359,  
 19362, 19368, 19371, 19373,  
 19376, 19379, 19381, 19383,  
 19385, 19387, 19389, 19391,  
 19393, 19395, 19397, 19399,  
 19402, 19404, 19406, 19408,  
 19411, 19414, 19416, 19418,  
 19420, 19423, 19425, 19428,  
 19430, 19434, 19437, 19439,  
 19441, 19443, 19445, 19447,  
 19449, 19451, 19453, 19455,  
 19457, 19459, 19461, 19464,  
 19466, 19468, 19471, 19474,  
 19476, 19478, 19480, 19482,  
 19484, 19486, 19488, 19490,  
 19492, 19494, 19496, 19498,  
 19500, 19502, 19504, 19506,  
 19508, 19510, 19512, 19514,  
 19516, 19518, 19520, 19522,  
 19524, 19526, 19528, 19531,  
 19534, 19537, 19541, 19544,  
 19547, 19549, 19551, 19553,  
 19555, 19558, 19560, 19563,  
 19565, 19567, 19569, 19571,  
 19573, 19575, 19578, 19580,  
 19583, 19586, 19589, 19592,  
 19594, 19596, 19598, 19600,  
 19602, 19604, 19606, 19608,

19610, 19612, 19615, 19618,  
 19620, 19622, 19624, 19626,  
 19628, 19630, 19632, 19635,  
 19638, 19640, 19642, 19644,  
 19647, 19649, 19651, 19653,  
 19655, 19687, 19689, 19691,  
 19692, 19693, 19694, 19695,  
 19696, 19697, 19698, 19699,  
 19700, 19702, 19704, 19705,  
 19706, 19707, 19708, 19709,  
 19710, 19712, 19714, 19717,  
 19719, 19721, 19722, 19723,  
 19724, 19725, 19726, 19727,  
 19728, 19729, 19730, 19732,  
 19734, 19736, 19737, 19738,  
 19739, 19740, 19742, 19743,  
 19744, 19745, 19747, 19749,  
 19751, 19752, 19753, 19754,  
 19755, 19756, 19757, 19758,  
 19759, 19760, 19762, 19764,  
 19765, 19766, 19767, 19768,  
 19769, 19770, 19772, 19774,  
 19777, 19779, 19781, 19782,  
 19783, 19784, 19785, 19786,  
 19787, 19788, 19789, 19790,  
 19792, 19794, 19796, 19797,  
 19798, 19799, 19800, 19802,  
 19803, 19804, 19805, 19911,  
 19913

\\_ 322, 628, 3086, 3089, 3888,  
 14718, 14719, 14720, 14721,  
 14722, 14723, 14724, 14725,  
 14726, 14727, 14728, 14729,  
 15183, 15184, 15185, 15186,  
 15187, 15188, 15189, 15190,  
 15191, 15192, 15194, 15196,  
 15197, 15198, 15199, 15200,  
 15201, 15202, 15203, 15204,  
 15205, 15206, 15207, 15208,  
 15209, 15210, 15211

## A

\a 280, 282, 286, 292  
 \ABREVE 19680, 19751, 19752,  
 19753, 19754, 19755  
 \abreve 19674, 19691, 19692,  
 19693, 19694, 19695  
 \AC 18109, 20967  
 \AccFancyVerbLineautorefname .  
 3113  
 \Accfootnoteautorefname 3093  
 \Acctheoremautorefname 3117

\acctonos	3175, 3176, 3177, 3178, 3179, 3180, 3181, 3182, 3183, 3184, 3185, 3186, 3187, 3188, 3189, 3190	\alpha	16476, 19990	\AtBeginShipoutFirst	6464, 10282, 11727, 11858
\Acht	19619, 20767	\amalg	18013, 20185	\AtEndDocument	6363
\ACIRCUMFLEX	19681, 19756, 19757, 19758, 19759, 19760	\AMSautorefname	8685	\AtEndOfPackage	351
\acircumflex	3162, 19675, 19696, 19697, 19698, 19699, 19700	\anchor@spot	5236, 5249, 5256, 5262, 5264, 9029, 9428, 9523, 10386, 10458, 10961, 11308, 11311, 11939, 12226	\AtVeryEndDocument	6694, 13098
\AcPa	19605, 20761	\and	6425	\author	6381, 6391
\Acrobatmenu	2232, 4220, 6314, 9381, 10121, 10649, 11523	\angle	18042, 20197	\autopageref	4351, 8568
\active	928, 935, 1540, 4706, 4707, 4708, 4709, 4710, 4711, 4714, 4716, 4719, 4727, 14446, 14476	\AngleSign	18050, 20959	\autoref	617, 4350, 8587, 12313
\add@accent	500	\Anglesign	18049, 20958	\ayn	19857
\addcontentsline	7681, 7753, 8070, 8075, 8163	\Ankh	18876, 20480		
\AddLineBeginAux	5331	\APLbox	18614, 20439	<b>B</b>	
\addtocontents	8115, 8164	\APLdown	18812, 21034	\b	281, 282, 776, 780, 786, 14704, 14716, 14728, 15147, 15176, 15205, 17236, 17238, 17248, 17250, 17320, 17322, 17328, 17330, 17356, 17358, 17392, 17394, 17412, 17414, 17480, 17482, 17484
\addtocounter	7276	\APLdownarrowbox	18603, 20434	\baa	19823
\AddToHookNext	7005	\APLinput	18606, 20435	\babygamma	16091, 19958
\adl@LT@array	7125	\APLinv	18580, 20426	\back@none	2896, 2906, 2919
\advance	454, 455, 949, 4855, 5044, 5057, 5351, 5679, 5725, 6160, 6161, 6164, 6165, 6501, 6509, 6546, 7972, 7982, 7985, 7999, 9487, 9571, 9609, 9649, 9964, 9974, 10804, 12002, 12289, 12541, 12613, 12656, 12657, 13151, 13214, 13258, 13259, 13505, 13570, 13614, 13615, 14232, 14234, 14235, 14241, 14250, 14350, 14566	\APLleftarrowbox	18595, 20431	\back@page	2898, 2911
\AE	14938, 15395, 15910	\APLrightarrowbox	18598, 20432	\back@section	2897, 2903, 2909, 2915
\ae	15004, 15462, 15912	\APLup	18797, 21031	\back@slide	2899, 2908
\afterassignment	1549, 1555, 1561, 5935	\APLuparrowbox	18600, 20433	\backcite	7887
\AfterBeginDocument	340, 354	\appendix	6963, 6975	\backcong	18146, 20240
\aftergroup	7567	\appendixautorefname	2961, 2979, 2997, 3015, 3033, 3051, 3069, 3101, 3102, 3127, 3145, 3163, 3181, 3199, 3217, 3235, 8695	\backepsilon	16567
\agemO	17739, 20938	\apprge	18259, 20982	\backneg	18552, 20413
\ainferior	20069	\apprle	18256, 20981	\backprime	17574, 20036
\alef	19821	\approx	18132, 20234	\backref	7918, 12317
\aleffhamza	19813	\approxeq	18137, 20236	\backsim	18110, 20224
\aleflowerhamza	19817	\Aquarius	18963, 21078	\backsimseq	18457, 20372
\alefmadda	19811	\aquarius	18961, 20506	\barb	15797, 20820
\alefmaqsurah	19879	\arabic	6592, 6825, 6827, 6829, 6832, 6833, 6834, 6836, 6837, 6838, 6839, 6841, 6842, 6843, 6844, 6845, 6846, 6849, 6859, 6860, 8172, 8178, 8226, 8239	\bard	15561, 20812
\aleph	17750, 20091	\Aries	18933, 21068	\bari	16105, 19959
\Alph	6595, 6971	\aries	18931, 20496	\barin	18548, 20411
\alph	6596, 7247, 7278	\ast	18029, 20192	\barj	16076, 20852
		\Asterisk	19177, 20589	\barl	15819, 19944
		\AsteriskBold	19154, 20578	\barlambda	15826, 20825
		\AsteriskCenterOpen	19156, 20579	\barleftharpoon	19336, 20655
		\AsteriskRoundedEnds	19201, 20601	\baro	16151, 16152, 18584, 18586, 21024
		\asympt	18150, 20242	\barp	17202, 20027
		\AtBeginDocument	341, 5299, 5303, 6354, 7109, 12318	\barrightharpoon	19342, 20657
		\AtBeginShipout	6447, 6459, 9920	\barsci	17200, 20026
		\AtBeginShipoutBox	6451, 6454, 9921, 9922	\barscu	17205, 20028
				\baru	16216, 19968
				\barwedge	18439, 20364
				\baselineskip	2235, 9542, 10980, 11012, 11710
				\bbl@cite@choice	7794
				\bbl@info	592



\bbslash	18626, 20442	\boxminus	18363, 20337	\capitalhungarumlaut	15219
\Beam	18610, 20437	\boxplus	18361, 20336	\capitalmacron	15223
\because	18095, 20218	\boxslash	19378, 20670	\capitalnewtie	15226
\BeforeTeXIVht	2698	\boxtimes	18365, 20338	\capitalogonek	15213
\begin	578, 12339, 21136	\brokenvert	15326, 20801	\capitalring	15220
\belowpdfbookmark	14346	\bullet	18033, 20031	\capitaltie	15225
\beta	16478, 19991	\Bumpeq	18155, 20244	\capitaltilde	15217
\betainferior	20021	\bumpeq	18159, 20246	\Capricorn	18960, 21077
\beth	17752, 20092			\capricornus	18958, 20505
\between	18243, 20283			\caption	7651, 7653, 7741, 7743
\bfseries	552, 8446, 8466, 8483, 8615			\catcode	172, 173, 184, 185, 186, 187, 206, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 904, 928, 935, 1540, 1669, 1670, 1803, 1804, 1860, 1861, 1862, 4582, 4584, 4705, 4706, 4707, 4708, 4709, 4710, 4711, 4714, 4716, 4719, 4727, 4737, 4828, 4829, 8710, 11042, 11043, 14375, 14377, 14446, 14449, 14476, 14479
\bgroup	637, 4822, 7553, 7566, 8942, 9938, 10386, 11001, 12845, 12937, 12958			\ccnc	19648, 20779
\biblecite	7785, 7791, 7795, 7820, 7835, 7851, 7861			\ccnd	19650
\Bicycle	19639, 20776			\ccsa	19652, 20780
\bigcircle	20465			\cdot	20787
\bigdoublevee	19398, 20680			\cdots	18542, 20408
\bigdoublewedge	19396, 20679			\CESign	19656, 20782
\bigtriangledown	18810, 20455			\CESign	19658, 21131
\bigtriangleup	18795, 20450			\cf@encoding	1253
\binampersand	15245, 20795			\chapterautorefname	2962, 2980, 2998, 3016, 3034, 3052, 3070, 3099, 3128, 3146, 3164, 3182, 3200, 3218, 3236, 8696
\bindnasrepma	17764, 20941			\chapternumberline	14264, 14269
\Biohazard	18874, 20479			\char	13132, 14379, 14416
\bitsetGetDec	5403, 5536, 5554, 5568, 5581, 5597, 5629, 5654			\chardef	256, 299, 2472, 2473, 2474, 2475, 2756, 2758, 4505, 4537, 11303, 11306, 11312
\bitsetGetHex	5404			\check@bmn@number	14499, 14507, 14557, 14565
\bitsetGetSetBitList	5392			\CheckBox	6109
\bitsetIsEmpty	5533, 5551, 5565, 5578, 5594, 5626, 5651			\CheckCommand	7512
\bitsetReset	5506, 5540, 5559, 5573, 5586, 5602, 5634			\checkcommand	42, 7628, 7635, 7642, 7741, 7751, 7845, 7857, 8163, 8166, 8226, 8480
\bitsetSetValue	5372, 5382			\CheckedBox	18852, 21039
\blacksmiley	18889, 20484				
\Bleech	18798, 21032				
\BOOKMARK	14278, 14357				
\booknumberline	14262, 14267				
\bool	6875				
\bot	18383, 20345				
\Bowtie	18447, 21013				
\bowtie	18445, 20367				
\Box	18849, 21038				
\box	6167, 6454, 8956, 9952, 11355, 11358				
\boxast	19382, 20672				
\boxbackslash	18592, 20430				
\boxbar	18832, 20464				
\boxbox	19386, 20674				
\boxbslash	19380, 20671				
\boxcircle	19384, 20673				
\boxdot	18367, 20339				
\boxempty	18847, 20470				

\Checkedbox . . . . .	18850, 20471	\cl@ckpt . . . . .	6921	\crossh . . . . .	15607, 20814
\checklatex . . . . .	4, 7627, 7740, 7844, 8162, 8479	\CleaningA . . . . .	18673, 21026	\CrossMaltese . . . . .	19123, 20563
\Checkmark . . . . .	19098, 20551	\CleaningF . . . . .	18684, 20444	\crossnilambda . . . . .	15825, 20824
\checkmark . . . . .	19100, 21097	\CleaningFF . . . . .	18686, 20445	\CrossOpenShadow . . . . .	19119, 20561
\CheckmarkBold . . . . .	19101, 20552	\CleaningP . . . . .	18708, 20446	\CrossOutline . . . . .	19121, 20562
\checkpackage . . . . .	9, 8225	\CleaningPP . . . . .	18710, 20447	\cs . . . . .	4992, 4997, 5001, 5010, 5014, 5023
\chi . . . . .	16520, 20012	\clickb . . . . .	16273, 20905	\Cube . . . . .	575
\chiinferior . . . . .	20025	\clickc . . . . .	16268, 20903	\Cup . . . . .	18478, 20381
\ChoiceBox . . . . .	5729	\clickt . . . . .	16210, 20887	\cup . . . . .	18073, 20209
\ChoiceMenu . . . . .	6106	\clock . . . . .	18558, 20416	\cupdot . . . . .	18312, 20316
\circ . . . . .	18031, 20193	\ClockLogo . . . . .	18561, 21023	\cupplus . . . . .	18314, 20317
\circeq . . . . .	18191, 20260	\Clocklogo . . . . .	18560, 21022	\curlyc . . . . .	16040, 20844
\circlearrowleft . . . . .	19248, 20620	\close@pdfink . . . . .	9023, 9048, 9057, 9089, 9126, 9159, 9405	\curlyeqprec . . . . .	18497, 20389
\circlearrowright . . . . .	19250, 20621	\closedniomega . . . . .	16159, 20875	\curlyeqsucc . . . . .	18501, 20391
\CircledA . . . . .	18671, 20443	\closedrepsilon . . . . .	16072, 20851	\curlyesh . . . . .	16207, 20886
\circledast . . . . .	18355, 20334	\closeout . . . . .	6348, 14366	\curlyvee . . . . .	18461, 20374
\circledbslash . . . . .	19363, 21106	\Cloud . . . . .	18838, 20466	\curlywedge . . . . .	18464, 20375
\circledcirc . . . . .	18351, 20333	\ClowerTips . . . . .	20568	\curlyyogh . . . . .	16252, 20899
\circleddash . . . . .	18359, 20335	\clubpenalty . . . . .	7402, 7404	\curlyz . . . . .	16245, 20898
\CircleShadow . . . . .	19209, 20604	\clubsuit . . . . .	18977, 18979, 21084	\CurrentBorderColor . . . . .	
\circplus . . . . .	19405, 20683	\codeof . . . . .	7909	. . . . .	9013, 9015, 9042, 9044, 9052, 9054, 9059, 10448, 10482, 10484, 10500, 10502, 10521, 10523, 10585, 10587, 10604, 10606
\citation . . . . .	7879	\Coffeecup . . . . .	18857, 20473	\currentpdfbookmark . . . . .	14338
\citeauthoryear . . . . .	7945, 7951	\coloncolonequals . . . . .	19442, 20698	\curu . . . . .	16775
\citeN . . . . .	7942	\colonequals . . . . .	18183, 20256	\curvearrowleft . . . . .	17866, 20125
\CJK@char . . . . .	931	\color@begingroup . . . . .	8942, 9938	\curvearrowright . . . . .	17868, 20126
\CJK@charx . . . . .	932	\color@endgroup . . . . .	8949, 9945	\CutLeft . . . . .	19064, 21091
\CJK@CJK . . . . .	920	\columnwidth . . . . .	7560	\CutLine . . . . .	18789, 21028
\CJK@eight . . . . .	1131, 1134, 1248	\comma@entry . . . . .	5720, 5727, 5729	\Cutline . . . . .	18790, 21029
\CJK@five . . . . .	1131, 1133, 1248	\comma@parse . . . . .	5719	\Cutright . . . . .	19065, 21092
\CJK@four . . . . .	1130, 1133, 1247	\complement . . . . .	17982, 20171	\CuttingLine . . . . .	18786, 20448
\CJK@hundred . . . . .	1197	\Conclusion . . . . .	17933, 20950	\cyr . . . . .	597, 3081, 3083, 3086, 3089, 3092, 3093, 3094, 3095, 3096, 3097, 3098, 3099, 3100, 3101, 3103, 3105, 3106, 3107, 3108, 3109, 3110, 3111, 3112, 3113, 3114, 3115, 3116, 3117, 3118
\CJK@hundredmillion . . . . .	1160	\cong . . . . .	18127, 20232	\CYRA . . . . .	16609, 17000, 17004
\CJK@ignorespaces . . . . .	930	\Congruent . . . . .	18209, 20976	\cyra . . . . .	3083, 3090, 3092, 3097, 3100, 3105, 3106, 3112, 3116, 16676, 17002, 17006
\CJK@kern . . . . .	918	\contentsline . . . . .	8116, 8120, 8164, 8166	\CYRABHCH . . . . .	16964, 16969
\CJK@minus . . . . .	1122	\copy . . . . .	5053, 5055, 5066, 5074, 8952, 9922, 9948	\cyrahch . . . . .	16966, 16972
\CJK@nine . . . . .	1131, 1135, 1248	\copyright . . . . .	19934	\CYRABHCHDSC . . . . .	16968
\CJK@null . . . . .	1224	\Corresponds . . . . .	18198, 20974	\cyrahchdsc . . . . .	16971
\CJK@one . . . . .	1130, 1132, 1247	\corresponds . . . . .	18197, 20973	\CYRABHDZE . . . . .	17034
\CJK@punctchar . . . . .	933	\count@ . . . . .	947, 948, 949, 950, 1550, 1908, 3407, 3408, 3413, 3414, 5350, 5351, 5366, 5662, 5677, 5679, 5703, 5725, 5741, 10800, 10801, 10802, 10803, 10804, 10807	\cyrahdze . . . . .	17036
\CJK@punctcharx . . . . .	934	\Cross . . . . .	19117, 20560	\CYRABHHA . . . . .	16919
\CJK@seven . . . . .	1131, 1134, 1248	\crossb . . . . .	15794, 20818	\cyrahha . . . . .	16921
\CJK@six . . . . .	1131, 1134, 1248	\CrossClowerTips . . . . .	19134		
\CJK@ten . . . . .	1132, 1133, 1134, 1135, 1212	\crossd . . . . .	15558, 20810		
\CJK@tenthousand . . . . .	1145, 1166	\CrossedBox . . . . .	18856, 21041		
\CJK@thousand . . . . .	1182	\Crossedbox . . . . .	18853, 20472		
\CJK@three . . . . .	1130, 1133, 1247				
\CJK@two . . . . .	1130, 1132, 1247				
\CJK@zero . . . . .	1130, 1148, 1165, 1169, 1185, 1200, 1222				
\CJKdigits . . . . .	1007				
\CJKkern . . . . .	919				
\CJKnumber . . . . .	1006				



\CYRAE .....	17008	\cyrhdsc .....	16943	\cyrlyus .....	16793
\cyrae .....	17010	\CYRHHK .....	17088	\CYRM .....	16634
\CYRB .....	16611	\cyrhkh .....	17090	\cyrm ... 3086, 3090, 3116, 3117,	
\cyrb .....	3097, 16678	\CYRHRDSN .....	16663	16701	
\CYRBYUS .....	16799	\cyrhrdsn . 16729, 16730, 20912		\CYRMDSC .....	16996
\cyrbyus .....	16801	\CYRI .... 16602, 16625, 16628,		\cyrmdsc .....	16998
\CYRC .....	16654	17038, 17042		\CYRN .....	16636
\cycr .....	16721	\cyri 3083, 3086, 3090, 3096, 3101,		\cyrn ... 3083, 3089, 3090, 3092,	
\CYRCH .....	16656, 17076	3103, 16692, 16695, 16772,		3093, 3095, 3103, 3109,	
\cyrch . 3089, 3090, 3098, 16723,		17040, 17044		3110, 16703	
17078		\CYRIE .....	16582	\CYRNDSC .....	16907
\CYRCHLDSC .....	16992	\cyrie .....	16752	\cyrndsc .....	16909
\cyrchldsc .....	16994	\CYRII .....	16587, 16590	\CYRNG .....	16911
\CYRCHRDSC .....	16950	\cyrii .....	16757, 16760	\cyrng .....	16913
\cyrchrdsc .....	16952	\CYRIOTBYUS .....	16803	\CYRNHK .....	16988
\CYRCHVCRS .....	16955	\cyrriotbyus .....	16805	\cyrnhk .....	16990
\cyrchvcrs .....	16958	\CYRIOTE .....	16787	\CYRNJE .....	16596
\CYRD .....	16617	\cyriote .....	16789	\cyrnje .....	16766
\cyrd ... 3086, 3089, 3100, 3105,		\CYRIOTLYUS .....	16795	\CYRO .....	16638, 17046
3106, 16684		\cyrriotlyus .....	16797	\cyro ... 3086, 3089, 3092, 3093,	
\CYRDJE .....	16578	\CYRISHRT .....	16627	3103, 3112, 3113, 3115,	
\cyrdje .....	16748	\cyrishrt .....	16694	3116, 3117, 16705, 17048	
\CYRDZE . 15106, 15123, 16571,		\CYRISHRTDSC .....	16851	\CYROMEGA .....	16779
16584		\cyrishrtdsc .....	16853	\cyromega .....	16781
\cyrdze .....	16754	\CYRIZH .....	16819, 16824	\CYROMEGARND .....	16833
\CYRDZHE .....	16607	\cyrizh .....	16821, 16827	\cyromegarnd .....	16835
\cyrdzhe .....	16777	\CYRJE .....	16592	\CYROMEGATITLO ... 16837	
\CYRE ... 16573, 16576, 16619,		\cyrje .....	16762	\cyromegatitlo .....	16839
17012		\CYRK .....	16600, 16630	\CYROT .....	16841
\cyre 3083, 3089, 3090, 3103, 3115,		\cyrk 3092, 3093, 3095, 3109, 3110,		\cyrot .....	16843
3116, 3117, 16686, 16743,		3112, 3113, 3114, 16697,		\CYROTLD .....	17050, 17055
16746, 17014		16770		\cyrotld .....	17052, 17058
\cyreref .....	17062	\CYRKBEAK .....	16903	\CYRP .....	16640
\CYREREV .... 16670, 17060		\cyrkbeak .....	16905	\cyrp ... 3086, 3089, 3090, 3094,	
\cyrerev .....	16737	\CYRKDSC .....	16889	3095, 3101, 3103, 3107,	
\CYRERY .....	16665, 17084	\cyrkdsc .....	16891	3108, 3109, 3110, 16707	
\cyrery 3081, 3083, 16732, 17086		\CYRKHCERS .....	16899	\CYRpalochka .....	16974
\CYRF .....	16650	\cyrkhcers .....	16901	\CYRPHK .....	16915
\cyrf .....	16717	\CYRKHK .....	16980	\cyrphk .....	16917
\CYRFITA .....	16815	\cyrkhk .....	16982	\CYRPSI .....	16811
\cyrfita .....	16817	\CYRKOPPA .....	16845	\cyrpsi .....	16813
\CYRG .....	16580, 16615	\cyrkoppa .....	16847	\CYRR .....	16642
\cyrgh .....	3099, 16682, 16750	\CYRKSI .....	16807	\cyr ... 3081, 3083, 3086, 3089,	
\CYRGDSC .....	17080	\cyrksi .....	16809	3090, 3096, 3100, 3101,	
\cyrghdsc .....	17082	\CYRKVCERS .....	16894	3103, 3105, 3106, 3111,	
\CYRGHCERS .....	16867	\cyrkvcers .....	16897	3112, 3113, 3114, 3115,	
\cyrghcers .....	16869	\CYRL .....	16632	3116, 3117, 16709	
\CYRGHK .....	16872	\cyr ... 3097, 3099, 3101, 3103,		\CYRRTICK .....	16859
\cyrghk .....	16875	16699		\cyrrtick .....	16861
\CYRGUP .....	16863	\CYRLDSC .....	16984	\CYRS .....	16644, 16924
\cyrgup .....	16865	\cyrldsc .....	16986	\cyr ... 3086, 3089, 3092, 3093,	
\CYRH .....	16652	\CYRLJE .....	16594	3096, 3111, 3112, 3113,	
\cyrh .....	16719	\cyrlje .....	16764	3114, 3118, 16711, 16927	
\CYRHDSC .....	16941	\CYRLYUS .....	16791	\CYRSCHWA .... 17016, 17021	



\DefaultWidthofSubmit . .	6170, 12734, 13337, 13710	\delta . . . . .	16482, 19993	3634, 3635, 3636, 3639, 3640, 3646, 3647, 3648, 3649, 3969, 3970, 3971, 3972, 3973, 3974, 5392, 7258, 12607, 12669, 12907, 12914, 12924, 13208, 13271, 13564, 13630, 14445, 14475		
\DefaultWidthofText . . . .	6179, 12570, 13173, 13522	\Denarius . . . . .	17707, 20937	\documentclass . . . . .	2, 8826	
\define@key . .	2370, 2372, 2416, 2431, 2434, 2437, 2445, 2448, 2458, 2461, 2464, 2481, 2493, 2495, 2498, 2501, 2518, 2522, 2528, 2531, 2534, 2537, 2540, 2543, 2546, 2571, 2628, 2634, 2753, 2864, 2880, 2890, 2893, 2900, 2929, 2948, 2951, 3278, 3341, 3353, 3368, 3385, 3388, 3392, 3420, 3425, 3429, 3432, 3439, 3451, 3458, 3468, 3471, 3474, 3478, 3494, 3504, 3511, 3522, 3535, 3552, 3642, 3651, 3681, 3686, 3691, 3696, 3701, 3706, 3712, 3718, 3723, 3728, 3761, 3768, 3859, 3860, 3873, 3880, 3890, 3931, 3932, 3935, 3938, 3941, 3944, 3947, 3950, 3953, 3976, 4090, 4093, 4836, 4865, 4871, 4883, 5344, 5432, 5488, 5790, 5795, 5808, 5836, 5879, 5882, 5885, 5889, 5892, 5896, 5899, 5903, 5907, 5911, 5914, 5918, 5921, 5924, 5927, 5930, 5950, 5966, 5969, 5972, 5975, 5978, 5981, 6011, 6014, 6017, 6020, 6039, 6045, 6059, 6064, 6070, 6087, 6092, 6098, 6707, 6718, 7004, 10879, 10885, 11387, 11389, 11392, 11395, 11397, 11399, 11408, 11416, 11423, 11425, 11427, 11429, 11431, 11433, 11442, 11452, 11454, 11456, 11457, 11463, 11472, 11474, 11476, 11478, 11480, 11482, 11484, 11486, 11488, 11490, 11492, 11494, 11496, 11498, 11500, 11502, 11503, 11504, 11505, 11506, 11507, 11508, 11509, 11510, 11511, 11512, 11513	\DH . . . . .	14958, 15415	\dotminus . . . . .	18102, 20221	
\Deleatur . . . . .	17705, 20082	\dh . . . . .	15028, 15486, 15487, 20809	\dotplus . . . . .	18021, 20188	
\Delta . . . . .	16417, 19980	\dhal . . . . .	19839	\dots . . . . .	512	
		\DiamandSolid . . . . .	20609	\dottimes . . . . .	19410, 20685	
		\diameter . . . . .	18550, 20412	\doublebarwedge . .	19433, 20694	
		\Diamond . . . . .	18822, 21035	\doublecap . . . . .	18477, 21016	
		\diamond . . . . .	18820, 20459	\doublecup . . . . .	18480, 21017	
		\diamonddots . . . .	17596, 20039	\doublesqcap . . . .	19421, 21113	
		\diamondsuit 18974, 18976, 21083		\doublesqcup . . . .	19426, 21114	
		\digamma . . . . .	16553, 20911	\doublevav . . . . .	17151	
		\dimen@ 1556, 1633, 1634, 1637, 1639, 4126, 4127, 4129, 4136, 4137, 5043, 5044, 5047, 5056, 5057, 5061, 5936, 5945, 6737, 6738, 8969, 8971, 10773, 10774, 10776, 11345, 11360, 11363, 11749, 11751, 11816, 11818, 11910, 11912, 12194, 12196		\doublevee . . . . .	19429, 20693	
		\dimexpr . . . . .	469, 1286, 1936, 1938, 1946, 1951, 1954, 1956, 1970, 1972, 1975, 1976, 1983, 1986, 1989, 1990, 1991, 1992, 2002, 2007, 2015, 2019, 2024, 2034, 2037, 2042, 2045, 2050, 2051, 5945		\doublewedge . . . .	19427, 20692
		\ding . . . . .	574, 5986, 5989	\doubleyod . . . . .	17155	
		\DingObject . . . . .	13283	\DOWNarrow . . . .	18806, 20454	
		\discretionary . . . . .	639	\Downarrow . . . .	17934, 20150	
		\div . . . . .	20785	\downarrow . . . . .	20100	
		\divdot . . . . .	19409, 21112	\downdownarrows .	17909, 20141	
		\divide . . . . .	10801	\downdownharpoons . . . .	19330, 20653	
		\divideontimes . . . .	18443, 20366	\downharpoonleft .	17892, 20134	
		\Divides . . . . .	18023, 20189	\downharpoonright	17889, 20133	
		\DividesNot . . . . .	18025, 20190	\downmodels . . . .	19546, 20745	
		\DJ . . . . .	3171, 14959, 15553	\downtherefore . . .	18097, 20965	
		\dj . . . . .	3168, 3169, 15556	\downuparrows . . .	17972, 20166	
		\dls . . . . .	17863, 20124	\downupharpoons .	19348, 20659	
		\do 948, 2388, 2393, 2398, 3492, 3524, 3525, 3526, 3527, 3582, 3583, 3584, 3585, 3586, 3587, 3590, 3591, 3592, 3593, 3594, 3595, 3598, 3599, 3602, 3603, 3604, 3605, 3606, 3609, 3610, 3611, 3612, 3613, 3616, 3617, 3618, 3619, 3620, 3623, 3624, 3625, 3626, 3627, 3630, 3631,		\downvdash . . . . .	18380, 20995	
				\dp 5043, 5051, 5064, 6163, 6166, 7558, 9477, 9557, 9594, 9634, 11346, 11349, 11992, 12274, 13500		
				\dsbiological . . . . .	19022, 20522	
				\dschemical . . . . .	19020, 20521	
				\dscommercial . . . .	19024, 20523	
				\dsjuridical . . . . .	19018, 20520	
				\dsmedical . . . . .	19016, 20519	
				\dsmilitary . . . . .	19013, 20518	
				\dth@counter . 7331, 7332, 7362, 7363, 7390		
				\dth@everypar . . . . .	7378	
				\dtimes . . . . .	19413, 20686	

<code>\dvipdfm@setdim</code>	13497, 13547, 13646, 13669, 13700, 13725, 13753, 13782
<code>\dz</code>	16304, 20909
<b>E</b>	
<code>\Earth</code>	18910, 21059
<code>\earth</code>	18908, 20489
<code>\ECIRCUMFLEX</code>	19682, 19766, 19767, 19768, 19769, 19770
<code>\ecircumflex</code>	19676, 19706, 19707, 19708, 19709, 19710
<code>\Ecommerce</code>	17747, 20940
<code>\EdefEscapeName</code>	3792, 3842, 9384, 10124, 10650, 11524, 12668, 12671, 13270, 13273, 13626, 13632
<code>\EdefEscapeString</code>	749, 759
<code>\EdefUnescapeName</code>	3793
<code>\EdefUnescapeString</code>	744, 8038
<code>\egroup</code>	638, 8949, 9945, 10386, 11037, 12854, 12946, 12971
<code>\EightAsterisk</code>	19207, 20603
<code>\EightFlowerPetal</code>	19185, 20593
<code>\EightFlowerPetalRemoved</code>	19204, 20602
<code>\eighthnote</code>	18992, 21085
<code>\eighthinferior</code>	20062
<code>\EightStar</code>	19164, 20583
<code>\EightStarBold</code>	19166, 20584
<code>\EightStarConvex</code>	19160, 20581
<code>\EightStarTaper</code>	19158, 20580
<code>\eightsuperior</code>	20046
<code>\einferior</code>	20070
<code>\ejective</code>	16256, 20900
<code>\ell</code>	17718, 20085
<code>\em</code>	558
<code>\emgma</code>	16138, 20871
<code>\emph</code>	537
<code>\empty</code>	930, 3395
<code>\emptyset</code>	17990, 20175
<code>\enc@html</code>	5794, 5797
<code>\enc@update</code>	497
<code>\END</code>	1278, 1279, 1305, 1306, 1321, 1322, 1339, 1340, 1357, 1358, 1742, 1748, 1753, 1855, 1857, 9276, 9289, 9293, 9300, 9313, 9317
<code>\end</code>	579, 21137
<code>\endeqnarray</code>	7200, 7222, 7229
<code>\endequation</code>	7154, 7188
<code>\endForm</code>	5784
<code>\endinput</code>	64, 2706, 2801, 4347, 4461, 8440, 10970, 12337, 14572
<code>\endlinechar</code>	796, 817, 4704
<code>\endNoHyper</code>	6296
<code>\EndPreamble</code>	12340
<code>\endsubeqnarray</code>	7233, 7244
<code>\eng</code>	15686, 20816
<code>\engma</code>	15687, 20817
<code>\ensuremath</code>	623
<code>\Envelope</code>	19080, 20543
<code>\enya</code>	16142, 20873
<code>\epsdice</code>	576, 20790
<code>\epsi</code>	16061, 20849
<code>\epsilon</code>	16484, 19994
<code>\eqcirc</code>	18187, 20258
<code>\eqcolon</code>	18105, 20222
<code>\eqdot</code>	19438, 20696
<code>\eqnarray</code>	7199, 7201, 7226
<code>\eqsim</code>	18119, 20228
<code>\eqslantgtr</code>	19477, 20714
<code>\eqslantless</code>	19475, 20713
<code>\equal</code>	7906
<code>\equalscolon</code>	18185, 20257
<code>\equalsinferior</code>	20066
<code>\equalsuperior</code>	20050
<code>\equation</code>	7153, 7162, 7166, 7175
<code>\equationautorefname</code>	2955, 2973, 2991, 3009, 3027, 3045, 3063, 3081, 3082, 3121, 3139, 3157, 3175, 3193, 3211, 3229, 8685, 8689
<code>\equiv</code>	18207, 20267
<code>\Equivalence</code>	17939
<code>\er</code>	16057, 20848
<code>\errmessage</code>	3275
<code>\escapechar</code>	481, 4294, 7251, 14305, 14486, 14537
<code>\esh</code>	16197, 19967
<code>\EstimatedSign</code>	17746, 20939
<code>\eta</code>	16488, 19996
<code>\eTeX</code>	523, 12345
<code>\etex@unexpanded</code>	1481, 1488
<code>\eth</code>	15487, 20809
<code>\Eur</code>	17704, 20936
<code>\EURcr</code>	17701, 20933
<code>\EurCr</code>	17700, 20932
<code>\EURdig</code>	17697, 20929
<code>\EurDig</code>	17696, 20928
<code>\EURhiv</code>	17699, 20931
<code>\EurHv</code>	17698, 20930
<code>\EURtm</code>	17703, 20935
<code>\EurTm</code>	17702, 20934
<code>\evensidemargin</code>	8056
<code>\everypar</code>	7404
<code>\ExecuteOptions</code>	4141, 4142, 4146
<code>\exists</code>	17986, 20173
<code>\ExplSyntaxOff</code>	478, 5027, 6891
<code>\ExplSyntaxOn</code>	232, 472, 4991, 6870
<code>\extrasvietnam</code>	3327
<code>\extrasvietnamese</code>	3319
<code>\EyesDollar</code>	15240, 20794
<b>F</b>	
<code>\fa</code>	19863
<code>\fallingdoteq</code>	20252
<code>\fallingdotseq</code>	18174
<code>\FancyVerbLineautorefname</code>	2968, 2986, 3004, 3022, 3040, 3058, 3076, 3111, 3114, 3134, 3152, 3170, 3188, 3206, 3224, 3242, 8702
<code>\farsikaf</code>	19905
<code>\farsiya</code>	19909
<code>\fatha</code>	19889
<code>\fatsemi</code>	19403, 20682
<code>\Fax</code>	19634, 20774
<code>\fax</code>	17758, 20095
<code>\Faxmachine</code>	19636, 21130
<code>\fbox</code>	13136, 13139
<code>\fcdice</code>	577, 20791
<code>\Female</code>	18907, 21058
<code>\female</code>	18901, 18904, 21055
<code>\FemaleFemale</code>	19030, 20526
<code>\FemaleMale</code>	19034, 20528
<code>\Field@addtoks</code>	5858, 5890, 5893, 6065, 6088
<code>\Field@boolkey</code>	5345, 5433, 5852, 5883, 5886
<code>\Field@toks</code>	5856, 5857, 5859, 12846, 12863, 12874, 12885, 12895, 12912, 12930, 12938, 12943, 12959, 12968
<code>\Field@Width</code>	5769, 5916
<code>\figureautorefname</code>	2958, 2976, 2994, 3012, 3030, 3048, 3066, 3096, 3124, 3142, 3160, 3178, 3196, 3214, 3232, 8692
<code>\filename@area</code>	5177
<code>\filename@base</code>	5177
<code>\filename@ext</code>	5174, 5175, 5177, 5178
<code>\filename@parse</code>	5173
<code>\find@pdfink</code>	8995, 9046, 9056
<code>\Finv</code>	17748, 20090
<code>\Fire</code>	19637, 20775

