

Hypertext marks in L^AT_EX

Sebastian Rahtz (deceased)
Heiko Oberdiek (inactive)
The L^AT_EX Project
<https://github.com/latex3/hyperref/issues>

2025-06-21 v7.01n

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_EX 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^AT_EX”

2 Contents

1	Documentation overview for hyperref	1
2	Contents	2
3	File hycheck.tex	7
4	Package options and setup	11
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	16
5	Common help macros	17
5.1	Macros for recursions	18
5.2	Babel's protection of shorthand characters	18
5.3	Coordinate transformations	18
6	Dealing with PDF strings	18
6.1	Description of PDF strings	19
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	33
6.3.4	PD1 encoding	34
6.3.5	PU encoding	34
6.4	Additional user commands	35
6.4.1	<code>\texorpdfstring</code>	35
6.4.2	Hooks for <code>\pdfstringdef</code>	35
6.5	Help macros for expansion	36
6.5.1	<code>\ignorespaces</code>	36
6.5.2	Babel languages	36
6.5.3	CJK patch	37
6.5.4	CJK bookmarks	37
6.5.5	CJK unicode	39
6.5.6	<code>\@inmathwarn-Patch</code>	44
6.5.7	Unexpandable spaces	45
6.5.8	Marker for commands	45
6.5.9	<code>\hspace fix</code>	45
6.5.10	Fix for AMS classes	46
6.5.11	Reference commands	46
6.5.12	Redefining the defining commands	48
6.5.13	<code>\ifnextchar</code>	50
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	51
6.6.3	Remove grouping braces	51
6.6.4	Catcode check	52
6.6.5	Check for wrong glyphs	56
6.6.6	Replacing tokens	57
6.6.7	Support for package <code>xspace</code>	58
6.6.8	Converting to Unicode	59
6.6.9	Support for UTF-8 input encoding	61
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>	66
7	Support of other packages	68
7.1	Package subfigure	68
7.2	Package <code>xr</code> and <code>xr-hyper</code>	69
8	Help macros for links	69
9	Options	71
9.1	Help macros	71
9.2	Defining the options	74
10	Options for different drivers	79
11	Options to add extra features	83
12	Language options	85
13	Options to change appearance of links	94
14	Bookmarking	95
15	PDF-specific options	97
15.1	Package <code>xspace</code> support	111
15.2	Option <code>draft</code>	112
15.3	PDF/A	112
15.4	Patch for babel's <code>\texttilde</code>	114
15.4.1	Driver loading	115
15.4.2	Bookmarks	119
16	User hypertext macros	122
16.1	Link box support for XeTeX	129
17	Underlying basic hypertext macros	130
18	Option ‘<code>destlabel</code>’	134

19 Forms creation	136
19.1 Field flags	137
19.1.1 Declarations of field flags	139
19.1.2 Set submit flags	141
19.1.3 Set annot flags in fields	141
19.1.4 Pushbutton field	142
19.1.5 Check box field	142
19.1.6 Radio button field	143
19.1.7 Text fields	143
19.1.8 Choice fields	144
19.2 Choice field	144
19.3 Forms	146
20 Setup	154
21 Low-level utility macros	155
22 Localized nullifying of package	156
23 Package nohyperref	157
24 The Mangling Of Aux and Toc Files	157
25 Title strings	159
26 Page numbers	160
27 Every page	160
27.1 PDF /PageLabels	161
27.1.1 pdfTeX and VTeX	165
27.1.2 xetex	166
27.1.3 pdfmarkbase, dvipdfm, xetex	167
28 Automated L^AT_EX hypertext cross-references	169
29 Package ifthen support	176
30 Package varwidth support	176
31 Package titlesec and titletoc support	176
32 Package longtable support	177
33 Equations	178
34 Support for theorems	180
35 Footnotes	182
36 Float captions	187

37 Bibliographic references	190
37.1 Package harvard	192
37.2 Package chicago	194
38 Page numbers	195
39 Table of contents	197
40 New counters	199
41 AMSIAT_EX compatibility	200
41.1 \@addtoreset and \numberwithin patches	201
42 Included figures	202
43 hyperindex entries	202
44 Configuration files	211
44.1 PS/PDF strings	211
44.2 pdftex	212
44.3 hypertex	226
44.4 dviwindo	228
44.5 dvipdfm/xetex dvi to PDF converter	233
44.6 VTeX typesetting system	244
44.7 Fix for Adobe bug number 466320	257
44.8 Direct pdfmark support	258
44.9 Rokicki's dvips	272
44.10 VTeX's vtexpdfmark driver	275
44.11 Textures	277
44.12 dvipsone	281
44.13 TeX4ht	285
45 Driver-specific form support	288
45.1 pdfmarks	288
45.2 HyperTeX	296
45.3 TeX4ht	297
45.4 pdfTeX	299
45.5 dvipdfm, xetex	309
45.6 Common forms part	317
46 Bookmarks in the PDF file	324
46.1 Bookmarks	324
46.1.1 Rerun warning	328
46.1.2 Driver stuff	328
47 Encoding definition files for encodings of PDF strings	334
47.1 PD1 encoding	334
47.2 PU encoding	343
47.2.1 NFSS2 accents	343
47.2.2 Basic Latin: U+0000 to U+007F	346
47.2.3 Latin-1 Supplement: U+0080 to U+00FF	348

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

3 File hycheck.tex

Many commands of L^AT_EX 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^AT_EX's `\CheckCommand`, because it takes `\DeclareRobustCommand` and optional parameters better into account.

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

`\checklatex` Optional argument: release date of L^AT_EX.

```
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^AT_EX 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^AT_EX'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 \LaTeX definition (number of arguments).

```

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

```

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

```

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

```

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

```

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

```

```

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

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

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

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

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

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

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

```

```

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

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

```

4 Package options and setup

4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

\Hy@SetCatcodes

```

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

```

```

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

```

\Hy@RestoreCatcodes

```

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

```

231 \Hy@SetCatcodes

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

```

232 \RequirePackage{iftex}[2019/10/24]
233 \RequirePackage{keyval}[1997/11/10]
234 \RequirePackage{kvsetkeys}[2007/09/29]
235 \RequirePackage{kvdefinekeys}[2011/04/07]
236 \RequirePackage{pdfescape}[2007/11/11]
237 \RequirePackage{hycolor}
238 \RequirePackage{nameref}[2012/07/28]
239 \RequirePackage{etoolbox}
240 \RequirePackage{stringenc}[2009/12/15]%
241 \def\Hy@Error{\PackageError{hyperref}}
242 \def\Hy@Warning{\PackageWarning{hyperref}}

```

```

243 \def\Hy@WarningNoLine{\PackageWarningNoLine{hyperref}}
244 \def\Hy@Info{\PackageInfo{hyperref}}
245 \def\Hy@InfoNoLine#1{\PackageInfo{hyperref}{#1\@gobble}}
246 \def\Hy@Message#1{%
247   \GenericWarning{%
248     (hyperref)\@spaces\@spaces\@spaces\@spaces
249   }{%
250     Package hyperref Message: #1\@gobble
251   }%
252 }

```

4.2 Version check

\Hy@VersionChecked

```

253 \chardef\Hy@VersionChecked=0 %

```

\Hy@VersionCheck

```

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

```

```

291     \fi
292     \fi
293   }%
294 }%
295 \endgroup
296 \chardef\Hy@@VersionChecked=1 %
297 }

```

\Hy@@VersionCheck

```

298 \def\Hy@@VersionCheck #1#2 #3 #4\@nil{%
299   \def#1{#2 #3}%
300 }

```

4.3 Checks with regular expressions

```

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

```

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 \LaTeX processing.

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

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

`\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.

```
342 \ExplSyntaxOn
343 \let\Hy@LocalAppendToMacro\tl_put_right:Nn
344 \let\Hy@GlobalAppendToMacro\tl_gput_right:Nn
345 \let\Hy@ifempty\tl_if_empty:nTF
346 \ExplSyntaxOff
347 \def\Hy@AtBeginDocument{%
348   \Hy@LocalAppendToMacro\Hy@AtBeginDocumentHook
349 }
```

`\Hy@AtEndOfPackage`

```
350 \def\Hy@AtEndOfPackage{%
351   \Hy@LocalAppendToMacro\Hy@AtEndOfPackageHook
352 }
```

`\Hy@AtBeginDocumentHook`

```
353 \let\Hy@AtBeginDocumentHook\@empty
```

`\Hy@AtEndOfPackageHook`

```
354 \let\Hy@AtEndOfPackageHook\@empty
```

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

```
355 \AtEndOfPackage{%
356   \Hy@AtEndOfPackageHook
357   \let\Hy@AtEndOfPackageHook\@undefined
358   \AfterBeginDocument{%
359     \Hy@AtBeginDocumentHook}%
360   \let\Hy@AtBeginDocumentHook\@undefined
361 }%
```

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

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

4.5 Switches

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

Defaults for the switches are now set.

```
414 \Hy@backreffalse
```



```

415 \Hy@bookmarksnumberedfalse
416 \Hy@bookmarksopenfalse
417 \Hy@bookmarkstrue
418 \Hy@breaklinksfalse
419 \Hy@pdfcenterwindowfalse
420 \Hy@CJKbookmarksfalse
421 \Hy@destlabelfalse
422 \Hy@pdfescapeformfalse
423 \Hy@hyperfiguresfalse
424 \Hy@pdffitwindowfalse
425 \Hy@hyperfootnotesttrue
426 \Hy@hyperindextrue
427 \Hy@hypertextnamestrue
428 \Hy@implicittrue
429 \Hy@linktopagefalse
430 \Hy@localanchornamefalse
431 \Hy@pdfmenubartrue
432 \Hy@naturalnamesfalse
433 \Hy@nestingfalse
434 \Hy@pdfnewwindowsetfalse
435 \Hy@pdfnewwindowfalse
436 \Hy@pageanchortrue
437 \Hy@pdfpagelabelstrue
438 \Hy@pdfstringfalse
439 \Hy@plainpagesfalse
440 \Hy@raiselinksfalse
441 \Hy@setpagesizetrue
442 \Hy@texhtfalse
443 \Hy@psdextrafalse
444 \Hy@pdftoolbartrue
445 \Hy@unicodetrue
446 \ifx\kanjiskip\@undefined
447 \else
448 \ifx\forcecjktoken\@undefined
449 \Hy@unicodefalse
450 \fi
451 \fi
452 \Hy@pdfusetitlefalse
453 \Hy@verbosefalse
454 \Hy@pdfwindowuitrue
455 \Hy@pdfdisplaydoctitlefalse
456 \Hy@pdfafalse

```

5 Common help macros

\Hy@StepCount

```

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

```

\Hy@GlobalStepCount

```

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

```

```

459 \newdimen\@linkdim

```

```

460 \let\Hy@driver\@empty

```

```

461 \let\MaybeStopEarly\relax

```

```

462 \newcount\Hy@linkcounter
463 \newcount\Hy@pagecounter
464 \Hy@linkcounter0
465 \Hy@pagecounter0
466 \def\Hy@space{ }

```

5.1 Macros for recursions

```

467 \let\Hy@ReturnEnd\@empty
468 \long\def\Hy@ReturnAfterFi#1\fi{\fi#1}
469 \long\def\Hy@ReturnAfterElseFi#1\else#2\fi{\fi#1}
470 \long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{\fi\fi#1}
471 \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.

```

472 \def\Hy@safe@activetrue{\csname @safe@activetrue\endcsname}
473 \def\Hy@safe@activesfalse{\csname @safe@activesfalse\endcsname}

```

5.3 Coordinate transformations

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

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

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

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

Example (TeX):

```

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

```

`\hypercalsbp`

```

474 \def\hypercalsbp#1{%
475   \strip@pt\dimexpr 0.99626401\dimexpr(#1)\relax\relax
476 }%
477 \def\hypercalsbpdef{\def}%

```

6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

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

6.1 Description of PDF strings

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

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

6.2 Definition of `\pdfstringdef`

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

Important: In \TeX '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 \TeX interpreter!

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

1. Preprocessing. Here the expansion is prepared. The encoding is set and many commands are redefined, so that they work appropriate.
2. Expansion. The \TeX string is expanded the first time to get a PDF string.
3. Postprocessing. The result of the expansion is checked and converted to the final form.

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

`\ppercaseUnsupportedInPdfStrings`
`\lowercaseUnsupportedInPdfStrings`

```
478 \providecommand*\BCPdata[1]{}
479 \ExplSyntaxOn
480 \@ifundefined{text_uppercase:n}{}
481 {
482   \def\MakeUppercaseUnsupportedInPdfStrings#1
483     {\use:e
484       {\exp_args:Ne
485         \text_uppercase:nn{\BCPdata { casing }}{#1}
486       }
487     }
```

```

488 \def\MakeLowercaseUnsupportedInPdfStrings#1
489     {\use:e
490      {\exp_args:Ne
491       \text_lowercase:nn{\BCPdata { casing }}{#1}
492      }
493     }
494 }
495 \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 be processed by $\text{T}_{\text{E}}\text{X}$, because the tokens have only catcodes 10 until 12.

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

```

496 \def\pdfstringdef#1#2{%

```

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

```

497 \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 $\text{T}_{\text{E}}\text{X}$ escape character indeed prints as a normal backslash. Eventually this line can be removed, because this is standard \LaTeX behaviour.

```

498 \escapechar`\%

```

From the view of $\text{T}_{\text{E}}\text{X}$ an 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.

```

499 \edef\0{\string\0}%
500 \edef\1{\string\1}%
501 \edef\2{\string\2}%
502 \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.

```

503 \ifHy@unicode
504 \edef\8{\string\8}%
505 \edef\9{\string\9}%
506 \fontencoding{PU}%
507 \HyPsd@UTFviii
508 \def\ifpdfstringunicode###1##2{##1}%
509 \else
510 \fontencoding{PD1}%
511 \def\ifpdfstringunicode###1##2{##2}%
512 \fi
513 \let\utf@viii@undeferr\HyPsd@utf@viii@undeferr
514 \enc@update

```

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

```

515 \@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).

```

516 \let\@inmathwarn\HyPsd@inmathwarn

```

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

```

517 \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.

```

518 \let\{\textbraceleft
519 \let\}\textbraceright
520 \let\\\textbackslash
521 \let\#\textnumbersign
522 \let\$\textdollar
523 \let\%\textpercent
524 \let\&\textampersand
525 \% \let\~\textasciitilde
526 \let\_ \textunderscore

```

```

527 \let\P\textparagraph
528 \let\ldots\textellipsis
529 \let\dots\textellipsis
530 \@ifundefined{textEncodingNoboundary}%
531   {}{\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.

```

532 \def\\\{\pdfstringdefWarn\\}%
533 \def\newline{\pdfstringdefWarn\newline}%

```

Logos. Because the box shifting used in the $\text{T}_{\text{E}}\text{X}$ logo does not work while writing to a file, the standard $\text{T}_{\text{E}}\text{X}$ logos are redefined. We use the direct PU code to avoid problems if `\textepsilon` is not defined.

```

534 \def\TeX{\TeX}%
535 \def\LaTeX{La\TeX}%
536 \def\LaTeXe{%
537   \LaTeX2%
538   \ifHy@unicode\83\265\else e\fi
539 }%
540 \def\eTeX{%
541   \ifHy@unicode\83\265\else e\fi
542   -\TeX%
543 }%
544 \def\SliTeX{Sli\TeX}%
545 \def\MF{Metafont}%
546 \def\MP{Metapost}%

```

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

```

547 \let\fontencoding\@gobble
548 \let\fontfamily\@gobble
549 \let\fontseries\@gobble
550 \let\fontshape\@gobble
551 \let\fontsize\@gobbletwo
552 \let\selectfont\@empty
553 \let\usefont\@gobblefour
554 \let\emph\@firstofone
555 \let\textnormal\@firstofone
556 \let\textrm\@firstofone
557 \let\textsf\@firstofone
558 \let\texttt\@firstofone

```

```

559 \let\textbf\@firstofone
560 \let\textmd\@firstofone
561 \let\textit\@firstofone
562 \let\textsc\@firstofone
563 \let\textsl\@firstofone
564 \let\textup\@firstofone
565 \let\normalfont\@empty
566 \let\rmfamily\@empty
567 \let\sffamily\@empty
568 \let\ttfamily\@empty
569 \let\bfseries\@empty
570 \let\mdseries\@empty
571 \let\itshape\@empty
572 \let\scshape\@empty
573 \let\slshape\@empty
574 \let\upshape\@empty
575 \let\em\@empty
576 \let\rm\@empty
577 \let\Huge\@empty
578 \let\LARGE\@empty
579 \let\Large\@empty
580 \let\footnotesize\@empty
581 \let\huge\@empty
582 \let\large\@empty
583 \let\normalsize\@empty
584 \let\scriptsize\@empty
585 \let\small\@empty
586 \let\tiny\@empty
587 \let\mathversion\@gobble
588 \let\phantom\@gobble
589 \let\vphantom\@gobble
590 \let\hphantom\@gobble

```

Package pifont.

```

591 \let\ding\HyPsd@ding
592 \let\Cube\HyPsd@DieFace
593 %* \HyPsd@DieFace -> \epsdice (epsdice)
594 %* \HyPsd@DieFace -> \fcdice (hhcount)

```

Environments.

```

595 \def\begin##1{\csname##1\endcsname}%
596 \def\end##1{\csname end##1\endcsname}%

```

Package color.

```

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

```

Upper- and lowercase.

```

598 \def\MakeUppercase{\MakeUppercaseUnsupportedInPdfStrings}%
599 \def\MakeLowercase{\MakeLowercaseUnsupportedInPdfStrings}%

```

TextOrMath The `\TextOrMath` command is protected in a current \LaTeX and so can not be processed.

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

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

```
601 \ifHy@psdextra
602 \ifHy@unicode
603 \csname psdmapshortnames\endcsname
604 \csname psdaliasnames\endcsname
605 \fi
606 \fi
```

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

```
607 \let\foreignlanguage\@secondoftwo
608 \let\textlatin\@firstofone
609 \@ifundefined{language@group}{}{%
610 \let\bbl@info\@gobble
611 \csname HyPsd@babel@language@group\endcsname
612 }%
```

```
613 \let\@safe@activetrue\relax
614 \let\@safe@activesfalse\relax
```

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

```
615 \let\cyr\relax
```

Package german.

```
616 \let\glqq\textglqq
617 \let\grqq\textgrqq
618 \let\glq\textglq
619 \let\grq\textgrq
620 \let\flqq\textflqq
621 \let\frqq\textfrqq
622 \let\flq\textflq
623 \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}
```

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

AMS classes.

```
625 \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.

```
626 \let\hspace\HyPsd@hspace
```

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

```
627 \let\label\@gobble
628 \let\index\@gobble
629 \let\glossary\@gobble
630 \let\href\HyPsd@href
631 \let\@mkboth\@gobbletwo
```

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

```
632 \let\ref\HyPsd@ref
633 \let\pageref\HyPsd@pageref
634 \let\nameref\HyPsd@nameref
635 \let\autoref\HyPsd@autoref
```

Miscellaneous commands.

```
636 \let\leavevmode\@empty
637 \let\mbox\@empty
```

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

```
638 \def\halign{\pdfstringdefWarn\halign\@gobble}%
639 \let\ignorespaces\HyPsd@ignorespaces
640 \let\Hy@SectionAnchorHref\@gobble
641 \let\ensuremath\@firstofone
```

Patch for `cjk` bookmarks.

```
642 \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 \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@tostopt`, and `\@ifnextchar` for `\renewcommand`).

```
643 \Hy@pdfstringtrue
644 \pdfstringdefPreHook
```

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

```
645 \HyPsd@LetUnexpandableSpace\space
646 \HyPsd@LetUnexpandableSpace\ %
647 \HyPsd@LetUnexpandableSpace~%
648 \HyPsd@LetUnexpandableSpace\nobreakspace
```

Package xspace.

```
649 \ifundefined{xspace}{%
650 \let\xspace\HyPsd@ITALCORR
651 }{%
652 \let\xspace\HyPsd@XSPACE
653 }%
654 \let\/\HyPsd@ITALCORR
655 \let\bgroup\/%
656 \let\egroup\/%
```

Redefinitions of miscellaneous commands. Hyphenation does not make sense.

```
657 \let\discretionary\@gobbletwo
```

\@ifstar is defined in L^AT_EX 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:

```
658 \def\@ifnextchar{\HyPsd@ifnextchar\@ifnextchar}%
659 \def\kernel@ifnextchar{\HyPsd@ifnextchar\kernel@ifnextchar}%
660 \def\new@ifnextchar{\HyPsd@ifnextchar\new@ifnextchar}%
661 \let\@protected@testopt\HyPsd@protected@testopt
```

Support for package 'xargs':

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

6.2.2 Expansion

There are several possibilities to expand tokens within L^AT_EX:

\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_EX 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_EX 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^AT_EX'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^AT_EX 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_EX, 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).

```
663 \begingroup
664 \let\GenericError\@gobblefour
665 \let\GenericWarning\@gobbletwo
666 \let\GenericInfo\@gobbletwo
```

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

```
667 \ifx\nofrenchguillemets\@undefined
668 \else
669 \nofrenchguillemets
670 \fi
```

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

```
671 \let\Hy@temp\xdef
672 \let\def\HyPsd@DefCommand
673 \let\gdef\HyPsd@DefCommand
674 \let\edef\HyPsd@DefCommand
675 \let\xdef\HyPsd@DefCommand
676 \let\futurelet\HyPsd@LetCommand
677 \let\let\HyPsd@LetCommand
678 \Hy@temp#1{#2}%
679 \endgroup
```

6.2.3 Postprocessing

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

```
680 \ifx#1\@empty
681 \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 the following item takes into account, that makes 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 find by \TeX 's argument scanning process. Third curly braces as grouping characters cannot be expanded further, so they don't vanish by the string expansion above. So these characters with catcode 1 and 2 are removed in the following and replaced by an marker for the xspace support.
- \TeX silently removes the outmost pair of braces of an argument. To prevent this on unwanted places, in the following the character | is appended to the string to make an outer brace to an inner one.

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

```

682 \HyPsd@ProtectSpaces#1%
683 \let\HyPsd@String\@empty
684 \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
685 \global\let#1\HyPsd@String

```

Check tokens. After removing the spaces and the grouping characters the string now should only consists 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 $\text{\HyPsd@CheckCatcodes}$ 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 $\text{\HyPsd@CheckCatcodes}$ is called.

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

```

686 \let\HyPsd@SPACEOPTI\relax
687 {%
688 \let\HyPsd@String\@empty
689 \expandafter\HyPsd@CheckCatcodes#1\HyPsd@End
690 \global\let#1\HyPsd@String
691 }%
692 \expandafter\HyPsd@RemoveMask\expandafter
693 |\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.

```
694 \expandafter
695 \HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
696 \let\HyPsd@String\@empty
697 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
698 \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.

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

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

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

```
700 \ifHy@unicode
701 \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
702 \HyPsd@SPACEOPTI#1%
703 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
704 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
705 {\HyPsd@SPACEOPTI\80\273}#1%
706 \else
707 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
708 \expandafter\HyPsd@Subst\expandafter{%
709 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
710 \string\273}\HyPsd@SPACEOPTI\273}#1%
711 \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.

```
712 \ifHy@unicode
713 \HyPsd@StringSubst{\)}{\80\051}#1%
714 \HyPsd@Subst){\80\051}#1%
```

```

715 \let\HyPsd@empty\relax
716 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
717 {\HyPsd@empty\80\051}#1%
718 \else
719 \HyPsd@StringSubst{\}){\051}#1%
720 \HyPsd@Subst){\051}#1%
721 \let\HyPsd@empty\relax
722 \HyPsd@StringSubst{051}{\HyPsd@empty\string\})#1%
723 \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`.

```

724 \expandafter\HyPsd@Subst\expandafter{\}/\HyPsd@empty#1%
725 \@ifundefined{@xspace}{%
726 }{%
727 \let\HyPsd@xspace\relax
728 \expandafter\HyPsd@Subst\expandafter
729 {\HyPsd@XSPACE}\HyPsd@xspace#1%
730 \let\HyPsd@xspace\HyPsd@doxspace
731 }%
732 \xdef#1{#1\HyPsd@empty}%

```

Ligatures. \TeX forms ligatures in its stomach, but the PDF strings are treated only by \TeX '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.

```

733 \HyPsd@Subst{---}\textemdash#1%
734 \HyPsd@Subst{--}\textendash#1%
735 % \HyPsd@Subst{fi}\textfi#1%
736 % \HyPsd@Subst{fl}\textfl#1%
737 \HyPsd@Subst{!}\textexclamdown#1%
738 \HyPsd@Subst{?}\textquestiondown#1%

```

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

```
739 \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 TeX memory and time.

```
740 \ifHy@unicode
741 \HyPsd@StringSubst\(\textparenleft#1%
742 \HyPsd@Subst(\textparenleft#1%
743 \else
744 \HyPsd@StringSubst\({\050}#1%
745 \HyPsd@Subst({\050}#1%
746 \HyPsd@StringSubst{\050}{\string\{ }#1%
747 \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.

```
748 \ifHy@unicode
749 \edef\HyPsd@SPACEOPTI{\80\040}%
750 \else
751 \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
752 \fi
753 \xdef#1{#1\@empty}%
754 \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.

```
755 \endgroup
756 \begingroup
757 \ifHy@unicode
758 \HyPsd@ConvertToUnicode#1%
```

Try conversion back to PDFDocEncoding.

```
759 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
760 \EdefUnescapeString\HyPsd@temp#1%
761 \iftutex
762 \let\HyPsd@UnescapedString\HyPsd@temp
763 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
764 {utf16be}{ascii-print}{%
765 \EdefEscapeString\HyPsd@temp\HyPsd@temp
766 \global\let#1\HyPsd@temp
767 \HyPsd@EscapeTeX#1%
768 \Hy@unicodetrue
769 }{%
770 \HyPsd@EscapeTeX#1%
771 }%
```

```

772     \else
773     \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
774         {utf16be}{pdfdoc}{%
775     \EdefEscapeString\HyPsd@temp\HyPsd@temp
776     \global\let#1\HyPsd@temp
777     \HyPsd@EscapeTeX#1%
778     \Hy@unicodetrue
779     }{}%
780     \fi
781 \fi
782 \fi

```

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

```

783 \pdfstringdefPostHook#1%
784 \endgroup
785 }

```

`\Hy@pdfstringdef`

```

786 \def\Hy@pdfstringdef#1#2{%
787 \pdfstringdef\Hy@gtemp{#2}%
788 \let#1\Hy@gtemp
789 }

```

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

```

790 \@ifpackageloaded{linguex}{%
791 \let\HyLinguex@OrgB\b
792 \let\HyLinguex@OrgC\c
793 \let\HyLinguex@OrgD\d
794 \def\HyLinguex@Restore{%
795 \let\b\HyLinguex@OrgB
796 \let\c\HyLinguex@OrgC
797 \let\d\HyLinguex@OrgD
798 }%
799 \Hy@AtEndOfPackage{%
800 \pdfstringdefDisableCommands{%
801 \@ifundefined{oldb}{-}{\let\b\oldb}%
802 \@ifundefined{oldc}{-}{\let\c\oldc}%
803 \@ifundefined{oldd}{-}{\let\d\oldd}%
804 }%
805 }%
806 }{}%
807 \let\HyLinguex@Restore\relax
808 }%

```


6.3.3 Catcodes saving and restoring for .def files

\Hy@SaveCatcodeSettings

```
809 \def\Hy@SaveCatcodeSettings#1{%
810   \expandafter\edef\csname Hy@cat@#1\endcsname{%
811     \endlinechar=\the\endlinechar\relax
812     \catcode32 \the\catcode32\relax % (space)
813     \catcode34 \the\catcode34\relax % "
814     \catcode35 \the\catcode35\relax % #
815     \catcode37 \the\catcode37\relax % (percent)
816     \catcode40 \the\catcode40\relax % (
817     \catcode41 \the\catcode41\relax % )
818     \catcode42 \the\catcode42\relax % *
819     \catcode46 \the\catcode46\relax % .
820     \catcode58 \the\catcode58\relax % :
821     \catcode60 \the\catcode60\relax % <
822     \catcode61 \the\catcode61\relax % =
823     \catcode62 \the\catcode62\relax % >
824     \catcode64 \the\catcode64\relax % @
825     \catcode91 \the\catcode91\relax % [
826     \catcode92 \the\catcode92\relax % (backslash)
827     \catcode93 \the\catcode93\relax % ]
828     \catcode123 \the\catcode123\relax % {
829     \catcode124 \the\catcode124\relax % |
830     \catcode125 \the\catcode125\relax % }
831   }%
832   \endlinechar=-1 %
833   \catcode32 10 % (space)
834   \catcode34 12 % "
835   \catcode35 6 % #
836   \catcode37 14 % (percent)
837   \catcode40 12 % (
838   \catcode41 12 % )
839   \catcode42 12 % *
840   \catcode46 12 % .
841   \catcode58 12 % :
842   \catcode60 12 % <
843   \catcode61 12 % =
844   \catcode62 12 % >
845   \catcode91 12 % [
846   \catcode92 0 % (backslash)
847   \catcode93 12 % ]
848   \catcode123 1 % {
849   \catcode124 12 % |
850   \catcode125 2 % }
851   \makeatletter
852 }
```

\Hy@RestoreCatcodeSettings

```
853 \def\Hy@RestoreCatcodeSettings#1{%
854   \csname Hy@cat@#1\endcsname
855   \expandafter\let\csname Hy@cat@#1\endcsname\relax
856 }
```

6.3.4 PD1 encoding

The PD1 encoding implements the PDFDocEncoding for use with L^AT_EX 2_ε's NFSS. Because the informational strings are not set by T_EX'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_EX does not process it anyway. So use CM.

```
857 \@ifundefined{T@PD1}{%
858   \Hy@SaveCatcodeSettings{pd1}%
859   \input{pd1enc.def}%
860   \Hy@RestoreCatcodeSettings{pd1}%
861   \HyLinguex@Restore
862 }{}
863 \DeclareFontFamily{PD1}{pdf}{}
864 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
865 \DeclareFontSubstitution{PD1}{pdf}{m}{n}
```

6.3.5 PU encoding

The PU encoding implements the Unicode encoding for use with L^AT_EX'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`.

```
866 \def\HyPsd@LoadUnicode{%
867   \@ifundefined{T@PU}{%
868     \Hy@SaveCatcodeSettings{pu}%
869     \input{puenc.def}%
870     \Hy@RestoreCatcodeSettings{pu}%
871     \HyLinguex@Restore
872   }{}%
873   \DeclareFontFamily{PU}{pdf}{}%
874   \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
875   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
876   \HyPsd@LoadExtra
877   \let\HyPsd@LoadUnicode\relax
878 }
```

`\HyPsd@LoadExtra`

```
879 \def\Hy@iffileloaded#1{%
880   \@ifundefined{ver@#1}\@secondoftwo\@firstoftwo
881 }
882 \def\HyPsd@LoadExtra{%
883   \ifHy@psdextra
884     \Hy@iffileloaded{puenc.def}{}%
885     \Hy@SaveCatcodeSettings{psdextra}%
886     \input{psdextra.def}%
887     \Hy@RestoreCatcodeSettings{psdextra}%
888   }
```

```

888   \let\HyPsd@LoadExtra\relax
889   }{}%
890   \fi
891 }

```

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 \TeX 's stomach, the second contains the replacement for PDF strings.

```

892 \def\texorpdfstring{%
893   \ifHy@pdfstring
894     \expandafter\@secondoftwo
895   \else
896     \expandafter\@firstoftwo
897   \fi
898 }

```

6.4.2 Hooks for `\pdfstringdef`

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

```

899 \@ifundefined{pdfstringdefPreHook}{%
900   \let\pdfstringdefPreHook\@empty
901 }{}
902 \@ifundefined{pdfstringdefPostHook}{%
903   \let\pdfstringdefPostHook\@gobble
904 }{}

```

`\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 \LaTeX commands like `\@gobble` or `\@firstofone`.

```

905 \def\pdfstringdefDisableCommands{%
906   \begingroup
907     \makeatletter
908     \HyPsd@DisableCommands
909 }

```

`\HyPsd@DisableCommands`

```
910 \long\def\HyPsd@DisableCommands#1{%
911   \Hy@GlobalAppendToMacro\pdfstringdefPreHook{#1}%
912   \endgroup
913 }
```

`\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`.

```
914 \def\pdfstringdefWarn#1{%
915   \expandafter\noexpand\csname<>-string#1\endcsname
916 }
```

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.

```
917 \begingroup
918   \catcode0=12 %
919   \def\x{\endgroup
920     \def\HyPsd@ignorespaces{%
921       \romannumeral\expandafter`\expandafter^^@%
922       \romannumeral^^^@%
923     }%
924   }%
925   \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.

```
926 \newif\ifHy@next
927 </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.

```
928 <*package>
```

6.5.3 CJK patch

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

```
\HyPsd@CJKhook
```

```
930 \def\HyPsd@CJKhook{%
931   \@ifpackageloaded{CJK}{%
932     \let\CJK@kern\relax
933     \let\CJKkern\relax
934     \let\CJK@CJK\relax
935     \ifHy@CJKbookmarks
936       \HyPsd@CJKhook@bookmarks
937     \fi
938     \HyPsd@CJKhook@unicode
939   }{}%
940 }
```

6.5.4 CJK bookmarks

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

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

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

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

```
941 \begingroup
942   \catcode"7F=\active
943   \toks@{%
944     \let\CJK@ignorespaces\empty
945     \def\CJK@char#1{\@gobbletwo}%
946     \let\CJK@charx\@gobblefour
947     \let\CJK@punctchar\@gobblefour
948     \def\CJK@punctcharx#1{\@gobblefour}%
949     \catcode"7F=\active
950     \def^^7f#1^^7f#2^^7f{%
951       \string #1\HyPsd@DecimalToOctal{#2}%
```

```

952 }%
953 % ... ?
954 \ifHy@unicode
955   \def\Hy@cjkpu{\80}%
956   \else
957     \let\Hy@cjkpu\@empty
958   \fi
959 \HyPsd@CJKActiveChars
960 }%
961 \count@=127 %
962 \@whilenum\count@<255 \do{%
963   \advance\count@ by 1 %
964   \lccode`\~=\count@
965   \lowercase{%
966     \toks@\expandafter{\the\toks@ ~}%
967   }%
968 }%
969 \toks@\expandafter{\the\toks@ !}%
970 \xdef\HyPsd@CJKhook@bookmarks{%
971   \the\toks@
972 }%
973 \endgroup

```

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

```

974 \def\HyPsd@CJKActiveChars#1{%
975   \ifx#1!%
976     \let\HyPsd@CJKActiveChars\relax
977   \else
978     \edef#1{\noexpand\Hy@cjkpu\string#1}%
979   \fi
980 \HyPsd@CJKActiveChars
981 }

```

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

```

982 \def\HyPsd@DecimalToOctal#1{%
983   \ifcase #1 %
984     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
985     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
986     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
987     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
988     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
989     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
990     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
991     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
992     \or @\or A\or B\or C\or D\or E\or F\or G%
993     \or H\or I\or J\or K\or L\or M\or N\or O%
994     \or P\or Q\or R\or S\or T\or U\or V\or W%
995     \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%
996     \or \140\or a\or b\or c\or d\or e\or f\or g%
997     \or h\or i\or j\or k\or l\or m\or n\or o%
998     \or p\or q\or r\or s\or t\or u\or v\or w%
999     \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
1000    \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%

```

```

1001 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1002 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1003 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1004 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1005 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1006 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1007 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1008 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1009 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1010 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1011 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1012 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1013 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1014 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1015 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1016 \fi
1017 }

```

6.5.5 CJK unicode

\HyPsd@CJKhook@unicode

```

1018 \def\HyPsd@CJKhook@unicode{%
1019 \let\Unicode\HyPsd@CJK@Unicode
1020 \let\CJKnumber\HyPsd@CJKnumber
1021 \let\CJKdigits\HyPsd@CJKdigits
1022 }

```

\HyPsd@CJK@Unicode

```

1023 \def\HyPsd@CJK@Unicode#1#2{%
1024 \ifnum#1<256 %
1025 \HyPsd@DecimalToOctalFirst{#1}%
1026 \HyPsd@DecimalToOctalSecond{#2}%
1027 \else
1028 \933%
1029 \expandafter\expandafter\expandafter\HyPsd@HighA
1030 \intcalcDiv{#1}{4}!%
1031 \933%
1032 \ifcase\intcalcMod{#1}{4} %
1033 4\or 5\or 6\or 7%
1034 \fi
1035 \HyPsd@DecimalToOctalSecond{#2}%
1036 \fi
1037 }

1038 \def\HyPsd@HighA#1!{%
1039 \expandafter\expandafter\expandafter\HyPsd@HighB
1040 \IntCalcDiv#1!64!!%
1041 \expandafter\expandafter\expandafter\HyPsd@HighD
1042 \IntCalcMod#1!64!!%
1043 }

1044 \def\HyPsd@HighB#1!{%
1045 \expandafter\expandafter\expandafter\HyPsd@HighC
1046 \IntCalcDec#1!!%
1047 }

```

```

1048 \def\HyPsd@HighC#1!{%
1049   \IntCalcDiv#1!4!%
1050   \@backslashchar
1051   \IntCalcMod#1!4!%
1052 }
1053 \def\HyPsd@HighD#1!{%
1054   \ifcase\IntCalcDiv#1!8! %
1055     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1056   \fi
1057   \ifcase\IntCalcMod#1!8! %
1058     0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1059   \fi
1060 }
1061 \def\HyPsd@DecimalToOctalFirst#1{%
1062   \9%
1063   \ifcase#1 %
1064     000\or 001\or 002\or 003\or 004\or 005\or 006\or 007%
1065     \or 010\or 011\or 012\or 013\or 014\or 015\or 016\or 017%
1066     \or 020\or 021\or 022\or 023\or 024\or 025\or 026\or 027%
1067     \or 030\or 031\or 032\or 033\or 034\or 035\or 036\or 037%
1068     \or 040\or 041\or 042\or 043\or 044\or 045\or 046\or 047%
1069     \or 050\or 051\or 052\or 053\or 054\or 055\or 056\or 057%
1070     \or 060\or 061\or 062\or 063\or 064\or 065\or 066\or 067%
1071     \or 070\or 071\or 072\or 073\or 074\or 075\or 076\or 077%
1072     \or 100\or 101\or 102\or 103\or 104\or 105\or 106\or 107%
1073     \or 120\or 111\or 112\or 113\or 114\or 115\or 116\or 117%
1074     \or 120\or 121\or 122\or 123\or 124\or 125\or 126\or 127%
1075     \or 130\or 131\or 132\or 133\or 134\or 135\or 136\or 137%
1076     \or 140\or 141\or 142\or 143\or 144\or 145\or 146\or 147%
1077     \or 150\or 151\or 152\or 153\or 154\or 155\or 156\or 157%
1078     \or 160\or 161\or 162\or 163\or 164\or 165\or 166\or 167%
1079     \or 170\or 171\or 172\or 173\or 174\or 175\or 176\or 177%
1080     \or 200\or 201\or 202\or 203\or 204\or 205\or 206\or 207%
1081     \or 210\or 211\or 212\or 213\or 214\or 215\or 216\or 217%
1082     \or 220\or 221\or 222\or 223\or 224\or 225\or 226\or 227%
1083     \or 230\or 231\or 232\or 233\or 234\or 235\or 236\or 237%
1084     \or 240\or 241\or 242\or 243\or 244\or 245\or 246\or 247%
1085     \or 250\or 251\or 252\or 253\or 254\or 255\or 256\or 257%
1086     \or 260\or 261\or 262\or 263\or 264\or 265\or 266\or 267%
1087     \or 270\or 271\or 272\or 273\or 274\or 275\or 276\or 277%
1088     \or 300\or 301\or 302\or 303\or 304\or 305\or 306\or 307%
1089     \or 310\or 311\or 312\or 313\or 314\or 315\or 316\or 317%
1090     \or 320\or 321\or 322\or 323\or 324\or 325\or 326\or 327%
1091     \or 330\or 331\or 332\or 333\or 334\or 335\or 336\or 337%
1092     \or 340\or 341\or 342\or 343\or 344\or 345\or 346\or 347%
1093     \or 350\or 351\or 352\or 353\or 354\or 355\or 356\or 357%
1094     \or 360\or 361\or 362\or 363\or 364\or 365\or 366\or 367%
1095     \or 370\or 371\or 372\or 373\or 374\or 375\or 376\or 377%
1096   \fi
1097 }
1098 \def\HyPsd@DecimalToOctalSecond#1{%
1099   \ifcase #1 %
1100     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1101     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%

```



```

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

1134 \def\HyPsd@CJKnumber#1{%
1135 \ifnum#1<\z@
1136 \CJK@minus
1137 \expandafter\HyPsd@@CJKnumber\expandafter{\number-\number#1}%
1138 \else
1139 \expandafter\HyPsd@@CJKnumber\expandafter{\number#1}%
1140 \fi
1141 }

1142 \def\HyPsd@@CJKnumber#1{%
1143 \ifcase#1 %
1144 \CJK@zero\or\CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1145 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine\or
1146 \CJK@ten\or\CJK@ten\CJK@one\or\CJK@ten\CJK@two\or
1147 \CJK@ten\CJK@three\or\CJK@ten\CJK@four\or\CJK@ten\CJK@five\or
1148 \CJK@ten\CJK@six\or\CJK@ten\CJK@seven\or\CJK@ten\CJK@eight\or
1149 \CJK@ten\CJK@nine
1150 \else
1151 \ifnum#1<10000 %
1152 \HyPsd@CJKnumberFour#1!\@empty{20}%
1153 \@empty
1154 \else
1155 \ifnum#1<100000000 %

```

```

1156 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1157 \IntCalcDiv#1!10000!%
1158 !\CJK@zero{10}%
1159 \CJK@tenthousand
1160 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1161 \IntCalcMod#1!10000!%
1162 !\CJK@zero{10}%
1163 \@empty
1164 \else
1165 \expandafter\HyPsd@CJKnumberLarge
1166 \number\IntCalcDiv#1!100000000!\expandafter!%
1167 \number\IntCalcMod#1!100000000!!%
1168 \fi
1169 \fi
1170 \fi
1171 }
1172 \def\HyPsd@CJKnumberLarge#1!#2!{%
1173 \HyPsd@CJKnumberFour#1!{\CJK@zero{10}}%
1174 \CJK@hundredmillion
1175 \ifnum#2=\z@
1176 \else
1177 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1178 \IntCalcDiv#2!10000!%
1179 !\CJK@zero{10}%
1180 \CJK@tenthousand
1181 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1182 \IntCalcMod#2!10000!%
1183 !\CJK@zero{10}%
1184 \@empty
1185 \fi
1186 }
1187 \def\HyPsd@CJKnumberFour#1!#2#3{%
1188 \ifnum#1=\z@
1189 \expandafter\@gobble
1190 \else
1191 \ifnum#1<1000 %
1192 #2%
1193 \HyPsd@CJKnumberThree#1!{\CJK@zero{10}}%
1194 \else
1195 \HyPsd@@@CJKnumber{\IntCalcDiv#1!1000!}%
1196 \CJK@thousand
1197 \expandafter\expandafter\expandafter\HyPsd@CJKnumberThree
1198 \IntCalcMod#1!1000!%
1199 !\CJK@zero{10}%
1200 \fi
1201 \fi
1202 }
1203 \def\HyPsd@CJKnumberThree#1!#2#3{%
1204 \ifnum#1=\z@
1205 \else
1206 \ifnum#1<100 %
1207 #2%
1208 \HyPsd@CJKnumberTwo#1!{\CJK@zero{10}}%
1209 \else

```

```

1210 \HyPsd@@CJKnumber{\IntCalcDiv#1!100!}%
1211 \CJK@hundred
1212 \expandafter\expandafter\expandafter\HyPsd@CJKnumberTwo
1213 \IntCalcMod#1!100!%
1214 !\CJK@zero{10}%
1215 \fi
1216 \fi
1217 }
1218 \def\HyPsd@CJKnumberTwo#1!#2#3{%
1219 \ifnum#1=\z@
1220 \else
1221 \ifnum#1<#3 %
1222 #2%
1223 \HyPsd@@CJKnumber{#1}%
1224 \else
1225 \HyPsd@@CJKnumber{\IntCalcDiv#1!10!}%
1226 \CJK@ten
1227 \ifnum\IntCalcMod#1!10!=\z@
1228 \else
1229 \HyPsd@@CJKnumber{\IntCalcMod#1!10!}%
1230 \fi
1231 \fi
1232 \fi
1233 }
1234 \def\HyPsd@CJKdigits#1{%
1235 \ifx*#1\relax
1236 \expandafter\HyPsd@@CJKdigits\expandafter\CJK@zero
1237 \else
1238 \HyPsd@@CJKdigits\CJK@null{#1}%
1239 \fi
1240 }
1241 \def\HyPsd@@CJKdigits#1#2{%
1242 \ifx\#2\%
1243 \else
1244 \HyPsd@@@CJKdigits#1#2\@nil
1245 \fi
1246 }%
1247 \def\HyPsd@@@CJKdigits#1#2#3\@nil{%
1248 \HyPsd@CJKdigit#1{#2}%
1249 \ifx\#3\%
1250 \expandafter\@gobble
1251 \else
1252 \expandafter\@firstofone
1253 \fi
1254 {%
1255 \HyPsd@@@CJKdigits#1#3\@nil
1256 }%
1257 }
1258 \def\HyPsd@CJKdigit#1#2{%
1259 \ifcase#2 %
1260 #1\or
1261 \CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1262 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine
1263 \fi

```

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 \LaTeX 2 ϵ 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 (\LaTeX 2 ϵ release [1998/12/01]). In the normal case `\pdfstringdef` is executed in a context where `\protect` has the meaning of `\@typesetprotect` (`=\relax`).

```

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

1265 \def\HyPsd@inmathwarn#1#2{%
1266   \ifx#2\expandafter
1267     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
1268       \HyPsd@GLYPHERR
1269       \expandafter\@gobble\string#1%
1270       >%
1271       \expandafter\expandafter\expandafter\HyPsd@EndWithElse

```

```

1272 \else
1273 \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
1274 \fi
1275 \else
1276 \expandafter#2%
1277 \fi
1278 }
1279 \def\HyPsd@GobbleFiFi#1\fi#2\fi{}
1280 \def\HyPsd@EndWithElse#1\else{\else}

```

`\HyPsd@add@accent`

```

1281 \def\HyPsd@add@accent#1#2{%
1282 \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%
1283 #2%
1284 }%

```

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 be caught by undelimited arguments.
- And they work in number, dimension, and skip assignments.

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

```

1285 \def\HyPsd@LetUnexpandableSpace#1{%
1286 \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
1287 }

```

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

```

1288 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace

```

6.5.8 Marker for commands

`\HyPsd@XSPACE` Some commands and information 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.

```

1289 \edef\HyPsd@XSPACE{\string#\string X}
1290 \edef\HyPsd@ITALCORR{\string#\string I}
1291 \edef\HyPsd@GLYPHERR{\string#\string G}

```

6.5.9 `\hspace` fix

`\HyPsd@hspace`

```

1292 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*END}

```

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

```

1293 \def\HyPsd@@hspace#1*#2END{%
1294 \ifx\#2\%

```

```

1295 \HyPsd@hspacetest{#1}%
1296 \else
1297 \expandafter\HyPsd@hspacetest
1298 \fi
1299 }

```

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

```

1300 \def\HyPsd@hspacetest#1{\ifdim\dimexpr#1\relax>\z@\space\fi}

```

6.5.10 Fix for AMS classes

```

1301 \@ifundefined{tocsection}{%
1302 \let\HyPsd@AMSclassfix\relax
1303 }{%
1304 \def\HyPsd@AMSclassfix{%
1305 \let\tocpart\HyPsd@tocsection
1306 \let\tocchapter\HyPsd@tocsection
1307 \let\tocappendix\HyPsd@tocsection
1308 \let\tocsection\HyPsd@tocsection
1309 \let\tocsubsection\HyPsd@tocsection
1310 \let\tocsubsubsection\HyPsd@tocsection
1311 \let\tocparagraph\HyPsd@tocsection
1312 }%
1313 \def\HyPsd@tocsection#1#2#3{%
1314 \if @#2@ \else \if @#1@ \else #1 \fi #2. \fi
1315 #3%
1316 }%
1317 }

```

6.5.11 Reference commands

`\HyPsd@href`

```

1318 \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.

```

1319 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%

```

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

```

1320 \def\HyPsd@@ref#1*#2\END{%
1321 \ifx\#2\%
1322 \HyPsd@@@ref{#1}%
1323 \else
1324 \expandafter\HyPsd@@@ref
1325 \fi
1326 }%

```

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

```

1327 \def\HyPsd@@@ref#1{%
1328 \expandafter\ifx\csname r@#1\endcsname\relax
1329 ??%
1330 \else
1331 \expandafter\expandafter\expandafter

```

```

1332 \car\csname r@#1\endcsname\@nil
1333 \fi
1334 }

```

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

```

1335 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*END}

```

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

```

1336 \def\HyPsd@@pageref#1*#2END{%
1337 \ifx\#2\%
1338 \HyPsd@@@pageref{#1}%
1339 \else
1340 \expandafter\HyPsd@@@pageref
1341 \fi
1342 }

```

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

```

1343 \def\HyPsd@@@pageref#1{%
1344 \expandafter\ifx\csname r@#1\endcsname\relax
1345 ??%
1346 \else
1347 \expandafter\expandafter\expandafter\expandafter
1348 \expandafter\expandafter\expandafter\@car
1349 \expandafter\expandafter\expandafter\@gobble
1350 \csname r@#1\endcsname{}\@nil
1351 \fi
1352 }

```

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

```

1353 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*END}

```

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

```

1354 \def\HyPsd@@nameref#1*#2END{%
1355 \ifx\#2\%
1356 \HyPsd@@@nameref{#1}%
1357 \else
1358 \expandafter\HyPsd@@@nameref
1359 \fi
1360 }

```

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

```

1361 \def\HyPsd@@@nameref#1{%
1362 \expandafter\ifx\csname r@#1\endcsname\relax
1363 ??%
1364 \else
1365 \expandafter\expandafter\expandafter\expandafter
1366 \expandafter\expandafter\expandafter\@car
1367 \expandafter\expandafter\expandafter\@gobbletwo
1368 \csname r@#1\endcsname{}\@nil
1369 \fi
1370 }

```

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

```
1371 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}
```

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

```
1372 \def\HyPsd@@autoref#1*#2\END{%
1373   \ifx\#2\%
1374     \HyPsd@@@autoref{#1}%
1375   \else
1376     \expandafter\HyPsd@@@autoref
1377   \fi
1378 }
```

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

```
1379 \def\HyPsd@@@autoref#1{%
1380   \expandafter\ifx\csname r@#1\endcsname\relax
1381     ??%
1382   \else
1383     \expandafter\expandafter\expandafter\HyPsd@autorefname
1384       \csname r@#1\endcsname\relax\@nil
1385     \expandafter\expandafter\expandafter
1386       \@car\csname r@#1\endcsname\@nil
1387   \fi
1388 }
```

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

```
1389 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1390   \ifx\#4\%
1391   \else
1392     \HyPsd@@autorefname#4.\@nil
1393   \fi
1394 }
```

`\HyPsd@@autorefname`

```
1395 \def\HyPsd@@autorefname#1.#2\@nil{%
1396   \@ifundefined{#1autorefname}{%
1397     \@ifundefined{#1name}{%
1398       }{%
1399         \csname#1name\endcsname\space
1400       }%
1401     }{%
1402       \csname#1autorefname\endcsname\space
1403     }%
1404 }
```

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

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

```
\HyPsd@DefCommand
\HyPsd@LetCommand 1405 \begingroup
1406 \def\x#1#2{%
1407 \endgroup
1408 \let#1\def
1409 \def\HyPsd@DefCommand##1##2###{%
1410 #1%
1411 \expandafter\noexpand
1412 \csname\expandafter\@gobble\string##1\@empty\endcsname
1413 \@gobble
1414 }%
1415 \let#2\let
1416 \def\HyPsd@@LetCommand##1{%
1417 \expandafter\ifx\csname##1\expandafter\endcsname
1418 \csname iftrue\endcsname
1419 \pdfstringdefWarn\let
1420 \expandafter\@gobble
1421 \else
1422 \expandafter\ifx\csname##1\expandafter\endcsname
1423 \csname iffalse\endcsname
1424 \pdfstringdefWarn\let
1425 \expandafter\expandafter\expandafter\@gobble
1426 \else
1427 #2%
1428 \expandafter\noexpand
1429 \csname##1\expandafter\expandafter\expandafter\endcsname
1430 \fi
1431 \fi
1432 }%
1433 }%
```

```

1434 \expandafter\x\csname <def>-command\expandafter\endcsname
1435         \csname <let>-command\endcsname
1436 \def\HyPsd@LetCommand#1{%
1437   \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1438   \expandafter\expandafter\expandafter{%
1439     \expandafter\@gobble\string#1\@empty
1440   }%
1441 }

```

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).

```

1442 \def\HyPsd@ifnextchar#1{%
1443   \pdfstringdefWarn#1%
1444   \expandafter\@gobbletwo\@gobble
1445 }

```

6.5.14 \@protected@testoptifnextchar

`\HyPsd@protected@testopt` Macros with optional arguments doesn't work properly, because they call `\@ifnextchar` to detect the optional argument (see the explanation of `\HyPsd@ifnextchar`). But a warning, that `\@ifnextchar` doesn't work, doesn't help the user very much. Therefore `\@protected@testopt` is also disabled, because its first argument is the problematic macro with the optional argument and it is called before `\@ifnextchar`.

```

1446 \def\HyPsd@protected@testopt#1{%
1447   \pdfstringdefWarn#1%
1448   \@gobbletwo
1449 }

```

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:

```

1450 \def\HyPsd@Warning#1{%
1451   \begingroup
1452   \let\space\Hy@space
1453   \Hy@Warning{#1}%
1454   \endgroup
1455 }

```

6.6.2 Protecting spaces

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

```

1456 \let\HyPsd@fi\fi
1457 \def\HyPsd@ProtectSpaces#1{%
1458   \xdef#1{%
1459     \iftrue
1460       \expandafter\HyPsd@@ProtectSpacesFi
1461       \expandafter|\expandafter\@empty#1| %
1462     \HyPsd@fi
1463   }%
1464   \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1465 }%
```

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

```

1466 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1467   \fi
1468   \unexpanded{#1}%
1469   \ifx\scrollmode#2\scrollmode
1470   \else
1471     \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1472   \HyPsd@fi
1473 }%
```

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.

```

1474 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1475   \xdef#2{\unexpanded\expandafter{#1}}%
1476 }%
```

6.6.3 Remove grouping braces

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

```

1477 \def\HyPsd@RemoveBraces#1{%
1478   \ifx\scrollmode#1\scrollmode
1479   \else
1480     \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1481   \fi
1482 }
```

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

token or a group. To avoid the case that `#2` is a group, the string is extended by a `|` before.

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

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

```

1483 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1484   \fi
1485   \def\Hy@temp@A{#1#2}%
1486   \def\Hy@temp@B{#3}%
1487   \ifx\Hy@temp@A\Hy@temp@B
1488     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1489       \HyPsd@String#1%
1490     }%
1491     \ifx\scrollmode#2\scrollmode
1492       \else
1493         \Hy@ReturnAfterFiFiEnd{%
1494           \HyPsd@RemoveBraces{#2}%
1495         }%
1496       \fi
1497     \else
1498       \def\Hy@temp@A{#1}%
1499       \HyPsd@AppendItalcrr\HyPsd@String
1500       \ifx\Hy@temp@A\@empty
1501         \Hy@ReturnAfterElseFiFiEnd{%
1502           \HyPsd@RemoveBraces{#2}%
1503         }%
1504       \else
1505         \HyPsd@ProtectSpaces\Hy@temp@A
1506         \HyPsd@AppendItalcrr\Hy@temp@A
1507         \Hy@ReturnAfterFiFiEnd{%
1508           \expandafter\HyPsd@RemoveBraces\expandafter
1509             {\Hy@temp@A#2}%
1510         }%
1511       \fi
1512     \fi
1513   \Hy@ReturnEnd
1514 }
```

`\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`.

```

1515 \def\HyPsd@AppendItalcrr#1{%
1516   \expandafter\HyPsd@@AppendItalcrr\expandafter{\/#1%
1517 }
1518 \def\HyPsd@@AppendItalcrr#1#2{%
1519   \expandafter\def\expandafter#2\expandafter{#2#1}%
1520 }
```

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>.

```

1521 \@ifundefined{directlua}{%
1522 }{%
1523   \expandafter\ifx\csname\endcsname\relax\fi
1524 }

```

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`.

```

1525 \begingroup
1526   \catcode`\Q=\active
1527   \let Q\@empty
1528   \gdef\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1529     \global\let\HyPsd@Rest\relax
1530     \ifcat\relax\noexpand#1\relax
1531       \ifx#1\protect
1532       \else
1533         \ifx#1\penalty
1534           \setbox\z@=\hbox{%
1535             \afterassignment\HyPsd@AfterCountRemove
1536             \count@=#2\HyPsd@End
1537           }%
1538         \else
1539           \ifx#1\kern
1540             \setbox\z@=\hbox{%
1541               \afterassignment\HyPsd@AfterDimenRemove
1542               \dimen@=#2\HyPsd@End
1543             }%
1544           \else
1545             \ifx#1\hskip
1546               \setbox\z@=\hbox{%
1547                 \afterassignment\HyPsd@AfterSkipRemove
1548                 \skip@=#2\HyPsd@End
1549               }%
1550             \else
1551               \HyPsd@CatcodeWarning{#1}%
1552             \fi
1553           \fi
1554         \fi
1555       \fi
1556     \else
1557       \ifcat\noexpand#1\noexpandQ% active character
1558       \expandafter\expandafter\expandafter\def

```

```

1559 \expandafter\expandafter\expandafter\HyPsd@String
1560 \expandafter\expandafter\expandafter{%
1561 \expandafter\HyPsd@String\string#1%
1562 }%
1563 \else
1564 \ifcat#1A% letter
1565 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1566 \HyPsd@String#1%
1567 }%
1568 \else
1569 \ifcat#1 % SPACE
1570 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1571 \HyPsd@String\HyPsd@SPACEOPTI
1572 }%
1573 \else
1574 \ifcat$#1%
1575 \HyPsd@CatcodeWarning{math shift}%
1576 \else
1577 \ifcat&#1%
1578 \HyPsd@CatcodeWarning{alignment tab}%
1579 \else
1580 \ifcat^#1%
1581 \HyPsd@CatcodeWarning{superscript}%
1582 \else
1583 \ifcat_#1%
1584 \HyPsd@CatcodeWarning{subscript}%
1585 \else
1586 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1587 \HyPsd@String#1%
1588 }%
1589 \fi
1590 \fi
1591 \fi
1592 \fi
1593 \fi
1594 \fi
1595 \fi
1596 \fi
1597 \ifx\HyPsd@Rest\relax
1598 \ifx\scrollmode#2\scrollmode
1599 \else
1600 \Hy@ReturnAfterFiFiEnd{%
1601 \HyPsd@CheckCatcodes#2\HyPsd@End
1602 }%
1603 \fi
1604 \else
1605 \ifx\HyPsd@Rest\@empty
1606 \else
1607 \Hy@ReturnAfterFiFiEnd{%
1608 \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@End
1609 }%
1610 \fi
1611 \fi
1612 \Hy@ReturnEnd

```

```

1613 }%
1614 \endgroup

```

Remove counts, dimens, skips.

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

```

1615 \def\HyPsd@AfterCountRemove#1\HyPsd@end{%
1616   \gdef\HyPsd@Rest{#1}%
1617 }

```

`\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.

```

1618 \def\HyPsd@AfterDimenRemove#1\HyPsd@end{%
1619   \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@>1ex %
1620     \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1621     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1622   \else
1623     \ifdim\dimen@=\z@
1624     \else
1625       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1626     \fi
1627     \gdef\HyPsd@Rest{#1}%
1628   \fi
1629 }

```

`\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).

```

1630 \def\HyPsd@AfterSkipRemove#1\HyPsd@end{%
1631   \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>1ex %
1632     \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%
1633     \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1634   \else
1635     \ifdim\skip@=\z@
1636     \else
1637       \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1638     \fi
1639     \gdef\HyPsd@Rest{#1}%
1640   \fi
1641 }

```

Catcode warnings.

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

```

1642 \def\HyPsd@CatcodeWarning#1{%
1643   \HyPsd@Warning{%
1644     Token not allowed in a PDF string (%
1645     \ifHy@unicode
1646       Unicode%
1647     \else
1648       PDFDocEncoding%
1649     \fi

```

```

1650 ):%
1651 \MessageBreak removing ``\HyPsd@RemoveCmdPrefix#1'%
1652 }%
1653 }
1654 \beginingroup
1655 \catcode`\|=0 %
1656 \catcode`\|=12 %
1657 |gdef|HyPsd@RemoveCmdPrefix#1{%
1658 |expandafter|HyPsd@@RemoveCmdPrefix
1659 |string#1|@empty\<>-|@empty|@empty
1660 }%
1661 |gdef|HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1662 |endgroup

```

\HyPsd@RemoveSpaceWarning

```

1663 \def\HyPsd@RemoveSpaceWarning#1{%
1664 \HyPsd@Warning{%
1665 Token not allowed in a PDF string (%)
1666 \ifHy@unicode
1667 Unicode%
1668 \else
1669 PDFDocEncoding%
1670 \fi
1671 ):%
1672 \MessageBreak #1\MessageBreak
1673 removed%
1674 }%
1675 }

```

\HyPsd@ReplaceSpaceWarning

```

1676 \def\HyPsd@ReplaceSpaceWarning#1{%
1677 \HyPsd@Warning{%
1678 Token not allowed in a PDF string (%)
1679 \ifHy@unicode
1680 Unicode%
1681 \else
1682 PDFDocEncoding%
1683 \fi
1684 ):%
1685 \MessageBreak #1\MessageBreak
1686 replaced by space%
1687 }%
1688 }

```

6.6.5 Check for wrong glyphs

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

```

1689 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
1690 \expandafter\def\expandafter\HyPsd@String\expandafter{%
1691 \HyPsd@String#1%
1692 }%
1693 \ifx\|#2\%
1694 \else

```



```

1695 \Hy@ReturnAfterFi{%
1696 \HyPsd@GlyphProcessWarning#2\@empty
1697 }%
1698 \fi
1699 }
1700 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
1701 \HyPsd@@GlyphProcessWarning#1++>%
1702 \HyPsd@GlyphProcess#2\@empty
1703 }
1704 \def\HyPsd@@GlyphProcessWarning#1+#2+#3>{%
1705 \ifx\#2\%
1706 \HyPsd@Warning{%
1707 Glyph not defined in %
1708 P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
1709 removing \@backslashchar#1'%
1710 }%
1711 \else
1712 \HyPsd@Warning{%
1713 Composite letter \@backslashchar#1+#2'\MessageBreak
1714 not defined in P\ifHy@unicode U\else D1\fi\space encoding,%
1715 \MessageBreak
1716 removing \@backslashchar#1'%
1717 }%
1718 \fi
1719 }

```

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`.

```

1720 \def\HyPsd@spaceopti#1{ % first space
1721 \ifx\HyPsd@spaceopti#1%
1722 \040%
1723 \else
1724 #1%
1725 \fi
1726 }%

```

6.6.6 Replacing tokens

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

```

#1 Exact the tokens that should be replaced.
#2 The replacement (don't need to be expanded).
#3 Command with the string.
1727 \def\HyPsd@Subst#1#2#3{%
1728 \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
1729 \fi
1730 ##1%
1731 \ifx\scrollmode##2\scrollmode

```

```

1732 \else
1733   #2%
1734   \HyPsd@@ReplaceFi##2\END
1735 \fi
1736 }%
1737 \xdef#3{%
1738   \iftrue
1739   \expandafter\HyPsd@@ReplaceFi#3#1\END
1740 \fi
1741 }%
1742 }

```

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

```

1743 \def\HyPsd@StringSubst#1{%
1744   \expandafter\HyPsd@Subst\expandafter{\string#1}%
1745 }

```

`\HyPsd@EscapeTeX`

```

1746 \begingroup
1747 \lccode`!=`\\%%
1748 \lccode`|=`\\%%
1749 \lccode`\(=`\{%
1750 \lccode`\)=`\\}%
1751 \lccode`0=\z@
1752 \lccode`1=\z@
1753 \lccode`3=\z@
1754 \lccode`4=\z@
1755 \lccode`5=\z@
1756 \lccode`7=\z@
1757 \lowercase{\endgroup
1758 \def\HyPsd@EscapeTeX#1{%
1759   \HyPsd@Subst!{|045}#1%
1760   \HyPsd@Subst({|173}#1%
1761   \HyPsd@Subst){|175}#1%
1762 }%
1763 }

```

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.

```

1764 \def\HyPsd@doxspace#1{%
1765   \ifx#1\relax\else
1766     \ifx#1.\else
1767       \ifx#1:\else
1768         \ifx#1,\else
1769           \ifx#1;\else
1770             \ifx#1!\else
1771               \ifx#1?\else
1772                 \ifx#1/\else

```

```

1773     \ifx#1-\else
1774     \ifx#1'\else
1775     \HyPsd@SPACEOPTI
1776     \fi
1777     \fi
1778     \fi
1779     \fi
1780     \fi
1781     \fi
1782     \fi
1783     \fi
1784     \fi
1785     \fi
1786     #1%
1787 }%

```

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.

```

1788 \begingroup
1789 \catcode`\|=0 %
1790 \catcode`\|=12 %

```

\HyPsd@ConvertToUnicode

```

1791 |gdef|HyPsd@ConvertToUnicode#1{%
1792 |xdef#1{%
1793 |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
1794 }%
1795 |ifx#1|@empty
1796 |else
1797 |xdef#1{%
1798 \376\377%
1799 #1%
1800 }%
1801 |fi
1802 }%

```

\HyPsd@DoConvert

```

1803 |gdef|HyPsd@DoConvert#1{%
1804 |ifx#1|@empty
1805 |else
1806 |Hy@ReturnAfterFi{%
1807 |ifx#1\%%
1808 \%%
1809 |expandafter|HyPsd@DoEscape
1810 |else
1811 |HyPsd@Char{#1}%
1812 |expandafter|HyPsd@DoConvert
1813 |fi
1814 }%
1815 |fi
1816 }%

```

\HyPsd@DoEscape

```

1817 |gdef|HyPsd@DoEscape#1{%
1818   |ifx#19%
1819   |expandafter|HyPsd@GetTwoBytes
1820   |else
1821   |Hy@ReturnAfterFi{%
1822   |ifx#18%
1823     00%
1824   |expandafter|HyPsd@GetTwoBytes
1825   |else
1826     #1%
1827   |expandafter|HyPsd@GetOneByte
1828   |fi
1829 }%
1830 |fi
1831 }%

```

\HyPsd@GetTwoBytes

```

1832 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
1833   #1\#2#3#4%
1834   |HyPsd@DoConvert
1835 }%

```

\HyPsd@GetOneByte

```

1836 |gdef|HyPsd@GetOneByte#1#2{%
1837   #1#2%
1838   |HyPsd@DoConvert
1839 }%
1840 |endgroup

```

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

```

1841 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
1842   \xdef#4{#4#1#2}%
1843   \HyPsd@@ConvertToUnicode#3\END#4%
1844 }

```

\HyPsd@Char

```

1845 \begingroup
1846 \catcode0=9 %
1847 \catcode`\^=7 %
1848 \catcode`\^^=12 %
1849 \def\x{^^^0000}%
1850 \expandafter\endgroup
1851 \ifx\x\@empty
1852   \def\HyPsd@Char#1{%
1853     \ifnum`#1<128 %
1854       \@backslashchar 000#1%
1855     \else
1856       \ifnum`#1<65536 %
1857         \expandafter\HyPsd@CharTwoByte\number`#1!%
1858       \else
1859         \expandafter\expandafter\expandafter\HyPsd@CharSurrogate

```

```

1860     \intcalcSub{`#1}{65536}!%
1861     \fi
1862 \fi
1863 }%
1864 \def\HyPsd@CharTwoByte#1!{%
1865     \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1866     \IntCalcDiv#1!256!!%
1867     \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1868     \IntCalcMod#1!256!!%
1869 }%
1870 \def\HyPsd@CharOctByte#1!{%
1871     \@backslashchar
1872     \IntCalcDiv#1!64!%
1873     \intcalcDiv{\IntCalcMod#1!64!}{8}%
1874     \IntCalcMod#1!8!%
1875 }%
1876 \def\HyPsd@CharSurrogate#1!{%
1877     \@backslashchar 33%
1878     \IntCalcDiv#1!262144!%
1879     \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1880     \intcalcDiv{\IntCalcMod#1!262144!}{1024}!%
1881     \@backslashchar 33%
1882     \expandafter\expandafter\expandafter\IntCalcAdd
1883     \intcalcDiv{\IntCalcMod#1!1024!}{256}!4!%
1884     \expandafter\expandafter\expandafter\HyPsd@CharOctByte
1885     \IntCalcMod#1!256!!%
1886 }%
1887 \else
1888 \def\HyPsd@Char#1{%
1889     \@backslashchar 000#1%
1890 }%
1891 \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.

```

1892 \ifcsname UTFviii@loop\endcsname
1893 \def\HyPsd@expand@utfviii {%
1894     \count@"C2
1895     \@tempcnta"F5
1896     \def\UTFviii@tmp{\expandafter\def\expandafter~\expandafter{~}}%
1897     \UTFviii@loop
1898 }
1899 \else
1900 \def\HyPsd@expand@utfviii {}
1901 \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

1902 \begingroup
1903 \lccode\~=`^^f4\relax
1904 \lowercase{\endgroup
1905 \def\HyPsd@UTFviii{%
1906   \HyPsd@expand@utfviii
1907   \let\UTFviii@two@octets\HyPsd@UTFviii@two
1908   \let\UTFviii@three@octets\HyPsd@UTFviii@three
1909   \let\UTFviii@four@octets\HyPsd@UTFviii@four
1910   \ifx~\HyPsd@UTFviii@ccxliv@undef
1911     \let~\HyPsd@UTFviii@ccxliv@def
1912   \fi
1913   \let\unichar\HyPsd@unichar
1914 }%
1915 }%
1916 \def\HyPsd@UTFviii@ccxliv@undef{\@inpenc@undefined@{utf8}}%
1917 \edef\HyPsd@UTFviii@ccxliv@def{%
1918   \noexpand\UTFviii@four@octets\string ^^f4%
1919 }%

```

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.