\fivedots . . . . .	19572, 20756	\Fld@borderwidth . . . . .	13560, 13616, 13628, 13662, 13711, 13734, 13766, 13774
\FiveFlowerOpen . .	19183, 20592	. . . . .	5778, 5931, 6157, 6160, 6161, 6164, 6165, 12656, 12657, 13258, 13259, 13614, 13615, 13980, 14013, 14041, 14075, 14110, 14146, 14200
\FiveFlowerPetal . .	19181, 20591		
\fiveinferior . . . . .	20059	\Fld@calculate@code . . . . .	6026, 12555, 13059, 13513, 13923, 13925
\FiveStar . . . . .	18840, 20467	\Fld@calculate@sortkey . .	6058, 6060, 13068
\FiveStarCenterOpen . . .	19142, 20572	\Fld@cbsymbol . . . . .	5780, 5979, 13995
\FiveStarConvex . .	19150, 20576	\Fld@charsize . . . . .	5770, 5771, 5928, 12655, 13257, 13613, 13997, 14062, 14091, 14131, 14182
\FiveStarOpen . . .	18842, 20468	\Fld@checkedfalse . . . . .	5766
\FiveStarOpenCircled . . .	19140, 20571	\Fld@checkequals . . . . .	5870, 12608, 12670, 12915, 12925, 13209, 13272, 13565, 13631
\FiveStarOpenDotted . . .	19144, 20573	\Fld@choices . . . . .	. . . . . 5659, 5667, 5669, 5673, 5682, 5690, 5695, 5743, 5745, 5753, 5754, 14064
\FiveStarOutline . .	19146, 20574	\Fld@color . . . . .	5774, 6021, 13998, 14063, 14092, 14132
\FiveStarOutlineHeavy . .	19148, 20575	\Fld@default . . . . .	5684, 5687, 5689, 5970, 12568, 12584, 12600, 12640, 12668, 12782, 12844, 12862, 12876, 12884, 12891, 12917, 12927, 12957, 12967, 13171, 13188, 13201, 13242, 13270, 13386, 13520, 13537, 13557, 13598, 13626, 13763, 14093, 14097, 14098, 14133
\FiveStarShadow . .	19152, 20577	\Fld@DingDef . . . . .	5979, 5982, 5984
\fivesuperior . . . . .	20043	\Fld@disabledfalse . . . . .	5767
\Flag . . . . .	19008, 20516	\Fld@export . . . . .	5497, 5500, 5507, 5799
\flap . . . . .	16185, 20884	\Fld@findlength . . . . .	12894, 12905
\flapr . . . . .	16184, 20883	\Fld@flags . . . . .	5566, 5568, 5579, 5581, 5595, 5597, 5627, 5629, 5652, 5654, 13978, 14011, 14039, 14073, 14108, 14144, 14180
\flat . . . . .	18997, 20511	\Fld@format@code . . . . .	6024, 13915, 13917
\Fld@@additionalactions .	13910, 13953, 13957	\Fld@getmethodfalse . . . . .	5819
\Fld@@@DingDef . . . . .	5986, 5989, 6008	\Fld@getmethodtrue . . . . .	5821
\Fld@additionalactions . .	13910, 14001, 14030, 14065, 14100, 14135, 14170, 14202	\Fld@height . . . . .	5925, 12571, 12589, 12603, 12658, 12678, 12695, 12735, 12755, 12785, 12795, 13174, 13194, 13204, 13260, 13288, 13302, 13338, 13361, 13389, 13401, 13523, 13539, 13560, 13616, 13628, 13662, 13711, 13734, 13766, 13774
\Fld@align . . . . .	5773, 5973, 13979, 14040, 14109		
\Fld@altname . . . . .	5906, 5908, 13890, 13892, 13963, 13965	\Fld@hiddenfalse . . . . .	5455
\Fld@annotflags . . . . .	5552, 5554, 13974, 14007, 14035, 14069, 14104, 14140, 14176	\Fld@hiddentrue . . . . .	5456
\Fld@annotnames . . . . .	13961, 13976, 14009, 14037, 14071, 14106, 14142, 14178	\Fld@invisiblefalse . . . . .	5451
\Fld@bcolor . . . . .	5775, 6015, 13991, 13993, 14056, 14058, 14085, 14087, 14113, 14125, 14127	\Fld@invisibletrue . . . . .	5452
\fld@bcolor . . . . .	14044	\Fld@keystroke@code . . . .	6027, 13911, 13913
\Fld@bordercolor . . . .	5776, 6018, 13987, 13989, 14015, 14023, 14025, 14043, 14052, 14054, 14081, 14083, 14112, 14121, 14123, 14148, 14156, 14158, 14184, 14192, 14194	\Fld@listcount . . . . .	12667, 12672, 12675, 12680, 12685, 12690, 13269, 13274, 13289, 13295, 13625, 13633, 13637, 13642, 13653, 13658
\Fld@bordersep . . . . .	5777, 5967	\Fld@loc . . . . .	5880
\Fld@borderstyle . . . . .	. . . . . 5779, 5951, 5952, 5953, 5963, 13980, 14013, 14041, 14075, 14110, 14146, 14200	\Fld@mappingname . . . . .	5910, 5912, 13894, 13896, 13967, 13969
		\Fld@maxlen . . . . .	5772, 5919, 14136
		\Fld@menulength . . . . .	5768, 5922, 12605, 12609, 12655, 12906, 12907, 12910, 13206, 13210, 13257, 13562, 13566, 13613
		\Fld@name . . . . .	5904, 12567, 12599, 12703, 12781, 12843, 12848, 12859, 12860, 12871, 12872, 12881, 12882, 12890, 12911, 12928, 12936, 12941, 12956, 12965, 13170, 13200, 13307, 13385, 13519, 13556, 13676, 13762, 13889, 13962
		\Fld@norotatefalse . . . . .	5468
		\Fld@norotatetrue . . . . .	5467
		\Fld@noviewfalse . . . . .	5471
		\Fld@noviewtrue . . . . .	5472
		\Fld@nozoomfalse . . . . .	5464
		\Fld@nozoomtrue . . . . .	5463
		\Fld@onblur@code . . . . .	6029, 13931, 13933



[illegible]

19784, 19789, 19794, 19799, 19804	\hbox . . . 1548, 1554, 1560, 2265, 3406, 3412, 5047, 5061, 5212, 5214, 5916, 6151, 6152, 6153, 6154, 8051, 8942, 9478, 9488, 9558, 9572, 9595, 9610, 9635, 9650, 9921, 9938, 11001, 11349, 11363, 11993, 12003, 12275, 12290, 12983, 13538, 13627, 13661, 13691, 13719, 13748, 13773, 14584	\hexstar . . . . . 19047, 20531
\H@@footnotemark . 7418, 7435, 7499, 7589, 7596, 7608, 7619	\hc@currentHref . . . . . 7672	\hfill . . . 6151, 6152, 6153, 6154, 7813, 7846
\H@@footnotetext . . . . . . . 7417, 7427, 7459, 7498, 7537, 7597, 7611, 7619	\HCode . . . 12835, 12837, 12848, 12857, 12869, 12877, 12879, 12910, 12916, 12921, 12926, 12940, 12945, 12949, 12952, 12961	\Hfootnoteautorefname . . . 8686
\H@@mpfootnotetext 7425, 7437, 7439, 7500	\hdotfor . . . . . 17559, 20032	\hinferior . . . . . 20074
\H@definecounter . . 8169, 8171	\headerps@out . . . 6750, 11662, 11673, 11760, 11774, 11835, 11844, 11857, 11871, 11918, 12036, 12153, 12352	\hoffset . . . . . 8052
\H@endeqnarray . . . 7200, 7223	\Heart . . . . . 18972, 21081	\hookb . . . . . 16032, 20841
\H@endequation . . . 7154, 7194	\heartsuit . 18970, 18973, 21082	\hookd . . . . . 16046, 20846
\H@endsubeqnarray . 7233, 7245	\hebalef . . . . . 17096	\hookg . . . . . 16079, 20853
\H@eqnarray . . . . . 7199, 7204	\hebayin . . . . . 17132	\hookh . . . . . 16099, 20858
\H@equation . . . . . 7153, 7177	\hebbet . . . . . 17098	\hookheng . . . . . 16103, 20860
\H@item 6847, 6853, 7802, 7827	\hebdalet . . . . . 17092, 17102	\hookleftarrow . . . 17849, 20118
\H@newctr . . . . . 8174, 8176	\hebfinalkaf . . . . . 17116	\hookrelepsilon . . . 16068, 20850
\H@old@part . . . . 14638, 14646	\hebfinalmem . . . . . 17122	\hookrightarrow . . 17851, 20119
\H@old@schapter . . 14608, 14617	\hebfinalnun . . . . . 17126	\hphantom . . . . . 573
\H@old@ssect 14656, 14667, 14676	\hebfinalpe . . . . . 17134	\href . . . . . 612, 4819, 6322
\H@old@spart . . . . 14648, 14654	\hebfinaltsadi . . . . . 17138	\href@ . . . . . 4822, 4825, 4830
\H@old@ssect . . . . 14594, 14599	\hebgimel . . . . . 17100	\href@split . . . . . 4830, 4831
\H@refstepcounter . . 6864, 6874, 7130, 7176, 7337, 7368, 7656	\hebhe . . . . . 17104	\hsize . . . . . 7560
\H@seteqlabel . . . . 8205, 8207	\hebhet . . . . . 17110	\hskip . . 1559, 1646, 2310, 2311, 4816, 6157, 12983
\H@subeqnarray . . . 7232, 7236	\hebkafe . . . . . 17118	\hslash . . . . . 17714, 20083
\ha . . . . . 19875	\heblamed . . . . . 17120	\hspace . . . . . 608, 7912, 7913
\Haa . . . . . 19833	\hebmeme . . . . . 17124	\hss . . . . 5048, 5060, 8060, 14589
\Halb . . . . . 19616, 21128	\hebnun . . . . . 17128	\ht 5052, 5056, 5065, 6159, 6162, 9486, 9561, 9570, 9577, 9598, 9608, 9615, 9638, 9648, 9655, 11345, 12001, 12288, 13498
\halfnote . . . . . 19614, 20765	\hebpe . . . . . 17136	\htrtaild . . . . . 20029
\halign . . . . . 620	\hebqof . . . . . 17142	\Huge . . . . . 560
\hamza . . . . . 19809	\hebresh . . . . . 17144	\huge . . . . . 564
\HandCuffLeft . . . 18859, 20474	\hebsamekh . . . . . 17130	\Hurl . . . . . 4905, 4907, 4909
\HandCuffRight . . 18861, 20475	\hebshin . . 17146, 17147, 20914	\hv . . . . . 15812, 20822
\HandLeft . . . . . 18863, 20476	\hebsin . . . . . 17147, 20914	\hv@pdf@char . . . 14374, 14439, 14440, 14441, 14442
\HandRight . . . . . 18866, 20477	\hebtav . . . . . 17149	\hvtex@buffer . . . 10692, 10696, 10704, 10707, 10716, 10720, 10736
\HaPa . . . . . 19601, 20759	\hebtet . . . . . 17112	\hvtex@gettoken . 10691, 10705, 10709, 10718, 10722
\HAR@checkcitations . . . . 7922	\hebtsadi . . . . . 17140	\hvtex@gettoken@ . 10692, 10694
\HAR@citetoaux . . . . . 7878	\hebvav . . . . . 17106	\hvtex@par@dimension . . 10687, 10728
\HAR@tempa 7923, 7924, 7925, 7926, 7927, 7928	\hebyod . . . . . 17114	\hvtex@par@direction . . . 10688, 10731
\hardsign . . . . . 16730, 20912	\hebzayin . . . . . 17108	\hvtex@par@duration . . . 10689, 10723
\harvardcite . . . . . 7872, 7909	\Hermaphrodite . . . 19036, 20529	\hvtex@par@motion 10690, 10725
\harvarditem . . . . . 7897	\hexagon . . . . . 18612, 20438	\hvtex@param@dimension 10700, 10729, 10747, 10750
\hateq . . . . . 18195, 20262		\hvtex@param@direction . 10701, 10732, 10758, 10766
\hausab . . . . . 15798, 19941		
\hausab . . . . . 16033, 20842		
\hausad . . . . . 15802, 19942		
\hausad . . . . . 16047, 20847		
\hausak . . . . . 15813, 19943		
\hausak . . . . . 15817, 20823		
\hb@xt@ . . . . . 5046, 5059		
\hbar . . . . . 15604, 19940		

<code>\hvtex@param@duration</code> . 10702, 10724, 10771, 10773	<code>\Hy@ActiveCarriageReturn</code> 4738, 4741	<code>\Hy@BorderArrayPatch</code> . . 11403, 11406, 11671, 12151
<code>\hvtex@param@motion</code> . . 10703, 10726, 10747, 10754	<code>\Hy@AllowHyphens</code> 4812, 10975, 11007, 11332	<code>\Hy@breaklinks@unsupported</code> . . . . . 2507, 10953
<code>\hvtex@parse@trans</code> 10676, 10698	<code>\Hy@AlphNoErr</code> 6964, 6977, 6979	<code>\Hy@breaklinks@false</code> . . . . . 414
<code>\hvtex@produce@trans</code> . . . 10737, 10743	<code>\Hy@AnchorName</code> . . . . . 4943, 4945, 4948, 4950, 4975, 4977, 4981, 4986, 4988	<code>\Hy@breaklinks@sunhbox</code> . . 11299, 11353
<code>\hvtex@token</code> . . . 10695, 10706, 10712, 10719, 10724, 10727, 10730, 10732	<code>\Hy@appendixstring</code> 6959, 6981	<code>\Hy@CatcodeWrapper</code> . . . 4577, 4636, 4663, 4692
<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@AtBeginDocument</code> . . . . . 343, 2555, 2616, 2702, 2797, 3356, 4123, 4192, 4209, 4343, 4349, 4457, 4616, 4689, 6229, 6345, 6783, 7282, 7869, 8529, 8679, 8937, 9328, 9933, 10440, 11870, 11916, 13000, 13033	<code>\Hy@chapapp</code> 6960, 6981, 7013, 14612, 14623
<code>\hvtex@trans@effect@Blinds</code> . . . . . 10680	<code>\Hy@AtBeginDocumentHook</code> 344, 349, 355, 356	<code>\Hy@chapterstring</code> . . 6955, 6957, 6960, 7012
<code>\hvtex@trans@effect@Box</code> 10681	<code>\Hy@AtEndOfPackage</code> . . . . 346, 784, 3320, 3328, 3335, 4331, 4357, 4363, 4568	<code>\Hy@CheckOptionValue</code> . . 2383, 2420
<code>\hvtex@trans@effect@Dissolve</code> . . . . . 10682	<code>\Hy@AtEndOfPackageHook</code> 347, 350, 352, 353	<code>\Hy@CJKbookmarks@false</code> . . . 416
<code>\hvtex@trans@effect@Glitter</code> . . . . . 10683	<code>\Hy@author</code> . . . . . 6393, 6397	<code>\Hy@cjkpu</code> . . . . . 941, 943, 964
<code>\hvtex@trans@effect@R</code> . . 10686	<code>\Hy@babelnormalise</code> 4920, 4922	<code>\Hy@CleanupFile</code> . . . 5210, 9095, 10024, 10536, 11597
<code>\hvtex@trans@effect@Split</code> 10684	<code>\Hy@backout</code> . 4698, 6281, 6285, 7768	<code>\Hy@colorlink</code> . . . . . 3348, 4640, 4648, 4652, 8938, 9018, 9088, 9125, 9158, 9404, 9428, 9451, 9482, 9495, 9523, 9539, 9564, 9580, 9602, 9619, 9642, 9659, 9934, 10013, 10053, 10086, 10116, 10143, 10458, 10480, 10550, 10576, 10611, 10644, 10663, 11005, 11278, 11280, 11939, 11962, 11997, 12010, 12226, 12248, 12283, 12296
<code>\hvtex@trans@effect@Wipe</code> 10685	<code>\Hy@backreffalse</code> 410, 2920, 2942, 4355	<code>\Hy@colorlinks@false</code> . . . . . 3345
<code>\hvtex@trans@par</code> 10719, 10723, 10725, 10728, 10731	<code>\Hy@backreftrue</code> 2913, 2917, 2939	<code>\Hy@ColorList</code> . . . . . 3491, 3492
<code>\hvtex@trans@params</code> . . . 10713, 10715, 10739	<code>\Hy@BeginAnnot</code> . . . 9963, 9980, 10022, 10060, 10093, 10123	<code>\Hy@CounterExists</code> . 6811, 6824, 6828
<code>\Hy@@@CleanupFile</code> . 5212, 5214	<code>\Hy@bibcite</code> . . . . . 7791, 7795	<code>\Hy@currentbookmarklevel</code> 14223, 14233, 14234, 14240, 14247, 14339, 14342, 14347, 14351
<code>\Hy@@@DefNameKey</code> . 2413, 2415	<code>\Hy@bookmarksdepth</code> . . . 3391, 3396, 3408, 3414, 14217	<code>\Hy@debug@false</code> . . . . . 406
<code>\Hy@@@escapeform</code> 13855, 13868, 13874	<code>\Hy@bookmarksnumbered@false</code> . . . . . 411	<code>\Hy@debug@true</code> . . . . . 405
<code>\Hy@@@SectionAnchor</code> . . . . 14579, 14582	<code>\Hy@bookmarksopen@false</code> . . 412	<code>\Hy@defaultbp</code> . . . . 5931, 5933
<code>\Hy@Ctemp</code> . . 3436, 3438, 6035, 6037	<code>\Hy@bookmarkstrue</code> . . . . . 413	<code>\Hy@defaultbpAux</code> . 5935, 5938
<code>\Hy@@@VersionCheck</code> . . 272, 301	<code>\Hy@bookmarkstype</code> 3426, 3428, 8083, 14228	<code>\Hy@defaultdriver</code> . . 4442, 4471, 4481, 4492
<code>\Hy@abspage</code> . 6488, 6574, 6690, 6776	<code>\Hy@boolkey</code> . 2339, 2432, 2435, 2438, 2459, 2462, 2465, 2496, 2499, 2502, 2519, 2526, 2529, 2532, 2535, 2538, 2541, 2544, 2547, 2629, 2891, 2894, 2949, 3342, 3354, 3369, 3386, 3389, 3430, 3433, 3652, 3933, 3936, 3939, 3942, 3945, 3948, 3951, 3959, 4091, 4094, 6708	<code>\Hy@defaultbpAux</code> . 5935, 5938
<code>\Hy@Acrobatmenu</code> . . 4239, 4280, 9382, 10122, 10651, 11525		<code>\Hy@Hy@Dest</code> . . . . . 11300, 11367
<code>\Hy@activeanchor@false</code> . . . . . 4702, 9037, 9430, 9445, 9524, 9534, 9850, 10371, 10388, 10459, 10472, 10987, 11941, 11956, 12228, 12242		<code>\Hy@destlabel@false</code> . . . . . 417
<code>\Hy@activeanchor@true</code> . . . . . 9033, 9427, 9441, 9522, 9531, 9846, 10367, 10385, 10457, 10469, 10977, 11938, 11952, 12225, 12238		<code>\Hy@DestName</code> . . . . 8982, 8989



\Hy@DestRename . .	<u>5275</u> , 5300, 5304	4465, 4468, 4471, 4480, 4481, 4492, 4494, 4502, 4504, 4506, 4508	\Hy@false 2229, 2349, 2905, 2941, 5841
\Hy@DisableOption .	<u>2368</u> , 4229, 4230, 4231, 4233, 4238, 4336, 4362, 4512, 4513, 4514, 4515, 4516, 4517, 4518, 4519, 4520, 4521, 4522, 4523, 4524, 4525, 4526, 4527, 4528, 4529, 4530, 4531, 4576, 4629, 4657, 4658, 4700, 4701, 5330, 6233, 6234, 6235, 6236, 6237, 6238, 6239, 6240, 6241, 6242, 6243, 6244, 6245, 6246, 6247, 6248, 6249, 6250, 6251, 6252, 6253, 6254, 6255, 6256, 6417, 6642, 7624, 8261, 8386, 8387, 8861, 8965, 9260, 9261, 9262, 9263, 9264, 9265, 9266, 9267, 9268, 9269, 9270, 9377, 9686, 9687, 9688, 9689, 9690, 9691, 9692, 9693, 9694, 9695, 9696, 9697, 9961, 10179, 10180, 10181, 10182, 10183, 10184, 10185, 10186, 10187, 10188, 10189, 10190, 10300, 10442, 10903, 10904, 10905, 10906, 10907, 10908, 10909, 10910, 10911, 10912, 10913, 10914, 11160, 11161, 11162, 11163, 11164, 11165, 11166, 11167, 11168, 11169, 11170, 11171, 11745, 12059, 12060, 12061, 12062, 12063, 12064, 12065, 12066, 12067, 12068, 12069, 12070	\Hy@dth@currentHref 7339, 7370, 7395	\Hy@finalfalse . . . . . 374
\Hy@DviErrMsg . . .	<u>2666</u> , <u>2668</u> , 2671, 2677, 2690	\Hy@dth@currentHref 7339, 7370, 7395	\Hy@finaltrue . . . . . 373
\Hy@DviModetrue . .	<u>2675</u> , <u>2680</u>	\Hy@DviErrMsg . . . 2666, 2668, 2671, 2677, 2690	\Hy@FirstPage . . . . . 4250
\Hy@DvipdfmxOutlineOpentru	. . . . . 4538, 4545	\Hy@DviModetrue . . 2675, 2680	\Hy@FirstPageHook . . . . .
\Hy@EndAnnot . . .	9969, 10016, 10056, 10089, 10119, 10146	\Hy@DvipdfmxOutlineOpentru . . . . . 4538, 4545	. . . . . 6446, 6460, 6461, 6465, 6468, 6748, 6749, 11672, 11773, 11843, 12152, 12351
\Hy@endcolorlink . .	3349, 4644, 4649, 4653, 8947, 9024, 9428, 9465, 9489, 9497, 9523, 9547, 9568, 9582, 9606, 9621, 9646, 9661, 9943, 9971, 10458, 10531, 10552, 10578, 10613, 10646, 10665, 11032, 11292, 11939, 11978, 12004, 12012, 12226, 12262, 12287, 12298	\Hy@EndAnnot . . . 9969, 10016, 10056, 10089, 10119, 10146	\Hy@float@caption . . 7662, 7712, 7726
\Hy@EndWrap 4578, 4580, 4581, 4614		\Hy@endcolorlink . . 3349, 4644, 4649, 4653, 8947, 9024, 9428, 9465, 9489, 9497, 9523, 9547, 9568, 9582, 9606, 9621, 9646, 9661, 9943, 9971, 10458, 10531, 10552, 10578, 10613, 10646, 10665, 11032, 11292, 11939, 11978, 12004, 12012, 12226, 12262, 12287, 12298	\Hy@float@currentHref . . 7716, 7719, 7721, 7727, 7729, 7731
\Hy@Error . . . . . 244, 260, 266, 289, 2559, 2688, 2714, 2730, 2765, 2804, 2811, 2822, 2828, 4264, 4873, 5143, 5492, 5616, 5812, 5844, 6040, 6093, 12709, 12762, 13314, 13368, 13683, 13741		\Hy@EndWrap 4578, 4580, 4581, 4614	\Hy@footnote@currentHref . . . . . 6228, 7447, 7452, 7467, 7472, 7475, 7487, 7489, 7528, 7570, 7573
\Hy@escapeform . 12588, 12674, 12693, 12722, 12743, 12769, 12794, 13192, 13278, 13300, 13327, 13348, 13376, 13399, 13544, 13636, 13665, 13697, 13721, 13749, 13779, 13849, 13879, 13886		\Hy@Error . . . . . 244, 260, 266, 289, 2559, 2688, 2714, 2730, 2765, 2804, 2811, 2822, 2828, 4264, 4873, 5143, 5492, 5616, 5812, 5844, 6040, 6093, 12709, 12762, 13314, 13368, 13683, 13741	\Hy@FormObjects 13092, 13407, 13462, 13472, 13790, 13841
\Hy@escapestring 13846, 13913, 13917, 13921, 13925, 13929, 13933, 13937, 13941, 13945, 13949, 13995, 14029, 14089, 14133, 14134, 14166		\Hy@escapeform . 12588, 12674, 12693, 12722, 12743, 12769, 12794, 13192, 13278, 13300, 13327, 13348, 13376, 13399, 13544, 13636, 13665, 13697, 13721, 13749, 13779, 13849, 13879, 13886	\Hy@frenchlinksfalse . . . . . 3347
\Hy@EveryPageAnchor . . 8024, 8067		\Hy@escapestring 13846, 13913, 13917, 13921, 13925, 13929, 13933, 13937, 13941, 13945, 13949, 13995, 14029, 14089, 14133, 14134, 14166	\Hy@Gin@setfile . . . 8256, 8258
\Hy@EveryPageBoxHook . . . . . 6445, 6449, 6453, 8066, 10276, 10792, 11082		\Hy@EveryPageAnchor . . 8024, 8067	\Hy@GlobalStepCount <u>455</u> , 6574, 7043, 7067, 8042
\Hy@EveryPageHook 6444, 6448, 6640, 9321		\Hy@EveryPageBoxHook . . . . . 6445, 6449, 6453, 8066, 10276, 10792, 11082	\Hy@gtemp . . . . . 772, 773, 4295, 4301, 4303, 5689, 5690, 5694, 5695, 5706, 5720, 7504, 7509, 8759, 8761, 13906, 13908
\Hy@ExchangeLeftParenthesis . . . . . 8735, 8741		\Hy@EveryPageHook 6444, 6448, 6640, 9321	\Hy@href . . . . . 4822, 4824
\Hy@ExchangeRightParenthesis . . . . . 8745, 8751		\Hy@ExchangeLeftParenthesis . . . . . 8735, 8741	\Hy@href@nextactionraw . . . . . 4859, 4882, 4884, 4885, 4887, 4892, 4896, 4898, 9084, 9121, 9154, 9400, 10009, 10049, 10082, 10112, 10139, 10495, 10565, 10633, 11622, 11651
		\Hy@ExchangeRightParenthesis . . . . . 8745, 8751	\Hy@href@page 4837, 4839, 4843, 4844, 4846, 4853, 4856, 9117, 10044, 11618
			\Hy@hyperfiguresfalse . . . . . 419
			\Hy@hyperfootnotetrue . . . 421
			\Hy@hyperindextrue . . . . . 422
			\Hy@hypertextnamesfalse . . 2189
			\Hy@hypertextnametrue . . . 423
			\Hy@ifStringEndsWith . . 5178, 5190
			\Hy@implicittrue . . . . . 424
			\Hy@Info . 247, 2357, 4306, 4308, 4311, 4313, 4316, 4318, 4321, 4323, 4326, 4328, 4561, 4567, 4645, 4650, 4654, 4781, 4808, 5399, 6190, 6192, 6195, 6197, 6200, 6202, 6205, 6207,

6210, 6212, 6215, 6217,  
 6220, 6222, 7870, 8088, 8105  
 \Hy@InfoNoLine 248, 4338, 4340,  
 4504, 8783, 12205  
 \Hy@IsNotEmpty .. 5282, 5283,  
 5306  
 \Hy@LastPage ..... 4253  
 \Hy@Level . 14229, 14231, 14242,  
 14247, 14248, 14249, 14279  
 \Hy@Levelcheck ... 14230, 14245  
 \Hy@Linkcounter 459, 461, 7043,  
 7044, 7067, 7068, 8208  
 \Hy@Linkfileprefix .. 3470, 5162,  
 9468, 10336, 11982, 12265  
 \Hy@LinkMath .. 10996, 10998,  
 11003, 11035, 11324, 11326,  
 11331, 11333, 11339, 11341  
 \Hy@Linktoc . 2467, 2469, 2477,  
 2479, 2489, 8129  
 \Hy@Linktoc@all ..... 2475  
 \Hy@Linktoc@none ..... 2472  
 \Hy@Linktoc@page .. 2467, 2474,  
 2477  
 \Hy@Linktoc@section 2469, 2473,  
 2479  
 \Hy@Linktocpagefalse ..... 425  
 \Hy@Localanchornamefalse .. 426  
 \Hy@LookForParentCounter 6930  
 \Hy@LT@currentHref 7132, 7143  
 \Hy@LT@footnotetext 7527, 7536  
 \Hy@make@anchor . 8182, 8188,  
 8194  
 \Hy@make@df@tag@@ 8186, 8201  
 \Hy@make@df@tag@@@ .. 8192,  
 8202  
 \Hy@MakeCurrentHref .. 7006,  
 7055, 7068  
 \Hy@MakeCurrentHrefAuto 7066,  
 7075, 8183, 14208, 14596,  
 14612, 14623, 14650, 14664  
 \Hy@MakeRemoteAction . 4842,  
 9098, 10027, 11600  
 \Hy@maketitle@end . 7600, 7605,  
 7607  
 \Hy@maketitle@optarg 7598, 7603  
 \Hy@Match 305, 307, 2867, 3480,  
 3538, 3555, 3895, 3986,  
 3992, 4022, 4023, 4026,  
 4037, 4052, 4887, 5953  
 \Hy@MaybeStopNow 2787, 4147,  
 4150  
 \Hy@Message . 249, 2701, 2796,  
 4342, 4456, 10392, 10396,  
 10399, 10402, 10405, 10408,  
 10411, 10414, 12536, 12807,  
 12811, 12814, 12817, 12820,  
 12823, 12826, 12829, 12839,  
 12976, 13467  
 \Hy@naturalnamesfalse ..... 428  
 \Hy@nestingfalse ..... 429  
 \Hy@newline@author ..... 6438  
 \Hy@newline@title ..... 6437  
 \Hy@next ... 6590, 6600, 6605,  
 14622, 14631, 14634  
 \Hy@nextfalse ..... 8271  
 \Hy@NextPage ..... 4244  
 \Hy@nexttrue . 8272, 8273, 8274  
 \Hy@NIL ..... 4166, 4179, 4182  
 \Hy@number ..... 3870, 3877  
 \Hy@numberline . 14224, 14261,  
 14262, 14263, 14264  
 \Hy@ObsoletePaperOption 2441,  
 2449  
 \Hy@ocgcolor 8941, 8955, 9937,  
 9951  
 \Hy@ocgcolorlinksfalse 3346, 4624  
 \Hy@Org@chapter . 14620, 14635  
 \Hy@OrgMakeLabel 12320, 12327  
 \Hy@OutlineName . 14498, 14553  
 \Hy@OutlineRerunCheck . 14363,  
 14462, 14544  
 \Hy@PageAnchorSlide ... 7984,  
 8022, 8035  
 \Hy@PageAnchorSlidesPlain 7971,  
 8021, 8030  
 \Hy@pageanchortrue ..... 432  
 \Hy@pagecounter 460, 462, 8042,  
 8044  
 \Hy@pageheight ... 4137, 11775,  
 11872  
 \Hy@param .....  
 .. 4167, 4168, 4171, 4172,  
 7011, 7012, 7013, 7040, 7044  
 \Hy@pdf@majorminor@version ..  
 .. 2654, 4235, 5666, 8779,  
 8793, 8820, 8841, 13901  
 \Hy@pdf@majorversion .....  
 .. 2645, 2646, 2647, 2648,  
 2649, 2650, 2651, 2652,  
 2654, 6742, 8787, 8816,  
 8838, 8856, 8859  
 \Hy@pdf@minorversion .....  
 .. 2645, 2646, 2647, 2648,  
 2649, 2650, 2651, 2652,  
 2653, 2654, 6743, 8787,  
 8817, 8839, 8856, 8860  
 \Hy@pdfafalse ..... 453  
 \Hy@pdfcenterwindowfalse . 415  
 \Hy@pdfdisplaydoctitlefalse . 452  
 \Hy@pdfescapeformfalse ... 418  
 \Hy@pdffitwindowfalse .... 420  
 \Hy@pdfmajorminor@version ...  
 .... 2655, 8774, 8793  
 \Hy@pdfmajorversion 2655, 2663,  
 8816, 8838, 8854, 8859  
 \Hy@pdfmarkerrorfalse .. 11252  
 \Hy@pdfmarkerrortrue ... 11436,  
 11445  
 \Hy@pdfmenubartrue ..... 427  
 \Hy@pdfminorversion 2655, 8771,  
 8772, 8817, 8839, 8855, 8860  
 \Hy@pdfnewwindowfalse ... 431  
 \Hy@pdfnewwindowsetfalse 430,  
 3956  
 \Hy@pdfnewwindowsettrue 3958,  
 4861  
 \Hy@pdfnewwindowtrue .. 4862  
 \Hy@pdfpagelabelsfalse ... 6475  
 \Hy@pdfpagelabelstrue .... 433  
 \Hy@pdfstringdef .... 771, 5664,  
 5672, 5877, 5970, 5976  
 \Hy@pdfstringfalse .. 434, 6258  
 \Hy@pdfstringtrue ... 625, 6230  
 \Hy@pdftoolbartrue ..... 440  
 \Hy@pdfusetitlefalse ..... 449  
 \Hy@pdfversion ..... 2653  
 \Hy@pdfwindowuitrue ..... 451  
 \Hy@pkg ..... 4165, 4172  
 \Hy@plainpagesfalse ..... 435  
 \Hy@PrevPage ..... 4247  
 \Hy@ProvideTheHCounter 6911  
 \Hy@ps@CR 11825, 11832, 11837,  
 11838, 11855, 11876, 11877,  
 11878, 11884, 11891, 11898,  
 11905  
 \Hy@psdextrafalse ..... 439  
 \Hy@pstringB 9176, 9181, 10221,  
 10233, 11225, 11241, 12124,  
 12140  
 \Hy@pstringD 9097, 9119, 10026,  
 10046, 11599, 11620  
 \Hy@pstringdef .....  
 .. 8706, 8981, 9005, 9062,  
 9096, 9097, 9131, 9132,  
 9176, 9788, 9989, 10025,  
 10026, 10061, 10062, 10094,  
 10221, 10479, 10557, 10620,  
 10621, 11225, 11434, 11443,  
 11572, 11598, 11599, 11630,  
 11631, 12124, 13872, 14497,  
 14513

\Hy@pstringDest 8981, 8982, 9788, 9835, 11434, 11435, 11439, 11443, 11444, 11448	9573, 9592, 9603, 9611, 9632, 9643, 9651, 11002, 11038, 11330, 11338, 11365, 11990, 11998, 12005, 12272, 12284, 12291, 12328, 12332	\Hy@secnum@part 14640, 14641, 14643
\Hy@pstringF ..... .. 9094, 9095, 9096, 9113, 9131, 9147, 9152, 10023, 10024, 10025, 10041, 10061, 10075, 10080, 10535, 10536, 10540, 10620, 10627, 10631, 11596, 11597, 11598, 11615, 11630, 11646, 11649	\Hy@ReturnAfterElseFiFiEnd .. ..... 465, 1515	\Hy@SectionAnchorHref .. 622, 14577, 14601, 14669
\Hy@pstringName 14497, 14498, 14513, 14527	\Hy@ReturnAfterFiFiEnd . 464, 1507, 1521, 1614, 1621	\Hy@SectionHShift 14576, 14585, 14597, 14665
\Hy@pstringP 9132, 9152, 10062, 10080, 10621, 10631, 11631, 11649	\Hy@ReturnEnd . 463, 464, 465, 1527, 1626	\Hy@setbreaklinks .. 2504, 2508, 2520, 8767, 9778
\Hy@pstringURI ... 9062, 9080, 10094, 10108, 10479, 10491, 10557, 10561, 11572, 11584	\Hy@safe@activesfalse 466, 5111, 8603	\Hy@SetCatcodes 181, 231, 4145
\Hy@PutCatalog 6636, 6644, 6765	\Hy@safe@activetrue ..... ... 466, 4284, 4734, 4771, 4779, 4807, 4924, 5268, 5278, 7010, 8122, 8495, 8592, 13003, 13062, 14455, 14485	\Hy@SetNewWindow 3962, 9115, 9149, 10048, 10077, 10628, 11614, 11645
\Hy@raisedlink 2253, 6906, 7077, 7098, 7099, 7100, 7103, 7144, 7184, 7189, 7192, 7215, 7392, 7450, 7470, 7541, 7568, 7700, 7779, 7803, 7808, 7828, 8184, 8209, 11660, 11758, 12032, 12203, 14209, 14586, 14613, 14624, 14651	\Hy@SaveCatcodeSettings . 794, 843, 853, 868, 871	\Hy@setouterhbox . 11298, 11329
\Hy@raiselinksfalse .. 436, 7871	\Hy@saved@currentHref .. 7485, 7488	\Hy@setpagesizetrue ..... 437
\Hy@RemoveDurPageAttr 9300, 9313	\Hy@saved@footnotemark 7594, 7609	\Hy@setpdfborder ..... .. 3571, 9011, 9067, 9102, 9136, 9387, 10000, 10033, 10068, 10100, 10130, 10499, 10520, 10543, 10569, 10603, 10637, 10656
\Hy@RemovePercentCr .. 4754, 4758, 4763	\Hy@saved@footnotetext . 7595, 7612	\Hy@setpdfhighlight ..... .. 3529, 9012, 9068, 9103, 9137, 9388, 10001, 10034, 10069, 10101, 10131
\Hy@RemoveTransPageAttr 9275, 9289	\Hy@saved@hook ... 6421, 6433	\Hy@setpdfversiontrue .... 2641
\Hy@reserved@a 5078, 7202, 7235, 12842, 12892, 12955	\Hy@saved@refstepcounter . 6892	\Hy@setref@link .... 8451, 8454
\Hy@RestoreCatcodes 205, 4143, 4511	\Hy@SavedSpaceFactor ..... .. 2236, 2238, 2243, 2244, 2250, 12325	\Hy@SlidesFormatOptionalPage . 6504, 7970, 7989, 7993
\Hy@RestoreCatcodeSettings 838, 845, 855, 870, 873	\Hy@savedthm 7284, 7285, 7409, 7410	\Hy@SlidesPage 6511, 8003, 8004, 8010, 8012, 8015, 8018
\Hy@RestoreLastskip ..... .. 2274, 8983, 9431, 9446, 9525, 9535, 9837, 10372, 10389, 10460, 10473, 10968, 10988, 11942, 11957, 12229, 12243	\Hy@SaveLastskip ..... .. 2274, 8979, 9419, 9434, 9516, 9528, 9785, 10359, 10375, 10450, 10463, 10958, 10972, 11931, 11945, 12218, 12232	\Hy@StartlinkName . 9009, 9020
\Hy@RestoreSavedSpaceFactor . .. 2249, 9476, 9556, 9593, 9633, 11991, 12273	\Hy@SaveSavedSpaceFactor .... .. 2248, 9474, 9554, 9591, 9631, 11989, 12271	\Hy@StepCount 454, 6551, 12609, 12672, 12907, 13210, 13274, 13566, 13633, 14343, 14348, 14424
\Hy@RestoreSpaceFactor ..... .. 2240, 2266, 2271, 9475, 9483, 9490, 9555, 9565,	\Hy@SaveSpaceFactor ..... .. 2237, 2257, 2268, 9473, 9485, 9553, 9567, 9590, 9605, 9630, 9645, 11000, 11036, 11322, 11334, 11342, 11988, 12000, 12270, 12286, 12323, 12330	\Hy@stoppedearlyfalse 4152, 6810
	\Hy@scanauthor ... 6391, 6396	\Hy@stoppedearlytrue 4149, 6807
	\Hy@scanoptauthor . 6391, 6392	\Hy@StringLocalhost 5208, 5209, 5224
	\Hy@scanopttitle ... 6382, 6383	\Hy@tabularx@hook 7497, 7505
	\Hy@scantitle ..... 6382, 6387	\Hy@temp ..... 653, 660, 2447, 2452, 2453, 2454, 2455, 2456, 2457, 3435, 3444, 3445, 3446, 3447, 3448, 3449, 3450, 3492, 3493, 3494, 3497, 3499, 3502, 3512, 3515, 3516, 3517, 3518, 3519, 3520, 3536, 3549, 3553, 3568, 3729, 3730, 3733, 3736, 3739, 3764, 3772, 3773, 3774, 3775, 3776, 3777, 3778, 3779, 3780, 3954, 3955, 3978, 3979, 4025,

4026, 4033, 4037, 4271, 4275, 4276, 4277, 4278, 4371, 4373, 4376, 4381, 4383, 4386, 4400, 4402, 4407, 4409, 4416, 4418, 4423, 4425, 4428, 4493, 4494, 5389, 5393, 5394, 5405, 5489, 5490, 5491, 5493, 5497, 5809, 5810, 5811, 5813, 5817, 5818, 5951, 5963, 6034, 6050, 6051, 6052, 6053, 6054, 6055, 6056, 6057, 6063, 6069, 6075, 6076, 6077, 6078, 6079, 6080, 6081, 6082, 6083, 6084, 6085, 6125, 6126, 6133, 6134, 6141, 6142, 6531, 6534, 6543, 6545, 6549, 6553, 6597, 6599, 6914, 6915, 6936, 7156, 7162, 7288, 7313, 7578, 7584, 8136, 8137, 8145, 8146, 8341, 8343, 8347, 8378, 8379, 8380, 8395, 8396, 8795, 8798, 8799, 8815, 8834, 9191, 9220, 9222, 9707, 9712, 9718, 9722, 9725, 9730, 9761, 9763, 10193, 10236, 10238, 11123, 11126, 11130, 11131, 11137, 11138, 11144, 11174, 11179, 11185, 11189, 11192, 11197, 11230, 11232, 11304, 11305, 11309, 11400, 11401, 11409, 11410, 11514, 11515, 12073, 12078, 12084, 12088, 12091, 12096, 12129, 12131, 13063, 13075, 13854, 13855, 14495, 14501, 14509, 14524	\Hy@tempa . . . . . .. 2340, 2342, 2344, 2345, 2347, 2349, 2351, 2354, 2357, 2358, 2901, 2902, 2903, 2905, 2906, 2908, 2909, 2911, 2915, 2919, 2930, 2932, 2934, 2935, 2937, 2941, 4740, 4741, 4752, 4756, 4926, 4930, 5090, 5092, 5796, 5797, 5837, 5838, 5841, 5845, 6580, 6582, 6620, 6622, 6776, 6778, 7253, 7255, 7256, 7259, 7260, 7261, 7657, 7662, 7667, 8082, 8083, 8101, 8102, 8108, 9452, 9453, 10340, 10488, 10489, 11963, 11964, 12249, 12250, 14227, 14228, 14251, 14253, 14271, 14272, 14280, 14304, 14306, 14307, 14309, 14310	10513, 10594, 10596, 11089, 11102, 11104
\Hy@temp@A . . . . . 685, 686, 1499, 1501, 1512, 1514, 1519, 1520, 1523, 3765, 3767, 4166, 4179, 4182, 6931, 6934, 6935, 6936, 6937, 8290, 8291, 8292, 8299, 8327, 8328, 8329, 8338, 8365, 8796, 8807, 8808, 8809, 8810, 8813, 8819, 8822, 8849	\Hy@tempb . . . . . .. 5091, 5093, 5114, 6581, 6582, 6621, 6622, 14252, 14253, 14280	\Hy@unicodetrue 442, 2567, 6701, 6715
\Hy@temp@B . . . . . 1500, 1501	\Hy@tempcolor .. 11014, 11016, 11029, 11093, 11095, 11107	\Hy@UseMaketitleInfos .. 6439, 9233, 9667, 10151, 10892, 11121, 12040
\Hy@temp@menu . . . 9384, 9399, 10124, 10138, 10650, 10653, 11524, 11533	\Hy@TempPageAnchor .. 7973, 8029, 8039, 8043, 8059	\Hy@UseMaketitleString . 6418, 6440, 6441
	\Hy@Test@Alph . . . . 6994, 7023	\Hy@UseNameKey . . . . . .. 2425, 9198, 9199, 9200, 9201, 9202, 9203, 9204, 9205, 9224, 9737, 9738, 9739, 9740, 9741, 9742, 9743, 9744, 9765, 10200, 10201, 10202, 10203, 10204, 10205, 10206, 10207, 10240, 10852, 10853, 10854, 10855, 10856, 10857, 10858, 10859, 11204, 11205, 11206, 11207, 11208, 11209, 11210, 11211, 11234, 12103, 12104, 12105, 12106, 12107, 12108, 12109, 12110, 12133
	\Hy@Test@alph . . . . 6985, 7019	\Hy@varioref@undefined . 7110, 7114, 8598
	\Hy@testname . . . . . .. 8997, 8998, 9003, 9005, 9006, 9017, 9981, 9982, 9987, 9989, 9991, 10008, 10507, 10508, 10513, 10517, 10590, 10591, 10596, 10600, 11098, 11099, 11104, 11115	\Hy@VerboseAnchor . . . . . .. 4804, 8980, 9420, 9435, 9517, 9529, 9786, 10360, 10376, 10451, 10464, 10959, 10973, 11932, 11946, 12219, 12233
	\Hy@texhtfalse . . . . . 438	\Hy@verbosefalse . . . . . 406, 450
	\Hy@texhttrue . . . . . 2696, 4366	\Hy@VerboseGlobalTemp 4780, 4781, 4782, 4783, 4787
	\Hy@TheSlideOptionalPage 7988, 7992, 7997, 8006	\Hy@VerboseLinkInfo 4787, 4788, 4791, 4798
	\Hy@title . . . . . 6384, 6388	\Hy@VerboseLinkStart . . . . . .. 4776, 9040, 9050, 9450, 9502, 9538, 9550, 9978, 10316, 10339, 10478, 10583, 10991, 11091, 11961, 12017, 12247, 12304
	\Hy@tocdestname .. 8124, 8126, 8133, 8141, 8148, 8152, 8154	\Hy@VerboseLinkStop 4792, 9025
	\Hy@toclevel .. 8093, 8097, 8110	\Hy@verbosetrue . . . . . 405
	\Hy@true 2228, 2345, 2347, 2935, 2937, 5838	\Hy@VersionCheck .. 257, 4508, 19916
	\Hy@typexmlfalse . . . . . 441	\Hy@VersionChecked .. 256, 299, 4505, 4507
	\Hy@undefinedname . . . . . .. 8994, 9001, 9003, 9976, 9985, 9987, 10476, 10511,	\Hy@vt@PutCatalog 6673, 6675

\Hy@VTeXversion .. 6653, 6665, 10539, 10669, 10799, 14376	10551, 10577, 10612, 10645, 10664, 11332, 11340, 11999, 12010, 12285, 12297, 12329	\HyColor@FieldBColor .. 6015, 6018
\Hy@WarnHTMLFieldOption .. 5863, 5897, 5900, 6071	\HyAnn@AbsPageLabel .. 13143, 13150, 13191, 13277, 13299, 13326, 13347, 13375, 13398	\HyColor@FieldColor .... 6021
\Hy@Warning ..... 245, 330, 1439, 2362, 2378, 2403, 2483, 2594, 2599, 2853, 2871, 2884, 3360, 3404, 3483, 3544, 3563, 3741, 3788, 3796, 3917, 4040, 4063, 4073, 4081, 4620, 4848, 4891, 5087, 5094, 5234, 5446, 5801, 5864, 5956, 6711, 6726, 8074, 8579, 8628, 8999, 9819, 9823, 9983, 10509, 10592, 10880, 10886, 11100, 11437, 11446, 14236, 14254	\HyAnn@Count .. 13148, 13149, 13151, 13152, 13153, 13156, 13158, 13160	\HyColor@HyperrefBorderColor ..... 3495, 3513
\Hy@WarningNoLine ..... 246, 283, 2442, 2510, 2523, 2621, 3455, 3508, 3658, 3757, 4130, 4227, 4378, 4387, 4404, 4420, 4429, 6476, 6667, 6790, 8084, 8830, 11261	\HyC@cmd ..... 87, 109, 122	\HyColor@HyperrefColor ..... .. 3440, 3459, 3460, 3461, 3462, 3463, 3464, 3465
\Hy@WarningPageBorderColor .. 3505, 3507, 3509	\HyC@check ..... 68, 71, 74	\HyColor@UseColor . 4642, 8944, 8955, 9940, 9951
\Hy@WarningPageColor . 3452, 3454, 3456	\HyC@checkcommand 50, 57, 59	\HyField@@AddToFields . 13056, 13078
\Hy@WarnOptionDisabled 2374, 2377	\HyC@checkFailed .... 146, 157	\HyField@@PDFChoices . 5684, 5685, 5700
\Hy@WarnOptionValue .. 2355, 2361, 2922, 2944	\HyC@checkItem . 132, 133, 134, 135, 138	\HyField@@SetFlag . 5379, 5381
\Hy@wrapper@babel 4282, 4300	\HyC@checklong ..... 45, 53	\HyField@@UseFlag . 5369, 5371
\Hy@WrapperDef ..... .. 4292, 8975, 9418, 9433, 9515, 9527, 9784, 10358, 10374, 10449, 10462, 10957, 10971, 11930, 11944, 12217, 12231	\HyC@checkOk ..... 144, 154	\HyField@ABD@AuxAddTo- CoFields ..... 13001, 13053
\Hy@writebookmark 2233, 8094, 14213, 14354	\HyC@checkPackage . 12, 16, 18	\HyField@AddCoField ... 13011, 13024, 13027
\Hy@xspace@end ..... .. 4190, 4195, 4199, 4204, 4207, 4212, 4213, 4214, 4216, 4217, 4218, 4219, 4220, 6270, 6271, 6273, 6276, 6278, 6279, 6280, 6284, 6287, 6290, 6292, 6293, 6294, 9056, 9088, 9125, 9158, 9495, 9566, 9581, 9604, 9620, 9644, 9660, 10018, 10055, 10088, 10118, 10145, 10320, 10330,	\HyC@cmd . 62, 75, 87, 95, 118, 131	\HyField@AddToFields .. 12547, 12595, 12686, 12700, 12729, 12750, 12776, 12801, 12989, 13055, 13195, 13290, 13304, 13331, 13356, 13380, 13403, 13511, 13551, 13654, 13673, 13705, 13729, 13757, 13786
	\HyC@date ... 11, 15, 23, 29, 31	\HyField@AdvanceAnnotCount . ..... 12540, 12585, 12676, 12694, 12719, 12744, 12770, 12791, 13504, 13541, 13638, 13666, 13694, 13722, 13750, 13776
	\HyC@DeclareRobustCommand ..... 114	\HyField@afields . 12985, 13044, 13045, 13047, 13101
	\HyC@def ..... 125	\HyField@AfterAuxOpen . 13000, 13042, 13079
	\HyC@defcmd ..... 47, 54, 93	\HyField@AnnotCount .. 12538, 12539, 12541, 12544, 13502, 13505, 13508
	\HyC@doCheck ..... 99, 130	\HyField@AuxAddToCoFields .. 12999, 13039, 13053, 13067
	\HyC@edef ..... 125	\HyField@AuxAddToFields ..... 12998, 13036, 13043, 13082
	\HyC@getDate ..... 12, 14	\HyField@cofields 12986, 13005, 13006, 13026, 13028, 13102, 13104
	\HyC@meaning ..... 152, 160	\HyField@FlagsAnnot 5539, 5558, 5572, 5585, 5601, 5633
	\HyC@nc@default .... 103, 105	\HyField@FlagsCheckBox 5571, 12789, 13394, 13771
	\HyC@nc@noopt 88, 91, 103, 112, 123, 127	\HyField@FlagsChoice ... 5632, 12648, 13250, 13606
	\HyC@nc@opt .... 88, 101, 123	
	\HyC@newcommand ..... 86	
	\HyC@next ..... 48, 55, 60, 83	
	\HyC@noValue 80, 81, 82, 85, 139	
	\HyC@optcmd ..... 107, 111	
	\HyC@org@cmd ..... 76	
	\HyC@org@optcmd .... 80, 111	
	\HyC@org@robustcmd .. 81, 120	
	\HyC@org@robustoptcmd ... 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 ..... 6918, 6930	
	\HyCnt@ProvideTheHCounter .. ..... 6902, 6911	



\HyField@FlagsPushButton	5557, 12717, 12740, 12767, 13322, 13343, 13373, 13692, 13716, 13746	5512, 5513, 5514, 5515, 5516, 5519, 5520, 5521, 5522, 5525, 5526, 5527, 5530, 5541, 5542, 5543, 5544, 5545, 5546, 5547, 5548, 5549, 5560, 5561, 5562, 5574, 5575, 5576, 5587, 5588, 5589, 5590, 5592, 5603, 5604, 5605, 5606, 5607, 5608, 5609, 5610, 5621, 5624, 5635, 5636, 5637, 5638, 5640, 5642, 5643, 5646, 5649	\HyInfo@trapped@unknown	3736, 3753
\HyField@FlagsRadioButton	...		\HyInfo@TrappedUnsupported	...
	5584, 12644, 13246, 13602		...	3754, 3758, 9668, 10893, 12041
\HyField@FlagsSubmit	.. 5505, 12741, 13344, 13717		\HyInfo@Value	...
\HyField@FlagsText	5600, 12582, 13186, 13535		\HyLang@addto	3246, 3262, 3280, 3319, 3327
\HyField@NeedAppearancesfalse	..... 5829, 5842		\HyLang@afrikaans	..... 2954
\HyField@NeedAppearancetrue	... 5832, 5835, 5839		\HyLang@catalan	..... 3138
\HyField@NewBitsetFlag	. 5337, 5340, 5348	\HyInd@@@wrrindex	\HyLang@danish	..... 3228
\HyField@NewFlag	. 5335, 5411, 5412, 5413, 5414, 5415, 5416, 5417, 5418, 5419, 5420, 5421, 5422, 5423, 5424, 5425, 5426, 5427, 5428, 5429, 5430, 5435, 5436, 5437, 5438, 5439, 5440, 5441, 5442, 5443, 5476, 5478, 5479, 5481, 5482, 5484, 5485, 5486, 5487	8286, 8289, 8320, 8326	\HyLang@DeclareLang	... 3260, 3289, 3290, 3291, 3292, 3293, 3294, 3295, 3296, 3297, 3298, 3299, 3300, 3301, 3302, 3303, 3304, 3305, 3306, 3307, 3308, 3309, 3310, 3311, 3312, 3313, 3314, 3315, 3316, 3317
\HyField@NewFlagOnly	. 5339, 5477, 5480, 5483	\HyInd@@hyperpage		3192
\HyField@NewOption	5336, 5342	8393, 8403	\HyLang@english	..... 2972
\HyField@PDFAFlagWarning	.. 5445, 5453, 5457, 5461, 5465, 5469, 5473	\HyInd@@wrrindex	\HyLang@french	..... 2990
\HyField@PDFChoices	.. 5657, 12692, 13297, 13660	.. 8281, 8282	\HyLang@german	..... 3008
\HyField@PrintFlags	.....	\HyInd@DefKey	\HyLang@greek	..... 3174
	.. 5386, 5532, 5550, 5564, 5577, 5593, 5625, 5650	8339, 8353, 8366, 8375	\HyLang@italian	..... 3026
\HyField@SetFlag	.. 5378, 5518, 5524, 5529, 5563, 5591	\HyInd@EncapChar	\HyLang@magyar	..... 3044
\HyField@SetKeys	. 5761, 12579, 12615, 12618, 12637, 12705, 12737, 12757, 12786, 13182, 13216, 13219, 13238, 13309, 13340, 13363, 13390, 13531, 13572, 13575, 13594, 13678, 13713, 13736, 13767	2952, 4140, 8276	\HyLang@norsk	..... 3210
\HyField@TheAnnotCount	12543, 12552, 12561, 12591, 12680, 12697, 12725, 12747, 12773, 12797, 13507, 13512, 13515, 13546, 13643, 13668, 13699, 13724, 13752, 13781	\HyInd@hyperpage	\HyLang@portuges	..... 3062
\HyField@UseFlag	.....	8390, 8392, 8399	\HyLang@russian	..... 3080
	.. 5368, 5509, 5510, 5511,	\HyInd@key	\HyLang@spanish	..... 3120
		.. 8340, 8344, 8355, 8368, 8380	\HyLang@vietnamese	3156, 3319, 3327
		\HyInd@Org@wrrindex	\HyLinguex@OrgB	... 776, 780
		8280, 8284, 8294, 8300, 8302, 8305	\HyLinguex@OrgC	... 777, 781
		\HyInd@pagelink	\HyLinguex@OrgD	... 778, 782
		... 8408, 8414, 8416, 8419	\HyLinguex@Restore	.. 779, 792, 846, 856
		\HyInd@ParenLeft	\HyNew@float@makebox	. 7713, 7736
		.. 8263, 8291, 8328, 8365	\HyOpt@CheckDvi	. 2684, 2737, 2743, 2748, 2772, 2777, 2783, 2835, 2842, 2848, 2858
		\HyInd@ParenRight	\HyOpt@CustomDriver	... 281, 2879, 2882, 4439, 4502
		8264, 8292, 8299, 8329, 8338	\HyOpt@DriverFallback	.. 2863, 2866, 2867, 2875, 4470, 4475
		\HyInd@removespaces	\HyOpt@DriverType	4438, 4441, 4472, 4482, 4484, 4501, 4504
		8422, 8425, 8435	\HyOrg@addtoreset	. 8214, 8216, 8242
		\HyInfo@AddonHandler	\HyOrg@appendix	.. 6963, 6982
		.. 3783, 3786	\HyOrg@author	6381, 6394, 6398
		\HyInfo@AddonList	\HyOrg@elt	..... 6916, 6922
		. 3816, 3817, 3851, 3858		
		\HyInfo@Addons		
		... 3837, 3853, 9257, 10176, 11153, 11157		
		\HyInfo@AddonUnsupportedtrue		
		... 9665, 10878, 12038		
		\HyInfo@do		
		... 3785, 3818, 3841		
		\HyInfo@GenerateAddons		
		3835, 9234, 10152, 11122		
		\HyInfo@Key		
		. 3793, 3794, 3812, 3814, 3815, 3818, 3821, 3828, 3842, 3846		
		\HyInfo@KeyEscaped		
		3792, 3793		
		\HyInfo@tmp		
		..... 3802, 3812		
		\HyInfo@trapped@false		
		.. 3733, 3752		
		\HyInfo@trapped@true		
		3730, 3751		

\HyOrg@float@makebox . . . . .	7714, 7735	10462, 10971, 11944, 12231, 14209, 14355, 14587, 14614, 14625, 14652	12265, 12267, 12305
\HyOrg@hyperpage . . . . .	8266, 8268, 8269		\hyper@livelink . . . . . 6272, 6297
\HyOrg@make@df@tag@@ . . . . .	8199	\hyper@chars . . . . .	\hyper@makecurrent 6903, 7008, 7131, 7182, 7213, 7241, 7338, 7369, 7486, 7674, 7728
\HyOrg@make@df@tag@@@ 8200		. . . . . 4768, 9063, 9423, 9437, 9457, 9479, 9493, 9507, 9587, 9627, 10325, 10346, 10362, 10379, 10454, 10466, 10558, 11573, 11948, 11968, 11994, 12008, 12022, 12235, 12254, 12277, 12294, 12309	\hyper@n@rmalise . . . . . 4735, 4739
\HyOrg@maketitle . . . . .	7592, 7599, 7604	\hyper@currentanchor . . . . . 10976, 10985, 11008, 11025	\hyper@nat@current . . . . . 7770
\HyOrg@subequations 7270, 7277		\hyper@currentlinktype . . . . . 11009, 11013, 11017	\hyper@nat@anchorend . . . . . 7781
\HyOrg@title . . . . .	6380, 6385, 6389	\hyper@destlabel@hook . . . . . 5274, 5281	\hyper@nat@anchorstart . . . . . 7778
\HyOrg@TX@endtabularx . . . . .	7496	\hyper@ghash . . . . . 4720, 4721, 4769, 5154, 5166, 5183, 5186, 6224, 10319	\hyper@nat@linkbreak . . . . . 7775
\HyOrg@url . . . . .	4904	\hyper@image 4910, 4911, 9505, 10616, 11086, 12020, 12307	\hyper@nat@linkend . . . . . 7772
\HyPat@NonNegativeReal . . . . .	3539, 3540, 3541, 3542, 3558, 3560, 3887, 3898, 3899, 3900, 3907, 3910, 3911, 3912, 3913	\hyper@last . . . . . 6370, 6375	\hyper@newdestlabel 5266, 5288, 5327, 5332
\HyPat@ObjRef 4888, 4889, 4902, 8768, 9779, 10954		\hyper@link . . . . .	\hyper@normalise . . . . . 4141, 4146, 4712, 4822, 4825, 4906, 4908, 4910, 4932, 5791
\hyper@@@anchor . . . . .	4211, 4914, 4916, 4948, 4950, 4986, 4988, 5231, 6271, 6286, 6302, 7446, 7451, 7466, 7471, 7539, 7542, 7569, 7698, 7701, 7718, 7974, 8029, 8039, 8044	\hyper@linkend 4199, 4207, 4216, 6278, 6292, 6307, 7491, 7773, 7776, 8133, 8141, 8148, 8152, 8154, 9048, 9463, 9546, 10016, 10018, 10351, 10529, 11011, 11976, 12260	\hyper@pageduration 9296, 9323, 10265, 10278, 10782, 10794, 11065, 11084
\hyper@@@link . . . . .	4774, 4832, 4938, 4967, 5078, 7787, 7873, 7874, 7875, 7923, 7925, 7927, 8456, 8471, 8589	\hyper@linkfile 4218, 5179, 6280, 6294, 6309, 9092, 9467, 9625, 10020, 10335, 10533, 11594, 11980, 12264	\hyper@pagetransition 9272, 9322, 10254, 10277, 10671, 10793, 11048, 11083
\hyper@C@normalise . . . . .	4743, 4747, 4751	\hyper@linkstart 4215, 6277, 6291, 6306, 7489, 7769, 7776, 8133, 8141, 8148, 8152, 8154, 9039, 9449, 9537, 9977, 10018, 10338, 10477, 10990, 11960, 12246	\hyper@quote 6226, 9425, 9439, 9454, 9459, 9480, 9494, 9508, 10319, 10329, 10342, 10365, 10383, 11936, 11950, 11965, 11971, 11995, 12009, 12023, 12223, 12236, 12251, 12256, 12279, 12295, 12310
\hyper@C@anchor 5258, 6274, 6288, 6356, 6364, 9028, 9418, 9515, 9842, 10374, 10449, 10957, 11930, 12217		\hyper@linkurl . . . . .	\hyper@readexternallink . . . . . 5108, 5119
\hyper@C@anchorend . . . . .	4199, 4207, 4214, 6257, 6276, 6290, 6305, 6907, 7079, 7145, 7190, 7192, 7216, 7242, 7396, 7781, 7806, 7809, 7829, 7902, 8184, 8210, 9035, 9443, 9533, 9849, 10369, 10471, 10979, 11954, 12240, 14209, 14355, 14587, 14614, 14625, 14652		\hyper@refstepcounter . . . . . 6882, 6886, 6894
\hyper@C@anchorstart . . . . .	4213, 6257, 6275, 6289, 6304, 6907, 7078, 7145, 7184, 7216, 7242, 7393, 7779, 7804, 7809, 7829, 7902, 8184, 8210, 9031, 9433, 9527, 9845, 10358,		\hyper@tilde . . . . . 4729, 4730, 4731, 6225

\HyperFirstAtBeginDocument . . .	\HyPL@page . 6510, 6519, 6522,	\HyPsd@@ref . . . . . 1305, <u>1306</u>
. 6353, 6355, 6371, 6374	6528, 6537	\HyPsd@@RemoveBraces . . <u>1497</u>
\hyperget . . . . . <u>4991</u>	\HyPL@Prefix . . . . .	\HyPsd@@RemoveBracesFi 1494,
\hypergetpageref . . . . . 7072	. . . 6537, 6539, 6541, 6555,	1497
\hypergetref . . . . . 7071	6558, 6560, 6572, 6586, 6624	\HyPsd@@RemoveCmdPrefix . . .
\HyperGlobalCurrentHref 7029,	\HyPL@Roman . . . . . 6494	. . . . . 1672, 1675
7031, 7039, 7040, 7044,	\HyPL@roman . . . . . 6495	\HyPsd@@ReplaceFi 1742, 1748,
7047, 7051, 7058, 7059, 7063	\HyPL@SetPageLabels . . . <u>6630</u> ,	1753
\hyperimage . . . . . 4910, 8258	6695, 6792	\HyPsd@@UTFviii@four . . 1969,
\hyperindexformat . . . . . 8265	\HyPL@SlidesOptionalPage 6503,	1974
\hyperlink . . . . 4773, 6324, 8431	6507, 6512	\HyPsd@add@accent . 500, <u>1267</u>
\hyperlinkfileprefix . 3470, 3471,	\HyPL@SlidesSetPage 6498, 6500,	\HyPsd@AfterCountRemove 1549,
3472, 12209	6520, 6527	<u>1629</u>
\HyperLocalCurrentHref . . . . .	\HyPL@StorePageLabel . . 6555,	\HyPsd@AfterDimenRemove . . .
. . . 7047, 7049, 7056, 7057,	6557, <u>6627</u> , <u>6685</u> , <u>6773</u>	. . . . . 1555, <u>1632</u>
7058, 7059, 7061	\HyPL@thisLabel . . 6484, 6486,	\HyPsd@AfterSkipRemove 1561,
\hyperpage . . 6330, 8266, 8267,	6518, 6522, 6523	<u>1644</u>
8269, 8389	\HyPL@Type . 6525, 6532, 6536,	\HyPsd@AMScsclassfix . 607, 1288,
\HyperRaiseLinkDefault . 2235,	6554, 6562, 6571, 6585, 6623	1290
2262	\HyPL@Useless . . . . <u>6628</u> , 6634	\HyPsd@AppendItalcorr . 1513,
\HyperRaiseLinkHook 2234, 2263	\HyPsd@@@autoref . 1360, 1362,	1520, <u>1529</u>
\HyperRaiseLinkLength . . 2261,	<u>1365</u>	\HyPsd@autoref . . . . . 617, <u>1357</u>
2262, 2265	\HyPsd@@@CJKdigits . . . 1230,	\HyPsd@autorefname 1369, <u>1375</u>
\hyperref 4919, 6326, 8527, 8543,	1233, 1241	\HyPsd@CatcodeWarning 1565,
8552, 8574	\HyPsd@@@nameref 1342, 1344,	1589, 1592, 1595, 1598, <u>1656</u>
\hyperrefundefinedlink 4953, 4964	<u>1347</u>	\HyPsd@Char . . . . . <u>1859</u>
\hypersetup . . 2587, 2632, 3298,	\HyPsd@@@pageref . 1324, 1326,	\HyPsd@CharOctByte . . . 1879,
3769, 4142, 6320	<u>1329</u>	1881, 1884, 1893, 1898
\hypertarget . . . . . 4912, 6325	\HyPsd@@@ref . 1308, 1310, <u>1313</u>	\HyPsd@CharSurrogate . . 1873,
\HyPL@@@CheckThePage 6601,	\HyPsd@@@UTFviii@four 1985,	1890
6619	1988	\HyPsd@CharTwoByte . . 1871,
\HyPL@@CheckThePage . 6577,	\HyPsd@@AppendItalcorr . <u>1529</u>	1878
<u>6579</u>	\HyPsd@@autoref . . 1357, <u>1358</u>	\HyPsd@CheckCatcodes . . 671,
\HyPL@Alph . . . . . 6496	\HyPsd@@autorefname . . 1378,	<u>1539</u>
\HyPL@alph . . . . . 6497	<u>1381</u>	\HyPsd@CJK@Unicode . . 1005,
\HyPL@arabic . . . . . 6493	\HyPsd@@CJKdigits 1222, 1224,	<u>1009</u>
\HyPL@CheckThePage . . 6528,	1227	\HyPsd@CJKActiveChars . 945,
<u>6576</u>	\HyPsd@@CJKnumber . . . . .	960
\HyPL@Entry 6778, 6786, 6794,	. . 1123, 1125, 1128, 1181,	\HyPsd@CJKdigit . . 1234, 1244
<u>6796</u>	1196, 1209, 1211, 1215	\HyPsd@CJKdigits . 1007, 1220
\HyPL@EveryPage . 6516, 6640	\HyPsd@@ConvertToUnicode . .	\HyPsd@CJKhook 624, <u>916</u> , <u>927</u>
\HyPL@Format 6592, 6593, 6594,	. . . . . 1857	\HyPsd@CJKhook@bookmarks .
6595, 6596, <u>6608</u>	\HyPsd@@ding 2122, 2126, <u>2137</u>	. . . . . 922, 956
\HyPL@found 6591, 6598, 6602,	\HyPsd@@GetNextTwoTokens . .	\HyPsd@CJKhook@unicode 924,
6609, 6619, 6621	. . . . . <u>1855</u>	<u>1004</u>
\HyPL@Labels <u>6487</u> , 6631, 6632,	\HyPsd@@GlyphProcessWarning	\HyPsd@CJKnumber 1006, 1120
6634, 6636, 6687, 6688,	. . . . . 1715, 1718	\HyPsd@CJKnumberFour . . . . .
6789, 6797, 6798	\HyPsd@@hspace . . . 1278, <u>1279</u>	. . 1138, 1142, 1146, 1159,
\HyPL@LastNumber 6491, 6547,	\HyPsd@@LetCommand . 1402,	1163, 1167, 1173
6570	1423	\HyPsd@CJKnumberLarge 1151,
\HyPL@LastPrefix . . 6492, 6541,	\HyPsd@@nameref . . 1339, <u>1340</u>	1158
<u>6572</u>	\HyPsd@@pageref . . 1321, <u>1322</u>	\HyPsd@CJKnumberThree 1179,
\HyPL@LastType . . 6490, 6532,	\HyPsd@@ProtectSpacesFi 1451,	1183, 1189
6571	<u>1455</u> , 1473, 1479, 1484	



\HyPsd@CJKnumberTwo 1194, 1198, 1204  
\HyPsd@ConvertToUnicode 740, 1805  
\HyPsd@DecimalToOctal .. 937, 968  
\HyPsd@DecimalToOctalFirst .. 1011, 1047  
\HyPsd@DecimalToOctalSecond .. 1012, 1021, 1084, 2141, 2147, 2150  
\HyPsd@DefCommand 654, 655, 656, 657, 1391  
\HyPsd@DieFace . 575, 576, 577, 2062, 20790, 20791  
\HyPsd@DieFaceLarge 2070, 2079  
\HyPsd@ding ..... 574, 2112  
\HyPsd@DisableCommands 894, 896  
\HyPsd@DoConvert . 1807, 1817  
\HyPsd@DoEscape ..... 1831  
\HyPsd@doxspace ... 712, 1778  
\HyPsd@empty .. 697, 699, 703, 704, 706, 714, 721  
\HyPsd@end ..... 671, 675, 1452, 1455, 1458, 1461, 1464, 1477, 1487, 1494, 1497, 1542, 1550, 1556, 1562, 1615, 1622, 1629, 1632, 1644  
\HyPsd@endWithElse 1257, 1266  
\HyPsd@EscapeTeX .. 751, 754, 761, 1760  
\HyPsd@expand@outfvii .. 1907, 1914, 1920  
\HyPsd@fi 1469, 1475, 1479, 1485  
\HyPsd@GetNextTwoTokens 1855  
\HyPsd@GetOneBye ..... 1850  
\HyPsd@GetTwoBytes .... 1846  
\HyPsd@GLYPHERR 677, 1254, 1268, 1275  
\HyPsd@GlyphProcess 679, 1703, 1716  
\HyPsd@GlyphProcessWarning . 1710, 1714  
\HyPsd@GobbleFiFi 1259, 1265  
\HyPsd@HighA .... 1015, 1024  
\HyPsd@HighB .... 1025, 1030  
\HyPsd@HighC .... 1031, 1034  
\HyPsd@HighD .... 1027, 1039  
\HyPsd@href ..... 612, 1304  
\HyPsd@hspace ..... 608, 1278  
\HyPsd@hspacetest . 1281, 1283, 1286  
\HyPsd@ifnextchar 640, 641, 642, 1428  
\HyPsd@ignorespaces . 621, 903  
\HyPsd@inmathwarn . 499, 1251  
\HyPsd@ITALCORR .. 632, 636, 1275  
\HyPsd@LetCommand 658, 659, 1391  
\HyPsd@LetUnexpandableSpace . 627, 628, 629, 630, 1271, 1274  
\HyPsd@LoadExtra ... 861, 864, 2630  
\HyPsd@LoadStringEnc .. 2591, 2612, 2614, 2618, 2620, 6706  
\HyPsd@LoadUnicode 851, 2550, 2556, 2558, 2565, 2611, 6700  
\HyPsd@MoonPha .. 2093, 2111, 20792  
\HyPsd@nameref .... 616, 1339  
\HyPsd@pageref .... 615, 1321  
\HyPsd@pdfencoding ..... 741, 2549, 2552, 2574, 2586, 2589, 2590, 2595, 2610, 6702, 6704, 6721, 6724  
\HyPsd@pdfencoding@auto 741, 2580, 2590, 2607, 6704, 6723  
\HyPsd@pdfencoding@pdfdoc .. 2573, 2595, 2608  
\HyPsd@pdfencoding@unicode .. 2577, 2609, 2610, 6702, 6720  
\HyPsd@PrerenderUnicode .... 3668, 3683, 3688, 3693, 3698, 3703, 3720, 3725, 3805  
\HyPsd@protected@testopt 643, 644, 1432  
\HyPsd@ProtectSpaces 664, 1449, 1470, 1519  
\HyPsd@ref ..... 614, 1305  
\HyPsd@RemoveBraces ... 666, 1491, 1508, 1516, 1522  
\HyPsd@RemoveCmdPrefix 1665, 1671  
\HyPsd@RemoveMask 674, 1458, 1464, 1477, 1487  
\HyPsd@RemoveSpaceWarning . 1639, 1651, 1677  
\HyPsd@ReplaceSpaceWarning . 1634, 1646, 1690  
\HyPsd@Rest ..... 1543, 1611, 1619, 1622, 1630, 1635, 1641, 1647, 1653  
\HyPsd@SanitizeForOutFile ... 14272, 14303  
\HyPsd@SanitizeOut@BraceLeft .. 14307, 14313, 14322  
\HyPsd@SanitizeOut@BraceRight .. 14310, 14325, 14334  
\HyPsd@SPACEOPTI . 668, 684, 685, 687, 689, 691, 692, 731, 733, 1585, 1789  
\HyPsd@spaceopti ... 733, 1734  
\HyPsd@String 665, 667, 670, 672, 678, 680, 1502, 1503, 1513, 1573, 1575, 1579, 1580, 1584, 1585, 1600, 1601, 1633, 1645, 1704, 1705  
\HyPsd@StringSubst .. 681, 683, 689, 695, 698, 701, 704, 723, 726, 728, 1757  
\HyPsd@Subst ..... 677, 686, 690, 696, 702, 706, 710, 715, 716, 717, 718, 719, 720, 724, 727, 1741, 1758, 1773, 1774, 1775  
\HyPsd@temp ..... 744, 746, 747, 749, 750, 757, 759, 760, 2572, 2573, 2574, 2577, 2580, 2586, 2598, 2602, 6719, 6720, 6721, 6723, 6724, 6729  
\HyPsd@tocsection ..... 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1299  
\HyPsd@UnescapedString .. 746  
\HyPsd@UnexpandableSpace ... 1274, 1460, 1484, 1635, 1647  
\HyPsd@unichar ... 1927, 1994, 2000, 2005  
\HyPsd@unichar@first@byte 2013, 2033  
\HyPsd@unichar@octtwo . 2035, 2043, 2049  
\HyPsd@unichar@second@byte .. 2021, 2041  
\HyPsd@UnicodeReplacementCharacter 1997, 2032, 2065, 2095, 2100, 2108, 2115, 2118, 2128, 2186  
\HyPsd@utf@viii@undeferr . 496, 2054  
\HyPsd@UTFviii .... 490, 1919  
\HyPsd@UTFviii@three . 1950, 1959