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

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

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

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

$$(5)$$

```

1920 \def\HyPsd@UTFviii@two#1#2{%
1921   \expandafter\HyPsd@UTFviii@@two
1922   \number\dimexpr.25\dimexpr`#1sp\expandafter\relax\expandafter| %
1923   \number`#1\expandafter| %
1924   \number\dimexpr.125\dimexpr`#2sp\expandafter\relax\expandafter| %
1925   \number`#2 \@nil
1926 }%
1927 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
1928   \expandafter\8%
1929   \number\numexpr #1-48\expandafter\relax
1930   \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
1931   \number\numexpr #3-8*%
1932   \number\dimexpr.125\dimexpr#3sp\relax\relax\expandafter\relax
1933   \number\numexpr #4-8*#3\relax
1934 }%

```

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

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

$$\begin{aligned}
b &:= 2 * (A - 4 * (A/4)) + ((B - 128 < 32)?0 : 1) & (7) \\
c &:= B/4 - 32 - ((B - 128 < 32)?0 : 8) & (8) \\
d &:= B - 4 * (B/4) & (9) \\
e &:= C/8 - 16 & (10) \\
f &:= C - 8 * (C/8) & (11) \\
& & (12)
\end{aligned}$$

```

1935 \def\HyPsd@UTFviii@three#1#2#3{%
1936   \expandafter\HyPsd@UTFviii@@three
1937   \number\dimexpr.25\dimexpr`#1sp\expandafter\relax\expandafter| %
1938   \number`#1\expandafter| %
1939   \number\ifnum\dimexpr`#2-128\relax <32 0\else 1\fi\expandafter| %
1940   \number\dimexpr.25\dimexpr`#2sp\expandafter\relax\expandafter| %
1941   \number`#2\expandafter| %
1942   \number\dimexpr.125\dimexpr`#3sp\expandafter\relax\expandafter| %
1943   \number`#3 \@nil
1944 }%
1945 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
1946   \expandafter\9%
1947   \number\dimexpr #1-56\expandafter\relax
1948   \number\dimexpr 2*(#2-4*#1)+#3\expandafter\relax
1949   \number\dimexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
1950   \csname\number\dimexpr #5-4*#4\relax\expandafter\endcsname
1951   \number\dimexpr #6-16\expandafter\relax
1952   \number\dimexpr #7-8*#6\relax
1953 }%

```

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

```

```

1954 \def\HyPsd@UTFviii@four#1#2{%
1955   \expandafter\HyPsd@@UTFviii@four\number
1956   \numexpr-1+(`#1-240)*4+\dimexpr.0625\dimexpr`#2sp-128sp%
1957   \expandafter|\number
1958   \numexpr`#2-16*\dimexpr.0625\dimexpr`#2sp| %
1959 }%
1960 \def\HyPsd@@UTFviii@four#1|#2|#3{%
1961   \933\number\dimexpr.25\dimexpr#1sp\relax\relax
1962   \csname\number\dimexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1963   \ifodd#2 %
1964     \number\dimexpr(#2-1)/2\relax
1965   \else
1966     \number\dimexpr#2/2\relax
1967   \fi
1968   \number\dimexpr\ifodd#2 4+\fi
1969   \dimexpr.0625\dimexpr`#3sp-128sp\relax\relax\relax
1970   \933%
1971   \expandafter\HyPsd@@@UTFviii@four\number
1972   \numexpr`#3-16*\dimexpr.0625\dimexpr`#3sp| %

```

```

1973 }%
1974 \def\HyPsd@@@UTFviii@four#1|#2{%
1975   \number\numexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
1976   \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1977   \number\dimexpr.125\dimexpr`#2sp-128sp\relax\relax
1978   \number\numexpr`#2-8*\dimexpr.125\dimexpr`#2sp\relax\relax\relax
1979 }%

```

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

```

1980 \def\HyPsd@unichar#1{%
1981   \ifHy@unicode
1982     \ifnum#1>"10FFFF %
1983     \HyPsd@UnicodeReplacementCharacter % illegal
1984   \else
1985     \ifnum#1>"FFFF %

```

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

```

1986   \expandafter\HyPsd@unichar\expandafter{%
1987     \number\numexpr 55296+%
1988     \dimexpr.0009765625\dimexpr\number#1sp-\p@
1989     \relax\relax\relax
1990   }%

```

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

```

1991   \expandafter\HyPsd@unichar\expandafter{%
1992     \number\numexpr#1-9216%
1993     -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
1994     \relax\relax\relax
1995   }%
1996   \else
1997     \ifnum#1>"7FFF %
1998       \9%
1999       \expandafter\HyPsd@unichar@first@byte\expandafter{%
2000         \number
2001         \dimexpr.00390625\dimexpr\number#1sp\relax\relax
2002       }%
2003     \else
2004       \8%
2005       \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
2006     \fi
2007     \expandafter\HyPsd@unichar@second@byte\expandafter{%
2008       \number
2009       \numexpr#1-256*\number
2010       \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
2011     }%
2012     \fi
2013   \fi
2014   \else
2015     .% unsupported (Unicode -> PDF Doc Encoding)
2016   \fi
2017 }%
2018 \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
2019 \def\HyPsd@unichar@first@byte#1{%
2020   \number\dimexpr.015625\dimexpr#1sp\relax\relax

```



```

2021 \expandafter\HyPsd@unichar@octtwo\expandafter{%
2022 \number
2023 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2024 \relax\relax\relax
2025 }%
2026 }%
2027 \def\HyPsd@unichar@second@byte#1{%
2028 \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
2029 \expandafter\HyPsd@unichar@octtwo\expandafter{%
2030 \number
2031 \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2032 \relax\relax\relax
2033 }%
2034 }%
2035 \def\HyPsd@unichar@octtwo#1{%
2036 \number\dimexpr.125\dimexpr#1sp\relax\relax
2037 \number\dimexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
2038 \relax\relax\relax
2039 }%

```

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

```

2040 \def\HyPsd@utf@viii@undeferr#1#2#3#4#5#6{%
2041 \ifx\@gobble#1%
2042 \else
2043 [Please insert \textbackslash PrerenderUnicode%
2044 \textbraceleft#1\textbraceright\space
2045 into preamble]%
2046 \fi
2047 }%

```

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.

```

2048 \def\HyPsd@DieFace#1{%
2049 \ifHy@unicode
2050 \ifnum#1<1 %
2051 \HyPsd@UnicodeReplacementCharacter
2052 \else
2053 \ifnum#1>6 %
2054 \9046\205%
2055 \expandafter\expandafter\expandafter
2056 \HyPsd@DieFaceLarge\intcalcSub{#1}{6}!%
2057 \else
2058 \9046\20\intcalcDec{#1}%
2059 \fi

```

```

2060 \fi
2061 \else
2062 .% Die faces are not part of PDFDocEncoding
2063 \fi
2064 }

```

\HyPsd@DieFaceLarge

```

2065 \def\HyPsd@DieFaceLarge#1{%
2066 \ifnum#1>6 %
2067 \expandafter\@firstoftwo
2068 \else
2069 \expandafter\@secondoftwo
2070 \fi
2071 {%
2072 \9046\205%
2073 \expandafter\expandafter\expandafter
2074 \HyPsd@DieFaceLarge\IntCalcSub#1!6!!%
2075 }{%
2076 \9046\20\IntCalcDec#1!%
2077 }%
2078 }

```

6.6.11 Support for moon phases of package china2e

```

2079 \def\HyPsd@MoonPha#1{%
2080 \ifcase\intcalcNum{#1} %
2081 \HyPsd@UnicodeReplacementCharacter
2082 \or % 1
2083 % U+1F31A NEW MOON WITH FACE; \MoonPha{1} (china2e)
2084 \9330\074\9337\032%
2085 \or % 2
2086 \HyPsd@UnicodeReplacementCharacter
2087 \or % 3
2088 % U+1F31D FULL MOON WITH FACE; \MoonPha{3} (china2e)
2089 \9330\074\9337\035%
2090 \or % 4
2091 % U+1F31C LAST QUARTER MOON WITH FACE; \MoonPha{4} (china2e)
2092 \9330\074\9337\034%
2093 \else
2094 \HyPsd@UnicodeReplacementCharacter
2095 \fi
2096 }
2097 %* \HyPsd@MoonPha -> \MoonPha

```

6.6.12 Support for package pifont

\HyPsd@ding

```

2098 \def\HyPsd@ding#1{%
2099 \ifHy@unicode
2100 \ifnum#1<32 %
2101 \HyPsd@UnicodeReplacementCharacter
2102 \else
2103 \ifnum#1>254 %
2104 \HyPsd@UnicodeReplacementCharacter
2105 \else

```

```

2106     \ifnum#1<127 %
2107         \expandafter\expandafter\expandafter
2108         \HyPsd@@ding\intcalcNum{#1}!%
2109     \else
2110         \ifnum#1>160 %
2111             \expandafter\expandafter\expandafter
2112             \HyPsd@@ding\intcalcNum{#1}!%
2113         \else
2114             \HyPsd@UnicodeReplacementCharacter
2115         \fi
2116     \fi
2117 \fi
2118 \fi
2119 \else
2120     .% Dingbats are not part of PDFDocEncoding
2121 \fi
2122 }

```

\HyPsd@@ding

```

2123 \def\HyPsd@@ding#1!{%
2124     \@ifundefined{HyPsd@ding@#1}{%
2125         \ifnum#1<127 %
2126             \9047%
2127             \HyPsd@DecimalToOctalSecond{\IntCalcSub#1!32!}%
2128         \else
2129             \ifnum#1<168 %
2130                 \9047\14\IntCalcSub#1!160!%
2131             \else
2132                 \ifnum#1>181 %
2133                     \9047\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!64!}%
2134                 \else
2135                     % 172..181 -> U+2460..U+2469
2136                     \9044\HyPsd@DecimalToOctalSecond{\IntCalcSub#1!76!}%
2137                 \fi
2138             \fi
2139         \fi
2140     }{%
2141         \csname HyPsd@ding@#1\endcsname
2142     }%
2143 }

2144 \@namedef{HyPsd@ding@32}{\space}
2145 % U+260E BLACK TELEPHONE
2146 \@namedef{HyPsd@ding@37}{\9046\016}% U+260E
2147 % U+261B BLACK RIGHT POINTING INDEX
2148 \@namedef{HyPsd@ding@42}{\9046\033}% U+261B
2149 % U+261E WHITE RIGHT POINTING INDEX
2150 \@namedef{HyPsd@ding@43}{\9046\036}% U+261E
2151 % U+2605 BLACK STAR
2152 \@namedef{HyPsd@ding@72}{\9046\005}% U+2605
2153 % U+25CF BLACK CIRCLE
2154 \@namedef{HyPsd@ding@108}{\9045\317}% U+25CF
2155 % U+25A0 BLACK SQUARE
2156 \@namedef{HyPsd@ding@110}{\9045\240}% U+25A0

```

```

2157 % U+25B2 BLACK UP-POINTING TRIANGLE
2158 \@namedef{HyPsd@ding@115}{\9045\262}% U+25B2
2159 % U+25BC BLACK DOWN-POINTING TRIANGLE
2160 \@namedef{HyPsd@ding@116}{\9045\274}% U+25BC
2161 % U+25C6 BLACK DIAMOND
2162 \@namedef{HyPsd@ding@117}{\9045\306}% U+25C6
2163 % U+25D7 RIGHT HALF BLACK CIRCLE
2164 \@namedef{HyPsd@ding@119}{\9045\327}% U+25D7
2165 \@namedef{HyPsd@ding@168}{\textclubsuitblack}%
2166 \@namedef{HyPsd@ding@169}{\textdiamondsuitblack}%
2167 \@namedef{HyPsd@ding@170}{\textheartsuitblack}%
2168 \@namedef{HyPsd@ding@171}{\textspadesuitblack}%
2169 \@namedef{HyPsd@ding@213}{\textrightarrow}%
2170 \@namedef{HyPsd@ding@214}{\textleftarrow}%
2171 \@namedef{HyPsd@ding@215}{\textupdownarrow}%
2172 \@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.

```

2173 \@ifpackageloaded{subfigure}{%
2174   \@ifundefined{sub@label}{%
2175     \Hy@hypertexnamesfalse
2176   }{%
2177     \renewcommand*{\sub@label}[1]{%
2178       \@bsphack
2179       \subfig@oldlabel{#1}%
2180       \if@filesw
2181         \begingroup
2182           \edef\@currentlabstr{%
2183             \expandafter\strip@prefix\meaning\@currentlabelname
2184           }%
2185           \protected@write\@auxout{}{%
2186             \string\newlabel{sub@#1}{%
2187               {\@nameuse{@@thesub\@capytype}}%
2188               {\thepage}%
2189             }%
2190             \expandafter\strip@period\@currentlabstr
2191             \relax.\relax\@@@%
2192           }%
2193           {\@currentHref}%
2194           {}%
2195         }%
2196       }%
2197     \endgroup
2198   \fi
2199   \@esphack
2200 }%
2201 }%
2202 }{}

```

7.2 Package xr and xr-hyper

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

```
2203 \def\Hy@true{true}
2204 \def\Hy@false{false}

    Providing dummy definitions.

2205 \let\literalps@out\@gobble
2206 \newcommand\pdfbookmark[3][]{ }
2207 \def\Acrobatmenu#1#2{\leavevmode#2}
2208 \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

```
2209 \let\HyperRaiseLinkHook\@empty
2210 \def\HyperRaiseLinkDefault{\baselineskip}
```

\HyperRaiseLinkHook allows the user to reassign \HyperRaiseLinkLength.

```
2211 \newcount\Hy@SavedSpaceFactor
2212 \def\Hy@SaveSpaceFactor{%
2213   \global\Hy@SavedSpaceFactor=\ifhmode\spacefactor\else\z@\fi
2214 }
2215 \def\Hy@RestoreSpaceFactor{%
2216   \relax
2217   \ifhmode
2218     \ifnum\Hy@SavedSpaceFactor>\z@
2219       \spacefactor=\Hy@SavedSpaceFactor
2220     \fi
2221   \fi
2222 }
2223 \def\Hy@SaveSavedSpaceFactor{%
2224   \edef\Hy@RestoreSavedSpaceFactor{%
2225     \global\Hy@SavedSpaceFactor=\the\Hy@SavedSpaceFactor\relax
2226   }%
2227 }
```

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

```

2228 \@if@t@r\fmtversion{2023-11-01}
2229 {\NewSocket{hyp/raisedlink}{1}}
2230 {\providecommand\UseSocket[2]{#2}}
2231 \def\Hy@raisedlink#1{%
2232   \ifvmode
2233     \UseSocket{hyp/raisedlink}{#1}%
2234   \else
2235     \Hy@SaveSpaceFactor
2236     \penalty\@M
2237     \smash{%
2238       \begin{group}
2239         \let\HyperRaiseLinkLength\@tempdima
2240         \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
2241         \HyperRaiseLinkHook
2242         \expandafter\endgroup
2243         \expandafter\raise\the\HyperRaiseLinkLength\hbox{%
2244           \Hy@RestoreSpaceFactor
2245           #1%
2246           \Hy@SaveSpaceFactor
2247         }%
2248       }%
2249     \Hy@RestoreSpaceFactor
2250   \fi
2251 }

```

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

```

\Hy@RestoreLastskip 2252 \def\Hy@SaveLastskip{%
2253   \let\Hy@RestoreLastskip\relax
2254   \ifvmode
2255     \ifdim\lastskip=\z@
2256       \ifnum\lastnodetype=1 %
2257         \let\Hy@RestoreLastskip\relax
2258       \else
2259         \let\Hy@RestoreLastskip\nobreak
2260       \fi
2261     \else
2262       \begin{group}
2263         \skip@=-\lastskip
2264         \edef\x{%
2265           \endgroup
2266           \def\noexpand\Hy@RestoreLastskip{%
2267             \noexpand\ifvmode
2268               \noexpand\nobreak
2269               \vskip\the\skip@
2270               \vskip\the\lastskip\relax
2271             \noexpand\fi
2272           }%
2273         }%
2274         \x
2275       \fi
2276     \else
2277       \ifhmode
2278         \ifdim\lastskip=\z@
2279         \let\Hy@RestoreLastskip\nobreak

```

```

2280 \else
2281 \begingroup
2282 \skip@=-\lastskip
2283 \edef\x{%
2284 \endgroup
2285 \def\noexpand\Hy@RestoreLastskip{%
2286 \noexpand\ifhmode
2287 \noexpand\nobreak
2288 \hskip\the\skip@
2289 \hskip\the\lastskip\relax
2290 \noexpand\fi
2291 }%
2292 }%
2293 \x
2294 \fi
2295 \fi
2296 \fi
2297 }%

```

9 Options

```

2298 \SetupKeyvalOptions{%
2299 family=Hyp,%
2300 prefix=HyOpt%
2301 }

```

9.1 Help macros

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

```

\AddToDocumentProperties
\GetDocumentProperties 2302 \ExplSyntaxOn
2303 \@ifundefined{AddToDocumentProperties}
2304 {
2305 \prop_new:N \g__hyp_documentproperties_prop
2306 \NewDocumentCommand\AddToDocumentProperties{O{\@currname}mm}
2307 {
2308 \exp_args:NNx
2309 \prop_gput:Nnn \g__hyp_documentproperties_prop
2310 {
2311 \tl_if_blank:eTF {#1}{top-level/}{#1/} #2
2312 }
2313 { #3}
2314 }
2315 \NewExpandableDocumentCommand\GetDocumentProperties{m}
2316 {
2317 \prop_item:Nn \g__hyp_documentproperties_prop {#1}
2318 }
2319 }{}
2320 \ExplSyntaxOff

\IfHyperBooleanExists

```

```

2321 \def\IfHyperBooleanExists#1{%
2322   \@ifundefined{Hy@#1false}\@secondoftwo{%
2323     \@ifundefined{KV@Hyp@#1@default}\@secondoftwo\@firstoftwo
2324   }%
2325 }

2326 \@namedef{KV@Hyp@stoppeearly@default}{ }

```

\IfHyperBoolean

```

2327 \def\IfHyperBoolean#1{%
2328   \IfHyperBooleanExists{#1}{%
2329     \csname ifHy@#1\endcsname
2330     \expandafter\@firstoftwo
2331   \else
2332     \expandafter\@secondoftwo
2333   \fi
2334 } \@secondoftwo
2335 }

```

\Hy@boolkey

```

2336 \def\Hy@boolkey#1#2{%
2337   \edef\Hy@tempa{#2}%
2338   \lowercase\expandafter{%
2339     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2340   }%
2341   \ifx\Hy@tempa\@empty
2342     \let\Hy@tempa\Hy@true
2343   \fi
2344   \ifx\Hy@tempa\Hy@true
2345   \else
2346     \ifx\Hy@tempa\Hy@false
2347     \else
2348       \let\Hy@tempa\relax
2349     \fi
2350   \fi
2351   \ifx\Hy@tempa\relax
2352     \Hy@WarnOptionValue{#2}{#1}{`true' or `false'}%
2353   \else
2354     \Hy@Info{Option `#1' set ``\Hy@tempa'}%
2355     \csname Hy@#1\Hy@tempa\endcsname
2356   \fi
2357 }

```

\Hy@WarnOptionValue

```

2358 \def\Hy@WarnOptionValue#1#2#3{%
2359   \Hy@Warning{%
2360     Unexpected value `#1'\MessageBreak
2361     of option `#2' instead of\MessageBreak
2362     #3%
2363   }%
2364 }

```

\Hy@DisableOption

```

2365 \def\Hy@DisableOption#1{%

```



```

2366 \@ifundefined{KV@Hyp@#1@default}{%
2367   \define@key{Hyp}{#1}%
2368 }{%
2369   \define@key{Hyp}{#1}[]%
2370 }%
2371 {\Hy@WarnOptionDisabled{#1}}%
2372 }
2373

```

\Hy@WarnOptionDisabled

```

2374 \def\Hy@WarnOptionDisabled#1{%
2375   \Hy@Warning{%
2376     Option `#1' has already been used,\MessageBreak
2377     setting the option has no effect%
2378   }%
2379 }

```

\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.

```

2380 \def\Hy@CheckOptionValue#1#2#3{%
2381   \begingroup
2382   \edef\x{#1}%
2383   \@onelevel@sanitize\x
2384   \let\y=y%
2385   \def\do##1##2{%
2386     \def\z{##1}%
2387     \@onelevel@sanitize\z
2388     \ifx\x\z
2389       \let\y=n%
2390       \let\do\@gobbletwo
2391     \fi
2392   }%
2393   #3%
2394   \ifx\y y%
2395     \def\do##1##2{%
2396       * `##1'%
2397       \ifx\\##2\\\else\space(##2)\fi
2398       \MessageBreak
2399     }%
2400     \Hy@Warning{%
2401       Values of option `#2':\MessageBreak
2402       #3%
2403       * An empty value disables the option.\MessageBreak
2404       Unknown value `x'%
2405     }%
2406   \fi
2407   \endgroup
2408 }

```

\Hy@DefNameKey #1: option name

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

```

2409 \def\Hy@DefNameKey#1{%
2410 \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
2411 }

```

\Hy@@DefNameKey #1: macro for value storage

#2: option name

#3: \do list with known values.

```

2412 \def\Hy@@DefNameKey#1#2#3{%
2413 \define@key{Hyp}{#2}{%
2414 \edef#1{##1}%
2415 \ifx#1\@empty
2416 \else
2417 \Hy@CheckOptionValue{##1}{#2}{#3}%
2418 \fi
2419 }%
2420 \let#1\@empty
2421 }

```

\Hy@UseNameKey

```

2422 \def\Hy@UseNameKey#1#2{%
2423 \ifx#2\@empty
2424 \else
2425 /#1/#2%
2426 \fi
2427 }

```

9.2 Defining the options

```

2428 \define@key{Hyp}{implicit}[true]{%
2429 \Hy@boolkey{implicit}{#1}%
2430 }
2431 \define@key{Hyp}{draft}[true]{%
2432 \Hy@boolkey{draft}{#1}%
2433 }
2434 \define@key{Hyp}{final}[true]{%
2435 \Hy@boolkey{final}{#1}%
2436 }
2437 \let\KV@Hyp@nolinks\KV@Hyp@draft
2438 \def\Hy@ObsoletePaperOption#1{%
2439 \Hy@WarningNoLine{%
2440 Option `#1' is no longer used%
2441 }%
2442 \define@key{Hyp}{#1}[true]{}%
2443 }
2444 \def\Hy@temp#1{%
2445 \define@key{Hyp}{#1}[true]{%
2446 \Hy@ObsoletePaperOption{#1}%
2447 }%
2448 }
2449 \Hy@temp{a4paper}
2450 \Hy@temp{a5paper}
2451 \Hy@temp{b5paper}
2452 \Hy@temp{letterpaper}

```

```

2453 \Hy@temp{legalpaper}
2454 \Hy@temp{executivepaper}

2455 \define@key{Hyp}{setpagesize}[true]{%
2456   \Hy@boolkey{setpagesize}{#1}%
2457 }
2458 \define@key{Hyp}{debug}[true]{%
2459   \Hy@boolkey{debug}{#1}%
2460 }
2461 \define@key{Hyp}{linktocpage}[true]{%
2462   \Hy@boolkey{linktocpage}{#1}%
2463   \ifHy@linktocpage
2464     \let\Hy@linktoc\Hy@linktoc@page
2465   \else
2466     \let\Hy@linktoc\Hy@linktoc@section
2467   \fi
2468 }
2469 \chardef\Hy@linktoc@none=0 %
2470 \chardef\Hy@linktoc@section=1 %
2471 \chardef\Hy@linktoc@page=2 %
2472 \chardef\Hy@linktoc@all=3 %
2473 \ifHy@linktocpage
2474   \let\Hy@linktoc\Hy@linktoc@page
2475 \else
2476   \let\Hy@linktoc\Hy@linktoc@section
2477 \fi
2478 \define@key{Hyp}{linktoc}{%
2479   \@ifundefined{Hy@linktoc@#1}{%
2480     \Hy@Warning{%
2481       Unexpected value `#1' of\MessageBreak
2482       option `linktoc' instead of `none',\MessageBreak
2483       `section', `page' or `all'%
2484     }%
2485   }{%
2486     \expandafter\let\expandafter\Hy@linktoc
2487     \csname Hy@linktoc@#1\endcsname
2488   }%
2489 }
2490 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
2491 \let\XR@ext\relax
2492 \define@key{Hyp}{verbose}[true]{%
2493   \Hy@boolkey{verbose}{#1}%
2494 }

```

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.

```

2495 \define@key{Hyp}{raiselinks}[true]{%
2496   \Hy@boolkey{raiselinks}{#1}%
2497 }

```

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

```

2498 \def\Hy@setbreaklinks#1{%
2499   \csname breaklinks#1\endcsname
2500 }

```

```

2501 \def\Hy@breaklinks@unsupported{%
2502   \ifx\Hy@setbreaklinks\@gobble
2503     \ifHy@breaklinks
2504       \Hy@WarningNoLine{%
2505         You have enabled option `breaklinks'.\MessageBreak
2506         But driver ``\Hy@driver.def' does not support this.\MessageBreak
2507         Expect trouble with the link areas of broken links%
2508       }%
2509     \fi
2510   \fi
2511 }

2512 \define@key{Hyp}{breaklinks}[true]{%
2513   \Hy@boolkey{breaklinks}{#1}%
2514   \let\Hy@setbreaklinks\@gobble
2515 }

2516 \define@key{Hyp}{localanchorname}[true]{%
2517   \Hy@WarningNoLine{%
2518     Option `localanchorname' is deprecated%
2519   }%
2520   \Hy@boolkey{localanchorname}{#1}%
2521 }

Determines whether an automatic anchor is put on each page
2522 \define@key{Hyp}{pageanchor}[true]{%
2523   \Hy@boolkey{pageanchor}{#1}%
2524 }

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.
2525 \define@key{Hyp}{plainpages}[true]{%
2526   \Hy@boolkey{plainpages}{#1}%
2527 }

Are the names for anchors made as per the HyperTeX system, or do they simply
use what LATEX provides?
2528 \define@key{Hyp}{naturalnames}[true]{%
2529   \Hy@boolkey{naturalnames}{#1}%
2530 }

Completely ignore the names as per the HyperTeX system, and use unique coun-
ters.
2531 \define@key{Hyp}{hypertexnames}[true]{%
2532   \Hy@boolkey{hypertexnames}{#1}%
2533 }

Currently, dvips doesn't allow anchors nested within targets, so this option tries
to stop that happening. Other processors may be able to cope.
2534 \define@key{Hyp}{nesting}[true]{%
2535   \Hy@boolkey{nesting}{#1}%
2536 }

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

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

```

```

2542 \ifHy@unicode
2543   \def\HyPsd@pdfencoding{unicode}%
2544   \HyPsd@LoadUnicode
2545 \else
2546   \def\HyPsd@pdfencoding{pdfdoc}%
2547 \fi
2548 }
2549 \Hy@AtBeginDocument{%
2550 \ifx\HyPsd@LoadUnicode\relax
2551 \else
2552   \def\HyPsd@LoadUnicode{%
2553     \Hy@Error{%
2554       Unicode support for bookmarks is not available.\MessageBreak
2555       Activate unicode support by using one of the options\MessageBreak
2556       `unicode', `pdfencoding=unicode', `pdfencoding=auto'\MessageBreak
2557       in the preamble%
2558     }\@ehc
2559     \global\let\HyPsd@LoadUnicode\relax
2560     \global\Hy@unicodetrue
2561     \global\let\Hy@unicodetrue\Hy@unicodetrue
2562   }%
2563 \fi
2564 }

2565 \define@key{Hyp}{pdfencoding}{%
2566   \edef\HyPsd@temp{#1}%
2567   \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2568     \let\HyPsd@pdfencoding\HyPsd@temp
2569     \Hy@unicodetrue
2570   \else
2571     \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2572       \z@
2573     \else
2574       \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2575         \z@
2576       \else
2577         \@ne
2578       \fi
2579     \fi
2580     \let\HyPsd@pdfencoding\HyPsd@temp
2581     \hypersetup{unicode}%
2582   \ifHy@unicode
2583     \def\HyPsd@pdfencoding{#1}%
2584   \else
2585     \Hy@Warning{Cannot switch to unicode bookmarks}%
2586     \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2587   \fi
2588 \else
2589   \@onelevel@sanitize\HyPsd@temp
2590   \Hy@Warning{%
2591     Values of option `pdfencoding':\MessageBreak
2592     `pdfdoc', `unicode', `auto'.\MessageBreak
2593     Ignoring unknown value ``\HyPsd@temp'%
2594   }%
2595 \fi

```

```

2596 \fi
2597 }
2598 \def\HyPsd@pdfencoding@auto{auto}
2599 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2600 \def\HyPsd@pdfencoding@unicode{unicode}

```

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

```

2601 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
2602 \HyPsd@LoadUnicode
2603 \define@key{Hyp}{psdextra}[true]{%
2604   \Hy@boolkey{psdextra}{#1}%
2605   \HyPsd@LoadExtra
2606 }
2607 \def\hypersetup{\kvsetkeys{Hyp}}
2608 \newif\ifHy@setpdfversion
2609 \define@key{Hyp}{pdfversion}{%
2610   \@ifundefined{Hy@pdfversion@#1}{%
2611     \PackageWarning{hyperref}{%
2612       Unsupported PDF version `#1'.\MessageBreak
2613       Valid values: 1.2-1.7, 2.0%
2614     }%
2615   }{%
2616     \Hy@setpdfversiontrue
2617     \@nameuse{Hy@pdfversion@#1}%
2618   }%
2619 }

```

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

```

2620 \@namedef{Hy@pdfversion@1.2}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
  norversion{2}}%
2621 \@namedef{Hy@pdfversion@1.3}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
  norversion{3}}%
2622 \@namedef{Hy@pdfversion@1.4}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
  norversion{4}}%
2623 \@namedef{Hy@pdfversion@1.5}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
  norversion{5}}%
2624 \@namedef{Hy@pdfversion@1.6}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
  norversion{6}}%
2625 \@namedef{Hy@pdfversion@1.7}{\def\Hy@pdf@majorversion{1}\def\Hy@pdf@mi-
  norversion{7}}%
2626 \@namedef{Hy@pdfversion@2.0}{\def\Hy@pdf@majorversion{2}\def\Hy@pdf@mi-
  norversion{0}}%
2627 \def\Hy@pdf@majorversion{1}\def\Hy@pdf@minorversion{5}

```

Legacy name, earlier releases assumed 1.x

```

2628 \let\Hy@pdfversion\Hy@pdf@minorversion
2629 \def\Hy@pdf@majorminor@version{\numexpr100*\Hy@pdf@majorversion+\Hy@pdf@mi-
  norversion\relax}
2630 \def\Hy@pdfmajorminor@version{\numexpr100*\Hy@pdfmajorversion+\Hy@pdfmi-
  norversion\relax}

```

if pdfminorversion is defined, make sure pdfmajorversion is too.

```

2631 \@ifundefined{pdfminorversion}{}{%
2632 \@ifundefined{pdfmajorversion}{}%

```

```

2633 \newcount\pdfmajorversion
2634 \pdfmajorversion=1
2635 }{}%
2636 }
2637 \ifx\pdfmajorversion\@undefined\else
2638 \def\Hy@pdfmajorversion{\pdfmajorversion}
2639 \fi

```

10 Options for different drivers

```

2640 \newif\ifHy@DviMode
2641 \let\Hy@DviErrMsg\@empty
2642 \ifpdf
2643   \def\Hy@DviErrMsg{pdfTeX or LuaTeX is running in PDF mode}%
2644 \else
2645   \ifxetex
2646     \def\Hy@DviErrMsg{XeTeX is running}%
2647   \else
2648     \ifvtex
2649       \ifnum\OpMode=\z@
2650         \Hy@DviModetrue
2651       \else
2652         \def\Hy@DviErrMsg{VTeX is running, but not in DVI mode}%
2653       \fi
2654     \else
2655       \Hy@DviModetrue
2656     \fi
2657   \fi
2658 \fi
2659 \def\HyOpt@CheckDvi#1{%
2660   \ifHy@DviMode
2661     \expandafter\@firstofone
2662   \else
2663     \Hy@Error{%
2664       Wrong DVI mode driver option `#1',\MessageBreak
2665       because \Hy@DviErrMsg
2666     }\@ehc
2667     \expandafter\@gobble
2668   \fi
2669 }
2670 \DeclareVoidOption{tex4ht}{%
2671   \Hy@texhttrue
2672   \kvsetkeys{Hyp}{colorlinks=true}%
2673   \def\BeforeTeXIVht{\RequirePackage{color}}}%
2674 \def\Hy@driver{htex4ht}%
2675 \def\MaybeStopEarly{%
2676   \Hy@Message{Stopped early}%
2677   \Hy@AtBeginDocument{%
2678     \PDF@FinishDoc
2679     \gdef\PDF@FinishDoc{}}%
2680   }%
2681 \endinput
2682 }%
2683 }

```

```

2684 \DeclareVoidOption{pdftex}{%
2685   \ifpdf
2686     \def\Hy@driver{hpdftex}%
2687     \PassOptionsToPackage{pdftex}{color}%
2688   \else
2689     \Hy@Error{%
2690       Wrong driver option `pdftex',\MessageBreak
2691       because pdfTeX in PDF mode is not detected%
2692     }\@ehc
2693   \fi
2694 }
2695 \DeclareVoidOption{luatex}{%
2696   \ifpdf
2697     \ifx\pdfextension\@undefined
2698       \def\Hy@driver{hpdftex}%
2699       \PassOptionsToPackage{pdftex}{color}%
2700     \else
2701       \def\Hy@driver{hluatex}%
2702       \PassOptionsToPackage{luatex}{color}%
2703     \fi
2704   \else
2705     \Hy@Error{%
2706       Wrong driver option `luatex',\MessageBreak
2707       because luaTeX in PDF mode is not detected%
2708     }\@ehc
2709   \fi
2710 }
2711 \DeclareVoidOption{nativepdf}{%
2712   \HyOpt@CheckDvi{nativepdf}{%
2713     \def\Hy@driver{hdvips}%
2714     \PassOptionsToPackage{dvips}{color}%
2715   }%
2716 }
2717 \DeclareVoidOption{dvipdfm}{%
2718   \HyOpt@CheckDvi{dvipdfm}{%
2719     \def\Hy@driver{hdvipdfm}%
2720   }%
2721 }
2722 \DeclareVoidOption{dvipdfmx}{%
2723   \HyOpt@CheckDvi{dvipdfmx}{%
2724     \def\Hy@driver{hdvipdfm}%
2725     \PassOptionsToPackage{dvipdfmx}{color}%
2726   }%
2727 }
2728 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2729   \expandafter\ifx\csname if#1\expandafter\endcsname
2730     \csname iftrue\endcsname
2731     \chardef\SpecialDvipdfmxOutlineOpen\@ne
2732   \else
2733     \chardef\SpecialDvipdfmxOutlineOpen\z@
2734   \fi
2735 }
2736 \DeclareVoidOption{xetex}{%
2737   \ifxetex

```



```

2738 \def\Hy@driver{hxtex}%
2739 \else
2740 \Hy@Error{%
2741   Wrong driver option `xetex',\MessageBreak
2742   because XeTeX is not detected%
2743 } \@ehc
2744 \fi
2745 }
2746 \DeclareVoidOption{pdfmark}{%
2747 \HyOpt@CheckDvi{pdfmark}{%
2748 \def\Hy@driver{hdvips}%
2749 }%
2750 }
2751 \DeclareVoidOption{dvips}{%
2752 \HyOpt@CheckDvi{dvips}{%
2753 \def\Hy@driver{hdvips}%
2754 \PassOptionsToPackage{dvips}{color}%
2755 }%
2756 }
2757 \DeclareVoidOption{hypertex}{%
2758 \HyOpt@CheckDvi{hypertex}{%
2759 \def\Hy@driver{hypertex}%
2760 }%
2761 }
2762 \let\Hy@MaybeStopNow\relax
2763 \DeclareVoidOption{vtex}{%
2764 \ifvtex
2765 \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2766 \def\Hy@driver{hvtex}%
2767 \else
2768 \ifnum\OpMode=10\relax
2769 \def\Hy@driver{hvtexhtm}%
2770 \def\MaybeStopEarly{%
2771 \Hy@Message{Stopped early}%
2772 \Hy@AtBeginDocument{%
2773 \PDF@FinishDoc
2774 \gdef\PDF@FinishDoc{}%
2775 }%
2776 \endinput
2777 }%
2778 \else
2779 \Hy@Error{%
2780   Wrong driver option `vtex',\MessageBreak
2781   because of wrong OpMode (\the\OpMode)%
2782 } \@ehc
2783 \fi
2784 \fi
2785 \else
2786 \Hy@Error{%
2787   Wrong driver option `vtex',\MessageBreak
2788   because VTeX is not running%
2789 } \@ehc
2790 \fi
2791 }

```

```

2792 \DeclareVoidOption{vtxpdfmark}{%
2793   \ifvtx
2794     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2795     \def\Hy@driver{hvtexmrk}%
2796   \else
2797     \Hy@Error{%
2798       Wrong driver option `vtxpdfmark',\MessageBreak
2799       because of wrong OpMode (\the\OpMode)%
2800     }\@ehc
2801   \fi
2802 \else
2803   \Hy@Error{%
2804     Wrong driver option `vtxpdfmark',\MessageBreak
2805     because VTeX is not running%
2806   }\@ehc
2807 \fi
2808 }
2809 \DeclareVoidOption{dviwindo}{%
2810   \HyOpt@CheckDvi{dviwindo}{%
2811     \def\Hy@driver{hdviwind}%
2812     \kvsetkeys{Hyp}{colorlinks}%
2813     \PassOptionsToPackage{dviwindo}{color}%
2814   }%
2815 }
2816 \DeclareVoidOption{dvipsone}{%
2817   \HyOpt@CheckDvi{dvipsone}{%
2818     \def\Hy@driver{hdvipson}%
2819     \PassOptionsToPackage{dvipsone}{color}%
2820   }%
2821 }
2822 \DeclareVoidOption{textures}{%
2823   \HyOpt@CheckDvi{textures}{%
2824     \def\Hy@driver{htexture}%
2825   }%
2826 }
2827 \DeclareVoidOption{latex2html}{%
2828   \Hy@Warning{Option `latex2html` is obsolete. \MessageBreak
2829   A current html.sty will do all necessary (re)definitions%
2830 }%
2831 }
2832 \DeclareVoidOption{hitex}{%
2833   \ifhint
2834     \IfFileExists{hhitex.def}
2835     {\def\Hy@driver{hhitex}}%
2836     {\Hy@Warning{%
2837       Missing driver file `hhitex.def',\MessageBreak
2838       ignoring hitex driver%
2839     }}%
2840   \else
2841     \Hy@Error{%
2842       Wrong driver option `hitex',\MessageBreak
2843       because HiTeX is not detected%
2844     }\@ehc
2845   \fi

```

```

2846 }

No more special treatment for ps2pdf. Let it sink or swim.
2847 \DeclareVoidOption{ps2pdf}{%
2848   \HyOpt@CheckDvi{ps2pdf}{%
2849     \def\Hy@driver{hdvips}%
2850     \PassOptionsToPackage{dvips}{color}%
2851   }%
2852 }

2853 \let\HyOpt@DriverFallback\@empty
2854 \define@key{Hyp}{driverfallback}{%
2855   \ifHy@DviMode
2856     \def\HyOpt@DriverFallback{#1}%
2857     \Hy@Match\HyOpt@DriverFallback{}{%
2858       ~(|dvipdfm|dvipdfmx|dvips|dvipsone|dviwindo|hypertex|ps2pdf|
2859       latex2html|tex4ht)$%
2860     }{}{%
2861       \Hy@Warning{%
2862         Invalid driver `#1' for option\MessageBreak
2863         `driverfallback'%
2864       }%
2865       \let\HyOpt@DriverFallback\@empty
2866     }%
2867   \fi
2868 }

2869 \IfPDFManagementActiveTF
2870 { \def\HyOpt@CustomDriver{hgeneric-testphase}}
2871 { \let\HyOpt@CustomDriver\@empty}
2872
2873 \define@key{Hyp}{customdriver}{%
2874   \IfFileExists{#1.def}{%
2875     \def\HyOpt@CustomDriver{#1}%
2876   }{%
2877     \Hy@Warning{%
2878       Missing driver file `#1.def',\MessageBreak
2879       ignoring custom driver%
2880     }%
2881   }%
2882 }

```

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.

```

2883 \define@key{Hyp}{hyperfigures}[true]{%
2884   \Hy@boolkey{hyperfigures}{#1}%
2885 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

2886 \define@key{Hyp}{hyperfootnotes}[true]{%
2887   \Hy@boolkey{hyperfootnotes}{#1}%
2888 }

```

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

```

2889 \def\back@none{none}
2890 \def\back@section{section}
2891 \def\back@page{page}
2892 \def\back@slide{slide}
2893 \define@key{Hyp}{backref}[section]{%
2894   \lowercase{\def\Hy@tempa{#1}}%
2895   \ifx\Hy@tempa\@empty
2896     \let\Hy@tempa\back@section
2897   \fi
2898   \ifx\Hy@tempa\Hy@false
2899     \let\Hy@tempa\back@none
2900   \fi
2901   \ifx\Hy@tempa\back@slide
2902     \let\Hy@tempa\back@section
2903   \fi
2904   \ifx\Hy@tempa\back@page
2905     \PassOptionsToPackage{hyperpageref}{backref}%
2906     \Hy@backreftrue
2907   \else
2908     \ifx\Hy@tempa\back@section
2909       \PassOptionsToPackage{hyperref}{backref}%
2910       \Hy@backreftrue
2911     \else
2912       \ifx\Hy@tempa\back@none
2913         \Hy@backreffalse
2914       \else
2915         \Hy@WarnOptionValue{#1}{backref}{%
2916           `section', `slide', `page', `none',\MessageBreak
2917           or `false'}%
2918       \fi
2919     \fi
2920   \fi
2921 }
2922 \define@key{Hyp}{pagebackref}[true]{%
2923   \edef\Hy@tempa{#1}%
2924   \lowercase\expandafter{%
2925     \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2926   }%
2927   \ifx\Hy@tempa\@empty
2928     \let\Hy@tempa\Hy@true
2929   \fi
2930   \ifx\Hy@tempa\Hy@true
2931     \PassOptionsToPackage{hyperpageref}{backref}%
2932     \Hy@backreftrue
2933   \else
2934     \ifx\Hy@tempa\Hy@false
2935       \Hy@backreffalse
2936     \else
2937       \Hy@WarnOptionValue{#1}{pagebackref}{`true' or `false'}%
2938     \fi
2939   \fi
2940 }

```

Make index entries be links back to the relevant pages. By default this is turned

on, but may be stopped.

```
2941 \define@key{Hyp}{hyperindex}[true]{%
2942   \Hy@boolkey{hyperindex}{#1}%
2943 }
```

Configuration of encap char.

```
2944 \define@key{Hyp}{encap}[|]{%
2945   \def\HyInd@EncapChar{#1}%
2946 }
```

12 Language options

The \autoref feature depends on the language.

```
2947 \def\HyLang@afrikaans{%
2948   \def\equationautorefname{Vergelyking}%
2949   \def\footnoteautorefname{Voetnota}%
2950   \def\itemautorefname{Item}%
2951   \def\figureautorefname{Figuur}%
2952   \def\tableautorefname{Tabel}%
2953   \def\partautorefname{Deel}%
2954   \def\appendixautorefname{Bylae}%
2955   \def\chapterautorefname{Hoofstuk}%
2956   \def\sectionautorefname{Afdeling}%
2957   \def\subsectionautorefname{Subafdeling}%
2958   \def\subsubsectionautorefname{Subsubafdeling}%
2959   \def\paragraphautorefname{Paragraaf}%
2960   \def\subparagraphautorefname{Subparagraaf}%
2961   \def\FancyVerbLineautorefname{Lyn}%
2962   \def\theoremautorefname{Teorema}%
2963   \def\pageautorefname{Bladsy}%
2964 }
2965 \def\HyLang@english{%
2966   \def\equationautorefname{Equation}%
2967   \def\footnoteautorefname{footnote}%
2968   \def\itemautorefname{item}%
2969   \def\figureautorefname{Figure}%
2970   \def\tableautorefname{Table}%
2971   \def\partautorefname{Part}%
2972   \def\appendixautorefname{Appendix}%
2973   \def\chapterautorefname{chapter}%
2974   \def\sectionautorefname{section}%
2975   \def\subsectionautorefname{subsection}%
2976   \def\subsubsectionautorefname{subsubsection}%
2977   \def\paragraphautorefname{paragraph}%
2978   \def\subparagraphautorefname{subparagraph}%
2979   \def\FancyVerbLineautorefname{line}%
2980   \def\theoremautorefname{Theorem}%
2981   \def\pageautorefname{page}%
2982 }
2983 \def\HyLang@french{%
2984   \def\equationautorefname{'equation}%
2985   \def\footnoteautorefname{note}%
2986   \def\itemautorefname{item}%

```

```

2987 \def\figureautorefname{figure}%
2988 \def\tableautorefname{tableau}%
2989 \def\partautorefname{partie}%
2990 \def\appendixautorefname{annexe}%
2991 \def\chapterautorefname{chapitre}%
2992 \def\sectionautorefname{section}%
2993 \def\subsectionautorefname{sous-section}%
2994 \def\subsubsectionautorefname{sous-sous-section}%
2995 \def\paragraphautorefname{paragraphe}%
2996 \def\subparagraphautorefname{sous-paragraphe}%
2997 \def\FancyVerbLineautorefname{ligne}%
2998 \def\theoremautorefname{th\'eor\`eme}%
2999 \def\pageautorefname{page}%
3000 }
3001 \def\HyLang@german{%
3002 \def\equationautorefname{Gleichung}%
3003 \def\footnoteautorefname{Fu\ss note}%
3004 \def\itemautorefname{Punkt}%
3005 \def\figureautorefname{Abbildung}%
3006 \def\tableautorefname{Tabelle}%
3007 \def\partautorefname{Teil}%
3008 \def\appendixautorefname{Anhang}%
3009 \def\chapterautorefname{Kapitel}%
3010 \def\sectionautorefname{Abschnitt}%
3011 \def\subsectionautorefname{Unterabschnitt}%
3012 \def\subsubsectionautorefname{Unterunterabschnitt}%
3013 \def\paragraphautorefname{Absatz}%
3014 \def\subparagraphautorefname{Unterabsatz}%
3015 \def\FancyVerbLineautorefname{Zeile}%
3016 \def\theoremautorefname{Theorem}%
3017 \def\pageautorefname{Seite}%
3018 }
3019 \def\HyLang@italian{%
3020 \def\equationautorefname{Equazione}%
3021 \def\footnoteautorefname{nota}%
3022 \def\itemautorefname{punto}%
3023 \def\figureautorefname{Figura}%
3024 \def\tableautorefname{Tabella}%
3025 \def\partautorefname{Parte}%
3026 \def\appendixautorefname{Appendice}%
3027 \def\chapterautorefname{Capitolo}%
3028 \def\sectionautorefname{sezione}%
3029 \def\subsectionautorefname{sottosezione}%
3030 \def\subsubsectionautorefname{sottosottosezione}%
3031 \def\paragraphautorefname{paragrafo}%
3032 \def\subparagraphautorefname{sottoparagrafo}%
3033 \def\FancyVerbLineautorefname{linea}%
3034 \def\theoremautorefname{Teorema}%
3035 \def\pageautorefname{Pag.\@}%
3036 }
3037 \def\HyLang@magyar{%
3038 \def\equationautorefname{Egyenlet}%
3039 \def\footnoteautorefname{l\'abjegyzet}%
3040 \def\itemautorefname{Elem}%

```

```

3041 \def\figureautorefname{'\Abra}%
3042 \def\tableautorefname{T\'abl\'azat}%
3043 \def\partautorefname{R\'esz}%
3044 \def\appendixautorefname{F\'uggel\'ek}%
3045 \def\chapterautorefname{fejezet}%
3046 \def\sectionautorefname{szakasz}%
3047 \def\subsectionautorefname{alszakasz}%
3048 \def\subsubsectionautorefname{alalszakasz}%
3049 \def\paragraphautorefname{bekezd\'es}%
3050 \def\subparagraphautorefname{albekezd\'es}%
3051 \def\FancyVerbLineautorefname{sor}%
3052 \def\theoremautorefname{T\'etel}%
3053 \def\pageautorefname{oldal}%
3054 }
3055 \def\HyLang@portuges{%
3056 \def\equationautorefname{Equa\c c\~ao}%
3057 \def\footnoteautorefname{Nota de rodap\'e}%
3058 \def\itemautorefname{Item}%
3059 \def\figureautorefname{Figura}%
3060 \def\tableautorefname{Tabela}%
3061 \def\partautorefname{Parte}%
3062 \def\appendixautorefname{Ap\~endice}%
3063 \def\chapterautorefname{Cap\'itulo}%
3064 \def\sectionautorefname{Se\c c\~ao}%
3065 \def\subsectionautorefname{Subse\c c\~ao}%
3066 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
3067 \def\paragraphautorefname{par\'agrafo}%
3068 \def\subparagraphautorefname{subpar\'agrafo}%
3069 \def\FancyVerbLineautorefname{linha}%
3070 \def\theoremautorefname{Teorema}%
3071 \def\pageautorefname{P\'agina}%
3072 }

```

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`.

```

3073 \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`?

```

3074 \def\equationautorefname{\cyr\cyrv\cyrry\cyrr.}%

```

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

```

3075 % \def\equationautorefname{%
3076 % \cyr\cyrv\cyrry\cyrr\cyra\cyrzh\cyre\cyrn\cyri\cyre
3077 % }%

```

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

```
3078 \def\footnoteautorefname{%
3079 \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr.\ \cyrp\cyrr\cyri\cyrm.%
3080 }%
```

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

```
3081 % \def\footnoteautorefname{%
3082 % \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr\cyro\cyrch\cyrn\cyro\cyre\ %
3083 % \cyrp\cyrr\cyri\cyrm\cyre\cyrch\cyra\cyrn\cyri\cyre
3084 % }%
```

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

```
3085 % \def\Nomfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyra}%
3086 % \def\Accfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyru}%
```

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

```
3087 \def\itemautorefname{\cyr\cyrp.}%
3088 % \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.

```
3089 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%
3090 \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.

```
3091 \def\partautorefname{\cyr\cyrch.}%
3092 \def\chapterautorefname{\cyr\cyrg\cyrl.}%
3093 \def\sectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
```

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

```
3094 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyrl.}%
3095 % \def\appendixautorefname{%
3096 % \cyr\cyrp\cyrr\cyri\cyrl\cyro\cyrz\cyre\cyrn\cyri\cyre
3097 % }%
```

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.

```
3098 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
3099 \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.


```

3100 \def\paragraphautorefname{\cyr\cyrp.}%
3101 \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.

```

3102 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
3103 % \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.

```

3104 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%

```

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

```

3105 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
3106 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%

```

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

```

3107 % \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 ...

```

3108 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%

```

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

```

3109 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
3110 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%

```

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

```

3111 \def\pageautorefname{\cyr\cyrs.}%
3112 }

```

```

3113 \def\HyLang@spanish{%
3114 \def\equationautorefname{Ecuaci'on}%
3115 \def\footnoteautorefname{Nota a pie de p'agina}%
3116 \def\itemautorefname{Elemento}%
3117 \def\figureautorefname{Figura}%
3118 \def\tableautorefname{Tabla}%
3119 \def\partautorefname{Parte}%
3120 \def\appendixautorefname{Ap'endice}%
3121 \def\chapterautorefname{Cap'itulo}%
3122 \def\sectionautorefname{Secci'on}%
3123 \def\subsectionautorefname{Subsecci'on}%
3124 \def\subsubsectionautorefname{Subsubsecci'on}%
3125 \def\paragraphautorefname{P'arrafo}%
3126 \def\subparagraphautorefname{Subp'arrafo}%
3127 \def\FancyVerbLineautorefname{L'inea}%
3128 \def\theoremautorefname{Teorema}%
3129 \def\pageautorefname{P'agina}%
3130 }

```

```

3131 \def\HyLang@catalan{%
3132 \def\equationautorefname{Equaci\'o}%
3133 \def\footnoteautorefname{Nota al peu de p\`agina}%
3134 \def\itemautorefname{Element}%
3135 \def\figureautorefname{Figura}%
3136 \def\tableautorefname{Taula}%
3137 \def\partautorefname{Part}%
3138 \def\appendixautorefname{Ap\`endix}%
3139 \def\chapterautorefname{Cap\'itol}%
3140 \def\sectionautorefname{Secci\'o}%
3141 \def\subsectionautorefname{Subsecci\'o}%
3142 \def\subsubsectionautorefname{Subsubsecci\'o}%
3143 \def\paragraphautorefname{Par\`agraf}%
3144 \def\subparagraphautorefname{Subpar\`agraf}%
3145 \def\FancyVerbLineautorefname{L\'inia}%
3146 \def\theoremautorefname{Teorema}%
3147 \def\pageautorefname{P\`agina}%
3148 }

3149 \def\HyLang@vietnamese{%
3150 \def\equationautorefname{Ph\`uhorn{}\`ohorn{}ng tr\`inh}%
3151 \def\footnoteautorefname{Ch\`u th\`ich}%
3152 \def\itemautorefname{m\`d{u}c}%
3153 \def\figureautorefname{H\`inh}%
3154 \def\tableautorefname{B\`h{a}ng}%
3155 \def\partautorefname{Ph\`acircumflex{}n}%
3156 \def\appendixautorefname{Ph\`d{u} l\`d{u}c}%
3157 \def\chapterautorefname{ch\`uhorn{}\`ohorn{}ng}%
3158 \def\sectionautorefname{m\`d{u}c}%
3159 \def\subsectionautorefname{m\`d{u}c}%
3160 \def\subsubsectionautorefname{m\`d{u}c}%
3161 \def\paragraphautorefname{d{ }o\`d{a}n}%
3162 \def\subparagraphautorefname{d{ }o\`d{a}n}%
3163 \def\FancyVerbLineautorefname{d\`ong}%
3164 \def\theoremautorefname{D{ }J{ }d{ }i\`nh l\`y}%
3165 \def\pageautorefname{Trang}%
3166 }

```

Greek, see [github issue 52](#)

```

3167 \def\HyLang@greek{%
3168 \def\equationautorefname{\textEpsilon\textxi\acconos\textiota\textsigma\textomega\textsigma\texteta}%
3169 \def\footnoteautorefname{\textupsilon\textpi\textomicron\textsigma\texteta\textmu\textepsilon\acconos\textiota\textomega\textsigma\texteta}%
3170 \def\itemautorefname{\textalpha\textnu\texttau\textiota\textkappa\textepsilon\acconos\textiota\textmu\textepsilon\textnu\textomicron}%
3171 \def\figureautorefname{\textSigma\textchi\acconos\texteta\textmu\textalpha}%
3172 \def\tableautorefname{\textPi\acconos\textiota\textnu\textalpha\textkappa\textalpha}%
3173 \def\partautorefname{\textMu\acconos\textepsilon\textrho\textomicron\textvarsigma}%
3174 \def\appendixautorefname{\textPi\textalpha\textrho\acconos\textalpha\textrho\texttau\texteta\textmu\textalpha}%
3175 \def\chapterautorefname{\textkappa\textepsilon\textphi\acconos\textal-

```

```

    pha\textlambda\textalpha\textiota\textomicron}%
3176 \def\sectionautorefname{\textepsilon\textnu\acctonos\textomicron\texttau\texteta\texttau\textalpha}%
    \def\subsectionautorefname{\textupsilon\textpi\textomicron\textepsilon\textnu\acctonos\textomicron\texttau\texteta\texttau\textalpha}%
3177 \def\subsubsectionautorefname{\textupsilon\textpi\textomicron-\textupsilon\textpi\textomicron\textepsilon\textnu\acctonos\textomicron\texttau\texteta\texttau\textalpha}%
3178 \def\paragraphautorefname{\textpi\textalpha\textrho\acctonos\textalpha\textgamma\textrho\textalpha\textphi\textomicron\textvarsigma}%
3179 \def\subparagraphautorefname{\textupsilon\textpi\textomicron\textpi\textalpha\textrho\acctonos\textalpha\textgamma\textrho\textalpha\textphi\textomicron\textvarsigma}%
3180 \def\FancyVerbLineautorefname{\textgamma\textrho\textalpha\textmu\textmu\acctonos\texteta}%
3181 \def\theoremautorefname{\textTheta\textepsilon\acctonos\textomega\textrho\texteta\textmu\textalpha}%
3182 \def\pageautorefname{\textsigma\textepsilon\textlambda\acctonos\textiota\textdelta\textalpha}%
3183 }
3184 }

3185 \def\HyLang@dutch{%
3186 \def\equationautorefname{Vergelijking}%
3187 \def\footnoteautorefname{voetnoot}%
3188 \def\itemautorefname{punt}%
3189 \def\figureautorefname{Figuur}%
3190 \def\tableautorefname{Tabel}%
3191 \def\partautorefname{Deel}%
3192 \def\appendixautorefname{Bijlage}%
3193 \def\chapterautorefname{hoofdstuk}%
3194 \def\sectionautorefname{paragraaf}%
3195 \def\subsectionautorefname{deelparagraaf}%
3196 \def\subsubsectionautorefname{deel-deelparagraaf}%
3197 \def\paragraphautorefname{alineaf}%
3198 \def\subparagraphautorefname{deelalineaf}%
3199 \def\FancyVerbLineautorefname{regel}%
3200 \def\theoremautorefname{Stelling}%
3201 \def\pageautorefname{pagina}%
3202 }

3203 \def\HyLang@norsk{%
3204 \def\equationautorefname{Ligning}%
3205 \def\footnoteautorefname{fotnote}%
3206 \def\itemautorefname{element}%
3207 \def\figureautorefname{Figur}%
3208 \def\tableautorefname{Tabell}%
3209 \def\partautorefname{Del}%
3210 \def\appendixautorefname{Tillegg}%
3211 \def\chapterautorefname{kapittel}%
3212 \def\sectionautorefname{seksjon}%
3213 \def\subsectionautorefname{underseksjon}%
3214 \def\subsubsectionautorefname{under-underseksjon}%
3215 \def\paragraphautorefname{avsnitt}%
3216 \def\subparagraphautorefname{underavsnitt}%
3217 \def\FancyVerbLineautorefname{Linje}%
3218 \def\theoremautorefname{Teorem}%
3219 \def\pageautorefname{side}%
3220 }

```

```

3221 \def\HyLang@danish{%
3222   \def\equationautorefname{Ligning}%
3223   \def\footnoteautorefname{fodnote}%
3224   \def\itemautorefname{element}%
3225   \def\figureautorefname{Figur}%
3226   \def\tableautorefname{Tabel}%
3227   \def\partautorefname{Del}%
3228   \def\appendixautorefname{Bilag}%
3229   \def\chapterautorefname{kapitel}%
3230   \def\sectionautorefname{sektion}%
3231   \def\subsectionautorefname{under-sektion}%
3232   \def\subsubsectionautorefname{under-under-sektion}%
3233   \def\paragraphautorefname{afsnit}%
3234   \def\subparagraphautorefname{underafsnit}%
3235   \def\FancyVerbLineautorefname{linje}%
3236   \def\theoremautorefname{Teorem}%
3237   \def\pageautorefname{side}%
3238 }
3239 \def\HyLang@swedish{%
3240   \def\equationautorefname{Ekvation}%
3241   \def\footnoteautorefname{fotnot}%
3242   \def\itemautorefname{punkt}%
3243   \def\figureautorefname{Figur}%
3244   \def\tableautorefname{Tabell}%
3245   \def\partautorefname{Del}%
3246   \def\appendixautorefname{Bilaga}%
3247   \def\chapterautorefname{kapitel}%
3248   \def\sectionautorefname{avsnitt}%
3249   \def\subsectionautorefname{underavsnitt}%
3250   \def\subsubsectionautorefname{under-underavsnitt}%
3251   \def\paragraphautorefname{paragraf}%
3252   \def\subparagraphautorefname{underparagraf}%
3253   \def\FancyVerbLineautorefname{linje}%
3254   \def\theoremautorefname{Teorem}%
3255   \def\pageautorefname{sida}%
3256 }

```

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

```

3257 \def\HyLang@addto#1#2{%
3258   #2%
3259   \@temptokena{#2}%
3260   \ifx#1\relax
3261     \let#1\@empty
3262   \fi
3263   \ifx#1\@undefined
3264     \edef#1{\the\@temptokena}%
3265   \else
3266     \toks@\expandafter{#1}%
3267     \edef#1{\the\toks@\the\@temptokena}%
3268   \fi
3269   \@temptokena{}\toks@\@temptokena
3270 }
3271 \def\HyLang@DeclareLang#1#2#3{%

```

```

3272 \ifcsname extras#1\endcsname
3273 \expandafter\HyLang@addto
3274 \csname extras#1\expandafter\endcsname
3275 \csname HyLang@#2\endcsname
3276 \begingroup
3277 \edef\x{\endgroup
3278   #3%
3279 }%
3280 \x
3281 \@namedef{HyLang@#1@done}{}%
3282 \fi
3283 \begingroup
3284 \edef\x##1##2{%
3285   \noexpand\ifx##2\relax
3286     \errmessage{No definitions for language #2' found!}%
3287   \noexpand\fi
3288   \endgroup
3289   \noexpand\define@key{Hyp}{#1}[]{}%
3290   \noexpand\@ifundefined{HyLang@#1@done}{%
3291     \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
3292     #3%
3293     \noexpand\@namedef{HyLang@#1@done}{}%
3294   }{}%
3295 }%
3296 }%
3297 \expandafter\x\csname extras#1\expandafter\endcsname
3298 \csname HyLang@#2\endcsname
3299 }
3300 \HyLang@DeclareLang{english}{english}{}
3301 \HyLang@DeclareLang{UKenglish}{english}{}
3302 \HyLang@DeclareLang{british}{english}{}
3303 \HyLang@DeclareLang{USenglish}{english}{}
3304 \HyLang@DeclareLang{american}{english}{}
3305 \HyLang@DeclareLang{german}{german}{}
3306 \HyLang@DeclareLang{austrian}{german}{}
3307 \HyLang@DeclareLang{ngerman}{german}{}
3308 \HyLang@DeclareLang{naustrian}{german}{}
3309 \HyLang@DeclareLang{nswissgerman}{german}{}
3310 \HyLang@DeclareLang{swissgerman}{german}{}
3311 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
3312 \HyLang@DeclareLang{brazil}{portuges}{}
3313 \HyLang@DeclareLang{brazilian}{portuges}{}
3314 \HyLang@DeclareLang{portuguese}{portuges}{}
3315 \HyLang@DeclareLang{spanish}{spanish}{}
3316 \HyLang@DeclareLang{catalan}{catalan}{}
3317 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
3318 \HyLang@DeclareLang{french}{french}{}
3319 \HyLang@DeclareLang{frenchb}{french}{}
3320 \HyLang@DeclareLang{francais}{french}{}
3321 \HyLang@DeclareLang{acadian}{french}{}
3322 \HyLang@DeclareLang{canadien}{french}{}
3323 \HyLang@DeclareLang{italian}{italian}{}
3324 \HyLang@DeclareLang{magyar}{magyar}{}
3325 \HyLang@DeclareLang{hungarian}{magyar}{}

```

```

3326 \HyLang@DeclareLang{greek}{greek}{}
3327 \HyLang@DeclareLang{dutch}{dutch}{}
3328 \HyLang@DeclareLang{norsk}{norsk}{}
3329 \HyLang@DeclareLang{norwegian}{norsk}{}
3330 \HyLang@DeclareLang{danish}{danish}{}
3331 \HyLang@DeclareLang{swedish}{swedish}{}

```

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

```

3332 \DeclareVoidOption{vietnamese}{%
3333   \HyLang@addto\extrasvietnamese\HyLang@vietnamese
3334   \Hy@AtEndOfPackage{%
3335     \@ifundefined{T@PU}{}{}%
3336     \input{puvnenc.def}%
3337   }%
3338 }%
3339 }
3340 \DeclareVoidOption{vietnam}{%
3341   \HyLang@addto\extravietnam\HyLang@vietnamese
3342   \Hy@AtEndOfPackage{%
3343     \@ifundefined{T@PU}{}{}%
3344     \input{puvnenc.def}%
3345   }%
3346 }%
3347 }

```

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

```

3348 \DeclareVoidOption{arabic}{%
3349   \Hy@AtEndOfPackage{%
3350     \@ifundefined{T@PU}{}{}%
3351     \input{puarenc.def}%
3352   }%
3353 }%
3354 }

```

13 Options to change appearance of links

Colouring links at the L^AT_EX level is useful for debugging, perhaps.

```

3355 \define@key{Hyp}{colorlinks}[true]{%
3356   \Hy@boolkey{colorlinks}{#1}%
3357 }
3358 \DeclareVoidOption{hidelinks}{%
3359   \Hy@colorlinksfalse
3360   \Hy@ocgcolorlinksfalse
3361   \Hy@frenchlinksfalse
3362   \def\Hy@colorlink##1{\begingroup}%
3363   \def\Hy@endcolorlink{\endgroup}%
3364   \def\@pdfborder{0 0 0}%
3365   \let\@pdfborderstyle\@empty
3366 }
3367 \define@key{Hyp}{ocgcolorlinks}[true]{%
3368   \Hy@boolkey{ocgcolorlinks}{#1}%
3369 }
3370 \Hy@AtBeginDocument{%

```

```

3371 \begingroup
3372 \ifundefined{OBJ@OCG@view}{%
3373   \ifHy@ocgcolorlinks
3374     \Hy@Warning{%
3375       Driver does not support `ocgcolorlinks',\MessageBreak
3376       using `colorlinks' instead%
3377     }%
3378   \fi
3379 }{}%
3380 \endgroup
3381 }
3382 \define@key{Hyp}{frenchlinks}[true]{%
3383   \Hy@boolkey{frenchlinks}{#1}%
3384 }

```

14 Bookmarking

```

3385 \begingroup\expandafter\expandafter\expandafter\endgroup
3386 \expandafter\ifx\csname chapter\endcsname\relax
3387   \def\toclevel@part{0}%
3388 \else
3389   \def\toclevel@part{-1}%
3390 \fi
3391 \def\toclevel@chapter{0}
3392 \def\toclevel@section{1}
3393 \def\toclevel@subsection{2}
3394 \def\toclevel@subsubsection{3}
3395 \def\toclevel@paragraph{4}
3396 \def\toclevel@subparagraph{5}
3397 \def\toclevel@figure{0}
3398 \def\toclevel@table{0}

3399 \define@key{Hyp}{bookmarks}[true]{%
3400   \Hy@boolkey{bookmarks}{#1}%
3401 }

3402 \define@key{Hyp}{bookmarksopen}[true]{%
3403   \Hy@boolkey{bookmarksopen}{#1}%
3404 }

```

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.

```

3405 \let\Hy@bookmarksdepth\c@tocdepth
3406 \define@key{Hyp}{bookmarksdepth}[]{}%
3407 \begingroup
3408   \edef\x{#1}%

```

```

3409 \ifx\x\empty
3410 \global\let\Hy@bookmarksdepth\c@tocdepth
3411 \else
3412 \ifundefined{toclevel@x}{%
3413 \onelevel@sanitize\x
3414 \edef\y{\expandafter\car\x\@nil}%
3415 \ifcase 0\expandafter\ifx\y-1\fi
3416 \expandafter\ifnum\expandafter`\y>47 %
3417 \expandafter\ifnum\expandafter`\y<58 1\fi\fi\relax
3418 \Hy@Warning{Unknown document division name (\x)}%
3419 \else
3420 \setbox\z@=\hbox{%
3421 \count@=\x
3422 \xdef\Hy@bookmarksdepth{\the\count@}%
3423 }%
3424 \fi
3425 }{%
3426 \setbox\z@=\hbox{%
3427 \count@=\csname toclevel@x\endcsname
3428 \xdef\Hy@bookmarksdepth{\the\count@}%
3429 }%
3430 }%
3431 \fi
3432 \endgroup
3433 }

```

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

```

3434 \define@key{Hyp}{bookmarksopenlevel}{%
3435 \def\@bookmarksopenlevel{#1}%
3436 }
3437 \def\@bookmarksopenlevel{\maxdimen}
3438 % `bookmarkstype' to specify which `toc' file to mimic
3439 \define@key{Hyp}{bookmarkstype}{%
3440 \def\Hy@bookmarkstype{#1}%
3441 }
3442 \def\Hy@bookmarkstype{toc}

```

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

```

3443 \define@key{Hyp}{bookmarksnumbered}[true]{%
3444 \Hy@boolkey{bookmarksnumbered}{#1}%
3445 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

3446 \define@key{Hyp}{CJKbookmarks}[true]{%
3447 \Hy@boolkey{CJKbookmarks}{#1}%
3448 }
3449 \def\Hy@temp#1{%
3450 \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
3451 }
3452 \def\Hy@@temp#1#2#3{%
3453 \define@key{Hyp}{#2color}{%
3454 \HyColor@HyperrefColor{##1}#1%
3455 }%
3456 \def#1{#3}%

```



```

3457 }
3458 \Hy@temp{link}{red}
3459 \Hy@temp{anchor}{black}
3460 \Hy@temp{cite}{green}
3461 \Hy@temp{file}{cyan}
3462 \Hy@temp{url}{magenta}
3463 \Hy@temp{menu}{red}
3464 \Hy@temp{run}{\@filecolor}
3465 \define@key{Hyp}{pagecolor}{%
3466   \Hy@WarningPageColor
3467 }
3468 \def\Hy@WarningPageColor{%
3469   \Hy@WarningNoLine{Option `pagecolor' is not available anymore}%
3470   \global\let\Hy@WarningPageColor\relax
3471 }
3472 \define@key{Hyp}{allcolors}{%
3473   \HyColor@HyperrefColor{#1}\@linkcolor
3474   \HyColor@HyperrefColor{#1}\@anchorcolor
3475   \HyColor@HyperrefColor{#1}\@citecolor
3476   \HyColor@HyperrefColor{#1}\@filecolor
3477   \HyColor@HyperrefColor{#1}\@urlcolor
3478   \HyColor@HyperrefColor{#1}\@menucolor
3479   \HyColor@HyperrefColor{#1}\@runcolor
3480 }

3481 \def\hyperbaseurl#1{\def\@baseurl{#1}}
3482 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
3483 \let\@baseurl\@empty
3484 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
3485 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
3486 \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.

```

3487 \let\@pdfpagetransition\relax
3488 \define@key{Hyp}{pdfpagetransition}{%
3489   \def\@pdfpagetransition{#1}%
3490 }

```

`\@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.

```

3491 \let\@pdfpageduration\relax
3492 \define@key{Hyp}{pdfpageduration}{%
3493   \def\@pdfpageduration{#1}%
3494   \Hy@Match\@pdfpageduration{#1}{%
3495     ^([0-9]+\.[0-9]*|[0-9]*\.[0-9]+)$%
3496   }{#1}%
3497   \Hy@Warning{%
3498     Invalid value `'\@pdfpageduration'\MessageBreak

```

```

3499   of option `pdfpageduration'\MessageBreak
3500   is replaced by an empty value%
3501 }%
3502 \let\@pdfpageduration\@empty
3503 }%
3504 }

```

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).