\HyPsd@UTFviii@ctwo ..	1935, 1941		
\HyPsd@UTFviii@ccxliv@def ..	1925, 1931		
\HyPsd@UTFviii@ccxliv@undef .	1924, 1930		
\HyPsd@UTFviii@four	1923, 1968		
\HyPsd@UTFviii@three ..	1922, 1949		
\HyPsd@UTFviii@two	1921, 1934		
\HyPsd@Warning ..	1436, 1657, 1678, 1691, 1720, 1726		
\HyPsd@XSPACE	634, 711, 1275		
\HyPsd@xspace ..	709, 711, 712		
\HyRef@StarSetRef	8500, 8505		
\HyRef@autopageref	8571, 8573		
\HyRef@autopagerefname	8570, 8574, 8576		
\HyRef@autoref ..	8589, 8590		
\HyRef@autosetref ..	8593, 8596		
\HyRef@CaseStar ..	8657, 8663		
\HyRef@currentHtag	8609, 8627, 8630, 8636, 8643, 8649, 8664		
\HyRef@MakeUppercaseFirstOfFive ..	4683, 8521, 8523		
\HyRef@name	8625, 8626, 8631, 8638, 8656, 8657, 8658, 8660		
\HyRef@Ref ..	4668, 8526		
\HyRef@ShowKeysInit ..	8666, 8677, 8681		
\HyRef@ShowKeysRef	8597, 8665		
\HyRef@StarSetRef ..	4671, 4675, 4679, 4683, 8493, 8512, 8515, 8518, 8521		
\HyRef@StripStar ..	8624, 8655		
\HyRef@testrestype ..	8602, 8621		
\HyRef@thisref ..	8599, 8602		
\HyTmp@found	5711, 5721, 5724		
\HyTmp@key ..	5705, 5706		
\HyTmp@optitem ..	5661, 5677, 5704, 5709, 5715, 5736, 5747		
\HyTmp@optlist ..	5660, 5675, 5676, 5707, 5708, 5713, 5714, 5722, 5723, 5743, 5745, 5752, 5755		
\HyXeTeX@CheckUnicode ..	3654, 3665, 3682, 3687, 3692, 3697, 3702, 3719, 3724, 3804, 6734		
<b>I</b>			
\i ..	14853, 15017, 15020, 15023, 15026, 15301, 15475, 15478, 15481, 15484, 15613, 15618, 15623, 15628, 15632, 15869, 15940, 15948		
\ibar ..	16107, 20861		
\if	1300, 2222, 6545, 6553, 7259, 7260, 10745, 10748, 10752, 10756, 10760, 10762, 10764, 13953		
\if@eqnstar ..	7197, 7205		
\if@files	2194, 4979, 5286, 6346, 6774, 6784, 7816, 7831, 7847, 7859, 7879, 7884, 7903, 8314, 13034, 13065, 13080, 14273, 14460, 14542		
\if@hyper@item ..	6866		
\if@inlabel ..	7382		
\if@Localurl ..	10306, 10352		
\if@mid@expandable ..	606		
\if@minipage ..	7686, 7758		
\if@nmbrlist ..	6852		
\if@nobreak ..	7401		
\if@skiphyperref ..	6867		
\IfBooleanTF ..	8589		
\ifcase ..	323, 969, 1018, 1040, 1043, 1049, 1085, 1129, 1245, 1963, 2094, 2577, 3401, 4507, 5507, 5612, 5741, 5818, 6986, 6995, 8129, 8291, 8328, 8598, 10812, 11317, 14014, 14042, 14111, 14147, 14183, 14380		
\ifcat	1544, 1571, 1578, 1583, 1588, 1591, 1594, 1597, 5242, 5244		
\ifcsize ..	1906, 8667		
\ifdim ..	1286, 1633, 1637, 1645, 1649, 2277, 2300, 4127, 4535, 9341, 9345, 9350, 9354, 9361, 9364, 9368, 9371, 10286, 10287, 10292, 10293, 10425, 10428, 10432, 10435, 11346, 11360, 11731, 11732, 11737, 11738, 12611, 12649, 12650, 13212, 13251, 13252, 13568, 13607, 13608		
\ifetex@unexpanded ..	1443		
\iffalse ..	5830		
\IfFileExists ..	2881, 8821, 12337		
\ifFld@checked ..	5764, 12962, 14000		
\ifFld@comb ..	5611		
\ifFld@combo	5639, 5644, 12624, 12653, 13225, 13255, 13581, 13611		
\ifFld@disabled ..	5765, 12963		
\ifFld@edit ..	5645		
\ifFld@fileselect ..	5614		
\ifFld@hidden ..	12583, 12638, 12718, 12742, 12768, 12790, 12861, 12873, 12883, 12966, 13187, 13240, 13323, 13345, 13374, 13395, 13536, 13596, 13693, 13718, 13747, 13772		
\ifFld@multiline ..	5612, 12572, 12868, 13175, 13524		
\ifFld@multiselect ..	5683		
\ifFld@password ..	5613, 12849		
\ifFld@popdown ..	5431, 12625, 13226, 13582		
\ifFld@radio	12621, 12643, 12898, 13222, 13245, 13578, 13601		
\ifFld@readonly ..	12870, 12880, 12964		
\ifForm@html ..	5785		
\ifhmode	2238, 2242, 2299, 2308, 4814, 7285, 7289, 7315, 7348, 7410, 7483, 7492, 7644, 7646, 8976, 8984, 11352, 12322		
\ifHy@activeanchor ..	362, 5255		
\ifHy@backref ..	363, 4325, 4695, 6204, 7880, 7916		
\ifHy@bookmarks ..	364, 4560		
\ifHy@bookmarksnumbered	365, 14260		
\ifHy@bookmarksopen	366, 4550		
\ifHy@breaklinks ..	367, 2509, 10992, 11033, 11328, 11351		
\ifHy@CJKbookmarks ..	369, 921		
\ifHy@colorlinks	370, 4631, 6209, 11917		
\ifHy@destlabel ..	371, 5265		
\ifHy@draft ..	372, 4210		
\ifHy@DviMode	2665, 2685, 2865		
\ifHy@DvipdfmxOutlineOpen ..	4533, 14515		
\ifHy@frenchlinks ..	378, 4647		
\ifHy@href@ismap ..	4870, 9081, 10109, 10492, 10562, 11585		
\ifHy@hyperfigures ..	376, 4305, 6189, 8255		
\ifHy@hyperfootnotes	379, 7415		
\ifHy@hyperindex ..	380, 4315, 6199, 8262		
\ifHy@hypertexnames	381, 7015, 8027		
\ifHy@implicit ..	382, 4337, 4667, 14570		

<code>\ifHy@linktocpage</code> . . .	383, 2466, 2476	<code>\ifHy@psize</code> . . . . .	395	14147, 14152, 14183, 14188,	
<code>\ifHy@localanchorname</code> . . .	384, 7048, 7060	<code>\ifHy@raiselinks</code> 396, 9472, 9552,	9589, 9629, 11987, 12269	14217, 14233, 14376, 14446,	
<code>\ifHy@naturalnames</code> .	386, 7027	<code>\ifHy@seminarslides</code> . . . . .	397	14449, 14476, 14479, 14517,	
<code>\ifHy@nesting</code> .	387, 4310, 4913, 4947, 4985, 5240, 6194, 7440, 7460, 7538, 7697	<code>\ifHy@setpagesize</code> . . .	398, 9329, 10283, 10422, 11728	14628, 14643, 14658	
<code>\ifHy@next</code> . . . . .	912, 8279	<code>\ifHy@setpdfversion</code> .	2633, 8778	<code>\ifodd</code> . . . . .	1977, 1982, 8053
<code>\ifHy@ocgcolorlinks</code> . . . . .	390, 3359, 4617, 4627, 6214, 8773, 8862, 8940, 8948, 9853, 9936, 9944	<code>\ifHy@stoppedearly</code> . . . . .	360	<code>\ifpdf</code> . . .	2667, 2710, 2721, 4375, 4443
<code>\ifHy@pageanchor</code> . . .	391, 8026	<code>\ifHy@texht</code> 399, 4396, 4659, 5855, 5888, 6062, 6086, 6257, 8439		<code>\ifpdfstringunicode</code> . . .	491, 494
<code>\ifHy@pdfa</code> 409, 4234, 4619, 5142, 5444, 6038, 6091, 6219, 9010, 9076, 9111, 9145, 9396, 9999, 10032, 10067, 10099, 10129, 10498, 10519, 10542, 10568, 10602, 10636, 10655, 11458, 12517, 12708, 12761, 13113, 13313, 13367, 13486, 13682, 13740, 13955, 14003, 14172		<code>\ifHy@typexml</code> 361, 4330, 4634, 4661, 6347, 14464, 14546		<code>\ifportrait</code> . . . . .	9340
<code>\ifHy@pdfcenterwindow</code> 368, 9196, 9735, 10198, 10850, 11202, 12101		<code>\ifHy@unicode</code> 402, 486, 521, 524, 584, 682, 694, 722, 730, 739, 940, 1659, 1680, 1693, 1722, 1728, 1995, 2063, 2113, 2548, 2588, 3656, 6709, 13902		<code>\ifthenelse</code> . . . . .	7906
<code>\ifHy@pdfdisplaydoctitle</code> . .	408, 9197, 9736, 10199, 10851, 11203, 12102	<code>\ifHy@verbose</code> .	404, 4777, 4793, 4805, 5387, 8099, 8782	<code>\iftrue</code> . .	1450, 1472, 1752, 5833, 14630
<code>\ifHy@pdfescapeform</code> 375, 13850, 13880		<code>\ifHyField@NeedAppearances</code> . .	5828, 5830, 5833, 12519, 13115, 13488	<code>\iftutex</code> . . . . .	745
<code>\ifHy@pdffitwindow</code> . .	377, 9195, 9734, 10197, 10849, 11201, 12100	<code>\ifHyInfo@AddonUnsupported</code> . .	3781, 3795, 3836	<code>\ifvmode</code> . . . . .	2254, 2276, 2289
<code>\ifHy@pdfmarkerror</code> 11249, 11258		<code>\IfHyperBoolean</code> . . . . .	2330	<code>\ifvoid</code> . . . . .	7138, 7142, 7386
<code>\ifHy@pdfmenubar</code> . . .	385, 9193, 9732, 10195, 10847, 11199, 12098	<code>\IfHyperBooleanExists</code> <u>2324</u> , 2331		<code>\ifvtx</code> . .	2673, 2789, 2818, 4417, 4453, 4464, 4467
<code>\ifHy@pdfnewwindow</code> 389, 3965, 10539		<code>\ifin@</code> . . . . .	6938	<code>\ifxetex</code> .	2670, 2762, 3655, 4401, 4450, 4534, 5030
<code>\ifHy@pdfnewwindowset</code> . .	388, 3963	<code>\ifmeasuring@</code> . . . . .	6893, 6904	<code>\ignorespaces</code> . . . . .	621, 7279, 7448, 7454, 7468, 7477, 7575, 7682, 7693, 7696, 7754, 7762, 7824, 7839, 7855, 7864, 7914
<code>\ifHy@pdfpagelabels</code> .	392, 6472, 6685, 6772	<code>\ifmmode</code> . . . . .	10995, 11323	<code>\iint</code> . . . . .	18080, 20212
<code>\ifHy@pdfstring</code> . . . . .	393, 879	<code>\ifnum</code> . .	1010, 1121, 1137, 1141, 1161, 1174, 1177, 1190, 1192, 1205, 1207, 1213, 1867, 1870, 1953, 1996, 1999, 2011, 2064, 2067, 2080, 2114, 2117, 2120, 2124, 2139, 2143, 2146, 2243, 2278, 2674, 2790, 2793, 2819, 3402, 3403, 4235, 4417, 4453, 4464, 4467, 4544, 4551, 4847, 5666, 5737, 5748, 6502, 6526, 6547, 6563, 6665, 6965, 6968, 7976, 7986, 8774, 8779, 8793, 8797, 8802, 8820, 8841, 9965, 9970, 10539, 10669, 10799, 10807, 10809, 10810, 10820, 10823, 10923, 10925, 11045, 11763, 12675, 12680, 12685, 13016, 13093, 13289, 13637, 13642, 13653, 13901, 13983, 14014, 14019, 14042, 14048, 14077, 14111, 14117, 14136,	<code>\IJ</code> . . . . .	14849, 15634
<code>\ifHy@pdftoolbar</code> 401, 9192, 9731, 10194, 10846, 11198, 12097		<code>\ifn@</code> . . . . .	6938	<code>\ij</code> . . . . .	15060, 15636
<code>\ifHy@pdfusetitle</code> . . . .	403, 6379	<code>\ifmmeasuring@</code> . . . . .	6893, 6904	<code>\Im</code> . . . . .	17716, 20084
<code>\ifHy@pdfwindowui</code> . .	407, 9194, 9733, 10196, 10848, 11200, 12099	<code>\ifmmode</code> . . . . .	10995, 11323	<code>\immediate</code> . .	6348, 6349, 6350, 6352, 6678, 6777, 6785, 7819, 7834, 7850, 7860, 7879, 7909, 8864, 8879, 8894, 10928, 11760, 12979, 13035, 13038, 13099, 14366, 14432, 14463, 14465, 14545, 14547
<code>\ifHy@plainpages</code> 394, 4320, 8028		<code>\ifnum</code> . .	1010, 1121, 1137, 1141, 1161, 1174, 1177, 1190, 1192, 1205, 1207, 1213, 1867, 1870, 1953, 1996, 1999, 2011, 2064, 2067, 2080, 2114, 2117, 2120, 2124, 2139, 2143, 2146, 2243, 2278, 2674, 2790, 2793, 2819, 3402, 3403, 4235, 4417, 4453, 4464, 4467, 4544, 4551, 4847, 5666, 5737, 5748, 6502, 6526, 6547, 6563, 6665, 6965, 6968, 7976, 7986, 8774, 8779, 8793, 8797, 8802, 8820, 8841, 9965, 9970, 10539, 10669, 10799, 10807, 10809, 10810, 10820, 10823, 10923, 10925, 11045, 11763, 12675, 12680, 12685, 13016, 13093, 13289, 13637, 13642, 13653, 13901, 13983, 14014, 14019, 14042, 14048, 14077, 14111, 14117, 14136,	<code>\in</code> . . . . .	17997, 20178
<code>\ifHy@psdextra</code> . .	400, 583, 865	<code>\IfHyperBoolean</code> . . . . .	2330	<code>\in@</code> . . . . .	6936
		<code>\IfHyperBooleanExists</code> <u>2324</u> , 2331		<code>\incr@eqnum</code> . . . . .	7157, 7170
		<code>\ifin@</code> . . . . .	6938	<code>\indent</code> . . . . .	7294, 7322
		<code>\ifmeasuring@</code> . . . . .	6893, 6904	<code>\index</code> . . . . .	610
		<code>\ifmmode</code> . . . . .	10995, 11323	<code>\indexentry</code> . .	8317, 8332, 8347, 8351, 8361
		<code>\ifnum</code> . .	1010, 1121, 1137, 1141, 1161, 1174, 1177, 1190, 1192, 1205, 1207, 1213, 1867, 1870, 1953, 1996, 1999, 2011, 2064, 2067, 2080, 2114, 2117, 2120, 2124, 2139, 2143, 2146, 2243, 2278, 2674, 2790, 2793, 2819, 3402, 3403, 4235, 4417, 4453, 4464, 4467, 4544, 4551, 4847, 5666, 5737, 5748, 6502, 6526, 6547, 6563, 6665, 6965, 6968, 7976, 7986, 8774, 8779, 8793, 8797, 8802, 8820, 8841, 9965, 9970, 10539, 10669, 10799, 10807, 10809, 10810, 10820, 10823, 10923, 10925, 11045, 11763, 12675, 12680, 12685, 13016, 13093, 13289, 13637, 13642, 13653, 13901, 13983, 14014, 14019, 14042, 14048, 14077, 14111, 14117, 14136,	<code>\Info</code> . . . . .	19654, 20781
		<code>\ifn@</code> . . . . .	6938	<code>\infty</code> . . . . .	18040, 20196
		<code>\ifmmeasuring@</code> . . . . .	6893, 6904	<code>\input</code> . . . . .	844, 854, 869, 872, 3322, 3330, 3337, 4506, 11663, 11761, 11860, 12037, 16384
		<code>\ifmmode</code> . . . . .	10995, 11323	<code>\InputIfFileExists</code> .	4144, 14456, 14490, 14535, 14537
		<code>\ifnum</code> . .	1010, 1121, 1137, 1141, 1161, 1174, 1177, 1190, 1192, 1205, 1207, 1213, 1867, 1870, 1953, 1996, 1999, 2011, 2064, 2067, 2080, 2114, 2117, 2120, 2124, 2139, 2143, 2146, 2243, 2278, 2674, 2790, 2793, 2819, 3402, 3403, 4235, 4417, 4453, 4464, 4467, 4544, 4551, 4847, 5666, 5737, 5748, 6502, 6526, 6547, 6563, 6665, 6965, 6968, 7976, 7986, 8774, 8779, 8793, 8797, 8802, 8820, 8841, 9965, 9970, 10539, 10669, 10799, 10807, 10809, 10810, 10820, 10823, 10923, 10925, 11045, 11763, 12675, 12680, 12685, 13016, 13093, 13289, 13637, 13642, 13653, 13901, 13983, 14014, 14019, 14042, 14048, 14077, 14111, 14117, 14136,	<code>\inputlineno</code> . . . . .	4784, 5247

`\insert` ..... 7553  
`\int` ..... 18075, 20210  
`\IntCalcAdd` ..... 1896  
`\IntCalcDec` ..... 1032, 2090  
`\intcalcDec` ..... 2072  
`\IntCalcDiv` .. 1026, 1035, 1040, 1143, 1152, 1164, 1181, 1196, 1211, 1880, 1886, 1892  
`\intcalcDiv` 1016, 1887, 1894, 1897  
`\IntCalcMod` . 1028, 1037, 1043, 1147, 1153, 1168, 1184, 1199, 1213, 1215, 1882, 1887, 1888, 1894, 1897, 1899  
`\intcalcMod` ..... 1018  
`\intcalcNum` .. 2094, 2122, 2126  
`\IntCalcSub` .. 2088, 2141, 2144, 2147, 2150  
`\intcalcSub` ..... 1874, 2070  
`\interfootnotelinepenalty` .. 7556  
`\interleave` ..... 19557, 20750  
`\interlinepenalty` ..... 7556  
`\inva` ..... 16020, 20837  
`\invamp` ..... 17762  
`\invbackneg` ..... 18556, 20415  
`\invdiameter` ..... 19356, 20663  
`\inve` ..... 15879, 19945  
`\invglotstop` ..... 16264, 19978  
`\invh` ..... 16095, 20856  
`\invlegr` ..... 16170, 20879  
`\invm` ..... 16129, 20867  
`\invneg` ..... 19417, 20688  
`\invr` ..... 16165, 20877  
`\invscr` ..... 16192, 19966  
`\invscripta` ..... 16028, 20839  
`\invv` ..... 16227, 20891  
`\invw` ..... 16231, 20893  
`\invy` ..... 16235, 20895  
`\iota` ..... 16492, 19998  
`\ipagamma` ..... 16087, 19957  
`\isuperior` ..... 20041  
`\item` ... 6847, 6850, 7846, 7858, 7901  
`\Itemautorefname` ..... 8687  
`\itemautorefname` .. 2957, 2975, 2993, 3011, 3029, 3047, 3065, 3094, 3095, 3123, 3141, 3159, 3177, 3195, 3213, 3231, 8687, 8688, 8691  
`\itemindent` ..... 7387  
`\itshape` ..... 554

## J

`\j` ..... 15641, 15899, 16006  
`\JackStar` ..... 19130, 20566

`\JackStarBold` .... 19132, 20567  
`\jarr` ..... 19887  
`\jeem` ..... 19831  
`\jeh` ..... 19903  
`\jinferior` ..... 20754  
`\jobname` ... 6349, 12337, 14365, 14456, 14463, 14490, 14535, 14537, 14545  
`\Join` ..... 19400, 20681  
`\Jupiter` ..... 18918, 21063  
`\jupiter` ..... 18916, 20491

## K

`\k` .. 14730, 15077, 15079, 15084, 15086, 15138, 15169, 15198, 15213, 15529, 15531, 15575, 15577, 15625, 15627, 15628, 15765, 15767, 15895, 15897, 16927, 16969, 16972  
`\kaf` ..... 19867  
`\kanjiskip` ..... 443  
`\kappa` ..... 16494, 19999  
`\kasra` ..... 19893  
`\keepPDF@SetupDoc` ... 11921, 11928  
`\kern` ... 1553, 1634, 1639, 1651, 7387, 8048, 8049, 8050, 8052, 8053, 8058, 14585  
`\kernel@ifnextchar` ..... 641  
`\Keyboard` ..... 18574, 20423  
`\kha` ..... 19835  
`\kinferior` ..... 20075  
`\Kutline` ..... 18788, 21027  
`\kv@define@key` ..... 3803  
`\KV@href@pdfnewwindow` . 4868  
`\KV@href@pdfnewwindow@default` ..... 4869  
`\KV@Hyp@draft` ..... 2440  
`\KV@Hyp@nolinks` ..... 2440  
`\KV@Hyp@pdfnewwindow` . 4868  
`\KV@Hyp@pdfnewwindow@default` ..... 4869  
`\kv@key` 3789, 3792, 3799, 5664, 5667, 5669, 5673, 5677  
`\kv@parse` ..... 5663  
`\kv@parse@normalized` 3820, 3827  
`\kv@processor@default` 3823, 3830  
`\kv@set@family@handler` .. 3782  
`\kv@value` 3787, 5665, 5672, 5673  
`\kvsetkeys` 2632, 2697, 2837, 3662, 3762, 4236, 4477, 4495, 4618, 5762, 8775, 11257, 12532, 12834, 12847, 12896, 12939, 12960, 13090, 13471

## L

`\L` ..... 14842, 15665  
`\l` ..... 6876, 14855, 15667  
`\labdentals` .... 16137, 20870  
`\label` ..... 609, 8072  
`\label@@hyperref` ... 4955, 4957  
`\label@hook` ..... 5315  
`\label@hyperdef` .... 4940, 4971  
`\label@hyperref` .... 4920, 4954  
`\label@name` .. 5280, 5290, 5316  
`\labelsep` ..... 7913  
`\labelwidth` ..... 7912  
`\Ladiesroom` ..... 19643, 20778  
`\lam` ..... 19869  
`\Lambda` ..... 16431, 19982  
`\lambda` ..... 16496, 20000  
`\lambdabar` ..... 15827, 20826  
`\lambdash` ..... 15828, 20827  
`\langle` ..... 18576, 20424  
`\language@group` ..... 593  
`\LARGE` ..... 561  
`\Large` ..... 562  
`\large` ..... 565  
`\LargerOrEqual` ... 18222, 20980  
`\lastbox` ..... 7385  
`\lastnodetype` ..... 2278  
`\lastskip` 2277, 2285, 2292, 2300, 2304, 2311  
`\LaTeX` . 518, 520, 12343, 12344  
`\LaTeXe` ..... 519, 12344  
`\latfric` ..... 16119, 20864  
`\LayoutCheckField` 6140, 12792, 13396, 13777  
`\LayoutChoiceField` 6132, 12642, 13244, 13600  
`\LayoutPushButtonField` . 6148, 12712, 12720, 13317, 13324, 13686, 13695  
`\LayoutTextField` . 6124, 12586, 13189, 13542  
`\lbrackdbl` ..... 20618  
`\lccode` ..... 950, 1761, 1762, 1763, 1764, 1765, 1766, 1767, 1768, 1769, 1770, 1917, 5998, 8276, 8277, 14290, 14291, 14292, 14293, 14294, 14295, 14296, 14297, 14298, 14299, 14300  
`\lcurvearrowdown` . 19296, 20642  
`\lcurvearrowse` .... 19288, 20639  
`\lcurvearrowsw` ... 19291, 20640  
`\ldots` ..... 511  
`\le` ..... 18214, 20270

<code>\leadsto</code> . . . . .	19282, 20637	<code>\leqclosed</code> . . . . .	18425, 21009	<code>\lower</code> . . . . .	5047, 9478, 9558, 9595, 9635, 11349, 11993, 12275
<code>\leavevmode</code> . . . . .		<code>\leqq</code> . . . . .	18223, 20273	<code>\lowercase</code> . . . . .	951, 1771, 1918, 2341, 2901, 2931, 3729, 3765, 5336, 5337, 5340, 5345, 5369, 5379, 5433, 5489, 5809, 5883, 5886, 5999, 8278, 11044, 14301
	618, 2232, 4220, 4240, 4280, 5040, 5072, 5147, 6314, 7482, 7643, 8588, 8996, 9064, 9099, 9133, 9383, 9471, 9551, 9588, 9628, 9979, 10021, 10059, 10092, 10317, 10326, 10380, 10534, 10559, 10589, 10622, 10994, 11321, 11574, 11601, 11632, 11986, 12268, 12587, 12713, 12721, 12760, 12793, 13190, 13276, 13298, 13318, 13325, 13346, 13366, 13397, 13543, 13635, 13664, 13687, 13696, 13720, 13739, 13778, 14583	<code>\lesseqgtr</code> . . . . .	18492, 20387	<code>\lozenge</code> . . . . .	18823, 20460
<code>\Leftarrow</code> . . . . .	17926, 20147	<code>\lesseqqgtr</code> . . . . .	19470, 20711	<code>\lrcorner</code> . . . . .	18568, 20420
<code>\leftarrow</code> . . . . .	20097	<code>\lessgtr</code> . . . . .	18264, 20292	<code>\LT@array</code> . . . . .	7123
<code>\leftarrowtail</code> . . . . .	17843, 20115	<code>\LessOrEqual</code> . . . . .	18217, 20979	<code>\LT@foot</code> . . . . .	7138, 7142
<code>\leftarrowtriangle</code> . . . . .	17974, 20167	<code>\lessssim</code> . . . . .	18254, 20288	<code>\LT@p@ftn</code> . . . . .	7514, 7517, 7521, 7531
<code>\leftbarharpoon</code> . . . . .	19333, 20654	<code>\LetLtxMacro</code> . . . . .	6261, 6265, 6334, 6338	<code>\LT@p@ftntext</code> . . . . .	7512, 7519
<code>\LEFTCIRCLE</code> . . . . .	18825, 20461	<code>\Letter</code> . . . . .	19082, 21095	<code>\LT@start</code> . . . . .	7140, 7150
<code>\leftharpoonup</code> . . . . .	17874, 20128	<code>\LHD</code> . . . . .	18818, 20458	<code>\ltimes</code> . . . . .	18448, 20368
<code>\leftharpoonup</code> . . . . .	17871, 20127	<code>\lhd</code> . . . . .	18417, 20356	<code>\ltx@backslashchar</code> . . . . .	309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 321, 4038
<code>\leftleftarrows</code> . . . . .	17903, 20138	<code>\hookrightarrow</code> . . . . .	19274, 20633	<code>\ltx@empty</code> . . . . .	349, 350, 457, 1541, 2666, 2863, 2875, 2879, 3351, 3488, 3858, 3875, 3882, 3984, 4103, 4104, 4107, 4108, 4109, 4110, 4111, 4112, 4116, 4168, 4438, 4439, 4470, 4480, 4578, 5092, 5093, 5264, 5285, 5308, 5534, 5552, 5566, 5579, 5595, 5627, 5652, 5659, 5660, 5985, 6023, 6024, 6025, 6026, 6027, 6028, 6029, 6030, 6031, 6032, 6033, 6058, 6444, 6445, 6446, 6449, 6461, 6470, 6487, 6492, 6498, 6507, 6527, 7189, 8126, 8137, 8146, 8341, 8795, 8815, 8819, 9411, 10307, 10394, 10998, 11256, 11270, 11286, 11305, 11326, 11393, 11660, 11758, 12032, 12203, 12210, 12534, 12555, 12568, 12809, 12844, 12891, 12985, 12986, 13005, 13012, 13028, 13059, 13102, 13142, 13143, 13144, 13171, 13496, 13513, 13520
<code>\leftleftharpoons</code> . . . . .	19321, 20650	<code>\hookrightarrow</code> . . . . .	19278, 20635	<code>\ltx@firstofone</code> . . . . .	2686, 4176, 5311, 5328, 6374, 14318, 14330
<code>\leftModels</code> . . . . .	19542, 21120	<code>\Libra</code> . . . . .	18951, 21074	<code>\ltx@firstoftwo</code> . . . . .	328, 336, 2081, 2326, 2333, 5203, 7441, 7461
<code>\leftmodels</code> . . . . .	19535, 21118	<code>\libra</code> . . . . .	18949, 20502	<code>\ltx@GlobalAppendToMacro</code> . . . . .	897, 5315
<code>\leftmoon</code> . . . . .	18894, 20486	<code>\Lightning</code> . . . . .	17861, 20949		
<code>\leftpointright</code> . . . . .	18868, 21043	<code>\lightning</code> . . . . .	17859, 20123		
<code>\Leftrightarrow</code> . . . . .	17937, 20151	<code>\limits</code> . . . . .	4760		
<code>\leftrightarrow</code> . . . . .	17812, 20101	<code>\linferior</code> . . . . .	20076		
<code>\leftrightarrows</code> . . . . .	17901, 20137	<code>\literalps@out</code> . . . . .	2230, 10917, 10922, 10974, 10980, 11006, 11012, 11268, 11284, 11318, 11319, 11347, 11349, 11361, 11363, 11661, 11750, 11759, 11817, 11830, 11911, 12035, 12195		
<code>\leftrightarrowtriangle</code> . . . . .	17978, 20169	<code>\ll</code> . . . . .	18235, 20279		
<code>\leftrightharpoon</code> . . . . .	19310, 20646	<code>\llap</code> . . . . .	5045		
<code>\leftrightharpoons</code> . . . . .	17912, 20142	<code>\llbracket</code> . . . . .	19243, 21099		
<code>\Leftscissors</code> . . . . .	19069, 21094	<code>\llcorner</code> . . . . .	18566, 20419		
<code>\leftslice</code> . . . . .	19479, 20715	<code>\Lleftarrow</code> . . . . .	17950, 20157		
<code>\leftspoon</code> . . . . .	19239, 20617	<code>\lll</code> . . . . .	18487, 20385		
<code>\leftsquigarrow</code> . . . . .	17954, 20159	<code>\llparenthesis</code> . . . . .	19352, 20661		
<code>\lefttherefore</code> . . . . .	17592, 20037	<code>\lnapprox</code> . . . . .	19465, 20709		
<code>\leftthreetimes</code> . . . . .	18453, 20370	<code>\lneq</code> . . . . .	19460, 20707		
<code>\LeftTorque</code> . . . . .	19303, 21103	<code>\lneqq</code> . . . . .	18231, 20277		
<code>\Lefttorque</code> . . . . .	19304, 21104	<code>\lnsim</code> . . . . .	18519, 20399		
<code>\leftVdash</code> . . . . .	19529, 21116	<code>\Longleftarrow</code> . . . . .	19258, 20625		
<code>\leftvdash</code> . . . . .	18374, 20993	<code>\longleftarrow</code> . . . . .	19252, 20622		
<code>\legacy</code> . . . . .	6872, 6877, 6879	<code>\Longleftrightarrow</code> . . . . .	19262, 20627		
<code>\legm</code> . . . . .	16134, 20869	<code>\longleftrightarrow</code> . . . . .	19256, 20624		
<code>\legr</code> . . . . .	16177, 20881	<code>\longlegr</code> . . . . .	19964		
<code>\Leo</code> . . . . .	18945, 21072	<code>\Longmapsfrom</code> . . . . .	19266, 20629		
<code>\leo</code> . . . . .	18943, 20500	<code>\Longmapsto</code> . . . . .	19268, 20630		
<code>\leq</code> . . . . .	18214, 20269	<code>\longmapsto</code> . . . . .	19264, 20628		
		<code>\Longrightarrow</code> . . . . .	19260, 20626		
		<code>\longrightarrow</code> . . . . .	19254, 20623		
		<code>\looparrowleft</code> . . . . .	17853, 20120		
		<code>\looparrowright</code> . . . . .	17855, 20121		



<code>\ltx@gobble</code>	253, 2692, 4169, 4196, 4205, 4566, 5307, 5309, 6274, 6275, 6286, 6288, 6289, 6646, 12317, 12998, 13014, 13019, 14316, 14328				
<code>\ltx@gobblethree</code>	8008				
<code>\ltx@gobbletwo</code>	5327, 6277, 6291, 12999				
<code>\ltx@ifclassloaded</code>	6499, 7969				
<code>\ltx@ifempty</code>	5086				
<code>\ltx@iffileloaded</code>	866, 867, 6458				
<code>\ltx@ifpackageloaded</code>	917, 13147				
<code>\ltx@ifUndefined</code>	259, 265, 304, 513, 591, 631, 707, 742, 786, 787, 788, 1287, 1382, 1383, 1535, 2188, 2217, 4162, 4191, 4193, 4872, 5276, 5307, 6419, 6831, 6932, 6939, 6961, 6976, 7231, 7782, 7987, 8340, 8577, 8578, 8622, 8623, 8625, 8626, 8780, 8811, 9041, 9051, 9360, 10424, 10481, 10584, 10970, 11013, 11092, 11277, 13145, 14619, 14629				
<code>\ltx@ifundefined</code>	2138, 2325, 2326, 2369, 5319, 7394, 8003, 8842				
<code>\ltx@leftbracechar</code>	319				
<code>\ltx@LocalAppendToMacro</code>	344, 347, 6924, 6940, 6945				
<code>\ltx@one</code>	6501, 6502, 6509, 7972, 7976, 7982, 7985, 7986, 7999, 8802, 13151				
<code>\ltx@onelevel@sanitize</code>	6915, 6934, 8379				
<code>\ltx@ReturnAfterElseFi</code>	4742				
<code>\ltx@ReturnAfterFi</code>	1709, 4746, 4762, 8398, 8434, 8740, 8750, 13873				
<code>\ltx@rightbracechar</code>	320				
<code>\ltx@secondoftwo</code>	325, 2083, 2325, 2326, 2335, 2337, 5097, 5201, 7443, 7463, 13004, 13007, 13010, 13013, 13017, 13018, 13021				
<code>\ltx@space</code>	322, 1438				
<code>\ltx@zero</code>	1765, 1766, 1767, 1768, 1769, 1770, 8790, 8797, 13016, 13149				
<code>\lz</code>	16126, 20866				
<b>M</b>					
<code>\m@ne</code>	4294, 4417, 4453, 4464, 4467, 4796, 4855, 5351, 7251, 9974, 14537, 14628, 14641				
<code>\make@df@tag@@</code>	8199, 8201				
<code>\make@df@tag@@@</code>	8200, 8202				
<code>\make@stripped@name</code>	6898, 7179, 7210, 7238, 7249				
<code>\makeatletter</code>	3, 836, 893				
<code>\MakeButtonField</code>	6155, 12714, 12723, 12745, 12765, 12771, 13319, 13329, 13354, 13371, 13378, 13688, 13691, 13719, 13744, 13748				
<code>\MakeCheckField</code>	6152, 12795, 13401, 13774				
<code>\MakeChoiceField</code>	6154, 12695, 13302, 13662				
<code>\MakeFieldObject</code>	12978, 13125, 13135, 13138				
<code>\MakeLowercase</code>	582				
<code>\MakeLowercaseUnsupportedIn-</code> <code>PdfStrings</code>	472, 582				
<code>\MakeRadioField</code>	6151, 12678, 13288, 13628				
<code>\maketag@@@</code>	8188				
<code>\MakeTextField</code>	6153, 12589, 13194, 13539				
<code>\maketitle</code>	7592, 7593				
<code>\MakeUppercase</code>	581, 8524				
<code>\MakeUppercaseUnsupportedIn-</code> <code>PdfStrings</code>	472, 581				
<code>\Male</code>	18915, 21062				
<code>\male</code>	18911, 20490				
<code>\MaleMale</code>	19032, 20527				
<code>\ManFace</code>	19629, 20772				
<code>\manstar</code>	19026, 20524				
<code>\mapsto</code>	17847, 20117				
<code>\Mars</code>	18914, 21061				
<code>\mars</code>	18913, 21060				
<code>\MathBSuppress</code>	10327, 10331				
<code>\mathclose</code>	7192				
<code>\mathdisplay</code>	7160, 7169				
<code>\mathdisplay@push</code>	7158, 7167				
<code>\mathdollar</code>	15239, 20793				
<code>\mathellipsis</code>	17563, 20927				
<code>\mathopen</code>	7183, 7214				
<code>\mathparagraph</code>	15361, 20804				
<code>\mathsection</code>	15329, 20802				
<code>\mathsterling</code>	15318, 20799				
<code>\mathunderscore</code>	15297, 20797				
<code>\mathversion</code>	570				
<code>\maxdimen</code>	3423, 12983				
<code>\MaybeStopEarly</code>	458, 2700, 2795, 4341, 4455, 6805, 6808				
<code>\mbox</code>	619, 8950, 9946				
<code>\mddefault</code>	7296, 7324, 7355				
<code>\mdseries</code>	553				
<code>\meaning</code>	62, 153, 159, 2197, 6403, 7040, 7256, 14501, 14509, 14524				
<code>\measuredangle</code>	18044, 20198				
<code>\measuring@false</code>	6893				
<code>\mediaheight</code>	10418, 10420, 10426, 10433				
<code>\mediawidth</code>	10429, 10436				
<code>\meem</code>	19871				
<code>\Mercury</code>	18900, 21053				
<code>\mercury</code>	18898, 20488				
<code>\merge</code>	19431, 21115				
<code>\MessageBreak</code>	261, 267, 284, 285, 290, 291, 331, 332, 1665, 1686, 1699, 1722, 1727, 1729, 2363, 2364, 2379, 2401, 2404, 2406, 2484, 2485, 2511, 2512, 2560, 2561, 2562, 2600, 2601, 2622, 2637, 2689, 2715, 2731, 2766, 2805, 2812, 2823, 2829, 2853, 2872, 2885, 2923, 3361, 3484, 3485, 3545, 3546, 3564, 3565, 3659, 3742, 3797, 3798, 3918, 3919, 4041, 4042, 4043, 4064, 4066, 4074, 4075, 4082, 4132, 4379, 4380, 4388, 4389, 4405, 4406, 4421, 4422, 4430, 4431, 4621, 4849, 4850, 4874, 4875, 4891, 4892, 5390, 5395, 5404, 5447, 5493, 5617, 5730, 5802, 5813, 5845, 5846, 5865, 5957, 5958, 5959, 5960, 6477, 6712, 6727, 6728, 8076, 8106, 8107, 8108, 8109, 8110, 8785, 8803, 8823, 8825, 8831, 8833, 8836, 8844, 9000, 9984, 10510, 10593, 10881, 10887, 11101, 12992, 12994, 14238, 14256, 14368				
<code>\MF</code>	528, 12346				
<code>\mho</code>	20088				
<code>\mid</code>	18051, 20200				
<code>\MineSign</code>	19011, 20517				
<code>\minferior</code>	20077				

$\backslash$ minusdot	19407, 20684	$\backslash$ nbacksimeq	18459, 20373	390, 391, 392, 393, 394, 395,	
$\backslash$ minusinferior	20065	$\backslash$ nBumpeq	18157, 20245	396, 397, 398, 399, 400, 401,	
$\backslash$ minussuperior	20049	$\backslash$ nbumpeq	18161, 20247	402, 403, 404, 407, 408, 409,	
$\backslash$ models	18391, 20998	$\backslash$ ncirceq	18193, 20261	912, 2633, 2665, 3781, 4533,	
$\backslash$ moo	20660	$\backslash$ ncong	18130, 20233	4870, 5343, 5431, 5764,	
$\backslash$ Moon	19627, 20771	$\backslash$ ncurlyeqprec	18499, 20390	5765, 5785, 5828, 6866,	
$\backslash$ MoonPha	2097, 2102, 2105, 2111, 20792	$\backslash$ ncurlyeqsucc	18503, 20392	6867, 6893, 7197, 10306,	
		$\backslash$ nDashV	19543, 20744	11249	
$\backslash$ Mountain	19058, 20535	$\backslash$ nDashv	19536, 20742	$\backslash$ newlabel	2200, 4981, 6357, 6358, 6365, 6376
$\backslash$ MoveDown	18808, 21033	$\backslash$ ndashV	19530, 20740	$\backslash$ newlabelxx	6359, 6360
$\backslash$ MoveUp	18793, 21030	$\backslash$ ndashv	18375, 20342	$\backslash$ newlength	14576
$\backslash$ MP	529, 12347	$\backslash$ nDoteq	18171, 20251	$\backslash$ newline	516, 6424
$\backslash$ mp	18019, 20187	$\backslash$ ndoteq	18165, 20249	$\backslash$ newname	6899, 7180, 7211, 7239, 7252, 7261
$\backslash$ mu	16498, 20001	$\backslash$ ndownmodels	19548, 20746	$\backslash$ newsavebox	9782, 11297
$\backslash$ mugreek	20002	$\backslash$ ndownvdash	18381, 20344	$\backslash$ newtie	14732, 14733, 15128, 15179, 15208, 15226
$\backslash$ multimap	18435, 20362	$\backslash$ ne	18203, 20266	$\backslash$ newtoks	90, 5856, 11119, 11372, 11373
$\backslash$ multimapboth	19390, 20676	$\backslash$ Nearrow	17944, 20154	$\backslash$ newwrite	14461, 14543
$\backslash$ multimapdotbothA	18431, 20360	$\backslash$ nearrow	17818, 20104	$\backslash$ nexists	17988, 20174
$\backslash$ multimapdotbothB	18433, 20361	$\backslash$ neg	20783	$\backslash$ next	7907, 7908, 7909, 10737, 10739, 10741
$\backslash$ MultiplicationDot	15364, 20805	$\backslash$ Neptune	18927, 21066	$\backslash$ nfalingdoteq	20253
$\backslash$ multiply	10774, 10803	$\backslash$ neptune	18925, 20494	$\backslash$ nfalingdotseq	18176
$\backslash$ Mundus	19625, 20770	$\backslash$ neq	18203, 20265	$\backslash$ nfss@text	8446, 8466, 8483, 8615
$\backslash$ MVArrowDown	17810, 20945	$\backslash$ neqcirc	18189, 20259	$\backslash$ NG	15683
$\backslash$ MVAt	15289, 19933	$\backslash$ neqdot	19440, 20697	$\backslash$ ng	15685, 15686, 15687, 20816, 20817
$\backslash$ MVComma	15257, 19919	$\backslash$ neqsim	18121, 20229	$\backslash$ ngeq	18252, 20287
$\backslash$ MVDivision	15263, 19922	$\backslash$ nequal	18206, 20975	$\backslash$ ngeqq	18229, 20276
$\backslash$ MVEight	15281, 19931	$\backslash$ nequiv	18210, 20268	$\backslash$ ngeqslang	19450
$\backslash$ MVFive	15275, 19928	$\backslash$ neswarrow	19272, 20632	$\backslash$ ngeqslant	20702
$\backslash$ MVFour	15273, 19927	$\backslash$ netscape	9514	$\backslash$ ngg	18241, 20282
$\backslash$ MVMinus	15259, 19920	$\backslash$ Neural	19038	$\backslash$ ngtr	18247, 20285
$\backslash$ MVMultiplication	15431, 20808	$\backslash$ Neutral	20530	$\backslash$ ngtrapprox	19458, 20706
$\backslash$ MVNine	15283, 19932	$\backslash$ new@ifnextchar	642	$\backslash$ ngtrclosed	18532, 21021
$\backslash$ MVOne	15267, 19924	$\backslash$ new@pdfink	8975, 9029, 9032	$\backslash$ ngtrless	18268, 20294
$\backslash$ MVPeriod	15261, 19921	$\backslash$ new@refstepcounter	7152, 7186	$\backslash$ ngtrsim	18262, 20291
$\backslash$ MVPlus	15255, 19918	$\backslash$ newblock	7917	$\backslash$ nhateq	18199, 20263
$\backslash$ MVRightArrow	17806, 20943	$\backslash$ newcommand	4, 9, 42, 2231, 5032, 5038, 5070, 5275, 5298, 6318, 6322, 7713, 8226, 14338, 14341, 14346, 19917, 20789	$\backslash$ ni	18003, 20181
$\backslash$ MVRightarrow	17807, 20944			$\backslash$ NibRight	19094, 20549
$\backslash$ MVSeven	15279, 19930			$\backslash$ NibSolidRight	19096, 20550
$\backslash$ MVSix	15277, 19929			$\backslash$ niepsilon	16059, 19952
$\backslash$ MVThree	15271, 19926			$\backslash$ niota	16108, 19960
$\backslash$ MVTwo	15269, 19925			$\backslash$ nineinferior	20063
$\backslash$ MVZero	15265, 19923			$\backslash$ ninesuperior	20047
<b>N</b>				$\backslash$ ninferior	20078
$\backslash$ nabla	17995, 20177	$\backslash$ newcount	459, 460, 2236, 2658, 4840, 5768, 6488, 12538, 12690, 13148, 13295, 13502, 13658, 14373	$\backslash$ niphi	16161, 19963
$\backslash$ name@of@eq	6865, 6896	$\backslash$ newcounter	6848, 7416, 9852, 14288	$\backslash$ niupsilon	16219, 19969
$\backslash$ nameref	616	$\backslash$ newdimen	456, 5028, 5769, 5770	$\backslash$ nj	16141, 20872
$\backslash$ napprox	18134, 20235	$\backslash$ NewDocumentCommand	8587	$\backslash$ nLeftarrow	17918, 20144
$\backslash$ napproxeq	18139, 20237	$\backslash$ NewHook	7003	$\backslash$ nleftarrow	17826, 20107
$\backslash$ nasb	19883	$\backslash$ newif	360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389,		
$\backslash$ nasymp	18152, 20243				
$\backslash$ natural	18999, 20512				
$\backslash$ nbackcong	18148, 20241				
$\backslash$ nbacksim	18112, 20225				

<code>\nleftModels</code> . . . . .	19545, 21121	<code>\NoHy@OrgRef</code> 6261, 6263, 6334, 6336	<code>\nSubset</code> . . . . .	18469, 20377	
<code>\nleftmodels</code> . . . . .	19538, 21119	<code>\NoHyper</code> . . . . .	<code>\nsubset</code> . . . . .	18296, 20308	
<code>\nLeftrightarrow</code> . . . . .	17920, 20145	<code>\nohyperpage</code> 6313, <u>8388</u> , 8390, 8392	<code>\nsubseteq</code> . . . . .	18304, 20312	
<code>\nlefrightharpoonright</code> . . . . .	17857, 20122	<code>\nolinkurl</code> . . . . .	<code>\nsubseteqq</code> . . . . .	19521, 20736	
<code>\nleftVdash</code> . . . . .	19532, 21117	<code>\nolinkurl@</code> . . . . .	<code>\nsucc</code> . . . . .	18290, 20305	
<code>\nleftvdash</code> . . . . .	18377, 20994	<code>\NomFancyVerbLineautorefname</code> . . . . .	<code>\nsuccapprox</code> . . . . .	19513, 20732	
<code>\nleq</code> . . . . .	18250, 20286	<code>\Nomfootnoteautorefname</code> . . . . .	<code>\nsucccurlyeq</code> . . . . .	18507, 20394	
<code>\nleqq</code> . . . . .	18225, 20274	<code>\Nomtheoremautorefname</code> . . . . .	<code>\nsucceq</code> . . . . .	19489, 20720	
<code>\nleqslant</code> . . . . .	19446, 20700	<code>\nonumber</code> . . . . .	<code>\nsucceqq</code> . . . . .	19501, 20726	
<code>\nless</code> . . . . .	18245, 20284	<code>\normalbaselineskip</code> . . . . .	<code>\nsuccsim</code> . . . . .	18286, 20303	
<code>\nlessapprox</code> . . . . .	19454, 20704	<code>\normalfont</code> 548, 7290, 7318, 7351	<code>\nsuperior</code> . . . . .	20053	
<code>\nlessclosed</code> . . . . .	18529, 21020	<code>\normalsize</code> . . . . .	<code>\nSupset</code> . . . . .	18473, 20379	
<code>\nlessgtr</code> . . . . .	18270, 20295	<code>\notasymp</code> . . . . .	<code>\nsupset</code> . . . . .	18298, 20309	
<code>\nlesssim</code> . . . . .	18260, 20290	<code>\notbackslash</code> . . . . .	<code>\nsupseteq</code> . . . . .	18306, 20313	
<code>\nll</code> . . . . .	18237, 20280	<code>\NotCongruent</code> . . . . .	<code>\nsupseteqq</code> . . . . .	19525, 20738	
<code>\nmid</code> . . . . .	18053, 20201	<code>\notdivides</code> . . . . .	<code>\nthickapprox</code> . . . . .	18136, 20969	
<code>\nmodels</code> . . . . .	18410, 21004	<code>\note</code> . . . . .	<code>\ntriangleleft</code> . . . . .	18527, 20403	
<code>\noboundary</code> . . . . .	514	<code>\notequiv</code> . . . . .	<code>\ntrianglelefteq</code> . . . . .	18534, 20405	
<code>\nobreak</code> 2281, 2290, 2301, 2309, 7483, 7644		<code>\notin</code> . . . . .	<code>\ntriangleright</code> . . . . .	18530, 20404	
<code>\nobreakspace</code> . . . . .	630, 8581, 8584	<code>\notni</code> . . . . .	<code>\ntrianglerighteq</code> . . . . .	18537, 20406	
<code>\NoChemicalCleaning</code> . . . . .	19370, 20667	<code>\notowner</code> . . . . .	<code>\ntriplesim</code> . . . . .	18144, 20239	
<code>\noexpand</code> . . . . .	22, 93, 95, 108, 116, 169, 171, 172, 173, 176, 206, 901, 964, 1397, 1414, 1544, 1571, 1932, 2288, 2289, 2290, 2293, 2307, 2308, 2309, 2312, 3274, 3276, 3278, 3279, 3280, 3282, 3298, 3494, 3495, 3497, 3853, 4296, 4300, 4301, 4477, 4754, 4928, 5242, 5244, 5270, 5399, 5944, 6601, 6602, 6611, 6613, 6616, 6750, 6918, 6919, 6936, 7077, 7078, 7079, 7080, 7081, 7089, 7090, 7091, 7255, 7505, 7515, 7523, 7524, 7525, 7527, 7653, 7743, 7818, 7833, 7849, 7974, 8124, 8218, 8220, 8500, 8501, 8631, 8632, 8637, 8639, 8644, 8645, 8650, 8651, 9719, 11186, 11253, 11827, 12085, 12617, 12618, 12619, 12620, 13218, 13219, 13220, 13221, 13574, 13575, 13576, 13577, 13852	<code>\notperp</code> . . . . .	<code>\ntwoheadleftarrow</code> 17832, 20110		
<code>\noexpandQ</code> . . . . .	1571	<code>\notslash</code> . . . . .	<code>\ntwoheadrightarrow</code> . . . . .	20113	
<code>\nofrenchguillemets</code> . . . . .	649, 651	<code>\noway</code> . . . . .	<code>\nu</code> . . . . .	16500, 20003	
<code>\NoHy@OrgPageRef</code> 6265, 6267, 6338, 6340		<code>\nparallel</code> . . . . .	<code>\null</code> . . . . .	7898, 7906, 8488, 8611	
		<code>\nperp</code> . . . . .	<code>\number</code> 1123, 1125, 1152, 1153, 1871, 1936, 1937, 1938, 1939, 1943, 1944, 1945, 1946, 1947, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1961, 1962, 1963, 1964, 1965, 1966, 1969, 1971, 1975, 1976, 1978, 1980, 1982, 1985, 1989, 1990, 1991, 1992, 2001, 2002, 2006, 2007, 2014, 2015, 2019, 2022, 2023, 2024, 2034, 2036, 2037, 2042, 2044, 2045, 2050, 2051, 4535, 4552, 5357, 6966, 6969, 7017, 7018, 7021, 7025, 8856, 8859, 8860, 9542, 9560, 9561, 9576, 9577, 9597, 9598, 9614, 9615, 9637, 9638, 9654, 9655		
		<code>\nprec</code> . . . . .	<code>\numberline</code> . . . . .	7682, 7754, 14261, 14266	
		<code>\nprecapprox</code> . . . . .	<code>\numberwithin</code> . . . . .	8223	
		<code>\npreccurlyeq</code> . . . . .	<code>\numexpr</code> 1943, 1944, 1945, 1947, 1953, 1961, 1962, 1963, 1964, 1965, 1966, 1970, 1972, 1976, 1978, 1980,		
		<code>\npreceq</code> . . . . .			
		<code>\npreceqq</code> . . . . .			
		<code>\nprecsim</code> . . . . .			
		<code>\nqsubseteq</code> . . . . .			
		<code>\nqsupseteq</code> . . . . .			
		<code>\NR@getttitle</code> . . . . .			
		<code>\NR@ref@showkeys</code> . . . . .			
		<code>\nRightarrow</code> . . . . .			
		<code>\nrightharpoonright</code> . . . . .			
		<code>\nrightModels</code> . . . . .			
		<code>\nrightmodels</code> . . . . .			
		<code>\nrightVdash</code> . . . . .			
		<code>\nrightvdash</code> . . . . .			
		<code>\nrisingdoteq</code> . . . . .			
		<code>\nsim</code> . . . . .			
		<code>\nsimeq</code> . . . . .			
		<code>\nsqsubset</code> . . . . .			
		<code>\nsqsubseteq</code> 18326, 18509, 20323			
		<code>\nsqsupset</code> . . . . .			
		<code>\nsqsupseteq</code> 18330, 18511, 20325			



1982, 1986, 1989, 1990,  
1992, 2001, 2006, 2023,  
2037, 2045, 2051, 2654,  
2655, 3871

`\nun` ..... 19873  
`\nupmodels` ..... 19552, 20748  
`\nupvdash` ..... 18386, 20346  
`\nVDash` ..... 18414, 20355  
`\nVdash` ..... 18411, 20354  
`\nvDash` ..... 18407, 20353  
`\nvdash` ..... 18404, 20352  
`\nVvash` ..... 18398, 20350  
`\Nwarrow` ..... 17942, 20153  
`\narrow` ..... 17816, 20103  
`\nwsearrow` ..... 19270, 20631

## O

`\O` ..... 14975, 15433, 15915  
`\o` ..... 15044, 15503, 15918  
`\oasterisk` ..... 18358, 20991  
`\obackslash` ..... 19364, 21107  
`\obar` ..... 19358, 20664  
`\obeylines` ..... 11826  
`\OBJ@acroform` ... 13121, 13122  
`\OBJ@Helv` 13096, 13109, 13461  
`\OBJ@OCG@print` .. 8893, 8896,  
8904, 8931, 9870, 9872,  
9885, 9889, 9898, 9927  
`\OBJ@OCG@view` .....  
... 8878, 8896, 8930, 9854,  
9856, 9869, 9889, 9926  
`\OBJ@OCGs` . 8899, 8902, 8908,  
8913, 8918, 9886, 9888,  
9892, 9896, 9902, 9907, 9912  
`\OBJ@pdfdocencoding` .. 13094,  
13442, 13458  
`\OBJ@ZaDb` 13095, 13108, 13451  
`\obot` ..... 19367, 20666  
`\obslash` ..... 19361, 20665  
`\ocirc` ..... 18353, 20988  
`\OCIRCUMFLEX` 19683, 19781,  
19782, 19783, 19784, 19785  
`\ocircumflex` 19677, 19721, 19722,  
19723, 19724, 19725  
`\oddsidemargin` ..... 8054  
`\odiv` ..... 19415, 20687  
`\odot` ..... 18348, 20332  
`\odplus` ..... 19369, 21109  
`\OE` ..... 14844, 15701  
`\oe` ..... 14857, 15703  
`\offinterlineskip` ..... 6452  
`\ogreaterthan` .... 19375, 20669  
`\OHORN` .. 19684, 19786, 19787,  
19788, 19789, 19790

`\ohorn` 3157, 3164, 19678, 19726,  
19727, 19728, 19729, 19730  
`\oiint` ..... 18085, 20214  
`\oinferior` ..... 20071  
`\oint` ..... 18082, 20213  
`\ointclockwise` .... 18088, 20215  
`\ointctrclockwise` .. 18090, 20216  
`\oldb` ..... 786  
`\oldc` ..... 787  
`\oldd` ..... 788  
`\oldnewlabel` .. 6357, 6362, 6365  
`\olessthan` ..... 19372, 20668  
`\OMEGA` ..... 12342  
`\Omega` ..... 16458, 19989  
`\omega` ..... 16524, 20014  
`\ominus` ..... 18339, 20329  
`\on@line` ..... 8103, 8104  
`\oneinferior` ..... 20055  
`\onesuperior` ..... 19937  
`\oo` ..... 19591, 20757  
`\openbullet` ..... 20463  
`\openo` ..... 16035, 19948  
`\openout` ... 6349, 14463, 14545  
`\oplus` ..... 18336, 20328  
`\OpMode` 2674, 2790, 2793, 2806,  
2819, 2824, 4417, 4453,  
4464, 4467, 10820, 10925,  
11763  
`\or` 326, 970, 971, 972, 973, 974,  
975, 976, 977, 978, 979, 980,  
981, 982, 983, 984, 985, 986,  
987, 988, 989, 990, 991, 992,  
993, 994, 995, 996, 997, 998,  
999, 1000, 1001, 1019, 1041,  
1044, 1050, 1051, 1052,  
1053, 1054, 1055, 1056,  
1057, 1058, 1059, 1060,  
1061, 1062, 1063, 1064,  
1065, 1066, 1067, 1068,  
1069, 1070, 1071, 1072,  
1073, 1074, 1075, 1076,  
1077, 1078, 1079, 1080,  
1081, 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, 1115, 1116,  
1117, 1130, 1131, 1132,  
1133, 1134, 1246, 1247,  
1248, 2096, 2099, 2101,  
2104, 5517, 5523, 5528,

5742, 6986, 6987, 6988,  
6989, 6995, 6996, 6997,  
6998, 8131, 8135, 10813,  
14381, 14382, 14383, 14384,  
14385, 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  
`\OrnamentDiamondSolid` . 19223  
`\oslash` ..... 18345, 20331  
`\otimes` ..... 18342, 20330  
`\ovee` ..... 18068, 20207  
`\overlay` ..... 8014  
`\owedge` ..... 18063, 20205  
`\owns` ..... 18005, 20954

## P

`\P` ..... 510  
`\p@` 2002, 2007, 5771, 5777, 7298,  
7326, 7357, 9487, 9571,  
9609, 9649, 10773, 12002,  
12289, 12613, 13214, 13570  
`\p@equation` ..... 8195  
`\PackageError` ..... 61  
`\PackageInfo` ..... 8853, 12990  
`\PackageWarning` .. 2636, 5728  
`\pageautorefname` .....  
... 2970, 2988, 3006, 3024,  
3042, 3060, 3078, 3118,  
3136, 3154, 3172, 3190,  
3208, 3226, 3244, 8584, 8704  
`\pagename` ..... 8581  
`\pageref` .. 615, 4351, 6265, 6266,  
6338, 6339, 8570, 8574  
`\paperheight` .....  
... 4125, 9345, 9347, 9350,  
9352, 9364, 9365, 10287,  
10288, 10425, 10426, 10428,  
11732, 11733  
`\paperwidth` .....  
... 9341, 9343, 9354, 9356,  
9361, 9362, 10286, 10288,  
10429, 11731, 11733  
`\par` 7289, 7316, 7349, 7681, 7709,  
7752, 7762, 7900, 7920  
`\paragraphautorefname` .....  
... 2966, 2984, 3002, 3020,  
3038, 3056, 3074, 3107,  
3109, 3132, 3150, 3168,  
3186, 3204, 3222, 3240, 8700  
`\parallel` ..... 18056, 20202

<code>\parentleftinferior</code> . . . . .	20067	9699, 10192, 10308, 10828,	<code>\pdfliteral</code> . . . . .	8951, 8953, 8958
<code>\parentleftsuperior</code> . . . . .	20051	11173, 11923, 12072, 12211	<code>\pdfm@box</code> . . . . .	9782, 13498, 13499,
<code>\parentrightinferior</code> . . . . .	20068	<code>\PDF@SetupDox</code> . . . . .		13500, 13538, 13550, 13627,
<code>\parentrightsuperior</code> . . . . .	20052	<code>\pdf@toks</code> . . . . .		13652, 13661, 13672, 13691,
<code>\parr</code> . . . . .	17765, 20942			13704, 13719, 13728, 13748,
<code>\partautorefname</code> . . . . .		<code>\pdf@type</code> . . . . .		13756, 13773, 13785
. . . . .	2960, 2978, 2996, 3014,		<code>\pdfmajorversion</code> . . . . .	2658, 2659,
. . . . .	3032, 3050, 3068, 3098,	<code>\pdfbookmark</code> . . . . .		2662, 2663
. . . . .	3126, 3144, 3162, 3180,		<code>\pdfmark</code> . . . . .	6768, 9719, 9728, 9758,
. . . . .	3198, 3216, 3234, 8694	<code>\pdfcatalog</code> . . . . .		10961, 10981, 11020, 11055,
<code>\partial</code> . . . . .	17984, 20172			11072, 11106, 11143, 11155,
<code>\partnumberline</code> . . . . .	14263, 14268	<code>\PDFdefaults</code> . . . . .		11186, 11195, 11226, 11250,
<code>\PassOptionsToPackage</code> . . . . .		<code>\pdfdest</code> . . . . .		11526, 11541, 11556, 11568,
. . . . .	2712, 2724, 2727, 2739,	<code>\pdfendlink</code> . . . . .		11575, 11602, 11633, 12085,
. . . . .	2750, 2779, 2838, 2844,			12094, 12125, 12548, 12557,
. . . . .	2860, 2912, 2916, 2938,			12589, 12678, 12695, 12723,
. . . . .	4160, 4173, 4184, 4496	<code>\pdfescapestring</code> . . . . .		12745, 12771, 12795, 14505
<code>\pdf@addtoks</code> . . . . .	11375, 11397,	<code>\pdfextension</code> . . . . .	<code>\pdfmark@</code> . . . . .	11250, 11251
. . . . .	11403, 11412, 11419, 11423,	<code>\PDFForm@@@Name</code> . . . . .	<code>\pdfmatch</code> . . . . .	323
. . . . .	11425, 11427, 11429, 11431,		<code>\pdfminorversion</code> . . . . .	8772
. . . . .	11439, 11448, 11452, 11454,	<code>\PDFForm@Ccheck</code> . . . . .	<code>\PDFNextPage</code> . . . . .	11539
. . . . .	11456, 11459, 11468, 11472,		<code>\PDFNextPage@</code> . . . . .	11539, 11540
. . . . .	11474, 11476, 11478, 11480,		<code>\pdfobj</code> . . . . .	8864, 8879, 8894, 13099,
. . . . .	11482, 11484, 11486, 11488,	<code>\PDFForm@List</code> . . . . .		13408, 13443, 13452
. . . . .	11490, 11492, 11494, 11496,		<code>\pdfobjcompresslevel</code> . . . . .	8790, 8846
. . . . .	11498, 11500, 11502, 11503,		<code>\PDFOpen</code> . . . . .	11567
. . . . .	11504, 11505, 11506, 11507,	<code>\PDFForm@Name</code> . . . . .	<code>\pdfoptionpdfminorversion</code> . . . . .	8771
. . . . .	11508, 11509, 11510, 11511,		<code>\pdfoutline</code> . . . . .	14554
. . . . .	11512, 11517		<code>\pdfpageattr</code> . . . . .	9276, 9280, 9281,
<code>\pdf@addtoks</code> . . . . .	11369, 11379,	<code>\PDFForm@Push</code> . . . . .		9291, 9300, 9304, 9305, 9315
. . . . .	11395		<code>\pdfpageheight</code> . . . . .	9347, 9356, 9365,
<code>\pdf@box</code> . . . . .	11297, 11329, 11337,			9372
. . . . .	11345, 11346, 11349, 11353,	<code>\PDFForm@Radio</code> . . . . .	<code>\pdfpageref</code> . . . . .	13159
. . . . .	11355, 11358		<code>\pdfpagemresources</code> . . . . .	8927, 8928
<code>\pdf@defaulttoks</code> . . . . .	11253, 11373,		<code>\pdfpagesattr</code> . . . . .	9166, 9168, 9170
. . . . .	11374, 11384		<code>\pdfpagewidth</code> . . . . .	9343, 9352, 9362,
<code>\pdf@docset</code> . . . . .	11119	<code>\PDFForm@Reset</code> . . . . .		9369
<code>\pdf@endanchor</code> . . . . .	8988, 9029, 9036		<code>\PDFPreviousPage</code> . . . . .	11552
<code>\pdf@escapestring</code> . . . . .	8759		<code>\PDFPreviousPage@</code> . . . . .	11553,
<code>\PDF@FinishDoc</code> . . . . .	2703, 2704,	<code>\PDFForm@Submit</code> . . . . .		11555
. . . . .	2798, 2799, 4119, 4222,		<code>\pdfrefobj</code> . . . . .	13094, 13095, 13096
. . . . .	4344, 4345, 4458, 4459,	<code>\PDFForm@Text</code> . . . . .	<code>\pdfrefxform</code> . . . . .	12983
. . . . .	6312, 6469, 6470, 9231,		<code>\pdfstartlink</code> . . . . .	9021, 9065, 9100,
. . . . .	9411, 9666, 10150, 10307,			9134, 9385, 13193, 13279,
. . . . .	10891, 11120, 12039, 12210	<code>\pdfhorigin</code> . . . . .		13301, 13328, 13349, 13377,
<code>\pdf@ifdraftmode</code> . . . . .	6645, 8863,	<code>\pdfinfo</code> . . . . .		13400
. . . . .	9232, 9320, 13091, 14473	<code>\pdflastannot</code> . . . . .	<code>\pdfstrcmp</code> . . . . .	13016
<code>\pdf@linktype</code> . . . . .	11277, 11281,	<code>\pdflastlink</code> . . . . .	<code>\pdfstringdef</code> . . . . .	479,
. . . . .	11389, 11390			772, 3684, 3689, 3694, 3699,
<code>\pdf@objdef</code> . . . . .	11256, 11270, 11272,	<code>\pdflastmatch</code> . . . . .		

<code>\pdfstringdefDisableCommands</code> . . . 785, 891, 6315, 6422	<code>\precnapprox</code> . . . . . 19515, 20733	12034, 12146, 12147, 12202, 13036, 13039, 13845
<code>\pdfstringdefPostHook</code> . 768, 885	<code>\precneq</code> . . . . . 19491, 20721	<code>\psdaliasnames</code> . . . 20789, 21132
<code>\pdfstringdefPreHook</code> . 626, 885, 897, 6421, 6433	<code>\precneqq</code> . . . . . 19503, 20727	<code>\psdmapshortnames</code> 19917, 20788
<code>\pdfstringdefWarn</code> 515, 516, 620, 900, 1405, 1410, 1429, 1433	<code>\precnsim</code> . . . . . 18523, 20401	<code>\Psi</code> . . . . . 16455, 19988
<code>\pdfTeXversion</code> . . . . . 13093	<code>\precsim</code> . . . . . 18280, 20300	<code>\psi</code> . . . . . 16522, 20013
<code>\pdfvorigin</code> . . . . . 9338	<code>\PrerenderUnicode</code> . . . . . 3676	<code>\PushButton</code> . . . . . 6112
<code>\pdfxform</code> . . . . . 12979	<code>\prime</code> . . . . . 17568, 20033	<code>\put@me@back</code> 5237, 5250, 5260
<code>\Peace</code> . . . . . 19083, 20544	<code>\process@me</code> . 6401, 6413, 6414, 9165, 9174	<code>\pwedge</code> . . . . . 16228, 20892
<code>\peh</code> . . . . . 19899	<code>\ProcessKeyvalOptions</code> . . . 4189	<code>\pxfonts</code> . . . . . 19561
<code>\penalty</code> . . . . . 1547, 2258, 4815	<code>\prod</code> . . . . . 18011, 20184	
<code>\PencilRight</code> . . . . . 19090, 20547	<code>\propto</code> . . . . . 18037, 20195	<b>Q</b>
<code>\PencilRightDown</code> . 19088, 20546	<code>\protect</code> . 1545, 4925, 4959, 7682, 7754, 7818, 7833, 7849, 7905, 7912, 7913, 8116, 8164, 8377, 8445, 8465, 8471, 8482, 8496, 8614, 9422, 9519, 10378, 10453, 11934, 12221, 14278, 14578	<code>\Q</code> . . . . . 1540, 13104
<code>\pentagon</code> . . . . . 19562, 20752	<code>\protected@edef</code> . . . . . 5090, 6503, 6597, 7253, 7273, 7563, 7988, 7992, 8997, 9981, 10507, 10590, 11098	<code>\qaf</code> . . . . . 19865
<code>\perp</code> . . . . . 19231, 20613	<code>\protected@file@percent</code> . . 8069, 8116	<code>\quaternnote</code> . . . . 18988, 20508
<code>\phantom</code> . . . . . 571	<code>\protected@write</code> . . . 2199, 4980, 5287, 7885, 8316, 8331, 8346, 8350, 8360, 14277	<code>\quotedblbase</code> . . . 14824, 15063, 17549, 19659
<code>\phantomsection</code> . . . 4120, 6319, 8078, 14207, 14258, 14644	<code>\protected@xdef</code> . . . 7524, 7618	<code>\quotesinglbase</code> . . 14834, 15065, 17543, 19661
<code>\Phi</code> . . . . . 16451, 19987	<code>\providecommand</code> . . . . . 4442, 4768, 4911, 5274, 5332, 6353, 6627, 6652, 6786, 6825, 6827, 6829, 6832, 6833, 6834, 6836, 6837, 6838, 6839, 6841, 6842, 6843, 6844, 6845, 6846, 6855, 6856, 6857, 6858, 6859, 6860, 7247, 7783, 7784, 7799, 8069, 8685, 8686, 8687, 8688, 8689, 8690, 8691, 8692, 8693, 8694, 8695, 8696, 8697, 8698, 8699, 8700, 8701, 8702, 8703, 8704, 8766, 8974, 8992, 8993, 9410, 9513, 9514, 9777, 9839, 9840, 9841, 10304, 10423, 10445, 10446, 10447, 10918, 11298, 11299, 11659, 11667, 11668, 11669, 11670, 11757, 11769, 11770, 11771, 11772, 11824, 11865, 11866, 11867, 11868, 12031, 12033,	
<code>\phi</code> . . . . . 16518, 20011		
<code>\phiinferior</code> . . . . . 20024		
<code>\Phone</code> . . . . . 18844, 20469		
<code>\PhoneHandset</code> . . . 19074, 20540		
<code>\Pi</code> . . . . . 19984		
<code>\pi</code> . . . . . 16506, 20005		
<code>\pinferior</code> . . . . . 20079		
<code>\Pisces</code> . . . . . 18966, 21079		
<code>\pisces</code> . . . . . 18964, 20507		
<code>\pitchfork</code> . . . . . 18481, 20382		
<code>\planck</code> . . . . . 15608, 20815		
<code>\Plane</code> . . . . . 19078, 20542		
<code>\Plus</code> . . . . . 19111, 20557		
<code>\PlusCenterOpen</code> . . 19115, 20559		
<code>\plusinferior</code> . . . . . 20064		
<code>\PlusOutline</code> . . . . 19109, 20556		
<code>\plussuperior</code> . . . . . 20048		
<code>\PlusThinCenterOpen</code> . . . 19113, 20558		
<code>\Pluto</code> . . . . . 18930, 21067		
<code>\pluto</code> . . . . . 18928, 20495		
<code>\pm</code> . . . . . 20786		
<code>\pointer</code> . . . . . 17969, 20165		
<code>\PointingHand</code> . . . 18869, 21044		
<code>\Pointinghand</code> . . . 18870, 21045		
<code>\pounds</code> . . . . . 15319, 20800		
<code>\Preamble</code> . . . . . 12338		
<code>\prec</code> . . . . . 18272, 20296		
<code>\precapprox</code> . . . . . 19507, 20729		
<code>\preccurlyeq</code> . . . . . 18276, 20298		
<code>\preceq</code> . . . . . 19483, 20717		
<code>\preceqq</code> . . . . . 19495, 20723		
		<code>\ra</code> . . . . . 19841
		<code>\Radiation</code> . . . . . 18873, 21046
		<code>\Radioactivity</code> . . . 18871, 20478
		<code>\raff</code> . . . . . 19885
		<code>\Rain</code> . . . . . 19054, 20533
		<code>\raise</code> 2265, 5061, 9488, 9572, 9610, 9650, 11363, 12003, 12290
		<code>\rangle</code> . . . . . 18578, 20425
		<code>\rbrackdbl</code> . . . . . 20619
		<code>\rcurvearrowdown</code> . 19301, 20643
		<code>\rcurvearrowleft</code> . . 19305, 20644
		<code>\rcurvearrowne</code> . . . 19285, 20638
		<code>\rcurvearrowright</code> . 19308, 20645
		<code>\rcurvearrowse</code> . . . 19294, 20641
		<code>\Re</code> . . . . . 17727, 20087
		<code>\ReadBookmarks</code> . . . . . 4188, 4225, 4358, 4569, 4690, 4692, 14437, 14472
		<code>\real@setref</code> . . . . . 8442, 8509
		<code>\realfootnote</code> . . . . . 7615
		<code>\Rectangle</code> . . . . . 19227, 20611
		<code>\RectangleBold</code> . . . 19229, 20612
		<code>\RectangleThin</code> . . . 19225, 20610
		<code>\recycle</code> . . . . . 19003, 20514
		<code>\Recycling</code> . . . . . 19005, 21086
		<code>\Ref</code> . . . . . 8527, 8536, 8544
		<code>\ref</code> 614, 4350, 6261, 6262, 6334, 6335, 7580, 7587, 8553, 8561, 12313