```

3505 \def\Hy@ColorList{cite,file,link,menu,run,url}
3506 \@for\Hy@temp:=\Hy@ColorList\do{%
3507   \edef\Hy@temp{%
3508     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
3509       \noexpand\HyColor@HyperrefBorderColor
3510       {##1}}%
3511     \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
3512     {hyperref}}%
3513     {\Hy@temp bordercolor}}%
3514   }%
3515 }%
3516 \Hy@temp
3517 }
3518 \define@key{Hyp}{pagebordercolor}{%
3519   \Hy@WarningPageBorderColor
3520 }
3521 \def\Hy@WarningPageBorderColor{%
3522   \Hy@WarningNoLine{Option `pagebordercolor' is not available anymore}%
3523   \global\let\Hy@WarningPageBorderColor\relax
3524 }
3525 \define@key{Hyp}{allbordercolors}{%
3526   \def\Hy@temp##1##2{%
3527     \HyColor@HyperrefBorderColor{#1}##1{hyperref}{##2bordercolor}%
3528   }%
3529   \Hy@temp\@citebordercolor{cite}%
3530   \Hy@temp\@filebordercolor{file}%
3531   \Hy@temp\@linkbordercolor{link}%
3532   \Hy@temp\@menubordercolor{menu}%
3533   \Hy@temp\@runbordercolor{run}%
3534   \Hy@temp\@urlbordercolor{url}%
3535 }
3536 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
3537 \Hy@DefNameKey{pdfhighlight}{%
3538   \do{/I}{Invert}%
3539   \do{/N}{None}%
3540   \do{/O}{Outline}%
3541   \do{/P}{Push}%
3542 }

```

```

3543 \def\Hy@setpdfhighlight{%
3544   \ifx\@pdfhighlight\@empty
3545   \else
3546     /H\@pdfhighlight
3547   \fi
3548 }
3549 \define@key{Hyp}{pdfborder}{%
3550   \let\Hy@temp\@pdfborder
3551   \def\@pdfborder{#1}%
3552   \Hy@Match\@pdfborder{}{%
3553     ~\HyPat@NonNegativeReal/ %
3554     \HyPat@NonNegativeReal/ %
3555     \HyPat@NonNegativeReal/%
3556     ( ?[\HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)*])?%$%
3557   }{%
3558     \Hy@Warning{%
3559       Invalid value `'\@pdfborder'\MessageBreak
3560       for option `pdfborder'.\MessageBreak
3561       Option setting is ignored%
3562     }%
3563     \let\@pdfborder\Hy@temp
3564   }%
3565 }
3566 \define@key{Hyp}{pdfborderstyle}{%
3567   \let\Hy@temp\@pdfborderstyle
3568   \def\@pdfborderstyle{#1}%
3569   \Hy@Match\@pdfborderstyle{}{%
3570     ~%
3571     ( */Type */Border%
3572     | */W +\HyPat@NonNegativeReal/%
3573     | */S */[SDBIU]%
3574     | */D *[ ( \HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)? )? ]%
3575     )* *$%
3576   }{%
3577     \Hy@Warning{%
3578       Invalid value `'\@pdfborderstyle'\MessageBreak
3579       for option `pdfborderstyle'.\MessageBreak
3580       Option setting is ignored%
3581     }%
3582     \let\@pdfborderstyle\Hy@temp
3583   }%
3584 }
3585 \def\Hy@setpdfborder{%
3586   \ifx\@pdfborder\@empty
3587   \else
3588     /Border[\@pdfborder]%
3589   \fi
3590   \ifx\@pdfborderstyle\@empty
3591   \else
3592     /BS<<\@pdfborderstyle>>%
3593   \fi
3594 }
3595 \Hy@DefNameKey{pdfpagemode}{%
3596   \do{UseNone}{}%

```

```

3597 \do{UseOutlines}{}%
3598 \do{UseThumbs}{}%
3599 \do{FullScreen}{}%
3600 \do{UseOC}{PDF 1.5}%
3601 \do{UseAttachments}{PDF 1.6}%
3602 }
3603 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
3604 \do{UseNone}{}%
3605 \do{UseOutlines}{}%
3606 \do{UseThumbs}{}%
3607 \do{FullScreen}{}%
3608 \do{UseOC}{PDF 1.5}%
3609 \do{UseAttachments}{PDF 1.6}%
3610 }
3611 \Hy@DefNameKey{pdfdirection}{%
3612 \do{L2R}{Left to right}%
3613 \do{R2L}{Right to left}%
3614 }
3615 \Hy@DefNameKey{pdfviewarea}{%
3616 \do{MediaBox}{}%
3617 \do{CropBox}{}%
3618 \do{BleedBox}{}%
3619 \do{TrimBox}{}%
3620 \do{ArtBox}{}%
3621 }
3622 \Hy@DefNameKey{pdfviewclip}{%
3623 \do{MediaBox}{}%
3624 \do{CropBox}{}%
3625 \do{BleedBox}{}%
3626 \do{TrimBox}{}%
3627 \do{ArtBox}{}%
3628 }
3629 \Hy@DefNameKey{pdfprintarea}{%
3630 \do{MediaBox}{}%
3631 \do{CropBox}{}%
3632 \do{BleedBox}{}%
3633 \do{TrimBox}{}%
3634 \do{ArtBox}{}%
3635 }
3636 \Hy@DefNameKey{pdfprintclip}{%
3637 \do{MediaBox}{}%
3638 \do{CropBox}{}%
3639 \do{BleedBox}{}%
3640 \do{TrimBox}{}%
3641 \do{ArtBox}{}%
3642 }
3643 \Hy@DefNameKey{pdfprintscaling}{%
3644 \do{AppDefault}{}%
3645 \do{None}{}%
3646 }
3647 \Hy@DefNameKey{pdfduplex}{%
3648 \do{Simplex}{}%
3649 \do{DuplexFlipShortEdge}{}%
3650 \do{DuplexFlipLongEdge}{}%

```

```

3651 }
3652 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
3653   \do{true}{}%
3654   \do{false}{}%
3655 }
3656 \define@key{Hyp}{pdfprintpagerange}{%
3657   \def\@pdfprintpagerange{#1}%
3658 }
3659 \Hy@DefNameKey{pdfnumcopies}{%
3660   \do{2}{two copies}%
3661   \do{3}{three copies}%
3662   \do{4}{four copies}%
3663   \do{5}{five copies}%
3664 }
3665 \define@key{Hyp}{pdfusetitle}[true]{%
3666   \Hy@boolkey{pdfusetitle}{#1}%
3667 }
3668 \def\HyXeTeX@CheckUnicode{%
3669   \ifxetex
3670     \ifHy@unicode
3671     \else
3672       \Hy@WarningNoLine{%
3673         XeTeX driver only supports unicode.\MessageBreak
3674         Enabling option `unicode'%
3675       }%
3676       \kvsetkeys{Hyp}{unicode}%
3677     \fi
3678   \else
3679     \let\HyXeTeX@CheckUnicode\relax
3680   \fi
3681 }
3682 \def\HyPsd@PrerenderUnicode#1{%
3683   \begingroup
3684     \expandafter\ifx\csname PrerenderUnicode\endcsname\relax
3685     \else
3686       \sbox0{%
3687         \let\GenericInfo\@gobbletwo
3688         \let\GenericWarning\@gobbletwo
3689         \let\GenericError\@gobblefour
3690         \PrerenderUnicode{#1}%
3691       }%
3692     \fi
3693   \endgroup
3694 }
3695 \define@key{Hyp}{pdftitle}{%
3696   \AddToDocumentProperties[hyperref]{pdftitle}{#1}%
3697   \HyXeTeX@CheckUnicode
3698   \HyPsd@PrerenderUnicode{#1}%
3699   \pdfstringdef\@pdftitle{#1}%
3700 }
3701 \define@key{Hyp}{pdfauthor}{%
3702   \AddToDocumentProperties[hyperref]{pdfauthor}{#1}%
3703   \HyXeTeX@CheckUnicode
3704   \HyPsd@PrerenderUnicode{#1}%

```

```

3705 \pdfstringdef\@pdfauthor{#1}%
3706 }
3707 \define@key{Hyp}{pdfproducer}{%
3708 \AddToDocumentProperties[hyperref]{pdfproducer}{#1}%
3709 \HyXeTeX@CheckUnicode
3710 \HyPsd@PrerenderUnicode{#1}%
3711 \pdfstringdef\@pdfproducer{#1}%
3712 }
3713 \define@key{Hyp}{pdfcreator}{%
3714 \AddToDocumentProperties[hyperref]{pdfcreator}{#1}%
3715 \HyXeTeX@CheckUnicode
3716 \HyPsd@PrerenderUnicode{#1}%
3717 \pdfstringdef\@pdfcreator{#1}%
3718 }
3719 \define@key{Hyp}{addtopdfcreator}{%
3720 \HyXeTeX@CheckUnicode
3721 \HyPsd@PrerenderUnicode{#1}%
3722 \pdfstringdef\@pdfcreator{\@pdfcreator, #1}%
3723 }
3724 \define@key{Hyp}{pdfcreationdate}{%
3725 \begingroup
3726 \Hy@unicodetrue
3727 \pdfstringdef\@pdfcreationdate{#1}%
3728 \endgroup
3729 }
3730 \define@key{Hyp}{pdfmoddate}{%
3731 \begingroup
3732 \Hy@unicodetrue
3733 \pdfstringdef\@pdfmoddate{#1}%
3734 \endgroup
3735 }
3736 \define@key{Hyp}{pdfsubject}{%
3737 \AddToDocumentProperties[hyperref]{pdfsubject}{#1}%
3738 \HyXeTeX@CheckUnicode
3739 \HyPsd@PrerenderUnicode{#1}%
3740 \pdfstringdef\@pdfsubject{#1}%
3741 }
3742 \define@key{Hyp}{pdfkeywords}{%
3743 \AddToDocumentProperties[hyperref]{pdfkeywords}{#1}%
3744 \HyXeTeX@CheckUnicode
3745 \HyPsd@PrerenderUnicode{#1}%
3746 \pdfstringdef\@pdfkeywords{#1}%
3747 }
3748 \define@key{Hyp}{pdftrapped}{%
3749 \lowercase{\edef\Hy@temp{#1}}%
3750 \ifx\Hy@temp\HyInfo@trapped@true
3751 \def\@pdftrapped{True}%
3752 \else
3753 \ifx\Hy@temp\HyInfo@trapped@false
3754 \def\@pdftrapped{False}%
3755 \else
3756 \ifx\Hy@temp\HyInfo@trapped@unknown
3757 \def\@pdftrapped{Unknown}%
3758 \else

```

```

3759     \ifx\Hy@temp\@empty
3760     \else
3761         \Hy@Warning{%
3762             Unsupported value `#1'\MessageBreak
3763             for option `pdftrapped'%
3764         }%
3765     \fi
3766     \def\@pdftrapped{}%
3767 \fi
3768 \fi
3769 \fi
3770 }
3771 \def\HyInfo@trapped@true{true}
3772 \def\HyInfo@trapped@false{false}
3773 \def\HyInfo@trapped@unknown{unknown}
3774 \def\HyInfo@TrappedUnsupported{%
3775     \ifx\@pdftrapped\@empty
3776     \else
3777         \Hy@WarningNoLine{`pdftrapped' is not supported by this driver}%
3778     \gdef\HyInfo@TrappedUnsupported{}%
3779 \fi
3780 }
3781 \define@key{Hyp}{pdfinfo}{%
3782     \kvsetkeys{pdfinfo}{#1}%
3783 }
3784 \def\Hy@temp#1{%
3785     \lowercase{\Hy@temp@A{#1}}{#1}%
3786 }
3787 \def\Hy@temp@A#1#2{%
3788     \define@key{pdfinfo}{#2}{%
3789         \hypersetup{pdf#1={##1}}%
3790     }%
3791 }
3792 \Hy@temp{Title}
3793 \Hy@temp{Author}
3794 \Hy@temp{Keywords}
3795 \Hy@temp{Subject}
3796 \Hy@temp{Creator}
3797 \Hy@temp{Producer}
3798 \Hy@temp{CreationDate}
3799 \Hy@temp{ModDate}
3800 \Hy@temp{Trapped}
3801 \newif\ifHyInfo@AddonUnsupported
3802 \kv@set@family@handler{pdfinfo}{%
3803     \HyInfo@AddonHandler{#1}{#2}%
3804 }
3805 \let\HyInfo@do\relax
3806 \def\HyInfo@AddonHandler#1#2{%
3807     \ifx\kv@value\relax
3808         \Hy@Warning{%
3809             Option `pdfinfo': ignoring key `kv@key' without value%
3810         }%
3811     \else
3812         \EdefEscapeName\HyInfo@KeyEscaped{\kv@key}%

```

```

3813 \EdefUnescapeName\HyInfo@Key{\HyInfo@KeyEscaped}%
3814 \expandafter\ifx\csname KV@pdfinfo@\HyInfo@Key\endcsname\relax
3815 \ifHyInfo@AddonUnsupported
3816 \Hy@Warning{%
3817   This driver does not support additional\MessageBreak
3818   information entries, therefore\MessageBreak
3819   `kv@key' is ignored%
3820 }%
3821 \else
3822 \def\HyInfo@tmp###1{%
3823   \kv@define@key{pdfinfo}{###1}{%
3824     \HyXeTeX@CheckUnicode
3825     \HyPsd@PrerenderUnicode{####1}%
3826     \pdfstringdef\HyInfo@Value{####1}%
3827     \global\expandafter
3828     \let\csname HyInfo@Value@##1\endcsname
3829     \HyInfo@Value
3830   }%
3831 }%
3832 \expandafter\HyInfo@tmp\expandafter{\HyInfo@Key}%
3833 \global\expandafter
3834 \let\csname KV@pdfinfo@\HyInfo@Key\expandafter\endcsname
3835 \csname KV@pdfinfo@\HyInfo@Key\endcsname
3836 \xdef\HyInfo@AddonList{%
3837   \HyInfo@AddonList
3838   \HyInfo@do{\HyInfo@Key}%
3839 }%
3840 \expandafter\kv@parse@normalized\expandafter{%
3841   \HyInfo@Key={#2}%
3842 }{%
3843   \kv@processor@default{pdfinfo}%
3844 }%
3845 \fi
3846 \else
3847 \expandafter\kv@parse@normalized\expandafter{%
3848   \HyInfo@Key={#2}%
3849 }{%
3850   \kv@processor@default{pdfinfo}%
3851 }%
3852 \fi
3853 \fi
3854 }
3855 \def\HyInfo@GenerateAddons{%
3856 \ifHyInfo@AddonUnsupported
3857 \def\HyInfo@Addons{}%
3858 \else
3859 \begingroup
3860 \toks@{}%
3861 \def\HyInfo@do###1{%
3862   \EdefEscapeName\HyInfo@Key{###1}%
3863   \edef\x{%
3864     \toks@{%
3865       \the\toks@
3866       /\HyInfo@Key(\csname HyInfo@Value@##1\endcsname)%

```



```

3867     }%
3868     }%
3869     \x
3870     }%
3871     \HyInfo@AddonList
3872     \edef\x{\endgroup
3873       \def\noexpand\HyInfo@Addons{\the\toks@}%
3874     }%
3875     \x
3876     \fi
3877   }
3878   \global\let\HyInfo@AddonList\@empty
3879   \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \\\}
3880   \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
3881   \let\setpdflinkmargin\@gobble
3882   \def\calculate@pdfview#1 #2\{\%
3883     \def\@pdfview{#1}%
3884     \ifx\#2\%
3885       \def\@pdfviewparams{ -32768}%
3886     \else
3887       \def\@pdfviewparams{ #2}%
3888     \fi
3889   }
3890   \def\Hy@number#1{%
3891     \the\numexpr#1\relax
3892   }%
3893   \define@key{Hyp}{pdfstartpage}{\%
3894     \ifx\#1\%
3895       \let\@pdfstartpage\@empty
3896     \else
3897       \edef\@pdfstartpage{\Hy@number{#1}}%
3898     \fi
3899   }%
3900   \define@key{Hyp}{pdfstartview}{\%
3901     \ifx\#1\%
3902       \let\@pdfstartview\@empty
3903     \else
3904       \def\@pdfstartview{/#1}%
3905     \fi
3906   }
3907   \def\HyPat@NonNegativeReal/{\%
3908     \ *([0-9]+\.[0-9]*|[0-9]*\.[0-9]+) *\%
3909   }
3910   \define@key{Hyp}{pdfremotestartview}{\%
3911     \ifx\#1\%
3912       \def\@pdfremotestartview{/Fit}%
3913     \else
3914       \edef\@pdfremotestartview{#1}%
3915     \Hy@Match\@pdfremotestartview{}\%
3916     ^{XYZ(
3917       (|
3918       (null|-\HyPat@NonNegativeReal/) %
3919       (null|-\HyPat@NonNegativeReal/) %
3920       (null|\HyPat@NonNegativeReal/)%

```

```

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

```

```

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

```

Test according to ABNF of RFC 3066.

```

4015   \Hy@Match\@pdflang{icase}{%
4016     ~%
4017     [a-z]{1,8}%
4018     (-[a-z0-9]{1,8})*%
4019     $%
4020   }{%

```

Test according to ABNF of RFC 5646.

```

4021   \Hy@Match\@pdflang{icase}{%
4022     ~%
4023     (%
4024     % langtag
4025     (% language

```

```

4026      [a-z]{2,3}%
4027      ([a-z]{3}(-[a-z]{3}){0,2})?% extlang
4028      |[a-z]{4}% reserved for future use
4029      |[a-z]{5,8}% registered language subtag
4030  )%
4031  (-[a-z]{4})?% script
4032  (-([a-z]{2}|[0-9]{3}))?% region
4033  (-([a-z]{5,8}|[0-9][a-z0-9]{3}))?% variant
4034  (-[0-9a-wyz](-[a-z0-9]{2,8})+)*% extension
4035  (-x(-[a-z0-9]{1,8})+)?% privateuse
4036  % privateuse
4037  |x(-[a-z0-9]{1,8})+%
4038  % grandfathered/irregular
4039  |en-GB-oed%
4040  |i-(ami|bnn|default|enochian|hak|klinton|lux|
4041  mingo|navajo|pwn|tao|tay|tsu)%
4042  |sgn-(BE-FR|BE-NL|CH-DE)%
4043  % grandfathered/regular
4044  |art-lojban%
4045  |cel-gaulish%
4046  |no-(bok|nyn)%
4047  |zh-(guoyu|hakka|min|min-nan|xiang)%
4048  )%
4049  $%
4050  }{%

```

Test for unique extensions.

```

4051  \Hy@Match{-\@pdfang}{icase}{-[a-wyz0-9]-}{}%
4052  \Hy@Match\@pdfang{icase}{~x-}{}%
4053  % remove privateuse
4054  \edef\Hy@temp{-\@pdfang}%
4055  \Hy@Match\Hy@temp{icase}{}%
4056  ~%
4057  (%
4058  (-[a-wyz0-9]|-[a-z0-9]{2,8})*%
4059  )%
4060  -x-%
4061  }{%
4062  \edef\Hy@temp{%
4063  \expandafter\strip@prefix\pdfastmatch1%
4064  }%
4065  }{}%
4066  \Hy@Match\Hy@temp{icase}{}%
4067  (-[a-wyz0-9]-).*\@backslashchar1%
4068  }{%
4069  \Hy@Warning{%
4070  Invalid language identifier `#1'\MessageBreak
4071  for option `pdfang', because it violates\MessageBreak
4072  well-formedness defined in RFC 4646\MessageBreak
4073  by duplicate singleton subtags%
4074  }%
4075  \let\@pdfang\relax
4076  }{}%
4077  }%
4078  }{}%

```

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

```

4079      \ifx\@pdflang\relax
4080      \else
4081      \Hy@Match\@pdflang{icase}{%
4082      ~%
4083      [a-zA-Z]{2}-%
4084      (%
4085      aa|AA|%
4086      [qQ][m-zA-Z]|%
4087      [xX][a-zA-Z]|%
4088      zz|ZZ%
4089      )%
4090      (-|%)%
4091      }{%
4092      \Hy@Warning{%
4093      Invalid language identifier `#1'\MessageBreak
4094      for option `pdflang' because of invalid country code%
4095      \MessageBreak
4096      in second subtag (RFC 3066)%
4097      }%
4098      \let\@pdflang\relax
4099      }{}%
4100      \fi
4101    }{%
4102      \Hy@Warning{%
4103      Invalid language identifier `#1'\MessageBreak
4104      for option `pdflang', because it violates\MessageBreak
4105      well-formedness defined in RFC 5646%
4106      }%
4107      \let\@pdflang\relax
4108      }%
4109    }{%
4110      \Hy@Warning{%
4111      Invalid language identifier `#1'\MessageBreak
4112      for option `pdflang' (RFC 3066)%
4113      }%
4114      \let\@pdflang\relax
4115      }%
4116      \fi
4117    \fi
4118  }
4119  \define@key{Hyp}{pdfpagelabels}[true]{%
4120    \Hy@boolkey{pdfpagelabels}{#1}%
4121  }
4122  \define@key{Hyp}{pdfescapeform}[true]{%
4123    \Hy@boolkey{pdfescapeform}{#1}%
4124  }

```

Default values:

```

4125 \def\@linkbordercolor{1 0 0}
4126 \def\@urlbordercolor{0 1 1}
4127 \def\@menubordercolor{1 0 0}
4128 \def\@filebordercolor{0 .5 .5}
4129 \def\@runbordercolor{0 .7 .7}

```

```

4130 \def\@citebordercolor{0 1 0}
4131 \def\@pdfhighlight{/I}
4132 \let\@pdftitle\@empty
4133 \let\@pdfauthor\@empty
4134 \let\@pdfproducer\relax
4135 \def\@pdfcreator{LaTeX with hyperref}
4136 \let\@pdfcreationdate\@empty
4137 \let\@pdfmoddate\@empty
4138 \let\@pdfsubject\@empty
4139 \let\@pdfkeywords\@empty
4140 \let\@pdftrapped\@empty
4141 \let\@pdfpagescrop\@empty
4142 \def\@pdfstartview{/Fit}
4143 \def\@pdfremotestartview{/Fit}
4144 \def\@pdfstartpage{1}
4145 \let\@pdfprintpagerange\@empty
4146 \let\@pdflang\relax
4147 \let\PDF@SetupDoc\@empty
4148 \let\PDF@FinishDoc\@empty
4149 \let\phantomsection\@empty
4150 \let\special@paper\@empty
4151 \def\HyperDestNameFilter#1{#1}
4152 \Hy@AtBeginDocument{%
4153   \begingroup
4154     \edef\x{\ifdim\stockheight>\z@ \stockheight\else\paperheight\fi}%
4155     \dimen@=\x\relax
4156     \ifdim\dimen@>\z@
4157       \else
4158         \dimen@=11in\relax
4159         \Hy@WarningNoLine{%
4160           Height of page (\expandafter\string\x) %
4161           is invalid (\the\x),\MessageBreak
4162           using 11in%
4163         }%
4164       \fi
4165       \dimen@=0.99626401\dimen@
4166       \xdef\Hy@pageheight{\strip@pt\dimen@}%
4167     \endgroup
4168 }
4169 \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.

```

4170 \let\hyper@normalise\ExecuteOptions
4171 \let\ExecuteOptions\hypersetup
4172 \Hy@RestoreCatcodes
4173 \InputIfFileExists{hyperref.cfg}{\|}{\|}
4174 \Hy@SetCatcodes
4175 \let\ExecuteOptions\hyper@normalise
4176 \ifx\Hy@MaybeStopNow\relax
4177 \else
4178   \Hy@stoppedearlytrue
4179   \expandafter\Hy@MaybeStopNow

```

```

4180 \fi
4181 \Hy@stopppedearlyfalse

```

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.

```

4182 \SetupKeyvalOptions{family=Hyp}
4183 \DeclareLocalOptions{%
4184   a4paper,a5paper,b5paper,letterpaper,legalpaper,executivepaper%
4185 }

```

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

```

4186 \@ifpackagewith{hyperref}{tex4ht}{%
4187 }{%
4188   \@ifpackageloaded{tex4ht}{%
4189     \PassOptionsToPackage{tex4ht}{hyperref}%
4190   }{%
4191     \@ifundefined{HCode}{%
4192     }{%
4193       \begingroup
4194       \def\Hy@pkg{tex4ht}%
4195       \def\Hy@temp@A#1\RequirePackage[#2]#3#4\Hy@NIL{%
4196         \def\Hy@param{#2#3}%
4197         \ifx\Hy@param\@empty
4198           \expandafter\@gobble
4199         \else
4200           \def\Hy@param{#3}%
4201           \ifx\Hy@param\Hy@pkg
4202             \PassOptionsToPackage{#2}{tex4ht}%
4203             \expandafter\expandafter\expandafter\@gobble
4204           \else
4205             \expandafter\expandafter\expandafter\@firstofone
4206           \fi
4207         \fi
4208         {\Hy@temp@A#4\Hy@NIL}%
4209       }%
4210       \expandafter
4211       \Hy@temp@A\@documentclasshook\RequirePackage[]{}\Hy@NIL
4212     \endgroup
4213     \PassOptionsToPackage{tex4ht}{hyperref}%
4214   }%
4215 }%
4216 }

4217 \let\ReadBookmarks\relax
4218 \ProcessKeyvalOptions{Hyp}

```

After processing options.

15.1 Package `xspace` support

```

4219 \def\Hy@xspace@end{}
4220 \@ifundefined{xspaceaddeceptions}{%
4221   \Hy@AtBeginDocument{%
4222     \@ifundefined{xspaceaddeceptions}{%
4223       }{%

```

```

4224 \def\Hy@xspace@end{%
4225 \gobble{end for xspace}%
4226 }%
4227 \xspaceaddexceptions{%
4228 \Hy@xspace@end,\hyper@linkend,\hyper@anchorend
4229 }%
4230 }%
4231 }%
4232 }{%
4233 \def\Hy@xspace@end{%
4234 \gobble{end for xspace}%
4235 }%
4236 \xspaceaddexceptions{\Hy@xspace@end,\hyper@linkend,\hyper@anchorend}%
4237 }

```

15.2 Option draft

```

4238 \Hy@AtBeginDocument{%
4239 \ifHy@draft
4240 \let\hyper@@anchor\gobble
4241 \gdef\hyper@link#1#2#3{#3\Hy@xspace@end}%
4242 \def\hyper@anchorstart#1#2{#2\Hy@xspace@end}%
4243 \def\hyper@anchorend{\Hy@xspace@end}%
4244 \let\hyper@linkstart\gobbletwo
4245 \def\hyper@linkend{\Hy@xspace@end}%
4246 \def\hyper@linkurl#1#2{#1\Hy@xspace@end}%
4247 \def\hyper@linkfile#1#2#3{#1\Hy@xspace@end}%
4248 \def\hyper@link@[#1]#2#3#4{#4\Hy@xspace@end}%
4249 \def\Acrobatmenu#1#2{\leavevmode#2\Hy@xspace@end}%
4250 \let\PDF@SetupDoc\@empty
4251 \let\PDF@FinishDoc\@empty
4252 \let\ReadBookmarks\relax
4253 \let\WriteBookmarks\relax
4254 \Hy@WarningNoLine{Draft mode on}%
4255 \fi
4256 \Hy@DisableOption{draft}%
4257 \Hy@DisableOption{nolinks}%
4258 \Hy@DisableOption{final}%
4259 }

```

15.3 PDF/A

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

```

4260 \ExplSyntaxOn
4261 \IfDocumentMetadataT
4262 {
4263 \tl_if_empty:eTF{\GetDocumentProperties{document/pdfstandard}}
4264 {
4265 \Hy@pdfafalse
4266 }
4267 {
4268 \Hy@pdfatrue
4269 }
4270 }

```



```

4271 \ExplSyntaxOff
4272 \Hy@DisableOption{pdfa}

4273 \ifHy@pdfa
4274   \ifnum \Hy@pdf@majorminor@version < 104
4275     \kvsetkeys{Hyp}{pdfversion=1.4}%
4276   \fi
4277   \Hy@DisableOption{pdfversion}%
4278   \def\Hy@Acrobatmenu#1#2{%
4279     \leavevmode
4280     \begingroup
4281       \edef\x{#1}%
4282       \@onelevel@sanitize\x
4283       \ifx\x\Hy@NextPage
4284         \let\y=Y%
4285       \else
4286         \ifx\x\Hy@PrevPage
4287           \let\y=Y%
4288         \else
4289           \ifx\x\Hy@FirstPage
4290             \let\y=Y%
4291           \else
4292             \ifx\x\Hy@LastPage
4293               \let\y=Y%
4294             \else
4295               \let\y=N%
4296             \fi
4297           \fi
4298         \fi
4299       \fi
4300     \expandafter\endgroup
4301     \ifx\y Y%
4302     \else
4303       \Hy@Error{%
4304         PDF/A: Named action `#1' is not permitted%
4305       }\@ehc
4306       {#2}%
4307     \expandafter\@gobble
4308   \fi
4309 }%
4310 \def\Hy@temp#1{%
4311   \expandafter\def\csname Hy@#1\endcsname{#1}%
4312   \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
4313 }%
4314 \Hy@temp{NextPage}%
4315 \Hy@temp{PrevPage}%
4316 \Hy@temp{FirstPage}%
4317 \Hy@temp{LastPage}%
4318 \else
4319   \def\Hy@Acrobatmenu#1#2{\leavevmode}%
4320 \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.

```
4321 \def\Hy@wrapper@babel#1#2{%
4322   \begingroup
4323   \Hy@safe@activetrue
4324   \set@display@protect
4325   \edef\x{#2}%
4326   \@onelevel@sanitize\x
4327   \toks@{#1}%
4328   \edef\x{\endgroup\the\toks@{\x}}%
4329   \x
4330 }
4331 \def\Hy@WrapperDef#1{%
4332   \begingroup
4333   \escapechar=\m@ne
4334   \xdef\Hy@gtemp{%
4335     \expandafter\noexpand\csname HyWrap@string#1\endcsname
4336   }%
4337   \endgroup
4338   \edef#1{%
4339     \noexpand\Hy@wrapper@babel
4340     \expandafter\noexpand\Hy@gtemp
4341   }%
4342   \expandafter\def\Hy@gtemp
4343 }
4344 \ifHy@hyperfigures
4345   \Hy@Info{Hyper figures ON}%
4346 \else
4347   \Hy@Info{Hyper figures OFF}%
4348 \fi
4349 \ifHy@nesting
4350   \Hy@Info{Link nesting ON}%
4351 \else
4352   \Hy@Info{Link nesting OFF}%
4353 \fi
4354 \ifHy@hyperindex
4355   \Hy@Info{Hyper index ON}%
4356 \else
4357   \Hy@Info{Hyper index OFF}%
4358 \fi
4359 \ifHy@plainpages
4360   \Hy@Info{Plain pages ON}%
4361 \else
4362   \Hy@Info{Plain pages OFF}%
4363 \fi
4364 \ifHy@backref
4365   \Hy@Info{Backreferencing ON}%
4366 \else
```

```

4367 \Hy@Info{Backreferencing OFF}%
4368 \fi
4369 \ifHy@implicit
4370 \Hy@InfoNoLine{Implicit mode ON; LaTeX internals redefined}%
4371 \else
4372 \Hy@InfoNoLine{Implicit mode OFF; no redefinition of LaTeX internals}%
4373 \def\MaybeStopEarly{%
4374   \Hy@Message{Stopped early}%
4375   \Hy@AtBeginDocument{%
4376     \PDF@FinishDoc
4377     \gdef\PDF@FinishDoc{}%
4378   }%
4379 \endinput
4380 }%
4381 \Hy@AtBeginDocument{%
4382   \let\autoref\ref
4383   \let\autopageref\pageref
4384   \ifx\@pdfpagemode\@empty
4385     \gdef\@pdfpagemode{UseNone}%
4386   \fi
4387   \global\Hy@backreffalse
4388 }%
4389 \Hy@AtEndOfPackage{%
4390   \global\let\ReadBookmarks\relax
4391   \global\let\WriteBookmarks\relax
4392 }%
4393 \fi
4394 \Hy@DisableOption{implicit}

```

15.4.1 Driver loading

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

```

4395 \@ifundefined{stockwidth}{\newdimen\stockwidth}{}
4396 \@ifundefined{stockheight}{\newdimen\stockheight}{}
4397 \Hy@AtEndOfPackage{%
4398   \@ifpackageloaded{tex4ht}{%
4399     \def\Hy@driver{htex4ht}%
4400     \Hy@texhttrue
4401   }{}%

```

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.

```

4402 \ifx\Hy@driver\@empty
4403 \else
4404   \ifx\pdfextension\@undefined
4405     \def\Hy@temp{hpdfTEX}%
4406   \else
4407     \def\Hy@temp{hLUAteX}%
4408   \fi
4409 \ifpdf
4410   \ifx\Hy@driver\Hy@temp
4411   \else
4412     \Hy@WarningNoLine{%
4413       Wrong driver `\'Hy@driver.def';\MessageBreak

```

```

4414         pdfTeX is running in PDF mode.\MessageBreak
4415         Forcing driver ``\Hy@temp.def'%
4416     }%
4417     \let\Hy@driver\Hy@temp
4418 \fi
4419 \else
4420     \ifx\Hy@driver\Hy@temp
4421         \Hy@WarningNoLine{%
4422             Wrong driver ``\Hy@driver.def';\MessageBreak
4423             pdfTeX is not running in PDF mode.\MessageBreak
4424             Using default driver%
4425         }%
4426         \let\Hy@driver\@empty
4427     \fi
4428 \fi
4429 \fi
4430 \ifHy@texht
4431 \else
4432     \ifx\Hy@driver\@empty
4433     \else
4434         \def\Hy@temp{hxdetex}%
4435     \ifxdetex
4436         \ifx\Hy@driver\Hy@temp
4437         \else
4438             \Hy@WarningNoLine{%
4439                 Wrong driver ``\Hy@driver.def';\MessageBreak
4440                 XeTeX is running.\MessageBreak
4441                 Forcing driver ``\Hy@temp.def' for XeTeX%
4442             }%
4443             \let\Hy@driver\Hy@temp
4444         \fi
4445     \fi
4446 \fi
4447 \fi
4448 \ifx\Hy@driver\@empty
4449 \else
4450     \def\Hy@temp{hhitex}%
4451 \ifhint
4452     \ifx\Hy@driver\Hy@temp
4453     \else
4454         \Hy@WarningNoLine{%
4455             Wrong driver ``\Hy@driver.def';\MessageBreak
4456             hitex is running.\MessageBreak
4457             Forcing driver ``\Hy@temp.def'%
4458         }%
4459         \let\Hy@driver\Hy@temp
4460     \fi
4461 \fi
4462 \fi
4463 \ifx\Hy@driver\@empty
4464 \else
4465     \def\Hy@temp{hvtexhtm}%
4466     \ifnum\ifvtex\OpMode\else\m@ne\fi=10 %
4467     \ifx\Hy@driver\Hy@temp

```

```

4468 \else
4469 \Hy@WarningNoLine{%
4470 Wrong driver ``\Hy@driver.def';\MessageBreak
4471 VTeX is running in HTML mode.\MessageBreak
4472 Forcing driver ``\Hy@temp.def'%
4473 }%
4474 \let\Hy@driver\Hy@temp
4475 \fi
4476 \else
4477 \ifx\Hy@driver\Hy@temp
4478 \Hy@WarningNoLine{%
4479 Wrong driver ``\Hy@driver.def';\MessageBreak
4480 VTeX is not running in HTML mode.\MessageBreak
4481 Using default driver%
4482 }%
4483 \let\Hy@driver\@empty
4484 \fi
4485 \fi
4486 \fi

```

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

```

4487 \let\HyOpt@DriverType\@empty
4488 \ifx\HyOpt@CustomDriver\@empty
4489 \ifx\Hy@driver\@empty
4490 \def\HyOpt@DriverType{ (autodetected)}%
4491 \providecommand*{\Hy@defaultdriver}{hdvips}%
4492 \ifpdf
4493 \ifx\pdfextension\@undefined
4494 \def\Hy@driver{hpdfTeX}%
4495 \else
4496 \def\Hy@driver{hluatex}%
4497 \fi
4498 \else
4499 \ifxetex
4500 \def\Hy@driver{hxetex}%
4501 \else
4502 \ifnum\ifvtex\OpMode\else\m@ne\fi=10 %
4503 \def\Hy@driver{hvtexhtm}%
4504 \def\MaybeStopEarly{%
4505 \Hy@Message{Stopped early}%
4506 \Hy@AtBeginDocument{%
4507 \PDF@FinishDoc
4508 \gdef\PDF@FinishDoc{}}%
4509 }%
4510 \endinput
4511 }%
4512 \else
4513 \ifhint
4514 \def\Hy@driver{hhitex}
4515 \else
4516 \ifnum\ifvtex\OpMode\else\m@ne\fi=\@ne
4517 \def\Hy@driver{hvtex}%
4518 \else
4519 \ifnum\ifvtex\OpMode\else\m@ne\fi=\tw@
4520 \def\Hy@driver{hvtex}%

```

```

4521         \else
4522         \ifx\HyOpt@DriverFallback\@empty
4523         \let\Hy@driver\Hy@defaultdriver
4524         \def\HyOpt@DriverType{ (default)}%
4525         \else
4526         \begingroup
4527         \toks@\expandafter{\HyOpt@DriverFallback}%
4528         \edef\x{\endgroup
4529         \noexpand\kvsetkeys{Hyp}{\the\toks@}%
4530         }%
4531         \x
4532         \ifx\Hy@driver\@empty
4533         \let\Hy@driver\Hy@defaultdriver
4534         \def\HyOpt@DriverType{ (default)}%
4535         \else
4536         \def\HyOpt@DriverType{ (fallback)}%
4537         \fi
4538         \fi
4539         \fi
4540         \fi
4541         \fi
4542         \fi
4543         \fi
4544         \fi
4545         \ifx\Hy@driver\Hy@defaultdriver
4546         \def\Hy@temp{hdvwind}%
4547         \ifx\Hy@temp\Hy@driver
4548         \kvsetkeys{Hyp}{colorlinks}%
4549         \PassOptionsToPackage{dviwindo}{color}%
4550         \fi
4551         \fi
4552         \fi
4553         \else
4554         \def\HyOpt@DriverType{ (custom)}%
4555         \let\Hy@driver\HyOpt@CustomDriver
4556         \fi
4557         \Hy@InfoNoLine{Driver\HyOpt@DriverType: \Hy@driver}%
4558         \chardef\Hy@VersionChecked=0 %
4559         \input{\Hy@driver.def}%
4560         \ifcase\Hy@VersionChecked
4561         \Hy@VersionCheck{\Hy@driver.def}%
4562         \fi
4563         \let\@unprocessedoptions\relax
4564         \Hy@RestoreCatcodes
4565         \Hy@DisableOption{tex4ht}%
4566         \Hy@DisableOption{pdftex}%
4567         \Hy@DisableOption{nativepdf}%
4568         \Hy@DisableOption{dvipdfm}%
4569         \Hy@DisableOption{dvipdfmx}%
4570         \Hy@DisableOption{dvipdfmx-outline-open}%
4571         \Hy@DisableOption{pdfmark}%
4572         \Hy@DisableOption{dvips}%
4573         \Hy@DisableOption{hypertex}%
4574         \Hy@DisableOption{vtex}%

```

```

4575 \Hy@DisableOption{vtexpdfmark}%
4576 \Hy@DisableOption{dviwindo}%
4577 \Hy@DisableOption{dvipsone}%
4578 \Hy@DisableOption{textures}%
4579 \Hy@DisableOption{latex2html}%
4580 \Hy@DisableOption{ps2pdf}%
4581 \Hy@DisableOption{xetex}%
4582 \Hy@DisableOption{driverfallback}%
4583 \Hy@DisableOption{customdriver}%
4584 \Hy@DisableOption{pdfversion}%
4585 }

```

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.

```

4586 \newif\ifHy@DvipdfmxOutlineOpen
4587 \ifxetex
4588   \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
4589   \else
4590     \chardef\SpecialDvipdfmxOutlineOpen\@ne
4591     \Hy@DvipdfmxOutlineOpenttrue
4592   \fi
4593 \fi
4594 \begingroup\expandafter\expandafter\expandafter\endgroup
4595 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
4596 \else
4597   \ifnum\SpecialDvipdfmxOutlineOpen>\z@
4598     \Hy@DvipdfmxOutlineOpenttrue
4599   \fi
4600 \fi

```

15.4.2 Bookmarks

```

4601 \def\WriteBookmarks{0}
4602 \def\@bookmarkopenstatus#1{%
4603   \ifHy@bookmarksopen

```

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

```

4604   \ifnum#1<\expandafter\@firstofone\expandafter
4605     {\number\@bookmarkopenlevel} % explicit space
4606   \else
4607     -%
4608   \fi
4609 \else
4610   -%
4611 \fi
4612 }
4613 \ifHy@bookmarks
4614   \Hy@Info{Bookmarks ON}%
4615   \ifx\@pdfpagemode\@empty
4616     \def\@pdfpagemode{UseOutlines}%
4617   \fi
4618 \else
4619   \let\@bookmarkopenstatus\@gobble

```

```

4620 \Hy@Info{Bookmarks OFF}%
4621 \Hy@AtEndOfPackage{%
4622   \global\let\ReadBookmarks\relax
4623   \global\let\WriteBookmarks\relax
4624 }%
4625 \ifx\@pdfpagemode\@empty
4626   \def\@pdfpagemode{UseNone}%
4627 \fi
4628 \fi
4629 \Hy@DisableOption{bookmarks}

  Add wrapper for setting standard catcodes (babel's shorthands).
4630 \def\Hy@CatcodeWrapper#1{%
4631   \let\Hy@endWrap\@empty
4632   \def\TMP@EnsureCode##1##2{%
4633     \edef\Hy@endWrap{%
4634       \Hy@endWrap
4635       \catcode##1 \the\catcode##1\relax
4636     }%
4637     \catcode##1 ##2\relax
4638   }%
4639   \TMP@EnsureCode{10}{12}% ^^J
4640   \TMP@EnsureCode{33}{12}% !
4641   \TMP@EnsureCode{34}{12}% "
4642   \TMP@EnsureCode{36}{3}% $ (math)
4643   \TMP@EnsureCode{38}{4}% & (alignment)
4644   \TMP@EnsureCode{39}{12}% '
4645   \TMP@EnsureCode{40}{12}% (
4646   \TMP@EnsureCode{41}{12}% )
4647   \TMP@EnsureCode{42}{12}% *
4648   \TMP@EnsureCode{43}{12}% +
4649   \TMP@EnsureCode{44}{12}% ,
4650   \TMP@EnsureCode{45}{12}% -
4651   \TMP@EnsureCode{46}{12}% .
4652   \TMP@EnsureCode{47}{12}% /
4653   \TMP@EnsureCode{58}{12}% :
4654   \TMP@EnsureCode{59}{12}% ;
4655   \TMP@EnsureCode{60}{12}% <
4656   \TMP@EnsureCode{61}{12}% =
4657   \TMP@EnsureCode{62}{12}% >
4658   \TMP@EnsureCode{63}{12}% ?
4659   \TMP@EnsureCode{91}{12}% [
4660   \TMP@EnsureCode{93}{12}% ]
4661   \TMP@EnsureCode{94}{7}% ^ (superscript)
4662   \TMP@EnsureCode{95}{8}% _ (subscript)
4663   \TMP@EnsureCode{96}{12}% `
4664   \TMP@EnsureCode{124}{12}% |
4665   \TMP@EnsureCode{126}{13}% ~ (active)
4666   ##1\relax
4667   \Hy@endWrap
4668 }

  \HyColor@UseColor expects a macro as argument. It contains the color spec-
  ification.
4669 \Hy@AtBeginDocument{%

```



```

4670 \ifHy@ocgcolorlinks
4671 \kvsetkeys{Hyp}{colorlinks}%
4672 \ifHy@pdfa
4673 \Hy@Warning{%
4674     PDF/A: Optional Content Groups are prohibited,\MessageBreak
4675     using `colorlinks' instead of `ocgcolorlinks'%
4676 }%
4677 \Hy@ocgcolorlinksfalse
4678 \fi
4679 \fi
4680 \ifHy@ocgcolorlinks
4681 \else
4682 \Hy@DisableOption{ocgcolorlinks}%
4683 \fi
4684 \ifHy@colorlinks
4685 \def\@pdfborder{0 0 0}%
4686 \let\@pdfborderstyle\@empty
4687 \Hy@CatcodeWrapper{%
4688 \RequirePackage{color}%
4689 }%
4690 \def\Hy@colorlink#1{%
4691 \begingroup
4692 \HyColor@UseColor#1%
4693 }%
4694 \def\Hy@endcolorlink{\endgroup}%
4695 \Hy@Info{Link coloring ON}%
4696 \else
4697 \ifHy@frenchlinks
4698 \def\Hy@colorlink#1{\begingroup\fontshape{\scdefault}\selectfont}%
4699 \def\Hy@endcolorlink{\endgroup}%
4700 \Hy@Info{French linking ON}%
4701 \else
for grouping consistency:
4702 \def\Hy@colorlink#1{\begingroup}%
4703 \def\Hy@endcolorlink{\endgroup}%
4704 \Hy@Info{Link coloring OFF}%
4705 \fi
4706 \fi
4707 \Hy@DisableOption{colorlinks}%
4708 \Hy@DisableOption{frenchlinks}%
4709 \ifHy@texht
4710 \else

```

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

```

4711 \ifHy@implicit
4712 \let \T@Ref\HyRef@Ref
4713 \def\@refstar#1{%
4714 \NR@ref@showkeys{#1}%
4715 \HyRef@StarSetRef{#1}\@firstoffive
4716 }
4717 \def\@pagerefstar#1{%
4718 \NR@ref@showkeys{#1}%
4719 \HyRef@StarSetRef{#1}\@secondoffive

```

```

4720 }
4721 \def\@namerefstar#1{%
4722   \NR@ref@showkeys{#1}%
4723   \HyRef@StarSetRef{#1}\@thirdoffive
4724 }
4725 \def\@Refstar#1{%
4726   \NR@ref@showkeys{#1}%
4727   \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
4728 }%
4729 \else
4730 \fi
4731 \fi
4732 }
4733 \Hy@AtBeginDocument{%
4734   \ifx\ReadBookmarks\relax
4735   \else
4736     \Hy@CatcodeWrapper\ReadBookmarks
4737   \fi
4738 }
4739 \ifHy@backref
4740   \RequirePackage{backref}%
4741 \else
4742   \let\Hy@backout\@gobble
4743 \fi
4744 \Hy@DisableOption{backref}
4745 \Hy@DisableOption{pagebackref}
4746 \Hy@activeanchorfalse

```

16 User hypertext macros

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

```

4747 \begingroup
4748   \endlinechar=-1 %
4749   \catcode`\^^A=14 %
4750   \catcode`\^^M\active
4751   \catcode`\%\active
4752   \catcode`\#\active
4753   \catcode`\_\active
4754   \catcode`\$\active
4755   \catcode`\&\active
4756   \gdef\hyper@normalise{^^A
4757     \begingroup
4758       \@makeother{:}\^^A
4759       \catcode`\^^M\active
4760       \def^^M{ }\^^A
4761       \catcode`\%\active
4762       \let%\@percentchar

```

```

4763 \let\%\@percentchar
4764 \catcode`\#\active
4765 \def#{\hyper@hash}^^A
4766 \def#{\hyper@hash}^^A
4767 \@makeother\&^^A
4768 \edef&{\string&}^^A
4769 \edef\&{\string&}^^A
4770 \edef\textunderscore{\string_}^^A
4771 \let_\textunderscore
4772 \catcode`\_\active
4773 \let_\textunderscore
4774 \let~\hyper@tilde
4775 \let~\hyper@tilde
4776 \let\textasciitilde\hyper@tilde
4777 \let\\\@backslashchar
4778 \edef$\string$}^^A
4779 \Hy@safe@activetrue
4780 \hyper@n@rmalise
4781 }^^A
4782 \catcode`\#=6 ^^A
4783 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
4784 \gdef\hyper@n@rmalise#1#2{^^A
4785 \def\Hy@tempa{#2}^^A
4786 \ifx\Hy@tempa\Hy@ActiveCarriageReturn
4787 \Hy@ReturnAfterElseFi{^^A
4788 \hyper@@normalise{#1}^^A
4789 }^^A
4790 \else
4791 \Hy@ReturnAfterFi{^^A
4792 \hyper@@normalise{#1}{#2}^^A
4793 }^^A
4794 \fi
4795 }^^A
4796 \gdef\hyper@@normalise#1#2{^^A
4797 \edef\Hy@tempa{^^A
4798 \endgroup
4799 \noexpand#1{\Hy@RemovePercentCr#2%^^M\@nil}^^A
4800 }^^A
4801 \Hy@tempa
4802 }^^A
4803 \gdef\Hy@RemovePercentCr#1%^^M#2\@nil{^^A
4804 #1^^A
4805 \ifx\limits#2\limits
4806 \else
4807 \Hy@ReturnAfterFi{^^A
4808 \Hy@RemovePercentCr #2\@nil
4809 }^^A
4810 \fi
4811 }^^A
4812 \endgroup
4813 \providecommand*\hyper@chars{%
4814 \let#\hyper@hash
4815 \let%\@percentchar
4816 \Hy@safe@activetrue

```

```

4817 }
4818 \def\hyperlink#1#2{%
4819   \hyper@@link{#1}{#2}%
4820 }
4821 \def\Hy@VerboseLinkStart#1#2{%
4822   \ifHy@verbose
4823     \begingroup
4824       \Hy@safe@activetrue
4825       \xdef\Hy@VerboseGlobalTemp{(#1) `#2'}%
4826       \Hy@Info{Reference \Hy@VerboseGlobalTemp}%
4827       \xdef\Hy@VerboseGlobalTemp{%
4828         \Hy@VerboseGlobalTemp, %
4829         line \the\inputlineno
4830       }%
4831     \endgroup
4832     \let\Hy@VerboseLinkInfo\Hy@VerboseGlobalTemp
4833     \@onelevel@sanitize\Hy@VerboseLinkInfo
4834   \fi
4835 }
4836 \def\Hy@VerboseLinkInfo{<VerboseLinkInfo>}
4837 \def\Hy@VerboseLinkStop{%
4838   \ifHy@verbose
4839     \begingroup
4840       \edef\x{\endgroup
4841         \write\m@ne{%
4842           Package `hyperref' Info: %
4843           End of reference \Hy@VerboseLinkInfo.%
4844         }%
4845       }%
4846     \x
4847   \fi
4848 }
4849 \def\Hy@VerboseAnchor#1{%
4850   \ifHy@verbose
4851     \begingroup
4852       \Hy@safe@activetrue
4853       \Hy@Info{Anchor ``\HyperDestNameFilter{#1}'}%
4854     \endgroup
4855   \fi
4856 }
4857 \def\Hy@AllowHyphens{%
4858   \relax
4859   \ifhmode
4860     \penalty\@M
4861     \hskip\z@skip
4862   \fi
4863 }
4864 \DeclareRobustCommand*\href[1][]{%
4865   \begingroup
4866     \setkeys{href}{#1}%
4867     \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
4868 }

```

```

4869 \def\Hy@href#{%
4870   \hyper@normalise\href@
4871 }
4872 \begingroup
4873   \catcode`\$=6 %
4874   \catcode`\#=12 %
4875   \gdef\href$1{\expandafter\href@split$1##\}%
4876   \gdef\href@split$1#$2##$3\\$4{%
4877     \hyper@@link{$1}{$2}{$3}{$4}%
4878   \endgroup
4879 }%
4880 \endgroup

```

Option ‘page’.

```

4881 \define@key{href}{page}{%
4882   \def\Hy@href@page{#1}%
4883 }
4884 \let\Hy@href@page\@empty
4885 \newcount\c@Hy@tempcnt
4886 \def\theHy@tempcnt{\the\c@Hy@tempcnt}
4887 \def\Hy@MakeRemoteAction{%
4888   \ifx\Hy@href@page\@empty
4889     \def\Hy@href@page{0}%
4890   \else
4891     \setcounter{Hy@tempcnt}{\Hy@href@page}%
4892     \ifnum\c@Hy@tempcnt<\@ne
4893       \Hy@Warning{%
4894         Invalid page number (\theHy@tempcnt)\MessageBreak
4895         for remote PDF file.\MessageBreak
4896         Using page 1%
4897       }%
4898     \def\Hy@href@page{0}%
4899   \else
4900     \global\advance\c@Hy@tempcnt\m@ne
4901     \edef\Hy@href@page{\theHy@tempcnt}%
4902   \fi
4903 }

```

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.

```

4904 \ifx\Hy@href@nextactionraw\@empty
4905 \else
4906   \Hy@pdfnewwindowsettrue
4907   \Hy@pdfnewwindowtrue
4908 \fi
4909 }

```

Option ‘pdfremotestartview’.

```

4910 \define@key{href}{pdfremotestartview}{%
4911   \setkeys{Hyp}{pdfremotestartview={#1}}%
4912 }

```

Option ‘pdfnewwindow’.

```

4913 \let\KV@href@pdfnewwindow\KV@Hyp@pdfnewwindow
4914 \let\KV@href@pdfnewwindow@default\KV@Hyp@pdfnewwindow@default

```

Option ‘ismap’.

```

4915 \newif\ifHy@href@ismap
4916 \define@key{href}{ismap}[true]{%
4917   \@ifundefined{Hy@href@ismap#1}{%
4918     \Hy@Error{%
4919       Invalid value (#1) for key `ismap'.\MessageBreak
4920       Permitted values are `true' or `false'.\MessageBreak
4921       Ignoring `ismap'%
4922     }\@ehc
4923   }{%
4924     \csname Hy@href@ismap#1\endcsname
4925   }%
4926 }
```

Option ‘nextactionraw’.

```

4927 \let\Hy@href@nextactionraw\@empty
4928 \define@key{href}{nextactionraw}{%
4929   \edef\Hy@href@nextactionraw{#1}%
4930   \ifx\Hy@href@nextactionraw\@empty
4931     \else
4932       \Hy@Match\Hy@href@nextactionraw}{%
4933         ~(\HyPat@ObjRef/|<<.*[/|/|. +>>|)%
4934         \[( ?\HyPat@ObjRef/|<<.*[/|/|. +>>)+ ?)]$%
4935       }{%
4936         \Hy@Warning{Invalid value for `nextactionraw':\MessageBreak
4937           \Hy@href@nextactionraw\MessageBreak
4938           The action is discarded%
4939         }%
4940       }%
4941       \ifx\Hy@href@nextactionraw\@empty
4942         \else
4943           \edef\Hy@href@nextactionraw{/Next \Hy@href@nextactionraw}%
4944         \fi
4945       \fi
4946     }
4947 \def\HyPat@ObjRef/{.+}
```

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

```

4948 \RequirePackage{url}
4949 \let\HyOrg@url\url
4950 \def\Hurl{\begingroup \Url}
4951 \DeclareRobustCommand*\nolinkurl{\hyper@normalise\nolinkurl@}
4952 \def\nolinkurl@#1{\Hurl{#1}}
4953 \DeclareRobustCommand*\url{\hyper@normalise\url@}
4954 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}

4955 \DeclareRobustCommand*\hyperimage{\hyper@normalise\hyper@image}
4956 \providecommand\hyper@image[2]{#2}

4957 \def\hypertarget#1#2{%
4958   \ifHy@nesting
4959     \hyper@@anchor{#1}{#2}%
4960   \else
4961     \hyper@@anchor{#1}{\relax}#2%
4962   \fi
4963 }
```

`\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 \LaTeX label which can be used in a short form of `\hyperref` later, to avoid remembering the name and category.

```

4964 \DeclareRobustCommand*\hyperref{%
4965   \@ifnextchar{\Hy@babelnormalise\label@hyperref}\@hyperref
4966 }
4967 \def\Hy@babelnormalise#1[#2]{%
4968   \begingroup
4969     \Hy@safe@activetrue
4970     \let\protect\@unexpandable@protect
4971     \edef\Hy@tempa{%
4972       \endgroup
4973       \noexpand#1[#2]}%
4974   }%
4975   \Hy@tempa
4976 }
4977 \def\@hyperref{\hyper@normalise\@hyperref}
4978 \def\@hyperref#1#2#3{%
4979   \edef\ref@one{\ifx\#2\else#2.\fi#3}%
4980   \expandafter\tryhyper@link\ref@one\{#1}%
4981 }
4982 \def\tryhyper@link#1\#2{%
4983   \hyper@@link{#2}{#1}%
4984 }

4985 \def\hyperdef{\@ifnextchar{\label@hyperdef}\@hyperdef}
4986 \def\@hyperdef#1#2#3{%, category, name, text
4987   \ifx\#1\%
4988     \def\Hy@AnchorName{#2}%
4989   \else
4990     \def\Hy@AnchorName{#1.#2}%
4991   \fi
4992   \ifHy@nesting
4993     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
4994   \else
4995     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#3%
4996   \fi
4997 }

```

We also have a need to give a \LaTeX *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.

```

4998 \let\hyperrefundefinedlink\@firstofone
4999 \def\label@hyperref#1{%
5000   \expandafter\label@\@hyperref\csname r@#1\endcsname{#1}%
5001 }%
5002 \def\label@\@hyperref#1#2#3{%
5003   \ifx#1\relax
5004     \protect\G@refundefinedtrue
5005     \@latex@warning{%

```

```

5006     Hyper reference `#2' on page \thepage \space undefined%
5007 }%
5008 \begingroup
5009   \hyperrefundefinedlink{#3}%
5010 \endgroup
5011 \else
5012   \hyper@@link{\expandafter\@fifthoffive#1}%
5013   {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
5014 \fi
5015 }
5016 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
5017                               % anchor text
5018   \@bsphack
5019   \ifx\#2\%
5020     \def\Hy@AnchorName{#3}%
5021   \else
5022     \def\Hy@AnchorName{#2.#3}%
5023   \fi
5024   \if@filesw
5025     \protected@write\@auxout{}{%
5026       \string\newlabel{#1}{\{ }\{ }\{ \Hy@AnchorName\} }%
5027     }%
5028   \fi
5029   \@esphack
5030   \ifHy@nesting
5031     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%
5032   \else
5033     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}{#4}%
5034   \fi
5035 }

```

`\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`

```

5036 \ExplSyntaxOn
5037 \cs_new:Npn \hyperget #1 #2
5038 {
5039   \use:c { __hyp_get_#1:n } { #2}
5040 }
5041
5042 \cs_new:Npn \__hyp_get_anchor:n #1
5043 {
5044   \HyperDestNameFilter
5045   {
5046     \cs_if_exist:cTF {r@#1}
5047     {
5048       \tl_item:cn {r@#1}{4}
5049     }
5050     {
5051       Doc-Start

```



```

5052     }
5053   }
5054 }
5055 \cs_new:Npn \__hyp_get_pageanchor:n #1
5056 {
5057   \HyperDestNameFilter
5058   {
5059     \cs_if_exist:cTF {r@#1}
5060     {
5061       page. \tl_item:cn {r@#1}{2}
5062     }
5063     {
5064       Doc-Start
5065     }
5066   }
5067 }
5068 \cs_new:Npn \__hyp_get_currentanchor:n #1
5069 {
5070   \HyperDestNameFilter { \@currentHref }
5071 }
5072 \ExplSyntaxOff

```

16.1 Link box support for XeTeX

```

5073 \newdimen\XeTeXLinkMargin
5074 \setlength{\XeTeXLinkMargin}{2pt}
5075 \ifxetex
5076   \font\XeTeXLink@font=pzdr at 1sp\relax
5077   \newcommand*{\XeTeXLink@space}{%
5078     \begingroup
5079       \XeTeXLink@font
5080       \@xxxii
5081     \endgroup
5082   }%
5083   \newcommand{\XeTeXLinkBox}[1]{%
5084     \begingroup
5085       \leavevmode
5086       \sbox\z@{#1}%
5087       \begingroup
5088         \dimen@=\dp\z@
5089         \advance\dimen@\XeTeXLinkMargin
5090         \setbox\tw@=\llap{%
5091           \hb@xt@\XeTeXLinkMargin{%
5092             \lower\dimen@\hbox{\XeTeXLink@space}%
5093             \hss
5094           }%
5095         }%
5096         \dp\tw@=\dp\z@
5097         \ht\tw@=\ht\z@
5098         \copy\tw@
5099       \endgroup
5100       \copy\z@
5101       \dimen@=\ht\z@
5102       \advance\dimen@\XeTeXLinkMargin

```

```

5103 \setbox\tw@=\rlap{%
5104 \hb@xt@\XeTeXLinkMargin{%
5105 \hss
5106 \raise\dimen@\hbox{\XeTeXLink@space}%
5107 }%
5108 }%
5109 \dp\tw@=\dp\z@
5110 \ht\tw@=\ht\z@
5111 \copy\tw@
5112 \endgroup
5113 }%
5114 \else
5115 \newcommand*\XeTeXLinkBox}[1]{%
5116 \begingroup
5117 \leavevmode
5118 \sbox\z@{#1}%
5119 \copy\z@
5120 \endgroup
5121 }%
5122 \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.

```

5123 \def\hyper@link{\let\Hy@reserved@a\relax
5124 \@ifnextchar{\hyper@link@}{\hyper@link@[link]}}%
5125 }
5126 % #1: type
5127 % #2: URL
5128 % #3: destination name
5129 % #4: text
5130 \def\hyper@link@[#1]#2#3#4{%
5131 \Hy@ifempty{#4}{% link text
5132 \Hy@Warning{Suppressing empty link}%
5133 }{%
5134 \begingroup
5135 \protected@edef\Hy@tempa{#2}%
5136 \edef\Hy@tempb{#3}%
5137 \ifx\Hy@tempa\@empty
5138 \ifx\Hy@tempb\@empty
5139 \Hy@Warning{Suppressing link with empty target}%
5140 \toks@{%
5141 \endgroup
5142 \@secondoftwo
5143 }%
5144 \else
5145 \toks@{%
5146 \endgroup
5147 \hyper@link{#1}%
5148 }%
5149 \fi

```

```

5150 \else
5151 \toks@{%
5152 \endgroup
5153 \expandafter\hyper@readexternallink#2\{\{#1\}%
5154 }%
5155 \fi
5156 \Hy@safe@activesfalse
5157 \toks@\expandafter{%
5158 \the\expandafter\toks@
5159 \expandafter{\Hy@tempb}\{#4}%
5160 }%
5161 \the\toks@
5162 }%
5163 }

```

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.

```

5164 \def\hyper@readexternallink#1\{#2#3#4{%
5165 \begingroup
5166 \let\\\relax
5167 \expandafter\endgroup
5168 \expandafter\@hyper@@readexternallink#1\{#2}\{#3}\{#4}%
5169 }
5170 \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.

```

5171 \@hyper@readexternallink{#2}\{#3}\{#4}#1::\{#1}%
5172 }

```

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

```

5173 \def\@pdftempwordfile{file}%
5174 \def\@pdftempwordrun{run}%
5175 \def\@hyper@readexternallink#1#2#3#4:#5:#6\\\#7{%

```

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

```

5176 \ifx\\\#6\\%

```

```

5177 \@hyper@linkfile file:#7\{\#3}\{\#2}\{\#7}%
5178 \else
5179 \ifx\#4\%
5180 \@hyper@linkfile file:#7\{\#3}\{\#2}\{\#7}%
5181 \else

```

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

```

5182 \def\@pdftempa{\#4}%
5183 \ifx\@pdftempa\@pdftempwordfile
5184 \@hyper@linkfile#7\{\#3}\{\#2}\{\#7}%
5185 \else

```

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

```

5186 \ifx\@pdftempa\@pdftempwordrun
5187 \ifHy@pdfa
5188 \Hy@Error{%
5189 PDF/A: Launch action is prohibited%
5190 }\@ehc
5191 \begingroup
5192 \leavevmode
5193 \#2%
5194 \endgroup
5195 \else
5196 \@hyper@launch#7\{\#3}\{\#2}%
5197 \fi
5198 \else

```

otherwise its a URL

```

5199 \hyper@linkurl{\#3}\{\#7}\ifx\#2\else\hyper@hash#2\fi}%
5200 \fi
5201 \fi
5202 \fi
5203 \fi
5204 }

```

By default, turn run: into file:

```

5205 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname
5206 \hyper@linkurl{\#2}\%
5207 \Hy@linkfileprefix
5208 \#1%
5209 \ifx\#3\%
5210 \else
5211 \hyper@hash
5212 \#3%
5213 \fi
5214 }\%
5215 }

```

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

```

5216 \def\@hyper@linkfile file:#1\#2#3#4{%
5217 %file url,link string, name, original uri
5218 \filename@parse{\#1}%
5219 \ifx\filename@ext\relax
5220 \edef\filename@ext{\XR@ext}%
5221 \fi

```

```

5222 \def\use@file{\filename@area\filename@base.\filename@ext}%
5223 \Hy@ifStringEndsWith\filename@ext\XR@ext{%
5224   \hyper@linkfile{#2}{\use@file}{#3}%
5225 }{%
5226   \ifx\@baseurl\@empty
5227     \hyper@linkurl{#2}{%
5228       #4\ifx\\#3\\\else\hyper@hash#3\fi
5229     }%
5230   \else
5231     \hyper@linkurl{#2}{\use@file\ifx\\#3\\\else\hyper@hash#3\fi}%
5232   \fi
5233 }%
5234 }

5235 \def\Hy@ifStringEndsWith#1#2{%
5236   \begingroup
5237   \edef\x{#1}%
5238   \@onelevel@sanitize\x
5239   \edef\x{.\x}%
5240   \edef\y{#2}%
5241   \@onelevel@sanitize\y
5242   \edef\y{.\y}%
5243   \expandafter\def\expandafter\z\expandafter##\expandafter1\y##2\@nil{%
5244     \endgroup
5245     \ifx\relax##2\relax
5246       \expandafter\@secondoftwo
5247     \else
5248       \expandafter\@firstoftwo
5249     \fi
5250   }%
5251   \expandafter\expandafter\expandafter\z\expandafter\x\y\@nil
5252 }

5253 \def\Hy@StringLocalhost{localhost}
5254 \@onelevel@sanitize\Hy@StringLocalhost
5255 \def\Hy@CleanupFile#1{%
5256   \edef#1{#1}%
5257   \expandafter\Hy@@CleanupFile#1\hbox{///\hbox\@nil{#1}%
5258 }
5259 \def\Hy@@CleanupFile#1//#2/#3\hbox#4\@nil#5{%
5260   \begingroup
5261   \toks@{\endgroup}%
5262   \def\x{#1}%
5263   \ifx\x\@empty
5264     \def\x{#2}%
5265   \ifx\x\@empty
5266     \toks@{\endgroup\def#5{/#3}}%
5267   \else
5268     \@onelevel@sanitize\x
5269     \ifx\x\Hy@StringLocalhost
5270       \toks@{\endgroup\def#5{/#3}}%
5271     \fi
5272   \fi
5273   \fi
5274   \the\toks@

```

5275 }

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.

```

5276 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
5277 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
5278   \ifx\#1\%
5279     #2\Hy@Warning{Ignoring empty anchor}%
5280   \else
5281     \def\anchor@spot{#2#3}%
5282     \let\put@me@back\@empty
5283     \ifx\relax#2\relax
5284       \else
5285         \ifHy@nesting
5286         \else
5287           \ifcat a\noexpand#2\relax
5288           \else
5289             \ifcat 0\noexpand#2 \relax
5290             \else
5291 %           \typeout{Anchor start is not alphanumeric %
5292 %             on input line\the\inputlineno%
5293 %           }%
5294           \let\anchor@spot\@empty
5295           \def\put@me@back{#2#3}%
5296         \fi
5297       \fi
5298     \fi
5299   \fi
5300   \ifHy@activeanchor
5301     \anchor@spot
5302   \else
5303     \hyper@anchor{#1}%
5304   \fi
5305   \expandafter\put@me@back
5306 \fi
5307 \let\anchor@spot\@empty
5308 }
5309 \let\anchor@spot\@empty

```

18 Option ‘destlabel’

5310 \ifHy@destlabel

\hyper@newdestlabel

```

5311 \def\hyper@newdestlabel#1#2{%
5312   \begingroup
5313   \Hy@safe@activetrue
5314   \edef\x{\endgroup

```

```

5315     \noexpand\@newl@bel{HyDL}{#1}{#2}%
5316     }%
5317     \x
5318     }%

\hyper@destlabel@hook

5319     \providecommand*{\hyper@destlabel@hook}{}%

\Hy@DestRename

5320     \newcommand*{\Hy@DestRename}[2]{%
5321     \@ifundefined{HyDL!#1}{%
5322     \begingroup
5323     \Hy@safe@activetrue
5324     \edef\dest@name{#1}%
5325     \edef\label@name{#2}%
5326     \hyper@destlabel@hook
5327     \Hy@IsNotEmpty{dest@name}{%
5328     \Hy@IsNotEmpty{label@name}{%
5329     \global\expandafter
5330     \let\csname HyDL!#1\endcsname\@empty
5331     \if@filesw
5332     \protected@write\@auxout{}{%
5333     \string\hyper@newdestlabel
5334     {#1}%
5335     {\label@name}%
5336     }%
5337     \fi
5338     }%
5339     }%
5340     \endgroup
5341     }{}%
5342     }%

\HyperDestRename

5343     \newcommand*{\HyperDestRename}[2]{%
5344     \AtBeginDocument{%
5345     \Hy@DestRename{#1}{#2}%
5346     }%
5347     }%
5348     \AtBeginDocument{%
5349     \let\HyperDestRename\Hy@DestRename
5350     }%

\Hy@IsNotEmpty

5351     \def\Hy@IsNotEmpty#1{%
5352     \@ifundefined{#1}\@gobble{%
5353     \expandafter\ifx\csname#1\endcsname\@empty
5354     \expandafter\@gobble
5355     \else
5356     \expandafter\@firstofone
5357     \fi
5358     }%
5359     }%

```

```

5360 \Hy@GlobalAppendToMacro\label@hook{%
5361   \HyperDestRename\@currentHref\label@name
5362 }%

\HyperDestLabelReplace
5363 \def\HyperDestLabelReplace#1{%
5364   \@ifundefined{HyDL@#1}{%
5365     #1%
5366   }{%
5367     \csname HyDL@#1\endcsname
5368   }%
5369 }%

\HyperDestNameFilter
5370 \let\HyperDestNameFilter\HyperDestLabelReplace

5371 \else

\hyper@newdestlabel
5372 \let\hyper@newdestlabel\@gobbletwo

\HyperDestLabelReplace
5373 \let\HyperDestLabelReplace\@firstofone

\HyperDestRename
5374 \let\HyperDestRename\@gobbletwo

5375 \fi
5376 \Hy@DisableOption{destlabel}

Provide a dummy default definition of \hyper@newdestlabel inside the .aux
files.
5377 \AddToHook{include/before}
5378 {\immediate\write\@partaux{\string\providecommand\string\hyper@newdest-
label[2]{}}}
5379 \AddToHook{begindocument}
5380 {\immediate\write\@mainaux{\string\providecommand\string\hyper@newdest-
label[2]{}}}

```

19 Forms creation

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

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

19.1 Field flags

The field flags are organized in a bit set.

```
5381 \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

```
5382 \def\HyField@NewFlag#1#2{%
5383   \lowercase{\HyField@NewOption{#2}}%
5384   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5385 }
```

\HyField@NewFlagOnly

```
5386 \def\HyField@NewFlagOnly#1#2{%
5387   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5388 }
```

\HyField@NewOption #1: option name

```
5389 \def\HyField@NewOption#1{%
5390   \expandafter\newif\csname ifFld@#1\endcsname
5391   \define@key{Field}{#1}[true]{%
5392     \lowercase{\Field@boolkey{##1}}{#1}%
5393   }%
5394 }
```

\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

```
5395 \def\HyField@NewBitsetFlag#1#2#3#4{%
5396   \begingroup
5397     \count@=#4\relax
5398     \advance\count@\m@ne
5399     \def\x##1{%
5400       \endgroup
5401       \expandafter\def\csname ifFld@#3@#1\endcsname{##1}%
5402       \expandafter\ifx\csname ifFld@#3@#1\endcsname\relax
5403         \expandafter\edef\csname ifFld@#3@#1\endcsname{%
5404           (\number#4) #2%
5405         }%
5406       \else
5407         \expandafter\edef\csname ifFld@#3@#1\endcsname{%
5408           \csname ifFld@#3@#1\endcsname
5409           /#2%
5410         }%
5411       \fi
```

```

5412 }%
5413 \expandafter\x\expandafter{\the\count@}%
5414 }

```

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

```

5415 \def\HyField@UseFlag#1#2{%
5416 \lowercase{\HyField@@UseFlag{#2}}{#1}%
5417 }

```

\HyField@@UseFlag

```

5418 \def\HyField@@UseFlag#1#2{%
5419 \bitsetSetValue{HyField@#2}{%
5420 \csname HyField@#2@#1\endcsname
5421 }{%
5422 \csname ifFld@#1\endcsname 1\else 0\fi
5423 }%
5424 }

```

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

```

5425 \def\HyField@SetFlag#1#2{%
5426 \lowercase{\HyField@@SetFlag{#2}}{#1}%
5427 }

```

\HyField@@SetFlag

```

5428 \def\HyField@@SetFlag#1#2{%
5429 \bitsetSetValue{HyField@#2}{%
5430 \csname HyField@#2@#1\endcsname
5431 }{1}%
5432 }

```

\HyField@PrintFlags

```

5433 \def\HyField@PrintFlags#1#2{%
5434 \ifHy@verbose
5435 \begingroup
5436 \let\Hy@temp\@empty
5437 \let\MessageBreak\relax
5438 \expandafter\@for\expandafter\x\expandafter:\expandafter=%
5439 \bitsetGetSetBitList{HyField@#1}\do{%
5440 \edef\Hy@temp{%
5441 \Hy@temp
5442 \csname HyField@#1@\x\endcsname\MessageBreak
5443 }%
5444 }%
5445 \edef\x{\endgroup
5446 \noexpand\Hy@Info{%
5447 Field flags: %
5448 \expandafter\ifx\@car#1\@nil S\else/\fi
5449 #1 %
5450 \bitsetGetDec{HyField@#1} %
5451 (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
5452 \Hy@temp
5453 for #2%
5454 }%

```

```

5455 } \x
5456 \fi
5457 }

```

19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

5458 \HyField@NewFlag{Ff}{ReadOnly}{1}
5459 \HyField@NewFlag{Ff}{Required}{2}
5460 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

5461 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
5462 \HyField@NewFlag{Ff}{Radio}{16}
5463 \HyField@NewFlag{Ff}{Pushbutton}{17}
5464 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

5465 \HyField@NewFlag{Ff}{Multiline}{13}
5466 \HyField@NewFlag{Ff}{Password}{14}
5467 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
5468 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5469 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
5470 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
5471 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

5472 \HyField@NewFlag{Ff}{Combo}{18}
5473 \HyField@NewFlag{Ff}{Edit}{19}
5474 \HyField@NewFlag{Ff}{Sort}{20}
5475 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
5476 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5477 \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.

```

5478 \newif\ifFld@popdown
5479 \define@key{Field}{popdown}[true]{%
5480 \lowercase{\Field@boolkey{#1}}{popdown}%
5481 }

```

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.

```

5482 \HyField@NewFlag{F}{Invisible}{1}
5483 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
5484 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
5485 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
5486 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
5487 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
5488 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
5489 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
5490 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

```

```

5491 \ifHy@pdfa
5492 \def\HyField@PDFAFIagWarning#1#2{%
5493   \Hy@Warning{%
5494     PDF/A: Annotation flag `#1' must\MessageBreak
5495     be set to `#2'%
5496   }%
5497 }%
5498 \Fld@invisiblefalse
5499 \def\Fld@invisibletrue{%
5500   \HyField@PDFAFIagWarning{invisible}{false}%
5501 }%
5502 \Fld@hiddenfalse
5503 \def\Fld@hiddenttrue{%
5504   \HyField@PDFAFIagWarning{hidden}{false}%
5505 }%
5506 \Fld@printtrue
5507 \def\Fld@printfalse{%
5508   \HyField@PDFAFIagWarning{print}{true}%
5509 }%
5510 \Fld@nozoomtrue
5511 \def\Fld@nozoomfalse{%
5512   \HyField@PDFAFIagWarning{nozoom}{true}%
5513 }%
5514 \Fld@norotatetrue
5515 \def\Fld@norotatefalse{%
5516   \HyField@PDFAFIagWarning{norotate}{true}%
5517 }%
5518 \Fld@noviewfalse
5519 \def\Fld@noviewtrue{%
5520   \HyField@PDFAFIagWarning{noview}{false}%
5521 }%
5522 \fi

```

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

```

5523 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
5524 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
5525 \HyField@NewFlag{Submit}{GetMethod}{4}
5526 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
5527 \HyField@NewFlagOnly{Submit}{XFDF}{6}
5528 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
5529 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
5530 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
5531 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
5532 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
5533 \HyField@NewFlag{Submit}{ExclFKey}{12}
5534 \HyField@NewFlag{Submit}{EmbedForm}{14}

5535 \define@key{Field}{export}{%
5536   \lowercase{\def\Hy@temp{#1}}%
5537   \@ifundefined{Fld@export@\Hy@temp}{%
5538     \@onelevel@sanitize\Hy@temp
5539     \Hy@Error{%
5540       Unknown export format ` \Hy@temp'.\MessageBreak
5541       Known formats are `FDF', `HTML', `XFDF', and `PDF'%

```

```

5542 } \@ehc
5543 } {%
5544 \let\Fld@export\Hy@temp
5545 } %
5546 }
5547 \def\Fld@export{fdf}
5548 \@namedef{Fld@export@fdf}{0}%
5549 \@namedef{Fld@export@html}{1}%
5550 \@namedef{Fld@export@xpdf}{2}%
5551 \@namedef{Fld@export@pdf}{3}%

```

19.1.2 Set submit flags

\HyField@FlagsSubmit

```

5552 \def\HyField@FlagsSubmit{%
5553 \bitsetReset{HyField@Submit}%
5554 \ifcase\@nameuse{Fld@export@\Fld@export} %
5555 % FDF
5556 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5557 \HyField@UseFlag{Submit}{SubmitCoordinates}%
5558 \HyField@UseFlag{Submit}{IncludeAppendSaves}%
5559 \HyField@UseFlag{Submit}{IncludeAnnotations}%
5560 \HyField@UseFlag{Submit}{CanonicalFormat}%
5561 \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
5562 \HyField@UseFlag{Submit}{ExclFKey}%
5563 \HyField@UseFlag{Submit}{EmbedForm}%
5564 \or % HTML
5565 \HyField@SetFlag{Submit}{ExportFormat}%
5566 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5567 \HyField@UseFlag{Submit}{GetMethod}%
5568 \HyField@UseFlag{Submit}{SubmitCoordinates}%
5569 \HyField@UseFlag{Submit}{CanonicalFormat}%
5570 \or % XFDF
5571 \HyField@SetFlag{Submit}{XFDF}%
5572 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5573 \HyField@UseFlag{Submit}{SubmitCoordinates}%
5574 \HyField@UseFlag{Submit}{CanonicalFormat}%
5575 \or % PDF
5576 \HyField@SetFlag{Submit}{SubmitPDF}%
5577 \HyField@UseFlag{Submit}{GetMethod}%
5578 \fi
5579 \HyField@PrintFlags{Submit}{submit button field}%
5580 \bitsetIsEmpty{HyField@Submit}{%
5581 \let\Fld@submitflags\@empty
5582 } {%
5583 \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
5584 } %
5585 }

```

19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

5586 \def\HyField@FlagsAnnot#1{%

```

```

5587 \bitsetReset{HyField@F}%
5588 \HyField@UseFlag{F}{Invisible}%
5589 \HyField@UseFlag{F}{Hidden}%
5590 \HyField@UseFlag{F}{Print}%
5591 \HyField@UseFlag{F}{NoZoom}%
5592 \HyField@UseFlag{F}{NoRotate}%
5593 \HyField@UseFlag{F}{NoView}%
5594 \HyField@UseFlag{F}{Locked}%
5595 \HyField@UseFlag{F}{ToggleNoView}%
5596 \HyField@UseFlag{F}{LockedContents}%
5597 \HyField@PrintFlags{F}{#1}%
5598 \bitsetIsEmpty{HyField@F}{%
5599 \let\Fld@annotflags\@empty
5600 }{%
5601 \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
5602 }%
5603 }

```

19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

5604 \def\HyField@FlagsPushButton{%
5605 \HyField@FlagsAnnot{push button field}%
5606 \bitsetReset{HyField@Ff}%
5607 \HyField@UseFlag{Ff}{ReadOnly}%
5608 \HyField@UseFlag{Ff}{Required}%
5609 \HyField@UseFlag{Ff}{NoExport}%
5610 \HyField@SetFlag{Ff}{PushButton}%
5611 \HyField@PrintFlags{Ff}{push button field}%
5612 \bitsetIsEmpty{HyField@Ff}{%
5613 \let\Fld@flags\@empty
5614 }{%
5615 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5616 }%
5617 }

```

19.1.5 Check box field

\HyField@FlagsCheckBox

```

5618 \def\HyField@FlagsCheckBox{%
5619 \HyField@FlagsAnnot{check box field}%
5620 \bitsetReset{HyField@Ff}%
5621 \HyField@UseFlag{Ff}{ReadOnly}%
5622 \HyField@UseFlag{Ff}{Required}%
5623 \HyField@UseFlag{Ff}{NoExport}%
5624 \HyField@PrintFlags{Ff}{check box field}%
5625 \bitsetIsEmpty{HyField@Ff}{%
5626 \let\Fld@flags\@empty
5627 }{%
5628 \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5629 }%
5630 }

```

19.1.6 Radio button field

\HyField@FlagsRadioButton

```
5631 \def\HyField@FlagsRadioButton{%
5632   \HyField@FlagsAnnot{radio button field}%
5633   \bitsetReset{HyField@Ff}%
5634   \HyField@UseFlag{Ff}{ReadOnly}%
5635   \HyField@UseFlag{Ff}{Required}%
5636   \HyField@UseFlag{Ff}{NoExport}%
5637   \HyField@UseFlag{Ff}{NoToggleToOff}%
5638   \HyField@SetFlag{Ff}{Radio}%
5639   \HyField@UseFlag{Ff}{RadiosInUnison}%
5640   \HyField@PrintFlags{Ff}{radio button field}%
5641   \bitsetIsEmpty{HyField@Ff}{%
5642     \let\Fld@flags\@empty
5643   }{%
5644     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5645   }%
5646 }
```

19.1.7 Text fields

\HyField@FlagsText

```
5647 \def\HyField@FlagsText{%
5648   \HyField@FlagsAnnot{text field}%
5649   \bitsetReset{HyField@Ff}%
5650   \HyField@UseFlag{Ff}{ReadOnly}%
5651   \HyField@UseFlag{Ff}{Required}%
5652   \HyField@UseFlag{Ff}{NoExport}%
5653   \HyField@UseFlag{Ff}{Multiline}%
5654   \HyField@UseFlag{Ff}{Password}%
5655   \HyField@UseFlag{Ff}{FileSelect}%
5656   \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5657   \HyField@UseFlag{Ff}{DoNotScroll}%
5658   \ifFld@comb
5659     \ifcase0\ifFld@multiline
5660       \else\ifFld@password
5661       \else\ifFld@fileselect
5662       \else 1\fi\fi\fi\relax
5663     \Hy@Error{%
5664       Field option `comb' cannot used together with\MessageBreak
5665       `multiline', `password', or `fileselect'%
5666     }\@ehc
5667   \else
5668     \HyField@UseFlag{Ff}{Comb}%
5669   \fi
5670 \fi
5671 \HyField@UseFlag{Ff}{RichText}%
5672 \HyField@PrintFlags{Ff}{text field}%
5673 \bitsetIsEmpty{HyField@Ff}{%
5674   \let\Fld@flags\@empty
5675 }{%
5676   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5677 }
```

5678 }

19.1.8 Choice fields

\HyField@FlagsChoice

```

5679 \def\HyField@FlagsChoice{%
5680   \HyField@FlagsAnnot{choice field}%
5681   \bitsetReset{HyField@Ff}%
5682   \HyField@UseFlag{Ff}{ReadOnly}%
5683   \HyField@UseFlag{Ff}{Required}%
5684   \HyField@UseFlag{Ff}{NoExport}%
5685   \HyField@UseFlag{Ff}{Combo}%
5686   \ifFld@combo
5687     \HyField@UseFlag{Ff}{Edit}%
5688   \fi
5689   \HyField@UseFlag{Ff}{Sort}%
5690   \HyField@UseFlag{Ff}{MultiSelect}%
5691   \ifFld@combo
5692     \ifFld@edit
5693       \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5694     \fi
5695   \fi
5696   \HyField@UseFlag{Ff}{CommitOnSelChange}%
5697   \HyField@PrintFlags{Ff}{choice field}%
5698   \bitsetIsEmpty{HyField@Ff}{%
5699     \let\Fld@flags\@empty
5700   }{%
5701     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5702   }%
5703 }
```

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.

```

5704 \def\HyField@PDFChoices#1{%
5705   \begingroup
5706   \global\let\Fld@choices\@empty
5707   \let\HyTmp@optlist\@empty
5708   \let\HyTmp@optitem\relax
5709   \count@=0 %
5710   \kv@parse{#1}{%
5711     \Hy@pdfstringdef\kv@key\kv@key
5712     \ifx\kv@value\relax
5713       \ifnum\Hy@pdf@majorminor@version<103 % implementation note 122, PDF spec 1.7
5714         \xdef\Fld@choices{\Fld@choices(\kv@key)(\kv@key)}%
5715       \else
5716         \xdef\Fld@choices{\Fld@choices(\kv@key)}%
5717       \fi
5718     \else
5719       \Hy@pdfstringdef\kv@value\kv@value
```



```

5720     \xdef\Fld@choices{\Fld@choices(\kv@value)(\kv@key)}}%
5721     \fi
5722     \edef\HyTmp@optlist{%
5723       \HyTmp@optlist
5724       \HyTmp@optitem{\the\count@}{\kv@key}0%
5725     }%
5726     \advance\count@ by 1 %
5727     \@gobbletwo
5728   }%
5729   \xdef\Fld@choices{/Opt[\Fld@choices]]%
5730   \ifFld@multiselect
5731     \HyField@@PDFChoices{DV}\Fld@default
5732     \HyField@@PDFChoices{V}\Fld@value
5733   \else
5734     \ifx\Fld@default\relax
5735     \else
5736       \pdfstringdef\Hy@gtemp\Fld@default
5737       \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
5738     \fi
5739     \ifx\Fld@value\relax
5740     \else
5741       \pdfstringdef\Hy@gtemp\Fld@value
5742       \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
5743     \fi
5744   \fi
5745   \endgroup
5746 }

```

\HyField@@PDFChoices

```

5747 \def\HyField@@PDFChoices#1#2{%
5748   \ifx#2\relax
5749   \else
5750     \count@=0 %
5751     \def\HyTmp@optitem##1##2##3{%
5752       \def\HyTmp@key{##2}%
5753       \ifx\HyTmp@key\Hy@gtemp
5754         \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5755           \HyTmp@optlist
5756           \HyTmp@optitem{##1}{##2}1%
5757         }%
5758       \let\HyTmp@found=Y%
5759     \else
5760       \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5761         \HyTmp@optlist
5762         \HyTmp@optitem{##1}{##2}##3%
5763       }%
5764     \fi
5765   }%
5766   \expandafter\comma@parse\expandafter{#2}{%
5767     \pdfstringdef\Hy@gtemp\comma@entry
5768     \let\HyTmp@found=N %
5769     \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
5770     \HyTmp@optlist
5771     \ifx\HyTmp@found Y%

```

```

5772     \advance\count@ by 1 %
5773 \else
5774     \@onelevel@sanitize\comma@entry
5775     \PackageWarning{hyperref}{%
5776         \string\ChoiceBox: Ignoring value `\'comma@entry',%
5777         \MessageBreak
5778         it cannot be found in the choices%
5779     }%
5780 \fi
5781 \@gobble
5782 }%
5783 \def\HyTmp@optitem##1##2##3{%
5784     \ifnum##3=1 %
5785         (##2)%
5786     \fi
5787 }%
5788 \ifcase\count@
5789 \or
5790     \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
5791 \else
5792     \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
5793 \ifx#1V%
5794     \def\HyTmp@optitem##1##2##3{%
5795         \ifnum##3=1 %
5796             \@firstofone{ ##1}%
5797         \fi
5798     }%
5799     \edef\HyTmp@optlist{\HyTmp@optlist}%
5800     \xdef\Fld@choices{%
5801         \Fld@choices
5802         /I\expandafter\@firstofone\HyTmp@optlist}%
5803     }%
5804 \fi
5805 \fi
5806 \fi
5807 }

```

19.3 Forms

\HyField@SetKeys

```

5808 \def\HyField@SetKeys{%
5809     \kvsetkeys{Field}%
5810 }

5811 \newif\ifFld@checked
5812 \newif\ifFld@disabled
5813 \Fld@checkedfalse
5814 \Fld@disabledfalse
5815 \newcount\Fld@menulength
5816 \newdimen\Fld@Width
5817 \newdimen\Fld@charsize
5818 \Fld@charsize=10\p@
5819 \def\Fld@maxlen{0}
5820 \def\Fld@align{0}

```

```

5821 \def\Fld@color{0 0 0 rg}
5822 \def\Fld@bcolor{1 1 1}
5823 \def\Fld@bordercolor{1 0 0}
5824 \def\Fld@bordersep{1\p@}
5825 \def\Fld@borderwidth{1}
5826 \def\Fld@borderstyle{S}
5827 \def\Fld@cbsymbol{4}
5828 \def\Fld@radiosymbol{H}
5829 \def\Fld@rotation{0}
5830 \def\Fld@Form{\@ifnextchar{\@Form}{\@Form[]}}
5831 \def\endForm{\@endForm}
5832 \newif\ifForm@html
5833 \Form@htmlfalse
5834 \def\Fld@boolkey#1#2{%
5835   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5836 }
5837 \define@key{Form}{action}{%
5838   \hyper@normalise\Hy@DefFormAction{#1}%
5839 }
5840 \def\Hy@DefFormAction{\def\Fld@action}
5841 \def\enc@html{html}
5842 \define@key{Form}{encoding}{%
5843   \def\Hy@tempa{#1}%
5844   \ifx\Hy@tempa\enc@html
5845     \Form@htmltrue
5846   \def\Fld@export{html}%
5847   \else
5848     \Hy@Warning{%
5849       Form `encoding' key with \MessageBreak
5850       unknown value `#1'%
5851     }%
5852     \Form@htmlfalse
5853   \fi
5854 }
5855 \define@key{Form}{method}{%
5856   \lowercase{\def\Hy@temp{#1}}%
5857   \@ifundefined{Form@method@\Hy@temp}{%
5858     \@onelevel@sanitize\Hy@temp
5859     \Hy@Error{%
5860       Unknown method `~\Hy@temp'.\MessageBreak
5861       Known values are `post' and `get'%
5862     }\@ehc
5863   }{%
5864     \let\Fld@method\Hy@temp
5865     \ifcase\@nameuse{Form@method@\Hy@temp} %
5866       \Fld@getmethodfalse
5867     \else
5868       \Fld@getmethodtrue
5869     \fi
5870   }%
5871 }
5872 \def\Fld@method{}
5873 \@namedef{Form@method@post}{0}
5874 \@namedef{Form@method@get}{1}

```

```

5875 \newif\ifHyField@NeedAppearances
5876 \def\HyField@NeedAppearancesfalse{%
5877   \global\let\ifHyField@NeedAppearances\iffalse
5878 }
5879 \def\HyField@NeedAppearancetrue{%
5880   \global\let\ifHyField@NeedAppearances\iftrue
5881 }
5882 \HyField@NeedAppearancetrue
5883 \define@key{Form}{NeedAppearances}[true]{%
5884   \edef\Hy@tempa{#1}%
5885   \ifx\Hy@tempa\Hy@true
5886     \HyField@NeedAppearancetrue
5887   \else
5888     \ifx\Hy@tempa\Hy@false
5889       \HyField@NeedAppearancesfalse
5890     \else
5891       \Hy@Error{%
5892         Unexpected value ``\Hy@tempa'\MessageBreak
5893         of option `NeedAppearances' instead of\MessageBreak
5894         `true' or `false'%
5895       }\@ehc
5896     \fi
5897   \fi
5898 }
5899 \def\Field@boolkey#1#2{%
5900   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5901 }
5902 \ifHy@texht
5903   \newtoks\Field@toks
5904   \Field@toks={ }%
5905   \def\Field@addtoks#1#2{%
5906     \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
5907     \@processme
5908   }%
5909 \else
5910   \def\Hy@WarnHTMLFieldOption#1{%
5911     \Hy@Warning{%
5912       HTML field option `#1'\MessageBreak
5913       is ignored%
5914     }%
5915   }%
5916 \fi
5917 \def\Fld@checkequals#1=#2=#3\\{%
5918   \def\@currDisplay{#1}%
5919   \ifx\\#2\\%
5920     \def\@currValue{#1}%
5921   \else
5922     \def\@currValue{#2}%
5923   \fi
5924   \expandafter\Hy@pdfstringdef\expandafter\@currValue\expandafter{\@currValue}%
5925 }
5926 \define@key{Field}{loc}{%
5927   \def\Fld@loc{#1}%
5928 }

```

```

5929 \define@key{Field}{checked}[true]{%
5930   \lowercase{\Field@boolkey{#1}}{checked}%
5931 }
5932 \define@key{Field}{disabled}[true]{%
5933   \lowercase{\Field@boolkey{#1}}{disabled}%
5934 }
5935 \ifHy@texht
5936   \define@key{Field}{accesskey}{%
5937     \Field@addtoks{accesskey}{#1}%
5938   }%
5939   \define@key{Field}{tabkey}{%
5940     \Field@addtoks{tabkey}{#1}%
5941   }%
5942 \else
5943   \define@key{Field}{accesskey}{%
5944     \Hy@WarnHTMLFieldOption{accesskey}%
5945   }%
5946   \define@key{Field}{tabkey}{%
5947     \Hy@WarnHTMLFieldOption{tabkey}%
5948   }%
5949 \fi
5950 \define@key{Field}{name}{%
5951   \def\Fld@name{#1}%
5952 }
5953 \let\Fld@altname\relax
5954 \define@key{Field}{altname}{%
5955   \def\Fld@altname{#1}%
5956 }
5957 \let\Fld@mappingname\relax
5958 \define@key{Field}{mappingname}{%
5959   \def\Fld@mappingname{#1}%
5960 }
5961 \define@key{Field}{width}{%
5962   \def\Fld@width{#1}%
5963   \Field@Width#1\setbox0=\hbox{m}%
5964 }
5965 \define@key{Field}{maxlen}{%
5966   \def\Fld@maxlen{#1}%
5967 }
5968 \define@key{Field}{menulength}{%
5969   \Fld@menulength=#1\relax
5970 }
5971 \define@key{Field}{height}{%
5972   \def\Fld@height{#1}%
5973 }
5974 \define@key{Field}{charsize}{%
5975   \setlength{\Fld@charsize}{#1}%
5976 }
5977 \define@key{Field}{borderwidth}{%
5978   \Hy@defaultbp\Fld@borderwidth{#1}%
5979 }
5980 \def\Hy@defaultbp#1#2{%
5981   \begingroup
5982   \afterassignment\Hy@defaultbpAux

```

```

5983 \dimen@=#2bp\relax{#1}{#2}%
5984 }
5985 \def\Hy@defaultbpAux#1\relax#2#3{%
5986 \ifx!#1!%
5987 \endgroup
5988 \def#2{#3}%
5989 \else
5990 \edef\x{\endgroup
5991 \def\noexpand#2{%
5992 \strip@pt\dimexpr\dimen@*800/803\relax
5993 }%
5994 }\x
5995 \fi
5996 }%
5997 \define@key{Field}{borderstyle}{%
5998 \let\Hy@temp\Fld@borderstyle
5999 \def\Fld@borderstyle{#1}%
6000 \Hy@Match\Fld@borderstyle}{%
6001 ^[SDBIU]$%
6002 }-}{%
6003 \Hy@Warning{%
6004 Invalid value ` \@pdfborderstyle'\MessageBreak
6005 for option `pdfborderstyle'. Valid values:\MessageBreak
6006 \space\space S (Solid), D (Dashed), B (Beveled),\MessageBreak
6007 \space\space I (Inset), U (Underline)\MessageBreak
6008 Option setting is ignored%
6009 }%
6010 \let\Fld@borderstyle\Hy@temp
6011 }%
6012 }
6013 \define@key{Field}{bordersep}{%
6014 \def\Fld@bordersep{#1}%
6015 }
6016 \define@key{Field}{default}{%
6017 \Hy@pdfstringdef\Fld@default{#1}%
6018 }
6019 \define@key{Field}{align}{%
6020 \def\Fld@align{#1}%
6021 }
6022 \define@key{Field}{value}{%
6023 \Hy@pdfstringdef\Fld@value{#1}%
6024 }
6025 \define@key{Field}{checkboxsymbol}{%
6026 \Fld@DingDef\Fld@cbsymbol{#1}%
6027 }
6028 \define@key{Field}{radiosymbol}{%
6029 \Fld@DingDef\Fld@radiosymbol{#1}%
6030 }
6031 \def\Fld@DingDef#1#2{%
6032 \let\Fld@temp\@empty
6033 \Fld@@@DingDef#2\ding{ }\@nil
6034 \let#1\Fld@temp
6035 }
6036 \def\Fld@@@DingDef#1\ding{#2#3}\@nil{%

```

```

6037 \expandafter\def\expandafter\Fld@temp\expandafter{%
6038   \Fld@temp
6039   #1%
6040 }%
6041 \ifx\|#3\|%
6042   \expandafter\@gobble
6043 \else
6044   \begingroup
6045     \lccode`0=#2\relax
6046   \lowercase{\endgroup
6047     \expandafter\def\expandafter\Fld@temp\expandafter{%
6048       \Fld@temp
6049       0%
6050     }%
6051   }%
6052   \expandafter\@firstofone
6053 \fi
6054 {%
6055   \Fld@@DingDef#3\@nil
6056 }%
6057 }

6058 \define@key{Field}{rotation}{%
6059   \def\Fld@rotation{#1}%
6060 }

6061 \define@key{Field}{backgroundcolor}{%
6062   \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
6063 }
6064 \define@key{Field}{bordercolor}{%
6065   \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
6066 }
6067 \define@key{Field}{color}{%
6068   \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
6069 }

6070 \let\Fld@onclick@code\@empty
6071 \let\Fld@format@code\@empty
6072 \let\Fld@validate@code\@empty
6073 \let\Fld@calculate@code\@empty
6074 \let\Fld@keystroke@code\@empty
6075 \let\Fld@onfocus@code\@empty
6076 \let\Fld@onblur@code\@empty
6077 \let\Fld@onmousedown@code\@empty
6078 \let\Fld@onmouseup@code\@empty
6079 \let\Fld@onenter@code\@empty
6080 \let\Fld@onexit@code\@empty
6081 \def\Hy@temp#1{%
6082   \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
6083 }
6084 \def\Hy@@temp#1#2{%
6085   \ifHy@pdfa
6086     \define@key{Field}{#2}{%
6087       \Hy@Error{%
6088         PDF/A: Additional action `#2' is prohibited%
6089       }\@ehc

```

```

6090 }%
6091 \else
6092   \define@key{Field}{#2}{%
6093     \def#1{##1}%
6094   }%
6095 \fi
6096 }
6097 \Hy@temp{keystroke}
6098 \Hy@temp{format}
6099 \Hy@temp{validate}
6100 \Hy@temp{calculate}
6101 \Hy@temp{onfocus}
6102 \Hy@temp{onblur}
6103 \Hy@temp{onmousedown}
6104 \Hy@temp{onmouseup}
6105 \Hy@temp{onenter}
6106 \Hy@temp{onexit}

6107 \let\Fld@calculate@sortkey\@empty
6108 \define@key{Field}{calculatesortkey}[1]{%
6109   \def\Fld@calculate@sortkey{#1}%
6110 }

6111 \ifHy@texht
6112   \def\Hy@temp#1{%
6113     \define@key{Field}{#1}{%
6114       \Field@addtoks{#1}{##1}%
6115     }%
6116   }%
6117 \else
6118   \def\Hy@temp#1{%
6119     \define@key{Field}{#1}{%
6120       \Hy@WarnHTMLFieldOption{#1}%
6121     }%
6122   }%
6123 \fi
6124 \Hy@temp{ondblclick}
6125 \Hy@temp{onmouseover}
6126 \Hy@temp{onmousemove}
6127 \Hy@temp{onmouseout}
6128 \Hy@temp{onkeydown}
6129 \Hy@temp{onkeyup}
6130 \Hy@temp{onselect}
6131 \Hy@temp{onchange}
6132 \Hy@temp{onkeypress}
6133 \ifHy@texht
6134   \define@key{Field}{onclick}{%
6135     \Field@addtoks{onclick}{#1}%
6136   }%
6137 \else
6138   \ifHy@pdfa
6139     \define@key{Field}{onclick}{%
6140       \Hy@Error{%
6141         PDF/A: Action `onclick' is prohibited%
6142       }\@ehc

```



```

6143 }%
6144 \else
6145   \define@key{Field}{onclick}{%
6146     \def\Fld@onclick@code{#1}%
6147   }%
6148 \fi
6149 \fi

6150 \DeclareRobustCommand\TextField{%
6151   \@ifnextchar[{\@TextField}{\@TextField[]}%
6152 }
6153 \DeclareRobustCommand\ChoiceMenu{%
6154   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
6155 }
6156 \DeclareRobustCommand\CheckBox{%
6157   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
6158 }
6159 \DeclareRobustCommand\PushButton{%
6160   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
6161 }
6162 \DeclareRobustCommand\Gauge{%
6163   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
6164 }
6165 \DeclareRobustCommand\Submit{%
6166   \@ifnextchar[{\@Submit}{\@Submit[]}%
6167 }
6168 \DeclareRobustCommand\Reset{%
6169   \@ifnextchar[{\@Reset}{\@Reset[]}%
6170 }
6171 \def\LayoutTextField#1#2{% label, field
6172   \def\Hy@temp{#1}%
6173   \ifx\Hy@temp\@empty
6174     #2%
6175   \else
6176     #1 #2%
6177   \fi
6178 }
6179 \def\LayoutChoiceField#1#2{% label, field
6180   \def\Hy@temp{#1}%
6181   \ifx\Hy@temp\@empty
6182     #2%
6183   \else
6184     #1 #2%
6185   \fi
6186 }
6187 \def\LayoutCheckField#1#2{% label, field
6188   \def\Hy@temp{#1}%
6189   \ifx\Hy@temp\@empty
6190     #2%
6191   \else
6192     #1 #2%
6193   \fi
6194 }
6195 \def\LayoutPushButtonField#1{% button
6196   #1%

```

```

6197 }
6198 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6199 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6200 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6201 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6202 \def\MakeButtonField#1{%
6203   \sbox0{%
6204     \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
6205   }%
6206   \@tempdima\ht0 %
6207   \advance\@tempdima by \Fld@borderwidth bp %
6208   \advance\@tempdima by \Fld@borderwidth bp %
6209   \ht0\@tempdima
6210   \@tempdima\dp0 %
6211   \advance\@tempdima by \Fld@borderwidth bp %
6212   \advance\@tempdima by \Fld@borderwidth bp %
6213   \dp0\@tempdima
6214   \box0\relax
6215 }
6216 \def\DefaultHeightofSubmit{14pt}
6217 \def\DefaultWidthofSubmit{2cm}
6218 \def\DefaultHeightofReset{14pt}
6219 \def\DefaultWidthofReset{2cm}
6220 \def\DefaultHeightofCheckBox{\normalbaselineskip}
6221 \def\DefaultWidthofCheckBox{\normalbaselineskip}
6222 \def\DefaultHeightofChoiceMenu{\normalbaselineskip}
6223 \def\DefaultWidthofChoiceMenu{\normalbaselineskip}
6224 \def\DefaultHeightofText{\normalbaselineskip}
6225 \def\DefaultHeightofTextMultiline{4\normalbaselineskip}
6226 \def\DefaultWidthofText{3cm}
6227 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
6228 \def\DefaultOptionsofReset{print,name=Reset,noexport}
6229 \def\DefaultOptionsofPushButton{print}
6230 \def\DefaultOptionsofCheckBox{print}
6231 \def\DefaultOptionsofText{print}

Default options for the types of \ChoiceMenu.
6232 \def\DefaultOptionsofListBox{print}
6233 \def\DefaultOptionsofComboBox{print,edit,sort}
6234 \def\DefaultOptionsofPopdownBox{print}
6235 \def\DefaultOptionsofRadio{print,notoggetooff}

```

20 Setup

```

6236 \ifHy@hyperfigures
6237   \Hy@Info{Hyper figures ON}%
6238 \else
6239   \Hy@Info{Hyper figures OFF}%
6240 \fi
6241 \ifHy@nesting
6242   \Hy@Info{Link nesting ON}%
6243 \else
6244   \Hy@Info{Link nesting OFF}%

```

```

6245 \fi
6246 \ifHy@hyperindex
6247   \Hy@Info{Hyper index ON}%
6248 \else
6249   \Hy@Info{Hyper index OFF}%
6250 \fi
6251 \ifHy@backref
6252   \Hy@Info{backreferencing ON}%
6253 \else
6254   \Hy@Info{backreferencing OFF}%
6255 \fi
6256 \ifHy@colorlinks
6257   \Hy@Info{Link coloring ON}%
6258 \else
6259   \Hy@Info{Link coloring OFF}%
6260 \fi
6261 \ifHy@ocgcolorlinks
6262   \Hy@Info{Link coloring with OCG ON}%
6263 \else
6264   \Hy@Info{Link coloring with OCG OFF}%
6265 \fi
6266 \ifHy@pdfa
6267   \Hy@Info{PDF/A mode ON}%
6268 \else
6269   \Hy@Info{PDF/A mode OFF}%
6270 \fi

```

21 Low-level utility macros

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

```

6271 \edef\hyper@hash{\string#}
6272 \edef\hyper@tilde{\string~}
6273 \edef\hyper@quote{\string"}

```

Support \label before \begin{document}.

```

6274 \def\@currentHref{Doc-Start}
6275 \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.

```

6276 \Hy@AtBeginDocument{%
6277   \Hy@pdfstringtrue
6278   \PDF@SetupDoc
6279   \let\PDF@SetupDoc\@empty
6280   \Hy@DisableOption{pdfpagescrop}%
6281   \Hy@DisableOption{pdfpagemode}%
6282   \Hy@DisableOption{pdfnonfullscreenpagemode}%
6283   \Hy@DisableOption{pdfdirection}%
6284   \Hy@DisableOption{pdfviewarea}%
6285   \Hy@DisableOption{pdfviewclip}%
6286   \Hy@DisableOption{pdfprintarea}%
6287   \Hy@DisableOption{pdfprintclip}%
6288   \Hy@DisableOption{pdfprintscaling}%

```

```

6289 \Hy@DisableOption{pdfduplex}%
6290 \Hy@DisableOption{pdfpicktraybypdfsize}%
6291 \Hy@DisableOption{pdfprintpagerange}%
6292 \Hy@DisableOption{pdfnumcopies}%
6293 \Hy@DisableOption{pdfstartview}%
6294 \Hy@DisableOption{pdfstartpage}%
6295 \Hy@DisableOption{pdftoolbar}%
6296 \Hy@DisableOption{pdfmenubar}%
6297 \Hy@DisableOption{pdfwindowui}%
6298 \Hy@DisableOption{pdfitwindow}%
6299 \Hy@DisableOption{pdfcenterwindow}%
6300 \Hy@DisableOption{pdfdisplaydoctitle}%
6301 \Hy@DisableOption{pdfpagelayout}%
6302 \Hy@DisableOption{pdflang}%
6303 \Hy@DisableOption{baseurl}%
6304 \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
6305 \Hy@pdfstringfalse
6306 }

```

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.

```

6307 \def\NoHyper{%
6308   \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6309   \def\hyper@@anchor##1##2{##2\Hy@xspace@end}%
6310   \global\let\hyper@livelink\hyper@link
6311   \gdef\hyper@link##1##2##3{##3\Hy@xspace@end}%
6312   \let\hyper@anchor\@gobble
6313   \let\hyper@anchorstart\@gobble
6314   \def\hyper@anchorend{\Hy@xspace@end}%
6315   \let\hyper@linkstart\@gobbletwo
6316   \def\hyper@linkend{\Hy@xspace@end}%
6317   \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6318   \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6319   \let\Hy@backout\@gobble
6320 }
6321 \def\stop@hyper{%
6322   \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6323   \let\Hy@backout\@gobble
6324   \let\hyper@@anchor\@gobble
6325   \def\hyper@link##1##2##3{##3\Hy@xspace@end}%
6326   \let\hyper@anchor\@gobble
6327   \let\hyper@anchorstart\@gobble
6328   \def\hyper@anchorend{\Hy@xspace@end}%
6329   \let\hyper@linkstart\@gobbletwo
6330   \def\hyper@linkend{\Hy@xspace@end}%
6331   \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6332   \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6333 }
6334 \def\endNoHyper{%

```

```

6335 \global\let\hyper@link\hyper@livelink
6336 }
6337 </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:

```

6338 (*nohyperref)
6339 \let\hyper@@anchor\@gobble
6340 \def\hyper@link#1#2#3{#3}%
6341 \let\hyper@anchorstart\@gobble
6342 \let\hyper@anchorend\@empty
6343 \let\hyper@linkstart\@gobbletwo
6344 \let\hyper@linkend\@empty
6345 \def\hyper@linkurl#1#2{#1}%
6346 \def\hyper@linkfile#1#2#3{#1}%
6347 \def\hyper@link@{#1}#2#3{#1}%
6348 \let\PDF@SetupDoc\@empty
6349 \let\PDF@FinishDoc\@empty
6350 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

6351 \def\Acrobatmenu#1#2{\leavevmode#2}
6352 \let\pdfstringdefDisableCommands\@gobbletwo
6353 \let\texorpdfstring\@firstoftwo
6354 \let\pdfbookmark\@undefined
6355 \newcommand\pdfbookmark[3]{}{}
6356 \let\phantomsection\@empty
6357 \let\hypersetup\@gobble
6358 \let\hyperbaseurl\@gobble
6359 \newcommand*{\href}[3]{}{#3}
6360 \let\hyperdef\@gobbletwo
6361 \let\hyperlink\@gobble
6362 \let\hypertarget\@gobble
6363 \protected\def\hyperref{%
6364   \@ifnextchar[\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
6365 }
6366 \long\def\@gobbleopt[#1]{}
6367 \let\hyperpage\@empty
6368 </nohyperref>

```

24 The Mangling Of Aux and Toc Files

Some extra tests so that the hyperref package may be removed or added to a document without having to remove .aux and .toc files (this section is by David Carlisle) All the code is delayed to `\begin{document}` change 2023-08-13: with a

new format it is no longer needed to handle different `\newlabel` definitions. The code can be removed completely later.

```
6369 \*package)
6370 \@if@t@r\fmtversion{2023-06-01}{-}
6371 {
6372   \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.

```
6373   \if@filesw
6374     \immediate\write\@auxout{%
6375       \string\providecommand\string\HyperFirstAtBeginDocument{%
6376         \string\AtBeginDocument}^^J%
6377       \string\HyperFirstAtBeginDocument{%
6378         \string\ifx\string\hyper@anchor\string\@undefined^^J%
6379         \string\global\string\let\string\oldnewlabel\string\newlabel^^J%
6380         \string\gdef\string\newlabel\string#1\string#2{%
6381           \string\newlabelxx{\string#1}\string#2}^^J%
6382         \string\gdef\string\newlabelxx%
6383           \string#1\string#2\string#3\string#4\string#5\string#6{%
6384           \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.

```
6385       \string\AtEndDocument{%
6386         \string\ifx\string\hyper@anchor\string\@undefined^^J%
6387         \string\let\string\newlabel\string\oldnewlabel^^J%
6388         \string\fi%
6389       }^^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.

```
6390       \string\fi%
6391     }^^J%
6392     \string\global\string\let\string\hyper@last\relax^^J%
6393     \string\gdef\string\HyperFirstAtBeginDocument\string#1{\string#1}%
6394   }%
6395   \fi
6396   \let\HyperFirstAtBeginDocument\@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.

```
6397   \ifx\hyper@last\@undefined
6398     \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}}%
6399   \fi
6400 }
6401 }
```

25 Title strings

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

```

6402 \ifHy@pdfusetitle
6403   \let\HyOrg@title\title
6404   \let\HyOrg@author\author
6405   \def\title{\@ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
6406   \def\Hy@scanopttitle[#1]{%
6407     \gdef\Hy@title{#1}%
6408     \HyOrg@title{#1}%
6409   }%
6410   \def\Hy@scantitle#1{%
6411     \gdef\Hy@title{#1}%
6412     \HyOrg@title{#1}%
6413   }%
6414   \def\author{\@ifnextchar{\Hy@scanoptauthor}{\Hy@scanauthor}}%
6415   \def\Hy@scanoptauthor[#1]{%
6416     \gdef\Hy@author{#1}%
6417     \HyOrg@author{#1}%
6418   }%
6419   \def\Hy@scanauthor#1{%
6420     \gdef\Hy@author{#1}%
6421     \HyOrg@author{#1}%
6422   }%

```

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.

```

6423 \begingroup
6424   \def\process@me#1\@nil#2{%
6425     \expandafter\let\expandafter\x\csname @#2\endcsname
6426     \edef\y{\expandafter\strip@prefix\meaning\x}%
6427     \def\c##1##2\@nil{%
6428       \ifx\\##1\\%
6429         \else
6430           \expandafter\gdef\csname Hy@#2\expandafter\endcsname
6431             \expandafter{\x}%
6432         \fi
6433       }%
6434     \expandafter\c\y\relax#1\@nil
6435   }%
6436   \expandafter\process@me\string\@latex@\@nil{title}%
6437   \expandafter\process@me\string\@latex@\@nil{author}%
6438 \endgroup
6439 \fi
6440 \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 new-line macros are not detected.

A possible ¹ removes its argument.

```

6441 \def\Hy@UseMaketitleString#1{%
6442   \@ifundefined{Hy@#1}{-}{%
6443     \begingroup
6444       \let\Hy@saved@hook\pdfstringdefPreHook
6445       \pdfstringdefDisableCommands{%
6446         \expandafter\let\expandafter\\\csname Hy@newline@#1\endcsname
6447         \let\newline\\%
6448         \def\and{; }%
6449         \let\thanks\@gobble%
6450       }%
6451       \expandafter\ifx\csname @pdf#1\endcsname\@empty
6452         \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
6453           \csname Hy@#1\endcsname\@empty
6454         }%
6455       \fi
6456       \global\let\pdfstringdefPreHook\Hy@saved@hook
6457     \endgroup
6458   }%
6459 }
6460 \def\Hy@newline@title#1{ #1}
6461 \def\Hy@newline@author#1{, #1}
6462 \def\Hy@UseMaketitleInfos{%
6463   \Hy@UseMaketitleString{title}%
6464   \Hy@UseMaketitleString{author}%
6465 }

```

26 Page numbers

This stuff is done by Heiko Oberdiek.

27 Every page

```

6466 \let\Hy@EveryPageHook\@empty
6467 \let\Hy@EveryPageBoxHook\@empty
6468 \let\Hy@FirstPageHook\@empty
6469 \AddToHook{shipout/before}{%
6470   \Hy@EveryPageHook
6471   \ifx\Hy@EveryPageBoxHook\@empty
6472     \else
6473       \setbox\ShipoutBox=\vbox{%
6474         \offinterlineskip
6475         \Hy@EveryPageBoxHook
6476         \box\ShipoutBox
6477       }%
6478     \fi
6479 }
6480 \Hy@iffileloaded{hpdftex.def}{%

```



```

6481 \AddToHook{shipout/before}{%
6482 \Hy@FirstPageHook
6483 \global\let\Hy@FirstPageHook\@empty
6484 }%
6485 }%
6486 \AddToHook{shipout/firstpage}{%
6487 \Hy@FirstPageHook
6488 }%
6489 }
6490 \g@addto@macro\Hy@FirstPageHook{%
6491 \PDF@FinishDoc
6492 \global\let\PDF@FinishDoc\@empty
6493 }

```

27.1 PDF /PageLabels

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

```

6494 \ifHy@pdfpagelabels
6495 \begingroup\expandafter\expandafter\expandafter\endgroup
6496 \expandafter\ifx\csname thepage\endcsname\relax
6497 \Hy@pdfpagelabelsfalse
6498 \Hy@WarningNoLine{%
6499 Option `pdfpagelabels' is turned off\MessageBreak
6500 because \string\thepage\space is undefined%
6501 }%
6502 \csname fi\endcsname
6503 \csname iffalse\expandafter\endcsname
6504 \fi

```

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

```

6505 \def\thispdfpagelabel#1{%
6506 \gdef\HyPL@thisLabel{#1}%
6507 }%
6508 \global\let\HyPL@thisLabel\relax

```

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

```

6509 \let\HyPL@Labels\@empty

```

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

```

6510 \newcount\Hy@abspage
6511 \Hy@abspage=0 %

```

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

```

6512 \def\HyPL@LastType{init}%
6513 \def\HyPL@LastNumber{0}%
6514 \let\HyPL@LastPrefix\@empty

```

Definitions for the PDF names of the L^AT_EX pendants.

```

6515 \def\HyPL@arabic{D}%
6516 \def\HyPL@Roman{R}%
6517 \def\HyPL@roman{r}%
6518 \def\HyPL@Alph{A}%
6519 \def\HyPL@alph{a}%

```

```

6520 \let\HyPL@SlidesSetPage\@empty
6521 \@ifclassloaded{slides}{%
6522   \def\HyPL@SlidesSetPage{%
6523     \advance\c@page\@ne
6524     \ifnum\value{page}>\@ne
6525       \protected@edef\HyPL@SlidesOptionalPage{%
6526         \Hy@SlidesFormatOptionalPage{\thepage}%
6527       }%
6528     \else
6529       \let\HyPL@SlidesOptionalPage\@empty
6530     \fi
6531     \advance\c@page-\@ne
6532   \def\HyPL@page{%
6533     \csname the\Hy@SlidesPage\endcsname
6534     \HyPL@SlidesOptionalPage
6535   }%
6536 }%
6537 }{}%

```

`\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.

```

6538 \def\HyPL@EveryPage{%
6539   \begingroup
6540   \ifx\HyPL@thisLabel\relax
6541     \let\HyPL@page\thepage
6542     \HyPL@SlidesSetPage
6543   \else
6544     \let\HyPL@page\HyPL@thisLabel
6545     \global\let\HyPL@thisLabel\relax
6546   \fi
6547   \let\HyPL@Type\relax
6548   \ifnum\c@page>0 %
6549     \ifx\HyPL@SlidesSetPage\@empty
6550       \expandafter\HyPL@CheckThePage\HyPL@page\@nil
6551     \fi
6552   \fi
6553   \let\Hy@temp Y%
6554   \ifx\HyPL@Type\HyPL@LastType
6555   \else
6556     \let\Hy@temp N%
6557   \fi
6558   \ifx\HyPL@Type\relax
6559     \pdfstringdef\HyPL@Prefix{\HyPL@page}%
6560   \else
6561     \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6562   \fi
6563   \ifx\HyPL@Prefix\HyPL@LastPrefix
6564   \else
6565     \let\Hy@temp N%
6566   \fi
6567   \if Y\Hy@temp
6568     \advance\c@page by -1 %
6569     \ifnum\HyPL@LastNumber=\the\c@page\relax
6570   \else

```

```

6571     \let\Hy@temp N%
6572     \fi
6573     \Hy@StepCount\c@page
6574     \fi
6575     \if N\Hy@temp
6576     \ifx\HyPL@Type\relax
6577       \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
6578     \else
6579       \HyPL@StorePageLabel{%
6580         \ifx\HyPL@Prefix\@empty
6581         \else
6582           /P(\HyPL@Prefix)%
6583         \fi
6584         /S/\csname HyPL\HyPL@Type\endcsname
6585         \ifnum\the\c@page=1 %
6586         \else
6587           \space/St \the\c@page
6588         \fi
6589       }%
6590     \fi
6591     \fi
6592     \xdef\HyPL@LastNumber{\the\c@page}%
6593     \global\let\HyPL@LastType\HyPL@Type
6594     \global\let\HyPL@LastPrefix\HyPL@Prefix
6595     \endgroup
6596     \Hy@GlobalStepCount\Hy@abspage
6597   }%

```

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

```

6598   \def\HyPL@CheckThePage#1\@nil{%
6599     \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6600   }%

```

`\HyPL@@CheckThePage` The first check is, is `\thepage` is defined such as in L^AT_EX, e. g.: `\csname @arabic\endcsname\c@page`. In the current implement ation 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`.

```

6601   \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6602     \def\Hy@tempa{#4}%
6603     \def\Hy@tempb{\csname\endcsname\c@page}%
6604     \ifx\Hy@tempa\Hy@tempb
6605       \expandafter\ifx\csname HyPL#3\endcsname\relax
6606       \else
6607         \def\HyPL@Type{#3}%
6608         \def\HyPL@Prefix{#2}%
6609       \fi
6610     \else
6611       \begingroup
6612         \let\Hy@next\endgroup
6613         \let\HyPL@found\@undefined
6614         \def\arabic{\HyPL@Format{arabic}}%
6615         \def\Roman{\HyPL@Format{Roman}}%
6616         \def\roman{\HyPL@Format{roman}}%
6617         \def\Alph{\HyPL@Format{Alph}}%

```

```

6618     \def\alph{\HyPL@Format{alph}}%
6619     \protected@edef\Hy@temp{#1}%
6620     \ifx\HyPL@found\relax
6621       \toks@{\expandafter{\Hy@temp}}%
6622       \edef\Hy@next{\endgroup
6623         \noexpand\HyPL@@@CheckThePage\the\toks@
6624         \noexpand\HyPL@found\relax\noexpand\@nil
6625       }%
6626     \fi
6627     \Hy@next
6628   \fi
6629 }%

```

\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`.

```

6630 \def\HyPL@Format#1#2{%
6631   \ifx\HyPL@found\@undefined
6632     \expandafter\ifx\csname c@#2\endcsname\c@page
6633       \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
6634     \else
6635       \expandafter\noexpand\csname#1\endcsname{#2}%
6636     \fi
6637   \else
6638     \expandafter\noexpand\csname#1\endcsname{#2}%
6639   \fi
6640 }%

```

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

```

6641 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6642   \def\Hy@tempa{#3}%
6643   \def\Hy@tempb{\HyPL@found\relax}%
6644   \ifx\Hy@tempa\Hy@tempb
6645     \def\HyPL@Type{#2}%
6646     \def\HyPL@Prefix{#1}%
6647   \fi
6648 }%

```

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

```

6649 \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`.

```

6650 \def\HyPL@Useless{0<</S/D>>}%
6651 \@onelevel@sanitize\HyPL@Useless

```

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

```

6652 \def\HyPL@SetPageLabels{%
6653   \@onelevel@sanitize\HyPL@Labels
6654   \ifx\HyPL@Labels\@empty

```

```

6655 \else
6656 \ifx\HyPL@Labels\HyPL@Useless
6657 \else
6658 \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
6659 \fi
6660 \fi
6661 }%

6662 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6663 \fi

Option ‘pdfpagelabels’ has been used and is now disabled.
6664 \Hy@DisableOption{pdfpagelabels}
6665 \end{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
6666 \ifpdf
6667 \pdf@ifdraftmode{%
6668 \let\Hy@PutCatalog\@gobble
6669 }{%
6670 \let\Hy@PutCatalog\pdfcatalog
6671 }
6672 \end{ifpdf}

```

The code for VTeX is more complicate, because it does not allow the direct access to the `/Catalog` object. The command scans its argument and looks for a `/PageLabels` entry.

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

```

6673 \ifvtx
6674 \providecommand*\XR@ext{pdf}
6675 \edef\Hy@VTeXversion{%
6676 \ifx\VTeXversion\@undefined
6677 \z@
6678 \else
6679 \ifx\VTeXversion\relax
6680 \z@
6681 \else
6682 \VTeXversion
6683 \fi
6684 \fi
6685 }
6686 \begin{group}
6687 \ifnum\Hy@VTeXversion<660 %
6688 \gdef\Hy@PutCatalog#1{%
6689 \Hy@WarningNoLine{%
6690 VTeX 6.59g or above required for pdfpagelabels%
6691 }%
6692 }%

```

```

6693 \else
6694 \gdef\Hy@PutCatalog#1{%
6695 \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6696 }%
6697 \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
6698 \ifx\#2\%
6699 \else
6700 \immediate\special{!pdfpagelabels #2}%
6701 \fi
6702 }%
6703 \fi
6704 \endgroup
6705 \</vtex>

6706 \<pdfTeX | vtex>

```

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

```

6707 \ifHy@pdfpagelabels
6708 \def\HyPL@StorePageLabel#1{%
6709 \toks@{\expandafter{\HyPL@Labels}}%
6710 \xdef\HyPL@Labels{%
6711 \the\toks@
6712 \the\Hy@absPage<<#1>>%
6713 }%
6714 }%

```

The `enddocument/afteraux` hook is used to get behind the final `\clearpage` and to avoid a `\clearpage` in `\AtEndDocument`. Then the PDF catalog entry for `\PageLabels` is set.

```

6715 \AddToHook{enddocument/afteraux}{%
6716 \HyPL@SetPageLabels
6717 }%

6718 \fi
6719 \</pdfTeX | vtex>

```

27.1.2 xetex

```

6720 \<xeTeX>
6721 \HyPsd@LoadUnicode
6722 \Hy@unicodetrue
6723 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
6724 \else
6725 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6726 \fi
6727 \define@key{Hyp}{unicode}[true]{%
6728 \Hy@boolkey{unicode}{#1}%
6729 \ifHy@unicode
6730 \else
6731 \Hy@Warning{%
6732 XeTeX driver only supports `unicode=true'. Ignoring\MessageBreak
6733 option setting `unicode=false'%
6734 }%
6735 \Hy@unicodetrue
6736 \fi

```

```

6737 }
6738 \define@key{Hyp}{pdfencoding}{%
6739   \edef\HyPsd@temp{#1}%
6740   \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6741     \let\HyPsd@pdfencoding\HyPsd@temp
6742   \else
6743     \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6744       \let\HyPsd@pdfencoding\HyPsd@temp
6745     \else
6746       \Hy@Warning{%
6747         XeTeX driver only supports\MessageBreak
6748         `pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6749         setting `pdfencoding=\HyPsd@temp'%
6750       }%
6751     \fi
6752   \fi
6753 }
6754 \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:

```

6755 \def\setpdfinkmargin#1{%
6756   \begingroup
6757   \setlength{\dimen@}{#1}%
6758   \special{dvipdfmx:config g \strip@pt\dimen@}%
6759   \endgroup}
6760 \</xetex>

```

set the pdf version

```

6761 \<*dvipdfm | xetex>
6762 \special{pdf:majorversion \Hy@pdf@majorversion}
6763 \special{pdf:minorversion \Hy@pdf@minorversion}
6764 \</dvipdfm | xetex>

```

27.1.3 pdfmarkbase, dvipdfm, xetex

```

6765 \<*pdfmarkbase>
6766 \begingroup
6767 \<@ifundefined{headerps@out}{>}{%
6768   \toks@<expandafter{\Hy@FirstPageHook}>%
6769   \xdef\Hy@FirstPageHook{%
6770     \noexpand\headerps@out{%
6771       systemdict /pdfmark known%
6772       {%
6773         userdict /?pdfmark systemdict /exec get put%
6774       }>%
6775       userdict /?pdfmark systemdict /pop get put %
6776       userdict /pdfmark systemdict /cleartomark get put%
6777     }>%
6778     ifelse%
6779   }>%
6780   \the\toks@
6781 }>%
6782 }>%
6783 \endgroup
6784 \</pdfmarkbase>

```

\Hy@PutCatalog

```

6785 <dvipdfm | xetex>\def\Hy@PutCatalog#1{\@pdfmark{docview <<#1>>}}
6786 <*pdfmarkbase>
6787 \def\Hy@PutCatalog#1{%
6788   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} <<#1>>}}%
6789 }
6790 </pdfmarkbase>

6791 <*pdfmarkbase | dvipdfm | xetex>
6792 \ifHy@pdfpagelabels

```

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

```

6793 \def\HyPL@StorePageLabel#1{%
6794   \if@filesw
6795     \begingroup
6796     \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6797     \immediate\write\@mainaux{%
6798       \string\HyPL@Entry{\Hy@tempa}%
6799     }%
6800   \endgroup
6801 \fi
6802 }%

```

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.

```

6803 \Hy@AtBeginDocument{%
6804   \if@filesw
6805     \immediate\write\@mainaux{%
6806       \string\providecommand\string*\string\HyPL@Entry[1]{}%
6807     }%
6808   \fi
6809   \ifx\HyPL@Labels\@empty
6810     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6811   \else
6812     \HyPL@SetPageLabels
6813   \fi
6814   \let\HyPL@Entry\@gobble
6815 }%

```

\HyPL@Entry

```

6816 \def\HyPL@Entry#1{%
6817   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6818     \HyPL@Labels
6819     #1%
6820   }%
6821 }%

6822 \fi
6823 </pdfmarkbase | dvipdfm | xetex>
6824 <*packageEnd>

6825 \ifx\MaybeStopEarly\relax
6826 \else

```



```

6827 \Hy@stoppedearlytrue
6828 \expandafter\MaybeStopEarly
6829 \fi
6830 \Hy@stoppedearlyfalse

```

28 Automated L^AT_EX hypertext cross-references

Anything which can be referenced advances some counter; we overload this to put in a hypertext starting point (with no visible anchor), and make a note of that for later use in `\label`. This will fail badly if `\theH<name>` does not expand to a sensible reference. This means that classes or package which introduce new elements need to define an equivalent `\theH<name>` for every `\the<name>`. We do make a trap to make `\theH<name>` be the same as `\arabic{<name>}`, if `\theH<name>` is not defined, but this is not necessarily a good idea. Alternatively, the ‘natural-names’ option uses whatever L^AT_EX provides, which may be usable. But then its up to you to make sure these are legal PDF and HTML names. The ‘hypertext-names=false’ option just makes up arbitrary names.

All the shenanigans is to make sure section numbers etc are always arabic, separated by dots. Who knows how people will set up `\@currentlabel`? If they put spaces in, or brackets (quite legal) then the hypertext processors will get upset.

But this is flaky, and open to abuse. Styles like `subeqn` will mess it up, for starters. Appendices are an issue, too. We just hope to cover most situations. We can at least cope with the standard sectioning structure, allowing for `\part` and `\chapter`.

Start with a fallback for equations

```

6831 \def\Hy@CounterExists#1{%
6832   \begingroup\expandafter\expandafter\expandafter\endgroup
6833   \expandafter\ifx\csname c@#1\endcsname\relax
6834     \expandafter\@gobble
6835   \else
6836     \begingroup\expandafter\expandafter\expandafter\endgroup
6837     \expandafter\ifx\csname the#1\endcsname\relax
6838       \expandafter\expandafter\expandafter\@gobble
6839     \else
6840       \expandafter\expandafter\expandafter\@firstofone
6841     \fi
6842   \fi
6843 }

```

change 2024-10-13: do not define if format is new enough.

```

6844 \IfFormatAtLeastTF{2024-11-01}{%
6845 {
6846   \Hy@CounterExists{section}{%
6847     \providecommand\theHequation{\theHsection.\arabic{equation}}}%
6848   }
6849   \providecommand\theHequation{\arabic{equation}}}%
6850   \Hy@CounterExists{part}{%
6851     \providecommand\theHpart{\arabic{part}}}%
6852   }
6853   \@ifundefined{thechapter}{%
6854     \providecommand\theHsection   {\arabic{section}}}%
6855     \providecommand\theHfigure    {\arabic{figure}}}%

```

```

6856 \providecommand\theHtable {\arabic{table}}%
6857 }{%
6858 \providecommand\theHchapter {\arabic{chapter}}%
6859 \providecommand\theHfigure {\theHchapter.\arabic{figure}}%
6860 \providecommand\theHtable {\theHchapter.\arabic{table}}%
6861 \providecommand\theHsection {\theHchapter.\arabic{section}}%
6862 }
6863 \providecommand\theHsubsection {\theHsection.\arabic{subsection}}
6864 \providecommand\theHsubsubsection{\theHsubsection.\arabic{subsubsec-
tion}}
6865 \providecommand\theHparagraph {\theHsubsubsection.\arabic{paragraph}}
6866 \providecommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
6867 \providecommand\theHtheorem {\theHsection.\arabic{theorem}}
6868 \providecommand\theHthm {\theHsection.\arabic{thm}}
6869 }

```

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.

```

6870 \let\H@item\item
6871 \newcounter{Item}
6872 \IfFormatAtLeastTF{2024-11-01}{%
6873 {\def\theHItem{\arabic{Item}}}%
6874 \def\item{%
6875 \@hyper@itemfalse
6876 \if@nmbrlist\@hyper@itemtrue\fi
6877 \H@item
6878 }
6879 \IfFormatAtLeastTF{2024-11-01}{%
6880 {
6881 \providecommand\theHenumi {\theHItem}
6882 \providecommand\theHenumii {\theHItem}
6883 \providecommand\theHenumiii {\theHItem}
6884 \providecommand\theHenumiv {\theHItem}
6885 \providecommand\theHHfootnote {\arabic{Hfootnote}}
6886 \providecommand\theHmpfootnote{\arabic{mpfootnote}}
6887 }

```

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.

```

6888 \let\H@refstepcounter\@kernel@refstepcounter
6889 \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`

```

6890 \newif\if@hyper@item
6891 \newif\if@skiphyperref
6892 \@hyper@itemfalse
6893 \@skiphyperreffalse
6894 \ExplSyntaxOn

```

```

6895 \IfFormatAtLeastTF{2024-11-01}
6896 {
6897   \NewSocketPlug{refstepcounter}{hyperref}{\ifHy@pdfstring\else#1\fi}
6898   \AssignSocketPlug{refstepcounter}{hyperref}

```

change 2024-11-05: cleveref relies on refstepcounter to update its data.

```

6899 \AddToHook{package/cleveref/after}
6900 {
6901   \@ifpackagelater{cleveref}{2018/03/28}{ }
6902   {
6903     \NewSocketPlug{refstepcounter}{hyperref/fixcleveref}
6904     {\ifHy@pdfstring\else
6905      #1%
6906      {\firstaid@cref@updatelabeldata{\@currentcounter}}}%
6907     \fi}
6908     \AssignSocketPlug{refstepcounter}{hyperref/fixcleveref}
6909   }
6910 }
6911 \NewSocketPlug{refstepcounter/target}{hyperref}
6912 {
6913   \bool_lazy_and:nnT
6914   { \l__hyp_target_create_bool }
6915   { ! \legacy_if_p:n{@skiphyperref} }
6916   {
6917     \legacy_if:nTF {@hyper@item}
6918     {
6919       \stepcounter{Item}%
6920       \hyper@refstepcounter{Item}%
6921       \@hyper@itemfalse
6922     }
6923     {
6924       \hyper@refstepcounter{\@currentcounter}%
6925     }
6926   }
6927 }
6928 \AssignSocketPlug{refstepcounter/target}{hyperref}
6929 }
6930 {
6931   \def\refstepcounter#1{%
6932     \legacy_if:nF {Hy@pdfstring}
6933     {
6934       \H@refstepcounter{#1}%
6935       \bool_lazy_and:nnT
6936       { \l__hyp_target_create_bool }
6937       { ! \legacy_if_p:n{@skiphyperref} }
6938       {
6939         \legacy_if:nTF {@hyper@item}
6940         {
6941           \stepcounter{Item}%
6942           \hyper@refstepcounter{Item}%
6943           \@hyper@itemfalse
6944         }
6945         {
6946           \hyper@refstepcounter{#1}%

```

```

6947     }
6948   }
6949 }
6950 }
6951 }
6952 \ExplSyntaxOff
6953 \let\Hy@saved@refstepcounter\refstepcounter

```

AMS \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. change 2025-06-20: test if the switch already exist, see tagging-project issue 920.

```

6954 \ifcsname ifmeasuring@\endcsname
6955 \else
6956   \expandafter\newif\csname ifmeasuring@\endcsname\measuring@false
6957 \fi
6958 \newcommand\Hy@ifnotmeasuring[1]{#1}
6959 \AddToHook{package/amsmath/after}
6960 {
6961   \renewcommand\Hy@ifnotmeasuring[1]
6962   {\ifmeasuring@ \else #1\fi}
6963 }

```

`\hyper@refstepcounter`

```

6964 \def\hyper@refstepcounter#1{%
6965   \HyCnt@ProvideTheHCounter{#1}%
6966   \hyper@makecurrent{#1}%
6967   \Hy@ifnotmeasuring
6968   {\Hy@raisedlink{%
6969     \hyper@anchorstart{\@currentHref}\hyper@anchorend
6970   }}%
6971 }

```

`\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`, \LaTeX 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 \LaTeX , substring search `\in@` can be used.

```

6972 \def\HyCnt@ProvideTheHCounter#1{%
6973   \@ifundefined{theH#1}{%
6974     \expandafter\def\csname theH#1\endcsname{}%
6975     \def\Hy@temp{\@elt{#1}}%
6976     \@onelevel@sanitize\Hy@temp
6977     \let\HyOrg@elt\@elt
6978     \edef\@elt{%
6979       \noexpand\HyCnt@LookForParentCounter
6980       \expandafter\noexpand\csname theH#1\endcsname
6981     }%
6982     \cl@ckpt
6983     \let\@elt\HyOrg@elt
6984     \expandafter
6985     \Hy@LocalAppendToMacro\csname theH#1\endcsname\expandafter\endcsname

```

```

6986 \expandafter{%
6987 \expandafter\@arabic\csname c@#1\endcsname
6988 }%
6989 }{}%
6990 }

```

\Hy@LookForParentCounter

```

6991 \def\HyCnt@LookForParentCounter#1#2{%
6992 \expandafter\let\expandafter\Hy@temp@A\csname cl@#2\endcsname
6993 \ifundefined{cl@#2}{%
6994 }{%
6995 \@onelevel@sanitize\Hy@temp@A
6996 \edef\Hy@temp@A{%
6997 \noexpand\in@{\Hy@temp}{\Hy@temp@A}%
6998 }\Hy@temp@A
6999 \ifin@
7000 \ifundefined{theH#2}{%
7001 \expandafter\Hy@LocalAppendToMacro\expandafter#1%
7002 \expandafter{%
7003 \expandafter\@arabic\csname c@#2\endcsname.%
7004 }%
7005 }{%
7006 \expandafter\Hy@LocalAppendToMacro\expandafter#1%
7007 \expandafter{%
7008 \csname theH#2\endcsname.%
7009 }%
7010 }%
7011 \fi
7012 }%
7013 }

```

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`.

```

7014 \begingroup\expandafter\expandafter\expandafter\endgroup
7015 \expandafter\ifx\csname chapter\endcsname\relax
7016 \def\Hy@chapterstring{section}%
7017 \else
7018 \def\Hy@chapterstring{chapter}%
7019 \fi
7020 \def\Hy@appendixstring{appendix}
7021 \def\Hy@chapapp{\Hy@chapterstring}
7022 \ifundefined{appendix}{%
7023 }{%
7024 \let\HyOrg@appendix\appendix
7025 \def\Hy@AlphNoErr#1{%
7026 \ifnum\value{#1}>26 %
7027 Alph\number\value{#1}%
7028 \else
7029 \ifnum\value{#1}<1 %
7030 Alph\number\value{#1}%

```

```

7031 \else
7032 \Alph{#1}%
7033 \fi
7034 \fi
7035 }%
7036 \def\appendix{%
7037 \ifundefined{chapter}{%
7038 \gdef\theHsection{\Hy@AlphNoErr{section}}}%
7039 }{%
7040 \gdef\theHchapter{\Hy@AlphNoErr{chapter}}}%
7041 }%
7042 \xdef\Hy@chapapp{\Hy@appendixstring}%
7043 \HyOrg@appendix
7044 }%
7045 }

```

\Hy@Test@alph

```

7046 \def\Hy@Test@alph#1{%
7047 \ifcase#1\or
7048 a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
7049 k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
7050 u\or v\or w\or x\or y\or z%
7051 \else
7052 \@ctrerr
7053 \fi
7054 }

```

\Hy@Test@Alph

```

7055 \def\Hy@Test@Alph#1{%
7056 \ifcase#1\or
7057 A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
7058 K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
7059 U\or V\or W\or X\or Y\or Z%
7060 \else
7061 \@ctrerr
7062 \fi
7063 }

```

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

```

7064 \NewHook{__hyp/target/setname }
7065 \define@key{Hyp}{next-anchor}{%
7066 \AddToHookNext{__hyp/target/setname}%
7067 {\Hy@MakeCurrentHref{#1}}}%
7068 }

```

\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.

```

7069 \def\hyper@makecurrent#1{%
7070 \begingroup
7071 \Hy@safe@activetrue
7072 \edef\Hy@param{#1}%
7073 \ifx\Hy@param\Hy@chapterstring

```

```

7074 \let\Hy@param\Hy@chapapp
7075 \fi
7076 \ifHy@hypertextnames
7077 \let\@number\@firstofone
7078 \def\@fnsymbol##1{\fnsymbol\number##1}%
7079 \def\@arabic##1{\number##1}%
7080 \ifx\@alph\Hy@Test@alph
7081 \else
7082 \def\@alph{alph\number}%
7083 \fi
7084 \ifx\@Alph\Hy@Test@Alph
7085 \else
7086 \def\@Alph{Alph\number}%
7087 \fi
7088 \ifHy@naturalnames
7089 \let\textlatin\@firstofone
7090 \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
7091 \else
7092 \xdef\HyperGlobalCurrentHref{%
7093 \csname
7094 the%
7095 \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
7096 #1%
7097 \endcsname
7098 }%
7099 \fi
7100 \xdef\HyperGlobalCurrentHref{%
7101 \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
7102 }%
7103 \else
7104 \Hy@GlobalStepCount\Hy@linkcounter
7105 \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
7106 \fi
7107 \endgroup
7108 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7109 \ifHy@localanchorname
7110 \let\@currentHref\HyperLocalCurrentHref
7111 \else
7112 \global\let\@currentHref\HyperGlobalCurrentHref
7113 \fi
7114 \UseHook{__hyp/target/setname}%
7115 }

```

\Hy@MakeCurrentHref

```

7116 \def\Hy@MakeCurrentHref#1{%
7117 \edef\HyperLocalCurrentHref{#1}%
7118 \@onelevel@sanitize\HyperLocalCurrentHref
7119 \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
7120 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7121 \ifHy@localanchorname
7122 \let\@currentHref\HyperLocalCurrentHref
7123 \else
7124 \global\let\@currentHref\HyperGlobalCurrentHref
7125 \fi

```

```
7126 }
```

`\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.

```
7127 \def\Hy@MakeCurrentHrefAuto#1{%
7128 \Hy@GlobalStepCount\Hy@linkcounter
7129 \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
7130 \UseHook{__hyp/target/setname}}
```

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

```
7131 \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.

```
7132 \def\hypergetref#1{\getrefbykeydefault{#1}{}}{??}}
7133 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}
```

30 Package varwidth support

2023-11-07: `varwidth` needs a special configuration point to insert its handler. We use a socket for this.

```
7134 \@ifl@t@r\fmtversion{2023-11-01}
7135 {
7136 \AddToHook{package/varwidth/after}
7137 {
7138 \NewSocketPlug{hyp/raisedlink}{varwidth}{\@vwid@wrap{#1}}
7139 \appto\@vwid@setup{\AssignSocketPlug{hyp/raisedlink}{varwidth}}
7140 }
7141 }
```

31 Package titlesec and titletoc support

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

Package `titlesec` support:

```
7142 \@ifpackageloaded{titlesec}{%
7143 \def\ttl@Hy@steplink#1{%
7144 \Hy@MakeCurrentHrefAuto{#1*}%
7145 \edef\ttl@Hy@saveanchor{%
7146 \noexpand\Hy@raisedlink{%
7147 \noexpand\hyper@anchorstart{\@currentHref}%
7148 \noexpand\hyper@anchorend
7149 \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
7150 \noexpand\ttl@Hy@PatchSaveWrite
7151 }%
7152 }%
```



```

7153 }%
7154 \def\ttl@Hy@PatchSaveWrite{%
7155   \begingroup
7156   \toks@\expandafter{\ttl@savewrite}%
7157   \edef\x{\endgroup
7158     \def\noexpand\ttl@savewrite{%
7159       \let\noexpand\@currentHref
7160       \noexpand\ttl@Hy@SavedCurrentHref
7161       \the\toks@
7162     }%
7163   }%
7164   \x
7165 }%
7166 \def\ttl@Hy@refstepcounter#1{%
7167   \let\ttl@b\Hy@raisedlink
7168   \def\Hy@raisedlink##1{%
7169     \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
7170   }%
7171   \refstepcounter{#1}%
7172   \let\Hy@raisedlink\ttl@b
7173 }%
7174 }{}

```

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

```

7175 \@ifpackageloaded{longtable}{%
7176   \@ifundefined{hyper@nopatch@longtable}{%
7177     \begingroup
7178     \def\y{\LT@array}%
7179     \@ifundefined{scr@LT@array}{%
7180       \@ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}%
7181     }{\def\y{\scr@LT@array}}%
7182     \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
7183       \expandafter\endgroup
7184       \expandafter\def\y[##1]##2{%
7185         \H@refstepcounter{#1}%
7186         \hyper@makecurrent{table}%
7187         \let\Hy@LT@currentHref\@currentHref
7188         #2\@sharp####4%
7189       }%
7190     }%
7191     \expandafter\expandafter\expandafter\x\y[{#1}]{#2}\@nil

```

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

```

7192 \begingroup
7193 \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
7194   \endgroup
7195   \def\LT@start{%

```

```

7196      #1%
7197      \ifvoid\LT@foot#2\fi
7198      \let\@currentHref\Hy@LT@currentHref
7199      \Hy@raisedlink{%
7200        \hyper@anchorstart{\@currentHref}\hyper@anchorend
7201      }%
7202      #3%
7203    }%
7204  }%
7205  \expandafter\x\LT@start\@nil
7206 }{}
7207 }{}

```

33 Equations

We want to make the whole equation a target anchor. Overload equation, temporarily reverting to original `\refstepcounter`. If, however, it is in AMS math, we do not do anything, as the tag mechanism is used there (see section 41). change 2023-06-14: previously hyperref contained code that moved the equation incrementation inside the math environment to avoid specials outside and a wrong vertical spacing of equation environments. Since 2021/08/24 this code is now in amsmath directly and so has been removed here.

This and more math related patches can be suppressed with `\hyper@nopatch@mathenv`

```

7208 \let\new@refstepcounter\refstepcounter
7209 \let\H@equation\equation
7210 \let\H@endequation\endequation
7211 \@ifundefined{hyper@nopatch@mathenv}{%

```

If amsmath was loaded before the following does nothing. If amsmath is loaded later it will overwrite the definition again, which is what is wanted here. If it is not loaded the new definition of equation will be used.