<code>\ref@one</code> . . . . .	4934, 4935	<code>\RightTorque</code> . . . .	19298, 21101	<code>\scripta</code> . . . . .	16022, 19947
<code>\rEflINK</code> . . . . .	12314, 12315	<code>\Righttorque</code> . . . .	19299, 21102	<code>\scriptg</code> . . . . .	16081, 19955
<code>\refstepcounter</code> . . . .	6864, 6871, 6892, 7102, 7127, 7152, 7176, 7186, 7306, 7746	<code>\rightVdash</code> . . . . .	18395, 21000	<code>\scriptsize</code> . . . . .	567
<code>\rem@ptetc</code> . . . . .	11045, 11047	<code>\rightvdash</code> . . . . .	18371, 20992	<code>\scriptv</code> . . . . .	16223, 19970
<code>\renewcommand</code> . . . . .	2191, 8239, 8533, 8540, 8549, 8558, 14353	<code>\rinferior</code> . . . . .	20018	<code>\scrollmode</code> . . . .	1457, 1482, 1492, 1505, 1612, 1745
<code>\Request</code> . . . . .	18608, 20436	<code>\riota</code> . . . . .	17740, 20089	<code>\scshape</code> . . . . .	555, 7295, 7323
<code>\RequirePackage</code> . . . .	22, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 359, 915, 1442, 2613, 2698, 4166, 4182, 4332, 4333, 4637, 4664, 4696, 4903, 5334, 6301, 6443, 6693, 8824, 10305, 12207, 14363	<code>\risingdoteq</code> . . . . .	20254	<code>\scu</code> . . . . .	17179, 20016
<code>\RerunFileCheck</code> . . . . .	14365	<code>\risingdotseq</code> . . . . .	18179	<code>\scy</code> . . . . .	16237, 19974
<code>\Reset</code> . . . . .	6121	<code>\rlap</code> . . . . .	5058, 8952, 9948	<code>\Searrow</code> . . . . .	17946, 20155
<code>\reset@font</code> . . . . .	8446, 8466, 8483, 8615	<code>\rm</code> . . . . .	559	<code>\searrow</code> . . . . .	17821, 20105
<code>\reve</code> . . . . .	16049, 19950	<code>\rmfamily</code> . . . . .	549	<code>\Sech</code> . . . . .	19621, 20768
<code>\reveject</code> . . . . .	16262, 20902	<code>\Roman</code> . . . . .	6593	<code>\second</code> . . . . .	17570, 20034
<code>\revepsilon</code> . . . . .	16063, 19953	<code>\roman</code> . . . . .	6594	<code>\sectionautorefname</code> . . . . .	2963, 2981, 2999, 3017, 3035, 3053, 3071, 3100, 3129, 3147, 3165, 3183, 3201, 3219, 3237, 8697
<code>\revglotstop</code> . . . . .	16260, 19977	<code>\romannumeral</code> . . . .	907, 908, 13104	<code>\seen</code> . . . . .	19845
<code>\Rewind</code> . . . . .	18813, 20456	<code>\rotm</code> . . . . .	16130, 20868	<code>\selectfont</code> . . . .	535, 4648, 13131
<code>\RewindToIndex</code> . . . .	18620, 20441	<code>\rotOmega</code> . . . . .	16221, 20890	<code>\SePa</code> . . . . .	19607, 20762
<code>\RHD</code> . . . . .	18804, 20453	<code>\rotr</code> . . . . .	16166, 20878	<code>\set@display@protect</code> . . . . .	4285
<code>\rhd</code> . . . . .	18420, 20357	<code>\rotvar</code> . . . . .	16029, 20840	<code>\setbox</code> . . . . .	1548, 1554, 1560, 3406, 3412, 5045, 5058, 5916, 6451, 7385, 8942, 9921, 9938, 13538, 13627, 13661, 13691, 13719, 13748, 13773
<code>\rho</code> . . . . .	16508, 20006	<code>\rotrw</code> . . . . .	16232, 20894	<code>\setcounter</code> . . . . .	4846
<code>\rhoinferior</code> . . . . .	20023	<code>\roty</code> . . . . .	16236, 20896	<code>\setkeys</code> . . . . .	4821, 4866
<code>\rhohooknearrow</code> . . . .	19276, 20634	<code>\rrbracket</code> . . . . .	19246, 21100	<code>\setlength</code> . . . . .	2262, 5029, 5928, 6737, 8969, 9337, 9338, 9343, 9347, 9352, 9356, 9362, 9365, 9369, 9372, 10426, 10429, 10433, 10436, 10773, 11749, 11816, 11910, 12194, 14597, 14665
<code>\rhohookrepsilon</code> . . . . .	19954	<code>\Rrightarrow</code> . . . . .	17952, 20158	<code>\setminus</code> . . . . .	18027, 20191
<code>\rhohookswarrow</code> . . . .	19280, 20636	<code>\rrparenthesis</code> . . . .	19354, 20662	<code>\setpdfinkmargin</code> . . . .	3860, 3861, 6735, 8967, 11747, 11814, 11908, 12192
<code>\Rrightarrow</code> . . . . .	17931, 20149	<code>\rtaild</code> . . . . .	19949	<code>\settowidth</code> . . . . .	12610, 13211, 13567
<code>\rightarrow</code> . . . . .	20099	<code>\rtimes</code> . . . . .	18451, 20369	<code>\SetupKeyvalOptions</code> . . . .	2320, 4153
<code>\rightarrowtail</code> . . . . .	17845, 20116	<code>\rule</code> . . . . .	7565	<code>\seveninferior</code> . . . . .	20061
<code>\rightarrowtriangle</code> . . . .	17976, 20168			<code>\sevensuperior</code> . . . . .	20045
<code>\rightbarharpoon</code> . . . .	19339, 20656			<code>\sffamily</code> . . . . .	550
<code>\RIGHTCIRCLE</code> . . . . .	18827, 20462			<code>\shadda</code> . . . . .	19895
<code>\rightharpoondown</code> . . . .	17886, 20132			<code>\sharp</code> . . . . .	19001, 20513
<code>\rightharpoonup</code> . . . . .	17883, 20131			<code>\sheen</code> . . . . .	19847
<code>\rightleftarrows</code> . . . .	17895, 20135			<code>\shortciteN</code> . . . . .	7948
<code>\rightleftharpoon</code> . . . .	19312, 20647			<code>\shuffle</code> . . . . .	19392, 20677
<code>\rightleftharpoons</code> . . . .	17915, 20143			<code>\Sigma</code> . . . . .	16445, 19985
<code>\rightModels</code> . . . . .	18403, 21001			<code>\sigma</code> . . . . .	16512, 20008
<code>\rightmodels</code> . . . . .	18392, 20999			<code>\sim</code> . . . . .	18107, 20223
<code>\rightmoon</code> . . . . .	18896, 20487			<code>\simeq</code> . . . . .	18123, 20230
<code>\rightpointleft</code> . . . .	18865, 21042				
<code>\rightrightarrow</code> . . . . .	17907, 20140				
<code>\rightrightarrowharpoons</code> . . . .	19327, 20652				
<code>\RightScissors</code> . . . . .	19068, 21093				
<code>\rightslice</code> . . . . .	19481, 20716				
<code>\rightsquigarrow</code> . . . .	17956, 20160				
<code>\rightthreetimes</code> . . . .	18455, 20371				

<code>\sinferior</code> . . . . .	20080	<code>\sqsupseteq</code> . . . . .	18328, 20324	<code>\subsection</code> . . . . .	12027
<code>\SixFlowerAlternate</code>	19179, 20590	<code>\sqsupsetneq</code> . . . . .	18516, 20398	<code>\subsectionautorefname</code> . . . . .	
<code>\SixFlowerAltPetal</code>	19189, 20595	<code>\SquareCastShadowBottomRight</code>		.. 2964, 2982, 3000, 3018,	
<code>\SixFlowerOpenCenter</code> ..	19175,	..... 19218, 20607		3036, 3054, 3072, 3105,	
20588		<code>\SquareCastShadowTopRight</code> ..		3130, 3148, 3166, 3184,	
<code>\SixFlowerPetalRemoved</code> .	19172,	..... 19221, 20608		3202, 3220, 3238, 8698	
20587		<code>\Squaredot</code> . . . . .	15365, 20806	<code>\Subset</code> . . . . .	18467, 20376
<code>\sixinferior</code> . . . . .	20060	<code>\squaredots</code> . . . . .	18100, 20220	<code>\subset</code> . . . . .	18292, 20306
<code>\SixStar</code> . . . . .	19162, 20582	<code>\SquareShadowBottomRight</code> ...		<code>\subseteq</code> . . . . .	18300, 20310
<code>\sixsuperior</code> . . . . .	20044	..... 19212, 20605		<code>\subseteqq</code> . . . . .	19519, 20735
<code>\SixteenStarLight</code> .	19170, 20586	<code>\SquareShadowTopRight</code> .	19215	<code>\subsetneq</code> . . . . .	18308, 20314
<code>\sixteenthnote</code> ....	18995, 20510	<code>\SquareTopRight</code> . . . . .	20606	<code>\subsubsectionautorefname</code> ....	
<code>\SK@</code> . . . . .	8671	<code>\SS</code> . . . . .	15061, 19645	.. 2965, 2983, 3001, 3019,	
<code>\SK@@ref</code> . . . . .	8671	<code>\ss</code> ...	3010, 14990, 15076, 15448	3037, 3055, 3073, 3106,	
<code>\SK@ref</code> . . . . .	8668	<code>\slash</code> . . . . .	19559, 20751	3131, 3149, 3167, 3185,	
<code>\skip@</code> ..	1562, 1645, 1646, 1649,	<code>\st@rredfalse</code> . . . . .	7159, 7168	3203, 3221, 3239, 8699	
1651, 2285, 2291, 2304, 2310		<code>\star</code> . . . . .	18441, 20365	<code>\succ</code> . . . . .	18274, 20297
<code>\slashc</code> . . . . .	16013, 19946	<code>\stepcounter</code> .	6881, 7272, 7484,	<code>\succapprox</code> . . . . .	19511, 20731
<code>\slashdiv</code> . . . . .	19568, 20755	7617, 14274		<code>\succcurlyeq</code> . . . . .	18278, 20299
<code>\slide</code> . . . . .	8011	<code>\stockheight</code> .	4125, 9371, 9372,	<code>\succeq</code> . . . . .	19487, 20719
<code>\SliTeX</code> . . . . .	527	10293, 10294, 10432, 10433,		<code>\succeqq</code> . . . . .	19499, 20725
<code>\slshape</code> . . . . .	556	11738, 11739		<code>\succnapprox</code> . . . . .	19517, 20734
<code>\small</code> . . . . .	568	<code>\stockwidth</code> ..	9368, 9369, 10292,	<code>\succneq</code> . . . . .	19493, 20722
<code>\smallin</code> . . . . .	18001, 20180	10294, 10435, 10436, 11737,		<code>\succneqq</code> . . . . .	19505, 20728
<code>\smallowns</code> . . . . .	18009, 20183	11739		<code>\succnsim</code> . . . . .	18525, 20402
<code>\smash</code> . . . . .	2259	<code>\stop@hyper</code> . . . . .	6283	<code>\succsim</code> . . . . .	18284, 20302
<code>\smile</code> . . . . .	18572, 20422	<code>\StringEncodingConvertTest</code>	747,	<code>\sukun</code> . . . . .	19897
<code>\Smiley</code> . . . . .	18888, 21051	757		<code>\sum</code> . . . . .	18015, 20186
<code>\smiley</code> . . . . .	18886, 20483	<code>\strip@period</code> . . . . .	2204	<code>\Sun</code> . . . . .	18893, 21052
<code>\Snowflake</code> . . . . .	19193, 20597	<code>\strip@prefix</code> 62, 2197, 4034, 6403,		<code>\sun</code> . . . . .	18891, 20485
<code>\SnowflakeChevron</code>	19191, 20596	7040, 7256, 14501, 14509,		<code>\SunCloud</code> . . . . .	20532
<code>\SnowflakeChevronBold</code> ..	19195,	14524		<code>\SunCloud</code> . . . . .	19052
20598		<code>\strip@pt</code> . . . . .		<code>\SunshineOpenCircled</code> ...	19187,
<code>\sofpasuq</code> . . . . .	17094	469, 4137, 5945, 6738, 9343,		20594	
<code>\softsign</code> . . . . .	16735, 20913	9347, 9352, 9356, 10776,		<code>\Supset</code> . . . . .	18471, 20378
<code>\spacefactor</code> ..	2238, 2244, 7483,	11751, 11818, 11912, 12196,		<code>\supset</code> . . . . .	18294, 20307
7492, 7644, 7646, 8977, 8985		13997, 14062, 14091, 14131,		<code>\supseteq</code> . . . . .	18302, 20311
<code>\spadesuit</code> .	18967, 18969, 21080	14182		<code>\supseteqq</code> . . . . .	19523, 20737
<code>\Sparkle</code> . . . . .	19197, 20599	<code>\strip@pt@and@otherjunk</code>	10980,	<code>\supsetneq</code> . . . . .	18310, 20315
<code>\SparkleBold</code> . . . . .	19199, 20600	11012, 11047		<code>\surd</code> . . . . .	20194
<code>\special@paper</code> . . . . .	4121	<code>\strutbox</code> . . . . .	7558	<code>\Swarrow</code> . . . . .	17948, 20156
<code>\SpecialDvipdfmxOutlineOpen</code> .		<code>\sub@label</code> . . . . .	2191	<code>\swarrow</code> . . . . .	17824, 20106
2756, 2758, 4537, 4544		<code>\subeqnarray</code> . . . . .	7232, 7234		
<code>\sphericalangle</code> ...	18046, 20199	<code>\subequations</code> . . . . .	7270, 7271		
<code>\splitmaxdepth</code> . . . . .	7558	<code>\subfig@oldlabel</code> . . . . .	2193		
<code>\splittopskip</code> . . . . .	7557	<code>\Submit</code> . . . . .	6118		
<code>\sqcap</code> . . . . .	18332, 20326	<code>\SubmitObject</code> . . . . .	13351		
<code>\sqcup</code> . . . . .	18334, 20327	<code>\SubmitPObject</code> . . . . .	13351		
<code>\sqdoublecap</code> . . . . .	19419, 20689	<code>\subparagraphautorefname</code> ....			
<code>\sqdoublecup</code> . . . . .	19424, 20691	.. 2967, 2985, 3003, 3021,			
<code>\sqsubset</code> . . . . .	18316, 20318	3039, 3057, 3075, 3108,			
<code>\sqsupseteq</code> . . . . .	18324, 20322	3110, 3133, 3151, 3169,			
<code>\sqsubsetneq</code> . . . . .	18513, 20397	3187, 3205, 3223, 3241, 8701			
<code>\sqsupset</code> . . . . .	18320, 20320	<code>\subpdfbookmark</code> . . . . .	14341		

## T

<code>\T</code> . . . . .	19825
<code>\t</code> ..	14731, 15149, 15178, 15207,
	15225
<code>\T@pageref</code> ..	8535, 8542, 8551,
	8560
<code>\T@Ref</code> . . . . .	4668
<code>\Ta</code> . . . . .	19853
<code>\taa</code> . . . . .	19827
<code>\tableautorefname</code> . . . . .	
..	2959, 2977, 2995, 3013,



3031, 3049, 3067, 3097, 3125, 3143, 3161, 3179, 3197, 3215, 3233, 8693	<code>\textAPLleftarrowbox</code> ... 18596, 20431	<code>\textbarb</code> ... 15796, 20819
<code>\tagform@</code> ... 8194	<code>\textAPLrightarrowbox</code> .. 18599, 20432	<code>\textbarc</code> ... 16017, 20836
<code>\taild</code> ... 16043, 20845	<code>\textAPLuparrowbox</code> ... 18601, 20433	<code>\textbard</code> ... 15560, 20811
<code>\tailnvr</code> ... 16174, 20880	<code>\textapprox</code> ... 18133, 20234	<code>\textbardbl</code> 17536, 17537, 20923
<code>\taill</code> ... 16123, 20865	<code>\textapproxeq</code> ... 18138, 20236	<code>\textbardotlessj</code> .. 16074, 16075, 16076, 20852
<code>\tailn</code> ... 16146, 20874	<code>\textaquarius</code> ... 18962, 18963, 20506, 21078	<code>\textbarglotstop</code> .. 16296, 16297
<code>\tailr</code> ... 16180, 20882	<code>\textaries</code> .. 18932, 18933, 20496, 21068	<code>\textbari</code> .. 16105, 16106, 16107, 19959, 20861
<code>\tails</code> ... 16196, 20885	<code>\textaristerikeraia</code> ... 16393	<code>\textbarin</code> ... 18549, 20411
<code>\tailt</code> ... 16214, 20888	<code>\textasciicircum</code> ... 15356	<code>\textbarl</code> .. 15819, 15820, 19944
<code>\tailz</code> ... 16242, 20897	<code>\textasciibreve</code> ... 14742, 15163, 15192, 16351	<code>\textbarleftharpoon</code> 19337, 20655
<code>\Tape</code> ... 19076, 20541	<code>\textasciicaron</code> ... 14700, 14712, 14724, 14744, 15160, 15189, 16337	<code>\textbaro</code> ... 16151, 16153
<code>\tatweel</code> ... 19861	<code>\textasciicircum</code> .. 14696, 14708, 14720, 14782, 15156, 15185, 15294	<code>\textbarp</code> ... 17203, 20027
<code>\tau</code> ... 16514, 20009	<code>\textasciidieresis</code> .. 14698, 14710, 14722, 14879, 15158, 15187, 15332	<code>\textbarrevglotstop</code> 16300, 16301
<code>\Taurus</code> ... 18936, 21069	<code>\textasciigrave</code> ... 14694, 14706, 14718, 14787, 15154, 15183, 15299	<code>\textbarriightharpoon</code> .... 19343, 20657
<code>\taurus</code> ... 18934, 20497	<code>\textasciimacron</code> .. 14703, 14715, 14727, 14892, 15167, 15196, 15345	<code>\textbarsci</code> ... 17201, 20026
<code>\tcheh</code> ... 19901	<code>\textasciitilde</code> 508, 4731, 14797, 15311	<code>\textbarscu</code> ... 17206, 20028
<code>\Telefon</code> ... 18846, 21037	<code>\textast</code> ... 18030, 20192	<code>\textbaru</code> .. 16216, 16217, 16218, 19968, 20889
<code>\temp@online</code> ... 8103, 8106	<code>\textAsterisk</code> ... 19178, 20589	<code>\textbarwedge</code> .... 18440, 20364
<code>\Tent</code> ... 19060, 20536	<code>\textAsteriskBold</code> .. 19155, 20578	<code>\textbbslash</code> 18627, 18628, 20442, 21025
<code>\tesh</code> ... 16314, 20910	<code>\textasteriskcentered</code> .... 15254	<code>\textBeam</code> ... 18611, 20437
<code>\TeX</code> .. 517, 518, 525, 527, 12341, 12343, 12345	<code>\textAsteriskCenterOpen</code> .. 19157, 20579	<code>\textbecause</code> 18096, 18097, 20218, 20965
<code>\texorpdfstring</code> .... 878, 6316	<code>\textAsteriskRoundedEnds</code> 19202, 20601	<code>\textbelt</code> .. 16117, 16118, 16119, 20864
<code>\text</code> ... 475, 476	<code>\textasymp</code> ... 18151, 20242	<code>\textBeta</code> ... 16383, 16414
<code>\textAcht</code> ... 19620, 20767	<code>\textbabygamma</code> .. 16092, 19958	<code>\textbeta</code> .. 15076, 16479, 19991
<code>\textAcPa</code> ... 19606, 20761	<code>\textbackcong</code> .... 18147, 20240	<code>\textbetainferior</code> .. 17190, 20021
<code>\textacute</code> .. 14695, 14707, 14719, 14902, 15155, 15184, 15355	<code>\textbackepsilon</code> ... 16568	<code>\textbeth</code> ... 17753, 20092
<code>\textacutedbl</code> ... 16362	<code>\textbackneg</code> ... 18553, 20413	<code>\textbetween</code> .... 18244, 20283
<code>\textacutemacron</code> 15152, 15181, 15210, 17267, 17270, 17371, 17374	<code>\textbackprime</code> ... 17575, 20036	<code>\textbf</code> ... 542
<code>\textainferior</code> .... 17657, 20069	<code>\textbacksim</code> ... 18111, 20224	<code>\textBicycle</code> ... 19640, 20776
<code>\textaleph</code> ... 17751, 20091	<code>\textbacksimeq</code> ... 18458, 20372	<code>\textbigcircle</code> .... 15180, 15209, 18835, 18836, 20465, 21036
<code>\textAlpha</code> ... 16395, 16412	<code>\textbackslash</code> .. 503, 681, 2057, 14778, 14780, 15292	<code>\textbigdoublevee</code> .. 19399, 20680
<code>\textalpha</code> 3177, 3178, 3179, 3181, 3182, 3183, 3184, 3185, 3186, 3187, 3188, 3189, 3190, 16466, 16477, 19990	<code>\textbaht</code> ... 17158	<code>\textbigdoublewedge</code> .... 19397, 20679
<code>\textamalg</code> ... 18014, 20185	<code>\textbar</code> ... 14793, 15306, 15307, 20798	<code>\textbigtriangledown</code> .... 18811, 18812, 20455, 21034
<code>\textampersand</code> .... 507, 14766, 15244, 15245, 15246, 20795, 20796		<code>\textbigtriangleup</code> 18796, 18797, 18798, 20450, 21031, 21032
<code>\textangle</code> ... 18043, 20197		<code>\textBiohazard</code> ... 18875, 20479
<code>\textangstrom</code> ... 17743		<code>\textblacksmiley</code> .. 18890, 20484
<code>\textAnkh</code> ... 18877, 20480		<code>\textblank</code> ... 18623
<code>\textaoilig</code> .. 19588, 19590, 21126		<code>\textbot</code> .. 18384, 18385, 20345, 20996
<code>\textAPLbox</code> ... 18615, 20439		<code>\textbowtie</code> 18446, 18447, 20367, 21013
<code>\textAPLdownarrowbox</code> .. 18604, 20434		<code>\textboxast</code> ... 19383, 20672
<code>\textAPLinup</code> ... 18607, 20435		<code>\textboxbackslash</code> .. 18593, 20430
<code>\textAPLinu</code> ... 18581, 20426		

<code>\textboxbar</code> . . . . .	18833, 20464	<code>\textcirceq</code> . . . . .	18192, 20260	<code>\textcoloncolonequals</code> . . .	19443, 20698
<code>\textboxbox</code> . . . . .	19387, 20674	<code>\textcirclearrowleft</code> . . . .	19249, 20620	<code>\textcolonequals</code> . .	18184, 20256
<code>\textboxbslash</code> . . . . .	19381, 20671	<code>\textcirclearrowright</code> . . . .	19251, 20621	<code>\textcolonmonetary</code> . . . . .	17683
<code>\textboxcircle</code> . . . . .	19385, 20673	<code>\textcircled</code> . . . . .	15151, 15180, 15209, 18630, 18632, 18634, 18636, 18638, 18640, 18642, 18644, 18646, 18648, 18650, 18652, 18654, 18656, 18658, 18660, 18662, 18664, 18666, 18668, 18670, 18675, 18677, 18679, 18681, 18683, 18689, 18691, 18693, 18695, 18697, 18699, 18701, 18703, 18705, 18707, 18713, 18715, 18717, 18719, 18721, 18723, 18725, 18727, 18729, 18731, 18733, 18735, 18737, 18739, 18741, 18743, 18745, 18747, 18749, 18751, 18753, 18755, 18757, 18759, 18761, 18763, 18765, 18767, 18769, 18771, 18773, 18775, 18777, 18779, 18781, 18783, 18785	<code>\textcolor</code> . . .	580, 13089, 13136, 13139, 13470
<code>\textboxdot</code> . . . . .	18368, 20339	<code>\textCircledA</code> . . . . .	18672, 18673, 20443, 21026	<code>\textcommatailz</code> . .	15983, 15984
<code>\textboxempty</code> . .	18848, 18849, 20470, 21038	<code>\textcircledast</code> . . . . .	18356, 18357, 18358, 20334, 20990, 20991	<code>\textcomplement</code> . .	17983, 20171
<code>\textboxminus</code> . . . . .	18364, 20337	<code>\textcircledcirc</code> . . . . .	18352, 18353, 18354, 20333, 20988, 20989	<code>\textcompwordmark</code> . . . . .	17530
<code>\textboxplus</code> . . . . .	18362, 20336	<code>\textcircledddash</code> . . . . .	18360, 20335	<code>\textcong</code> . . . . .	18128, 20232
<code>\textboxslash</code> . . . . .	19379, 20670	<code>\textcircledP</code> . . . . .	17723	<code>\textcopyright</code> . . . . .	19646, 19647
<code>\textboxtimes</code> . . . . .	18366, 20338	<code>\textCircleShadow</code> . .	19210, 20604	<code>\textcopyright</code> . . .	14881, 15334, 19934
<code>\textbraceleft</code> . . . . .	501, 2058, 14791, 15304	<code>\textcircledplus</code> . . . . .	19406, 20683	<code>\textcorner</code> . . . . .	16371, 16372
<code>\textbraceright</code> . . . . .	502, 2058, 14795, 15309	<code>\textcircledflex</code> . . . . .	14746	<code>\textCR</code> . . . . .	14740, 15232
<code>\textbrokenbar</code> . .	14875, 15325, 15326, 20801	<code>\textcircledlow</code> . . . . .	15173, 15202, 19594	<code>\textcrb</code> . . . . .	15792, 15793, 15794, 15796, 15797, 20818, 20819, 20820
<code>\textbullet</code> . .	14799, 17558, 20031	<code>\textCleaningF</code> . . . . .	18685, 20444	<code>\textcrd</code> . . . . .	15555, 15557, 15558, 15560, 15561, 20810, 20811, 20812
<code>\textbulletoperator</code> . . . . .	18034	<code>\textCleaningFF</code> . . . . .	18687, 20445	<code>\textcrg</code> . . . . .	15885, 20832
<code>\textbullseye</code> . . . . .	16271, 16272, 16273, 16274, 20905, 20906	<code>\textCleaningPP</code> . . . . .	18709, 20446	<code>\textcrh</code> . . . . .	15606, 20813
<code>\textBumpeq</code> . . . . .	18156, 20244	<code>\textClock</code> . . . . .	18559, 18560, 18561, 20416, 21022, 21023	<code>\textcrinvglotstop</code> .	15846, 15847
<code>\textbumpeq</code> . . . . .	18160, 20246	<code>\textcloseepsilon</code> . . . . .	16278, 16279	<code>\textcrlambda</code> . . . . .	15823, 15824, 15825, 15826, 15827, 15828, 20824, 20825, 20826, 20827
<code>\textcancer</code> . . . . .	18941, 18942, 20499, 21071	<code>\textcloseomega</code> . . . . .	16157, 16158, 16159, 16160, 20875, 20876	<code>\textCross</code> . . . . .	19118, 20560
<code>\textCap</code> . .	18476, 18477, 20380, 21016	<code>\textcloserevepsilon</code> . . . . .	16070, 16071, 16072, 20851	<code>\textCrossedbox</code> . .	18854, 18855, 18856, 20472, 21040, 21041
<code>\textcap</code> . . . . .	18072, 20208	<code>\textCloud</code> . . . . .	18839, 20466	<code>\textCrossMaltese</code> .	19124, 20563
<code>\textcapdot</code> . . . . .	19423, 20690	<code>\textClowerTips</code> . . . . .	19135, 20568	<code>\textCrossOpenShadow</code> . .	19120, 20561
<code>\textcapricornus</code> . .	18959, 18960, 20505, 21077	<code>\textclubsuitblack</code> . .	2179, 18978, 18979, 21084	<code>\textCrossOutline</code> .	19122, 20562
<code>\textccnc</code> . . . . .	19649, 20779	<code>\textclubsuitwhite</code> . . . . .	18987	<code>\textCrtwo</code> . . . . .	15843, 15844
<code>\textccnd</code> . . . . .	19651	<code>\textCoffeecup</code> . . . . .	18858, 20473	<code>\textctc</code> . . . . .	16038, 16039, 16040, 20844
<code>\textccsa</code> . . . . .	19653, 20780			<code>\textctd</code> . . . . .	15981, 15982
<code>\textcdj</code> . . . . .	16285			<code>\textctesh</code> . . . . .	16205, 16206, 16207, 20886
<code>\textcdot</code> . .	15075, 19671, 20787			<code>\textctj</code> . . . . .	16286, 16287, 20907
<code>\textcdots</code> . . . . .	18543, 20408			<code>\textctjvar</code> . . . . .	16287, 20907
<code>\textcedilla</code> . . . . .	14702, 14714, 14726, 14910, 15162, 15191, 15367			<code>\textctn</code> . . . . .	16001, 16002
<code>\textcelsius</code> . . . . .	15062, 17713			<code>\textctt</code> . . . . .	16003, 16004
<code>\textcent</code> . . . . .	14867, 15315			<code>\textctyogh</code> . . . . .	16250, 16251, 16252, 20899
<code>\textcentoldstyle</code> . .	16015, 20835			<code>\textctz</code> . . . . .	16243, 16244, 16245, 20898
<code>\textCESign</code> . . . . .	19657, 19658, 20782, 21131			<code>\textCup</code> . . . . .	18479, 18480, 20381, 21017
<code>\textCheckedbox</code> . .	18851, 18852, 20471, 21039			<code>\textcup</code> . . . . .	18074, 20209
<code>\textCheckmark</code> . .	19099, 19100, 20551, 21097			<code>\textcupdot</code> . . . . .	18313, 20316
<code>\textCheckmarkBold</code> . . . . .	19102, 20552			<code>\textcupplus</code> . . . . .	18315, 20317
<code>\textChi</code> . . . . .	16454			<code>\textcurlyeqprec</code> . .	18498, 20389
<code>\textchi</code> . . . . .	3178, 16521, 20012				
<code>\textchiinferior</code> . . .	17198, 20025				
<code>\textcirc</code> . . . . .	18032, 20193				

<code>\textcurlyeqsucc</code> .. 18502, 20391	<code>\textDigamma</code> ..... 16549	<code>\textdownharpoons</code> . 19331, 20653
<code>\textcurlyvee</code> .... 18462, 18463, 20374, 21014	<code>\textdigamma</code> ..... 16552	<code>\textdownharpoonleft</code> ... 17893, 20134
<code>\textcurlywedge</code> .. 18465, 18466, 20375, 21015	<code>\textDigammagreek</code> ..... 16548	<code>\textdownharpoonright</code> .. 17890, 20133
<code>\textcurrency</code> .... 14871, 15321	<code>\textdigammagreek</code> 16551, 16553, 20911	<code>\textdownmodels</code> .. 19547, 20745
<code>\textcurvearrowleft</code> 17867, 20125	<code>\textdiscount</code> ..... 17591	<code>\textdownstep</code> .... 19577, 19578
<code>\textcurvearrowright</code> .... 17869, 20126	<code>\textdiv</code> ... 15073, 19669, 20785	<code>\textdownuparrows</code> 17973, 20166
<code>\textCuttingLine</code> . 18787, 18788, 18789, 18790, 20448, 21027, 21028, 21029	<code>\textdivide</code> 15042, 15073, 15501, 19669	<code>\textdownupharpoons</code> ... 19349, 20659
<code>\textdagger</code> 14801, 17551, 17552, 20030, 20924	<code>\textdivideontimes</code> 18444, 20366	<code>\textdsbiological</code> .. 19023, 20522
<code>\textdaggerdbl</code> ... 14803, 17554, 17555, 17556, 20925, 20926	<code>\textDivides</code> ..... 18024, 20189	<code>\textdschemical</code> ... 19021, 20521
<code>\textdaleth</code> ..... 17757, 20094	<code>\textDividesNot</code> ... 18026, 20190	<code>\textdscommercial</code> . 19025, 20523
<code>\textdanger</code> ..... 19029, 20525	<code>\textdivorced</code> ..... 19043	<code>\textdsjuridical</code> ... 19019, 20520
<code>\textdasheddownarrow</code> .. 17968, 20164	<code>\textdlsh</code> ..... 17864, 20124	<code>\textdsmedical</code> .... 19017, 20519
<code>\textdasheduparrow</code> 17963, 20162	<code>\textdollar</code> ... 505, 14762, 15238, 15239, 15240, 20793, 20794	<code>\textdsmilitary</code> .. 19014, 19015, 20518, 21088
<code>\textdashleftarrow</code> 17960, 17961, 20161, 20951	<code>\textdong</code> ..... 17693	<code>\textdtimes</code> ..... 19414, 20686
<code>\textdashrightarrow</code> ..... 17965, 17966, 20163, 20952	<code>\textdotaccent</code> ... 14701, 14713, 14725, 14748, 15161, 15190, 16353	<code>\textdyoghlig</code> ..... 16305, 16306
<code>\textDashV</code> 19541, 19542, 20743, 21120	<code>\textdotbelow</code> ... 14705, 14717, 14729, 14772, 15177, 15206, 16378	<code>\textdzlig</code> . 16302, 16303, 16304, 20909
<code>\textDashv</code> 19534, 19535, 20741, 21118	<code>\textdotdiv</code> ..... 18104, 20966	<code>\textearth</code> . 18909, 18910, 20489, 21059
<code>\textdashV</code> 19528, 19529, 20739, 21116	<code>\textdoteq</code> ..... 18164, 20248	<code>\textEightAsterisk</code> . 19208, 20603
<code>\textdashv</code> . 18373, 18374, 20341, 20993	<code>\textdoteqdot</code> ... 18169, 18170, 20250, 20972	<code>\textEightFlowerPetal</code> ... 19186, 20593
<code>\textDavidStar</code> .. 19126, 19127, 20564, 21098	<code>\textdotminus</code> ... 18103, 18104, 20221, 20966	<code>\textEightFlowerPetalRemoved</code> . .... 19205, 20602
<code>\textdblig</code> . 16007, 16009, 20833	<code>\textdotplus</code> ..... 18022, 20188	<code>\texteightinferior</code> .. 17643, 20062
<code>\textdctzlig</code> ..... 16308, 16309	<code>\textdottimes</code> .... 19411, 20685	<code>\textEightStar</code> .... 19165, 20583
<code>\textddagger</code> ..... 14804	<code>\textdoublebarpipe</code> 15859, 15860, 15861, 20831	<code>\textEightStarBold</code> 19167, 20584
<code>\textddots</code> ..... 18547, 20410	<code>\textdoublebarpipevar</code> ... 15861, 20831	<code>\textEightStarConvex</code> ... 19161, 20581
<code>\textdegree</code> 14894, 15062, 15347	<code>\textdoublebarwedge</code> .... 19434, 20694	<code>\textEightStarTaper</code> 19159, 20580
<code>\textDeleatur</code> ... 17706, 17707, 20082, 20937	<code>\textdoublegrave</code> . 15165, 15194, 16374	<code>\texteightsuperior</code> . 17611, 20046
<code>\textDelta</code> ..... 16418, 19980	<code>\textdoublepipe</code> .. 15855, 15856, 15857, 20830	<code>\texteinferior</code> ..... 17659, 20070
<code>\textdelta</code> .. 3190, 16483, 19993	<code>\textdoublepipevar</code> 15857, 20830	<code>\textell</code> ..... 17719, 20085
<code>\textdexiakeraia</code> ..... 16390	<code>\textdoublevee</code> ... 19430, 19431, 20693, 21115	<code>\textellipsis</code> ... 511, 512, 14806, 17562, 17563, 20927
<code>\textDiamandSolid</code> 19224, 20609	<code>\textdoublevertline</code> 17537, 20923	<code>\textemdash</code> . 715, 14808, 17534
<code>\textdiameter</code> .... 18551, 20412	<code>\textdoublewedge</code> . 19428, 20692	<code>\textemptyset</code> ... 17991, 17992, 20175, 20953
<code>\textdiamond</code> ... 18821, 18822, 20459, 21035	<code>\textDOWNarrow</code> 18807, 18808, 20454, 21033	<code>\textEncodingNoboundary</code> 514, 19913
<code>\textdiamonddots</code> . 17597, 20039	<code>\textDownarrow</code> .. 17935, 20150	<code>\textendash</code> .. 716, 14810, 17532
<code>\textdiamondsuitblack</code> ... 2180, 18985	<code>\textdownarrow</code> .. 17809, 17810, 17811, 20100, 20945, 20946	<code>\textEnvelope</code> ... 19081, 19082, 20543, 21095
<code>\textdiamondsuitwhite</code> .. 18975, 18976, 21083	<code>\textdownharpoons</code> ... 17910, 20141	<code>\textEpsilon</code> 3175, 16397, 16420
		<code>\textepsilon</code> .. 3176, 3177, 3180, 3182, 3183, 3184, 3185, 3189, 3190, 16468, 16485, 19994
		<code>\texteqcirc</code> ..... 18188, 20258