```

7212   \@ifpackageloaded{amsmath}{}{}%
7213   \def\equation{%
7214     \let\refstepcounter\H@refstepcounter
7215     \H@equation
7216     \hyper@makecurrent{equation}%

```

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

```

7217     \mathopen{%
7218       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}}%
7219     }%
7220     \let\refstepcounter\new@refstepcounter
7221   }%
7222   \def\endequation{%
7223     \ifx\Hy@raisedlink\@empty
7224       \hyper@anchorend
7225     \else
7226       \mathclose{\Hy@raisedlink{\hyper@anchorend}}}%
7227     \fi
7228     \H@endequation
7229   }%
7230 }
7231 }{}

```

My goodness, why can't L^AT_EX 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.

```

7232 \newif\if@eqnstar
7233 \@eqnstarfalse
7234 \let\H@eqnarray\eqnarray
7235 \let\H@endeqnarray\endeqnarray
7236 \@ifundefined{hyper@nopatch@mathenv}{%
7237   \def\eqnarray{%
7238     \let\Hy@reserved@a\relax
7239     \def\@currentHref{}%
7240     \H@eqnarray
7241     \if@eqnstar
7242     \else
7243       \ifx\\ \@currentHref\\%
7244       \else
7245         \hyper@makecurrent{equation}%
7246         \mathopen{%
7247           \Hy@raisedlink{%
7248             \hyper@anchorstart{\@currentHref}\hyper@anchorend
7249           }%
7250         }%
7251       \fi
7252     \fi
7253   }
7254   \def\endeqnarray{%
7255     \H@endeqnarray
7256   }
7257 }{}

```

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.

```

7258 \@namedef{eqnarray*}{%
7259   \protected\def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
7260 }
7261 \@namedef{endeqnarray*}{%
7262   \nonumber\endeqnarray\@eqnstarfalse
7263 }

```

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

```

7264 \@ifundefined{subeqnarray}{%}{%
7265   \let\H@subeqnarray\subeqnarray
7266   \let\H@endsubeqnarray\endsubeqnarray
7267   \def\subeqnarray{%
7268     \let\Hy@reserved@a\relax
7269     \H@subeqnarray
7270     \hyper@makecurrent{equation}%
7271     \hyper@anchorstart{\@currentHref}{\hyper@anchorend
7272   }%
7273   \def\endsubeqnarray{%

```

```

7274 \H@endsubeqnarray
7275 }%
7276 \providecommand\theHsubequation{\theHequation\alph{subequation}}%
7277 }

```

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

```

7278 \def\make@stripped@name#1{%
7279 \begingroup
7280 \escapechar\m@ne
7281 \global\let\newname\@empty
7282 \protected@edef\Hy@tempa{#1}%
7283 \edef\@tempb{%
7284 \noexpand\@tfor\noexpand\Hy@tempa:=%
7285 \expandafter\strip@prefix\meaning\Hy@tempa
7286 }%
7287 \@tempb\do{%
7288 \if{\Hy@tempa\else
7289 \if}\Hy@tempa\else
7290 \xdef\newname{\newname\Hy@tempa}%
7291 \fi
7292 \fi
7293 }%
7294 \endgroup
7295 }

```

Support for amsmath’s subequations: change 2023-06-14: we use hooks to no longer depend on amsmath being loaded before hyperref. Once amsmath sets the theH-representation itself this can go completely.

```

7296 \AddToHook{cmd/subequations/before}
7297 {%
7298 \stepcounter{equation}%
7299 \protected@edef\theHparentequation{\theHequation}%
7300 \addtocounter{equation}{-1}%
7301 }
7302
7303 \AddToHook{cmd/subequations/after}
7304 {%
7305 \def\theHequation{\theHparentequation\alph{equation}}%
7306 \ignorespaces
7307 }

```

34 Support for theorems

Hyperlink support in theorems has to resolve typically three problems:

- The `\refstepcounter` can be issued too early. The target it produces can be separated from the theorem and then the link is wrong (see testfiles thm-005-xx). It can also affect spacing. This means that it is better if this `\refstepcounter` doesn’t produce a target.
- The natural place for the target (before the theorem label) is normally not printed directly but delayed to the next paragraph begin (through the `\item` code or by other means). and `\label` commands used directly at the begin

of the environment are perhaps processed *before* the target is created and so do not know the correct `\@currentHref` value. That means that if `\refstepcounter` does not produce a target, it should nevertheless update the target name.

- The target should be placed (in horizontal mode) before the theorem label to avoid side effects on spacing. For this a suitable place must be found depending on the actual theorem definition.

Theorems typically issue the `\refstepcounter` in `\@thm`. The first two points can therefore be resolved by patching this command and replacing the `\refstepcounter`.

The last point is the most complicated. Simply moving at the point `\refstepcounter` is encountered into the next para hook doesn't work, as this can be in a header if there is page break. The next item hook doesn't work for the same reason, also not every theorem environment actually use `\item` (e.g. `amsthm` and `ams-classes`). Patching (or using a hook) `\@begintheorem` doesn't work either as `ntheorem` redefines this on the fly.

For now we move the target creation into the item hook. This is not perfect, as it can end up in header or be too much to the right, but there is not really a better place.

The patch will not apply to `cleveref`, this means that with `cleveref` there can be a page break between target and theorem but beside this it hopefully it does the right thing. `\@currentHref` is updated directly for labels set before the actual start of the paragraph. The target can be behind a target created from a following list, so we restore `\@currentHref` just in case. Later we could use sockets here (or hope that the packages take this over).

```

7308 \newcommand\Hy@theorem@refstepcounter[1]
7309 {%
7310   \H@refstepcounter{#1}%
7311   \hyper@makecurrent{#1}%
7312   \global\let\Hy@dth@currentHref\@currentHref
7313   \Hy@theorem@makelinktarget{\Hy@dth@currentHref}%
7314 }
7315 \newcommand\Hy@theorem@makelinktarget[1]
7316 {
7317   \AddToHookNext{cmd/item/before}
7318   {\AddToHookNext{para/begin}
7319     {\let\Hy@tempa\@currentHref
7320       \MakeLinkTarget*{#1}% \Hy@dth@currentHref
7321       \global\let\@currentHref\Hy@tempa
7322     }%
7323   }%
7324 }
```

`amsthm` doesn't issue an item in the theorem, we delay the target into `\deferred@thm@head` and hope that it always begins a paragraph.

```

7325 \AddToHook{begindocument}
7326 {%
7327   \@ifundefined{deferred@thm@head}{}
7328   {%
7329     \let\Hy@deferred@thm@head\deferred@thm@head
```

```

7330 \def\deferred@thm@head#1{\Hy@deferred@thm@head{#1}}%
7331 \renewcommand\Hy@theorem@makelinktarget[1]
7332 {%
7333 \AddToHookNext{cmd/deferred@thm@head/before}
7334 {\AddToHookNext{para/begin}
7335 {\let\Hy@tempa\@currentHref
7336 \MakeLinkTarget*{#1}%
7337 \global\let\@currentHref\Hy@tempa
7338 }%
7339 }%
7340 }%
7341 }%
7342 }
7343 \@ifundefined{hyper@nopatch@thm}{%
7344 \AtBeginDocument{%
7345 \@ifpackageloaded{cleveref}
7346 {\AddToHook{cmd/@thm/before}{\ifhmode\unskip\fi}}
7347 {%
7348 \ifpatchable\@thm{\refstepcounter}
7349 {\patchcmd\@thm{\refstepcounter}{\Hy@theorem@refstepcounter}{-}{-}}
7350 {-}}%
7351 }-{}

```

35 Footnotes

The footnote mark is a hypertext link, and the text is a target. We separately number the footnotes sequentially through the text, separately from whatever labels the text assigns. Too hard to keep track of markers otherwise. If the raw forms `\footnotemark` and `\footnotetext` are used, force them to use un-hyper original. If `\hyper@nopatch@footnote` is defined we don't patch but assume that additions links to footnotes is handled elsewhere.

```

7352 \@ifundefined{hyper@nopatch@footnote}{%
7353 \ifHy@hyperfootnotes
7354 \@ifundefined{theHfootnote}
7355 {\newcounter{Hfootnote}}
7356 {\let\H@@theHfootnote\theHfootnote
7357 \let\theHfootnote\undefined
7358 \newcounter{Hfootnote}
7359 \let\theHfootnote\H@@theHfootnote
7360 }%

```

where is this used?

```

7361 \@ifundefined{theHHmpfootnote}{%
7362 \let\theHHmpfootnote\theHHfootnote
7363 }{}
7364 \let\H@@footnotetext\@footnotetext
7365 \let\H@@footnotemark\@footnotemark
7366 \def\xfootnotenext[#1]{%
7367 \begingroup
7368 \csname c@\@mpfn\endcsname #1\relax
7369 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7370 \endgroup
7371 \ifx\@footnotetext\@mpfootnotetext

```

```

7372 \expandafter\H@@mpfootnotetext
7373 \else
7374 \expandafter\H@@footnotetext
7375 \fi
7376 }%
7377 \def\@xfootnotemark[#1]{%
7378 \begingroup
7379 \c@footnote #1\relax
7380 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7381 \endgroup
7382 \H@@@footnotemark
7383 }%
7384 \let\H@@mpfootnotetext\@mpfootnotetext
7385 \long\def\@mpfootnotetext#1{%
7386 \H@@mpfootnotetext{%
7387 \ifHy@nesting
7388 \expandafter\@firstoftwo
7389 \else
7390 \expandafter\@secondoftwo
7391 \fi
7392 {%
7393 \expandafter\hyper@@anchor\expandafter{%
7394 \Hy@footnote@currentHref
7395 }\ignorespaces #1}%
7396 }{%
7397 \Hy@raisedlink{%
7398 \expandafter\hyper@@anchor\expandafter{%
7399 \Hy@footnote@currentHref
7400 }\relax}%
7401 }\ignorespaces #1%
7402 }%
7403 }%
7404 }%
7405 \long\def\@footnotetext#1{%
7406 \H@@@footnotetext{%
7407 \ifHy@nesting
7408 \expandafter\@firstoftwo
7409 \else
7410 \expandafter\@secondoftwo
7411 \fi
7412 {%
7413 \expandafter\hyper@@anchor\expandafter{%
7414 \Hy@footnote@currentHref
7415 }\ignorespaces #1}%
7416 }{%
7417 \Hy@raisedlink{%
7418 \expandafter\hyper@@anchor\expandafter{%
7419 \Hy@footnote@currentHref
7420 }\relax}%
7421 }%
7422 \let\@currentHref\Hy@footnote@currentHref
7423 \let\@currentlabelname\@empty
7424 \ignorespaces #1%
7425 }%

```

```

7426 }%
7427 }%

```

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.

```

7428 \def\@footnotemark{%
7429   \leavevmode
7430   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7431   \stepcounter{Hfootnote}%
7432   \global\let\Hy@saved@currentHref\@currentHref
7433   \hyper@makecurrent{Hfootnote}%
7434   \global\let\Hy@footnote@currentHref\@currentHref
7435   \global\let\@currentHref\Hy@saved@currentHref
7436   \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7437   \@makefnmark
7438   \hyper@linkend
7439   \ifhmode\spacefactor\@x@sf\fi
7440   \relax
7441 }%

```

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

```

7442 \@ifpackageloaded{tabularx}{%
7443   \let\HyOrg@TX@endtabularx\TX@endtabularx
7444   \def\Hy@tabularx@hook{%
7445     \let\@footnotetext\H@@footnotetext
7446     \let\@footnotemark\H@@footnotemark
7447     \let\@mpfootnotetext\H@@mpfootnotetext
7448   }%
7449   \begingroup
7450     \toks@\expandafter{\TX@endtabularx}%
7451     \xdef\Hy@gtemp{%
7452       \noexpand\Hy@tabularx@hook
7453       \the\toks@
7454     }%
7455   \endgroup
7456   \let\TX@endtabularx\Hy@gtemp
7457 }{}%

```

Support for footnotes in `p` columns of `longtable`. Here `\footnote` commands are split into `\footnotemark` and a call of `\footnotetext` with the optional argument, that is not supported by `hyperref`. The result is a link by `\footnotemark` without valid anchor

```

7458 \@ifpackageloaded{longtable}{%
7459   \CheckCommand{\LT@p@ftntext}[1]{%
7460     \edef\@tempa{%
7461       \the\LT@p@ftn
7462       \noexpand\footnotetext[\the\c@footnote]%
7463     }%
7464     \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7465   }%
7466   \long\def\LT@p@ftntext#1{%

```



```

7467 \edef\@tempa{%
7468 \the\LT@p@ftn
7469 \begingroup
7470 \noexpand\c@footnote=\the\c@footnote\relax
7471 \noexpand\protected@xdef\noexpand\@thefnmark{%
7472 \noexpand\thempfn
7473 }%
7474 \noexpand\Hy@LT@footnotetext{%
7475 \Hy@footnote@currentHref
7476 }%
7477 }%
7478 \global\LT@p@ftn\expandafter{%
7479 \@tempa{#1}%
7480 \endgroup
7481 }%
7482 }%
7483 \long\def\Hy@LT@footnotetext#1#2{%
7484 \H@@@footnotetext{%
7485 \ifHy@nesting
7486 \hyper@@anchor{#1}{#2}%
7487 \else
7488 \Hy@raisedlink{%
7489 \hyper@@anchor{#1}{\relax}%
7490 }%
7491 \def\@currentHref{#1}%
7492 \let\@currentlabelname\@empty
7493 #2%
7494 \fi
7495 }%
7496 }%
7497 }-}%

```

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

```

7498 \@ifpackageloaded{fancyvrb}{%
7499 \def\V@@@footnotetext{%
7500 \insert\footins\bgroup
7501 \csname reset@font\endcsname
7502 \footnotesize
7503 \interlinepenalty\interfootnotelinepenalty
7504 \splittopskip\footnotesep
7505 \splitmaxdepth\dp\strutbox
7506 \floatingpenalty \@MM
7507 \hsize\columnwidth
7508 \@parboxrestore
7509 \def\@currentcounter{footnote}%
7510 \protected@edef\@currentlabel{\csname p@footnote\endcsname\@thefn-
mark}%
7511 \@makefn-text{}%
7512 \rule{\z@}{\footnotesep}%
7513 \bgroup
7514 \aftergroup\V@@@footnotetext
7515 \Hy@raisedlink{%
7516 \expandafter\hyper@@anchor\expandafter{%
7517 \Hy@footnote@currentHref
7518 }{\relax}%

```

```

7519 }%
7520 \let\@currentHref\Hy@footnote@currentHref
7521 \let\@currentlabelname\@empty
7522 \ignorespaces
7523 }%
7524 }{}%

```

KOMA-Script or newer LaTeX defines `\footref` that uses both `\ref` and `\@footnotemark` resulting in two links, one of them wrong.

```

7525 \def\Hy@temp#1{%
7526   \begingroup
7527   \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7528   \endgroup
7529   \@footnotemark
7530 }%
7531 \ifx\Hy@temp\footref
7532   \def\footref#1{%
7533     \begingroup
7534     \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7535     \endgroup
7536     \H@@@footnotemark
7537   }%
7538   \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.

```

7539 \let\HyOrg@maketitle\maketitle
7540 \def\maketitle{%
7541   \let\Hy@saved@footnotemark\@footnotemark
7542   \let\Hy@saved@footnotetext\@footnotetext
7543   \let\@footnotemark\H@@@footnotemark
7544   \let\@footnotetext\H@@@footnotetext
7545   \@ifnextchar[\Hy@maketitle@optarg{% ]
7546     \HyOrg@maketitle
7547     \Hy@maketitle@end
7548   }%
7549 }%
7550 \def\Hy@maketitle@optarg[#1]{%
7551   \HyOrg@maketitle[{#1}]%
7552   \Hy@maketitle@end
7553 }%
7554 \def\Hy@maketitle@end{%
7555   \ifx\@footnotemark\H@@@footnotemark
7556     \let\@footnotemark\Hy@saved@footnotemark
7557   \fi
7558   \ifx\@footnotetext\H@@@footnotetext
7559     \let\@footnotetext\Hy@saved@footnotetext
7560   \fi
7561 }%

```

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

```

7562 \def\realfootnote{%
7563   \@ifnextchar[\@xfootnote%]
7564   {\stepcounter{\@mpfn}%

```

```

7565 \protected@xdef\@thefnmark{\thempfn}%
7566 \H@@footnotemark\H@@footnotetext
7567 }%
7568 }%

7569 \fi
7570 }{}
7571 \Hy@DisableOption{hyperfootnotes}

7572 \</packageEnd>
7573 \< *check>
7574 \checklatex
7575 \checkcommand\def\@xfootnotenext[#1]{%
7576 \begingroup
7577 \csname c@\@mpfn\endcsname #1\relax
7578 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7579 \endgroup
7580 \@footnotetext
7581 }
7582 \checkcommand\def\@xfootnotemark[#1]{%
7583 \begingroup
7584 \c@footnote #1\relax
7585 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7586 \endgroup
7587 \@footnotemark
7588 }
7589 \checkcommand\def\@footnotemark{%
7590 \leavevmode
7591 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7592 \@makefnmark
7593 \ifhmode\spacefactor\@x@sf\fi
7594 \relax
7595 }
7596 \</check>
7597 \< *packageEnd>

```

36 Float captions

Make the float caption the hypertext anchor; curiously enough, we can't just copy the definition of `\@caption`. Its all to do with expansion. It screws up. Sigh.

```

7598 \@ifundefined{hyper@nopatch@caption}{%
7599 \def\caption{%
7600 \ifx\@capytype\@undefined
7601 \latex@error{\noexpand\caption outside float}\@ehd
7602 \expandafter\@gobble
7603 \else
7604 \H@refstepcounter\@capytype
7605 \let\Hy@tempa\@caption
7606 \@ifundefined{float@caption}{%
7607 }{%
7608 \expandafter\ifx\csname @float@c@\@capytype\endcsname
7609 \float@caption
7610 \let\Hy@tempa\Hy@float@caption
7611 \fi

```

```

7612 }%
7613 \expandafter\@firstofone
7614 \fi
7615 {\@dblarg{\Hy@tempa\@captype}}%
7616 }
7617 \long\def\@caption#1[#2]#3{%
7618 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7619 \csname iftrue\endcsname
7620 \global\let\@currentHref\hc@currentHref
7621 \else
7622 \hyper@makecurrent{\@captype}%
7623 \fi
7624 \@ifundefined{NR@gettitle}{%
7625 \def\@currentlabelname{#2}%
7626 }{%
7627 \NR@gettitle{#2}%
7628 }%
7629 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7630 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7631 }%
7632 \begingroup
7633 \@parboxrestore
7634 \if@minipage
7635 \@setminipage
7636 \fi
7637 \normalsize
7638 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7639 \csname iftrue\endcsname
7640 \global\@capstartfalse
7641 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7642 \else
7643 \@makecaption{\csname fnum@#1\endcsname}{%
7644 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7645 \ifHy@nesting
7646 \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7647 \else
7648 \Hy@raisedlink{%
7649 \expandafter\hyper@@anchor\expandafter{%
7650 \@currentHref
7651 }{\relax}%
7652 }%
7653 #3%
7654 \fi

```

as the anchor are set manually here, we have to update the tagging info. For now we test for the format but this should go again in 2025.

```

7655 \IfFormatAtLeastTF{2024-11-01}{\UseTaggingSocket{recordtarget}}{%
7656 }%
7657 \fi
7658 \par
7659 \endgroup
7660 }}{\}%end no patch

```

Compatibility with float.sty: anchor setting at the top of the float, if the float

is controlled by float.sty. Several `\caption` commands inside one float are not supported.

`\HyNew@float@makebox` is introduced as feature request of Axel Sommerfeldt to make the life easier for his package ‘caption’.

```

7661 \let\Hy@float@caption\@caption
7662 \newcommand{\HyNew@float@makebox}[1]{%
7663   \HyOrg@float@makebox{%
7664     #1\relax
7665     \ifx\Hy@float@currentHref\@undefined
7666       \else
7667         \expandafter\hyper@@anchor\expandafter{%
7668           \Hy@float@currentHref
7669         }\relax}%
7670     \global\let\Hy@float@currentHref\@undefined
7671   \fi
7672 }%
7673 }%
7674 \@ifpackageloaded{float}{%
7675   \def\Hy@float@caption{%
7676     \ifx\Hy@float@currentHref\@undefined
7677       \hyper@makecurrent{\@capttype}%
7678       \global\let\Hy@float@currentHref\@currentHref
7679     \else
7680       \let\@currentHref\Hy@float@currentHref
7681     \fi
7682     \float@caption
7683   }%
7684   \let\HyOrg@float@makebox\float@makebox
7685   \let\float@makebox\HyNew@float@makebox
7686 }{}

7687 \</packageEnd>
7688 \< *check>
7689 \checklatex[1999/06/01 - 2000/06/01]
7690 \checkcommand\def\caption{%
7691   \ifx\@capttype\@undefined
7692     \@latex@error{\noexpand\caption outside float}\@ehd
7693     \expandafter\@gobble
7694   \else
7695     \refstepcounter\@capttype
7696     \expandafter\@firstofone
7697   \fi
7698   {\@dblarg{\@caption\@capttype}}}%
7699 }

7700 \checkcommand\long\def\@caption#1[#2]#3{%
7701   \par
7702   \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7703     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7704   }%
7705   \begingroup
7706     \@parboxrestore
7707     \if@minipage
7708       \@setminipage
7709     \fi

```

```

7710 \normalsize
7711 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7712 \endgroup
7713 }
7714 </check>
7715 <*packageEnd>

```

37 Bibliographic references

This is not very robust, since many styles redefine these things. The package used to redefine `\@citex` and the like; then we tried adding the `hyperref` call explicitly into the `.aux` file. Now we redefine `\bibcite`; this still breaks some citation packages so we have to work around them. But this remains extremely dangerous. Any or all of *achemso* and *drftcite* may break.

However, lets make an attempt to get *natbib* right, because that's a powerful, important package. Patrick Daly (daly@linmpi.mpg.de) has provided hooks for us, so all we need to do is activate them.

```

7716 \def\hyper@natlinkstart#1{%
7717 \Hy@backout{#1}%
7718 \hyper@linkstart{cite}{cite.#1}%
7719 \def\hyper@nat@current{#1}%
7720 }
7721 \def\hyper@natlinkend{%
7722 \hyper@linkend
7723 }
7724 \def\hyper@natlinkbreak#1#2{%
7725 \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7726 }
7727 \def\hyper@natanchorstart#1{%
7728 \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7729 }
7730 \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.

```

7731 \@ifundefined{hyper@nopatch@bib}
7732 {%
7733 \@ifundefined{NAT@parse}{%
7734 \providecommand*\@extra@binfo{}%
7735 \providecommand*\@extra@b@citeb{}%
7736 \def\bibcite#1#2{%
7737 \@newl@bel{b}{#1\@extra@binfo}{%
7738 \hyper@@link[cite]{cite.#1\@extra@b@citeb}{#2}%
7739 }%
7740 }%
7741 \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.”.

```

7742 \let\Hy@bibcite\bibcite
7743 \begingroup

```

```

7744 \ifundefined{bbl@cite@choice}{%
7745 \g@addto@macro\bbl@cite@choice{%
7746 \let\bibcite\Hy@bibcite
7747 }%
7748 }%
7749 \endgroup

```

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

```

7750 \providecommand*\@BIBLABEL{\@biblabel}%
7751 \def\@bibitem[#1]#2{%
7752 \@skiphyperreftrue
7753 \H@item{%
7754 \ifx\Hy@raisedlink\@empty
7755 \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7756 \@BIBLABEL{#1}%
7757 \hyper@anchorend
7758 \else
7759 \Hy@raisedlink{%
7760 \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7761 }%
7762 \@BIBLABEL{#1}%
7763 \fi
7764 \hfill
7765 }%
7766 \@skiphyperreffalse
7767 \if@filesw
7768 \begingroup
7769 \let\protect\noexpand
7770 \immediate\write\@auxout{%
7771 \string\bibcite{#2}{#1}%
7772 }%
7773 \endgroup
7774 \fi
7775 \ignorespaces
7776 }%

```

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

```

7777 \def\@bibitem#1{%
7778 \@skiphyperreftrue\H@item\@skiphyperreffalse
7779 \Hy@raisedlink{%
7780 \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7781 }%
7782 \if@filesw
7783 \begingroup
7784 \let\protect\noexpand
7785 \immediate\write\@auxout{%
7786 \string\bibcite{#1}{\the\value{\@listctr}}%
7787 }%
7788 \endgroup
7789 \fi
7790 \ignorespaces
7791 }%
7792 }{}%
7793 }{}

```

```

7794 </packageEnd>
7795 <*check>
7796 \checklatex
7797 \checkcommand\def\@lbibitem[#1]#2{%
7798   \item[\@biblabel{#1}]{\hfill}%
7799   \if@filesw
7800     {%
7801       \let\protect\noexpand
7802       \immediate\write\@auxout{%
7803         \string\bibcite{#2}{#1}%
7804       }%
7805     }%
7806   \fi
7807   \ignorespaces
7808 }
7809 \checkcommand\def\@bibitem#1{%
7810   \item
7811   \if@filesw
7812     \immediate\write\@auxout{%
7813       \string\bibcite{#1}{\the\value{\@listctr}}%
7814     }%
7815   \fi
7816   \ignorespaces
7817 }
7818 </check>
7819 <*packageEnd>

```

37.1 Package harvard

Override Peter Williams' Harvard package; we have to a) make each of the citation types into a link; b) make each citation write a backref entry, and c) kick off a backreference section for each bibliography entry.

The redefinitions have to be deferred to `\begin{document}`, because if `harvard.sty` is loaded and `html.sty` is present and detects pdfTeX, then `hyperref` is already loaded at the begin of `harvard.sty`, and the `\newcommand` macros causes error messages.

```

7820 \@ifpackageloaded{harvard}{%
7821   \Hy@AtBeginDocument{%
7822     \Hy@Info{*** compatibility with harvard **** }%
7823     \Hy@raiselinksfalse
7824     \def\harvardcite#1#2#3#4{%
7825       \global\@namedef{HAR@fn@#1}{\hyper@@link[cite]{#1}{#2}}%
7826       \global\@namedef{HAR@an@#1}{\hyper@@link[cite]{#1}{#3}}%
7827       \global\@namedef{HAR@yr@#1}{\hyper@@link[cite]{#1}{#4}}%
7828       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7829     }%
7830     \def\HAR@citetoaux#1{%
7831       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7832     \ifHy@backref
7833       \ifx\@empty\@currentlabel
7834       \else
7835         \@bsphack
7836         \if@filesw

```



```

7837     \protected@write\@auxout{}\{-%
7838     \string\@writefile{brf}\{-%
7839     \string\backcite{#1}\{-%
7840     {\thepage}\{\@currentlabel}\{\@currentHref}%
7841     }%
7842     }%
7843     }%
7844     \fi
7845     \@esphack
7846     \fi
7847     \fi
7848 }%
7849 \def\harvarditem{%
7850   \@ifnextchar{\@harvarditem}\@harvarditem[\null]}%
7851 }%
7852 \def\@harvarditem[#1]#2#3#4#5\par{%
7853   \item[]%
7854   \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7855   \if@filesw
7856     \begingroup
7857       \def\protect##1{\string ##1\space}%
7858       \ifthenelse\equal{#1}{\null}}%
7859       {\def\next{{#4}{#2}{#2}{#3}}}%
7860       {\def\next{{#4}{#2}{#1}{#3}}}%
7861       \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7862     \endgroup
7863     \fi
7864     \protect\hspace*{-\labelwidth}%
7865     \protect\hspace*{-\labelsep}%
7866     \ignorespaces
7867     #5%
7868     \ifHy@backref
7869       \newblock
7870       \backref{\csname br@#4\endcsname}%
7871     \fi
7872     \par
7873 }%

```

\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:

```

7874 \long\def\HAR@checkcitations#1#2#3#4{%
7875   \def\HAR@tempa{\hyper@@link[cite]\{cite.#1\}{#2}}%
7876   \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7877     \def\HAR@tempa{\hyper@@link[cite]\{cite.#1\}{#3}}%
7878     \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7879       \def\HAR@tempa{\hyper@@link[cite]\{cite.#1\}{#4}}%
7880       \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7881         \else
7882           \@tempswatrue
7883         \fi
7884       \else
7885         \@tempswatrue
7886       \fi

```

```

7887     \else
7888     \@tempswatrue
7889     \fi
7890 }%
7891 }%

7892 }{}

```

37.2 Package chicago

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

```

7893 \@ifpackageloaded{chicago}{%

```

`\citeN`

```

7894 \def\citeN{%
7895   \def\@citesep{-1000}%
7896   \def\@cite##1##2{##1}%
7897   \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}}%
7898   \@citedata@opt
7899 }%

```

`\shortciteN`

```

7900 \def\shortciteN{%
7901   \def\@citesep{-1000}%
7902   \def\@cite##1##2{##1}%
7903   \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}}%
7904   \@citedata@opt
7905 }%

```

`\@citedata@opt`

```

7906 \def\@citedata@opt{%
7907   \let\@cite@opt\@empty
7908   \@ifnextchar [{%
7909     \@tempswatrue
7910     \@citedatax@opt
7911   }{%
7912     \@tempswafalse
7913     \@citedatax[]%
7914   }%
7915 }%

```

`\@citedatax@opt`

```

7916 \def\@citedatax@opt[#1]{%
7917   \def\@cite@opt{, #1}%
7918   \@citedatax[{#1}]%
7919 }%

7920 }{}

```

38 Page numbers

The last page should not contain a `/Dur` key, because there is no page after the last page. Therefore at the last page there should be a command `\hypersetup{pdfpageduration={}}`. This can be set with `\AtEndDocument`, but it can be too late, if the last page is already finished, or too early, if lots of float pages will follow. Therefore currently nothing is done by `hyperref`.

This where we supply a destination for each page.

The name of destination is stored in the global command `\@currentHpage`, this allows it to retrieve it with an extended reference system like `zref` or the new property code from L^AT_EX 2023-11-01.

```

7921 \def\@currentHpage{Doc-Start}
7922 \ifclassloaded{slides}{%
7923   \def\Hy@SlidesFormatOptionalPage#1{(#1)}%
7924   \def\Hy@PageAnchorSlidesPlain{%
7925     \advance\c@page\@ne
7926     \xdef\@currentHpage{page.\the\c@slide.\the\c@overlay.\the\c@note%
7927       \ifnum\c@page=\@ne
7928         \else
7929           .\the\c@page
7930         \fi}%
7931   \edef\Hy@TempPageAnchor{%
7932     \noexpand\hyper@@anchor{%
7933       \@currentHpage
7934     }%
7935   }%
7936   \advance\c@page-\@ne
7937 }%
7938 \def\Hy@PageAnchorSlide{%
7939   \advance\c@page\@ne
7940   \ifnum\c@page>\@ne
7941     \@ifundefined{theHpage}{%
7942       \protected@edef\Hy@TheSlideOptionalPage{%
7943         \Hy@SlidesFormatOptionalPage{thepage}%
7944       }%
7945     }{%
7946       \protected@edef\Hy@TheSlideOptionalPage{%
7947         \Hy@SlidesFormatOptionalPage{theHpage}%
7948       }%
7949     }%
7950   \else
7951     \def\Hy@TheSlideOptionalPage{}%
7952   \fi
7953   \advance\c@page-\@ne
7954   \pdfstringdef\@the@H@page{%
7955     \csname
7956       the%
7957       \@ifundefined{theH\Hy@SlidesPage}{H}%
7958       \Hy@SlidesPage
7959     \endcsname
7960   \Hy@TheSlideOptionalPage
7961 }%
7962 \gobblethree

```

```

7963 }%
7964 \def\Hy@SlidesPage{slide}%
7965 \g@addto@macro\slide{%
7966   \def\Hy@SlidesPage{slide}%
7967 }%
7968 \g@addto@macro\overlay{%
7969   \def\Hy@SlidesPage{overlay}%
7970 }%
7971 \g@addto@macro\note{%
7972   \def\Hy@SlidesPage{note}%
7973 }%
7974 }{%
7975   \def\Hy@PageAnchorSlidesPlain{}}%
7976   \def\Hy@PageAnchorSlide{}}%
7977 }
7978 \def\Hy@EveryPageAnchor{%
7979   \Hy@DistillerDestFix
7980   \ifHy@pageanchor
7981     \ifHy@hypertextnames
7982       \ifHy@plainpages
7983         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
7984         \xdef\@currentHpage{page.\the\c@page}%
7985         \Hy@PageAnchorSlidesPlain
7986       \else
7987         \begingroup
7988         \let\@number\@firstofone
7989         \Hy@unicodedefalse
7990         \Hy@PageAnchorSlide
7991         \pdfstringdef\@the@H@page{\thepage}%
7992         \endgroup
7993         \EdefUnescapeString\@the@H@page{\@the@H@page}%
7994         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
7995         \xdef\@currentHpage{page.\@the@H@page}%
7996       \fi
7997     \else
7998       \Hy@GlobalStepCount\Hy@pagecounter
7999       \def\Hy@TempPageAnchor{%
8000         \hyper@@anchor{page.\the\Hy@pagecounter}%
8001       }%
8002       \xdef\@currentHpage{page.\the\Hy@pagecounter}%
8003     \fi
8004   \vbox to 0pt{%
8005     \kern\voffset
8006     \kern\topmargin
8007     \kern-1bp\relax
8008     \hbox to 0pt{%
8009       \kern\hoffset
8010       \kern\ifodd\value{page}%
8011         \oddsidemargin
8012       \else
8013         \evensidemargin
8014       \fi
8015       \kern-1bp\relax
8016       \Hy@TempPageAnchor\relax

```

```

8017     \hss
8018   }%
8019   \vss
8020 }%
8021 \fi
8022 }
8023 \g@addto@macro\Hy@EveryPageBoxHook{%
8024   \Hy@EveryPageAnchor
8025 }

```

39 Table of contents

TV Raman noticed that people who add arbitrary material into the TOC generate a bad or null link. We avoid that by checking if the current destination is empty. But if ‘the most recent destination’ is not what you expect, you will be in trouble. In newer L^AT_EX releases this is defined to put a % at the end of the line in the tocfile.

```

8026 \providecommand\protected@file@percent{}
8027 \@ifundefined{hyper@nopatch@toc}{%
8028   \def\addcontentsline#1#2#3{% toc extension, type, tag
8029     \begingroup
8030       \let\label\@gobble
8031       \ifx\@currentHref\@empty
8032         \Hy@Warning{%
8033           No destination for bookmark of \string\addcontentsline,%
8034           \MessageBreak destination is added%
8035         }%
8036       \phantomsection
8037     \fi
8038     \expandafter\ifx\csname toplevel@#2\endcsname\relax
8039       \begingroup
8040         \def\Hy@tempa{#1}%
8041         \ifx\Hy@tempa\Hy@bookmarkstype
8042           \Hy@WarningNoLine{%
8043             bookmark level for unknown #2 defaults to 0%
8044           }%
8045         \else
8046           \Hy@Info{bookmark level for unknown #2 defaults to 0}%
8047         \fi
8048       \endgroup
8049       \expandafter\gdef\csname toplevel@#2\endcsname{0}%
8050     \fi
8051     \edef\Hy@toplevel{\csname toplevel@#2\endcsname}%
8052     \Hy@writebookmark{\csname the#2\endcsname}%
8053       {#3}%
8054       {\@currentHref}%
8055       {\Hy@toplevel}%
8056       {#1}%
8057     \ifHy@verbose
8058       \begingroup
8059         \def\Hy@tempa{#3}%
8060         \@onelevel@sanitize\Hy@tempa

```

```

8061 \let\temp@online\on@line
8062 \let\on@line\@empty
8063 \Hy@Info{%
8064   bookmark\temp@online:\MessageBreak
8065   thecounter {\csname the#2\endcsname}\MessageBreak
8066   text {\Hy@tempa}\MessageBreak
8067   reference {\@currentHref}\MessageBreak
8068   toplevel {\Hy@toclevel}\MessageBreak
8069   type {#1}%
8070 }%
8071 \endgroup
8072 \fi
8073 \addtocontents{#1}{%
8074 \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}\protected@file@per-
cent
8075 }%
8076 \endgroup
8077 }
8078 }{}

```

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

change 2022-11-13: To avoid problems if MakeUppercase is used around the entry we use special protected commands:

```

8079 \protected\def\Hy@toclinkstart{\hyper@linkstart{link}{\Hy@tocdestname}}
8080 \protected\def\Hy@toclinkend{\hyper@linkend}
8081
8082 \@ifundefined{hyper@nopatch@toc}{%
8083 \def\contentsline#1#2#3#4{%
8084 \begingroup
8085 \Hy@safe@activetrue
8086 \edef\x{\endgroup
8087 \def\noexpand\Hy@tocdestname{#4}%
8088 }\x
8089 \ifx\Hy@tocdestname\@empty
8090 \csname l@#1\endcsname{#2}{#3}%
8091 \else
8092 \ifcase\Hy@linktoc % none
8093 \csname l@#1\endcsname{#2}{#3}%
8094 \or % section
8095 \csname l@#1\endcsname{%
8096 \Hy@toclinkstart{#2}\Hy@toclinkend
8097 }{#3}%
8098 \or % page
8099 \def\Hy@temp{#3}%
8100 \ifx\Hy@temp\@empty
8101 \csname l@#1\endcsname{#2}{#3}%
8102 \else
8103 \csname l@#1\endcsname{{#2}}{%
8104 \Hy@toclinkstart{#3}\Hy@toclinkend
8105 }%
8106 \fi
8107 \else % all
8108 \def\Hy@temp{#3}%

```

```

8109 \ifx\Hy@temp\@empty
8110 \csname l@#1\endcsname{%
8111 \Hy@toclinkstart{#2}\Hy@toclinkend
8112 }{}%
8113 \else
8114 \csname l@#1\endcsname{%
8115 \Hy@toclinkstart{#2}\Hy@toclinkend
8116 }{%
8117 \Hy@toclinkstart{#3}\Hy@toclinkend
8118 }%
8119 \fi
8120 \fi
8121 \fi
8122 }
8123 }{}

8124 \</packageEnd>
8125 \< *check>
8126 \checklatex
8127 \checkcommand\def\addcontentsline#1#2#3{%
8128 \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}}%
8129 }
8130 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
8131 \</check>
8132 \< *packageEnd>

```

40 New counters

The whole theorem business makes up new counters on the fly; we are going to intercept this. Sigh. Do it at the level where new counters are defined. change 2024-02-14: use a csname to handle counter names with commands, see issue #330 change 2024-10-13: disable patches in new format 2024-11-01.

```

8133 \IfFormatAtLeastTF{2024-11-01}{\def\hyper@nopatch@counter{}}{}
8134 \@ifundefined{hyper@nopatch@counter}
8135 {
8136 \let\H@definecounter\@definecounter
8137 \def\@definecounter#1{%
8138 \H@definecounter{#1}%
8139 \expandafter
8140 \gdef\csname theH#1\expandafter\endcsname\expandafter
8141 {\expandafter\@arabic\csname c@#1\endcsname}}%
8142 }{}

```

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.

```

8143 \@ifundefined{hyper@nopatch@counter}
8144 {
8145 \let\H@newctr\@newctr
8146 \def\@newctr#1[#2]{%
8147 \H@newctr#1[#2]}%
8148 \expandafter\gdef\csname theH#1\endcsname{%
8149 \csname the\@ifundefined{theH#2}{H}#2\endcsname.\arabic{#1}%
8150 }%

```

```

8151 }
8152 }{}

```

41 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.

If `\hyper@nopatch@amsmath@tag` is defined we don't patch but assume that kernel code adds anchors to equations. change 2023-06-14: use a hook to make it independent of loading order.

```

8153 \ifundefined{hyper@nopatch@amsmath@tag}
8154 {%
8155   \AddToHook{package/amsmath/after}{%
8156     \def\Hy@make@anchor{%
8157       \Hy@MakeCurrentHrefAuto{AMS}%
8158       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
8159     }%
8160     \def\Hy@make@df@tag@@#1{%
8161       \gdef\df@tag{%
8162         \maketag@@@{\Hy@make@anchor#1}%
8163         \def\@currentlabel{#1}%
8164       }%
8165     }%
8166     \def\Hy@make@df@tag@@@#1{%
8167       \gdef\df@tag{%
8168         \tagform@{\Hy@make@anchor#1}%
8169         \toks@{\xp{\p@equation{#1}}}%
8170         \edef\@currentlabel{\the\toks@}%
8171       }%
8172     }%
8173     \let\HyOrg@make@df@tag@@\make@df@tag@@
8174     \let\HyOrg@make@df@tag@@@\make@df@tag@@@
8175     \let\make@df@tag@@\Hy@make@df@tag@@
8176     \let\make@df@tag@@@\Hy@make@df@tag@@@
8177   }{}
8178 }{}

```

This code I simply cannot remember what I was trying to achieve. The final result seems to do nothing anyway.

```

\let\H@tagform@\tagform@
\def\tagform@#1{%
  \maketag@@@{\hyper@@anchor{\@currentHref}%
    {(\ignorespaces#1\unskip)}}%
}
\def\eqref#1{\textup{\H@tagform@\ref{#1}}}

```


41.1 \@addtoreset and \numberwithin patches

\@addtoreset puts a counter to the reset list of another counter. After a reset the counter starts again with perhaps already used values. Therefore the hyperref version of the counter print command \theHcounter is redefined in order to add the parent counter. change 2024-07-10: define \HyOrg@addtoreset always for cleveref compability with tagging code, see <https://github.com/latex3/tagging-project/issues/2>

```

8179 \def\HyOrg@addtoreset#1#2{\expandafter\@cons\csname cl@#2\endcsname {\{#1\}}}
8180 \@ifundefined{hyper@nopatch@counter}
8181 {
8182   \let\HyOrg@addtoreset\@addtoreset
8183   \def\@addtoreset#1#2{%
8184     \HyOrg@addtoreset{#1}{#2}%
8185     \expandafter\xdef\csname theH#1\endcsname{%
8186       \expandafter\noexpand
8187       \csname the\@ifundefined{theH#2}{H#2\endcsname
8188       .\noexpand\the\noexpand\value{#1}%
8189     }%
8190   }
8191 }{}

```

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

```

8192 \</packageEnd>
8193 \<check>
8194 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
8195 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
8196   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8197     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8198       \@addtoreset{#2}{#3}%
8199       \@xp\xdef\csname the#2\endcsname{%
8200         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8201       }%
8202     }%
8203   }%
8204 }%
8205 \</check>

```

change 2023-06-14: use hook to make independent of loading order

```

8206 \<packageEnd>
8207 \@ifundefined{hyper@nopatch@counter}
8208 {
8209   \AddToHook{package/amsmath/after}{%
8210     \renewcommand*\numberwithin[3][\arabic]{%
8211       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8212         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8213           \HyOrg@addtoreset{#2}{#3}%
8214           \@xp\xdef\csname the#2\endcsname{%
8215             \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8216           }%
8217           \@xp\xdef\csname theH#2\endcsname{%
8218             \@xp\@nx
8219             \csname the\@ifundefined{theH#3}{H#3\endcsname

```

```

8220      .\@nx#1{#2}%
8221      }%
8222      }%
8223      }%
8224      }%
8225      }{}
8226      }{}

```

42 Included figures

Simply intercept the low level graphics package macro.

```

8227 \ifHy@hyperfigures
8228   \let\Hy@Gin@setfile\Gin@setfile
8229   \def\Gin@setfile#1#2#3{%
8230     \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
8231   }%
8232 \fi
8233 \Hy@DisableOption{hyperfigures}

```

43 hyperindex entries

Internal command names are prefixed with `\HyInd@`.

Hyper-indexing works crudely, by forcing code onto the end of the index entry with the `|` feature; this puts a hyperlink around the printed page numbers. It will not proceed if the author has already used the `|` specifier for something like boldening entries. That would make `Makeindex` fail (cannot have two `|` specifiers). The solution is for the author to use generic coding, and put in the requisite `\hyperpage` in his/her own macros along with the boldness.

This section is poor stuff; it's open to all sorts of abuse. Sensible large projects will design their own indexing macros any bypass this.

```

8234 \ifHy@hyperindex
8235   \def\HyInd@ParenLeft{({}%
8236   \def\HyInd@ParenRight{)}}%
8237   \def\hyperindexformat#1#2{%
8238     \let\HyOrg@hyperpage\hyperpage
8239     \let\hyperpage\@firstofone
8240     #1{\HyOrg@hyperpage{#2}}%
8241     \let\hyperpage\HyOrg@hyperpage
8242   }%

```

keep the old name for compability.

```

8243   \let\hyperindexformat\hyperindexformat
8244   \Hy@nextfalse
8245   \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
8246   \@ifpackageloaded{index}{\Hy@nexttrue}{}%
8247   \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
8248   \begingroup
8249     \lccode`\|=\expandafter\HyInd@EncapChar\relax
8250     \lccode`\/=``\relax
8251   \lowercase{\endgroup
8252   \ifHy@next

```

```

8253 \let\HyInd@org@wrindex\@wrindex
8254 \def\@wrindex#1#2{\HyInd@wrindex{#1}#2||\}%
8255 \def\HyInd@wrindex#1#2|#3|#4\{\%
8256 \ifx\|#3\%
8257 \HyInd@org@wrindex{#1}{#2|hyperpage}%
8258 \else
8259 \HyInd@@@wrindex{#1}{#2}#3\%
8260 \fi
8261 }%
8262 \def\HyInd@@@wrindex#1#2#3#4\{\%
8263 \def\Hy@temp@A{#3}%
8264 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8265 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8266 \relax
8267 \HyInd@org@wrindex{#1}{%
8268 #2|hyperxindexformat{/#3#4}%
8269 }%
8270 \else
8271 \ifx\|#4\%
8272 \ifx\Hy@temp@A\HyInd@ParenRight
8273 \HyInd@org@wrindex{#1}{#2|#3}%
8274 \else
8275 \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
8276 \fi
8277 \else
8278 \HyInd@org@wrindex{#1}{%
8279 #2|#3hyperxindexformat{/#4}%
8280 }%
8281 \fi
8282 \fi
8283 }%
8284 \else
8285 \def\@wrindex#1{\@wrindex#1||\}%
8286 \def\@wrindex#1|#2|#3\{\%
8287 \if@filesw
8288 \ifx\|#2\%
8289 \protected@write\@indexfile{\%
8290 \string\indexentry{#1|hyperpage}\the page}%
8291 }%
8292 \else
8293 \HyInd@@@wrindex{#1}#2\%
8294 \fi
8295 \fi
8296 \endgroup
8297 \@esphack
8298 }%
8299 \def\HyInd@@@wrindex#1#2#3\{\%
8300 \def\Hy@temp@A{#2}%
8301 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8302 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8303 \relax
8304 \protected@write\@indexfile{\%
8305 \string\indexentry{%
8306 #1|hyperxindexformat{/#2#3}%

```

```

8307     }{\thepage}%
8308   }%
8309 \else
8310   \ifx\\#3\\%
8311     \ifx\Hy@temp@A\HyInd@ParenRight
8312       \HyInd@DefKey{#1}%
8313       \@ifundefined{HyInd@(\HyInd@key)}{%
8314         \let\Hy@temp\@empty
8315       }{%
8316         \expandafter\let\expandafter\Hy@temp
8317         \csname HyInd@(\HyInd@key)\endcsname
8318       }%
8319       \protected@write\@indexfile{}{%
8320         \string\indexentry{#1|#2\Hy@temp}{\thepage}%
8321       }%
8322     \else
8323       \protected@write\@indexfile{}{%
8324         \string\indexentry{#1|#2hyperpage}{\thepage}%
8325       }%
8326       \HyInd@DefKey{#1}%
8327       \expandafter
8328       \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8329         hyperpage%
8330       }%
8331     \fi
8332 \else
8333   \protected@write\@indexfile{}{%
8334     \string\indexentry{%
8335       #1|#2hyperxindexformat{/#3}%
8336     }{\thepage}%
8337   }%
8338   \ifx\Hy@temp@A\HyInd@ParenLeft
8339     \HyInd@DefKey{#1}%
8340     \expandafter
8341     \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8342       hyperxindexformat{/#3}%
8343     }%
8344   \fi
8345 \fi
8346 \fi
8347 }%
8348 \def\HyInd@DefKey#1{%
8349   \begingroup
8350   \let\protect\@unexpandable@protect
8351   \edef\Hy@temp{#1}%
8352   \@onelevel@sanitize\Hy@temp
8353   \global\let\HyInd@key\Hy@temp
8354   \endgroup
8355 }%
8356 \fi
8357 }%
8358 \fi
8359 \Hy@DisableOption{hyperindex}
8360 \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.

```
8361 \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.

```
8362 \def\hyperpage#1{%
8363   \HyInd@hyperpage#1\nohyperpage{}\@nil
8364 }
8365 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
8366   \HyInd@@hyperpage{#1}%
8367   #2%
8368   \def\Hy@temp{#3}%
8369   \ifx\Hy@temp\@empty
8370   \else
8371     \Hy@ReturnAfterFi{%
8372       \HyInd@hyperpage#3\@nil
8373     }%
8374   \fi
8375 }
8376 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
8377 \def\@hyperpage#1--#2--#3\{\%
8378   \ifx\#2\%
8379     \@commahyperpage{#1}%
8380   \else
8381     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
8382   \fi
8383 }
8384 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
8385 \def\@@commahyperpage#1, #2,#3\{\%
8386   \ifx\#2\%
8387     \HyInd@pagelink{#1}%
8388   \else
8389     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
8390   \fi
8391 }
```

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

```
8392 \def\HyInd@pagelink#1{%
8393   \begingroup
8394   \toks@={}%
8395   \HyInd@removespaces#1 \@nil
8396   \endgroup
8397 }
8398 \def\HyInd@removespaces#1 #2\@nil{%
8399   \toks@=\expandafter{\the\toks@#1}%
8400   \ifx\#2\%
8401     \edef\x{\the\toks@}%
8402     \ifx\x\@empty
8403     \else
8404       \hyperlink{page.\the\toks@}{\the\toks@}%
8405     \fi
8406   \else
```

```

8407 \Hy@ReturnAfterFi{%
8408 \HyInd@removespaces#2\@nil
8409 }%
8410 \fi
8411 }

```

This breaks TeX4ht, so leave it to last. Emend `\@setref` to put out a hypertext link as well as its normal text (which is used as an anchor). (`\endinput` have to be on the same line like `\fi`, or you have to use `\expandafter` before.)

change 2022-11-13: added an `\@empty` for issue#261.

```

8412 \ifHy@texht
8413 \expandafter\endinput
8414 \fi
8415 \let\real@setref\@setref
8416 \def\@setref#1#2#3{% csname, extract group, refname
8417 \ifx#1\relax
8418 \protect\G@refundefinedtrue
8419 \nfss@text{\reset@font\bfseries ??}%
8420 \@latex@warning{%
8421 Reference `#3' on page \thepage \space undefined%
8422 }%
8423 \else
8424 \expandafter\Hy@setref@link#1\@empty\@empty\@empty\@nil{#2}%
8425 \fi
8426 }

```

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

```

8427 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8428 \begingroup
8429 \toks0={\hyper@@link{#5}{#4}}%
8430 \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8431 \edef\x{\endgroup
8432 \the\toks0 {\the\toks1 }%
8433 }%
8434 \x
8435 }
8436 \def\@pagesetref#1#2#3{% csname, extract macro, ref
8437 \ifx#1\relax
8438 \protect\G@refundefinedtrue
8439 \nfss@text{\reset@font\bfseries ??}%
8440 \@latex@warning{%
8441 Reference `#3' on page \thepage \space undefined%
8442 }%
8443 \else
8444 \protect\hyper@@link
8445 {\expandafter\@fifthoffive#1}%
8446 {page.\expandafter\@secondoffive#1}%
8447 {\expandafter\@secondoffive#1}%
8448 \fi
8449 }
8450 \</packageEnd>
8451 \< *check>
8452 \checklatex

```

```

8453 \checkcommand\def\@setref#1#2#3{%
8454   \ifx#1\relax
8455     \protect\G@refundefinedtrue
8456     \nfss@text{\reset@font\bfseries ??}%
8457     \@latex@warning{%
8458       Reference `#3' on page \thepage\space undefined%
8459     }%
8460   \else
8461     \expandafter#2#1\null
8462   \fi
8463 }
8464 \</check>
8465 \*packageEnd>

```

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

```

8466 \def\HyRef@StarSetRef#1{%
8467   \begingroup
8468   \Hy@safe@activestru
8469   \let\protect\@unexpandable@protect
8470   \edef\x{#1}%
8471   \@onelevel@sanitize\x
8472   \edef\x{\endgroup
8473     \noexpand\HyRef@@StarSetRef
8474     \expandafter\noexpand\csname r@\x\endcsname{\x}%
8475   }%
8476   \x
8477 }
8478 \def\HyRef@@StarSetRef#1#2#3{%
8479   \ifx#1\@undefined
8480     \let#1\relax
8481   \fi
8482   \real@setref#1#3{#2}%
8483 }
8484 \def\@refstar#1{%
8485   \HyRef@StarSetRef{#1}\@firstoffive
8486 }
8487 \def\@pagerefstar#1{%
8488   \HyRef@StarSetRef{#1}\@secondoffive
8489 }
8490 \def\@namerefstar#1{%
8491   \HyRef@StarSetRef{#1}\@thirdoffive
8492 }
8493 \def\@Refstar#1{%
8494   \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8495 }%
8496 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8497   \MakeUppercase#1%
8498 }%
8499 \def\HyRef@Ref#1{%
8500   \hyperref[{#1}]{\Ref*{#1}}%
8501 }%
8502 \Hy@AtBeginDocument{%
8503   \@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.

```

8504 \ifundefined{hyper@nopatch@varioref}
8505 {
8506   \renewcommand\Vref@star[2][]{%
8507     \begingroup
8508     \let\T@pageref\@pagerefstar
8509     \Ref*{#2}
8510     \vpageref[#1]{#2}%
8511   \endgroup
8512 }%
8513 \renewcommand\Vr@f[2][]{%
8514   \begingroup
8515   \let\T@pageref\@pagerefstar
8516   \hyperref[{#2}]{%
8517     \Ref*{#2}
8518     \vpageref[#1]{#2}%
8519   }%
8520 \endgroup
8521 }%
8522 \renewcommand\vr@f[2][]{%
8523   \begingroup
8524   \let\T@pageref\@pagerefstar
8525   \hyperref[{#2}]{%
8526     \ref*{#2}
8527     \vpageref[#1]{#2}%
8528   }%
8529 \endgroup
8530 }%
8531 \renewcommand\vref@star[2][]{%
8532   \begingroup
8533   \let\T@pageref\@pagerefstar
8534   \ref*{#2}
8535   \vpageref[#1]{#2}%
8536 \endgroup
8537 }%
8538 }{}%
8539 }{}%
8540 }

8541 \DeclareRobustCommand*\autopageref{%
8542   \@ifstar{%
8543     \HyRef@autopagerefname\pageref*%
8544   }\HyRef@autopageref
8545 }
8546 \def\HyRef@autopageref#1{%
8547   \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
8548 }
8549 \def\HyRef@autopagerefname{%
8550   \ifundefined{pageautorefname}{%
8551     \ifundefined{pagename}{%
8552       \Hy@Warning{No autoref name for `page'}%
8553     }{}%

```



```

8554 \pagename\nobreakspace
8555 }%
8556 }{%
8557 \pageautorefname\nobreakspace
8558 }%
8559 }

```

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

```

8560 \NewDocumentCommand\autoref{s}
8561 {
8562   \leavevmode
8563   \IfBooleanTF{#1}{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@@link}}
8564 \def\HyRef@autoref#1#2{%
8565   \begingroup
8566   \Hy@safe@activetrue
8567   \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
8568 }
8569 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
8570   \HyRef@ShowKeysRef{#2}%
8571   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8572   \edef\HyRef@thisref{%
8573     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8574   }%
8575   \expandafter\HyRef@testreftype\HyRef@thisref.\.%
8576   \Hy@safe@activesfalse
8577   #3{%
8578     \expandafter\@fifthoffive#1\@empty\@empty\@empty
8579   }{%
8580     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8581   }{%
8582     \HyRef@currentHtag
8583     \expandafter\@firstoffive#1\@empty\@empty\@empty
8584     \null
8585   }%
8586   \else
8587     \protect\G@refundefinedtrue
8588     \nfss@text{\reset@font\bfseries ??}%
8589     \@latex@warning{%
8590       Reference `#2' on page \thepage\space undefined%
8591     }%
8592   \fi
8593 }
8594 \def\HyRef@testreftype#1.#2\{%
8595   \@ifundefined{#1autorefname}{%
8596     \@ifundefined{#1name}{%
8597       \HyRef@StripStar#1\*\@nil{#1}%
8598       \@ifundefined{\HyRef@name autorefname}{%
8599         \@ifundefined{\HyRef@name name}{%
8600           \def\HyRef@currentHtag{%
8601             \Hy@Warning{No autoref name for `#1'}%
8602           }{%
8603             \edef\HyRef@currentHtag{%
8604               \expandafter\noexpand\csname\HyRef@name name\endcsname

```

```

8605         \noexpand~%
8606     }%
8607 }%
8608 }{%
8609     \edef\HyRef@currentHtag{%
8610         \expandafter\noexpand
8611         \csname\HyRef@name\autorefname\endcsname
8612         \noexpand~%
8613     }%
8614 }%
8615 }{%
8616     \edef\HyRef@currentHtag{%
8617         \expandafter\noexpand\csname#1name\endcsname
8618         \noexpand~%
8619     }%
8620 }%
8621 }{%
8622     \edef\HyRef@currentHtag{%
8623         \expandafter\noexpand\csname#1\autorefname\endcsname
8624         \noexpand~%
8625     }%
8626 }%
8627 }
8628 \def\HyRef@StripStar#1*\#2\@nil#3{%
8629     \def\HyRef@name{#2}%
8630     \ifx\HyRef@name\HyRef@CaseStar
8631         \def\HyRef@name{#1}%
8632     \else
8633         \def\HyRef@name{#3}%
8634     \fi
8635 }
8636 \def\HyRef@CaseStar{*\\}
8637 \def\HyRef@currentHtag{}

```

Support for package `showkeys`.

`\HyRef@ShowKeysRef`

```

8638 \let\HyRef@ShowKeysRef\@gobble
8639 \def\HyRef@ShowKeysInit{%
8640     \@ifundefined{SK@@label}{}
8641     {%
8642         \ifx\SK@ref\@empty
8643         \else
8644             \def\HyRef@ShowKeysRef{%
8645                 \SK@\SK@@ref
8646             }%
8647         \fi
8648     }%
8649 }
8650 \AddToHook{package/showkeys/after}{\HyRef@ShowKeysInit}

```

Defaults for the names that `\autoref` uses.

```

8651 \providecommand*\AMSautorefname{\equationautorefname}
8652 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8653 \providecommand*\Itemautorefname{\itemautorefname}

```

```

8654 \providecommand*\itemautorefname{item}
8655 \providecommand*\equationautorefname{Equation}
8656 \providecommand*\footnoteautorefname{footnote}
8657 \providecommand*\itemautorefname{item}
8658 \providecommand*\figureautorefname{Figure}
8659 \providecommand*\tableautorefname{Table}
8660 \providecommand*\partautorefname{Part}
8661 \providecommand*\appendixautorefname{Appendix}
8662 \providecommand*\chapterautorefname{chapter}
8663 \providecommand*\sectionautorefname{section}
8664 \providecommand*\subsectionautorefname{subsection}
8665 \providecommand*\subsubsectionautorefname{subsubsection}
8666 \providecommand*\paragraphautorefname{paragraph}
8667 \providecommand*\subparagraphautorefname{subparagraph}
8668 \providecommand*\FancyVerbLineautorefname{line}
8669 \providecommand*\theoremautorefname{Theorem}
8670 \providecommand*\pageautorefname{page}
8671 \endpackage

```

44 Configuration files

44.1 PS/PDF strings

Some drivers write PS or PDF strings. These strings are delimited by parentheses, therefore a lonely unmatched parenthesis must be avoided to avoid PS or PDF syntax errors. Also the backslash character itself has to be protected.

`\Hy@pstringdef` Therefore such strings should be passed through `\Hy@pstringdef`. The first argument holds a macro for the result, the second argument is the string that needs protecting. Since version 1.30.0 pdfTeX offers `\pdfescapestring`.

```

8672 (*pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo)
8673 \begingroup\expandafter\expandafter\expandafter\endgroup
8674 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8675   \begingroup
8676     \catcode`\|=0 %
8677     \@makeother\| %
8678     \@firstofone{\endgroup
8679       |def|Hy@pstringdef#1#2{%
8680         |begingroup
8681           |edef~{|string~}%
8682           |xdef|Hy@gtemp{#2}%
8683         |endgroup
8684         |let#1|Hy@gtemp
8685         |@onelevel@sanitize#1%
8686         |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
8687         |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
8688         |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
8689       }%
8690       |def|Hy@ExchangeBackslash#1/#2|@nil{%
8691         #1%
8692         |ifx|\#2|\%%
8693       |else

```

```

8694     \\\%
8695     |Hy@ReturnAfterFi{%
8696     |Hy@ExchangeBackslash#2|@nil
8697     }%
8698     |fi
8699     }%
8700 }%
8701 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8702     #1%
8703     \ifx\#2\%
8704     \else
8705     \@backslashchar(%
8706     \Hy@ReturnAfterFi{%
8707     \Hy@ExchangeLeftParenthesis#2\@nil
8708     }%
8709     \fi
8710 }%
8711 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8712     #1%
8713     \ifx\#2\%
8714     \else
8715     \@backslashchar)%
8716     \Hy@ReturnAfterFi{%
8717     \Hy@ExchangeRightParenthesis#2\@nil
8718     }%
8719     \fi
8720 }%
8721 \else
8722 \def\Hy@pstringdef#1#2{%
8723     \begingroup
8724     \edef~{\string~}%
8725     \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8726     \endgroup
8727     \let#1\Hy@gtemp
8728     }%
8729 \fi
8730 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

44.2 pdfTeX

```

8731 <*pdfTeX>
8732 \providecommand*\XR@ext}{pdf}
8733 \Hy@setbreaklinks{true}
8734 \def\HyPat@ObjRef{%
8735     [0-9]*[1-9][0-9]* 0 R%
8736 }

```

This driver is for Han The Thanh's T_EX variant which produces PDF directly. This has new primitives to do PDF things, which usually translate almost directly to PDF code, so there is a lot of flexibility which we do not at present harness.

Set PDF version if requested by option `pdfversion`.