<code>\texteqcolon</code> . . . . .	18106, 20222	<code>\textFiveStarOpen</code> . . . . .	18843, 20468	<code>\textggg</code> . . . . .	18490, 20386
<code>\texteqdot</code> . . . . .	19439, 20696	<code>\textFiveStarOpenCircled</code> . . . . .	19141, 20571	<code>\textgimel</code> . . . . .	17755, 20093
<code>\texteqsim</code> . . . . .	18120, 20228	<code>\textFiveStarOpenDotted</code> . . . . .	19145, 20573	<code>\textglobfall</code> . . . . .	17823, 20948
<code>\texteqslantgtr</code> . . . . .	19478, 20714	<code>\textFiveStarOutline</code> . . . . .	19147, 20574	<code>\textglobrise</code> . . . . .	17820, 20947
<code>\texteqslantless</code> . . . . .	19476, 20713	<code>\textFiveStarOutlineHeavy</code> . . . . .	19149, 20575	<code>\textglotstop</code> . . . . .	16254, 16255, 16256, 16257, 19976, 20900, 20901
<code>\textequalscolon</code> . . . . .	18186, 20257	<code>\textFiveStarShadow</code> . . . . .	19153, 20577	<code>\textglq</code> . . . . .	600, 15065, 19661
<code>\textequalsinferior</code> . . . . .	17651, 20066	<code>\textfivesuperior</code> . . . . .	17605, 20043	<code>\textglqq</code> . . . . .	598, 15063, 19659
<code>\textequalssuperior</code> . . . . .	17619, 20050	<code>\textfl</code> . . . . .	718, 14840, 19598	<code>\textgnapprox</code> . . . . .	19468, 20710
<code>\textequiv</code> . . . . .	18208, 18209, 20267, 20976	<code>\textFlag</code> . . . . .	19009, 19010, 20516, 21087	<code>\textgneq</code> . . . . .	19464, 20708
<code>\textEreversed</code> . . . . .	15805	<code>\textflat</code> . . . . .	18998, 20511	<code>\textgneqq</code> . . . . .	18234, 20278
<code>\textesh</code> . . . . .	16197, 16198, 19967	<code>\textflorin</code> . . . . .	14812, 15808, 15809, 20821	<code>\textgnsim</code> . . . . .	18522, 20400
<code>\textestimated</code> . . . . .	17745, 17746, 17747, 20939, 20940	<code>\textflq</code> . . . . .	604, 15069, 19665	<code>\textgravedbl</code> . . . . .	16366
<code>\textEta</code> . . . . .	16399, 16424	<code>\textflqq</code> . . . . .	602, 15067, 19663	<code>\textgravemacron</code> . . . . .	15153, 15182, 15211, 17261, 17264, 17365, 17368
<code>\texteta</code> . . . . .	3175, 3176, 3178, 3181, 3183, 3184, 3185, 3188, 3189, 16470, 16489, 19996	<code>\textforall</code> . . . . .	17981, 20170	<code>\textgreater</code> . . . . .	14776, 15288
<code>\texteuro</code> . . . . .	14863, 17695, 17696, 17697, 17698, 17699, 17700, 17701, 17702, 17703, 17704, 20928, 20929, 20930, 20931, 20932, 20933, 20934, 20935, 20936	<code>\textforallq</code> . . . . .	18800, 20451	<code>\textgrq</code> . . . . .	601, 15066, 19662
<code>\textexclamdown</code> . . . . .	719, 14865, 15313	<code>\textForwardToIndex</code> . . . . .	18618, 20440	<code>\textgrqq</code> . . . . .	599, 15064, 19660
<code>\textexists</code> . . . . .	17987, 20173	<code>\textFourAsterisk</code> . . . . .	19129, 20565	<code>\textGslash</code> . . . . .	15882
<code>\textfallingdoteq</code> . . . . .	18175, 20252	<code>\textfourfifths</code> . . . . .	17783	<code>\textgslash</code> . . . . .	15884, 15885, 20832
<code>\textfatsemi</code> . . . . .	19404, 20682	<code>\textfourinferior</code> . . . . .	17635, 20058	<code>\textgtrapprox</code> . . . . .	19457, 20705
<code>\textFax</code> . . . . .	19635, 19636, 20774, 21130	<code>\textFourStar</code> . . . . .	19137, 20569	<code>\textgtrdot</code> . . . . .	18486, 20384
<code>\textfax</code> . . . . .	17759, 20095	<code>\textFourStarOpen</code> . . . . .	19139, 20570	<code>\textgtreqless</code> . . . . .	18496, 20388
<code>\textfemale</code> . . . . .	18903, 21054	<code>\textfoursuperior</code> . . . . .	17603, 20042	<code>\textgtreqless</code> . . . . .	19474, 20712
<code>\textFemaleFemale</code> . . . . .	19031, 20526	<code>\textfourth</code> . . . . .	17595, 20038	<code>\textgttrless</code> . . . . .	18267, 20293
<code>\textFemaleMale</code> . . . . .	19035, 20528	<code>\textfractionsolidus</code> . . . . .	14814, 17585	<code>\textgtrsim</code> . . . . .	18258, 18259, 20289, 20982
<code>\textfi</code> . . . . .	717, 14838, 19596	<code>\textfrown</code> . . . . .	18571, 20421	<code>\textguarani</code> . . . . .	17711
<code>\TextField</code> . . . . .	6103	<code>\textfrownie</code> . . . . .	18884, 18885, 20482, 21050	<code>\texthalflength</code> . . . . .	16348, 16349
<code>\textFinv</code> . . . . .	17749, 20090	<code>\textfrq</code> . . . . .	605, 15070, 19666	<code>\texthalfnote</code> . . . . .	19615, 19616, 20765, 21128
<code>\textFire</code> . . . . .	19638, 20775	<code>\textfrqq</code> . . . . .	603, 15068, 19664	<code>\textHandCuffLeft</code> . . . . .	18860, 20474
<code>\textfishhookr</code> . . . . .	16182, 16183, 16184, 16185, 20883, 20884	<code>\textfullnote</code> . . . . .	19612, 19613, 20764, 21127	<code>\textHandCuffRight</code> . . . . .	18862, 20475
<code>\textfivedots</code> . . . . .	19573, 20756	<code>\textGame</code> . . . . .	17761, 20096	<code>\textHandLeft</code> . . . . .	18864, 18865, 20476, 21042
<code>\textfiveeighths</code> . . . . .	17793	<code>\textGamma</code> . . . . .	16416, 19979	<code>\textHandRight</code> . . . . .	18867, 18868, 18869, 18870, 20477, 21043, 21044, 21045
<code>\textFiveFlowerOpen</code> . . . . .	19184, 20592	<code>\textgamma</code> . . . . .	3186, 3187, 3188, 16481, 19992	<code>\textHaPa</code> . . . . .	19602, 20759
<code>\textFiveFlowerPetal</code> . . . . .	19182, 20591	<code>\textgammainferior</code> . . . . .	17192, 20022	<code>\texthateq</code> . . . . .	18196, 18197, 18198, 20262, 20973, 20974
<code>\textfiveinferior</code> . . . . .	17637, 20059	<code>\textGaPa</code> . . . . .	19600, 20758	<code>\texthausaB</code> . . . . .	15799, 19941
<code>\textfivesixths</code> . . . . .	17787	<code>\textge</code> . . . . .	18221, 20272	<code>\texthausaD</code> . . . . .	15803, 19942
<code>\textFiveStar</code> . . . . .	18841, 20467	<code>\textgemini</code> . . . . .	18938, 18939, 20498, 21070	<code>\texthausaK</code> . . . . .	15814, 19943
<code>\textFiveStarCenterOpen</code> . . . . .	19143, 20572	<code>\textGentsroom</code> . . . . .	19642, 20777	<code>\texthbar</code> . . . . .	15605, 15606, 15607, 15608, 19940, 20813, 20814, 20815
<code>\textFiveStarConvex</code> . . . . .	19151, 20576	<code>\textgeq</code> . . . . .	18220, 18222, 20271, 20980	<code>\texthdotfor</code> . . . . .	17560, 20032
		<code>\textgeqq</code> . . . . .	18228, 20275	<code>\textheartsuitblack</code> . . . . .	2181, 18983
		<code>\textgeqslant</code> . . . . .	19449, 20701	<code>\textheartsuitwhite</code> . . . . .	18971, 18972, 18973, 21081, 21082
		<code>\textgg</code> . . . . .	18240, 20281	<code>\textheng</code> . . . . .	19579, 19581, 21123

<code>\textHermaphrodite</code>	19037, 20529	<code>\textinvglotstop</code>	16264, 16265, 19978	<code>\textleftleftarrows</code>	17904, 20138
<code>\texthexagon</code>	18613, 20438	<code>\textinvneg</code>	19418, 20688	<code>\textleftleftharpoons</code>	19322, 20650
<code>\texthexstar</code>	19048, 20531	<code>\textinvnscr</code>	16192, 16193, 19966	<code>\textleftmoon</code>	18895, 20486
<code>\textthinferior</code>	17667, 20074	<code>\textIota</code>	16401, 16428, 16462	<code>\textLeftrightarrow</code>	17938, 20151
<code>\texthookleftarrow</code>	17850, 20118	<code>\textiota</code>	3175, 3176, 3177, 3179, 3182, 3190, 16472, 16493, 16527, 19998	<code>\textleftrightharpoon</code>	2184, 17813, 20101
<code>\texthookrightarrow</code>	17852, 20119	<code>\textIotadieresis</code>	16410, 16461	<code>\textleftrightharpoons</code>	17902, 20137
<code>\textHslash</code>	15603	<code>\textipagamma</code>	16088, 16089, 19957, 20855	<code>\textleftrightharpoontriangle</code>	17979, 20169
<code>\texthslash</code>	17715, 20083	<code>\textisuperior</code>	17601, 20041	<code>\textleftrightharpoon</code>	19311, 20646
<code>\textHT</code>	14736, 15228	<code>\textit</code>	544	<code>\textleftrightharpoons</code>	17913, 20142
<code>\texthtb</code>	16030, 16031, 16032, 16033, 20841, 20842	<code>\textJackStar</code>	19131, 20566	<code>\textleftslice</code>	19480, 20715
<code>\texthtbardotlessj</code>	16200, 16201	<code>\textJackStarBold</code>	19133, 20567	<code>\textleftspoon</code>	19240, 20617
<code>\texthtc</code>	15800, 15801	<code>\textjinferior</code>	19567, 20754	<code>\textleftsquigarrow</code>	17955, 20159
<code>\texthtd</code>	16044, 16045, 16046, 16047, 20846, 20847	<code>\textJoin</code>	19402, 20681	<code>\textlefttherefore</code>	17593, 20037
<code>\texthtg</code>	16077, 16078, 16079, 20853	<code>\textjupiter</code>	18917, 18918, 20491, 21063	<code>\textleftthreetimes</code>	18454, 20370
<code>\texthth</code>	16097, 16098, 16099, 16100, 20858, 20859	<code>\textKappa</code>	16430	<code>\textlengthmark</code>	16345, 16346
<code>\texththeng</code>	16101, 16102, 16103, 20860	<code>\textkappa</code>	3177, 3179, 3182, 16495, 19999	<code>\textleo</code>	18944, 18945, 20500, 21072
<code>\texthtk</code>	15815, 15816, 15817, 20823	<code>\textKeyboard</code>	18575, 20423	<code>\textleq</code>	18215, 18217, 20269, 20979
<code>\texthtp</code>	15833, 15834	<code>\textkinferior</code>	17669, 20075	<code>\textleqq</code>	18224, 20273
<code>\texthtq</code>	16293, 16294	<code>\textKoppa</code>	16555	<code>\textleqslant</code>	19445, 20699
<code>\texthtrtaild</code>	17210, 17211, 20029	<code>\textkoppa</code>	16558	<code>\textless</code>	14774, 15286
<code>\texhtscg</code>	16281, 16282	<code>\textKoppagreek</code>	16556	<code>\textlessapprox</code>	19453, 20703
<code>\texhttt</code>	15838, 15839	<code>\textkoppagreek</code>	16559	<code>\textlessdot</code>	18484, 20383
<code>\texthungarumlaut</code>	14750, 15168, 15197, 16361	<code>\textkra</code>	15647	<code>\textlesseqgtr</code>	18493, 20387
<code>\texthvlig</code>	15810, 15811, 15812, 20822	<code>\textLadiesroom</code>	19644, 20778	<code>\textlesseqqgtr</code>	19471, 20711
<code>\textiiint</code>	18081, 20212	<code>\textLambda</code>	16432, 19982	<code>\textlessgtr</code>	18265, 20292
<code>\textiinferior</code>	17182, 20017	<code>\textlambda</code>	3182, 3190, 16497, 20000	<code>\textlessssim</code>	18255, 18256, 20288, 20981
<code>\textiint</code>	18079, 20211	<code>\textlangle</code>	18577, 20424	<code>\textLF</code>	14738, 15230
<code>\textIm</code>	17717, 20084	<code>\textlatin</code>	590, 7028	<code>\textLHD</code>	18819, 20458
<code>\textin</code>	17998, 20178	<code>\textlbrackdbl</code>	19242, 19243, 20618, 21099	<code>\textlhd</code>	18418, 18419, 20356, 21007
<code>\textInfo</code>	19655, 20781	<code>\textlcurvearrowdown</code>	19297, 19298, 19299, 20642, 21101, 21102	<code>\textlhookfour</code>	19582, 19584, 21124
<code>\textinfty</code>	18041, 20196	<code>\textlcurvearrowse</code>	19289, 20639	<code>\textlhooknarrow</code>	19275, 20633
<code>\textint</code>	18076, 18077, 20210, 20963	<code>\textlcurvearrowsw</code>	19292, 20640	<code>\textlhooksearrow</code>	19279, 20635
<code>\textinterleave</code>	19558, 20750	<code>\textle</code>	18216, 20270	<code>\textlhookt</code>	15836, 15837
<code>\textinterrobang</code>	17583	<code>\textleadsto</code>	19283, 20637	<code>\textlhtlongi</code>	16187, 16188
<code>\textinterrobangdown</code>	19570, 19571	<code>\textLeftarrow</code>	17927, 20147	<code>\textlhtlongy</code>	16319, 16320
<code>\textinvamp</code>	17763, 17764, 17765, 20941, 20942	<code>\textleftarrow</code>	17801, 20097	<code>\textlibra</code>	18950, 18951, 20502, 21074
<code>\textinvbackneg</code>	18557, 20415	<code>\textleftarrowtail</code>	17844, 20115	<code>\textlightning</code>	17860, 17861, 20123, 20949
<code>\textinvbreve</code>	15127, 15170, 15199, 15932, 15934, 15945, 15947, 15948, 15958, 15960, 15974, 15976	<code>\textleftarrowtriangle</code>	17975, 20167	<code>\textlinferior</code>	17671, 20076
<code>\textinvdiameter</code>	19357, 20663	<code>\textleftbarharpoon</code>	19334, 20654	<code>\textlira</code>	17685
<code>\textinve</code>	15880, 19945	<code>\textLEFTCIRCLE</code>	18826, 20461	<code>\textll</code>	18236, 20279
		<code>\textleftharpoondown</code>	17875, 20128	<code>\textllcorner</code>	18567, 20419
		<code>\textleftharpoonup</code>	17872, 20127	<code>\textLleftarrow</code>	17951, 20157

<code>\textll</code> . . . . .	18488, 20385	<code>\textmho</code> . .	17738, 17739, 20088, 20938	<code>\textnasymp</code>	18153, 18154, 20243, 20971
<code>\textllparenthesis</code> . .	19353, 20661	<code>\textmid</code> . . . . .	18052, 20200	<code>\textnatural</code> . . . . .	19000, 20512
<code>\textlnapprox</code> . . . .	19466, 20709	<code>\textMineSign</code> . . . .	19012, 20517	<code>\textnbackcong</code> . . .	18149, 20241
<code>\textlneq</code> . . . . .	19461, 20707	<code>\textminferior</code> . . . .	17673, 20077	<code>\textnbacksim</code> . . . .	18113, 20225
<code>\textlneqq</code> . . . . .	18232, 20277	<code>\textminus</code> . . . . .	14820, 18018	<code>\textnbacksimeq</code> . .	18460, 20373
<code>\textlnot</code> . . . . .	14888, 15341	<code>\textminusdot</code> . . .	19408, 19409, 20684, 21112	<code>\textnBumpeq</code> . . . .	18158, 20245
<code>\textlnsim</code> . . . . .	18520, 20399	<code>\textminusinferior</code> .	17649, 20065	<code>\textnbumpeq</code> . . . .	18162, 20247
<code>\textlogicalnot</code> . .	14887, 15071, 15340, 19667	<code>\textminussuperior</code>	17617, 20049	<code>\textncirceq</code> . . . . .	18194, 20261
<code>\textLongleftarrow</code>	19259, 20625	<code>\textmoo</code> . . . . .	19351, 20660	<code>\textncong</code> . . . . .	18131, 20233
<code>\textlongleftarrow</code> .	19253, 20622	<code>\textMoon</code> . . . . .	19628, 20771	<code>\textncurlyeqprec</code> .	18500, 20390
<code>\textLongleftrightarrow</code> . .	19263, 20627	<code>\textMountain</code> . . . .	19059, 20535	<code>\textncurlyeqsucc</code> .	18504, 20392
<code>\textlongleftrightarrow</code> . .	19257, 20624	<code>\textmp</code> . . . . .	18020, 20187	<code>\textnDashV</code>	19544, 19545, 20744, 21121
<code>\textlonglegr</code> . . . .	16175, 16176, 16177, 19964, 20881	<code>\textMu</code> . . . . .	3180, 16434	<code>\textnDashv</code>	19537, 19538, 20742, 21119
<code>\textLongmapsfrom</code>	19267, 20629	<code>\textmu</code> .	3176, 3177, 3178, 3181, 3188, 3189, 14904, 15358, 20001	<code>\textndashV</code>	19531, 19532, 20740, 21117
<code>\textLongmapsto</code> . .	19269, 20630	<code>\textmugreek</code> . . . . .	16499, 20002	<code>\textndashv</code>	18376, 18377, 20342, 20994
<code>\textlongmapsto</code> . .	19265, 20628	<code>\textmultimap</code> . . . .	18436, 20362	<code>\textnDoteq</code> . . . . .	18172, 20251
<code>\textLongrightarrow</code>	19261, 20626	<code>\textmultimapboth</code>	19391, 20676	<code>\textndoteq</code> . . . . .	18166, 20249
<code>\textlongrightarrow</code>	19255, 20623	<code>\textmultimapdotbothA</code> .	18432, 20360	<code>\textndownmodels</code> .	19549, 20746
<code>\textlongs</code> . . . . .	15791, 17492	<code>\textmultimapdotbothB</code> .	18434, 20361	<code>\textndownvdash</code> . .	18382, 20344
<code>\textlooparrowleft</code> .	17854, 20120	<code>\textmultiply</code> . . . .	14973, 15072, 15429, 15430, 15431, 19668, 20807, 20808	<code>\textne</code> . . . . .	18205, 20266
<code>\textlooparrowright</code>	17856, 20121	<code>\textMundus</code> . . . . .	19626, 20770	<code>\textNearrow</code> . . . . .	17945, 20154
<code>\textlozenge</code> . . . . .	18824, 20460	<code>\textmusicalnote</code> .	18990, 18991, 18992, 21085	<code>\textnarrow</code> . . . .	17819, 17820, 20104, 20947
<code>\textlptr</code> . . . . .	16331, 16332	<code>\textMVAt</code> . . . . .	15290, 19933	<code>\textneg</code> . .	15071, 19667, 20783
<code>\textlquill</code> . . . . .	17587	<code>\textMVComma</code> . .	15258, 19919	<code>\textneptune</code> . . . .	18926, 18927, 20494, 21066
<code>\textlrcorner</code> . . . . .	18569, 20420	<code>\textMVDivision</code> . .	15264, 19922	<code>\textneq</code> . .	18204, 18206, 20265, 20975
<code>\textltailm</code> .	16135, 16136, 16137, 16138, 20870, 20871	<code>\textMVEight</code> . . . .	15282, 19931	<code>\textneqcirc</code> . . . . .	18190, 20259
<code>\textltailn</code> .	16139, 16140, 16141, 16142, 20872, 20873	<code>\textMVFive</code> . . . . .	15276, 19928	<code>\textneqdot</code> . . . . .	19441, 20697
<code>\textltilde</code> .	16114, 16115, 16116, 20863	<code>\textMVFour</code> . . . . .	15274, 19927	<code>\textneqsim</code> . . . . .	18122, 20229
<code>\textltimes</code> . . . . .	18449, 20368	<code>\textMVMinus</code> . . . .	15260, 19920	<code>\textnequiv</code>	18211, 18212, 18213, 20268, 20977, 20978
<code>\textlyoghlig</code>	16124, 16125, 16126, 20866	<code>\textMVNine</code> . . . . .	15284, 19932	<code>\textneswarrow</code> . . .	19273, 20632
<code>\textmacronbelow</code>	14704, 14716, 14728, 14785, 15176, 15205, 16380	<code>\textMVOne</code> . . . . .	15268, 19924	<code>\textNeutral</code> . . . . .	19039, 20530
<code>\textmale</code> .	18912, 18913, 18914, 18915, 20490, 21060, 21061, 21062	<code>\textMVPeriod</code> . . .	15262, 19921	<code>\textnewtie</code>	15179, 15208, 16376
<code>\textMaleMale</code> . . . .	19033, 20527	<code>\textMVPlus</code> . . . . .	15256, 19918	<code>\textnexists</code> . . . . .	17989, 20174
<code>\textManFace</code> . . . .	19630, 20772	<code>\textMVSeven</code> . . . .	15280, 19930	<code>\textnfallingdoteq</code> .	18177, 20253
<code>\textmanstar</code> . . . . .	19027, 20524	<code>\textMVSix</code> . . . . .	15278, 19929	<code>\textngeq</code> . . . . .	18253, 20287
<code>\textmapsto</code> . . . . .	17848, 20117	<code>\textMVThree</code> . . . .	15272, 19926	<code>\textngeqq</code> . . . . .	18230, 20276
<code>\textmarried</code> . . . . .	19041	<code>\textMVTwo</code> . . . . .	15270, 19925	<code>\textngeqslant</code> . . . .	19451, 20702
<code>\textmd</code> . . . . .	543	<code>\textMVZero</code> . . . . .	15266, 19923	<code>\textngg</code> . . . . .	18242, 20282
<code>\textmeasuredangle</code>	18045, 20198	<code>\textmnabla</code> . . . . .	17996, 20177	<code>\textngtr</code> . . . . .	18248, 20285
<code>\textmercury</code> . . . .	18899, 18900, 20488, 21053	<code>\textmnaira</code> . . . . .	17687	<code>\textngtrapprox</code> . . .	19459, 20706
		<code>\textnapostrophe</code> . . . . .	15681	<code>\textngtrless</code> . . . .	18269, 20294
		<code>\textnapprox</code> . . . .	18135, 18136, 20235, 20969	<code>\textngtrsim</code> . . . . .	18263, 20291
		<code>\textnapproxq</code> . . .	18140, 20237	<code>\textnhateq</code> . . . . .	18200, 20263
				<code>\textni</code> . . . .	18004, 18005, 20181, 20954

<code>\textNibRight</code> . . . . .	19095, 20549	<code>\textnssqsupset</code> . . . . .	18323, 20321	<code>\textobot</code> . . . . .	19368, 19369, 20666, 21109
<code>\textNibSolidRight</code> . . . . .	19097, 20550	<code>\textnssqsupseteq</code> . . . . .	18331, 20325	<code>\textobslash</code> . . . . .	19362, 19363, 19364, 19365, 20665, 21106, 21107, 21108
<code>\textniepsilon</code> . . . . .	16060, 16061, 19952, 20849	<code>\textnSubset</code> . . . . .	18470, 20377	<code>\textObullseye</code> . . . . .	16274, 20906
<code>\textniiota</code> . . . . .	16109, 16110, 19960, 20862	<code>\textnsubset</code> . . . . .	18297, 20308	<code>\textodiv</code> . . . . .	19416, 20687
<code>\textnineinferior</code> . . . . .	17645, 20063	<code>\textnsubseq</code> . . . . .	18305, 20312	<code>\textodot</code> . . . . .	18349, 18350, 20332, 20987
<code>\textninesuperior</code> . . . . .	17613, 20047	<code>\textnsubseqq</code> . . . . .	19522, 20736	<code>\textogonek</code> . . . . .	14752, 15169, 15198, 16357
<code>\textnininferior</code> . . . . .	17675, 20078	<code>\textnsucc</code> . . . . .	18291, 20305	<code>\textogreaterthan</code> . . . . .	19376, 19377, 20669, 21111
<code>\textnipheri</code> . . . . .	16162, 19963	<code>\textnsuccapprox</code> . . . . .	19514, 20732	<code>\textohm</code> . . . . .	17736
<code>\textniupsilon</code> . . . . .	16220, 16221, 19969, 20890	<code>\textnsucccurlyeq</code> . . . . .	18508, 20394	<code>\textoint</code> . . . . .	18086, 20214
<code>\textnLeftarrow</code> . . . . .	17919, 20144	<code>\textnsucceq</code> . . . . .	19490, 20720	<code>\textoinferior</code> . . . . .	17661, 20071
<code>\textnleftarrow</code> . . . . .	17827, 20107	<code>\textnsucceqq</code> . . . . .	19502, 20726	<code>\textoint</code> . . . . .	18083, 18084, 20213, 20964
<code>\textnLeftrightarrow</code> . . . . .	17921, 20145	<code>\textnsuccsim</code> . . . . .	18287, 20303	<code>\textointclockwise</code> . . . . .	18089, 20215
<code>\textnlefrightharpoon</code> . . . . .	17858, 20122	<code>\textnsuperior</code> . . . . .	17625, 20053	<code>\textointctrclockwise</code> . . . . .	18091, 20216
<code>\textnleq</code> . . . . .	18251, 20286	<code>\textnSupset</code> . . . . .	18474, 20379	<code>\textolessthan</code> . . . . .	19373, 19374, 20668, 21110
<code>\textnleqq</code> . . . . .	18226, 20274	<code>\textnupset</code> . . . . .	18299, 20309	<code>\textOmega</code> . . . . .	16407, 16459, 19989
<code>\textnleqslant</code> . . . . .	19447, 20700	<code>\textnupseteq</code> . . . . .	18307, 20313	<code>\textomega</code> . . . . .	3175, 3176, 3189, 16525, 16536, 20014
<code>\textnless</code> . . . . .	18246, 20284	<code>\textnupseteqq</code> . . . . .	19526, 20738	<code>\textOmicron</code> . . . . .	16403, 16440
<code>\textnlessapprox</code> . . . . .	19455, 20704	<code>\textntriangleleft</code> . . . . .	18528, 18529, 20403, 21020	<code>\textomicron</code> . . . . .	3176, 3177, 3180, 3182, 3183, 3184, 3185, 3186, 3187, 16505, 16531
<code>\textnlessgtr</code> . . . . .	18271, 20295	<code>\textntrianglelefteq</code> . . . . .	18535, 20405	<code>\textominus</code> . . . . .	18340, 18341, 20329, 20984
<code>\textnlesssim</code> . . . . .	18261, 20290	<code>\textntriangleright</code> . . . . .	18531, 18532, 20404, 21021	<code>\textoneeighth</code> . . . . .	17789
<code>\textnll</code> . . . . .	18238, 20280	<code>\textntrianglerighteq</code> . . . . .	18538, 18539, 20406	<code>\textonefifth</code> . . . . .	17777
<code>\textnmid</code> . . . . .	18054, 18055, 20201, 20960	<code>\textntriplesim</code> . . . . .	18145, 20239	<code>\textonehalf</code> . . . . .	14920, 15377
<code>\textNoChemicalCleaning</code> . . . . .	19371, 20667	<code>\textntwoheadleftarrow</code> . . . . .	17833, 20110	<code>\textoneinferior</code> . . . . .	17629, 20055
<code>\textnormal</code> . . . . .	538	<code>\textntwoheadrightarrow</code> . . . . .	17840, 20113	<code>\textoneninth</code> . . . . .	17769
<code>\textnotbackslash</code> . . . . .	18591, 20429	<code>\textNu</code> . . . . .	16436	<code>\textonequarter</code> . . . . .	14918, 15375
<code>\textnotin</code> . . . . .	18000, 20179	<code>\textnu</code> . . . . .	3177, 3179, 3183, 3184, 3185, 16501, 20003	<code>\textoneseventh</code> . . . . .	17767
<code>\textnotowner</code> . . . . .	18007, 18008, 20182, 20955	<code>\textnumbersign</code> . . . . .	504, 14760, 15236	<code>\textonesixth</code> . . . . .	17785
<code>\textnotperp</code> . . . . .	19234, 20614	<code>\textnumeralsigngreek</code> . . . . .	16389	<code>\textonesuperior</code> . . . . .	14912, 15369, 19937
<code>\textnotslash</code> . . . . .	18588, 20428	<code>\textnumeralsignlowergreek</code> . . . . .	16392	<code>\textonetenth</code> . . . . .	17771
<code>\textnoway</code> . . . . .	19057, 20534	<code>\textnumero</code> . . . . .	17721	<code>\textonethird</code> . . . . .	17773
<code>\textnparallel</code> . . . . .	18059, 18060, 20203	<code>\textnupmodels</code> . . . . .	19553, 20748	<code>\texttoo</code> . . . . .	19592, 20757
<code>\textnprec</code> . . . . .	18289, 20304	<code>\textnupvdash</code> . . . . .	18387, 18388, 20346, 20997	<code>\textopenbullet</code> . . . . .	18830, 20463
<code>\textnprecapprox</code> . . . . .	19510, 20730	<code>\textnVDash</code> . . . . .	18415, 18416, 20355, 21006	<code>\textopencorner</code> . . . . .	16369, 16370
<code>\textnpreccurlyeq</code> . . . . .	18506, 20393	<code>\textnVdash</code> . . . . .	18412, 18413, 20354, 21005	<code>\textopeno</code> . . . . .	16035, 16036, 16037, 19948, 20843
<code>\textnpreceq</code> . . . . .	19486, 20718	<code>\textnvDash</code> . . . . .	18408, 18409, 18410, 20353, 21003, 21004	<code>\textoplus</code> . . . . .	18337, 18338, 20328, 20983
<code>\textnpreceqq</code> . . . . .	19498, 20724	<code>\textnvdash</code> . . . . .	18405, 18406, 20352, 21002	<code>\textordfeminine</code> . . . . .	14883, 15336
<code>\textnprecsim</code> . . . . .	18283, 20301	<code>\textnVdash</code> . . . . .	18399, 20350	<code>\textordmasculine</code> . . . . .	14914, 15371
<code>\textnqsubseqeq</code> . . . . .	18510, 20395	<code>\textnVdash</code> . . . . .	18408, 18409, 18410, 20353, 21003, 21004		
<code>\textnqsupseteq</code> . . . . .	18512, 20396	<code>\textnVdash</code> . . . . .	18405, 18406, 20352, 21002		
<code>\textnrightarrow</code> . . . . .	17924, 20146	<code>\textnVdash</code> . . . . .	18399, 20350		
<code>\textnrightharpoon</code> . . . . .	17829, 20108	<code>\textnVdash</code> . . . . .	17943, 20153		
<code>\textnrisingdoteq</code> . . . . .	18182, 20255	<code>\textnVdash</code> . . . . .	17817, 20103		
<code>\textnrleg</code> . . . . .	15830, 15832, 20828	<code>\textnVdash</code> . . . . .	19271, 20631		
<code>\textnsim</code> . . . . .	18118, 20227	<code>\textobar</code> . . . . .	19359, 19360, 20664, 21105		
<code>\textnsimeq</code> . . . . .	18126, 20231				
<code>\textnssqsubset</code> . . . . .	18319, 20319				
<code>\textnssqsubseqeq</code> . . . . .	18327, 20323				

<code>\textoslash</code>	18346, 18347, 20331, 20986	<code>\textpitchfork</code>	18482, 20382	<code>\textPUscf</code>	19586, 19587, 21125
<code>\textotimes</code>	18343, 18344, 20330, 20985	<code>\textPlane</code>	19079, 20542	<code>\textPUscK</code>	17168, 17169, 20915
<code>\textovee</code>	18069, 18070, 20207, 20962	<code>\textPlus</code>	19112, 20557	<code>\textPUscm</code>	17171, 17172, 20916
<code>\textowedge</code>	18064, 18065, 20205, 20961	<code>\textPlusCenterOpen</code>	19116, 20559	<code>\textPUscP</code>	17174, 17175, 20917
<code>\textparagraph</code>	510, 14906, 15360, 15361, 20804	<code>\textplusinferior</code>	17647, 20064	<code>\textPUuncrfemale</code>	19045, 19046, 21089
<code>\textparallel</code>	18057, 20202	<code>\textplusminus</code>	14896, 15074, 15349, 19670	<code>\textQoppa</code>	16538
<code>\textparenleft</code>	723, 724, 14768, 15250	<code>\textplusoutline</code>	19110, 20556	<code>\textqoppa</code>	16540
<code>\textparenleftinferior</code>	17653, 20067	<code>\textplussuperior</code>	17615, 20048	<code>\textqplig</code>	16010, 16012, 20834
<code>\textparenleftsuperior</code>	17621, 20051	<code>\textPlusThinCenterOpen</code>	19114, 20558	<code>\textquaternote</code>	18989, 20508
<code>\textparenright</code>	14770, 15252	<code>\textpluto</code>	18929, 18930, 20495, 21067	<code>\textquestiondown</code>	720, 14924, 15381
<code>\textparenrightinferior</code>	17655, 20068	<code>\textppm</code>	15074, 19670, 20786	<code>\textquotedbl</code>	14758, 15234
<code>\textparenrightsuperior</code>	17623, 20052	<code>\textpointer</code>	17970, 20165	<code>\textquotedblleft</code>	14826, 15064, 17545, 19660
<code>\textpartial</code>	17985, 20172	<code>\textprec</code>	18273, 20296	<code>\textquotedblright</code>	14828, 17547
<code>\textPeace</code>	19084, 20544	<code>\textprecapprox</code>	19508, 20729	<code>\textquoteleft</code>	14830, 15066, 17539, 19662
<code>\textPencilRight</code>	19091, 20547	<code>\textpreccurlyeq</code>	18277, 20298	<code>\textquoteright</code>	14832, 17541
<code>\textPencilRightDown</code>	19089, 20546	<code>\textpreceq</code>	19484, 20717	<code>\textquotesingle</code>	15248
<code>\textPencilRightUp</code>	19093, 20548	<code>\textpreceqq</code>	19496, 20723	<code>\textRadioactivity</code>	18872, 18873, 20478, 21046
<code>\textpentagon</code>	19563, 20752	<code>\textprecnapprox</code>	19516, 20733	<code>\textRain</code>	19055, 20533
<code>\textpercent</code>	506, 14764, 15242	<code>\textprecneq</code>	19492, 20721	<code>\textraiseglotstop</code>	16328, 16329
<code>\textperiodcentered</code>	14908, 15075, 15363, 15364, 15365, 19671, 20805, 20806	<code>\textprecneqq</code>	19504, 20727	<code>\texttriangle</code>	18579, 20425
<code>\textperp</code>	19232, 20613	<code>\textprecnsim</code>	18524, 20401	<code>\texttrbrackdbl</code>	19245, 19246, 20619, 21100
<code>\textpertenthousand</code>	17567	<code>\textprecsim</code>	18281, 20300	<code>\texttrcurvearrowdown</code>	19302, 19303, 19304, 20643, 21103, 21104
<code>\textperthousand</code>	14822, 17565	<code>\textprime</code>	17569, 20033	<code>\texttrcurvearrowleft</code>	19306, 20644
<code>\textpeseta</code>	17689	<code>\textprimstress</code>	16339, 16340	<code>\texttrcurvearrowne</code>	19286, 20638
<code>\textpeso</code>	17709	<code>\textprod</code>	18012, 20184	<code>\texttrcurvearrowright</code>	19309, 20645
<code>\textPhi</code>	16452, 19987	<code>\textpropto</code>	18038, 18039, 20195, 20956	<code>\texttrcurvearrowse</code>	19295, 20641
<code>\textphi</code>	3182, 3186, 3187, 16519, 20011	<code>\textPsi</code>	16456, 19988	<code>\textRe</code>	17728, 20087
<code>\textphiinferior</code>	17196, 20024	<code>\textpsi</code>	16523, 20013	<code>\textrecipe</code>	17730
<code>\textPhone</code>	18845, 18846, 20469, 21037	<code>\textPUaolig</code>	19589, 19590, 21126	<code>\textRectangle</code>	19228, 20611
<code>\textPhoneHandset</code>	19075, 20540	<code>\textPUdblig</code>	16008, 16009, 20833	<code>\textRectangleBold</code>	19230, 20612
<code>\textPi</code>	3179, 3181, 16442, 19984	<code>\textPUfemale</code>	18902, 18903, 18904, 18905, 18906, 18907, 21054, 21055, 21056, 21057, 21058	<code>\textRectangleThin</code>	19226, 20610
<code>\textpi</code>	3176, 3184, 3185, 3186, 3187, 16507, 20005	<code>\textPUheng</code>	19580, 19581, 21123	<code>\textrecycle</code>	19004, 19005, 20514, 21086
<code>\textpinferior</code>	17677, 20079	<code>\textPUhookfour</code>	19583, 19584, 21124	<code>\textreferencemark</code>	17581
<code>\textpipe</code>	15851, 15852, 15853, 20829	<code>\textPUnrleg</code>	15831, 15832, 20828	<code>\textregistered</code>	14890, 15343
<code>\textpipevar</code>	15853, 20829	<code>\textPUqplig</code>	16011, 16012, 20834	<code>\textRequest</code>	18609, 20436
<code>\textpisces</code>	18965, 18966, 20507, 21079	<code>\textPUrevscr</code>	17177, 17178, 20918	<code>\textrevapostrophe</code>	16325, 16326
		<code>\textPURhooka</code>	17208, 17209, 20919	<code>\textrevc</code>	17797
		<code>\textPURhooke</code>	17213, 17214, 20920	<code>\textrevE</code>	15806
		<code>\textPURhookepsilon</code>	17217, 17218, 20921	<code>\textreve</code>	16049, 16050, 19950
		<code>\textPURhookopeno</code>	17221, 17222, 20922	<code>\textrevepsilon</code>	16063, 16064, 19953
				<code>\textrevglotstop</code>	16260, 16261, 16262, 19977, 20902
				<code>\textrevscr</code>	17176, 17178, 20918



<code>\textrevyogh</code> . . . . .	15841, 15842	<code>\textring</code> . .	14699, 14711, 14723, 14754, 15159, 15188, 16355	<code>\textsck</code> . . .	17167, 17169, 20915
<code>\textRewind</code> . . . . .	18814, 20456	<code>\textringlow</code>	15172, 15201, 16364	<code>\textsccl</code> . . . . .	16291, 16292
<code>\textRewindToIndex</code> . . . .	18621, 20441	<code>\textriota</code> . . . . .	17741, 20089	<code>\textscm</code> . .	17170, 17172, 20916
<code>\textRHD</code> . . . . .	18805, 20453	<code>\textringdoteq</code> . . .	18180, 20254	<code>\textscn</code> . . .	16147, 16148, 19962
<code>\textrhd</code> . .	18421, 18422, 20357, 21008	<code>\textrm</code> . . . . .	539	<code>\textscelig</code> . . . . .	16154, 16155
<code>\textRho</code> . . . . .	16444	<code>\textrptr</code> . . . . .	16334, 16335	<code>\textscorpio</code>	18953, 18954, 20503, 21075
<code>\textrho</code>	3180, 3181, 3186, 3187, 3188, 3189, 16509, 20006	<code>\textrquill</code> . . . . .	17589	<code>\textscp</code> . . .	17173, 17175, 20917
<code>\textrhoinferior</code> . . .	17194, 20023	<code>\textRrightarrow</code> . .	17953, 20158	<code>\textscr</code> . . .	16189, 16190, 19965
<code>\textrhooka</code>	17207, 17209, 20919	<code>\textrrparenthesis</code> .	19355, 20662	<code>\textscripta</code>	16022, 16023, 16024, 19947, 20838
<code>\textrhooke</code>	17212, 17214, 20920	<code>\textrtaild</code> .	16041, 16042, 16043, 19949, 20845	<code>\textscriptg</code>	16081, 16082, 16083, 19955, 20854
<code>\textrhookepsilon</code>	17216, 17218, 20921	<code>\textrtailn</code> .	16121, 16122, 16123, 20865	<code>\textscriptv</code>	16223, 16224, 19970
<code>\textrhooknearrow</code> .	19277, 20634	<code>\textrtailn</code> .	16144, 16145, 16146, 20874	<code>\textscu</code> . . .	17179, 17180, 20016
<code>\textrhookopeno</code> .	17220, 17222, 20922	<code>\textrtailr</code> .	16178, 16179, 16180, 20882	<code>\textscy</code> . . .	16237, 16238, 19974
<code>\textrhookrepsilon</code> . . . .	16066, 16067, 16068, 19954, 20850	<code>\textrtails</code> .	16194, 16195, 16196, 20885	<code>\textSearrow</code> . . . . .	17947, 20155
<code>\textrhookswa</code> .	16055, 16056, 16057, 20848	<code>\textrtailt</code> .	16212, 16213, 16214, 20888	<code>\textsearrow</code>	17822, 17823, 20105, 20948
<code>\textrhookswarrow</code>	19281, 20636	<code>\textrtailz</code> .	16240, 16241, 16242, 20897	<code>\textSech</code> . . . . .	19622, 20768
<code>\textRrightarrow</code> .	17932, 17933, 20149, 20950	<code>\textrtimes</code> . . . . .	18452, 20369	<code>\textsecond</code> . . . . .	17571, 20034
<code>\textrightarrow</code> . . .	2183, 17805, 17806, 17807, 20099, 20943, 20944	<code>\textSagittarius</code> . .	18956, 18957, 20504, 21076	<code>\textsecstress</code> . . . . .	16342, 16343
<code>\textrightarrowtail</code> .	17846, 20116	<code>\textSampi</code> . . . . .	16562	<code>\textsection</code>	14877, 15328, 15329, 15330, 20802, 20803
<code>\textrightarrowtriangle</code> . .	17977, 20168	<code>\textSampi</code> . . . . .	16565	<code>\textSePa</code> . . . . .	19608, 20762
<code>\textrightbarharpoon</code> . . . .	19340, 20656	<code>\textSampigreek</code> . . . . .	16561	<code>\textservicemark</code> . . . . .	17732
<code>\textRIGHTCIRCLE</code> . . . .	18828, 20462	<code>\textSampigreek</code> . . . . .	16564	<code>\textsetminus</code> . . .	14780, 18028, 20191
<code>\textrightharpoondown</code> . .	17887, 20132	<code>\textSatur</code>	18920, 18921, 20492, 21064	<code>\textsevenighths</code> . . . . .	17795
<code>\textrightharpoonup</code>	17884, 20131	<code>\textsc</code> . . . . .	545	<code>\textseveninferior</code> .	17641, 20061
<code>\textrightleftarrows</code>	17896, 20135	<code>\textsca</code> . . . . .	17159, 17160	<code>\textsevensuperior</code> .	17609, 20045
<code>\textrightleftharpoon</code> . . . .	19313, 20647	<code>\textscb</code> . . . . .	16275, 16276	<code>\textsf</code> . . . . .	540, 13136, 13139
<code>\textrightleftharpoons</code> . . .	17916, 20143	<code>\textscd</code> . . . . .	17162, 20015	<code>\textsharp</code> . . . . .	19002, 20513
<code>\textrightmoon</code> . . .	18897, 20487	<code>\textsce</code> . . . . .	17163, 17164	<code>\textshuffle</code> . . . . .	19393, 20677
<code>\textrightrightarrow</code> . . . .	17908, 20140	<code>\textscf</code> . . .	19585, 19587, 21125	<code>\textSigma</code> .	3178, 16446, 19985
<code>\textrightrightarrow</code> . . . .	19328, 20652	<code>\textscg</code> . . .	16084, 16085, 19956	<code>\textsigma</code> . . .	3175, 3176, 3190, 16513, 20008
<code>\textrightarrow</code> . . . . .	19482, 20716	<code>\textsch</code> . . . . .	16283, 16284	<code>\textsim</code> . .	18108, 18109, 20223, 20967
<code>\textrightarrow</code> . . . . .	17957, 20160	<code>\textschwa</code> .	16052, 16053, 19951	<code>\textsimeq</code> . . . . .	18124, 20230
<code>\textrightthreetimes</code>	18456, 20371	<code>\textschwainferior</code> .	17665, 20073	<code>\textsinferior</code> . . . . .	17679, 20080
<code>\textrinferior</code> . . . . .	17184, 20018	<code>\textsci</code> . . .	16111, 16112, 19961	<code>\textSixFlowerAlternate</code> .	19180, 20590
		<code>\textScissorHollowRight</code> .	19073, 20539	<code>\textSixFlowerAltPetal</code> . .	19190, 20595
		<code>\textScissorRight</code> .	19067, 19068, 19069, 20537, 21093, 21094	<code>\textSixFlowerOpenCenter</code>	19176, 20588
		<code>\textScissorRightBrokenBottom</code> . . . . .	19063, 19064, 19065, 21091, 21092	<code>\textSixFlowerPetalRemoved</code> . . . . .	19173, 20587
		<code>\textScissorRightBrokenTop</code> . . . . .	19071, 20538	<code>\textsixinferior</code> . . .	17639, 20060
		<code>\textscj</code> . . . . .	17165, 17166	<code>\textSixStar</code> . . . . .	19163, 20582
				<code>\textsixsuperior</code> . . .	17607, 20044
				<code>\textSixteenStarLight</code> . . .	19171, 20586