- pdfT_EX 1.10a, 2003-01-16: `\pdfoptionpdfminorversion`
- pdfT_EX 1.30, 2005-08-081: `\pdfminorversion`

```

8737 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8738 \def\Hy@pdfminorversion{\pdfminorversion}%
8739 \ifHy@ocgcolorlinks
8740 \ifnum\Hy@pdfmajorminor@version<105 %
8741 \kvsetkeys{Hyp}{pdfversion=1.5}%
8742 \fi
8743 \fi
8744 \ifHy@setpdfversion
8745 \ifnum\Hy@pdf@majorminor@version<105 %
8746 \@ifundefined{pdfobjcompresslevel}{%
8747 }{%
8748 \ifHy@verbose
8749 \Hy@InfoNoLine{%
8750 PDF object streams are disabled, because they are%
8751 \MessageBreak
8752 not supported in requested PDF version %
8753 \Hy@pdf@majorversion.\Hy@pdf@minorversion
8754 }%
8755 \fi
8756 \pdfobjcompresslevel=\z@
8757 }%
8758 \fi
8759 \ifnum\Hy@pdfmajorminor@version=\Hy@pdf@majorminor@version\relax
8760 \else
8761 \let\Hy@temp\@empty
8762 \def\Hy@temp@A#1#2{%
8763 \ifnum#1>\z@
8764 \edef\Hy@temp{%
8765 \Hy@temp
8766 \space\space
8767 \the#1\space #2%
8768 \ifnum#1=\@ne\else s\fi
8769 \MessageBreak
8770 }%
8771 \fi
8772 }%
8773 \Hy@temp@A\pdfastobj{PDF object}%
8774 \Hy@temp@A\pdfastxform{form XObject}%
8775 \Hy@temp@A\pdfastximage{image XObject}%
8776 \Hy@temp@A\pdfastannot{annotation}%
8777 \@ifundefined{pdfastlink}{%
8778 }{%
8779 \Hy@temp@A\pdfastlink{link}%
8780 }%
8781 \ifx\Hy@temp\@empty
8782 \Hy@pdfmajorversion=\Hy@pdf@majorversion\relax
8783 \Hy@pdfminorversion=\Hy@pdf@minorversion\relax
8784 \else
8785 \let\Hy@temp@A\@empty
8786 \ifnum\Hy@pdf@majorminor@version=104 %
8787 \IfFileExists{pdf14.sty}{%
8788 \def\Hy@temp@A{%
8789 \MessageBreak
8790 Or \string\RequirePackage{pdf14} can be used%

```

```

8791         \MessageBreak
8792         before \string\documentclass\space as shortcut%
8793     }%
8794 }{}%
8795 \fi
8796 \Hy@WarningNoLine{%
8797     The PDF version number could not be set,\MessageBreak
8798     because some PDF objects are already written:%
8799     \MessageBreak
8800     \Hy@temp
8801     The version should be set as early as possible:%
8802     \MessageBreak
8803     \space\space
8804     \expandafter\string\Hy@pdfmajorversion=\Hy@pdf@majorversion, %
8805     \expandafter\string\Hy@pdfminorversion=\Hy@pdf@minorversion
8806     \string\relax
8807     \ifnum\Hy@pdf@majorminor@version<105 %
8808         \@ifundefined{pdfobjcompresslevel}{%
8809             }{%
8810                 \MessageBreak
8811                 \space\space
8812                 \string\pdfobjcompresslevel=0\string\relax
8813             }%
8814         \fi
8815         \Hy@temp@A
8816     }%
8817 \fi
8818 \fi
8819 \PackageInfo{hyperref}{%
8820     \expandafter\string\Hy@pdfmajorversion.%
8821     \expandafter\string\Hy@pdfminorversion
8822     :=\number\Hy@pdf@majorversion.\number\Hy@pdf@minorversion\space
8823 }%
8824 \fi
8825 \edef\Hy@pdf@majorversion{\number\Hy@pdfmajorversion}%
8826 \edef\Hy@pdf@minorversion{\number\Hy@pdfminorversion}%
8827 \Hy@DisableOption{pdfversion}%
8828 \ifHy@ocgcolorlinks
8829     \pdf@ifdraftmode{}{%
8830         \immediate\pdfobj{%
8831             <<%
8832             /Type/OCG%
8833             /Name(View)%
8834             /Usage<<%
8835             /Print<<%
8836             /PrintState/OFF%
8837             >>%
8838             /View<<%
8839             /ViewState/ON%
8840             >>%
8841             >>%
8842         }%
8843     }%
8844     \edef\OBJ@OCG@view{\the\pdflastobj\space 0 R}%

```

```

8845 \immediate\pdfobj{%
8846   <<%
8847     /Type/OCG%
8848     /Name(Print)%
8849     /Usage<<%
8850       /Print<<%
8851         /PrintState/ON%
8852       >>%
8853     /View<<%
8854       /ViewState/OFF%
8855     >>%
8856   >>%
8857 >>%
8858 }%
8859 \edef\OBJ@OCG@print{\the\pdfflastobj\space 0 R}%
8860 \immediate\pdfobj{%
8861   [%
8862     \OBJ@OCG@view\space\OBJ@OCG@print
8863   ]%
8864 }%
8865 \edef\OBJ@OCGs{\the\pdfflastobj\space 0 R}%
8866 \pdfcatalog{%
8867   /OCProperties<<%
8868     /OCGs \OBJ@OCGs
8869   /D<<%
8870     /OFF[\OBJ@OCG@print]%
8871   /AS[%
8872     <<%
8873       /Event/View%
8874       /OCGs \OBJ@OCGs
8875       /Category[/View]%
8876     >>%
8877     <<%
8878       /Event/Print%
8879       /OCGs \OBJ@OCGs
8880       /Category[/Print]%
8881     >>%
8882     <<%
8883       /Event/Export%
8884       /OCGs \OBJ@OCGs
8885       /Category[/Print]%
8886     >>%
8887   ]%
8888   >>%
8889 >>%
8890 }%
8891 \beginngroup
8892 \edef\x{\endgroup
8893   \pdfpageresources{%
8894     \the\pdfpageresources
8895     /Properties<<%
8896       /OCView \OBJ@OCG@view
8897       /OCPrint \OBJ@OCG@print
8898     >>%

```

```

8899     }%
8900   }%
8901   \x
8902 }%
8903 \Hy@AtBeginDocument{%
8904   \def\Hy@colorlink#1{%
8905     \begingroup
8906     \ifHy@ocgcolorlinks
8907       \def\Hy@ocgcolor{#1}%
8908       \setbox0=\hbox\bgroup\color@begingroup
8909     \else
8910       \HyColor@UseColor#1%
8911     \fi
8912   }%
8913   \def\Hy@endcolorlink{%
8914     \ifHy@ocgcolorlinks
8915       \color@endgroup\egroup
8916     \mbox{%
8917       \pdfliteral page{/OC/OCPrint BDC}%
8918       \rlap{\copy0}%
8919       \pdfliteral page{EMC/OC/OCView BDC}%
8920     \begingroup
8921       \expandafter\HyColor@UseColor\Hy@ocgcolor
8922       \box0 %
8923     \endgroup
8924     \pdfliteral page{EMC}%
8925   }%
8926   \fi
8927 \endgroup
8928 }%
8929 }%
8930 \else
8931   \Hy@DisableOption{ocgcolorlinks}%
8932 \fi

```

First, allow for some changes and additions to pdftex syntax:

```

8933 \def\setpdfinkmargin#1{%
8934   \begingroup
8935     \setlength{\dimen@}{#1}%
8936   \expandafter\endgroup
8937   \expandafter\pdfinkmargin\the\dimen@\relax
8938 }
8939 \pdfinkmargin1pt %

```

First set up the default linking

```
8940 \providecommand*\@pdfview{XYZ}
```

First define the anchors:

```

8941 \Hy@WrapperDef\new@pdfink#1{%
8942   \ifhmode
8943     \@savsf\spacefactor
8944   \fi
8945   \Hy@SaveLastskip
8946   \Hy@VerboseAnchor{#1}%
8947   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%

```



```

8948 \Hy@DestName\Hy@pstringDest\@pdfview
8949 \Hy@RestoreLastskip
8950 \ifhmode
8951   \spacefactor\@savs
8952 \fi
8953 }
8954 \let\pdf@endanchor\@empty

```

\Hy@DestName Wrap the call of \pdfdest name in \Hy@DestName. Then it can easier be caught by package hypdestopt.

```

8955 \def\Hy@DestName#1#2{%
8956   \pdfdest name{#1}#2\relax
8957 }

```

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.

```

8958 \providecommand*\@pdfborder{0 0 1}
8959 \providecommand*\@pdfborderstyle{}
8960 \def\Hy@undefinedname{UNDEFINED}
8961 \def\find@pdflink#1#2{%
8962   \leavevmode
8963   \protected@edef\Hy@testname{#2}%
8964   \ifx\Hy@testname\@empty
8965     \Hy@Warning{%
8966       Empty destination name,\MessageBreak
8967       using '\Hy@undefinedname'%
8968     }%
8969     \let\Hy@testname\Hy@undefinedname
8970   \else
8971     \Hy@pstringdef\Hy@testname{%
8972       \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8973     }%
8974   \fi
8975   \Hy@StartlinkName{%
8976     \ifHy@pdfa /F 4\fi
8977     \Hy@setpdfborder
8978     \Hy@setpdfhighlight
8979     \ifx\CurrentBorderColor\relax
8980       \else
8981         /C[\CurrentBorderColor]%
8982     \fi
8983   }\Hy@testname
8984   \expandafter\Hy@colorlink\csname @#1color\endcsname
8985 }
8986 \def\Hy@StartlinkName#1#2{%
8987   \pdfstartlink attr{#1}goto name{#2}\relax
8988 }
8989 \def\close@pdflink{%
8990   \Hy@endcolorlink
8991   \Hy@VerboseLinkStop
8992   \pdfendlink
8993 }

```

```

8994 \def\hyper@anchor#1{%
8995   \new@pdfink{#1}\anchor@spot\pdf@endanchor
8996 }
8997 \def\hyper@anchorstart#1{%
8998   \new@pdfink{#1}%
8999   \Hy@activeanchortrue
9000 }
9001 \def\hyper@anchorend{%
9002   \pdf@endanchor
9003   \Hy@activeanchorfalse
9004 }
9005 \def\hyper@linkstart#1#2{%
9006   \Hy@VerboseLinkStart{#1}{#2}%
9007   \@ifundefined{@#1bordercolor}{%
9008     \let\CurrentBorderColor\relax
9009   }{%
9010     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
9011   }%
9012   \find@pdfink{#1}{#2}%
9013 }
9014 \def\hyper@linkend{\close@pdfink}
9015 \def\hyper@link#1#2#3{%
9016   \Hy@VerboseLinkStart{#1}{#2}%
9017   \@ifundefined{@#1bordercolor}{%
9018     \let\CurrentBorderColor\relax
9019   }{%
9020     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
9021   }%
9022   \find@pdfink{#1}{#2}#3\Hy@xspace@end
9023   \close@pdfink
9024 }
9025 \let\CurrentBorderColor\@linkbordercolor
9026 \def\hyper@linkurl#1#2{%
9027   \begingroup
9028     \Hy@pstringdef\Hy@pstringURI{#2}%
9029     \hyper@chars
9030     \leavevmode
9031     \pdfstartlink
9032     attr{%
9033       \Hy@setpdfborder
9034       \Hy@setpdfhighlight
9035       \ifx\@urlbordercolor\relax
9036         \else
9037           /C[\@urlbordercolor]%
9038         \fi
9039     }%
9040     user{%
9041       /Subtype/Link%
9042       \ifHy@pdfa /F 4\fi
9043       /A<<%
9044         /Type/Action%
9045         /S/URI%
9046         /URI(\Hy@pstringURI)%
9047         \ifHy@href@ismap

```

```

9048      /IsMap true%
9049      \fi
9050      \Hy@href@nextactionraw
9051      >>%
9052      }%
9053      \relax
9054      \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9055      \close@pdflink
9056      \endgroup
9057      }
9058      \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
9059      \begingroup
9060      \def\Hy@pstringF{#2}%
9061      \Hy@CleanupFile\Hy@pstringF
9062      \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9063      \Hy@pstringdef\Hy@pstringD{#3}%
9064      \Hy@MakeRemoteAction
9065      \leavevmode
9066      \pdfstartlink
9067      attr{%
9068      \Hy@setpdfborder
9069      \Hy@setpdfhighlight
9070      \ifx\@filebordercolor\relax
9071      \else
9072      /C[\@filebordercolor]%
9073      \fi
9074      }%
9075      user {%
9076      /Subtype/Link%
9077      \ifHy@pdfa /F 4\fi
9078      /A<<%
9079      /F(\Hy@pstringF)%
9080      /S/GoToR%
9081      \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}

```

```

9082      \ifx\#3\%
9083      /D[\Hy@href@page\@pdfremotestartview]%
9084      \else
9085      /D(\Hy@pstringD)%
9086      \fi
9087      \Hy@href@nextactionraw
9088      >>%
9089      }%

```

```

9090 \relax
9091 \Hy@colorlink\@filecolor#1\Hy@xspace@end
9092 \close@pdfink
9093 \endgroup
9094 }
9095 \def\@hyper@launch run:#1\|#2#3{% filename, anchor text linkname
9096 \begin{group}
9097 \Hy@pstringdef\Hy@pstringF{#1}%
9098 \Hy@pstringdef\Hy@pstringP{#3}%
9099 \leavevmode
9100 \pdfstartlink
9101 attr{%
9102 \Hy@setpdfborder
9103 \Hy@setpdfhighlight
9104 \ifx\@runbordercolor\relax
9105 \else
9106 /C[\@runbordercolor]%
9107 \fi
9108 }%
9109 user {%
9110 /Subtype/Link%
9111 \ifHy@pdfa /F 4\fi
9112 /A<<%
9113 /F(\Hy@pstringF)%
9114 /S/Launch%
9115 \Hy@SetNewWindow
9116 \ifx\|#3\|
9117 \else
9118 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9119 \fi
9120 \Hy@href@nextactionraw
9121 >>%
9122 }%
9123 \relax
9124 \Hy@colorlink\@runcolor#2\Hy@xspace@end
9125 \close@pdfink
9126 \endgroup
9127 }

```

\PDF@SetupDox

```

9128 \def\PDF@SetupDoc{%
9129 \ifx\@pdfpagescrop\@empty
9130 \else
9131 \edef\process@me{%
9132 \pdfpagesattr={%
9133 /CropBox[\@pdfpagescrop]%
9134 \expandafter\ifx\expandafter\|the\pdfpagesattr\|
9135 \else
9136 ^^J\the\pdfpagesattr
9137 \fi
9138 }%
9139 }%
9140 \process@me
9141 \fi

```

```

9142 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9143 \pdfcatalog{%
9144   /PageMode/\@pdfpagemode
9145   \ifx\@baseurl\@empty
9146     \else
9147     /URI<</Base(\Hy@pstringB)>>%
9148   \fi
9149 }%
9150 \ifx\@pdfstartpage\@empty
9151 \else
9152   \ifx\@pdfstartview\@empty
9153   \else
9154     openaction goto page\@pdfstartpage{\@pdfstartview}%
9155   \fi
9156 \fi
9157 \edef\Hy@temp{%
9158   \ifHy@pdftoolbar\else /HideToolbar true\fi
9159   \ifHy@pdfmenubar\else /HideMenubar true\fi
9160   \ifHy@pdfwindowui\else /HideWindowUI true\fi
9161   \ifHy@pdfwindow /FitWindow true\fi
9162   \ifHy@pdfcenterwindow /CenterWindow true\fi
9163   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9164   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9165   \Hy@UseNameKey{Direction}\@pdfdirection
9166   \Hy@UseNameKey{ViewArea}\@pdfviewarea
9167   \Hy@UseNameKey{ViewClip}\@pdfviewclip
9168   \Hy@UseNameKey{PrintArea}\@pdfprintarea
9169   \Hy@UseNameKey{PrintClip}\@pdfprintclip
9170   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9171   \Hy@UseNameKey{Duplex}\@pdfduplex
9172   \ifx\@pdfpicktraybypdfsize\@empty
9173   \else
9174     /PickTrayByPDFSize \@pdfpicktraybypdfsize
9175   \fi
9176   \ifx\@pdfprintpagerange\@empty
9177   \else
9178     /PrintPageRange[\@pdfprintpagerange]%
9179   \fi
9180   \ifx\@pdfnumcopies\@empty
9181   \else
9182     /NumCopies \@pdfnumcopies
9183   \fi
9184 }%
9185 \pdfcatalog{%
9186   \ifx\Hy@temp\@empty
9187   \else
9188     /ViewerPreferences<<\Hy@temp>>%
9189   \fi
9190   \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9191   \ifx\@pdflang\relax
9192   \else
9193     /Lang(\@pdflang)%
9194   \fi
9195 }%

```

9196 }

\PDF@FinishDoc

```
9197 \def\PDF@FinishDoc{%
9198   \pdf@ifdraftmode{}{%
9199     \Hy@UseMaketitleInfos
9200     \HyInfo@GenerateAddons
9201     \pdfinfo{%
9202       /Author(\@pdfauthor)%
9203       /Title(\@pdftitle)%
9204       /Subject(\@pdfsubject)%
9205       /Creator(\@pdfcreator)%
9206       \ifx\@pdfcreationdate\@empty
9207       \else
9208         /CreationDate(\@pdfcreationdate)%
9209       \fi
9210       \ifx\@pdfmoddate\@empty
9211       \else
9212         /ModDate(\@pdfmoddate)%
9213       \fi
9214       \ifx\@pdfproducer\relax
9215       \else
9216         /Producer(\@pdfproducer)%
9217       \fi
9218       /Keywords(\@pdfkeywords)%
9219       \ifx\@pdftrapped\@empty
9220       \else
9221         /Trapped/\@pdftrapped
9222       \fi
9223       \HyInfo@Addons
9224     }%
9225   }%
9226   \Hy@DisableOption{pdfauthor}%
9227   \Hy@DisableOption{pdftitle}%
9228   \Hy@DisableOption{pdfsubject}%
9229   \Hy@DisableOption{pdfcreator}%
9230   \Hy@DisableOption{addtopdfcreator}%
9231   \Hy@DisableOption{pdfcreationdate}%
9232   \Hy@DisableOption{pdfmoddate}%
9233   \Hy@DisableOption{pdfproducer}%
9234   \Hy@DisableOption{pdfkeywords}%
9235   \Hy@DisableOption{pdftrapped}%
9236   \Hy@DisableOption{pdfinfo}%
9237 }
```

\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.

```
9238 \def\hyper@pagetransition{%
9239   \ifx\@pdfpagetransition\relax
9240   \else
9241     \expandafter\Hy@RemoveTransPageAttr
9242     \the\pdfpageattr^^J/Trans{>>\END
9243     \ifx\@pdfpagetransition\@empty
```

```

9244 \else
9245 \edef\@processme{%
9246 \global\pdfpageattr{%
9247 \the\pdfpageattr
9248 ^^J/Trans << /S /\@pdfpagetransition\space >>%
9249 }%
9250 }%
9251 \@processme
9252 \fi
9253 \fi
9254 }

```

`\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.

```

9255 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
9256 \ifx\#2\%
9257 \global\pdfpageattr{#1}%
9258 \else
9259 \Hy@RemoveTransPageAttr#1#4\END
9260 \fi
9261 }

```

`\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`.

```

9262 \def\hyper@pageduration{%
9263 \ifx\@pdfpageduration\relax
9264 \else
9265 \expandafter
9266 \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
9267 \ifx\@pdfpageduration\@empty
9268 \else
9269 \edef\@processme{%
9270 \global\pdfpageattr{%
9271 \the\pdfpageattr
9272 ^^J/Dur \@pdfpageduration\space
9273 }%
9274 }%
9275 \@processme
9276 \fi
9277 \fi
9278 }

```

`\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.

```

9279 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
9280 \ifx\#2\%
9281 \global\pdfpageattr{#1}%

```

```

9282 \else
9283 \Hy@RemoveDurPageAttr#1#4\END
9284 \fi
9285 }

9286 \pdf@ifdraftmode{}{%
9287 \g@addto@macro\Hy@EveryPageHook{%
9288 \hyper@pagetransition
9289 \hyper@pageduration
9290 }%
9291 }

```

Also XeTeX support `\pdfpagewidth` and `\pdfpageheight`, but it does not provide `\pdfhorigin` and `\pdfvorigin`.

```

9292 </pdftex>
9293 <*pdftex|xetex>
9294 \Hy@AtBeginDocument{%
9295 \ifHy@setpagesize
9296 \expandafter\@firstofone
9297 \else
9298 \expandafter\@gobble
9299 \fi
9300 {%
9301 \@ifclassloaded{seminar}{%
9302 *pdftex}
9303 \setlength{\pdfhorigin}{1truein}%
9304 \setlength{\pdfvorigin}{1truein}%
9305 </pdftex>
9306 \ifportrait
9307 \ifdim\paperwidth=\z@
9308 \else
9309 \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9310 \fi
9311 \ifdim\paperheight=\z@
9312 \else
9313 \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9314 \fi
9315 \else
9316 \ifdim\paperheight=\z@
9317 \else
9318 \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9319 \fi
9320 \ifdim\paperwidth=\z@
9321 \else
9322 \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9323 \fi
9324 \fi
9325 }{%
9326 \ifnum\mag=\@m
9327 \ifdim\stockwidth>\z@
9328 \ifdim\stockheight>\z@
9329 \setlength{\pdfpagewidth}{\stockwidth}%
9330 \setlength{\pdfpageheight}{\stockheight}%
9331 \else
9332 \ifdim\paperwidth>\z@

```



```

9333         \ifdim\paperheight>\z@
9334         \setlength{\pdfpagewidth}{\paperwidth}%
9335         \setlength{\pdfpageheight}{\paperheight}%
9336     \fi
9337 \fi
9338 \fi
9339 \else
9340     \ifdim\stockwidth=\z@
9341     \ifdim\paperwidth>\z@
9342     \ifdim\paperheight>\z@
9343         \setlength{\pdfpagewidth}{\paperwidth}%
9344         \setlength{\pdfpageheight}{\paperheight}%
9345     \fi
9346 \fi
9347 \fi
9348 \fi
9349 \fi
9350 }%
9351 }%
9352 \Hy@DisableOption{setpagesize}%
9353 }
9354 </pdfTeX | xetex>
9355 <*pdfTeX>
9356 \def\Acrobatmenu#1#2{%
9357     \Hy@Acrobatmenu{#1}{#2}{%
9358         \leavevmode
9359         \EdefEscapeName\Hy@temp@menu{#1}%
9360         \pdfstartlink
9361         attr{%
9362             \Hy@setpdfborder
9363             \Hy@setpdfhighlight
9364             \ifx\@menubordercolor\relax
9365             \else
9366                 /C[\@menubordercolor]%
9367             \fi
9368         }%
9369         user{%
9370             /Subtype/Link%
9371             \ifHy@pdfa /F 4\fi
9372             /A<<%
9373             /S/Named%
9374             /N/\Hy@temp@menu
9375             \Hy@href@nextactionraw
9376             >>%
9377         }%
9378         \relax
9379         \Hy@colorlink\@menucolor#2%
9380         \close@pdflink
9381     }%
9382 }
9383 </pdfTeX>

```

44.3 hypertex

The HyperTeX specification (this is borrowed from an article by Arthur Smith) says that conformant viewers/translators must recognize the following set of \special commands:

href: html:

name: html:

end: html:

image: html:

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.

```
9384 (*hypertex)
9385 \providecommand*\XR@ext}{dvi}
9386 \let\PDF@FinishDoc\@empty
9387 \def\PDF@SetupDoc{%
9388   \ifx\@baseurl\@empty
9389   \else
9390     \special{html:<base href="\@baseurl">}%
9391   \fi
9392 }
9393 \Hy@WrapperDef\hyper@anchor#1{%
9394   \Hy@SaveLastskip
9395   \Hy@VerboseAnchor{#1}%
9396   \begingroup
9397     \let\protect=\string
9398     \hyper@chars
9399     \special{html:<a name=%
9400       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9401   \endgroup
9402   \Hy@activeanchortrue
9403   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
```

```

9404 \special{html:</a>}%
9405 \Hy@activeanchorfalse
9406 \Hy@RestoreLastskip
9407 }
9408 \Hy@WrapperDef\hyper@anchorstart#1{%
9409 \Hy@SaveLastskip
9410 \Hy@VerboseAnchor{#1}%
9411 \begingroup
9412 \hyper@chars
9413 \special{html:<a name=%
9414 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9415 \endgroup
9416 \Hy@activeanchortrue
9417 }
9418 \def\hyper@anchorend{%
9419 \special{html:</a>}%
9420 \Hy@activeanchorfalse
9421 \Hy@RestoreLastskip
9422 }
9423 \def\@urlltype{url}
9424 \def\hyper@linkstart#1#2{%
9425 \Hy@VerboseLinkStart{#1}{#2}%
9426 \expandafter\Hy@colorlink\csname @#1color\endcsname
9427 \def\Hy@tempa{#1}%
9428 \ifx\Hy@tempa\@urlltype
9429 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9430 \else
9431 \begingroup
9432 \hyper@chars
9433 \special{html:<a href=%
9434 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
9435 \endgroup
9436 \fi
9437 }
9438 \def\hyper@linkend{%
9439 \special{html:</a>}%
9440 \Hy@endcolorlink
9441 }
9442 \def\hyper@linkfile#1#2#3{%
9443 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\#3\fi}%
9444 }
9445 \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^AT_EX constructs make this totally foul up, and make us revert to basic T_EX. I do not know.

```

9446 \leavevmode
9447 \ifHy@raiselinks
9448 \Hy@SaveSpaceFactor
9449 \Hy@SaveSavedSpaceFactor
9450 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9451 \Hy@RestoreSavedSpaceFactor
9452 \@linkdim\dp\@tempboxa
9453 \lower\@linkdim\hbox{%

```

```

9454 \hyper@chars
9455 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9456 }%
9457 \Hy@colorlink\@urlcolor
9458 \Hy@RestoreSpaceFactor
9459 #1%
9460 \Hy@SaveSpaceFactor
9461 \@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).

```

9462 \advance\@linkdim by -6.5\p@
9463 \raise\@linkdim\hbox{\special{html:</a>}}%
9464 \Hy@endcolorlink
9465 \Hy@RestoreSpaceFactor
9466 \else
9467 \begingroup
9468 \hyper@chars
9469 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9470 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9471 \special{html:</a>}}%
9472 \Hy@endcolorlink
9473 \endgroup
9474 \fi
9475 }

```

Very poor implementation of `\hyper@link` without considering `#1`.

```

9476 \def\hyper@link#1#2#3{%
9477 \Hy@VerboseLinkStart{#1}{#2}%
9478 \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
9479 }

9480 \def\hyper@image#1#2{%
9481 \begingroup
9482 \hyper@chars
9483 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9484 \endgroup
9485 }
9486 </hypertex>
9487 <*\dviwindo>

```

44.4 dviwindo

[This was developed by David Carlisle]. Within a file `dviwindo` hyperlinking is used, for external URL's a call to `\wwwbrowser` is made. (You can define this command before or after loading the `hyperref` package if the default `c:/netscape/netscape` is not suitable) `Dviwindo` could in fact handle external links to dvi files on the same machine without calling a web browser, but that would mean parsing the URL to recognise such, and this is currently not done.

This was more or less blindly copied from the `hypertex` cfg. For `dviwindo`, \LaTeX 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.

```

9488 \providecommand*\XR@ext}{dvi}
9489 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9490 \Hy@WrapperDef\hyper@anchor#1{%
9491   \Hy@SaveLastskip
9492   \Hy@VerboseAnchor{#1}%
9493   \begingroup
9494     \let\protect=\string
9495     \special{mark: #1}%
9496   \endgroup
9497   \Hy@activeanchortrue
9498   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9499   \Hy@activeanchorfalse
9500   \Hy@RestoreLastskip
9501 }
9502 \Hy@WrapperDef\hyper@anchorstart#1{%
9503   \Hy@SaveLastskip
9504   \Hy@VerboseAnchor{#1}%
9505   \special{mark: #1}%
9506   \Hy@activeanchortrue
9507 }
9508 \def\hyper@anchorend{%
9509   \Hy@activeanchorfalse
9510   \Hy@RestoreLastskip
9511 }
9512 \def\hyper@linkstart#1#2{%
9513   \Hy@VerboseLinkStart{#1}{#2}%
9514   \expandafter\Hy@colorlink\csname @#1color\endcsname
9515   \special{button: %
9516     10000000 %
9517     \number\baselineskip\space
9518     #2%
9519   }%
9520 }
9521 \def\hyper@linkend{%
9522   \Hy@endcolorlink
9523 }
9524 \def\hyper@link#1#2#3{%
9525   \Hy@VerboseLinkStart{#1}{#2}%
9526   \leavevmode
9527   \ifHy@raiselinks
9528     \Hy@SaveSpaceFactor
9529     \Hy@SaveSavedSpaceFactor
9530     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9531     \Hy@RestoreSavedSpaceFactor
9532     \@linkdim\dp\@tempboxa
9533     \lower\@linkdim\hbox{%
9534       \special{button: %
9535         \number\wd\@tempboxa\space
9536         \number\ht\@tempboxa\space
9537         #2%
9538       }%
9539     \expandafter\Hy@colorlink\csname @#1color\endcsname

```

```

9540 \Hy@RestoreSpaceFactor
9541 #3\Hy@xspace@end
9542 \Hy@SaveSpaceFactor
9543 \Hy@endcolorlink
9544 }%
9545 \@linkdim\ht\@tempboxa
9546 \advance\@linkdim by -6.5\p@
9547 \raise\@linkdim\hbox{}%
9548 \Hy@RestoreSpaceFactor
9549 \else
9550 \special{button: %
9551 \number\wd\@tempboxa\space
9552 \number\ht\@tempboxa\space
9553 #2%
9554 }%
9555 \expandafter\Hy@colorlink\csname @#1color\endcsname
9556 #3\Hy@xspace@end
9557 \Hy@endcolorlink
9558 \fi
9559 }
9560 \def\hyper@linkurl#1#2{%
9561 \begingroup
9562 \hyper@chars
9563 \leavevmode
9564 \ifHy@raiselinks
9565 \Hy@SaveSpaceFactor
9566 \Hy@SaveSavedSpaceFactor
9567 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9568 \Hy@RestoreSavedSpaceFactor
9569 \@linkdim\dp\@tempboxa
9570 \lower\@linkdim\hbox{%
9571 \special{button: %
9572 \number\wd\@tempboxa\space
9573 \number\ht\@tempboxa\space
9574 launch: \wwwbrowser\space
9575 #2%
9576 }%
9577 \Hy@colorlink\@urlcolor
9578 \Hy@RestoreSpaceFactor
9579 #1\Hy@xspace@end
9580 \Hy@SaveSpaceFactor
9581 \Hy@endcolorlink
9582 }%
9583 \@linkdim\ht\@tempboxa
9584 \advance\@linkdim by -6.5\p@
9585 \raise\@linkdim\hbox{}%
9586 \Hy@RestoreSpaceFactor
9587 \else
9588 \special{button: %
9589 \number\wd\@tempboxa\space
9590 \number\ht\@tempboxa\space
9591 launch: \wwwbrowser\space
9592 #2%
9593 }%

```

```

9594 \Hy@colorlink\@urlcolor
9595 #1\Hy@xspace@end
9596 \Hy@endcolorlink
9597 \fi
9598 \endgroup
9599 }
9600 \def\hyper@linkfile#1#2#3{%
9601 \begingroup
9602 \hyper@chars
9603 \leavevmode
9604 \ifHy@raiselinks
9605 \Hy@SaveSpaceFactor
9606 \Hy@SaveSavedSpaceFactor
9607 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9608 \Hy@RestoreSavedSpaceFactor
9609 \@linkdim\dp\@tempboxa
9610 \lower\@linkdim\hbox{%
9611 \special{button: %
9612 \number\wd\@tempboxa\space
9613 \number\ht\@tempboxa\space
9614 #3,%
9615 file: #2%
9616 }%
9617 \Hy@colorlink\@filecolor
9618 \Hy@RestoreSpaceFactor
9619 #1\Hy@xspace@end
9620 \Hy@SaveSpaceFactor
9621 \Hy@endcolorlink
9622 }%
9623 \@linkdim\ht\@tempboxa
9624 \advance\@linkdim by -6.5\p@
9625 \raise\@linkdim\hbox{}%
9626 \Hy@RestoreSpaceFactor
9627 \else
9628 \special{button: %
9629 \number\wd\@tempboxa\space
9630 \number\ht\@tempboxa\space
9631 #3,%
9632 file: #2%
9633 }%
9634 \Hy@colorlink\@filecolor
9635 #1\Hy@xspace@end
9636 \Hy@endcolorlink
9637 \fi
9638 \endgroup
9639 }
9640 \HyInfo@AddonUnsupportedtrue
9641 \def\PDF@FinishDoc{%
9642 \Hy@UseMaketitleInfos
9643 \HyInfo@TrappedUnsupported
9644 \special{PDF: Keywords \@pdfkeywords}%
9645 \special{PDF: Title \@pdftitle}%
9646 \special{PDF: Creator \@pdfcreator}%
9647 \ifx\@pdfcreationdate\@empty

```

```

9648 \else
9649 \special{PDF: CreationDate \@pdfcreationdate}%
9650 \fi
9651 \ifx\@pdfmoddate\@empty
9652 \else
9653 \special{PDF: ModDate \@pdfmoddate}%
9654 \fi
9655 \special{PDF: Author \@pdfauthor}%
9656 \ifx\@pdfproducer\relax
9657 \else
9658 \special{PDF: Producer \@pdfproducer}%
9659 \fi
9660 \special{PDF: Subject \@pdfsubject}%
9661 \Hy@DisableOption{pdfauthor}%
9662 \Hy@DisableOption{pdftitle}%
9663 \Hy@DisableOption{pdfsubject}%
9664 \Hy@DisableOption{pdfcreator}%
9665 \Hy@DisableOption{addtopdfcreator}%
9666 \Hy@DisableOption{pdfcreationdate}%
9667 \Hy@DisableOption{pdfcreationdate}%
9668 \Hy@DisableOption{pdfmoddate}%
9669 \Hy@DisableOption{pdfproducer}%
9670 \Hy@DisableOption{pdfkeywords}%
9671 \Hy@DisableOption{pdftrapped}%
9672 \Hy@DisableOption{pdfinfo}%
9673 }
9674 \def\PDF@SetupDoc{%
9675 \ifx\@baseurl\@empty
9676 \else
9677 \special{PDF: Base \@baseurl}%
9678 \fi
9679 \ifx\@pdfpagescrop\@empty\else
9680 \special{PDF: BBox \@pdfpagescrop}%
9681 \fi
9682 \def\Hy@temp{}%
9683 \ifx\@pdfstartpage\@empty
9684 \else
9685 \ifx\@pdfstartview\@empty
9686 \else
9687 \edef\Hy@temp{%
9688 ,Page=\@pdfstartpage
9689 ,View=\@pdfstartview
9690 }%
9691 \fi
9692 \fi
9693 \edef\Hy@temp{%
9694 \noexpand\pdfmark{%
9695 pdfmark=/DOCVIEW,%
9696 PageMode=/\@pdfpagemode
9697 \Hy@temp
9698 }%
9699 }%
9700 \Hy@temp
9701 \ifx\@pdfpagescrop\@empty

```



```

9702 \else
9703   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9704 \fi
9705 \edef\Hy@temp{%
9706   \ifHy@pdftoolbar\else /HideToolbar true\fi
9707   \ifHy@pdfmenubar\else /HideMenubar true\fi
9708   \ifHy@pdfwindowui\else /HideWindowUI true\fi
9709   \ifHy@pdfwindow /FitWindow true\fi
9710   \ifHy@pdfcenterwindow /CenterWindow true\fi
9711   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9712   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9713   \Hy@UseNameKey{Direction}\@pdfdirection
9714   \Hy@UseNameKey{ViewArea}\@pdfviewarea
9715   \Hy@UseNameKey{ViewClip}\@pdfviewclip
9716   \Hy@UseNameKey{PrintArea}\@pdfprintarea
9717   \Hy@UseNameKey{PrintClip}\@pdfprintclip
9718   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9719   \Hy@UseNameKey{Duplex}\@pdfduplex
9720   \ifx\@pdfpicktraybypdfsize\@empty
9721     \else
9722       /PickTrayByPDFSize \@pdfpicktraybypdfsize
9723     \fi
9724   \ifx\@pdfprintpagerange\@empty
9725     \else
9726       /PrintPageRange[\@pdfprintpagerange]%
9727     \fi
9728   \ifx\@pdfnumcopies\@empty
9729     \else
9730       /NumCopies \@pdfnumcopies
9731     \fi
9732 }%
9733 \pdfmark{pdfmark=/PUT,%
9734   Raw={%
9735     \string{Catalog\string}<<%
9736     \ifx\Hy@temp\@empty
9737       \else
9738         /ViewerPreferences<<\Hy@temp>>%
9739       \fi
9740     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9741     \ifx\@pdflang\relax
9742       \else
9743         /Lang(\@pdflang)%
9744       \fi
9745     >>%
9746   }%
9747 }%
9748 }
9749 </dviwindo>
9750 <*\dviPDFm | xetex>

```

44.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

(x)dvipdfmx replaces destination names by numbers. This makes it impossible

to link from an external document with xr-hyper, so from version 7.00j on this is suppressed with a config special.

```

9751 \special{dvipdfmx:config C 0x0010}
9752 \providecommand*\XR@ext>{pdf}
9753 \Hy@setbreaklinks{true}
9754 \def\HyPat@ObjRef{%
9755   @[^ ]+%
9756 }
9757 \newsavebox{\pdfm@box}
9758 \def\@pdfm@mark#1{\special{pdf:#1}}
9759 \Hy@WrapperDef\@pdfm@dest#1{%
9760   \Hy@SaveLastskip
9761   \Hy@VerboseAnchor{#1}%
9762   \begingroup
9763     \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9764     \def\x{XYZ}%
9765     \ifx\x\@pdfview
9766       \def\x{XYZ @xpos @ypos null}%
9767     \else
9768       \def\x{FitH}%
9769       \ifx\x\@pdfview
9770         \def\x{FitH @ypos}%
9771       \else
9772         \def\x{FitBH}%
9773         \ifx\x\@pdfview
9774           \def\x{FitBH @ypos}%
9775         \else
9776           \def\x{FitV}%
9777           \ifx\x\@pdfview
9778             \def\x{FitV @xpos}%
9779           \else
9780             \def\x{FitBV}%
9781             \ifx\x\@pdfview
9782               \def\x{FitBV @xpos}%
9783             \else
9784               \def\x{Fit}%
9785               \ifx\x\@pdfview
9786                 \let\x\@pdfview
9787             \else
9788               \def\x{FitB}%
9789               \ifx\x\@pdfview
9790                 \let\x\@pdfview
9791             \else
9792               \def\x{FitR}%
9793               \ifx\x\@pdfview
9794                 \Hy@Warning{'pdfview=FitR' is not supported}%
9795                 \def\x{XYZ @xpos @ypos null}%
9796             \else
9797               \@onelevel@sanitize\@pdfview
9798               \Hy@Warning{%
9799                 Unknown value '\@pdfview' for pdfview%
9800               }%
9801             \def\x{XYZ @xpos @ypos null}%
9802           \fi

```

```

9803         \fi
9804     \fi
9805 \fi
9806 \fi
9807 \fi
9808 \fi
9809 \fi
9810 \pdfmark{dest (\Hy@pstringDest) [@thispage /\x]}%
9811 \endgroup
9812 \Hy@RestoreLastskip
9813 }
9814 \providecommand*\pdfview{XYZ}
9815 \providecommand*\pdfborder{0 0 1}
9816 \providecommand*\pdfborderstyle{}
9817 \def\hyper@anchor#1{%
9818     \pdfmark{dest{#1}}%
9819 }
9820 \def\hyper@anchorstart#1{%
9821     \Hy@activeanchortrue
9822     \pdfmark{dest{#1}}%
9823 }
9824 \def\hyper@anchorend{%
9825     \Hy@activeanchorfalse
9826 }
9827 \newcounter{Hy@AnnotLevel}
9828 \ifHy@ocgcolorlinks
9829     \def\OBJ@OCG@view{@OCG@view}%
9830     \pdfmark{%
9831         obj \OBJ@OCG@view <<%
9832         /Type/OCG%
9833         /Name(View)%
9834         /Usage<<%
9835         /Print<<%
9836         /PrintState/OFF%
9837         >>%
9838         /View<<%
9839         /ViewState/ON%
9840         >>%
9841         >>%
9842         >>%
9843     }%
9844     \pdfmark{close \OBJ@OCG@view}%
9845     \def\OBJ@OCG@print{@OCG@print}%
9846     \pdfmark{%
9847         obj \OBJ@OCG@print <<%
9848         /Type/OCG%
9849         /Name(Print)%
9850         /Usage<<%
9851         /Print<<%
9852         /PrintState/ON%
9853         >>%
9854         /View<<%
9855         /ViewState/OFF%

```

```

9856     >>%
9857     >>%
9858     >>%
9859 }%
9860 \@pdfm@mark{close \OBJ@OCG@print}%
9861 \def\OBJ@OCGs{@OCGs}%
9862 \@pdfm@mark{%
9863   obj \OBJ@OCGs [%
9864     \OBJ@OCG@view\space\OBJ@OCG@print
9865   ]%
9866 }%
9867 \@pdfm@mark{close \OBJ@OCGs}%
9868 \@pdfm@mark{%
9869   put @catalog <<%
9870     /OCProperties<<%
9871     /OCGs \OBJ@OCGs
9872     /D<<%
9873     /OFF[\OBJ@OCG@print]%
9874     /AS[%
9875       <<%
9876         /Event/View%
9877         /OCGs \OBJ@OCGs
9878         /Category[/View]%
9879       >>%
9880       <<%
9881         /Event/Print%
9882         /OCGs \OBJ@OCGs
9883         /Category[/Print]%
9884       >>%
9885       <<%
9886         /Event/Export%
9887         /OCGs \OBJ@OCGs
9888         /Category[/Print]%
9889       >>%
9890     ]%
9891   >>%
9892   >>%
9893   >>%
9894 }%
9895 \AddToHook{shipout/before}{%
9896   \setbox\ShipoutBox=\hbox{%
9897     \copy\ShipoutBox
9898     \@pdfm@mark{%
9899       put @resources <<%
9900         /Properties<<%
9901         /OCView \OBJ@OCG@view
9902         /OCPrint \OBJ@OCG@print
9903       >>%
9904       >>%
9905     }%
9906   }%
9907 }%
9908 \Hy@AtBeginDocument{%
9909   \def\Hy@colorlink#1{%

```

```

9910 \begingroup
9911 \ifHy@ocgcolorlinks
9912 \def\Hy@ocgcolor{#1}%
9913 \setbox0=\hbox\bgroup\color@begingroup
9914 \else
9915 \HyColor@UseColor#1%
9916 \fi
9917 }%
9918 \def\Hy@endcolorlink{%
9919 \ifHy@ocgcolorlinks
9920 \color@endgroup\egroup
9921 \mbox{%
9922 \@pdfm@mark{content /OC/OCPrint BDC}%
9923 \rlap{\copy0}%
9924 \@pdfm@mark{content EMC/OC/OCView BDC}%
9925 \begingroup
9926 \expandafter\HyColor@UseColor\Hy@ocgcolor
9927 \box0 %
9928 \endgroup
9929 \@pdfm@mark{content EMC}%
9930 }%
9931 \fi
9932 \endgroup
9933 }%
9934 }%
9935 \else
9936 \Hy@DisableOption{ocgcolorlinks}%
9937 \fi

```

Use primitive counter arithmetic here to avoid amsmath redefining `\stepcounter` (github issue/13)

```

9938 \def\Hy@BeginAnnot#1{%
9939 \global\advance\c@Hy@AnnotLevel\@ne
9940 \ifnum\c@Hy@AnnotLevel=\@ne
9941 #1%
9942 \fi
9943 }
9944 \def\Hy@endAnnot{%
9945 \ifnum\value{Hy@AnnotLevel}=\@ne
9946 \Hy@endcolorlink
9947 \@pdfm@mark{eann}%
9948 \fi
9949 \global\advance\c@Hy@AnnotLevel\m@ne
9950 }

9951 \def\Hy@undefinedname{UNDEFINED}
9952 \def\hyper@linkstart#1#2{%
9953 \Hy@VerboseLinkStart{#1}{#2}%
9954 \leavevmode
9955 \Hy@BeginAnnot{%
9956 \protected@edef\Hy@testname{#2}%
9957 \ifx\Hy@testname\@empty
9958 \Hy@Warning{%
9959 Empty destination name,\MessageBreak
9960 using ``\Hy@undefinedname'%

```

```

9961 }%
9962 \let\Hy@testname\Hy@undefinedname
9963 \else
9964 \Hy@pstringdef\Hy@testname{%
9965 \expandafter\HyperDestNameFilter\expandafter{%
9966 \Hy@testname
9967 }%
9968 }%
9969 \fi
9970 \@pdfm@mark{%
9971 bann<<%
9972 /Type/Annot%
9973 /Subtype/Link%
9974 \ifHy@pdfa /F 4\fi
9975 \Hy@setpdfborder
9976 \Hy@setpdfhighlight
9977 \expandafter\ifx\csname @#1bordercolor\endcsname\relax
9978 \else
9979 /C[\csname @#1bordercolor\endcsname]%
9980 \fi
9981 /A<<%
9982 /S/GoTo%
9983 /D(\Hy@testname)%
9984 \Hy@href@nextactionraw
9985 >>%
9986 >>%
9987 }%
9988 \expandafter\Hy@colorlink\csname @#1color\endcsname
9989 }%
9990 }
9991 \def\hyper@linkend{\Hy@EndAnnot}%
9992 \def\hyper@link#1#2#3{%
9993 \hyper@linkstart{#1}{#2}#3\Hy@xspace@end\hyper@linkend
9994 }

```

2025-05-20 added a group for issue #380

```

9995 \def\hyper@linkfile#1#2#3{%
9996 \leavevmode
9997 \begingroup
9998 \Hy@BeginAnnot{%
9999 \def\Hy@pstringF{#2}%
10000 \Hy@CleanupFile\Hy@pstringF
10001 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
10002 \Hy@pstringdef\Hy@pstringD{#3}%
10003 \Hy@MakeRemoteAction
10004 \@pdfm@mark{%
10005 bann<<%
10006 /Type/Annot%
10007 /Subtype/Link%
10008 \ifHy@pdfa /F 4\fi
10009 \Hy@setpdfborder
10010 \Hy@setpdfhighlight
10011 \ifx\@filebordercolor\relax
10012 \else

```

```

10013      /C[\@filebordercolor]%
10014      \fi
10015      /A<<%
10016      /S/GoToR%
10017      /F(\Hy@pstringF)%
10018      /D%
10019      \ifx\#3\%
10020      [\Hy@href@page\@pdfremotestartview]%
10021      \else
10022      (\Hy@pstringD)%
10023      \fi
10024      \Hy@SetNewWindow
10025      \Hy@href@nextactionraw
10026      >>%
10027      >>%
10028      }%
10029      \Hy@colorlink\@filecolor
10030      }%
10031      #1\Hy@xspace@end
10032      \Hy@endAnnot
10033      \endgroup
10034      }
10035      \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
10036      \leavevmode
10037      \Hy@BeginAnnot{%
10038      \Hy@pstringdef\Hy@pstringF{#1}%
10039      \Hy@pstringdef\Hy@pstringP{#3}%
10040      \@pdfm@mark{%
10041      bann<<%
10042      /Type/Annot%
10043      /Subtype/Link%
10044      \ifHy@pdfa /F 4\fi
10045      \Hy@setpdfborder
10046      \Hy@setpdfhighlight
10047      \ifx\@runbordercolor\relax
10048      \else
10049      /C[\@runbordercolor]%
10050      \fi
10051      /A<<%
10052      /F(\Hy@pstringF)%
10053      /S/Launch%
10054      \Hy@SetNewWindow
10055      \ifx\#3\%
10056      \else
10057      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
10058      \fi
10059      \Hy@href@nextactionraw
10060      >>%
10061      >>%
10062      }%
10063      \Hy@colorlink\@runcolor
10064      }%
10065      #2\Hy@xspace@end
10066      \Hy@endAnnot

```

```

10067 }
10068 \def\hyper@linkurl#1#2{%
10069 \leavevmode
10070 \Hy@BeginAnnot{%
10071 \Hy@pstringdef\Hy@pstringURI{#2}%
10072 \@pdfm@mark{%
10073 bann<<%
10074 /Type/Annot%
10075 /Subtype/Link%
10076 \ifHy@pdfa /F 4\fi
10077 \Hy@setpdfborder
10078 \Hy@setpdfhighlight
10079 \ifx\@urlbordercolor\relax
10080 \else
10081 /C[\@urlbordercolor]%
10082 \fi
10083 /A<<%
10084 /S/URI%
10085 /URI(\Hy@pstringURI)%
10086 \ifHy@href@ismap
10087 /IsMap true%
10088 \fi
10089 \Hy@href@nextactionraw
10090 >>%
10091 >>%
10092 }%
10093 \Hy@colorlink\@urlcolor
10094 }%
10095 #1\Hy@xspace@end
10096 \Hy@endAnnot
10097 }
10098 \def\Acrobatmenu#1#2{%
10099 \Hy@Acrobatmenu{#1}{#2}{%
10100 \Hy@BeginAnnot{%
10101 \EdefEscapeName\Hy@temp@menu{#1}%
10102 \@pdfm@mark{%
10103 bann<<%
10104 /Type/Annot%
10105 /Subtype/Link%
10106 \ifHy@pdfa /F 4\fi
10107 \Hy@setpdfborder
10108 \Hy@setpdfhighlight
10109 \ifx\@menubordercolor\relax
10110 \else
10111 /C[\@menubordercolor]%
10112 \fi
10113 /A<<%
10114 /S/Named%
10115 /N/\Hy@temp@menu
10116 \Hy@href@nextactionraw
10117 >>%
10118 >>%
10119 }%
10120 \Hy@colorlink\@menucolor

```



```

10121 }%
10122 #2\Hy@xspace@end
10123 \Hy@EndAnnot
10124 }%
10125 }
10126
10127 \def\PDF@FinishDoc{%
10128 \Hy@UseMaketitleInfos
10129 \HyInfo@GenerateAddons
10130 \@pdfm@mark{%
10131 docinfo<<%
10132 /Title(\@pdftitle)%
10133 /Subject(\@pdfsubject)%
10134 /Creator(\@pdfcreator)%
10135 \ifx\@pdfcreationdate\@empty
10136 \else
10137 /CreationDate(\@pdfcreationdate)%
10138 \fi
10139 \ifx\@pdfmoddate\@empty
10140 \else
10141 /ModDate(\@pdfmoddate)%
10142 \fi
10143 /Author(\@pdfauthor)%
10144 \ifx\@pdfproducer\relax
10145 \else
10146 /Producer(\@pdfproducer)%
10147 \fi
10148 /Keywords(\@pdfkeywords)%
10149 \ifx\@pdftrapped\@empty
10150 \else
10151 /Trapped/\@pdftrapped
10152 \fi
10153 \HyInfo@Addons
10154 >>%
10155 }%
10156 \Hy@DisableOption{pdfauthor}%
10157 \Hy@DisableOption{pdftitle}%
10158 \Hy@DisableOption{pdfsubject}%
10159 \Hy@DisableOption{pdfcreator}%
10160 \Hy@DisableOption{addtopdfcreator}%
10161 \Hy@DisableOption{pdfcreationdate}%
10162 \Hy@DisableOption{pdfcreationdate}%
10163 \Hy@DisableOption{pdfmoddate}%
10164 \Hy@DisableOption{pdfproducer}%
10165 \Hy@DisableOption{pdfkeywords}%
10166 \Hy@DisableOption{pdftrapped}%
10167 \Hy@DisableOption{pdfinfo}%
10168 }
10169 \def\PDF@SetupDoc{%
10170 \edef\Hy@temp{%
10171 \ifHy@pdftoolbar\else /HideToolbar true\fi
10172 \ifHy@pdfmenubar\else /HideMenubar true\fi
10173 \ifHy@pdfwindowui\else /HideWindowUI true\fi
10174 \ifHy@pdfwindow /FitWindow true\fi

```

```

10175 \ifHy@pdfcenterwindow /CenterWindow true\fi
10176 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10177 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10178 \Hy@UseNameKey{Direction}\@pdfdirection
10179 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10180 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10181 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10182 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10183 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10184 \Hy@UseNameKey{Duplex}\@pdfduplex
10185 \ifx\@pdfpicktraybypdfsize\@empty
10186 \else
10187 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10188 \fi
10189 \ifx\@pdfprintpagerange\@empty
10190 \else
10191 /PrintPageRange[\@pdfprintpagerange]%
10192 \fi
10193 \ifx\@pdfnumcopies\@empty
10194 \else
10195 /NumCopies \@pdfnumcopies
10196 \fi
10197 }%
10198 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10199 \@pdfm@mark{%
10200 docview<<%
10201 \ifx\@pdfstartpage\@empty
10202 \else
10203 \ifx\@pdfstartview\@empty
10204 \else
10205 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
10206 \fi
10207 \fi
10208 \ifx\@baseurl\@empty
10209 \else
10210 /URI<</Base(\Hy@pstringB)>>%
10211 \fi
10212 /PageMode/\@pdfpagemode
10213 \ifx\Hy@temp\@empty
10214 \else
10215 /ViewerPreferences<<\Hy@temp>>%
10216 \fi
10217 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10218 \ifx\@pdflang\relax
10219 \else
10220 /Lang(\@pdflang)%
10221 \fi
10222 >>%
10223 }%
10224 \ifx\@pdfpagescrop\@empty
10225 \else
10226 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
10227 \fi
10228 }

```

```
10229 </dvipdfm | xetex>
```

```
10230 < *dvipdfm | xetex>
```

```
\hyper@pagetransition
```

```
10231 \def\hyper@pagetransition{%
10232   \ifx\@pdfpagetransition\relax
10233   \else
10234     \ifx\@pdfpagetransition\@empty
10235     \else
10236       \special{pdf:put @thispage %
10237         <</Trans<</S/\@pdfpagetransition>>>>%
10238       }%
10239     \fi
10240   \fi
10241 }
```

```
\hyper@pageduration
```

```
10242 \def\hyper@pageduration{%
10243   \ifx\@pdfpageduration\relax
10244   \else
10245     \ifx\@pdfpageduration\@empty
10246     \else
10247       \special{pdf:put @thispage %
10248         <</Dur \@pdfpageduration>>>%
10249       }%
10250     \fi
10251   \fi
10252 }
```

```
10253 \g@addto@macro\Hy@EveryPageBoxHook{%
10254   \hyper@pagetransition
10255   \hyper@pageduration
10256 }
```

```
10257 </dvipdfm | xetex>
```

XeTeX uses pdfTeX's method `\pdfpagewidth` and `\pdfpageheight` for setting the paper size.

```
10258 < *dvipdfm>
10259 \AddToHook{shipout/firstpage}{%
10260   \ifHy@setpagesize
10261     \begingroup
10262     \ifnum\mag=\@m
10263       \ifdim\stockwidth>\z@
10264         \ifdim\stockheight>\z@
10265           \special{papersize=\the\stockwidth,\the\stockheight}%
10266         \else
10267           \ifdim\paperwidth>\z@
10268             \ifdim\paperheight>\z@
10269               \special{papersize=\the\paperwidth,\the\paperheight}%
10270             \fi
10271           \fi
10272         \fi
10273     \else
```

```

10274 \ifdim\stockwidth=\z@
10275 \ifdim\paperwidth>\z@
10276 \ifdim\paperheight>\z@
10277 \special{papersize=\the\paperwidth,\the\paperheight}%
10278 \fi
10279 \fi
10280 \fi
10281 \fi
10282 \fi
10283 \endgroup
10284 \fi
10285 \Hy@DisableOption{setpagesize}%
10286 }
10287 </dvipdfm>

```

44.6 VTeX typesetting system

Provided by MicroPress, May 1998. They require VTeX version 6.02 or newer; see <http://www.micropress-inc.com/> for details.

```

10288 <{*vtexhtml}>
10289 \providecommand*{\XR@ext}{htm}
10290 \RequirePackage{vtexhtml}
10291 \newif\if@Localurl
10292 \let\PDF@FinishDoc\@empty
10293 \def\PDF@SetupDoc{%
10294 \ifx\@baseurl\@empty
10295 \else
10296 \special{!direct <base href="\@baseurl">}%
10297 \fi
10298 }
10299 \def\@urltype{url}
10300 \def\hyper@link#1#2#3{%
10301 \Hy@VerboseLinkStart{#1}{#2}%
10302 \leavevmode
10303 \special{!direct <a href=%
10304 \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
10305 #3\Hy@xspace@end
10306 \special{!direct </a>}%
10307 }
10308 \def\hyper@linkurl#1#2{%
10309 \begingroup
10310 \hyper@chars
10311 \leavevmode
10312 \MathBSuppress=1\relax
10313 \special{!direct <a href=%
10314 \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
10315 #1\Hy@xspace@end
10316 \MathBSuppress=0\relax
10317 \special{!direct </a>}%
10318 \endgroup
10319 }
10320 \def\hyper@linkfile#1#2#3{%
10321 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
10322 }

```

```

10323 \def\hyper@linkstart#1#2{%
10324   \Hy@VerboseLinkStart{#1}{#2}%
10325   \def\Hy@tempa{#1}\ifx\Hy@tempa\@urlltype
10326     \@Localurltrue
10327     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
10328   \else
10329     \@Localurlfalse
10330     \begingroup
10331       \hyper@chars
10332       \special{!aref \HyperDestNameFilter{#2}}%
10333     \endgroup
10334   \fi
10335 }
10336 \def\hyper@linkend{%
10337   \if@Localurl
10338     \special{!endaref}%
10339   \else
10340     \special{!direct </a>}%
10341   \fi
10342 }
10343 \Hy@WrapperDef\hyper@anchorstart#1{%
10344   \Hy@SaveLastskip
10345   \Hy@VerboseAnchor{#1}%
10346   \begingroup
10347     \hyper@chars
10348     \special{!aname #1}%
10349     \special{!direct <a name=%
10350       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10351   \endgroup
10352   \Hy@activeanchortrue
10353 }
10354 \def\hyper@anchorend{%
10355   \special{!direct </a>}%
10356   \Hy@activeanchorfalse
10357   \Hy@RestoreLastskip
10358 }
10359 \Hy@WrapperDef\hyper@anchor#1{%
10360   \Hy@SaveLastskip
10361   \Hy@VerboseAnchor{#1}%
10362   \begingroup
10363     \let\protect=\string
10364     \hyper@chars
10365     \leavevmode
10366     \special{!aname #1}%
10367     \special{!direct <a name=%
10368       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10369   \endgroup
10370   \Hy@activeanchortrue
10371   \bgroup\anchor@spot\egroup
10372   \special{!direct </a>}%
10373   \Hy@activeanchorfalse
10374   \Hy@RestoreLastskip
10375 }
10376 \def\@Form[#1]{%

```

```

10377 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10378 }
10379 \let\@endForm\@empty
10380 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10381 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10382 }
10383 \def\@TextField[#1]#2{% parameters, label
10384 \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10385 }
10386 \def\@CheckBox[#1]#2{% parameters, label
10387 \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10388 }
10389 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10390 \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10391 }
10392 \def\@PushButton[#1]#2{% parameters, label
10393 \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10394 }
10395 \def\@Reset[#1]#2{%
10396 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10397 }
10398 \def\@Submit[#1]#2{%
10399 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10400 }
10401 \</vtexhtml>
10402 \<*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.

```

10403 \ifcsname mediaheight\endcsname
10404 \ifHy@setpagesize
10405 \providecommand*\VTeXInitMediaSize{%
10406 \ifnum\mag=\@m
10407 \ifdim\stockwidth>\z@
10408 \ifdim\stockheight>\z@
10409 \setlength\mediaheight\stockheight
10410 \setlength\mediawidth\stockwidth
10411 \else
10412 \ifdim\paperwidth>\z@
10413 \ifdim\paperheight>\z@
10414 \setlength\mediaheight\paperheight
10415 \setlength\mediawidth\paperwidth
10416 \fi
10417 \fi
10418 \fi
10419 \else
10420 \ifdim\stockwidth=\z@
10421 \ifdim\paperwidth>\z@
10422 \ifdim\paperheight>\z@
10423 \setlength\mediaheight\paperheight
10424 \setlength\mediawidth\paperwidth
10425 \fi
10426 \fi

```

```

10427     \fi
10428     \fi
10429     \fi
10430 }%
10431 \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10432 \fi
10433 \Hy@DisableOption{setpagesize}%
10434 \fi
Older versions of VTeX require xyz in lower case.
10435 \providecommand*\@pdfview{xyz}
10436 \providecommand*\@pdfborder{0 0 1}
10437 \providecommand*\@pdfborderstyle{}
10438 \let\CurrentBorderColor\@linkbordercolor
10439 \Hy@WrapperDef\hyper@anchor#1{%
10440   \Hy@SaveLastskip
10441   \Hy@VerboseAnchor{#1}%
10442   \begingroup
10443     \let\protect=\string
10444     \hyper@chars
10445     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10446   \endgroup
10447   \Hy@activeanchortrue
10448   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10449   \Hy@activeanchorfalse
10450   \Hy@RestoreLastskip
10451 }
10452 \Hy@WrapperDef\hyper@anchorstart#1{%
10453   \Hy@SaveLastskip
10454   \Hy@VerboseAnchor{#1}%
10455   \begingroup
10456     \hyper@chars
10457     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10458   \endgroup
10459   \Hy@activeanchortrue
10460 }
10461 \def\hyper@anchorend{%
10462   \Hy@activeanchorfalse
10463   \Hy@RestoreLastskip
10464 }
10465 \def\@urltype{url}
10466 \def\Hy@undefinedname{UNDEFINED}
10467 \def\hyper@linkstart#1#2{%
10468   \Hy@VerboseLinkStart{#1}{#2}%
10469   \Hy@pstringdef\Hy@pstringURI{#2}%
10470   \expandafter\Hy@colorlink\csname @#1color\endcsname
10471   \@ifundefined{@#1bordercolor}{%
10472     \let\CurrentBorderColor\relax
10473   }{%
10474     \edef\CurrentBorderColor{%
10475       \csname @#1bordercolor\endcsname
10476     }%
10477   }%
10478   \def\Hy@tempa{#1}%
10479   \ifx\Hy@tempa\@urltype

```

```

10480 \special{!%
10481   aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10482   \ifHy@href@ismap
10483     /IsMap true%
10484   \fi
10485   \Hy@href@nextactionraw
10486   >,%
10487   a=<%
10488   \ifHy@pdfa /F 4\fi
10489   \Hy@setpdfborder
10490   \ifx\CurrentBorderColor\relax
10491   \else
10492     /C [\CurrentBorderColor]%
10493   \fi
10494   >%
10495   }%
10496 \else
10497   \protected@edef\Hy@testname{#2}%
10498   \ifx\Hy@testname\@empty
10499     \Hy@Warning{%
10500       Empty destination name,\MessageBreak
10501       using ``\Hy@undefinedname'%
10502     }%
10503   \let\Hy@testname\Hy@undefinedname
10504   \fi
10505   \special{!%
10506     aref \expandafter\HyperDestNameFilter
10507       \expandafter{\Hy@testname};%
10508     a=<%
10509     \ifHy@pdfa /F 4\fi
10510     \Hy@setpdfborder
10511     \ifx\CurrentBorderColor\relax
10512     \else
10513       /C [\CurrentBorderColor]%
10514     \fi
10515     >%
10516     }%
10517   \fi
10518 }
10519 \def\hyper@linkend{%
10520   \special{!endaref}%
10521   \Hy@endcolorlink
10522 }
10523 \def\hyper@linkfile#1#2#3{%
10524   \leavevmode
10525   \def\Hy@pstringF{#2}%
10526   \Hy@CleanupFile\Hy@pstringF
10527   \special{!%
10528     aref <%
10529     \ifnum\Hy@VTeXversion>753 \ifHy@pdfnewwindow n\fi\fi
10530     f=\Hy@pstringF>#3;%
10531     a=<%
10532     \ifHy@pdfa /F 4\fi
10533     \Hy@setpdfborder

```



```

10534 \ifx\@filebordercolor\relax
10535 \else
10536 /C [\@filebordercolor]%
10537 \fi
10538 >%
10539 }%
10540 \Hy@colorlink\@filecolor
10541 #1\Hy@xspace@end
10542 \Hy@endcolorlink
10543 \special{!endaref}%
10544 }
10545 \def\hyper@linkurl#1#2{%
10546 \begingroup
10547 \Hy@pstringdef\Hy@pstringURI{#2}%
10548 \hyper@chars
10549 \leavevmode
10550 \special{!%
10551 aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10552 \ifHy@href@ismap
10553 /IsMap true%
10554 \fi
10555 \Hy@href@nextactionraw
10556 >;%
10557 a=<%
10558 \ifHy@pdfa /F 4\fi
10559 \Hy@setpdfborder
10560 \ifx\@urlbordercolor\relax
10561 \else
10562 /C [\@urlbordercolor]%
10563 \fi
10564 >%
10565 }%
10566 \Hy@colorlink\@urlcolor
10567 #1\Hy@xspace@end
10568 \Hy@endcolorlink
10569 \special{!endaref}%
10570 \endgroup
10571 }
10572 \def\hyper@link#1#2#3{%
10573 \Hy@VerboseLinkStart{#1}{#2}%
10574 \@ifundefined{@#1bordercolor}{%
10575 \let\CurrentBorderColor\relax
10576 }{%
10577 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10578 }%
10579 \leavevmode
10580 \protected@edef\Hy@testname{#2}%
10581 \ifx\Hy@testname\@empty
10582 \Hy@Warning{%
10583 Empty destination name,\MessageBreak
10584 using ``\Hy@undefinedname'%
10585 }%
10586 \let\Hy@testname\Hy@undefinedname
10587 \fi

```

```

10588 \special{!%
10589   \expandafter\HyperDestNameFilter
10590     \expandafter{\Hy@testname};%
10591   a=<%
10592     \ifHy@pdfa /F 4\fi
10593     \Hy@setpdfborder
10594     \ifx\CurrentBorderColor\relax
10595     \else
10596     /C [\CurrentBorderColor]%
10597     \fi
10598   >%
10599 }%
10600 \expandafter
10601 \Hy@colorlink\csname @#1color\endcsname
10602   #3\Hy@xspace@end
10603 \Hy@endcolorlink
10604 \special{!endaref}%
10605 }
10606 \def\hyper@image#1#2{%
10607 \hyper@linkurl{#2}{#1}%
10608 }
10609 \def\@hyper@launch run:#1\#2#3{%
10610 \Hy@pstringdef\Hy@pstringF{#1}%
10611 \Hy@pstringdef\Hy@pstringP{#3}%
10612 \leavevmode
10613 \special{!aref %
10614   <u=%
10615     /Type/Action%
10616     /S/Launch%
10617     /F(\Hy@pstringF)%
10618     \Hy@SetNewWindow
10619     \ifx\#3\%
10620     \else
10621     /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10622     \fi
10623     \Hy@href@nextactionraw
10624   >,%
10625   a=<%
10626     \ifHy@pdfa /F 4\fi
10627     \Hy@setpdfborder
10628     \ifx\@runbordercolor\relax
10629     \else
10630     /C[\@runbordercolor]%
10631     \fi
10632   >%
10633 }%
10634 \Hy@colorlink\@runcolor
10635   #2\Hy@xspace@end
10636 \Hy@endcolorlink
10637 \special{!endaref}%
10638 }
10639 \def\Acrobatmenu#1#2{%
10640 \EdefEscapeName\Hy@temp@menu{#1}%
10641 \Hy@Acrobatmenu{#1}{#2}{%

```

```

10642 \special{!%
10643   aref <u=/S /Named /N /\Hy@temp@menu>;%
10644   a=<%
10645     \ifHy@pdfa /F 4\fi
10646     \Hy@setpdfborder
10647     \ifx\@menubordercolor\relax
10648     \else
10649     /C[\@menubordercolor]%
10650     \fi
10651   >%
10652 }%
10653 \Hy@colorlink\@menucolor
10654 #2\Hy@xspace@end
10655 \Hy@endcolorlink
10656 \special{!endaref}%
10657 }%
10658 }

```

The following code (transition effects) is made by Alex Kostin.

The code below makes sense for V_TE_X 7.02 or later.

Please never use `\@ifundefined{VTeXversion}{..}{..}` *globally*.

```

10659 \ifnum\Hy@VTeXversion<702 %
10660 \else
10661   \def\hyper@pagetransition{%
10662     \ifx\@pdfpagetransition\relax
10663     \else
10664     \ifx\@pdfpagetransition\@empty

```

Standard incantation.

1. Does an old entry have to be deleted? 2. If 1=yes, how to delete?

```

10665   \else
10666   \hvtex@parse@trans\@pdfpagetransition
10667   \fi
10668 \fi
10669 }%

```

I have to write an “honest” parser to convert raw PDF code into V_TE_X `\special`. (AVK)

Syntax of V_TE_X `\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:

```

10670 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10671 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10672 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10673 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10674 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10675 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10676 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

10677 \def\hvtex@par@dimension{/Dm}%
10678 \def\hvtex@par@direction{/Di}%
10679 \def\hvtex@par@duration{/D}%
10680 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

10681 \def\hvtex@gettoken{%
10682   \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10683 }%

```

Notice that tokens in the input buffer must be space delimited.

```

10684 \def\hvtex@gettoken@#1 #2\@nil{%
10685   \edef\hvtex@token{#1}%
10686   \edef\hvtex@buffer{#2}%
10687 }%
10688 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

10689 \let\hvtex@trans@code\@empty
10690 \let\hvtex@param@dimension\@empty
10691 \let\hvtex@param@direction\@empty
10692 \let\hvtex@param@duration\@empty
10693 \let\hvtex@param@motion\@empty
10694 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

10695 \hvtex@gettoken
10696 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

10697   \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

10698     \else
10699       \hvtex@gettoken
10700     \fi
10701 \fi
10702 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

10703 \hvtex@trans@params
10704 }%

```

Reentrant macro to parse optional parameters.

```

10705 \def\hvtex@trans@params{%
10706   \ifx\hvtex@buffer\@empty
10707   \else

```

```

10708 \hvtex@gettoken
10709 \let\hvtex@trans@par\hvtex@token
10710 \ifx\hvtex@buffer\@empty
10711 \else
10712 \hvtex@gettoken
10713 \ifx\hvtex@trans@par\hvtex@par@duration

```

/D is the effect duration in seconds. \TeX special takes it in milliseconds.

```

10714 \let\hvtex@param@duration\hvtex@token
10715 \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```

10716 \expandafter\edef\expandafter\hvtex@param@motion
10717 \expandafter{\expandafter\@gobble\hvtex@token}%
10718 \else \ifx\hvtex@trans@par\hvtex@par@dimension

```

/Dm can be either /H or /V

```

10719 \expandafter\edef\expandafter\hvtex@param@dimension
10720 \expandafter{\expandafter\@gobble\hvtex@token}%
10721 \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).

```

10722 \let\hvtex@param@direction\hvtex@token
10723 \fi\fi\fi\fi
10724 \fi
10725 \fi
10726 \ifx\hvtex@buffer\@empty
10727 \let\next\hvtex@produce@trans
10728 \else
10729 \let\next\hvtex@trans@params
10730 \fi
10731 \next
10732 }%

```

Merge <transition_effect> and issue the special when possible. Too lazy to validate optional parameters.

```

10733 \def\hvtex@produce@trans{%
10734 \let\vtex@trans@special\@empty
10735 \if S\hvtex@trans@code
10736 \edef\vtex@trans@special{\hvtex@trans@code
10737 \hvtex@param@dimension\hvtex@param@motion}%
10738 \else\if B\hvtex@trans@code
10739 \edef\vtex@trans@special{%
10740 \hvtex@trans@code\hvtex@param@dimension
10741 }%
10742 \else\if X\hvtex@trans@code
10743 \edef\vtex@trans@special{%
10744 \hvtex@trans@code\hvtex@param@motion
10745 }%
10746 \else\if W\hvtex@trans@code
10747 \edef\vtex@trans@special{%
10748 \hvtex@trans@code\hvtex@param@direction
10749 }%
10750 \else\if D\hvtex@trans@code
10751 \let\vtex@trans@special\hvtex@trans@code

```

```

10752 \else\if R\hvtex@trans@code
10753 \let\vtex@trans@special\hvtex@trans@code
10754 \else\if G\hvtex@trans@code
10755 \edef\vtex@trans@special{%
10756 \hvtex@trans@code\hvtex@param@direction
10757 }%
10758 \fi\fi\fi\fi\fi\fi
10759 \ifx\vtex@trans@special\@empty
10760 \else
10761 \ifx\hvtex@param@duration\@empty
10762 \else
10763 \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

10764 \multiply\dimen@\@m
10765 \edef\vtex@trans@special{%
10766 \vtex@trans@special,\strip@pt\dimen@
10767 }%
10768 \fi

```

And all the mess is just for this.

```

10769 \special{!trans \vtex@trans@special}%
10770 \fi
10771 }%
10772 \def\hyper@pageduration{%
10773 \ifx\@pdfpageduration\relax
10774 \else
10775 \ifx\@pdfpageduration\@empty
10776 \special{!duration-}%
10777 \else
10778 \special{!duration \@pdfpageduration}%
10779 \fi
10780 \fi
10781 }%
10782 \g@addto@macro\Hy@EveryPageBoxHook{%
10783 \hyper@pagetransition
10784 \hyper@pageduration
10785 }%
10786 \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

```

10787 \ifx\@pdfproducer\relax
10788 \def\@pdfproducer{VTeX}%
10789 \ifnum\Hy@VTeXversion>\z@
10790 \count@\VTeXversion

```

```

10791 \divide\count@ 100 %
10792 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10793 \multiply\count@ -100 %
10794 \advance\count@\VTeXversion
10795 \edef\@pdfproducer{%
10796 \@pdfproducer
10797 .\ifnum\count@<10 0\fi\the\count@
10798 \ifx\VTeXOS\@undefined\else
10799 \ifnum\VTeXOS>0 %
10800 \ifnum\VTeXOS<6 %
10801 \space(
10802 \ifcase\VTeXOS
10803 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10804 \fi
10805 )%
10806 \fi
10807 \fi
10808 \fi
10809 ,\space
10810 \ifnum\OpMode=\@one PDF\else PS\fi
10811 \space backend%
10812 \ifx\gexmode\@undefined\else
10813 \ifnum\gexmode>z@\space with GeX\fi
10814 \fi
10815 }%
10816 \fi
10817 \fi

```

Current `!pdfinfo` key syntax:

Key	Field	Type
a	Author	String
b	CropBox	String
c	Creator	String
k	Keywords	String
l	PageLayout	PS
p	PageMode	PS
r	Producer	String
s	Subject	String
t	Title	String
u	URI	PS
v	ViewPreferences	PS

Note: PS objects that are dicts are in `<<<.>>>` (yuck; no choice).

```

10818 \def\PDF@SetupDoc{%
10819 \ifx\@pdfpagescrop\@empty
10820 \else
10821 \special{!pdfinfo b=<\@pdfpagescrop>}%
10822 \fi
10823 \ifx\@pdfstartpage\@empty
10824 \else
10825 \ifx\@pdfstartview\@empty
10826 \else
10827 \special{!onopen Page\@pdfstartpage}%
10828 \fi

```

```

10829 \fi
10830 \special{!pdfinfo p=</\@pdfpagemode>}%
10831 \ifx\@baseurl\@empty
10832 \else
10833 \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
10834 \fi
10835 \special{!pdfinfo v=<<<%
10836 \ifHy@pdftoolbar\else /HideToolbar true\fi
10837 \ifHy@pdfmenubar\else /HideMenubar true\fi
10838 \ifHy@pdfwindowui\else /HideWindowUI true\fi
10839 \ifHy@pdfwindow /FitWindow true\fi
10840 \ifHy@pdfcenterwindow /CenterWindow true\fi
10841 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10842 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10843 \Hy@UseNameKey{Direction}\@pdfdirection
10844 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10845 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10846 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10847 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10848 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10849 \Hy@UseNameKey{Duplex}\@pdfduplex
10850 \ifx\@pdfpicktraybypdfsize\@empty
10851 \else
10852 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10853 \fi
10854 \ifx\@pdfprintpagerange\@empty
10855 \else
10856 /PrintPageRange[\@pdfprintpagerange]%
10857 \fi
10858 \ifx\@pdfnumcopies\@empty
10859 \else
10860 /NumCopies \@pdfnumcopies
10861 \fi
10862 >>>}%
10863 \ifx\@pdfpagelayout\@empty
10864 \else
10865 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
10866 \fi
10867 }%
10868 \HyInfo@AddonUnsupportedtrue
10869 \define@key{Hyp}{pdfcreationdate}{%
10870 \Hy@Warning{%
10871 VTeX does not support pdfcreationdate.\MessageBreak
10872 Therefore its setting is ignored%
10873 }%
10874 }
10875 \define@key{Hyp}{pdfmoddate}{%
10876 \Hy@Warning{%
10877 VTeX does not support pdfmoddate.\MessageBreak
10878 Therefore its setting is ignored%
10879 }%
10880 }
10881 \def\PDF@FinishDoc{%
10882 \Hy@UseMaketitleInfos

```



```

10883 \HyInfo@TrappedUnsupported
10884 \special{!pdfinfo a=<\@pdfauthor>}%
10885 \special{!pdfinfo t=<\@pdftitle>}%
10886 \special{!pdfinfo s=<\@pdfsubject>}%
10887 \special{!pdfinfo c=<\@pdfcreator>}%
10888 \ifx\@pdfproducer\relax
10889 \else
10890 \special{!pdfinfo r=<\@pdfproducer>}%
10891 \fi
10892 \special{!pdfinfo k=<\@pdfkeywords>}%
10893 \Hy@DisableOption{pdfauthor}%
10894 \Hy@DisableOption{pdftitle}%
10895 \Hy@DisableOption{pdfsubject}%
10896 \Hy@DisableOption{pdfcreator}%
10897 \Hy@DisableOption{addtopdfcreator}%
10898 \Hy@DisableOption{pdfcreationdate}%
10899 \Hy@DisableOption{pdfcreationdate}%
10900 \Hy@DisableOption{pdfmoddate}%
10901 \Hy@DisableOption{pdfproducer}%
10902 \Hy@DisableOption{pdfkeywords}%
10903 \Hy@DisableOption{pdftrapped}%
10904 \Hy@DisableOption{pdfinfo}%
10905 }
10906 </vtx>

```

44.7 Fix for Adobe bug number 466320

If a destination occurs at the very begin of a page, the destination is moved to the previous page by Adobe Distiller 5. As workaround Adobe suggests:

```

/showpage {
  //showpage
  clippath stroke erasepage
} bind def

```

But unfortunately this fix generates an empty page at the end of the document. Therefore another fix is used by writing some clipped text.

```

10907 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
10908 <packageEnd>\providecommand*{\Hy@DistillerDestFix}{-}
10909 <*pdfmark | dviwindo>
10910 \def\Hy@DistillerDestFix{%
10911 \begingroup
10912 \let\x\literalps@out

```

The fix has to be passed unchanged through GeX, if VTeX in PostScript mode with GeX is used.

```

10913 \ifnum \@ifundefined{OpMode}{0}{%
10914 \ifundefined{gexmode}{0}{%
10915 \ifnum\gexmode>0 \OpMode\else 0\fi
10916 }}>1 %
10917 \def\x##1{%
10918 \immediate\special{!##1}%
10919 }%
10920 \fi

```

```

10921 \x{%
10922 /product where{%
10923   pop %
10924   product(Distiller)search{%
10925     pop pop pop %
10926     version(.)search{%
10927       exch pop exch pop%
10928       (3011)eq{%
10929         gsave %
10930         newpath 0 0 moveto closepath clip%
10931         /Courier findfont 10 scalefont setfont %
10932         72 72 moveto(.)show %
10933         grestore%
10934       }if%
10935     }{pop}ifelse%
10936   }{pop}ifelse%
10937 }if%
10938 }%
10939 \endgroup
10940 }
10941 </pdfmark | dviwindo>

```

44.8 Direct pdfmark support

Drivers that load `pdfmark.def` have to provide the correct macro definitions of

```

\@pdfproducer   for document information
\literalps@out  PostScript output
\headerps@out   PostScript output that goes in the header area

```

and the correct definitions of the following PostScript procedures:

```

H.S           start of anchor, link or rect
#1 H.A        end of anchor, argument=baselineskip in pt
#1 H.L        end of link, argument=baselineskip in pt
H.R           end of rect
H.B           raw rect code

```

```

10942 <*pdfmark>
10943 \Hy@breaklinks@unsupported
10944 \def\HyPat@ObjRef{%
10945   \{[~{}]+\}%
10946 }
10947 \Hy@WrapperDef\hyper@anchor#1{%
10948   \Hy@SaveLastskip
10949   \Hy@VerboseAnchor{#1}%
10950   \begingroup
10951     \pdfmark[\anchor@spot]{%
10952       pdfmark=/DEST,%
10953       linktype=anchor,%
10954       View=/\@pdfview \@pdfviewparams,%
10955       DestAnchor={#1}%
10956     }%
10957   \endgroup
10958   \Hy@RestoreLastskip

```

```

10959 }
10960 \@ifundefined{hyper@anchorstart}{\endinput}
10961 \Hy@WrapperDef\hyper@anchorstart#1{%
10962   \Hy@SaveLastskip
10963   \Hy@VerboseAnchor{#1}%
10964   \literalps@out{H.S}%
10965   \Hy@AllowHyphens
10966   \xdef\hyper@currentanchor{#1}%
10967   \Hy@activeanchortrue
10968 }
10969 \def\hyper@anchorend{%
10970   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10971   \pdfmark{%
10972     pdfmark=/DEST,%
10973     linktype=anchor,%
10974     View=/\@pdfview \@pdfviewparams,%
10975     DestAnchor=\hyper@currentanchor,%
10976   }%
10977   \Hy@activeanchorfalse
10978   \Hy@RestoreLastskip
10979 }
10980 \def\hyper@linkstart#1#2{%
10981   \Hy@VerboseLinkStart{#1}{#2}%
10982   \ifHy@breaklinks
10983   \else
10984     \leavevmode
10985     \ifmmode
10986       \def\Hy@LinkMath{$}%
10987     \else
10988       \let\Hy@LinkMath\@empty
10989     \fi
10990     \Hy@SaveSpaceFactor
10991     \hbox\bgroup
10992     \Hy@RestoreSpaceFactor
10993     \Hy@LinkMath
10994   \fi
10995   \expandafter\Hy@colorlink\csname @#1color\endcsname
10996   \literalps@out{H.S}%
10997   \Hy@AllowHyphens
10998   \xdef\hyper@currentanchor{#2}%
10999   \gdef\hyper@currentlinktype{#1}%
11000 }
11001 \def\hyper@linkend{%
11002   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
11003   \@ifundefined{\hyper@currentlinktype bordercolor}{%
11004     \let\Hy@tempcolor\relax
11005   }{%
11006     \edef\Hy@tempcolor{%
11007       \csname @\hyper@currentlinktype bordercolor\endcsname
11008     }%
11009   }%
11010   \pdfmark{%
11011     pdfmark=/ANN,%
11012     linktype=link,%

```

```

11013 Subtype=/Link,%
11014 PDFAFlags=4,%
11015 Dest=\hyper@currentanchor,%
11016 AcroHighlight=\@pdfhighlight,%
11017 Border=\@pdfborder,%
11018 BorderStyle=\@pdfborderstyle,%
11019 Color=\Hy@tempcolor,%
11020 Raw=H.B%
11021 }%
11022 \Hy@endcolorlink
11023 \ifHy@breaklinks
11024 \else
11025 \Hy@LinkMath
11026 \Hy@SaveSpaceFactor
11027 \egroup
11028 \Hy@RestoreSpaceFactor
11029 \fi
11030 }

```

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.

```

11031 \begingroup
11032 \catcode`P=12 %
11033 \catcode`T=12 %
11034 \lowercase{\endgroup
11035 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
11036 }
11037 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

`\hyper@pagetransition`

```

11038 \def\hyper@pagetransition{%
11039 \ifx\@pdfpagetransition\relax
11040 \else
11041 \ifx\@pdfpagetransition\@empty
11042 % 1. Does an old entry have to be deleted?
11043 % 2. If 1=yes, how to delete?
11044 \else
11045 \pdfmark{%
11046 pdfmark=/PUT,%
11047 Raw={%
11048 \string{ThisPage\string}%
11049 <</Trans << /S /\@pdfpagetransition\space >> >>%
11050 }%
11051 }%
11052 \fi
11053 \fi
11054 }

```

`\hyper@pageduration`

```

11055 \def\hyper@pageduration{%
11056 \ifx\@pdfpageduration\relax
11057 \else
11058 \ifx\@pdfpageduration\@empty

```

```

11059 % 1. Does an old entry have to be deleted?
11060 % 2. If 1=yes, how to delete?
11061 \else
11062 \pdfmark{%
11063 pdfmark=/PUT,%
11064 Raw={%
11065 \string{ThisPage\string}%
11066 <</Dur \@pdfpageduration>>%
11067 }%
11068 }%
11069 \fi
11070 \fi
11071 }

11072 \g@addto@macro\Hy@EveryPageBoxHook{%
11073 \hyper@pagetransition
11074 \hyper@pageduration
11075 }

11076 \def\hyper@image#1#2{%
11077 \hyper@linkurl{#2}{#1}%
11078 }
11079 \def\Hy@undefinedname{UNDEFINED}
11080 \def\hyper@link#1#2#3{%
11081 \Hy@VerboseLinkStart{#1}{#2}%
11082 \@ifundefined{@#1bordercolor}{%
11083 \let\Hy@tempcolor\relax
11084 }{%
11085 \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
11086 }%
11087 \begingroup
11088 \protected@edef\Hy@testname{#2}%
11089 \ifx\Hy@testname\@empty
11090 \Hy@Warning{%
11091 Empty destination name,\MessageBreak
11092 using '\Hy@undefinedname'%
11093 }%
11094 \let\Hy@testname\Hy@undefinedname
11095 \fi
11096 \pdfmark[{#3}]{%
11097 Color=\Hy@tempcolor,%
11098 linktype={#1},%
11099 AcroHighlight=\@pdfhighlight,%
11100 Border=\@pdfborder,%
11101 BorderStyle=\@pdfborderstyle,%
11102 pdfmark=/ANN,%
11103 Subtype=/Link,%
11104 PDFAFlags=4,%
11105 Dest=\Hy@testname
11106 }%
11107 \endgroup
11108 }
11109 \newtoks\pdf@docset
11110 \def\PDF@FinishDoc{%
11111 \Hy@UseMaketitleInfos

```

```

11112 \HyInfo@GenerateAddons
11113 \let\Hy@temp\@empty
11114 \ifx\@pdfcreationdate\@empty
11115 \else
11116 \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
11117 \fi
11118 \ifx\@pdfmoddate\@empty
11119 \else
11120 \expandafter\def\expandafter\Hy@temp\expandafter{%
11121 \Hy@temp
11122 ModDate=\@pdfmoddate,%
11123 }%
11124 \fi
11125 \ifx\@pdfproducer\relax
11126 \else
11127 \expandafter\def\expandafter\Hy@temp\expandafter{%
11128 \Hy@temp
11129 Producer=\@pdfproducer,%
11130 }%
11131 \fi
11132 \expandafter
11133 \pdfmark\expandafter{%
11134 \Hy@temp
11135 pdfmark=/DOCINFO,%
11136 Title=\@pdftitle,%
11137 Subject=\@pdfsubject,%
11138 Creator=\@pdfcreator,%
11139 Author=\@pdfauthor,%
11140 Keywords=\@pdfkeywords,%
11141 Trapped=\@pdftrapped
11142 }%
11143 \ifx\HyInfo@Addons\@empty
11144 \else
11145 \pdfmark{%
11146 pdfmark=/DOCINFO,%
11147 Raw={\HyInfo@Addons}%
11148 }%
11149 \fi
11150 \Hy@DisableOption{pdfauthor}%
11151 \Hy@DisableOption{pdftitle}%
11152 \Hy@DisableOption{pdfsubject}%
11153 \Hy@DisableOption{pdfcreator}%
11154 \Hy@DisableOption{addtopdfcreator}%
11155 \Hy@DisableOption{pdfcreationdate}%
11156 \Hy@DisableOption{pdfcreationdate}%
11157 \Hy@DisableOption{pdfmoddate}%
11158 \Hy@DisableOption{pdfproducer}%
11159 \Hy@DisableOption{pdfkeywords}%
11160 \Hy@DisableOption{pdftrapped}%
11161 \Hy@DisableOption{pdfinfo}%
11162 }
11163 \def\PDF@SetupDoc{%
11164 \def\Hy@temp{}%
11165 \ifx\@pdfstartpage\@empty

```

```

11166 \else
11167 \ifx\@pdfstartview\@empty
11168 \else
11169 \edef\Hy@temp{%
11170 ,Page=\@pdfstartpage
11171 ,View=\@pdfstartview
11172 }%
11173 \fi
11174 \fi
11175 \edef\Hy@temp{%
11176 \noexpand\pdfmark{%
11177 pdfmark=/DOCVIEW,%
11178 PageMode=/\@pdfpagemode
11179 \Hy@temp
11180 }%
11181 }%
11182 \Hy@temp
11183 \ifx\@pdfpagescrop\@empty
11184 \else
11185 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11186 \fi
11187 \edef\Hy@temp{%
11188 \ifHy@pdftoolbar\else /HideToolbar true\fi
11189 \ifHy@pdfmenubar\else /HideMenubar true\fi
11190 \ifHy@pdfwindowui\else /HideWindowUI true\fi
11191 \ifHy@pdfwindow /FitWindow true\fi
11192 \ifHy@pdfcenterwindow /CenterWindow true\fi
11193 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
11194 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11195 \Hy@UseNameKey{Direction}\@pdfdirection
11196 \Hy@UseNameKey{ViewArea}\@pdfviewarea
11197 \Hy@UseNameKey{ViewClip}\@pdfviewclip
11198 \Hy@UseNameKey{PrintArea}\@pdfprintarea
11199 \Hy@UseNameKey{PrintClip}\@pdfprintclip
11200 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11201 \Hy@UseNameKey{Duplex}\@pdfduplex
11202 \ifx\@pdfpicktraybypdfsize\@empty
11203 \else
11204 /PickTrayByPDFSize \@pdfpicktraybypdfsize
11205 \fi
11206 \ifx\@pdfprintpagerange\@empty
11207 \else
11208 /PrintPageRange[\@pdfprintpagerange]%
11209 \fi
11210 \ifx\@pdfnumcopies\@empty
11211 \else
11212 /NumCopies \@pdfnumcopies
11213 \fi
11214 }%
11215 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11216 \pdfmark{%
11217 pdfmark=/PUT,%
11218 Raw={%
11219 \string{Catalog\string}<<%

```

```

11220 \ifx\Hy@temp\@empty
11221 \else
11222 /ViewerPreferences<<\Hy@temp>>%
11223 \fi
11224 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11225 \ifx\@pdflang\relax
11226 \else
11227 /Lang(\@pdflang)%
11228 \fi
11229 \ifx\@baseurl\@empty
11230 \else
11231 /URI<</Base(\Hy@pstringB)>>%
11232 \fi
11233 >>%
11234 }%
11235 }%
11236 }
11237 </pdfmark>
11238 (*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.

```

11239 \newif\ifHy@pdfmarkerror
11240 \def\pdfmark{\@ifnextchar[\pdfmark@]{\pdfmark@[]}}
11241 \def\pdfmark@[#1]#2{%
11242 \Hy@pdfmarkerrorfalse
11243 \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
11244 \@processme
11245 \let\pdf@type\relax
11246 \let\pdf@objdef\@empty
11247 \kvsetkeys{PDF}{#2}%
11248 \ifHy@pdfmarkerror
11249 \else
11250 \ifx\pdf@type\relax
11251 \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
11252 \ifx\#1\%
11253 \else
11254 \pdf@rect{#1}%
11255 \fi
11256 \else
11257 \ifx\#1\%
11258 \literalps@out{%
11259 [%
11260 \ifx\pdf@objdef\@empty
11261 \else
11262 /_objdef\string{\pdf@objdef\string}%
11263 \fi
11264 \the\pdf@toks\space\pdf@type\space pdfmark%
11265 }%
11266 \else

```



```

11267 \ifundefined{@\pdf@linktype color}{%
11268   \Hy@colorlink\@linkcolor
11269 }{%
11270   \expandafter\Hy@colorlink
11271     \csname @\pdf@linktype color\endcsname
11272 }%
11273 \pdf@rect{#1}%
11274 \literalps@out{%
11275   [%
11276   \ifx\pdf@objdef\@empty
11277   \else
11278     /_objdef\string{\pdf@objdef\string}%
11279   \fi
11280   \the\pdf@toks\space\pdf@type\space pdfmark%
11281   }%
11282   \Hy@endcolorlink
11283 \fi
11284 \fi
11285 \fi
11286 }

```

The complicated bit is working out the right enclosing rectangle of some piece of \TeX text, needed by the `/Rect` key. This solution originates with Toby Thain (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}

```

```

11287 \newsavebox{\pdf@box}
11288 \providecommand*{\Hy@setouterhbox}{\sbox}
11289 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
11290 \def\Hy@DEST{/DEST}
11291 \def\pdf@rect#1{%
11292   \begingroup
11293     \chardef\x=1 %
11294     \def\Hy@temp{#1}%
11295     \ifx\Hy@temp\@empty
11296       \chardef\x=0 %
11297     \else
11298       \def\y{\anchor@spot}%
11299       \ifx\Hy@temp\y
11300         \def\y{\relax}%
11301       \ifx\anchor@spot\y
11302         \chardef\x=0 %
11303       \fi
11304     \fi
11305   \fi
11306   \expandafter\endgroup

```

```

11307 \ifcase\x
11308 \literalps@out{H.S}%
11309 \literalps@out{H.R}%
11310 \else
11311 \leavevmode
11312 \Hy@SaveSpaceFactor
11313 \ifmmode
11314 \def\Hy@LinkMath{$}%
11315 \else
11316 \let\Hy@LinkMath\@empty
11317 \fi
11318 \ifHy@breaklinks
11319 \Hy@setouterhbox\pdf@box{%
11320 \Hy@RestoreSpaceFactor
11321 \Hy@LinkMath
11322 \Hy@AllowHyphens#1\Hy@xspace@end
11323 \Hy@LinkMath
11324 \Hy@SaveSpaceFactor
11325 }%
11326 \else
11327 \sbox\pdf@box{%
11328 \Hy@RestoreSpaceFactor
11329 \Hy@LinkMath
11330 #1\Hy@xspace@end
11331 \Hy@LinkMath
11332 \Hy@SaveSpaceFactor
11333 }%
11334 \fi
11335 \dimen@ \ht\pdf@box
11336 \ifdim\dp\pdf@box=\z@
11337 \literalps@out{H.S}%
11338 \else
11339 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
11340 \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...).

```

11341 \ifHy@breaklinks
11342 \ifhmode
11343 \Hy@breaklinksunhbox\pdf@box
11344 \else
11345 \box\pdf@box
11346 \fi
11347 \else
11348 \expandafter\box\pdf@box
11349 \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

11350 \ifdim\dimen@=\z@
11351 \literalps@out{H.R}%

```

```

11352 \else
11353 \raise\dimen@\hbox{\literalps@out{H.R.}}%
11354 \fi
11355 \Hy@RestoreSpaceFactor
11356 \fi
11357 \ifx\pdf@type\Hy@DEST
11358 \else
11359 \pdf@addtoksx{H.B}%
11360 \fi
11361 }

```

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.

```

11362 \newtoks\pdf@toks
11363 \newtoks\pdf@defaulttoks
11364 \pdf@defaulttoks={}%
11365 \def\pdf@addtoks#1#2{%
11366 \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
11367 \@processme
11368 }
11369 \def\pdf@addtoksx#1{%
11370 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
11371 \@processme
11372 }
11373 \def\PDFdefaults#1{%
11374 \pdf@defaulttoks={#1}%
11375 }

```

This is the list of allowed keys. See the Acrobat manual for an explanation.

```

11376 % what is the type of pdfmark?
11377 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11378 % what is the link type?
11379 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11380 \def\pdf@linktype{link}
11381 % named object?
11382 \define@key{PDF}{objdef}{\edef\pdf@objdef{#1}}
11383 \let\pdf@objdef\@empty
11384 % parameter is a stream of PDF
11385 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
11386 % parameter is a name
11387 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11388 % parameter is a array
11389 \define@key{PDF}{Border}{%
11390 \edef\Hy@temp{#1}%
11391 \ifx\Hy@temp\@empty
11392 \else
11393 \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11394 \fi
11395 }
11396 \let\Hy@BorderArrayPatch\@empty
11397 % parameter is a dictionary
11398 \define@key{PDF}{BorderStyle}{%
11399 \edef\Hy@temp{#1}%
11400 \ifx\Hy@temp\@empty

```

```

11401 \else
11402   \pdf@addtoks{<<#1>>}{BS}%
11403 \fi
11404 }
11405 % parameter is a array
11406 \define@key{PDF}{Color}{%
11407   \ifx\relax#1\relax
11408   \else
11409     \pdf@addtoks{[#1]}{Color}% hash-ok
11410   \fi
11411 }
11412 % parameter is a string
11413 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11414 % parameter is a integer
11415 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11416 % parameter is a array
11417 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11418 % parameter is a string
11419 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11420 % parameter is a string or file
11421 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11422 % parameter is a destination
11423 \define@key{PDF}{Dest}{%
11424   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11425   \ifx\Hy@pstringDest\@empty
11426     \Hy@pdfmarkerrortrue
11427     \Hy@Warning{Destination with empty name ignored}%
11428   \else
11429     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11430   \fi
11431 }
11432 \define@key{PDF}{DestAnchor}{%
11433   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11434   \ifx\Hy@pstringDest\@empty
11435     \Hy@pdfmarkerrortrue
11436     \Hy@Warning{Destination with empty name ignored}%
11437   \else
11438     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11439   \fi
11440 }
11441 % parameter is a string
11442 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11443 % parameter is a string
11444 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11445 % parameter is a int
11446 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11447 \define@key{PDF}{PDFAFlags}{%
11448   \ifHy@pdfa
11449     \pdf@addtoks{#1}{F}%
11450   \fi
11451 }
11452 % parameter is a name
11453 \define@key{PDF}{AcroHighlight}{%
11454   \begingroup

```

```

11455 \edef\x{#1}%
11456 \expandafter\endgroup\ifx\x\@empty
11457 \else
11458 \pdf@addtoks{#1}{H}%
11459 \fi
11460 }
11461 % parameter is a string
11462 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11463 % parameter is a string
11464 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11465 % parameter is a string
11466 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11467 % parameter is a string
11468 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11469 % parameter is a Boolean
11470 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11471 % parameter is a integer or name
11472 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11473 % parameter is a name
11474 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11475 % parameter is a string
11476 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11477 % parameter is a array
11478 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11479 % parameter is a integer
11480 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
11481 % parameter is a name
11482 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11483 % parameter is a string
11484 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11485 % parameter is a string
11486 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11487 % parameter is a string
11488 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11489 % parameter is an array
11490 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11491 % parameter is a string
11492 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

11493 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11494 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11495 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
11496 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11497 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11498 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11499 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
11500 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11501 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11502 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
11503 \define@key{PDF}{Trapped}{%
11504 \edef\Hy@temp{#1}%
11505 \ifx\Hy@temp\@empty
11506 \else
11507 \pdf@addtoks{/#1}{Trapped}%

```

```

11508 \fi
11509 }
11510
11511 </pdfmarkbase>
11512 <*pdfmark>
11513 \def\Acrobatmenu#1#2{%
11514 \EdefEscapeName\Hy@temp@menu{#1}%
11515 \Hy@Acrobatmenu{#1}{#2}{%
11516 \pdfmark[{#2}]{%
11517 linktype=menu,%
11518 pdfmark=/ANN,%
11519 AcroHighlight=\@pdfhighlight,%
11520 Border=\@pdfborder,%
11521 BorderStyle=\@pdfborderstyle,%
11522 Color=\@menubordercolor,%
11523 Action={<</Subtype/Named/N/\Hy@temp@menu>>},%
11524 Subtype=/Link,%
11525 PDFAFlags=4%
11526 }%
11527 }%
11528 }

```

And now for some useful examples:

```

11529 \def\PDFNextPage{\@ifnextchar{\PDFNextPage@}{\PDFNextPage@[]}}
11530 \def\PDFNextPage@[#1]#2{%
11531 \pdfmark[{#2}]{%
11532 #1,%
11533 Border=\@pdfborder,%
11534 BorderStyle=\@pdfborderstyle,%
11535 Color=.2 .1 .5,%
11536 pdfmark=/ANN,%
11537 Subtype=/Link,%
11538 PDFAFlags=4,%
11539 Page=/Next%
11540 }%
11541 }
11542 \def\PDFPreviousPage{%
11543 \@ifnextchar{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11544 }
11545 \def\PDFPreviousPage@[#1]#2{%
11546 \pdfmark[{#2}]{%
11547 #1,%
11548 Border=\@pdfborder,%
11549 BorderStyle=\@pdfborderstyle,%
11550 Color=.4 .4 .1,%
11551 pdfmark=/ANN,%
11552 Subtype=/Link,%
11553 PDFAFlags=4,%
11554 Page=/Prev%
11555 }%
11556 }
11557 \def\PDFOpen#1{%
11558 \pdfmark{#1,pdfmark=/DOCVIEW}%
11559 }

```

This will only work if you use Distiller 2.1 or higher.

```
11560 \def\hyper@linkurl#1#2{%
11561   \begingroup
11562   \Hy@pstringdef\Hy@pstringURI{#2}%
11563   \hyper@chars
11564   \leavevmode
11565   \pdfmark[{#1}]{%
11566     pdfmark=/ANN,%
11567     linktype=url,%
11568     AcroHighlight=\@pdfhighlight,%
11569     Border=\@pdfborder,%
11570     BorderStyle=\@pdfborderstyle,%
11571     Color=\@urlbordercolor,%
11572     Action={<<%
11573       /Subtype/URI%
11574       /URI(\Hy@pstringURI)%
11575       \ifHy@href@ismap
11576       /IsMap true%
11577       \fi
11578     >>},%
11579     Subtype=/Link,%
11580     PDFAFlags=4%
11581   }%
11582 \endgroup
11583 }
11584 \def\hyper@linkfile#1#2#3{%
11585   \begingroup
11586   \def\Hy@pstringF{#2}%
11587   \Hy@CleanupFile\Hy@pstringF
11588   \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11589   \Hy@pstringdef\Hy@pstringD{#3}%
11590   \Hy@MakeRemoteAction
11591   \leavevmode
11592   \pdfmark[{#1}]{%
11593     pdfmark=/ANN,%
11594     Subtype=/Link,%
11595     PDFAFlags=4,%
11596     AcroHighlight=\@pdfhighlight,%
11597     Border=\@pdfborder,%
11598     BorderStyle=\@pdfborderstyle,%
11599     linktype=file,%
11600     Color=\@filebordercolor,%
11601     Action={%
11602       <<%
11603       /S/GoToR%
11604       \Hy@SetNewWindow
11605       /F(\Hy@pstringF)%
11606       /D%
11607       \ifx\#3\%
11608         [\Hy@href@page\@pdfremotestartview]%
11609       \else
11610         (\Hy@pstringD)cvn%
11611       \fi
11612       \Hy@href@nextactionraw
```

```

11613     >>%
11614   }%
11615 }%
11616 \endgroup
11617 }
11618 \def\@hyper@launch run:#1\|#2#3{%
11619   \begingroup
11620   \Hy@pstringdef\Hy@pstringF{#1}%
11621   \Hy@pstringdef\Hy@pstringP{#3}%
11622   \leavevmode
11623   \pdfmark[{#2}]{%
11624     pdfmark=/ANN,%
11625     Subtype=/Link,%
11626     PDFAFlags=4,%
11627     AcroHighlight=\@pdfhighlight,%
11628     Border=\@pdfborder,%
11629     BorderStyle=\@pdfborderstyle,%
11630     linktype=run,%
11631     Color=\@runbordercolor,%
11632     Action={%
11633       <<%
11634         /S/Launch%
11635         \Hy@SetNewWindow
11636         /F(\Hy@pstringF)%
11637         \ifx\|#3\|%
11638           \else
11639             /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11640           \fi
11641           \Hy@href@nextactionraw
11642         >>%
11643       }%
11644     }%
11645   \endgroup
11646 }
11647 \pdfmark>

```

Unfortunately, some parts of the `pdfmark` PostScript code depend on vagaries of the dvi driver. We isolate here all the problems.

44.9 Rokicki's dvips

dvips thinks in 10ths of a big point, its coordinate space is resolution dependent, and its *y* axis starts at the top of the page. Other drivers can and will be different!

The work is done in `SDict`, because we add in some header definitions in a moment.

```

11648 <*dvips>
11649 \providecommand*\XR@ext}{pdf}
11650 \let\Hy@raisedlink\@empty
11651 \def\literalps@out#1{\special{ps:SDict begin #1 end}}}%
11652 \def\headerps@out#1{\special{! #1}}}%
11653 \input{pdfmark.def}%
11654 \ifx\@pdfproducer\relax
11655   \def\@pdfproducer{dvips + Distiller}%
11656 \fi

```



```

11657 \providecommand*\@pdfborder{0 0 1}
11658 \providecommand*\@pdfborderstyle{}
11659 \providecommand*\@pdfview{XYZ}
11660 \providecommand*\@pdfviewparams{ H.V}
11661 \def\Hy@BorderArrayPatch{BorderArrayPatch}

11662 \g@addto@macro\Hy@FirstPageHook{%
11663   \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.

```

11664   /DvipsToPDF{72.27 mul Resolution div} def%
11665   /PDFToDvips{72.27 div Resolution mul} def%
11666   /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.

```

11667   product (Ghostscript) search {pop pop pop revision 927 gt}%
11668   {pop false} ifelse%
11669   {%
11670     /BorderArrayPatch{} def%
11671   }%
11672   {%
11673     /BorderArrayPatch{%
11674       [exch{%
11675         dup dup type/integertype eq exch type/realtype eq or%
11676         {BPToDvips}if%
11677       }forall]%
11678     }def%
11679   } 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.

```

11680   /HyperBorder {1 PDFToDvips} def%
11681   /H.V {pdf@hoff pdf@voff null} def%
11682   /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

```

11683 /H.S {%
11684   currentpoint %
11685   HyperBorder add /pdf@lly exch def %
11686   dup DvipsToPDF 72 add /pdf@hoff exch def %
11687   HyperBorder sub /pdf@llx exch def%
11688 } def%

```

The calculation of upper left y is done without raising the point in \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

```

11689 /H.L {%
11690   2 sub dup%
11691   /HyperBasePt exch def %
11692   PDFToDvips /HyperBaseDvips exch def %
11693   currentpoint %
11694   HyperBaseDvips sub /pdf@ury exch def%
11695   /pdf@urx exch def%
11696 } def%
11697 /H.A {%
11698   H.L %
11699 % | /pdf@voff| = the distance from the top of the page to a point
11700 % | \baselineskip| above the current point in PDF coordinates
11701   currentpoint exch pop %
11702   vsize 72 sub exch DvipsToPDF %
11703   HyperBasePt sub % baseline skip
11704   sub /pdf@voff exch def%
11705 } def%
11706 /H.R {%
11707   currentpoint %
11708   HyperBorder sub /pdf@ury exch def %
11709   HyperBorder add /pdf@urx exch def %
11710 % | /pdf@voff| = the distance from the top of the page to the current point, in
11711 % PDF coordinates
11712   currentpoint exch pop vsize 72 sub %
11713   exch DvipsToPDF sub /pdf@voff exch def%
11714 } def%
11715 }%
11716 }
11717 \AddToHook{shipout/firstpage}{%
11718   \ifHy@setpagesize
11719     \begingroup
11720     \ifnum\mag=\@m
11721       \ifdim\stockwidth>\z@
11722         \ifdim\stockheight>\z@
11723           \special{papersize=\the\stockwidth,\the\stockheight}%
11724         \else
11725           \ifdim\paperwidth>\z@
11726             \ifdim\paperheight>\z@
11727               \special{papersize=\the\paperwidth,\the\paperheight}%
11728             \fi

```

```

11729     \fi
11730     \fi
11731     \else
11732         \ifdim\stockwidth=\z@
11733         \ifdim\paperwidth>\z@
11734         \ifdim\paperheight>\z@
11735             \special{papersize=\the\paperwidth,\the\paperheight}%
11736         \fi
11737     \fi
11738     \fi
11739     \fi
11740     \fi
11741     \endgroup
11742 \fi
11743 \Hy@DisableOption{setpagesize}%
11744 }

11745 \def\setpdfinkmargin#1{%
11746     \begingroup
11747     \setlength{\dimen@}{#1}%
11748     \literalps@out{%
11749         /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11750     }%
11751     \endgroup
11752 }

11753 </dvips>

```

44.10 VTeX's vtexpdfmark driver

This part is derived from the dvips (many names reflect this).

The origin seems to be the same as TeX's origin, 1 in from the left and 1 in downwards from the top. The direction of the y axis is downwards, the opposite of the dvips case. Units seems to be pt or bp.

```

11754 (*vtexpdfmark)
11755 \providecommand*\XR@ext}{pdf}
11756 \let\Hy@raisedlink\@empty
11757 \def\literalps@out#1{\special{pS:#1}}%
11758 \def\headerps@out#1{\immediate\special{pS:#1}}%
11759 \input{pdfmark.def}%
11760 \ifx\@pdfproducer\relax
11761     \ifnum\OpMode=\@one
11762         \def\@pdfproducer{VTeX}%
11763     \else
11764         \def\@pdfproducer{VTeX + Distiller}%
11765     \fi
11766 \fi
11767 \providecommand*\@pdfborder{0 0 1}
11768 \providecommand*\@pdfborderstyle{}
11769 \providecommand*\@pdfview{XYZ}
11770 \providecommand*\@pdfviewparams{ H.V}

11771 \g@addto@macro\Hy@FirstPageHook{%
11772     \headerps@out{%
11773         /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.

```
11774 /HyperBorder {1} def%
11775 /H.V {pdf@hoff pdf@voff null} def%
11776 /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: $\text{pdf@lly} = Y_c - \text{HyperBorder}$, $\text{pdf@hoff} = X_c + 72$, $\text{pdf@llx} = X_c - \text{HyperBorder}$

```
11777 /H.S {%
11778     currentpoint %
11779     HyperBorder sub%
11780     /pdf@lly exch def %
11781     dup 72 add /pdf@hoff exch def %
11782     HyperBorder sub%
11783     /pdf@llx exch def%
11784 } def%
```

The x and y coordinates of the current point, minus the `\baselineskip`: $\text{pdf@ury} = Y_c + \text{HyperBasePt} + \text{HyperBorder}$, $\text{pdf@urx} = X_c + \text{HyperBorder}$

```
11785 /H.L {%
11786     2 sub%
11787     /HyperBasePt exch def %
11788     currentpoint %
11789     HyperBasePt add HyperBorder add%
11790     /pdf@ury exch def %
11791     HyperBorder add%
11792     /pdf@urx exch def%
11793 } def%
11794 /H.A {%
11795     H.L %
11796     currentpoint exch pop %
11797     vsize 72 sub exch %
11798     HyperBasePt add add%
11799     /pdf@voff exch def%
11800 } def%
```

$\text{pdf@ury} = Y_c + \text{HyperBorder}$, $\text{pdf@urx} = X_c + \text{HyperBorder}$

```
11801 /H.R {%
11802     currentpoint %
11803     HyperBorder add%
11804     /pdf@ury exch def %
11805     HyperBorder add%
11806     /pdf@urx exch def %
11807     currentpoint exch pop vsize 72 sub add%
11808     /pdf@voff exch def%
11809 } def%
11810 }%
11811 }
```

```
11812 \def\setpdflinkmargin#1{%
11813     \begingroup
11814     \setlength{\dimen@}{#1}%
11815     \literalps@out{%
11816         /HyperBorder{\strip@pt\dimen@}def%
```

```

11817 }%
11818 \endgroup
11819 }
11820 </vtxpdfmark>

```

44.11 Textures

```

11821 <*textures>
11822 \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.

```

11823 \begingroup
11824 \obeylines %
11825 \gdef\Hy@ps@CR{\noexpand
11826 }%
11827 \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`.

```

11828 \def\literalps@out#1{%
11829 \special{postscript 0 0 transform}%
11830 \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11831 }%
11832 %

```

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.

```

11833 \def\headerps@out#1{%
11834 \special{%
11835 prepostscript TeXdict begin\Hy@ps@CR
11836 #1\Hy@ps@CR
11837 end%
11838 }%
11839 }%
11840 %

```

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.

```

11841 \g@addto@macro\Hy@FirstPageHook{%
11842   \headerps@out{%
11843     /betterpdfmark {%
11844       systemdict begin %
11845         dup /BP eq%
11846         {cleartomark gsave nulldevice []%
11847           {dup /EP eq%
11848             {cleartomark cleartomark grestore}%
11849             {cleartomark}%
11850             ifelse%
11851           }ifelse %
11852         end%
11853       }def\Hy@ps@CR
11854     ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11855   }% end of \headerps@out
11856 }% end of \AddToHook{shipout/firstpage}
11857 %
11858 \input{pdfmark.def}%
11859 %
11860 \ifx\@pdfproducer\relax
11861   \def\@pdfproducer{Textures + Distiller}%
11862 \fi
11863 \providecommand*\@pdfborder{0 0 1}
11864 \providecommand*\@pdfborderstyle{}
11865 \providecommand*\@pdfview{XYZ}
11866 \providecommand*\@pdfviewparams{ H.V}
11867 %

```

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 \TeX .

```

11868 \Hy@AtBeginDocument{%
11869   \headerps@out{%

```

`Textures` lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```

11870   /vsize {\Hy@pageheight} def%
11871   /DvipsToPDF {} def%
11872   /PDFToDvips {} def%
11873   /BPToDvips {} def%
11874   /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11875   /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11876   /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11877   /H.S {%
11878     currentpoint %
11879     HyperBorder add /pdf@lly exch def %
11880     dup DvipsToPDF 72 add /pdf@hoff exch def %
11881     HyperBorder sub /pdf@llx exch def%
11882   } def\Hy@ps@CR

```

```

11883 /H.L {%
11884 2 sub %
11885 PDFToDvips /HyperBase exch def %
11886 currentpoint %
11887 HyperBase sub /pdf@ury exch def%
11888 /pdf@urx exch def%
11889 } def\Hy@ps@CR
11890 /H.A {%
11891 H.L %
11892 currentpoint exch pop %
11893 vsize 72 sub exch DvipsToPDF %
11894 HyperBase sub % baseline skip
11895 sub /pdf@voff exch def%
11896 } def\Hy@ps@CR
11897 /H.R {%
11898 currentpoint %
11899 HyperBorder sub /pdf@ury exch def %
11900 HyperBorder add /pdf@urx exch def %
11901 currentpoint exch pop vsize 72 sub %
11902 exch DvipsToPDF sub /pdf@voff exch def%
11903 } def\Hy@ps@CR
11904 }%
11905 }

11906 \def\setpdfinkmargin#1{%
11907 \begingroup
11908 \setlength{\dimen@}{#1}%
11909 \literalps@out{%
11910 /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11911 }%
11912 \endgroup
11913 }

11914 \Hy@AtBeginDocument{%
11915 \ifHy@colorlinks
11916 \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11917 \fi
11918 }

11919 \expandafter\let\expandafter\keepPDF@SetupDoc
11920 \csname PDF@SetupDoc\endcsname
11921 \def\PDF@SetupDoc{%
11922 \ifx\@baseurl\@empty
11923 \else
11924 \special{html:<base href="\@baseurl">}%
11925 \fi
11926 \keepPDF@SetupDoc
11927 }
11928 \Hy@WrapperDef\hyper@anchor#1{%
11929 \Hy@SaveLastskip
11930 \Hy@VerboseAnchor{#1}%
11931 \begingroup

```

Textures provides built-in support for HyperTeX specials so this part combines code from `hypertex.def` with what is established by loading `pdfmark.def`, or any other driver.

```

11932 \let\protect=\string
11933 \special{html:<a name=%
11934 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11935 \endgroup
11936 \Hy@activeanchortrue
11937 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11938 \special{html:</a>}%
11939 \Hy@activeanchorfalse
11940 \Hy@RestoreLastskip
11941 }
11942 \Hy@WrapperDef\hyper@anchorstart#1{%
11943 \Hy@SaveLastskip
11944 \Hy@VerboseAnchor{#1}%
11945 \begingroup
11946 \hyper@chars
11947 \special{html:<a name=%
11948 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11949 \endgroup
11950 \Hy@activeanchortrue
11951 }
11952 \def\hyper@anchorend{%
11953 \special{html:</a>}%
11954 \Hy@activeanchorfalse
11955 \Hy@RestoreLastskip
11956 }
11957 \def\@urltype{url}
11958 \def\hyper@linkstart#1#2{%
11959 \Hy@VerboseLinkStart{#1}{#2}%
11960 \expandafter\Hy@colorlink\csname @#1color\endcsname
11961 \def\Hy@tempa{#1}%
11962 \ifx\Hy@tempa\@urltype
11963 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11964 \else
11965 \begingroup
11966 \hyper@chars
11967 \special{%
11968 html:<a href=%
11969 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>%
11970 }%
11971 \endgroup
11972 \fi
11973 }
11974 \def\hyper@linkend{%
11975 \special{html:</a>}%
11976 \Hy@endcolorlink
11977 }
11978 \def\hyper@linkfile#1#2#3{%
11979 \hyper@linkurl{#1}{%
11980 \Hy@linkfileprefix#2\ifx\#3\\\else\#3\fi
11981 }%
11982 }
11983 \def\hyper@linkurl#1#2{%
11984 \leavevmode
11985 \ifHy@raiselinks

```



```

11986 \Hy@SaveSpaceFactor
11987 \Hy@SaveSavedSpaceFactor
11988 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11989 \Hy@RestoreSavedSpaceFactor
11990 \@linkdim\dp\@tempboxa
11991 \lower\@linkdim\hbox{%
11992   \hyper@chars
11993   \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
11994 }%
11995 \Hy@colorlink\@urlcolor
11996 \Hy@RestoreSpaceFactor
11997 #1\Hy@xspace@end
11998 \Hy@SaveSpaceFactor
11999 \@linkdim\ht\@tempboxa
12000 \advance\@linkdim by -6.5\p@
12001 \raise\@linkdim\hbox{\special{html:</a>}}%
12002 \Hy@endcolorlink
12003 \Hy@RestoreSpaceFactor
12004 \else
12005 \begingroup
12006   \hyper@chars
12007   \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
12008   \Hy@colorlink\@urlcolor#1\Hy@xspace@end
12009   \special{html:</a>}}%
12010   \Hy@endcolorlink
12011 \endgroup
12012 \fi
12013 }

```

Very poor implementation of \hyper@link without considering #1.

```

12014 \def\hyper@link#1#2#3{%
12015   \Hy@VerboseLinkStart{#1}{#2}%
12016   \hyper@linkurl{#3}{\#\Hy@HyperDestNameFilter{#2}}%
12017 }
12018 \def\hyper@image#1#2{%
12019   \begingroup
12020     \hyper@chars
12021     \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
12022   \endgroup
12023 }
12024 </textures>

```

44.12 dvipsone

```

12025 % \subsection{dvipsone driver}
12026 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
12027 % |\special| commands.
12028 (*dvipsone)
12029 \providecommand*\XR@ext{}{pdf}
12030 \let\Hy@raisedlink\@empty
12031 \providecommand*\@pdfborder{0 0 1}
12032 \providecommand*\@pdfborderstyle{}
12033 \def\literalps@out#1{\special{ps:#1}}%
12034 \def\headerps@out#1{\special{headertext=#1}}%

```

```

12035 \input{pdfmark.def}%
12036 \HyInfo@AddonUnsupportedtrue
12037 \def\PDF@FinishDoc{%
12038   \Hy@UseMaketitleInfos
12039   \HyInfo@TrappedUnsupported
12040   \special{PDF: Keywords \@pdfkeywords}%
12041   \special{PDF: Title \@pdftitle}%
12042   \special{PDF: Creator \@pdfcreator}%
12043   \ifx\@pdfcreationdate\@empty
12044   \else
12045     \special{PDF: CreationDate \@pdfcreationdate}%
12046   \fi
12047   \ifx\@pdfmoddate\@empty
12048   \else
12049     \special{PDF: ModDate \@pdfmoddate}%
12050   \fi
12051   \special{PDF: Author \@pdfauthor}%
12052   \ifx\@pdfproducer\relax
12053   \else
12054     \special{PDF: Producer \@pdfproducer}%
12055   \fi
12056   \special{PDF: Subject \@pdfsubject}%
12057   \Hy@DisableOption{pdfauthor}%
12058   \Hy@DisableOption{pdftitle}%
12059   \Hy@DisableOption{pdfsubject}%
12060   \Hy@DisableOption{pdfcreator}%
12061   \Hy@DisableOption{addtopdfcreator}%
12062   \Hy@DisableOption{pdfcreationdate}%
12063   \Hy@DisableOption{pdfcreationdate}%
12064   \Hy@DisableOption{pdfmoddate}%
12065   \Hy@DisableOption{pdfproducer}%
12066   \Hy@DisableOption{pdfkeywords}%
12067   \Hy@DisableOption{pdftrapped}%
12068   \Hy@DisableOption{pdfinfo}%
12069 }
12070 \def\PDF@SetupDoc{%
12071   \def\Hy@temp{}%
12072   \ifx\@pdfstartpage\@empty
12073   \else
12074     \ifx\@pdfstartview\@empty
12075     \else
12076       \edef\Hy@temp{%
12077         ,Page=\@pdfstartpage
12078         ,View=\@pdfstartview
12079       }%
12080     \fi
12081   \fi
12082   \edef\Hy@temp{%
12083     \noexpand\pdfmark{%
12084       pdfmark=/DOCVIEW,%
12085       PageMode=/\@pdfpagemode
12086     }\Hy@temp
12087   }%
12088 }%

```

```

12089 \Hy@temp
12090 \ifx\@pdfpagescrop\@empty
12091 \else
12092 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
12093 \fi
12094 \edef\Hy@temp{%
12095 \ifHy@pdftoolbar\else /HideToolbar true\fi
12096 \ifHy@pdfmenubar\else /HideMenubar true\fi
12097 \ifHy@pdfwindowui\else /HideWindowUI true\fi
12098 \ifHy@pdffitwindow /FitWindow true\fi
12099 \ifHy@pdfcenterwindow /CenterWindow true\fi
12100 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
12101 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
12102 \Hy@UseNameKey{Direction}\@pdfdirection
12103 \Hy@UseNameKey{ViewArea}\@pdfviewarea
12104 \Hy@UseNameKey{ViewClip}\@pdfviewclip
12105 \Hy@UseNameKey{PrintArea}\@pdfprintarea
12106 \Hy@UseNameKey{PrintClip}\@pdfprintclip
12107 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
12108 \Hy@UseNameKey{Duplex}\@pdfduplex
12109 \ifx\@pdfpicktraybypdfsize\@empty
12110 \else
12111 /PickTrayByPDFSize \@pdfpicktraybypdfsize
12112 \fi
12113 \ifx\@pdfprintpagerange\@empty
12114 \else
12115 /PrintPageRange[\@pdfprintpagerange]%
12116 \fi
12117 \ifx\@pdfnumcopies\@empty
12118 \else
12119 /NumCopies \@pdfnumcopies
12120 \fi
12121 }%
12122 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
12123 \pdfmark{%
12124 pdfmark=/PUT,%
12125 Raw={%
12126 \string{Catalog\string}<<%
12127 \ifx\Hy@temp\@empty
12128 \else
12129 /ViewerPreferences<<\Hy@temp>>%
12130 \fi
12131 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
12132 \ifx\@pdflang\relax
12133 \else
12134 /Lang(\@pdflang)%
12135 \fi
12136 \ifx\@baseurl\@empty
12137 \else
12138 /URI<</Base(\Hy@pstringB)>>%
12139 \fi
12140 >>%
12141 }%
12142 }%

```

```

12143 }
12144 \providecommand*\@pdfview{XYZ}
12145 \providecommand*\@pdfviewparams{ %
12146   gsave revscl currentpoint grestore %
12147   72 add exch pop null exch null%
12148 }
12149 \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 .

```

12150 \g@addto@macro\Hy@FirstPageHook{%
12151   \headerps@out{%

```

dvipsone lives in scaled points; does this mean 65536 or 65781?

```

12152   /DvipsToPDF { 65781 div } def%
12153   /PDFToDvips { 65781 mul } def%
12154   /BPToDvips{65781 mul}def%
12155   /HyperBorder { 1 PDFToDvips } def%
12156   /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.

```

12157   /BorderArrayPatch{%
12158     [exch{%
12159       dup dup type/integertype eq exch type/realtype eq or%
12160       {BPToDvips}if%
12161     }forall]%
12162   }def%

12163   /H.S {%
12164     currentpoint %
12165     HyperBorder add /pdf@lly exch def %
12166     dup DvipsToPDF 72 add /pdf@hoff exch def %
12167     HyperBorder sub /pdf@llx exch def%
12168   } def%

12169   /H.L {%
12170     2 sub %
12171     PDFToDvips /HyperBase exch def %
12172     currentpoint %
12173     HyperBase sub /pdf@ury exch def%
12174     /pdf@urx exch def%
12175   } def%

12176   /H.A {%
12177     H.L %
12178     currentpoint exch pop %
12179     HyperBase sub % baseline skip
12180     DvipsToPDF /pdf@voff exch def%
12181   } def%

12182   /H.R {%
12183     currentpoint %
12184     HyperBorder sub /pdf@ury exch def %
12185     HyperBorder add /pdf@urx exch def %

```

```

12186     currentpoint exch pop DvipsToPDF /pdf@voff exch def%
12187   } def%
12188 }%
12189 }

12190 \def\setpdfinkmargin#1{%
12191   \begingroup
12192     \setlength{\dimen@}{#1}%
12193     \literalps@out{%
12194       /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
12195     }%
12196   \endgroup
12197 }

12198 </dvipsone>

```

44.13 TeX4ht

```

12199 <*\tex4ht>
12200 \providecommand*{\XR@ext}{html}
12201 \let\Hy@raisedlink\@empty
12202 \@ifpackageloaded{tex4ht}{%
12203   \Hy@InfoNoLine{tex4ht is already loaded}%
12204 }{%
12205   \RequirePackage[hTeX4ht]{tex4ht}%
12206 }
12207 \hyperlinkfileprefix{}
12208 \let\PDF@FinishDoc\@empty
12209 \def\PDF@SetupDoc{%
12210   \ifx\@baseurl\@empty
12211     \else
12212       \special{t4ht=<base href="\@baseurl">}%
12213     \fi
12214 }
12215 \Hy@WrapperDef\hyper@anchor#1{%
12216   \Hy@SaveLastskip
12217   \Hy@VerboseAnchor{#1}%
12218   \begingroup
12219     \let\protect=\string
12220     \special{t4ht=<a name=%
12221       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12222   \endgroup
12223   \Hy@activeanchortrue
12224   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
12225   \special{t4ht=</a>}%
12226   \Hy@activeanchorfalse
12227   \Hy@RestoreLastskip
12228 }
12229 \Hy@WrapperDef\hyper@anchorstart#1{%
12230   \Hy@SaveLastskip
12231   \Hy@VerboseAnchor{#1}%
12232   \begingroup
12233     \hyper@chars\special{t4ht=<a name=%
12234       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12235   \endgroup
12236   \Hy@activeanchortrue

```

```

12237 }
12238 \def\hyper@anchorend{%
12239 \special{t4ht=</a>}%
12240 \Hy@activeanchorfalse
12241 \Hy@RestoreLastskip
12242 }
12243 \def\@urltype{url}
12244 \def\hyper@linkstart#1#2{%
12245 \Hy@VerboseLinkStart{#1}{#2}%
12246 \expandafter\Hy@colorlink\csname @#1color\endcsname
12247 \def\Hy@tempa{#1}%
12248 \ifx\Hy@tempa\@urltype
12249 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12250 \else
12251 \begingroup
12252 \hyper@chars
12253 \special{t4ht=<a href=%
12254 \hyper@quote\#\Hy@DestNameFilter{#2}\hyper@quote>}%
12255 \endgroup
12256 \fi
12257 }
12258 \def\hyper@linkend{%
12259 \special{t4ht=</a>}%
12260 \Hy@endcolorlink
12261 }
12262 \def\hyper@linkfile#1#2#3{%
12263 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
12264 }
12265 \def\hyper@linkurl#1#2{%
12266 \leavevmode
12267 \ifHy@raiselinks
12268 \Hy@SaveSpaceFactor
12269 \Hy@SaveSavedSpaceFactor
12270 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12271 \Hy@RestoreSavedSpaceFactor
12272 \@linkdim\dp\@tempboxa
12273 \lower\@linkdim\hbox{%
12274 \begingroup
12275 \hyper@chars
12276 \special{%
12277 t4ht=<a href=\hyper@quote#2\hyper@quote>%
12278 }%
12279 \endgroup
12280 }%
12281 \Hy@colorlink\@urlcolor
12282 \Hy@RestoreSpaceFactor
12283 #1\Hy@xspace@end
12284 \Hy@SaveSpaceFactor
12285 \Hy@endcolorlink
12286 \@linkdim\ht\@tempboxa
12287 \advance\@linkdim by -6.5\p@
12288 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
12289 \Hy@RestoreSpaceFactor
12290 \else

```

```

12291 \begingroup
12292 \hyper@chars
12293 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12294 \Hy@colorlink\@urlcolor
12295 #1\Hy@xspace@end
12296 \Hy@endcolorlink
12297 \special{t4ht=</a>}%
12298 \endgroup
12299 \fi
12300 }

```

Poor implementation of `\hyper@link` without considering #1.

```

12301 \def\hyper@link#1#2#3{%
12302 \Hy@VerboseLinkStart{#1}{#2}%
12303 \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
12304 }
12305 \def\hyper@image#1#2{%
12306 \begingroup
12307 \hyper@chars
12308 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
12309 \endgroup
12310 }
12311 \let\autoref\ref
12312 \ifx \rEFLiNK \UnDef
12313 \def\rEFLiNK #1#2{#2}%
12314 \fi
12315 \let\backref\@gobble

```

Fix for `tex4ht`.

```

12316 \AtBeginDocument{%
12317 \expandafter
12318 \let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
12319 \expandafter\def\csname Make:Label\endcsname#1#2{%
12320 \ifhmode
12321 \Hy@SaveSpaceFactor
12322 \else
12323 \global\Hy@SavedSpaceFactor=1000 %
12324 \fi
12325 \Hy@OrgMakeLabel{#1}{#2}%
12326 \Hy@RestoreSpaceFactor
12327 #2\Hy@xspace@end%
12328 \Hy@SaveSpaceFactor
12329 }%
12330 \Hy@RestoreSpaceFactor
12331 }%
12332 }
12333 </tex4ht>
12334 <*\tex4htcfg>
12335 \IfFileExists{\jobname.cfg}{\endinput}{}
12336 \Preamble{html}
12337 \begin{document}%
12338 \EndPreamble
12339 \def\TeX{TeX}
12340 \def\OMEGA{Omega}
12341 \def\LaTeX{LaTeX}

```

```

12342 \def\LaTeXe{\LaTeX2e}
12343 \def\TeX{e-TeX}
12344 \def\MF{Metafont}
12345 \def\MP{MetaPost}
12346 \</tex4htcfg>

```

45 Driver-specific form support

45.1 pdfmarks

change 2020-06-20: added /Euro to encoding

```

12347 \*pdfmark
12348 \long\def\@Form[#1]{%
12349 \g@addto@macro\Hy@FirstPageHook{%
12350 \headerps@out{%
12351 [%
12352 /_objdef{pdfDocEncoding}%
12353 /type/dict%
12354 /OBJ pdfmark%
12355 [%
12356 {pdfDocEncoding}%
12357 <<%
12358 /Type/Encoding%
12359 /Differences[%
12360 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
12361 /tilde %
12362 39/quotesingle %
12363 96/grave %
12364 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12365 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
12366 /quotedblbase/quotedblleft/quotedblright/quoteleft%
12367 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
12368 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12369 160/Euro %
12370 164/currency %
12371 166/brokenbar %
12372 168/dieresis/copyright/ordfeminine %
12373 172/logicalnot/.notdef/registered/macron/degree/plusminus%
12374 /twosuperior/threesuperior/acute/mu %
12375 183/periodcentered/cedilla/onesuperior/ordmasculine %
12376 188/onequarter/onehalf/threequarters %
12377 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
12378 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
12379 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
12380 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
12381 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
12382 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
12383 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
12384 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
12385 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
12386 /ucircumflex/udieresis/yacute/thorn/ydieresis%
12387 ]%
12388 >>%
12389 /PUT pdfmark%

```



```

12390 [%
12391   /_objdef{ZaDb}%
12392   /type/dict%
12393 /OBJ pdfmark%
12394 [%
12395   {ZaDb}%
12396   <<%
12397     /Type/Font%
12398     /Subtype/Type1%
12399     /Name/ZaDb%
12400     /BaseFont/ZapfDingbats%
12401   >>%
12402 /PUT pdfmark%
12403 [%
12404   /_objdef{Helv}%
12405   /type/dict%
12406 /OBJ pdfmark%
12407 [%
12408   {Helv}%
12409   <<%
12410     /Type/Font%
12411     /Subtype/Type1%
12412     /Name/Helv%
12413     /BaseFont/Helvetica%
12414     /Encoding{pdfDocEncoding}%
12415   >>%
12416 /PUT pdfmark%
12417 [%
12418   /_objdef{aform}%
12419   /type/dict%
12420 /OBJ pdfmark%
12421 [%
12422   /_objdef{afields}%
12423   /type/array%
12424 /OBJ pdfmark%
12425 [%
12426   /_objdef{corder}%
12427   /type/array%
12428 /OBJ pdfmark%
12429 {%
12430 [%
12431   /BBox[0 0 100 100]%
12432   /_objdef{Check}%
12433 /BP pdfmark %
12434 1 0 0 setrgbcolor%
12435 /ZapfDingbats 80 selectfont %
12436 20 20 moveto%
12437 (4)show%
12438 [/EP pdfmark%
12439 [%
12440   /BBox[0 0 100 100]%
12441   /_objdef{Cross}%
12442 /BP pdfmark %
12443 1 0 0 setrgbcolor%

```

```

12444 /ZapfDingbats 80 selectfont %
12445 20 20 moveto%
12446 (8)show%
12447 [/EP pdfmark%
12448 [%
12449 /BBox[0 0 250 100]%
12450 /_objdef{Submit}%
12451 /BP pdfmark %
12452 0.6 setgray %
12453 0 0 250 100 rectfill %
12454 1 setgray %
12455 2 2 moveto %
12456 2 98 lineto %
12457 248 98 lineto %
12458 246 96 lineto %
12459 4 96 lineto %
12460 4 4 lineto %
12461 fill %
12462 0.34 setgray %
12463 248 98 moveto %
12464 248 2 lineto %
12465 2 2 lineto %
12466 4 4 lineto %
12467 246 4 lineto %
12468 246 96 lineto %
12469 fill%
12470 /Helvetica 76 selectfont %
12471 0 setgray %
12472 8 22.5 moveto%
12473 (Submit)show%
12474 [/EP pdfmark%
12475 [%
12476 /BBox[0 0 250 100]%
12477 /_objdef{SubmitP}%
12478 /BP pdfmark %
12479 0.6 setgray %
12480 0 0 250 100 rectfill %
12481 0.34 setgray %
12482 2 2 moveto %
12483 2 98 lineto %
12484 248 98 lineto %
12485 246 96 lineto %
12486 4 96 lineto %
12487 4 4 lineto %
12488 fill %
12489 1 setgray %
12490 248 98 moveto %
12491 248 2 lineto %
12492 2 2 lineto %
12493 4 4 lineto %
12494 246 4 lineto %
12495 246 96 lineto %
12496 fill%
12497 /Helvetica 76 selectfont %

```

```

12498 0 setgray %
12499 10 20.5 moveto%
12500 (Submit)show%
12501 [/EP pdfmark%
12502 } ?pdfmark%
12503 [%
12504 {aform}%
12505 <<%
12506 /Fields{afields}%
12507 /DR<<%
12508 /Font<<%
12509 /ZaDb{ZaDb}%
12510 /Helv{Helv}%
12511 >>%
12512 >>%
12513 /DA(/Helv 10 Tf 0 g)%
12514 /CO{corder}%
12515 \ifHy@pdfa
12516 \else
12517 \ifHyField@NeedAppearances
12518 /NeedAppearances true%
12519 \fi
12520 \fi
12521 >>%
12522 /PUT pdfmark%
12523 [%
12524 {Catalog}%
12525 <<%
12526 /AcroForm{aform}%
12527 >>%
12528 /PUT pdfmark%
12529 }}%
12530 \kvsetkeys{Form}{#1}%
12531 }
12532 \let\@endForm\@empty
12533 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12534 \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
12535 }

12536 \newcount\HyField@AnnotCount
12537 \HyField@AnnotCount=\z@
12538 \def\HyField@AdvanceAnnotCount{%
12539 \global\advance\HyField@AnnotCount\@ne
12540 }
12541 \def\HyField@TheAnnotCount{%
12542 \the\HyField@AnnotCount
12543 }

12544 \edef\Fld@pageobjref{/P\string{ThisPage\string}}
12545 \def\HyField@AddToFields#1{%
12546 \pdfmark{%
12547 pdfmark=/APPEND,%
12548 Raw={%
12549 \string{afields\string}%
12550 \string{#1\HyField@TheAnnotCount\string}%

```

```

12551 }%
12552 }%
12553 \ifx\Fld@calculate@code\@empty
12554 \else
12555 \pdfmark{%
12556 pdfmark=/APPEND,%
12557 Raw={%
12558 \string{corder\string}%
12559 \string{#1\HyField@TheAnnotCount\string}%
12560 }%
12561 }%
12562 \fi
12563 }

12564 \def\@TextField[#1]#2{% parameters, label
12565 \def\Fld@name{#2}%
12566 \let\Fld@default\@empty
12567 \let\Fld@value\@empty
12568 \def\Fld@width{\DefaultWidthofText}%
12569 \def\Fld@height{%
12570 \ifFld@multiline
12571 \DefaultHeightofTextMultiline
12572 \else
12573 \DefaultHeightofText
12574 \fi
12575 }%
12576 \begingroup
12577 \expandafter\HyField@SetKeys\expandafter{%
12578 \DefaultOptionsofText,#1%
12579 }%
12580 \HyField@FlagsText
12581 \ifFld@hidden\def\Fld@width{1sp}\fi
12582 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12583 \HyField@AdvanceAnnotCount
12584 \LayoutTextField{#2}{%
12585 \leavevmode
12586 \Hy@escapeform\PDFForm@Text
12587 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
12588 pdfmark=/ANN,%
12589 objdef=text\HyField@TheAnnotCount,%
12590 Raw={\PDFForm@Text}%
12591 }%
12592 }%
12593 \HyField@AddToFields{text}%
12594 \endgroup
12595 }

12596 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12597 \def\Fld@name{#2}%
12598 \let\Fld@default\relax
12599 \let\Fld@value\relax
12600 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12601 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12602 \begingroup
12603 \Fld@menulength=0 %
12604 \@tempdima\z@

```

```

12605 \@for\@curropt:=#3\do{%
12606 \expandafter\Fld@checkequals\@curropt==\\%
12607 \Hy@StepCount\Fld@menulength
12608 \settowidth{\@tempdimb}{\@currDisplay}%
12609 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12610 }%
12611 \advance\@tempdima by 15\p@
12612 \begingroup
12613 \HyField@SetKeys{#1}%
12614 \edef\x{\endgroup
12615 \noexpand\expandafter
12616 \noexpand\HyField@SetKeys
12617 \noexpand\expandafter{%
12618 \expandafter\noexpand\csname DefaultOptionsof%
12619 \ifFld@radio
12620 Radio%
12621 \else
12622 \ifFld@combo
12623 \ifFld@popdown
12624 PopdownBox%
12625 \else
12626 ComboBox%
12627 \fi
12628 \else
12629 ListBox%
12630 \fi
12631 \fi
12632 \endcsname
12633 }%
12634 }\x
12635 \HyField@SetKeys{#1}%
12636 \ifFld@hidden\def\Fld@width{1sp}\fi
12637 \ifx\Fld@value\relax
12638 \let\Fld@value\Fld@default
12639 \fi
12640 \LayoutChoiceField{#2}{%
12641 \ifFld@radio
12642 \HyField@FlagsRadioButton
12643 \@@Radio{#3}%
12644 \else
12645 \begingroup
12646 \HyField@FlagsChoice
12647 \ifdim\Fld@width<\@tempdima
12648 \ifdim\@tempdima<1cm\@tempdima1cm\fi
12649 \edef\Fld@width{\the\@tempdima}%
12650 \fi
12651 \ifFld@combo
12652 \else
12653 \@tempdima=\the\Fld@menulength\Fld@charsize
12654 \advance\@tempdima by \Fld@borderwidth bp %
12655 \advance\@tempdima by \Fld@borderwidth bp %
12656 \edef\Fld@height{\the\@tempdima}%
12657 \fi
12658 \@@Listbox{#3}%

```

```

12659     \endgroup
12660     \fi
12661 }%
12662 \endgroup
12663 }
12664 \def\@@Radio#1{%
12665   \Fld@listcount=0 %
12666   \EdefEscapeName\Fld@default{\Fld@default}%
12667   \@for\@curropt:=#1\do{%
12668     \expandafter\Fld@checkequals\@curropt==\%
12669     \EdefEscapeName\@currValue{\@currValue}%
12670     \Hy@StepCount\Fld@listcount
12671     \@currDisplay\space
12672     \Hy@escapeform\PDFForm@Radio
12673     \ifnum\Fld@listcount=1 %
12674       \HyField@AdvanceAnnotCount
12675     \fi
12676     \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12677       pdfmark=/ANN,%
12678       objdef=\ifnum\Fld@listcount=1 radio\HyField@TheAnnotCount\fi,%
12679       Raw={%
12680         \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12681       }%
12682     } % deliberate space between radio buttons
12683     \ifnum\Fld@listcount=1 %
12684       \HyField@AddToFields{radio}%
12685     \fi
12686   }%
12687 }
12688 \newcount\Fld@listcount
12689 \def\@@Listbox#1{%
12690   \HyField@PDFChoices{#1}%
12691   \Hy@escapeform\PDFForm@List
12692   \HyField@AdvanceAnnotCount
12693   \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
12694     pdfmark=/ANN,%
12695     objdef=list\HyField@TheAnnotCount,%
12696     Raw={\PDFForm@List}%
12697   }%
12698   \HyField@AddToFields{list}%
12699 }
12700 \def\@PushButton[#1]#2{% parameters, label
12701   \def\Fld@name{#2}%
12702   \begingroup
12703     \expandafter\HyField@SetKeys\expandafter{%
12704       \DefaultOptionsofPushButton,#1%
12705     }%
12706     \ifHy@pdfa
12707       \Hy@Error{%
12708         PDF/A: Push button with JavaScript is prohibited%
12709       }\@ehc
12710     \LayoutPushButtonField{%
12711       \leavevmode
12712       \MakeButtonField{#2}%

```

```

12713 }%
12714 \else
12715 \HyField@FlagsPushButton
12716 \ifFld@hidden\def\Fld@width{1sp}\fi
12717 \HyField@AdvanceAnnotCount
12718 \LayoutPushButtonField{%
12719 \leavevmode
12720 \Hy@escapeform\PDFForm@Push
12721 \pdfmark[\MakeButtonField{#2}]{%
12722 pdfmark=/ANN,%
12723 objdef=push\HyField@TheAnnotCount,%
12724 Raw={\PDFForm@Push}%
12725 }%
12726 }%
12727 \HyField@AddToFields{push}%
12728 \fi
12729 \endgroup
12730 }
12731 \def\@Submit[#1]#2{%
12732 \def\Fld@width{\DefaultWidthofSubmit}%
12733 \def\Fld@height{\DefaultHeightofSubmit}%
12734 \begingroup
12735 \expandafter\HyField@SetKeys\expandafter{%
12736 \DefaultOptionsofSubmit,#1%
12737 }%
12738 \HyField@FlagsPushButton
12739 \HyField@FlagsSubmit
12740 \ifFld@hidden\def\Fld@width{1sp}\fi
12741 \Hy@escapeform\PDFForm@Submit
12742 \HyField@AdvanceAnnotCount
12743 \pdfmark[\MakeButtonField{#2}]{%
12744 pdfmark=/ANN,%
12745 objdef=submit\HyField@TheAnnotCount,%
12746 Raw={\PDFForm@Submit /AP<</N{Submit}/D{SubmitP}>>}%
12747 }%
12748 \HyField@AddToFields{submit}%
12749 \endgroup
12750 }
12751 \def\@Reset[#1]#2{%
12752 \def\Fld@width{\DefaultWidthofReset}%
12753 \def\Fld@height{\DefaultHeightofReset}%
12754 \begingroup
12755 \expandafter\HyField@SetKeys\expandafter{%
12756 \DefaultOptionsofReset,#1%
12757 }%
12758 \leavevmode
12759 \ifHy@pdfa
12760 \Hy@Error{%
12761 PDF/A: Reset action is prohibited%
12762 } \@ehc
12763 \MakeButtonField{#2}%
12764 \else
12765 \HyField@FlagsPushButton
12766 \ifFld@hidden\def\Fld@width{1sp}\fi

```

```

12767 \Hy@escapeform\PDFForm@Reset
12768 \HyField@AdvanceAnnotCount
12769 \pdfmark[\MakeButtonField{#2}]{%
12770 pdfmark=/ANN,%
12771 objdef=reset\HyField@TheAnnotCount,%
12772 Raw={\PDFForm@Reset}%
12773 }%
12774 \HyField@AddToFields{reset}%
12775 \fi
12776 \endgroup
12777 }%
12778 \def\@CheckBox[#1]#2{% parameters, label
12779 \def\Fld@name{#2}%
12780 \def\Fld@default{0}%
12781 \begingroup
12782 \def\Fld@width{\DefaultWidthofCheckBox}%
12783 \def\Fld@height{\DefaultHeightofCheckBox}%
12784 \expandafter\HyField@SetKeys\expandafter{%
12785 \DefaultOptionsofCheckBox,#1%
12786 }%
12787 \HyField@FlagsCheckBox
12788 \ifFld@hidden\def\Fld@width{1sp}\fi
12789 \HyField@AdvanceAnnotCount
12790 \LayoutCheckBox{#2}{%
12791 \leavevmode
12792 \Hy@escapeform\PDFForm@Check
12793 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
12794 pdfmark=/ANN,%
12795 objdef=check\HyField@TheAnnotCount,%
12796 Raw={\PDFForm@Check}%
12797 }%
12798 }%
12799 \HyField@AddToFields{check}%
12800 \endgroup
12801 }
12802 \pdfmark

```

45.2 HyperTeX

```

12803 (*hypertex)
12804 \def\@Form[#1]{%
12805 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12806 }
12807 \let\@endForm\@empty
12808 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12809 \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12810 }
12811 \def\@TextField[#1]#2{% parameters, label
12812 \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12813 }
12814 \def\@CheckBox[#1]#2{% parameters, label
12815 \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12816 }
12817 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices

```



```

12818 \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12819 }
12820 \def\@PushButton[#1]#2{% parameters, label
12821 \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12822 }
12823 \def\@Reset[#1]#2{%
12824 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12825 }
12826 \def\@Submit[#1]#2{%
12827 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12828 }
12829 </hypertex>

```

45.3 TeX4ht

```

12830 (*tex4ht)
12831 \def\@Form[#1]{%
12832 \kvsetkeys{Form}{#1}%
12833 \HCode{<form action="\Form@action" method="\Form@method">}%
12834 }
12835 \def\@endForm{\HCode{</form>}}
12836 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12837 \Hy@Message{Sorry, TeX4ht does not support gauges}%
12838 }
12839 \def\@TextField[#1]#2{% parameters, label
12840 \let\Hy@reserved@a\@empty
12841 \def\Fld@name{#2}%
12842 \let\Fld@default\@empty
12843 \bgroup
12844 \Field@toks={ }%
12845 \kvsetkeys{Field}{#1}%
12846 \HCode{<label for="\Fld@name">#2</label>}%
12847 \ifFld@password
12848 \@@PasswordField
12849 \else
12850 \@@TextField
12851 \fi
12852 \egroup
12853 }
12854 \def\@@PasswordField{%
12855 \HCode{%
12856 <input type="password" %
12857 id="\Fld@name" %
12858 name="\Fld@name" %
12859 \ifFld@hidden type="hidden" \fi
12860 value="\Fld@default" %
12861 \the\Field@toks
12862 >%
12863 }%
12864 }
12865 \def\@@TextField{%
12866 \ifFld@multiline
12867 \HCode{<textarea %
12868 \ifFld@readonly readonly \fi
12869 id="\Fld@name" %

```

```

12870     name="\Fld@name" %
12871     \ifFld@hidden type="hidden" \fi
12872     \the\Field@toks>%
12873 }%
12874 \Fld@default
12875 \HCode{</textarea>}%
12876 \else
12877 \HCode{<input type="textbox" %
12878     \ifFld@readonly readonly \fi
12879     id="\Fld@name" %
12880     name="\Fld@name" %
12881     \ifFld@hidden type="hidden" \fi
12882     value="\Fld@default" %
12883     \the\Field@toks>%
12884 }%
12885 \fi
12886 }
12887 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12888 \def\Fld@name{#2}%
12889 \let\Fld@default\@empty
12890 \let\Hy@reserved@a\relax
12891 \begingroup
12892 \expandafter\Fld@findlength#3\\%
12893 \Field@toks={ }%
12894 \kvsetkeys{Field}{#1}%
12895 #2%
12896 \ifFld@radio
12897 \expandafter\@@Radio#3\\%
12898 \else
12899 \expandafter\@@Menu#3\\%
12900 \fi
12901 \endgroup
12902 }
12903 \def\Fld@findlength#1\\{%
12904 \Fld@menulength=0 %
12905 \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
12906 }
12907 \def\@@Menu#1\\{%
12908 \HCode{<select size="\the\Fld@menulength" %
12909     name="\Fld@name" %
12910     \the\Field@toks>%
12911 }%
12912 \@for\@curropt:=#1\do{%
12913 \expandafter\Fld@checkequals\@curropt==\\%
12914 \HCode{<option %
12915     \ifx\@curropt\Fld@default selected \fi
12916     value="\@currValue">\@currDisplay</option>%
12917 }%
12918 }%
12919 \HCode{</select>}%
12920 }
12921 \def\@@Radio#1\\{%
12922 \@for\@curropt:=#1\do{%
12923 \expandafter\Fld@checkequals\@curropt==\\%

```

```

12924 \HCode{<input type="radio" %
12925 \ifx\@curropt\Fld@default checked \fi
12926 name="\Fld@name" %
12927 value="\@currValue" %
12928 \the\Field@toks>%
12929 }%
12930 \@currDisplay
12931 }%
12932 }
12933 \def\@PushButton[#1]#2{% parameters, label
12934 \def\Fld@name{#2}%
12935 \bgroup
12936 \Field@toks={ }%
12937 \kvsetkeys{Field}{#1}%
12938 \HCode{<input type="button" %
12939 name="\Fld@name" %
12940 value="#2" %
12941 \the\Field@toks>%
12942 }%
12943 \HCode{</button>}%
12944 \egroup
12945 }
12946 \def\@Submit[#1]#2{%
12947 \HCode{<button type="submit">#2</button>}%
12948 }
12949 \def\@Reset[#1]#2{%
12950 \HCode{<button type="reset">#2</button>}%
12951 }
12952 \def\@CheckBox[#1]#2{% parameters, label
12953 \let\Hy@reserved@a\@empty
12954 \def\Fld@name{#2}%
12955 \def\Fld@default{0}%
12956 \bgroup
12957 \Field@toks={ }%
12958 \kvsetkeys{Field}{#1}%
12959 \HCode{<input type="checkbox" %
12960 \ifFld@checked checked \fi
12961 \ifFld@disabled disabled \fi
12962 \ifFld@readonly readonly \fi
12963 name="\Fld@name" %
12964 \ifFld@hidden type="hidden" \fi
12965 value="\Fld@default" %
12966 \the\Field@toks>%
12967 #2%
12968 }%
12969 \egroup
12970 }
12971 </tex4ht>

```

45.4 pdfTeX

```

12972 <*pdfTeX>
12973 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12974 \Hy@Message{Sorry, pdfTeX does not support FORM gauges}%
12975 }

```

```

12976 \def\MakeFieldObject#1#2{\sbox0{#1}%
12977 \immediate\pdfxform0 %
12978 \expandafter\edef\csname #2Object\endcsname{%
12979 \the\pdfastxform\space 0 R%
12980 }%
12981 % \hbox to 0pt{\hskip-\maxdimen{\pdfrefxform \the\pdfastxform}}}%
12982 }%
12983 \let\HyField@afields\@empty
12984 \let\HyField@cofields\@empty
12985 \ifundefined{pdfastlink}
12986 {%
12987 \let\HyField@AddToFields\relax
12988 \PackageInfo{hyperref}{%
12989 You need pdfTeX 1.40.0 for setting the /Fields entry.%
12990 \MessageBreak
12991 Adobe Reader/Acrobat accepts an empty /Field array,%
12992 \MessageBreak
12993 but other PDF viewers might complain%
12994 }}%
12995 {%
12996 \let\HyField@AuxAddToFields\@gobble
12997 \let\HyField@AuxAddToCoFields\@gobbletwo
12998 \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.