<code>\textsixteenthnote</code>	18996, 20510	<code>\textStigma</code>	16543	<code>\textTape</code>	19077, 20541
<code>\textsl</code>	546	<code>\textstigma</code>	16546	<code>\textTau</code>	16448
<code>\textslash</code>	16014, 16015, 16017, 19946, 20835, 20836	<code>\textStigmagreek</code>	16542	<code>\texttau</code>	3177, 3181, 3183, 3184, 3185, 16515, 20009
<code>\textslashdiv</code>	19569, 20755	<code>\textstigmagreek</code>	16545	<code>\texttaurus</code>	18935, 18936, 20497, 21069
<code>\textsmallin</code>	18002, 20180	<code>\textstmarydbaro</code>	18585, 18586, 21024	<code>\texttctclig</code>	16316, 16317
<code>\textsmallowns</code>	18010, 20183	<code>\textstretchc</code>	16266, 16267, 16268, 16269, 20903, 20904	<code>\textTent</code>	19061, 20536
<code>\textsmile</code>	18573, 20422	<code>\textstretchcvar</code>	16269, 20904	<code>\textteshlig</code>	16312, 16313, 16314, 20910
<code>\textsmiley</code>	18887, 18888, 20483, 21051	<code>\textsubbreve</code>	15143, 15174, 15203, 17304, 17306	<code>\texttherefore</code>	18093, 18094, 20217
<code>\textSnowflake</code>	19194, 20597	<code>\textsubcircum</code>	15140, 15141, 15173, 15202, 17256, 17258, 17272, 17274, 17332, 17334, 17360, 17362, 17416, 17418, 17428, 17430	<code>\textTheta</code>	3189, 16426, 19981
<code>\textSnowflakeChevron</code>	19192, 20596	<code>\textsubbring</code>	15133, 15134, 15172, 15201, 17224, 17226	<code>\texttheta</code>	16491, 19997
<code>\textSnowflakeChevronBold</code>	19196, 20598	<code>\textSubset</code>	18468, 20376	<code>\textthird</code>	17573, 20035
<code>\textSoccerBall</code>	19050, 19051, 21090	<code>\textsubset</code>	18293, 20306	<code>\textThorn</code>	14988, 15446, 19938
<code>\textspadesuitblack</code>	2182, 18968, 18969, 21080	<code>\textsubseteq</code>	18301, 20310	<code>\textthorn</code>	15057, 15515, 15517, 19939
<code>\textspadesuitwhite</code>	18981	<code>\textsubseteqq</code>	19520, 20735	<code>\textthreeeighths</code>	17791
<code>\textSparkle</code>	19198, 20599	<code>\textsubsetneq</code>	18309, 20314	<code>\textthreefifths</code>	17781
<code>\textSparkleBold</code>	19200, 20600	<code>\textsubtilde</code>	15144, 15145, 15175, 15204, 17276, 17278, 17308, 17310, 17424, 17426	<code>\textthreeinferior</code>	17633, 20057
<code>\textssphericalangle</code>	18047, 18048, 18049, 18050, 20199, 20957, 20958, 20959	<code>\textsubumlaut</code>	15131, 15132, 15171, 15200, 17420, 17422	<code>\textthreequarters</code>	14922, 15379
<code>\textsqcap</code>	18333, 20326	<code>\textsucc</code>	18275, 20297	<code>\textthreesuperior</code>	14900, 15353, 19936
<code>\textsqcup</code>	18335, 20327	<code>\textsuccapprox</code>	19512, 20731	<code>\texttie</code>	15178, 15207, 16382
<code>\textsqdoublecap</code>	19420, 19421, 20689, 21113	<code>\textsucccurlyeq</code>	18279, 20299	<code>\texttilde</code>	14697, 14709, 14721, 14756, 15157, 15186, 16359
<code>\textsqdoublecup</code>	19425, 19426, 20691, 21114	<code>\textsucceq</code>	19488, 20719	<code>\texttildelow</code>	15175, 15204, 16368
<code>\textsqsubset</code>	18317, 20318	<code>\textsucceqq</code>	19500, 20725	<code>\texttimes</code>	15072, 19668, 20784
<code>\textsqsubseq</code>	18325, 20322	<code>\textsuccnapprox</code>	19518, 20734	<code>\texttinferior</code>	17681, 20081
<code>\textsqsubseqneq</code>	18514, 18515, 20397, 21018	<code>\textsuccneq</code>	19494, 20722	<code>\texttop</code>	18379, 18380, 20343, 20995
<code>\textsqsupset</code>	18321, 20320	<code>\textsuccneqq</code>	19506, 20728	<code>\texttrademark</code>	14836, 17734
<code>\textsqsupseteq</code>	18329, 20324	<code>\textsuccnsim</code>	18526, 20402	<code>\texttriangle</code>	17994, 20176
<code>\textsqsupsetneq</code>	18517, 18518, 20398, 21019	<code>\textsuccsim</code>	18285, 20302	<code>\texttriangleleft</code>	18202, 20264
<code>\textSquareCastShadowBottom-Right</code>	19219, 20607	<code>\textsum</code>	18016, 20186	<code>\texttriangleright</code>	18817, 20457
<code>\textSquareCastShadowTopRight</code>	19222, 20608	<code>\textsun</code>	18892, 18893, 20485, 21052	<code>\texttripleright</code>	18803, 20452
<code>\textSquaredots</code>	18101, 20220	<code>\textSunCload</code>	19053, 20532	<code>\texttriplesim</code>	18142, 18143, 20238, 20970
<code>\textSquareShadowBottomRight</code>	19213, 20605	<code>\textSunshineOpenCircled</code>	19188, 20594	<code>\textTslash</code>	15741
<code>\textSquareTopRight</code>	19216, 20606	<code>\textSupset</code>	18472, 20378	<code>\texttslash</code>	15743
<code>\textsslash</code>	19560, 19561, 20751, 21122	<code>\textsupset</code>	18295, 20307	<code>\texttslig</code>	16310, 16311
<code>\textstar</code>	18442, 20365	<code>\textsupseteq</code>	18303, 20311	<code>\texttt</code>	541
<code>\textsterling</code>	14869, 15317, 15318, 15319, 20799, 20800	<code>\textsupseteqq</code>	19524, 20737	<code>\textTumbler</code>	18583, 20427
		<code>\textsupsetneq</code>	18311, 20315	<code>\textturna</code>	16018, 16019, 16020, 20837
		<code>\textsurd</code>	18036, 20194	<code>\textturnh</code>	16093, 16094, 16095, 16096, 20856, 20857
		<code>\textSwarrow</code>	17949, 20156	<code>\textturnk</code>	16288, 16289, 16290, 20908
		<code>\textswarrow</code>	17825, 20106	<code>\textturnlonglegr</code>	16168, 16169, 16170, 20879
		<code>\TextSymbolUnavailable</code>	14730, 14731, 14733	<code>\textturnm</code>	16127, 16128, 16129, 16130, 20867, 20868

<code>\textturnmrlg</code> . . .	16132, 16133, 16134, 20869	<code>\textupdownharpoonleftright</code> . . .	19319, 20649	<code>\textwedge</code> . . . . .	18062, 20204
<code>\textturnr</code> . . .	16163, 16164, 16165, 16166, 20877, 20878	<code>\textupdownharpoonrightleft</code> . . .	19316, 20648	<code>\textwedgedot</code> . . . .	19238, 20616
<code>\textturnrrtail</code> . . .	16172, 16173, 16174, 20880	<code>\textupdownharpoons</code> . . .	19346, 20658	<code>\textWheelchair</code> . . .	19007, 20515
<code>\textturnsck</code> . . . . .	16290, 20908	<code>\textupharpoonleft</code> . . .	17881, 20130	<code>\textWomanFace</code> . . .	19632, 19633, 20773, 21129
<code>\textturnscripta</code> . .	16026, 16027, 16028, 16029, 20839, 20840	<code>\textupharpoonright</code> . . . .	17878, 20129	<code>\textwon</code> . . . . .	17691
<code>\textturnt</code> . . .	16208, 16209, 16210, 20887	<code>\textupplus</code> . . . . .	19395, 20678	<code>\textwp</code> . . . . .	17726, 20086
<code>\textturnv</code> . . .	16225, 16226, 16227, 16228, 19971, 20891, 20892	<code>\textupmodels</code> . . . .	19551, 20747	<code>\textwr</code> . . . . .	18115, 18116, 20226, 20968
<code>\textturnw</code> . . .	16229, 16230, 16231, 16232, 19972, 20893, 20894	<code>\textUpsilon</code> . . . . .	16405, 16450, 16464, 19986	<code>\textWritingHand</code> . . .	19086, 19087, 20545, 21096
<code>\textturny</code> . . .	16233, 16234, 16235, 16236, 19973, 20895, 20896	<code>\textupsilon</code> . . . . .	3176, 3184, 3185, 3187, 16517, 16529, 16534, 20010	<code>\textwynn</code> . . . . .	15848, 15849
<code>\textTwelveStar</code> . . .	19169, 20585	<code>\textupsilonacute</code> . . .	16475, 16533	<code>\textXi</code> . . . . .	16438, 19983
<code>\texttwofifths</code> . . . . .	17779	<code>\textupspoon</code> . . . . .	19555, 20749	<code>\textxi</code> . . . . .	3175, 16503, 20004
<code>\texttwoheaddownarrow</code> . .	17842, 20114	<code>\textupstep</code> . . . . .	19574, 19575	<code>\textxinferior</code> . . . .	17663, 20072
<code>\texttwoheadleftarrow</code> . . .	17831, 20109	<code>\textupparrows</code> . . .	17906, 20139	<code>\textXSolid</code> . . . . .	19104, 20553
<code>\texttwoheadrightarrow</code> . .	17838, 20112	<code>\textuppharpoons</code> . . .	19325, 20651	<code>\textXSolidBold</code> . . .	19106, 20554
<code>\texttwoheaduparrow</code> . . .	17835, 20111	<code>\texturanus</code> . . . . .	18923, 18924, 20493, 21065	<code>\textXSolidBrush</code> . . .	19108, 20555
<code>\texttwoinferior</code> . . .	17631, 20056	<code>\texturcorner</code> . . . . .	18565, 20418	<code>\textxswup</code> . . . . .	19015, 21088
<code>\texttwonotes</code> . . . .	18994, 20509	<code>\textValve</code> . . . . .	19389, 20675	<code>\textyen</code> . . . . .	14873, 15323
<code>\texttwosuperior</code> . . .	14898, 15351, 19935	<code>\textvarhexagon</code> . . .	19565, 20753	<code>\textYinYang</code> . . . .	18879, 18880, 18881, 18882, 20481, 21047, 21048, 21049
<code>\texttwothirds</code> . . . . .	17775	<code>\textvarobar</code> . . . . .	19360, 21105	<code>\textyogh</code> . . . . .	16247, 16248, 19975
<code>\textudots</code> . . . . .	18545, 20409	<code>\textvarsigma</code> . . . . .	3180, 3186, 3187, 16511, 20007	<code>\textzeroinferior</code> . .	17627, 20054
<code>\textuinferior</code> . . . .	17186, 20019	<code>\textVDash</code> . . . . .	18402, 18403, 20351, 21001	<code>\textzerosuperior</code> . .	17599, 20040
<code>\textulcorner</code> . . . . .	18563, 20417	<code>\textVdash</code> . . . . .	18394, 18395, 20348, 21000	<code>\textzerohirds</code> . . . . .	17799
<code>\textuncrfemale</code> . . .	19044, 19046, 21089	<code>\textvDash</code> . . . . .	18390, 18391, 18392, 20347, 20998, 20999	<code>\textZeta</code> . . . . .	16422
<code>\textunderscore</code> . . .	509, 4725, 4726, 4728, 14784, 15296, 15297, 20797	<code>\textvdash</code> . . . . .	18370, 18371, 20340, 20992	<code>\textzeta</code> . . . . .	16487, 19995
<code>\textunlhd</code> . . . . .	18424, 18425, 18426, 20358, 21009, 21010	<code>\textvdotdot</code> . . . . .	18099, 20219	<code>\textZwdr</code> . . . . .	19624, 20769
<code>\textunrhd</code> . . . . .	18428, 18429, 18430, 20359, 21011, 21012	<code>\textvdots</code> . . . . .	18541, 20407	<code>\textZwPa</code> . . . . .	19610, 20763
<code>\textup</code> . . . . .	547	<code>\textvee</code> . . . . .	18067, 20206	<code>\TH</code> . . . . .	14986, 14987, 15444, 15445
<code>\textUParrow</code> . . . .	18792, 18793, 20449, 21030	<code>\textveebar</code> . . . . .	18438, 20363	<code>\th</code> . . . . .	15055, 15056, 15515, 15516
<code>\textUparrow</code> . . . .	17929, 20148	<code>\textveedot</code> . . . . .	19236, 20615	<code>\thaa</code> . . . . .	19829
<code>\textuparrow</code> . . . . .	17803, 20098	<code>\textveedoublebar</code> . .	19437, 20695	<code>\thanks</code> . . . . .	6426
<code>\textUpdownarrow</code> . .	17941, 20152	<code>\textvertline</code> . . . . .	15307, 20798	<code>\thebookmark@seq@number</code> . . .	14281
<code>\textupdownarrow</code> . .	2185, 17815, 20102	<code>\textvibyi</code> . . . . .	16203, 16204	<code>\theequation</code> . . . .	6898, 7179, 7210, 7238, 7274
<code>\textupdownarrows</code> . .	17899, 20136	<code>\textvibyy</code> . . . . .	16322, 16323	<code>\thefootnote</code> . . . . .	7433, 7638
		<code>\textVier</code> . . . . .	19618, 20766	<code>\theHchapter</code> . . . .	6836, 6837, 6838, 6839, 6979
		<code>\textvinferior</code> . . . .	17188, 20020	<code>\theHenumi</code> . . . . .	6855
		<code>\textViPa</code> . . . . .	19604, 20760	<code>\theHenumii</code> . . . . .	6856
		<code>\textvirgo</code> . . . . .	18947, 18948, 20501, 21073	<code>\theHenumiii</code> . . . . .	6857
		<code>\textvisiblespace</code> . . . . .	18625	<code>\theHenumiv</code> . . . . .	6858
		<code>\textVvdash</code> . . . . .	18397, 20349	<code>\theHequation</code> . . . . .	6825, 6827, 6899, 7180, 7211, 7239, 7247, 7274, 7278
		<code>\textwasylozenge</code> . .	18555, 20414	<code>\theHfigure</code> . . . . .	6833, 6837
				<code>\theHHfootnote</code> . . . .	6859, 6862
				<code>\theHHmpfootnote</code> . . . . .	6862
				<code>\theHItem</code> . . . . .	6849, 6855, 6856, 6857, 6858



<code>\theHmpfootnote</code> . . . . .	6860	<code>\tl</code> . . . . .	5003, 5016	<code>\ttl@Hy@refstepcounter</code> . . .	7097
<code>\theHpage</code> . . . . .	7993	<code>\TMP@EnsureCode</code> . . . . .		<code>\ttl@Hy@saveanchor</code> . . . . .	7076, 7100
<code>\theHparagraph</code> . . . . .	6843, 6844	. . . . .	4579, 4586, 4587, 4588,	<code>\ttl@Hy@SavedCurrentHref</code> . . . . .	7080, 7091
<code>\theHparentequation</code> . . . . .	7273, 7278		4589, 4590, 4591, 4592,	<code>\ttl@Hy@steplink</code> . . . . .	7074
<code>\theHpart</code> . . . . .	6829		4593, 4594, 4595, 4596,	<code>\ttl@savewrite</code> . . . . .	7087, 7089
<code>\theHsection</code> . . . . .	6825, 6832, 6839,		4597, 4598, 4599, 4600,	<code>\Tumbler</code> . . . . .	18582, 20427
	6841, 6845, 6846, 6977		4601, 4602, 4603, 4604,	<code>\turnv</code> . . . . .	19971
<code>\theHsubequation</code> . . . . .	7247		4605, 4606, 4607, 4608,	<code>\turnw</code> . . . . .	19972
<code>\theHsubparagraph</code> . . . . .	6844		4609, 4610, 4611, 4612	<code>\turny</code> . . . . .	19973
<code>\theHsubsection</code> . . . . .	6841, 6842	<code>\tocappendix</code> . . . . .	1293	<code>\tw@</code> . . . . .	4467, 5045, 5051, 5052,
<code>\theHsubsubsection</code> . . . . .	6842, 6843	<code>\tocchapter</code> . . . . .	1292		5053, 5058, 5064, 5065,
<code>\theHtable</code> . . . . .	6834, 6838	<code>\toclevel@chapter</code> . . . . .	3377		5066, 14600, 14605, 14668,
<code>\theHtheorem</code> . . . . .	6845	<code>\toclevel@figure</code> . . . . .	3383		14673
<code>\theHthm</code> . . . . .	6846	<code>\toclevel@paragraph</code> . . . . .	3381	<code>\TwelveStar</code> . . . . .	19168, 20585
<code>\theHy@tempcnt</code> . . . . .	4841, 4849, 4856	<code>\toclevel@part</code> . . . . .	3373, 3375	<code>\twoheaddownarrow</code> . . . . .	17841, 20114
<code>\thempfn</code> . . . . .	7422, 7525, 7618, 7631	<code>\toclevel@section</code> . . . . .	3378	<code>\twoheadleftarrow</code> . . . . .	17830, 20109
<code>\theoremautorefname</code> . . . . .		<code>\toclevel@subparagraph</code> . . . . .	3382	<code>\twoheadrightarrow</code> . . . . .	17837, 20112
. . . . .	2969, 2987, 3005, 3023,	<code>\toclevel@subsection</code> . . . . .	3379	<code>\twoheaduparrow</code> . . . . .	17834, 20111
	3041, 3059, 3077, 3115,	<code>\toclevel@subsubsection</code> . . . . .	3380	<code>\twoinferior</code> . . . . .	20056
	3135, 3153, 3171, 3189,	<code>\toclevel@table</code> . . . . .	3384	<code>\twonotes</code> . . . . .	18993, 20509
	3207, 3225, 3243, 8703	<code>\tocparagraph</code> . . . . .	1297	<code>\twosuperior</code> . . . . .	19935
<code>\thepage</code> . . . . .	2202, 4961, 6478, 6504,	<code>\tocpart</code> . . . . .	1291	<code>\TX@endtabularx</code> . . . . .	7496, 7503, 7509
	6519, 7888, 7989, 8036,	<code>\tocsection</code> . . . . .	1294	<code>\typeout</code> . . . . .	5, 6, 7, 19, 26, 27,
	8116, 8164, 8317, 8334,	<code>\tocsubsection</code> . . . . .	1295		36, 131, 155, 158, 159, 160,
	8347, 8351, 8363, 8448,	<code>\tocsubsubsection</code> . . . . .	1296		5246, 21135
	8468, 8485, 8617	<code>\toks</code> . . . . .	8456, 8457, 8459, 14600,		
<code>\therefore</code> . . . . .	18092, 20217		14605, 14668, 14673		
<code>\Theta</code> . . . . .	16425, 19981	<code>\toks@</code> . . . . .	171, 208, 929, 952, 955,		
<code>\theta</code> . . . . .	16490, 19997		957, 1465, 1466, 3255, 3256,		
<code>\third</code> . . . . .	17572, 20035		3258, 3840, 3844, 3845,		
<code>\This@name</code> . . . . .	6895, 6896		3853, 4288, 4289, 4475,		
<code>\thispdfpagelabel</code> . . . . .	6483		4477, 5095, 5100, 5106,		
<code>\ThisShouldNotHappen</code> . . . . .	13859		5112, 5113, 5116, 5216,		
<code>\thm@headfont</code> . . . . .	7295, 7323		5221, 5225, 5229, 6599,		
<code>\thm@headpunct</code> . . . . .	7297, 7325,		6601, 6687, 6689, 6748,		
	7356		6760, 7087, 7092, 7503,		
<code>\thm@headsep</code> . . . . .	7298, 7326, 7357		7506, 8195, 8196, 8421,		
<code>\thm@indent</code> . . . . .	7294, 7322		8426, 8428, 8431, 14599,		
<code>\thm@notefont</code> . . . . .	7296, 7324, 7355		14605, 14667, 14673		
<code>\thm@postskip</code> . . . . .	7302, 7330, 7361	<code>\top</code> . . . . .	18378, 20343	<code>\U</code> . . . . .	15107, 16605, 16628, 16695,
<code>\thm@preskip</code> . . . . .	7301, 7329, 7360	<code>\topmargin</code> . . . . .	8049		16775, 16976, 16978, 17000,
<code>\thm@space@setup</code> . . . . .	7299, 7327,	<code>\triangle</code> . . . . .	17993, 20176		17002, 17012, 17014
	7358	<code>\triangleeq</code> . . . . .	18201, 20264	<code>\u</code> . . . . .	15105, 15163, 15192, 15222,
<code>\thm@swap</code> . . . . .	7293, 7321, 7354	<code>\triangleleft</code> . . . . .	18816, 20457		15525, 15527, 15567, 15569,
<code>\thmheadnl</code> . . . . .	7292, 7320, 7353	<code>\trianglelefteq</code> . . . . .	18426, 21010		15587, 15589, 15620, 15622,
<code>\Thorn</code> . . . . .	14986, 15444, 19938	<code>\triangleright</code> . . . . .	18802, 20452		15623, 15693, 15695, 15753,
<code>\thorn</code> . . . . .	15055, 15515, 19939	<code>\trianglerighteq</code> . . . . .	18430, 21012		15755
<code>\threeinferior</code> . . . . .	20057	<code>\triplesim</code> . . . . .	18141, 20238	<code>\ubar</code> . . . . .	16218, 20889
<code>\threesuperior</code> . . . . .	19936	<code>\trivlist</code> . . . . .	7291, 7319, 7352	<code>\udesc</code> . . . . .	16096, 20857
<code>\tildel</code> . . . . .	16116, 20863	<code>\tryhyper@link</code> . . . . .	4935, 4937	<code>\udots</code> . . . . .	18544, 20409
<code>\times</code> . . . . .	20784	<code>\ttfamily</code> . . . . .	551	<code>\UHORN</code> . . . . .	19685, 19796, 19797,
<code>\tinferior</code> . . . . .	20081	<code>\ttl@b</code> . . . . .	7098, 7103		19798, 19799, 19800
<code>\tiny</code> . . . . .	569	<code>\ttl@Hy@PatchSaveWrite</code> . . . . .	7081,	<code>\uhorn</code> . . . . .	3157, 3164, 19679, 19736,
<code>\title</code> . . . . .	6380, 6382		7085		19737, 19738, 19739, 19740
				<code>\uinferior</code> . . . . .	20019
				<code>\ulcorner</code> . . . . .	18562, 20417
				<code>\UnDef</code> . . . . .	12314
				<code>\undefined</code> . . . . .	232
				<code>\unhbox</code> . . . . .	7399, 11299, 13550,
					13672, 13704, 13728, 13756,
					13785
				<code>\unhcopy</code> . . . . .	13652
				<code>\unichar</code> . . . . .	1927
				<code>\Unicode</code> . . . . .	1005

<code>\unlhd</code>	18423, 20358
<code>\unrestored@protected@xdef</code>	7422, 7433, 7580, 7587, 7631, 7638
<code>\unrhd</code>	18427, 20359
<code>\unskip</code>	7285, 7289, 7316, 7349, 7410
<code>\UParrow</code>	18791, 20449
<code>\Uparrow</code>	17928, 20148
<code>\uparrow</code>	20098
<code>\Updownarrow</code>	17940, 20152
<code>\updownarrow</code>	17814, 20102
<code>\updownarrows</code>	17898, 20136
<code>\updownharpoonleftright</code>	19318, 20649
<code>\updownharpoonrightleft</code>	19315, 20648
<code>\updownharpoons</code>	19345, 20658
<code>\upharpoonleft</code>	17880, 20130
<code>\upharpoonright</code>	17877, 20129
<code>\uplus</code>	19394, 20678
<code>\upmodels</code>	19550, 20747
<code>\upshape</code>	557, 7296, 7324, 7355
<code>\Upsilon</code>	16449, 19986
<code>\upsilon</code>	16516, 20010
<code>\upspoon</code>	19554, 20749
<code>\upuparrows</code>	17905, 20139
<code>\upupharpoons</code>	19324, 20651
<code>\upvdash</code>	18385, 20996
<code>\Uranus</code>	18924, 21065
<code>\uranus</code>	18922, 20493
<code>\urcorner</code>	18564, 20418
<code>\Url</code>	4905
<code>\url</code>	4904, 4908
<code>\url@</code>	4908, 4909
<code>\use</code>	475, 476, 4994
<code>\use@file</code>	5177, 5179, 5186
<code>\usefont</code>	536
<code>\UseHook</code>	7053, 7069
<code>\utf@viii@undeferr</code>	496
<code>\UTFViii@four@octets</code>	1923, 1932
<code>\UTFViii@loop</code>	1911
<code>\UTFViii@three@octets</code>	1922
<code>\UTFViii@tmp</code>	1910
<code>\UTFViii@two@octets</code>	1921

## V

$\backslash v$  .. 14700, 14712, 14724, 14846,  
14851, 14859, 14861, 15118,  
15160, 15189, 15221, 15545,  
15547, 15549, 15551, 15579,  
15581, 15657, 15659, 15677,  
15679, 15713, 15715, 15729,  
15731, 15737, 15739, 15787,  
15789, 15863, 15865, 15867.

	15869, 15870, 15872, 15874, 15876, 15878, 15887, 15889, 15891, 15893, 15899, 15900, 15978, 15980	
<code>\V@@@footnotetext</code>	.....	7567
<code>\V@ffootnotetext</code>	.....	7552
<code>\value</code>	.. 6502, 6965, 6966, 6968, 6969, 7835, 7861, 8053, 8220, 9970	
<code>\Valve</code>	.....	19388, 20675
<code>\vara</code>	.....	16024, 20838
<code>\varangle</code>	.....	18048, 20957
<code>\varbigcirc</code>	.....	18836, 21036
<code>\varcurlyvee</code>	.....	18463, 21014
<code>\varcurlywedge</code>	...	18466, 21015
<code>\VarFlag</code>	.....	19010, 21087
<code>\varg</code>	.....	16083, 20854
<code>\varhexagon</code>	.....	19564, 20753
<code>\vari</code>	.....	16110, 20862
<code>\varint</code>	.....	18077, 20963
<code>\varnothing</code>	17990,	17992, 20953
<code>\varoast</code>	.....	18357, 20990
<code>\varobslash</code>	.....	19365, 21108
<code>\varocircle</code>	.....	18354, 20989
<code>\varodot</code>	.....	18350, 20987
<code>\varogreaterthan</code>	..	19377, 21111
<code>\varoint</code>	.....	18084, 20964
<code>\varolessthan</code>	.....	19374, 21110
<code>\varomega</code>	.....	16160, 20876
<code>\varominus</code>	.....	18341, 20984
<code>\varopeno</code>	.....	16037, 20843
<code>\varoplus</code>	.....	18338, 20983
<code>\varoslash</code>	.....	18347, 20986
<code>\varotimes</code>	.....	18344, 20985
<code>\varovee</code>	.....	18070, 20962
<code>\varowedge</code>	.....	18065, 20961
<code>\varparallel</code>	.....	19561, 21122
<code>\varparallelinv</code>	....	18628, 21025
<code>\varprop</code>	.....	18039, 20956
<code>\varsigma</code>	.....	20007
<code>\varsqsubsetneq</code>	...	18515, 21018
<code>\varsqsupsetneq</code>	...	18518, 21019
<code>\vartimes</code>	.....	15430, 20807
<code>\vavyod</code>	.....	17153
<code>\vbox</code>	.. 6151, 6152, 6153, 6154, 6451, 8047	
<code>\VDash</code>	.....	18401, 20351
<code>\Vdash</code>	.....	18393, 20348
<code>\vDash</code>	.....	18389, 20347
<code>\vdash</code>	.....	18369, 20340
<code>\vdotdot</code>	.....	18098, 20219
<code>\vdots</code>	.....	18540, 20407
<code>\vee</code>	.....	18066, 20206
<code>\veebar</code>	.....	18437, 20363

\weedot	19235, 20615
\veedoublebar	19436, 20695
\Venus	18906, 21057
\venus	18905, 21056
\vfill	6151, 6152, 6153, 6154
\VHF	18143, 20970
\Vier	19617, 20766
\vinferior	20020
\ViPa	19603, 20760
\Virgo	18948, 21073
\virgo	18946, 20501
\vod	16087, 16089, 20855
\voffset	8048
\voicedh	16100, 20859
\vpageref	8537, 8545, 8554, 8562
\vphantom	572
\Vr@f	8540
\vr@f	8549
\vref@pagenum	7112
\Vref@star	8533
\vref@star	8558
\vskip	2291, 2292
\vss	8062
\vtex@trans@special	10744, 10746, 10749, 10753, 10757, 10761, 10763, 10765, 10769, 10775, 10776, 10779
\VTeXInitMediaSize	10423, 10440
\VTeXOS	10808, 10809, 10810, 10812
\VTeXversion	6654, 6657, 6660, 10800, 10804
\Vydash	18396, 20349

## W

\wasylozenge	18554, 20414
\waw	19877
\wawhamza	19815
\wd	9560, 9576, 9597, 9614, 9637, 9654, 13499
\wedge	18061, 20204
\wedgedot	19237, 20616
\Wheelchair	19006, 20515
\with	15246, 20796
\WomanFace	19631, 20773
\Womanface	19633, 21129
\wp	17725, 20086
\wr	18114, 20226
\wreath	18116, 20968
\write	4796, 6350, 6352, 6777, 6785, 7819, 7834, 7850, 7860, 7879, 7909, 13035, 13038, 13066, 13081, 14465, 14547

\WriteBookmarks . . 4226, 4359,  
4548, 4570, 14215, 14458,  
14491, 14492, 14534, 14540  
\WritingHand . . . . 19085, 20545  
\Writinghand . . . . 19087, 21096  
\wwwbrowser . . 9514, 9599, 9616

## X

\x . . . . . 21, 25, 92,  
98, 168, 169, 176, 178, 206,  
209, 210, 211, 212, 213, 214,  
215, 216, 217, 218, 219, 220,  
221, 222, 223, 224, 225, 226,  
227, 228, 271, 276, 277, 905,  
911, 1392, 1420, 1863, 1865,  
2286, 2296, 2305, 2315,  
2385, 2386, 2391, 2407,  
3266, 3269, 3273, 3286,  
3394, 3395, 3398, 3399,  
3400, 3404, 3407, 3413,  
3843, 3849, 3852, 3855,  
4125, 4126, 4131, 4132,  
4242, 4243, 4244, 4247,  
4250, 4253, 4286, 4287,  
4289, 4290, 4476, 4479,  
4795, 4801, 5192, 5193,  
5194, 5206, 5217, 5218,  
5219, 5220, 5223, 5224,  
5269, 5272, 5352, 5366,  
5391, 5395, 5398, 5408,  
5943, 5947, 6402, 6403,  
6408, 7088, 7095, 7127,  
7136, 7138, 7150, 8123,  
8125, 8428, 8429, 8458,  
8461, 8497, 8498, 8499,  
8501, 8503, 8926, 8935,  
9789, 9790, 9791, 9793,  
9794, 9795, 9797, 9798,  
9799, 9801, 9802, 9803,  
9805, 9806, 9807, 9809,  
9810, 9811, 9813, 9814,  
9815, 9817, 9818, 9820,  
9826, 9835, 10922, 10927,  
10931, 11303, 11306, 11312,

11317, 11465, 11466, 12616,  
12636, 13217, 13237, 13573,  
13593, 14604, 14606, 14672,  
14674

\XBox . . . . . 18855, 21040  
\XeTeXLink@font . . 5031, 5034  
\XeTeXLink@space . 5032, 5047,  
5061  
\XeTeXLinkBox . . . 5038, 5070  
\XeTeXLinkMargin . 5028, 5029,  
5044, 5046, 5057, 5059  
\XeTeXrevision . . . . . 4535  
\XeTeXversion . . . . . 4535  
\Xi . . . . . 16437, 19983  
\xi . . . . . 16502, 20004  
\xinferior . . . . . 20072  
\XR@CdURL . . . . . 2219, 2220  
\XR@addURL . . . . . 2219  
\XR@ext 2493, 2494, 5175, 5178,  
6652, 8766, 9410, 9513,  
9777, 10304, 11659, 11757,  
11824, 12031, 12202  
\XR@URL . . . . . 2224  
\XSolid . . . . . 19103, 20553  
\XSolidBold . . . . 19105, 20554  
\XSolidBrush . . . . 19107, 20555  
\xspace . . . . . 632, 634  
\xspaceaddexceptions 4198, 4207

## Y

\y . . . . . 276, 278, 285,  
291, 2387, 2392, 2397, 3400,  
3401, 3402, 3403, 4245,  
4248, 4251, 4254, 4256,  
4262, 5195, 5196, 5197,  
5198, 5206, 6403, 6411,  
7123, 7125, 7126, 7129,  
7136, 11308, 11309, 11310,  
11311  
\ya . . . . . 19881  
\yahamza . . . . . 19819  
\YingYang . . . . . 18881, 21048  
\Yingyang . . . . . 18882, 21049  
\YinYang . . . . . 18878, 20481

\Yinyang . . . . . 18880,  
\yogh . . . . . 16247,

## Z

\z 277, 278, 286, 292, 2389,  
2391, 5198, 5206  
\z@ . . . . 1121, 1161, 1174,  
1205, 1213, 1286,  
1554, 1560, 1633,  
1645, 1649, 2238,  
2277, 2300, 2578,  
2674, 2758, 3406,  
4127, 4544, 5041,  
5051, 5052, 5055,  
5064, 5065, 5073,  
6655, 6658, 7385,  
7565, 9341, 9345,  
9354, 9361, 9364,  
9371, 10286, 10287,  
10293, 10799, 10823,  
11346, 11360, 11731,  
11737, 11738, 12539,  
13207, 13503, 13563,  
14014, 14019, 14042,  
14077, 14111, 14117,  
14147, 14152, 14183,  
14292, 14293, 14294,  
14296, 14297, 14298,  
14300, 14517, 14640  
\z@skip . . . . .  
\za . . . . .  
\zay . . . . .  
\zeroinferior . . . . .  
\zerosuperior . . . . .  
\zeta . . . . . 16486,  
\zref@extractdefault . . . .  
\zref@ifrefcontainsprop . .  
\zref@ifrefundefined . . . .  
\zref@labelbyprops . . . .  
\zref@refused . . . . .  
\Zwdr . . . . . 19623,  
\ZWJ . . . . .  
\ZwPa . . . . . 19609,