```

12999 \def\HyField@ABD@AuxAddToCoFields#1#2{%
13000 \begingroup
13001 \Hy@safe@activetrue
13002 \let\@secondoftwo\relax
13003 \ifx\HyField@cofields\@empty
13004 \xdef\HyField@cofields{%
13005 \@secondoftwo{#1}{ #2 0 R}%
13006 }%
13007 \else
13008 \let\@secondoftwo\relax
13009 \def\HyField@AddCoField##1##2##3{%
13010 \ifx##1\@empty
13011 \@secondoftwo{#1}{ #2 0 R}%
13012 \expandafter\@gobble
13013 \else
13014 \ifnum\pdfstrcmp{##2}{#1}>\z@
13015 \@secondoftwo{#1}{ #2 0 R}%
13016 \@secondoftwo{##2}{##3}%
13017 \expandafter\expandafter\expandafter\@gobble
13018 \else
13019 \@secondoftwo{##2}{##3}%
13020 \fi
13021 \fi
13022 \HyField@AddCoField
13023 }%
13024 \xdef\HyField@cofields{%
13025 \expandafter\HyField@AddCoField
13026 \HyField@cofields\@empty\@empty\@empty
13027 }%

```

```

13028 \fi
13029 \endgroup
13030 }%
13031 \Hy@AtBeginDocument{%
13032 \if@filesw
13033 \immediate\write\@mainaux{%
13034 \string\providecommand\string\HyField@AuxAddToFields[1]{}%
13035 }%
13036 \immediate\write\@mainaux{%
13037 \string\providecommand\string\HyField@AuxAddToCoFields[2]{}%
13038 }%
13039 \fi
13040 \let\HyField@AfterAuxOpen\@firstofone
13041 \def\HyField@AuxAddToFields#1{%
13042 \xdef\HyField@afields{%
13043 \ifx\HyField@afields\@empty
13044 \else
13045 \HyField@afields
13046 \space
13047 \fi
13048 #1 0 R%
13049 }%
13050 }%
13051 \let\HyField@AuxAddToCoFields\HyField@ABD@AuxAddToCoFields
13052 }%
13053 \def\HyField@AddToFields{%
13054 \expandafter\HyField@@AddToFields\expandafter{%
13055 \the\pdfastlink
13056 }%
13057 \ifx\Fld@calculate@code\@empty
13058 \else
13059 \begingroup
13060 \Hy@safe@activestrue
13061 \edef\Hy@temp{%
13062 \endgroup
13063 \if@filesw
13064 \write\@mainaux{%
13065 \string\HyField@AuxAddToCoFields{%
13066 \Fld@calculate@sortkey
13067 }{%
13068 \the\pdfastlink
13069 }%
13070 }%
13071 \fi
13072 }%
13073 \Hy@temp
13074 \fi
13075 }%
13076 \def\HyField@@AddToFields#1{%
13077 \HyField@AfterAuxOpen{%
13078 \if@filesw
13079 \write\@mainaux{%
13080 \string\HyField@AuxAddToFields{#1}%
13081 }%

```

```

13082     \fi
13083   }%
13084 }%
13085 }
13086 \def\@Form[#1]{%
13087   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13088   \kvsetkeys{Form}{#1}%
13089   \pdf@ifdraftmode{}{%
13090     \Hy@FormObjects
13091     \ifnum\pdfTeXversion>13 %
13092       \pdfrefobj\OBJ@pdfdocencoding
13093       \pdfrefobj\OBJ@ZaDb
13094       \pdfrefobj\OBJ@Helv
13095     \fi
13096     \AddToHook{enddocument/afteraux}{%
13097       \immediate\pdfobj{%
13098         <<%
13099         /Fields[\HyField@afields]%
13100         \ifx\HyField@cofields\@empty
13101           \else
13102             /CO[\romannumeral-`\Q\HyField@cofields]%
13103           \fi
13104         /DR<<%
13105         /Font<<%
13106         /ZaDb \OBJ@ZaDb\space 0 R%
13107         /Helv \OBJ@Helv\space 0 R%
13108         >>%
13109       >>%
13110       /DA(/Helv 10 Tf 0 g)%
13111       \ifHy@pdfa
13112       \else
13113         \ifHyField@NeedAppearances
13114         /NeedAppearances true%
13115       \fi
13116       \fi
13117     >>%
13118   }%
13119   \edef\OBJ@acroform{\the\pdflastobj}%
13120   \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
13121 }%
13122 }%
13123 \MakeFieldObject{%
Same as \ding{123} of package pifont.
13124   \begingroup
13125     \fontfamily{pzd}%
13126     \fontencoding{U}%
13127     \fontseries{m}%
13128     \fontshape{n}%
13129     \selectfont
13130     \char123 %
13131   \endgroup
13132 }{Ding}%
13133 \MakeFieldObject{%
13134   \fbox{\textcolor{yellow}{\textsf{Submit}}}%

```

```

13135 }{Submit}%
13136 \MakeFieldObject{%
13137   \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
13138 }{SubmitP}%
13139 }
13140 \let\@endForm\@empty
13141 \let\HyAnn@AbsPageLabel\@empty
13142 \let\Fld@pageobjref\@empty
13143 \@ifundefined{pdfpageref}{%
13144 }{%
13145   \@ifpackageloaded{zref-abspage}{%
13146     \newcount\HyAnn@Count
13147     \HyAnn@Count=\z@
13148     \def\HyAnn@AbsPageLabel{%
13149       \global\advance\HyAnn@Count by\@ne
13150       \zref@labelbyprops{HyAnn@\the\HyAnn@Count}{abspage}%
13151       \zref@refused{HyAnn@\the\HyAnn@Count}%
13152     }%
13153     \def\Fld@pageobjref{%
13154       \zref@ifrefundefined{HyAnn@\the\HyAnn@Count}{%
13155       }{%
13156         \zref@ifrefcontainsprop{HyAnn@\the\HyAnn@Count}{abspage}{%
13157           /P \pdfpageref
13158           \zref@extractdefault{HyAnn@\the\HyAnn@Count}{abspage}{1} %
13159           \space 0 R%
13160         }{%
13161         }%
13162       }%
13163     }%
13164   }{%
13165   }%
13166 }
13167 \def\@TextField[#1]#2{% parameters, label
13168   \def\Fld@name{#2}%
13169   \let\Fld@default\@empty
13170   \let\Fld@value\@empty
13171   \def\Fld@width{\DefaultWidthofText}%
13172   \def\Fld@height{%
13173     \ifFld@multiline
13174       \DefaultHeightofTextMultiline
13175     \else
13176       \DefaultHeightofText
13177     \fi
13178   }%
13179   \begingroup
13180     \expandafter\HyField@SetKeys\expandafter{%
13181       \DefaultOptionsofText,#1%
13182     }%
13183   \PDFForm@Name
13184   \HyField@FlagsText
13185   \ifFld@hidden\def\Fld@width{1sp}\fi
13186   \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13187   \LayoutTextField{#2}%
13188   \leavevmode

```

```

13189 \HyAnn@AbsPageLabel
13190 \Hy@escapeform\PDFForm@Text
13191 \pdfstartlink user {\PDFForm@Text}\relax
13192 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
13193 \HyField@AddToFields
13194 }%
13195 \endgroup
13196 }
13197 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13198 \def\Fld@name{#2}%
13199 \let\Fld@default\relax
13200 \let\Fld@value\relax
13201 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13202 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13203 \begingroup
13204 \Fld@menulength=0 %
13205 \@tempdima\z@
13206 \@for\@curropt:=#3\do{%
13207 \expandafter\Fld@checkequals\@curropt==\%
13208 \Hy@StepCount\Fld@menulength
13209 \settowidth{\@tempdimb}{\@currDisplay}%
13210 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13211 }%
13212 \advance\@tempdima by 15\p@
13213 \begingroup
13214 \HyField@SetKeys{#1}%
13215 \edef\x{\endgroup
13216 \noexpand\expandafter
13217 \noexpand\HyField@SetKeys
13218 \noexpand\expandafter{%
13219 \expandafter\noexpand\curname DefaultOptionsof%
13220 \ifFld@radio
13221 Radio%
13222 \else
13223 \ifFld@combo
13224 \ifFld@popdown
13225 PopdownBox%
13226 \else
13227 ComboBox%
13228 \fi
13229 \else
13230 ListBox%
13231 \fi
13232 \fi
13233 \endcurname
13234 }%
13235 }\x
13236 \HyField@SetKeys{#1}%
13237 \PDFForm@Name
13238 \ifFld@hidden\def\Fld@width{1sp}\fi
13239 \ifx\Fld@value\relax
13240 \let\Fld@value\Fld@default
13241 \fi
13242 \LayoutChoiceField{#2}{%

```



```

13243 \ifFld@radio
13244 \HyField@FlagsRadioButton
13245 \@@Radio{#3}%
13246 \else
13247 \beginngroup
13248 \HyField@FlagsChoice
13249 \ifdim\Fld@width<\@tempdima
13250 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13251 \edef\Fld@width{\the\@tempdima}%
13252 \fi
13253 \ifFld@combo
13254 \else
13255 \@tempdima=\the\Fld@menulength\Fld@charsize
13256 \advance\@tempdima by \Fld@borderwidth bp %
13257 \advance\@tempdima by \Fld@borderwidth bp %
13258 \edef\Fld@height{\the\@tempdima}%
13259 \fi
13260 \@@ListBox{#3}%
13261 \endgroup
13262 \fi
13263 }%
13264 \endgroup
13265 }
13266 \def\@@Radio#1{%
13267 \Fld@listcount=0 %
13268 \EdefEscapeName\Fld@default{\Fld@default}%
13269 \@for\@curropt:=#1\do{%
13270 \expandafter\Fld@checkequals\@curropt==\%
13271 \EdefEscapeName\@currValue{\@currValue}%
13272 \Hy@StepCount\Fld@listcount
13273 \@currDisplay\space
13274 \leavevmode
13275 \HyAnn@AbsPageLabel
13276 \Hy@escapeform\PDFForm@Radio
13277 \pdfstartlink user {%
13278 \PDFForm@Radio
13279 /AP<<%
13280 /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.

```

13281 /\@currValue\space \DingObject
13282 >>%
13283 >>%
13284 }%
13285 \relax
13286 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
13287 \ifnum\Fld@listcount=1 %
13288 \HyField@AddToFields
13289 \fi
13290 \space % deliberate space between radio buttons
13291 }%
13292 }

```

```

13293 \newcount\Fld@listcount
13294 \def\@@Listbox#1{%
13295   \HyField@PDFChoices{#1}%
13296   \leavevmode
13297   \HyAnn@AbsPageLabel
13298   \Hy@escapeform\PDFForm@List
13299   \pdfstartlink user {\PDFForm@List}\relax
13300   \MakeChoiceField{\Fld@width}{\Fld@height}%
13301   \pdfendlink
13302   \HyField@AddToFields
13303 }
13304 \def\@PushButton[#1]#2{% parameters, label
13305   \def\Fld@name{#2}%
13306   \begingroup
13307     \expandafter\HyField@SetKeys\expandafter{%
13308       \DefaultOptionsofPushButton,#1%
13309     }%
13310     \PDFForm@Name
13311     \ifHy@pdfa
13312       \Hy@Error{%
13313         PDF/A: Push button with JavaScript is prohibited%
13314       }\@ehc
13315       \LayoutPushButtonField{%
13316         \leavevmode
13317         \MakeButtonField{#2}%
13318       }%
13319     \else
13320       \HyField@FlagsPushButton
13321       \ifFld@hidden\def\Fld@width{1sp}\fi
13322       \LayoutPushButtonField{%
13323         \leavevmode
13324         \HyAnn@AbsPageLabel
13325         \Hy@escapeform\PDFForm@Push
13326         \pdfstartlink user {\PDFForm@Push}\relax
13327         \MakeButtonField{#2}%
13328         \pdfendlink
13329         \HyField@AddToFields
13330       }%
13331     \fi
13332   \endgroup
13333 }
13334 \def\@Submit[#1]#2{%
13335   \def\Fld@width{\DefaultWidthofSubmit}%
13336   \def\Fld@height{\DefaultHeightofSubmit}%
13337   \begingroup
13338     \expandafter\HyField@SetKeys\expandafter{%
13339       \DefaultOptionsofSubmit,#1%
13340     }%
13341     \HyField@FlagsPushButton
13342     \HyField@FlagsSubmit
13343     \ifFld@hidden\def\Fld@width{1sp}\fi
13344     \leavevmode
13345     \HyAnn@AbsPageLabel
13346     \Hy@escapeform\PDFForm@Submit

```

```

13347 \pdfstartlink user {%
13348 \PDFForm@Submit
13349 /AP<</N \SubmitObject/D \SubmitPObj>>%
13350 }%
13351 \relax
13352 \MakeButtonField{#2}%
13353 \pdfendlink
13354 \HyField@AddToFields
13355 \endgroup
13356 }
13357 \def\@Reset[#1]#2{%
13358 \def\Fld@width{\DefaultWidthofReset}%
13359 \def\Fld@height{\DefaultHeightofReset}%
13360 \begingroup
13361 \expandafter\HyField@SetKeys\expandafter{%
13362 \DefaultOptionsofReset,#1%
13363 }%
13364 \leavevmode
13365 \ifHy@pdfa
13366 \Hy@Error{%
13367 PDF/A: Reset action is prohibited%
13368 }\@ehc
13369 \MakeButtonField{#2}%
13370 \else
13371 \HyField@FlagsPushButton
13372 \ifFld@hidden\def\Fld@width{1sp}\fi
13373 \HyAnn@AbsPageLabel
13374 \Hy@escapeform\PDFForm@Reset
13375 \pdfstartlink user {\PDFForm@Reset}\relax
13376 \MakeButtonField{#2}%
13377 \pdfendlink
13378 \HyField@AddToFields
13379 \fi
13380 \endgroup
13381 }
13382 \def\@CheckBox[#1]#2{% parameters, label
13383 \def\Fld@name{#2}%
13384 \def\Fld@default{0}%
13385 \begingroup
13386 \def\Fld@width{\DefaultWidthofCheckBox}%
13387 \def\Fld@height{\DefaultHeightofCheckBox}%
13388 \expandafter\HyField@SetKeys\expandafter{%
13389 \DefaultOptionsofCheckBox,#1%
13390 }%
13391 \PDFForm@Name
13392 \HyField@FlagsCheckBox
13393 \ifFld@hidden\def\Fld@width{1sp}\fi
13394 \LayoutCheckField{#2}{%
13395 \leavevmode
13396 \HyAnn@AbsPageLabel
13397 \Hy@escapeform\PDFForm@Check
13398 \pdfstartlink user {\PDFForm@Check}\relax
13399 \MakeCheckField{\Fld@width}{\Fld@height}%
13400 \pdfendlink

```

```

13401 \HyField@AddToFields
13402 }%
13403 \endgroup
13404 }
13405 \def\Hy@FormObjects{%
13406 \pdfobj {%
13407 <<%
13408 /Type/Encoding%
13409 /Differences[%
13410 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
13411 /ring/tilde %
13412 39/quotesingle %
13413 96/grave %
13414 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13415 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13416 /quotedblbase/quotedblleft/quotedblright/quoteleft%
13417 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
13418 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13419 160/Euro %
13420 164/currency %
13421 166/brokenbar %
13422 168/dieresis/copyright/ordfeminine %
13423 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13424 /twosuperior/threesuperior/acute/mu %
13425 183/periodcentered/cedilla/onesuperior/ordmasculine %
13426 188/onequarter/onehalf/threequarters %
13427 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13428 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
13429 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
13430 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
13431 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
13432 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
13433 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
13434 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
13435 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
13436 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
13437 ]%
13438 >>%
13439 }%
13440 \xdef\OBJ@pdfdocencoding{\the\pdflastobj}%
13441 \pdfobj{%
13442 <<%
13443 /Type/Font%
13444 /Subtype/Type1%
13445 /Name/ZaDb%
13446 /BaseFont/ZapfDingbats%
13447 >>%
13448 }%
13449 \xdef\OBJ@ZaDb{\the\pdflastobj}%
13450 \pdfobj{%
13451 <<%
13452 /Type/Font%
13453 /Subtype/Type1%
13454 /Name/Helv%

```

```

13455 /BaseFont/Helvetica%
13456 /Encoding \OBJ@pdfdocencoding\space 0 R%
13457 >>%
13458 }%
13459 \xdef\OBJ@Helv{\the\pdfastobj}%
13460 \global\let\Hy@FormObjects\relax
13461 }
13462 \pdfTeX

```

45.5 dvipdfm, xetex

D. P. Story adapted the pdf \TeX forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```

13463 \*dvipdfm | xetex

```

\@Gauge

```

13464 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13465 \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
13466 }

```

\@Form

```

13467 \def\@Form[#1]{%
13468 \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13469 \kvsetkeys{Form}{#1}%
13470 \Hy@FormObjects
13471 \@pdfm@mark{obj @afields []}%
13472 \@pdfm@mark{obj @corder []}%
13473 \@pdfm@mark{%
13474 obj @aform <<%
13475 /Fields @afields%
13476 /DR<<%
13477 /Font<<%
13478 /ZaDb @OBJZaDb%
13479 /Helv @OBJHelv%
13480 >>%
13481 >>%
13482 /DA(/Helv 10 Tf 0 g)%
13483 /CO @corder%
13484 \ifHy@pdfa
13485 \else
13486 \ifHyField@NeedAppearances
13487 /NeedAppearances true%
13488 \fi
13489 \fi
13490 >>%
13491 }%
13492 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
13493 }

```

\@endForm

```

13494 \let\@endForm\@empty

```

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.

```

13495 \def\dvipdfm@setdim{%

```

```

13496 height \the\ht\pdfm@box\space
13497 width \the\wd\pdfm@box\space
13498 depth \the\dp\pdfm@box\space
13499 }

```

\HyField@AnnotCount

```

13500 \newcount\HyField@AnnotCount
13501 \HyField@AnnotCount=\z@

```

\HyField@AdvanceAnnotCount

```

13502 \def\HyField@AdvanceAnnotCount{%
13503   \global\advance\HyField@AnnotCount\@ne
13504 }

```

\HyField@TheAnnotCount

```

13505 \def\HyField@TheAnnotCount{%
13506   \the\HyField@AnnotCount
13507 }

```

\Fld@pageobjref

```

13508 \def\Fld@pageobjref{/P @thispage}%

```

\HyField@AddToFields

```

13509 \def\HyField@AddToFields#1{%
13510   \@pdfm@mark{put @afields @#1\HyField@TheAnnotCount}%
13511   \ifx\Fld@calculate@code\@empty
13512   \else
13513     \@pdfm@mark{put @corder @#1\HyField@TheAnnotCount}%
13514   \fi
13515 }

```

\@TextField

```

13516 \def\@TextField[#1]#2{% parameters, label
13517   \def\Fld@name{#2}%
13518   \let\Fld@default\@empty
13519   \let\Fld@value\@empty
13520   \def\Fld@width{\DefaultWidthofText}%
13521   \def\Fld@height{%
13522     \ifFld@multiline
13523       \DefaultHeightofTextMultiline
13524     \else
13525       \DefaultHeightofText
13526     \fi
13527   }%
13528   \begingroup
13529     \expandafter\HyField@SetKeys\expandafter{%
13530       \DefaultOptionsofText,#1%
13531     }%
13532     \PDFForm@Name
13533     \HyField@FlagsText
13534     \ifFld@hidden\def\Fld@width{1sp}\fi
13535     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13536     \setbox\pdfm@box=\hbox{%

```

```

13537 \MakeTextField{\Fld@width}{\Fld@height}%
13538 }%
13539 \HyField@AdvanceAnnotCount
13540 \LayoutTextField{#2}{%
13541 \leavevmode
13542 \Hy@escapeform\PDFForm@Text
13543 \@pdfm@mark{%
13544 ann @text\HyField@TheAnnotCount\space
13545 \dvipdfm@setdim << \PDFForm@Text >>%
13546 }%
13547 }%
13548 \unhbox\pdfm@box
13549 \HyField@AddToFields{text}%
13550 % record in @afields array
13551 \endgroup
13552 }

```

\@ChoiceMenu

```

13553 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13554 \def\Fld@name{#2}%
13555 \let\Fld@default\relax
13556 \let\Fld@value\relax
13557 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13558 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13559 \begingroup
13560 \Fld@menulength=0 %
13561 \@tempdima\z@
13562 \@for\@curropt:=#3\do{%
13563 \expandafter\Fld@checkequals\@curropt==\%
13564 \Hy@StepCount\Fld@menulength
13565 \settowidth{\@tempdimb}{\@currDisplay}%
13566 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13567 }%
13568 \advance\@tempdima by 15\p@
13569 \begingroup
13570 \HyField@SetKeys{#1}%
13571 \edef\x{\endgroup
13572 \noexpand\expandafter
13573 \noexpand\HyField@SetKeys
13574 \noexpand\expandafter{%
13575 \expandafter\noexpand\curname DefaultOptionsof%
13576 \ifFld@radio
13577 Radio%
13578 \else
13579 \ifFld@combo
13580 \ifFld@popdown
13581 PopdownBox%
13582 \else
13583 ComboBox%
13584 \fi
13585 \else
13586 ListBox%
13587 \fi
13588 \fi

```

```

13589     \endcsname
13590   }%
13591 } \x
13592 \HyField@SetKeys{#1}%
13593 \PDFForm@Name
13594 \ifFld@hidden\def\Fld@width{1sp}\fi
13595 \ifx\Fld@value\relax
13596   \let\Fld@value\Fld@default
13597 \fi
13598 \LayoutChoiceField{#2}{%
13599   \ifFld@radio
13600     \HyField@FlagsRadioButton
13601     \@@Radio{#3}%
13602   \else
13603     \begingroup
13604       \HyField@FlagsChoice
13605       \ifdim\Fld@width<\@tempdima
13606         \ifdim\@tempdima<1cm\@tempdima1cm\fi
13607         \edef\Fld@width{\the\@tempdima}%
13608       \fi
13609       \ifFld@combo
13610       \else
13611         \@tempdima=\the\Fld@menulength\Fld@charsize
13612         \advance\@tempdima by \Fld@borderwidth bp %
13613         \advance\@tempdima by \Fld@borderwidth bp %
13614         \edef\Fld@height{\the\@tempdima}%
13615       \fi
13616       \@@ListBox{#3}%
13617     \endgroup
13618   \fi
13619 }%
13620 \endgroup
13621 }

```

\@@Radio

```

13622 \def\@@Radio#1{%
13623   \Fld@listcount=0 %
13624   \EdefEscapeName\Fld@default{\Fld@default}%
13625   \setbox\pdfm@box=\hbox{%
13626     \MakeRadioField{\Fld@width}{\Fld@height}%
13627   }%
13628   \@for\@curropt:=#1\do{%
13629     \expandafter\Fld@checkequals\@curropt==\%
13630     \EdefEscapeName\@currValue{\@currValue}%
13631     \Hy@StepCount\Fld@listcount
13632     \@currDisplay\space
13633     \leavevmode
13634     \Hy@escapeform\PDFForm@Radio
13635     \ifnum\Fld@listcount=1 %
13636       \HyField@AdvanceAnnotCount
13637     \fi
13638     \@pdfm@mark{%
13639       ann %
13640     \ifnum\Fld@listcount=1 %

```



```

13641      @radio\HyField@TheAnnotCount%
13642      \space
13643      \fi
13644      \dvipdfm@setdim
13645      <<%
13646      \PDFForm@Radio
13647      /AP<</N<</\@currValue /null>>>>%
13648      >>%
13649      }%
13650      \unhcopy\pdfm@box\space% deliberate space between radio buttons
13651      \ifnum\Fld@listcount=1 %
13652      \HyField@AddToFields{radio}%
13653      \fi
13654      }%
13655      }

\Fld@listcount
13656 \newcount\Fld@listcount

\@@Listbox
13657 \def\@@Listbox#1{%
13658   \HyField@PDFChoices{#1}%
13659   \setbox\pdfm@box=\hbox{%
13660     \MakeChoiceField{\Fld@width}{\Fld@height}%
13661   }%
13662   \leavevmode
13663   \Hy@escapeform\PDFForm@List
13664   \HyField@AdvanceAnnotCount
13665   \@pdfm@mark{%
13666     ann @list\HyField@TheAnnotCount\space
13667     \dvipdfm@setdim
13668     <<\PDFForm@List>>%
13669   }%
13670   \unhbox\pdfm@box
13671   \HyField@AddToFields{list}%
13672   }

\@PushButton
13673 \def\@PushButton[#1]#2{% parameters, label
13674   \def\Fld@name{#2}%
13675   \begingroup
13676     \expandafter\HyField@SetKeys\expandafter{%
13677       \DefaultOptionsofPushButton,#1%
13678     }%
13679     \PDFForm@Name
13680     \ifHy@pdfa
13681       \Hy@Error{%
13682         PDF/A: Push button with JavaScript is prohibited%
13683       }\@ehc
13684       \LayoutPushButtonField{%
13685         \leavevmode
13686         \MakeButtonField{#2}%
13687       }%
13688     \else

```

```

13689 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}}%
13690 \HyField@FlagsPushButton
13691 \ifFld@hidden\def\Fld@width{1sp}\fi
13692 \HyField@AdvanceAnnotCount
13693 \LayoutPushButtonField{%
13694 \leavevmode
13695 \Hy@escapeform\PDFForm@Push
13696 \@pdfm@mark{%
13697 ann @push\HyField@TheAnnotCount\space
13698 \dvi pdfm@setdim
13699 <<\PDFForm@Push>>%
13700 }%
13701 }%
13702 \unhbox\pdfm@box
13703 \HyField@AddToFields{push}%
13704 \fi
13705 \endgroup
13706 }

\@Submit
13707 \def\@Submit[#1]#2{%
13708 \def\Fld@width{\DefaultWidthofSubmit}%
13709 \def\Fld@height{\DefaultHeightofSubmit}%
13710 \begingroup
13711 \expandafter\HyField@SetKeys\expandafter{%
13712 \DefaultOptionsofSubmit,#1%
13713 }%
13714 \HyField@FlagsPushButton
13715 \HyField@FlagsSubmit
13716 \ifFld@hidden\def\Fld@width{1sp}\fi
13717 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}}%
13718 \leavevmode
13719 \Hy@escapeform\PDFForm@Submit
13720 \HyField@AdvanceAnnotCount
13721 \@pdfm@mark{%
13722 ann @submit\HyField@TheAnnotCount\space
13723 \dvi pdfm@setdim
13724 <<\PDFForm@Submit>>%
13725 }%
13726 \unhbox\pdfm@box%
13727 \HyField@AddToFields{submit}%
13728 \endgroup
13729 }

\@Reset
13730 \def\@Reset[#1]#2{%
13731 \def\Fld@width{\DefaultWidthofReset}%
13732 \def\Fld@height{\DefaultHeightofReset}%
13733 \begingroup
13734 \expandafter\HyField@SetKeys\expandafter{%
13735 \DefaultOptionsofReset,#1%
13736 }%
13737 \leavevmode
13738 \ifHy@pdfa

```

```

13739 \Hy@Error{%
13740     PDF/A: Reset action is prohibited%
13741 } \@ehc
13742 \MakeButtonField{#2}%
13743 \else
13744 \HyField@FlagsPushButton
13745 \ifFld@hidden\def\Fld@width{1sp}\fi
13746 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13747 \Hy@escapeform\PDFForm@Reset
13748 \HyField@AdvanceAnnotCount
13749 \@pdfm@mark{%
13750     ann @reset\HyField@TheAnnotCount\space
13751     \dvi pdfm@setdim
13752     <<\PDFForm@Reset>>%
13753 }%
13754 \unhbox\pdfm@box
13755 \HyField@AddToFields{reset}%
13756 \fi
13757 \endgroup
13758 }

```

\@CheckBox

```

13759 \def\@CheckBox[#1]#2{% parameters, label
13760 \def\Fld@name{#2}%
13761 \def\Fld@default{0}%
13762 \begingroup
13763 \def\Fld@width{\DefaultWidthofCheckBox}%
13764 \def\Fld@height{\DefaultHeightofCheckBox}%
13765 \expandafter\HyField@SetKeys\expandafter{%
13766     \DefaultOptionsofCheckBox,#1%
13767 }%
13768 \PDFForm@Name
13769 \HyField@FlagsCheckBox
13770 \ifFld@hidden\def\Fld@width{1sp}\fi
13771 \setbox\pdfm@box=\hbox{%
13772     \MakeCheckField{\Fld@width}{\Fld@height}%
13773 }%
13774 \HyField@AdvanceAnnotCount
13775 \LayoutCheckField{#2}%
13776 \leavevmode
13777 \Hy@escapeform\PDFForm@Check
13778 \@pdfm@mark{%
13779     ann @check\HyField@TheAnnotCount\space
13780     \dvi pdfm@setdim
13781     <<\PDFForm@Check>>%
13782 }%
13783 \unhbox\pdfm@box
13784 \HyField@AddToFields{check}%
13785 }%
13786 \endgroup
13787 }

13788 \def\Hy@FormObjects{%
13789 \@pdfm@mark{obj @OBJpdfdocencoding%

```

```

13790 <<%
13791 /Type/Encoding%
13792 /Differences[%
13793 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13794 39/quotesingle %
13795 96/grave %
13796 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13797 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13798 /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
13799 /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
13800 /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13801 160/Euro %
13802 164/currency %
13803 166/brokenbar %
13804 168/dieresis/copyright/ordfeminine %
13805 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13806 /twosuperior/threesuperior/acute/mu %
13807 183/periodcentered/cedilla/onesuperior/ordmasculine %
13808 188/onequarter/onehalf/threequarters %
13809 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13810 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
13811 /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
13812 /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
13813 /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
13814 /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
13815 /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
13816 /eth/ntilde/ograde/oacute/ocircumflex/otilde/odieresis%
13817 /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
13818 /thorn/ydieresis%
13819 ]%
13820 >>%
13821 }%
13822 \@pdfm@mark{obj @OBJZaDb%
13823 <<%
13824 /Type/Font%
13825 /Subtype/Type1%
13826 /Name/ZaDb%
13827 /BaseFont/ZapfDingbats%
13828 >>%
13829 }%
13830 \@pdfm@mark{obj @OBJHelv%
13831 <<%
13832 /Type/Font%
13833 /Subtype/Type1%
13834 /Name/Helv%
13835 /BaseFont/Helvetica%
13836 /Encoding @OBJpdfdocencoding%
13837 >>%
13838 }%
13839 \global\let\Hy@FormObjects\relax
13840 }
13841 (/dvipdfm | xetex)

```

45.6 Common forms part

```

13842 (*pdfform)

\Fld@pageobjref
13843 \providecommand*{\Fld@pageobjref}{}

\Hy@escapestring
13844 \@ifundefined{pdf@escapestring}
13845 {%
13846 \let\Hy@escapestring\@firstofone
13847 \def\Hy@escapeform#1{%
13848 \ifHy@pdfescapeform
13849 \def\Hy@escapestring##1{%
13850 \noexpand\Hy@escapestring{\noexpand##1}%
13851 }%
13852 \edef\Hy@temp{#1}%
13853 \expandafter\Hy@@@escapeform\Hy@temp\Hy@escapestring{}\@nil
13854 \def\Hy@escapestring##1{%
13855 \@ifundefined{Hy@esc@\string##1}{%
13856 ##1%
13857 \ThisShouldNotHappen
13858 }{%
13859 \csname Hy@esc@\string##1\endcsname
13860 }%
13861 }%
13862 \else
13863 \let\Hy@escapestring\@firstofone
13864 \fi
13865 }%
13866 \def\Hy@@@escapeform#1\Hy@escapestring#2#3\@nil{%
13867 \ifx\|#3\|
13868 \else
13869 \expandafter
13870 \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13871 \Hy@ReturnAfterFi{%
13872 \Hy@@@escapeform#3\@nil
13873 }%
13874 \fi
13875 }%
13876 }{%
13877 \def\Hy@escapeform#1{%
13878 \ifHy@pdfescapeform
13879 \let\Hy@escapestring\pdfescapestring
13880 \else
13881 \let\Hy@escapestring\@firstofone
13882 \fi
13883 }%
13884 \Hy@escapeform}%
13885 }

\PDFForm@Name
13886 \def\PDFForm@Name{%
13887 \PDFForm@@@Name\Fld@name
13888 \ifx\Fld@altname\relax

```

```

13889 \else
13890 \PDFForm@@Name\Fld@altname
13891 \fi
13892 \ifx\Fld@mappingname\relax
13893 \else
13894 \PDFForm@@Name\Fld@mappingname
13895 \fi
13896 }

```

\PDFForm@@Name

```

13897 \def\PDFForm@@Name#1{%
13898 \begingroup
13899 \ifnum\Hy@pdf@majorminor@version<105 % implementation note 117, PDF spec 1.7
13900 \ifHy@unicode
13901 \Hy@unicodedefalse
13902 \fi
13903 \fi
13904 \pdfstringdef\Hy@gtemp#1%
13905 \endgroup
13906 \let#1\Hy@gtemp
13907 }

```

\Fld@additionalactions

```

13908 \def\Fld@@additionalactions{%
K input (keystroke) format
13909 \ifx\Fld@keystroke@code\@empty
13910 \else
13911 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13912 \fi
F display format
13913 \ifx\Fld@format@code\@empty
13914 \else
13915 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13916 \fi
V validation
13917 \ifx\Fld@validate@code\@empty
13918 \else
13919 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13920 \fi
C calculation
13921 \ifx\Fld@calculate@code\@empty
13922 \else
13923 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13924 \fi
Fo receiving the input focus
13925 \ifx\Fld@onfocus@code\@empty
13926 \else
13927 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13928 \fi

```

Bl losing the input focus (blurred)

```
13929 \ifx\Fld@onblur@code\@empty
13930 \else
13931 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13932 \fi
```

D pressing the mouse button (down)

```
13933 \ifx\Fld@onmousedown@code\@empty
13934 \else
13935 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13936 \fi
```

U releasing the mouse button (up)

```
13937 \ifx\Fld@onmouseup@code\@empty
13938 \else
13939 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13940 \fi
```

E cursor enters the annotation's active area.

```
13941 \ifx\Fld@onenter@code\@empty
13942 \else
13943 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13944 \fi
```

X cursor exits the annotation's active area.

```
13945 \ifx\Fld@onexit@code\@empty
13946 \else
13947 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13948 \fi
13949 }
13950 \def\Fld@additionalactions{%
13951 \if-\Fld@@additionalactions-%
13952 \else
13953 \ifHy@pdfa
13954 \else
13955 /AA<<\Fld@@additionalactions>>%
13956 \fi
13957 \fi
13958 }
```

\Fld@annotnames

```
13959 \def\Fld@annotnames{%
13960 /T(\Fld@name)%
13961 \ifx\Fld@altname\relax
13962 \else
13963 /TU(\Fld@altname)%
13964 \fi
13965 \ifx\Fld@mappingname\relax
13966 \else
13967 /TM(\Fld@mappingname)%
13968 \fi
13969 }
```

\PDFForm@Check

```
13970 \def\PDFForm@Check{%
```

```

13971 /Subtype/Widget%
13972 \Fld@annotflags
13973 \Fld@pageobjref
13974 \Fld@annotnames
13975 /FT/Btn%
13976 \Fld@flags
13977 /Q \Fld@align
13978 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13979 /AP<< /N <</Yes<<>>>> >> %new string /Yes is from below
13980 /MK<<%
13981 \ifnum\Fld@rotation=\z@
13982 \else
13983 /R \Fld@rotation
13984 \fi
13985 \ifx\Fld@bordercolor\relax
13986 \else
13987 /BC[\Fld@bordercolor]%
13988 \fi
13989 \ifx\Fld@bcolor\relax
13990 \else
13991 /BG[\Fld@bcolor]%
13992 \fi
13993 /CA(\Hy@escapestring{\Fld@cbsymbol})%
13994 >>%
13995 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13996 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13997 /H/P%
13998 \ifFld@checked /V/Yes/AS/Yes\else /V/Off/AS/Off\fi
13999 \Fld@additionalactions
14000 }

```

\PDFForm@Push

```

14001 \ifHy@pdfa
14002 \else
14003 \def\PDFForm@Push{%
14004 /Subtype/Widget%
14005 \Fld@annotflags
14006 \Fld@pageobjref
14007 \Fld@annotnames
14008 /FT/Btn%
14009 \Fld@flags
14010 /H/P%
14011 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14012 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14013 \ifx\Fld@bordercolor\relax\else 1\fi
14014 \space
14015 \else
14016 /MK<<%
14017 \ifnum\Fld@rotation=\z@
14018 \else
14019 /R \Fld@rotation
14020 \fi
14021 \ifx\Fld@bordercolor\relax
14022 \else

```



```

14023      /BC[\Fld@bordercolor]%
14024      \fi
14025      >>%
14026      \fi
14027      /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
14028      \Fld@additionalactions
14029      }%
14030      \fi

```

\PDFForm@List

```

14031 \def\PDFForm@List{%
14032   /Subtype/Widget%
14033   \Fld@annotflags
14034   \Fld@pageobjref
14035   \Fld@annotnames
14036   /FT/Ch%
14037   \Fld@flags
14038   /Q \Fld@align
14039   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14040   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14041     \ifx\Fld@bordercolor\relax\else 1\fi
14042     \ifx\Fld@bcolor\relax \else 1\fi
14043     \space
14044   \else
14045     /MK<<%
14046     \ifnum\Fld@rotation=\z@
14047       \else
14048         /R \Fld@rotation
14049       \fi
14050     \ifx\Fld@bordercolor\relax
14051       \else
14052         /BC[\Fld@bordercolor]%
14053       \fi
14054     \ifx\Fld@bcolor\relax
14055       \else
14056         /BG[\Fld@bcolor]%
14057       \fi
14058     >>%
14059   \fi
14060   /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14061     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14062   \Fld@choices
14063   \Fld@additionalactions
14064 }

```

\PDFForm@Radio

```

14065 \def\PDFForm@Radio{%
14066   /Subtype/Widget%
14067   \Fld@annotflags
14068   \Fld@pageobjref
14069   \Fld@annotnames
14070   /FT/Btn%
14071   \Fld@flags
14072   /H/P%

```

```

14073 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14074 /MK<<%
14075   \ifnum\Fld@rotation=\z@
14076   \else
14077     /R \Fld@rotation
14078   \fi
14079   \ifx\Fld@bordercolor\relax
14080   \else
14081     /BC[\Fld@bordercolor]%
14082   \fi
14083   \ifx\Fld@bcolor\relax
14084   \else
14085     /BG[\Fld@bcolor]%
14086   \fi
14087   /CA(\Hy@escapestring{\Fld@radiosymbol})%
14088 >>%
14089 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
14090   \ifx\Fld@color\@empty\else\space\Fld@color\fi)%

```

New code, the default value is used for all buttons

```

14091 \ifx\Fld@default\@empty
14092   /V/Off%
14093   /DV/Off%
14094 \else
14095   /V/\Fld@default
14096   /DV/\Fld@default
14097 \fi
14098 \Fld@additionalactions
14099 }

```

\PDFForm@Text

```

14100 \def\PDFForm@Text{%
14101   /Subtype/Widget%
14102   \Fld@annotflags
14103   \Fld@pageobjref
14104   \Fld@annotnames
14105   /FT/Tx%
14106   \Fld@flags
14107   /Q \Fld@align
14108   /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
14109   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14110     \ifx\Fld@bordercolor\relax\else 1\fi
14111     \ifx\Fld@bcolor\relax \else 1\fi
14112     \space
14113   \else
14114     /MK<<%
14115     \ifnum\Fld@rotation=\z@
14116     \else
14117       /R \Fld@rotation
14118     \fi
14119     \ifx\Fld@bordercolor\relax
14120     \else
14121       /BC[\Fld@bordercolor]%
14122     \fi

```

```

14123     \ifx\Fld@bcolor\relax
14124     \else
14125         /BG[\Fld@bcolor]%
14126     \fi
14127     >>%
14128 \fi
14129 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14130     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14131 /DV(\Hy@escapestring{\Fld@default})%
14132 /V(\Hy@escapestring{\Fld@value})%
14133 \Fld@additionalactions
14134 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
14135 }

```

\PDFForm@Submit

```

14136 \def\PDFForm@Submit{%
14137     /Subtype/Widget%
14138     \Fld@annotflags
14139     \Fld@pageobjref
14140     \Fld@annotnames
14141     /FT/Btn%
14142     \Fld@flags
14143     /H/P%
14144     /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14145     \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14146         \ifx\Fld@bordercolor\relax\else 1\fi
14147         \space
14148     \else
14149         /MK<<%
14150         \ifnum\Fld@rotation=\z@
14151         \else
14152             /R \Fld@rotation
14153         \fi
14154         \ifx\Fld@bordercolor\relax
14155         \else
14156             /BC[\Fld@bordercolor]%
14157         \fi
14158         >>%
14159     \fi
14160 /A<<%
14161     /S/SubmitForm%
14162     /F<<%
14163         /FS/URL%
14164         /F(\Hy@escapestring{\Form@action})%
14165     >>%
14166     \Fld@submitflags
14167     >>%
14168     \Fld@additionalactions
14169 }

```

\PDFForm@Reset

```

14170 \ifHy@pdfa
14171 \else
14172     \def\PDFForm@Reset{%

```

```

14173 /Subtype/Widget%
14174 \Fld@annotflags
14175 \Fld@pageobjref
14176 \Fld@annotnames
14177 /FT/Btn%
14178 \Fld@flags
14179 /H/P%
14180 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
14181 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14182 \ifx\Fld@bordercolor\relax\else 1\fi
14183 \space
14184 \else
14185 /MK<<%
14186 \ifnum\Fld@rotation=\z@
14187 \else
14188 /R \Fld@rotation
14189 \fi
14190 \ifx\Fld@bordercolor\relax
14191 \else
14192 /BC[\Fld@bordercolor]%
14193 \fi
14194 % /CA (Clear)
14195 % /AC (Done)
14196 >>%
14197 \fi
14198 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14199 /A<</S/ResetForm>>%
14200 \Fld@additionalactions
14201 }%
14202 \fi

14203 </pdfform>
14204 <*packageEnd>

```

46 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `repere.sty`); it needed the `repere` or `makebook.pl` post-processor to work properly. Now redundant, as it is done entirely in \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`

```

14205 \def\phantomsection{%
14206 \Hy@MakeCurrentHrefAuto{section*}%
14207 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
14208 }
14209 </packageEnd>

```

46.1 Bookmarks

14210 (*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 ε -TeX, the order of the `\BOOKMARK` commands written to the `\@outlinefile` could appear wrong, because of mis-feature of ε -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.

```

14211 \def\Hy@writebookmark#1#2#3#4#5{%
14212   % section number, text, label, level, file
14213   \ifx\WriteBookmarks\relax%
14214   \else
14215     \ifnum#4>\Hy@bookmarksdepth\relax
14216     \else
14217       \@@writetorep{#1}{#2}{#3}{#4}{#5}%
14218     \fi
14219   \fi
14220 }
14221 \def\Hy@currentbookmarklevel{0}
14222 \def\Hy@numberline#1{#1 }
14223 \def\@@writetorep#1#2#3#4#5{%
14224   \begingroup
14225     \edef\Hy@tempa{#5}%
14226     \ifx\Hy@tempa\Hy@bookmarkstype
14227       \edef\Hy@level{#4}%
14228       \ifx\Hy@levelcheck Y%
14229         \@tempcnta\Hy@level\relax
14230         \advance\@tempcnta by -1 %
14231         \ifnum\Hy@currentbookmarklevel<\@tempcnta
14232           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
14233           \advance\@tempcnta by 1 %
14234           \Hy@Warning{%
14235             Difference (\the\@tempcnta) between bookmark levels is %
14236             greater \MessageBreak than one, level fixed%
14237           }%
14238           \@tempcnta\Hy@currentbookmarklevel
14239           \advance\@tempcnta by 1 %
14240           \edef\Hy@level{\the\@tempcnta}%
14241         \fi
14242       \else
14243         \global\let\Hy@levelcheck Y%
14244       \fi
14245       \global\let\Hy@currentbookmarklevel\Hy@level

```

```

14246 \@tempcnta\Hy@level\relax
14247 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
14248 \advance\@tempcnta by -1 %
14249 \edef\Hy@tempa{#3}%
14250 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
14251 \ifx\Hy@tempa\Hy@tempb
14252 \Hy@Warning{%
14253 The anchor of a bookmark and its parent's must not%
14254 \MessageBreak be the same. Added a new anchor%
14255 }%
14256 \phantomsection
14257 \fi
14258 \ifHy@bookmarksnumbered
14259 \let\numberline\Hy@numberline
14260 \let\booknumberline\Hy@numberline
14261 \let\partnumberline\Hy@numberline
14262 \let\chapternumberline\Hy@numberline
14263 \else
14264 \let\numberline\@gobble
14265 \let\booknumberline\@gobble
14266 \let\partnumberline\@gobble
14267 \let\chapternumberline\@gobble
14268 \fi
14269 \pdfstringdef\Hy@tempa{#2}%
14270 \HyPsd@SanitizeForOutFile\Hy@tempa
14271 \if@filesw
14272 \stepcounter{bookmark@seq@number}%
14273 \@ifundefined{@outlinefile}{%
14274 }{%
14275 \protected@write\@outlinefile{ }{%
14276 \protect\BOOKMARK
14277 [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
14278 {\Hy@tempa}{\Hy@tempb}%
14279 \@percentchar\space\thebookmark@seq@number
14280 }%
14281 }%
14282 \fi
14283 \fi
14284 \endgroup
14285 }
14286 \newcounter{bookmark@seq@number}

14287 \begingroup
14288 \lccode`=(`{`%
14289 \lccode`)=`}%
14290 \lccode`1=\z@
14291 \lccode`2=\z@
14292 \lccode`3=\z@
14293 \lccode`5=\z@
14294 \lccode`7=\z@
14295 \lccode`\#=\z@
14296 \lccode``=\z@
14297 \lccode`\{=\z@
14298 \lccode`\}= \z@
14299 \lowercase{%

```

```

14300 \endgroup
14301 \def\HyPsd@SanitizeForOutFile#1{%
14302   \@onelevel@sanitize\Hy@tempa
14303   \escapechar`\\%
14304   \edef\Hy@tempa{%
14305     \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa(\@nil
14306   }%
14307   \edef\Hy@tempa{%
14308     \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa)\@nil
14309   }%
14310 }%
14311 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
14312   #1%
14313   \ifx\\#2\\%
14314     \expandafter\@gobble
14315   \else
14316     \expandafter\@firstofone
14317   \fi
14318   {%
14319     \string\173%
14320     \HyPsd@SanitizeOut@BraceLeft#2\@nil
14321   }%
14322 }%
14323 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
14324   #1%
14325   \ifx\\#2\\%
14326     \expandafter\@gobble
14327   \else
14328     \expandafter\@firstofone
14329   \fi
14330   {%
14331     \string\175%
14332     \HyPsd@SanitizeOut@BraceRight#2\@nil
14333   }%
14334 }%
14335 }

```

In the call of \BOOKMARK the braces around #4 are omitted, because it is not likely, that the level number contains].

```

14336 \newcommand{\currentpdfbookmark}{%
14337   \pdfbookmark[\Hy@currentbookmarklevel]%
14338 }
14339 \newcommand{\subpdfbookmark}{%
14340   \@tempcnta\Hy@currentbookmarklevel
14341   \Hy@StepCount\@tempcnta
14342   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
14343 }
14344 \newcommand{\belowpdfbookmark}[2]{%
14345   \@tempcnta\Hy@currentbookmarklevel
14346   \Hy@StepCount\@tempcnta
14347   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
14348   \advance\@tempcnta by -1 %
14349   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
14350 }

```

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.

```

14351 \renewcommand\pdfbookmark[3][0]{%
14352   \Hy@writebookmark{}{#2}{#3.#1}{#1}{toc}%
14353   \hyper@anchorstart{#3.#1}\hyper@anchorend
14354 }
14355 \def\BOOKMARK{%
14356   \@ifnextchar{\@BOOKMARK}{\@@BOOKMARK[1][-]}%
14357 }
14358 \def\@BOOKMARK[#1]{%
14359   \@ifnextchar{\@@BOOKMARK[{#1}]}{\@@BOOKMARK[{#1}][-]}%
14360 }

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the `texinfopdf` macros.

46.1.1 Rerun warning

`\Hy@OutlineRerunCheck`

```

14361 \RequirePackage{rerunfilecheck}[2009/12/10]
14362 \def\Hy@OutlineRerunCheck{%
14363   \RerunFileCheck{\jobname.out}{%
14364     \immediate\closeout\@outlinefile
14365   }{%
14366     Rerun to get outlines right\MessageBreak
14367     or use package `bookmark'%
14368   }%
14369 }

```

46.1.2 Driver stuff

The VTEX section was written originally by VTEX, but then amended by Denis Girou (denis.girou@idris.fr), then by Taco Hoekwater (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.

```

14370 <*vtex>
14371 \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.

```

14372 \begingroup
14373   \catcode`\'=12 %
14374   \ifnum\Hy@VTeXversion<650 %
14375     \catcode`\=12 %
14376     \gdef\hv@pdf@char#1#2#3{%
14377       \char
14378       \ifcase'#1#2#3 %
14379         "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
14380         \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
14381         \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
14382         \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%

```



```

14383 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
14384 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
14385 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
14386 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
14387 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
14388 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
14389 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
14390 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
14391 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
14392 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
14393 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
14394 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
14395 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
14396 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
14397 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
14398 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
14399 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
14400 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
14401 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
14402 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
14403 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
14404 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
14405 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
14406 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
14407 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
14408 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
14409 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
14410 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
14411 \fi
14412 }%
14413 \else
14414 \gdef\hv@pdf@char{\char'}%
14415 \fi
14416 \endgroup

```

\@@BOOKMARK

```

14417 \def\@@BOOKMARK[#1][#2]#3#4#5{%
14418 \expandafter\edef\csname @count@#3\endcsname{%
14419 \the\@serial@counter
14420 }%
14421 \edef\@mycount{\the\@serial@counter}%
14422 \Hy@StepCount\@serial@counter
14423 \edef\@parcount{%
14424 \expandafter\ifx\csname @count@#5\endcsname\relax
14425 0%
14426 \else
14427 \csname @count@#5\endcsname
14428 \fi
14429 }%
14430 \immediate\special{%
14431 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
14432 s=\ifx#2-c\else o\fi,t=#4%
14433 }%
14434 }%

```

\ReadBookmarks

```
14435 \def\ReadBookmarks{%
14436   \begingroup
14437   \def\0{\hv@pdf@char 0}%
14438   \def\1{\hv@pdf@char 1}%
14439   \def\2{\hv@pdf@char 2}%
14440   \def\3{\hv@pdf@char 3}%
14441   \def\{({}%
14442   \def\)}{)%
14443   \def\do###1{%
14444     \ifnum\catcode`\###1=\active
14445       \@makeother###1%
14446     \else
14447       \ifnum\catcode`\###1=6 %
14448         \@makeother###1%
14449       \fi
14450     \fi
14451   }%
14452   \dospecials
14453   \Hy@safe@activetrue
14454   \InputIfFileExists{\jobname.out}{\}{}%
14455 \endgroup
14456 \ifx\WriteBookmarks\relax
14457 \else
14458   \if@files
14459     \newwrite\@outlinefile
14460     \Hy@OutlineRerunCheck
14461     \immediate\openout\@outlinefile=\jobname.out\relax
14462   \fi
14463 \fi
14464 }

14465 </vtex>
14466 <*\vtex>
14467 \def\ReadBookmarks{%
14468   \pdf@ifdraftmode{\}%
14469   \begingroup
14470     \def\do###1{%
14471       \ifnum\catcode`\###1=\active
14472         \@makeother###1%
14473       \else
14474         \ifnum\catcode`\###1=6 %
14475           \@makeother###1%
14476         \fi
14477       \fi
14478     }%
14479     \dospecials
14480     \Hy@safe@activetrue
14481     \escapechar=``\%
14482     \def\@@BOOKMARK[##1][##2]##3##4##5{%
14483       \calc@bm@number{##5}%
14484     }%
14485     \InputIfFileExists{\jobname.out}{\}{}%
14486     \ifx\WriteBookmarks\relax
```

```

14487 \global\let\WriteBookmarks\relax
14488 \fi
14489 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14490 \def\Hy@temp{##4}%
14491 (*pdfTeX)
14492 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14493 \Hy@OutlineName{}\Hy@pstringName{%
14494 ##2\check@bm@number{##3}%
14495 }{%
14496 \expandafter\strip@prefix\meaning\Hy@temp
14497 }%
14498 \pdfTeX)
14499 (*pdfmark)
14500 \pdfmark{%
14501 pdfmark=/OUT,%
14502 Count={##2\check@bm@number{##3}},%
14503 Dest={##3},%
14504 Title=\expandafter\strip@prefix\meaning\Hy@temp
14505 }%
14506 \pdfmark)
14507 (*dvipdfm|xetex)
14508 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14509 \@pdfm@mark{%
14510 outline \ifHy@DvipdfmxOutlineOpen
14511 [%
14512 \ifnum##21>\z@
14513 \else
14514 -%
14515 \fi
14516 ] %
14517 \fi
14518 ##1<<%
14519 /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
14520 /A<<%
14521 /S/GoTo%
14522 /D(\Hy@pstringName)%
14523 >>%
14524 >>%
14525 }%
14526 \dvipdfm|xetex)
14527 }%
14528 \begingroup
14529 \def\WriteBookmarks{0}%
14530 \InputIfFileExists{jobname.out}{\fi}%
14531 \endgroup
14532 %\escapechar\m@ne\InputIfFileExists{jobname.out}{\fi}%
14533 \endgroup
14534 }%
14535 \ifx\WriteBookmarks\relax
14536 \else
14537 \if@files
14538 \newwrite\@outlinefile
14539 \Hy@OutlineRerunCheck
14540 \immediate\openout\@outlinefile=jobname.out\relax

```

```

14541 \fi
14542 \fi
14543 }
14544 \*pdfTeX
14545 \def\Hy@OutlineName#1#2#3#4{%
14546 \pdfoutline goto name{#2}count#3{#4}%
14547 }
14548 \pdfTeX
14549 \def\check@bm@number#1{%
14550 \expandafter\ifx\csname B_#1\endcsname\relax
14551 0%
14552 \else
14553 \csname B_#1\endcsname
14554 \fi
14555 }
14556 \def\calc@bm@number#1{%
14557 \@tempcnta=\check@bm@number{#1}\relax
14558 \advance\@tempcnta by 1 %
14559 \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
14560 }
14561 \!vTeX

14562 \ifHy@implicit
14563 \else
14564 \expandafter\endinput
14565 \fi

14566 \outlines
14567 \*outlines | hypertex

14568 \newlength\Hy@SectionHShift
14569 \def\Hy@SectionAnchorHref#1{%
14570 \ifx\protect\@typeset@protect
14571 \Hy@@@SectionAnchor{#1}%
14572 \fi
14573 }
14574 \DeclareRobustCommand*\Hy@@@SectionAnchor}[1]{%
14575 \leavevmode
14576 \hbox to 0pt{%
14577 \kern-\Hy@SectionHShift
14578 \Hy@raisedlink{%
14579 \hyper@anchorstart{#1}\hyper@anchorend
14580 }%
14581 \hss
14582 }%
14583 }
14584 \AddToNoCaseChangeList{\Hy@@@SectionAnchor}
14585 \@ifundefined{hyper@nopatch@sectioning}
14586 {
14587 \let\H@old@ssect\@ssect
14588 \def\@ssect#1#2#3#4#5{%
14589 \Hy@MakeCurrentHrefAuto{section*}%
14590 \setlength{\Hy@SectionHShift}{#1}%
14591 \begingroup
14592 \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
14593 \toks\tw@\expandafter{%

```

```

14594 \expandafter\Hy@sectionAnchorHref\expandafter{\@currentHref}%
14595 #5%
14596 }%
14597 \edef\x{\endgroup
14598 \the\toks@\the\toks\tw@}%
14599 }\x
14600 }
14601 \let\H@old@schapter\@schapter
14602 \def\@schapter#1{%
14603 \begingroup
14604 \let\@mkboth\@gobbletwo
14605 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14606 \Hy@raisedlink{%
14607 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14608 }%
14609 \endgroup
14610 \H@old@schapter{#1}%
14611 }

```

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:

```

14612 \@ifundefined{chapter}{%}{%
14613 \let\Hy@org@chapter\@chapter
14614 \def\@chapter{%
14615 \def\Hy@next{%
14616 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14617 \Hy@raisedlink{%
14618 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14619 }%
14620 }%
14621 \ifnum\c@secnumdepth>\m@ne
14622 \ifundefined{if@mainmatter}%
14623 \iftrue{\csname if@mainmatter\endcsname}%
14624 \let\Hy@next\relax
14625 \fi
14626 \fi
14627 \Hy@next
14628 \Hy@org@chapter
14629 }%
14630 }

14631 \let\H@old@part\@part
14632 \@ifundefined{chapter}
14633 {\let\Hy@secnum@part\z@}
14634 {\let\Hy@secnum@part\m@ne}
14635 \def\@part{%
14636 \ifnum\Hy@secnum@part>\c@secnumdepth
14637 \phantomsection
14638 \fi
14639 \H@old@part
14640 }

14641 \let\H@old@spart\@spart
14642 \def\@spart#1{%

```

```

14643 \Hy@MakeCurrentHrefAuto{part*}%
14644 \Hy@raisedlink{%
14645   \hyper@anchorstart{\@currentHref}\hyper@anchorend
14646 }%
14647 \H@old@spart{#1}%
14648 }
14649 \let\H@old@sect\@sect
14650 \def\@sect#1#2#3#4#5#6[#7]#8{%
14651   \ifnum #2>\c@secnumdepth
14652     \expandafter\@firstoftwo
14653   \else
14654     \expandafter\@secondoftwo
14655   \fi
14656   {%
14657     \Hy@MakeCurrentHrefAuto{section*}%
14658     \setlength{\Hy@SectionHShift}{#3}%
14659     \begingroup
14660       \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{{#7}}}%
14661       \toks\tw@\expandafter{%
14662         \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14663         #8%
14664       }%
14665       \edef\x{\endgroup
14666         \the\toks@{\the\toks\tw@}}%
14667       }\x
14668     }{%
14669       \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{{#7}}{#8}%
14670     }%
14671   }
14672 }{}

14673 </outlines | hypertex>
14674 <*outlines>

14675 \expandafter\def\csname Parent-4\endcsname{}
14676 \expandafter\def\csname Parent-3\endcsname{}
14677 \expandafter\def\csname Parent-2\endcsname{}
14678 \expandafter\def\csname Parent-1\endcsname{}
14679 \expandafter\def\csname Parent0\endcsname{}
14680 \expandafter\def\csname Parent1\endcsname{}
14681 \expandafter\def\csname Parent2\endcsname{}
14682 \expandafter\def\csname Parent3\endcsname{}
14683 \expandafter\def\csname Parent4\endcsname{}

14684 </outlines>

```

47 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

47.1 PD1 encoding

```
14685 <*pd1enc>
```

14686 \DeclareFontEncoding{PD1}{-}{-}

Accents

```
14687 \DeclareTextAccent{\`}{PD1}{\textasciigrave}
14688 \DeclareTextAccent{\' }{PD1}{\textacute}
14689 \DeclareTextAccent{\^}{PD1}{\textasciicircum}
14690 \DeclareTextAccent{\~}{PD1}{\texttilde}
14691 \DeclareTextAccent{\"}{PD1}{\textasciidieresis}
14692 \DeclareTextAccent{\r}{PD1}{\textstring}
14693 \DeclareTextAccent{\v}{PD1}{\textasciicaron}
14694 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
14695 \DeclareTextAccent{\c}{PD1}{\textcedilla}
14696 \DeclareTextAccent{\=}{PD1}{\textasciimacron}
14697 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}
14698 \DeclareTextAccent{\d}{PD1}{\textdotbelow}
14699 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textasciigrave}
14700 \DeclareTextCompositeCommand{\' }{PD1}{\@empty}{\textacute}
14701 \DeclareTextCompositeCommand{\^}{PD1}{\@empty}{\textasciicircum}
14702 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
14703 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textasciidieresis}
14704 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textstring}
14705 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
14706 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
14707 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
14708 \DeclareTextCompositeCommand{\=}{PD1}{\@empty}{\textasciimacron}
14709 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
14710 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
14711 \DeclareTextCompositeCommand{\`}{PD1}{\ }{\textasciigrave}
14712 \DeclareTextCompositeCommand{\' }{PD1}{\ }{\textacute}
14713 \DeclareTextCompositeCommand{\^}{PD1}{\ }{\textasciicircum}
14714 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}
14715 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}
14716 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textstring}
14717 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
14718 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
14719 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
14720 \DeclareTextCompositeCommand{\=}{PD1}{\ }{\textasciimacron}
14721 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
14722 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
14723 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
14724 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
14725 \DeclareTextCommand{\newtie}{PD1}[1]{%
14726   \TextSymbolUnavailable{\newtie{#1}}#1%
14727 }
```

Special white space escape characters not for use in bookmarks but for other PDF strings.

```
14728 % U+0009 (CHARACTER TABULATION)
14729 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
14730 % U+000A (LINE FEED)
14731 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
14732 % U+000D (CARRIAGE RETURN)
14733 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D
```

Accent glyph names

```
14734 % U+02D8 BREVE; breve
```

14735 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
14736 % U+02C7 CARON; caron
14737 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
14738 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
14739 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6
14740 % U+02D9 DOT ABOVE; dotaccent
14741 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9
14742 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
14743 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD
14744 % U+02DB OGONEK; ogonek
14745 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB
14746 % U+02DA RING ABOVE; ring
14747 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA
14748 % U+02DC SMALL TILDE; ilde, *tilde
14749 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC

\040: U+0020 SPACE; *space, spacehackarabic
\041: U+0021 EXCLAMATION MARK; exclam
14750 % U+0022 QUOTATION MARK; quotedbl
14751 \DeclareTextCommand{\textquotedbl}{PD1}{"}% \042 U+0022
14752 % U+0023 NUMBER SIGN; numbersign
14753 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023
14754 % U+0024 DOLLAR SIGN; dollar
14755 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024
14756 % U+0025 PERCENT SIGN; percent
14757 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025
14758 % U+0026 AMPERSAND; ampersand
14759 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026

\047: U+0027 APOSTROPHE; quotesingle

14760 % U+0028 LEFT PARENTHESIS; parenleft
14761 \DeclareTextCommand{\textparenleft}{PD1}{\string\{}% \050 U+0028
14762 % U+0029 RIGHT PARENTHESIS; parenright
14763 \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
14764 % U+002E FULL STOP; period
14765 \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
14766 % U+003C LESS-THAN SIGN; less
14767 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C

\075: U+003D EQUALS SIGN; equal
14768 % U+003E GREATER-THAN SIGN; greater
14769 \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
 14770 % U+005C REVERSE SOLIDUS; backslash
 14771 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C
 14772 % "U+2216 SET MINUS" simulated by "U+005C REVERSE SOLIDUS"
 14773 \DeclareTextCommand{\textsetminus}{PD1}{\textbackslash}
 \135: U+005D RIGHT SQUARE BRACKET; bracketright
 14774 % U+005E CIRCUMFLEX ACCENT; asciicircum
 14775 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E
 14776 % U+005F LOW LINE; underscore
 14777 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F
 14778 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F
 14779 % U+0060 GRAVE ACCENT; grave
 14780 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060
 \141: U+0061 LATIN SMALL LETTER A; a
 ...
 \150: U+0068 LATIN SMALL LETTER H; h
 14781 % U+0069 LATIN SMALL LETTER I; i
 14782 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069
 \152: U+006A LATIN SMALL LETTER J; j
 ...
 \172: U+007A LATIN SMALL LETTER Z; z
 14783 % U+007B LEFT CURLY BRACKET; braceleft
 14784 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B
 14785 % U+007C VERTICAL LINE; *bar, verticalbar
 14786 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C
 14787 % U+007D RIGHT CURLY BRACKET; braceright
 14788 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D
 14789 % U+007E TILDE; asciitilde
 14790 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E
 Slot \177 (0x7F) is undefined in PDFDocEncoding.
 14791 % U+2022 BULLET; bullet
 14792 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022
 14793 % U+2020 DAGGER; dagger
 14794 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020
 14795 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)
 14796 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021
 14797 \DeclareTextCommand{\textddagger}{PD1}{\textdaggerdbl}
 14798 % U+2026 HORIZONTAL ELLIPSIS; ellipsis
 14799 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026
 14800 % U+2014 EM DASH; emdash
 14801 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014
 14802 % U+2013 EN DASH; endash
 14803 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013
 14804 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin
 14805 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192
 14806 % U+2044 FRACTION SLASH; fraction
 14807 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044

14808 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-
 ingleft
 14809 \DeclareTextCommand{\guilingleft}{PD1}{\210}% U+2039
 14810 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-
 ingright
 14811 \DeclareTextCommand{\guilsingright}{PD1}{\211}% U+203A
 14812 % U+2212 MINUS SIGN; minus
 14813 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212
 14814 % U+2030 PER MILLE SIGN; perthousand
 14815 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030
 14816 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase
 14817 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E
 14818 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft
 14819 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C
 14820 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright
 14821 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D
 14822 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft
 14823 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018
 14824 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright
 14825 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019
 14826 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase
 14827 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A
 14828 % U+2122 TRADE MARK SIGN; trademark
 14829 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122
 14830 % U+FB01 LATIN SMALL LIGATURE FI; fi
 14831 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01
 14832 % U+FB02 LATIN SMALL LIGATURE FL; fl
 14833 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02
 14834 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash
 14835 \DeclareTextCommand{\L}{PD1}{\225}% U+0141
 14836 % U+0152 LATIN CAPITAL LIGATURE OE; OE
 14837 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152
 14838 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron
 14839 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160
 14840 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis
 14841 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230}% U+0178
 14842 \DeclareTextCommand{\IJ}{PD1}{IJ}% ligature U+0049 U+004A
 14843 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron
 14844 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D
 14845 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi
 14846 \DeclareTextCommand{\i}{PD1}{\232}% U+0131
 14847 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash
 14848 \DeclareTextCommand{\l}{PD1}{\233}% U+0142
 14849 % U+0153 LATIN SMALL LIGATURE OE; oe
 14850 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153
 14851 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron
 14852 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161
 14853 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron
 14854 \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.
 14855 % U+20AC EURO SIGN; *Euro, euro
 14856 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC
 14857 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown

14858 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1
14859 % U+00A2 CENT SIGN; cent
14860 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2
14861 % U+00A3 POUND SIGN; sterling
14862 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3
14863 % U+00A4 CURRENCY SIGN; currency
14864 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4
14865 % U+00A5 YEN SIGN; yen
14866 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5
14867 % U+00A6 BROKEN BAR; brokenbar
14868 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6
14869 % U+00A7 SECTION SIGN; section
14870 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7
14871 % U+00A8 DIAERESIS; dieresis
14872 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8
14873 % U+00A9 COPYRIGHT SIGN; copyright
14874 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9
14875 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine
14876 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA
14877 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetleft
14878 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB
14879 \DeclareTextCommand{\guillemetleft}{PD1}{\253}% U+00AB
14880 % U+00AC NOT SIGN; logicalnot
14881 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC
14882 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not

No glyph \255 in PDFDocEncoding.
14883 % U+00AE REGISTERED SIGN; registered
14884 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE
14885 % U+00AF MACRON; *macron, overscore
14886 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF
14887 % U+00B0 DEGREE SIGN; degree
14888 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0
14889 % U+00B1 PLUS-MINUS SIGN; plusminus
14890 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1
14891 % U+00B2 SUPERSCRIPT TWO; twosuperior
14892 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}%* U+00B2
14893 % U+00B3 SUPERSCRIPT THREE; threesuperior
14894 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}%* U+00B3
14895 % U+00B4 ACUTE ACCENT; acute
14896 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4
14897 % U+00B5 MICRO SIGN; mu, mul
14898 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5
14899 % U+00B6 PILCROW SIGN; paragraph
14900 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6
14901 % U+00B7 MIDDLE DOT; middot, *periodcentered
14902 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7
14903 % U+00B8 CEDILLA; cedilla
14904 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8
14905 % U+00B9 SUPERSCRIPT ONE; onesuperior
14906 \DeclareTextCommand{\textonesuperior}{PD1}{\271}%* U+00B9
14907 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine
14908 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA
14909 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetright
14910 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB

14911 \DeclareTextCommand{\guillemetright}{PD1}{\273}% U+00BB
14912 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter
14913 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC
14914 % U+00BD VULGAR FRACTION ONE HALF; onehalf
14915 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD
14916 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters
14917 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE
14918 % U+00BF INVERTED QUESTION MARK; questiondown
14919 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF
14920 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave
14921 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0
14922 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute
14923 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1
14924 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex
14925 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2
14926 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde
14927 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3
14928 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis
14929 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4
14930 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring
14931 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5
14932 % U+00C6 LATIN CAPITAL LETTER AE; AE
14933 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6
14934 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla
14935 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7
14936 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave
14937 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8
14938 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute
14939 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9
14940 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex
14941 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA
14942 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis
14943 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB
14944 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave
14945 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC
14946 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute
14947 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD
14948 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex
14949 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE
14950 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis
14951 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF
14952 % U+00D0 LATIN CAPITAL LETTER ETH; Eth
14953 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0
14954 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0
14955 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde
14956 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1
14957 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve
14958 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2
14959 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute
14960 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3
14961 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex
14962 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4
14963 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde
14964 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5

14965 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis
14966 \DeclareTextCompositeCommand{"}{PD1}{O}{\326}% U+00D6
14967 % U+00D7 MULTIPLICATION SIGN; multiply
14968 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7
14969 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash
14970 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8
14971 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave
14972 \DeclareTextCompositeCommand{"}{PD1}{U}{\331}% U+00D9
14973 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute
14974 \DeclareTextCompositeCommand{"}{PD1}{U}{\332}% U+00DA
14975 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex
14976 \DeclareTextCompositeCommand{"}{PD1}{U}{\333}% U+00DB
14977 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis
14978 \DeclareTextCompositeCommand{"}{PD1}{U}{\334}% U+00DC
14979 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute
14980 \DeclareTextCompositeCommand{"}{PD1}{Y}{\335}% U+00DD
14981 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)
14982 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE
14983 \DeclareTextCommand{\textThorn}{PD1}{\336}%* U+00DE
14984 % U+00DF LATIN SMALL LETTER SHARP S; germandbls
14985 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF
14986 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave
14987 \DeclareTextCompositeCommand{"}{PD1}{a}{\340}% U+00E0
14988 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute
14989 \DeclareTextCompositeCommand{"}{PD1}{a}{\341}% U+00E1
14990 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex
14991 \DeclareTextCompositeCommand{"}{PD1}{a}{\342}% U+00E2
14992 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde
14993 \DeclareTextCompositeCommand{"}{PD1}{a}{\343}% U+00E3
14994 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis
14995 \DeclareTextCompositeCommand{"}{PD1}{a}{\344}% U+00E4
14996 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring
14997 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5
14998 % U+00E6 LATIN SMALL LETTER AE; ae
14999 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6
15000 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla
15001 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7
15002 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave
15003 \DeclareTextCompositeCommand{"}{PD1}{e}{\350}% U+00E8
15004 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute
15005 \DeclareTextCompositeCommand{"}{PD1}{e}{\351}% U+00E9
15006 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex
15007 \DeclareTextCompositeCommand{"}{PD1}{e}{\352}% U+00EA
15008 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis
15009 \DeclareTextCompositeCommand{"}{PD1}{e}{\353}% U+00EB
15010 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave
15011 \DeclareTextCompositeCommand{"}{PD1}{i}{\354}% U+00EC
15012 \DeclareTextCompositeCommand{"}{PD1}{i}{\354}% U+00EC
15013 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute
15014 \DeclareTextCompositeCommand{"}{PD1}{i}{\355}% U+00ED
15015 \DeclareTextCompositeCommand{"}{PD1}{i}{\355}% U+00ED
15016 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex
15017 \DeclareTextCompositeCommand{"}{PD1}{i}{\356}% U+00EE
15018 \DeclareTextCompositeCommand{"}{PD1}{i}{\356}% U+00EE

15019 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis
 15020 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF
 15021 \DeclareTextCompositeCommand{"}{PD1}{i}{\357}% U+00EF
 15022 % U+00F0 LATIN SMALL LETTER ETH; eth
 15023 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0
 15024 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde
 15025 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1
 15026 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve
 15027 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362}% U+00F2
 15028 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute
 15029 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363}% U+00F3
 15030 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex
 15031 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364}% U+00F4
 15032 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde
 15033 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365}% U+00F5
 15034 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis
 15035 \DeclareTextCompositeCommand{"}{PD1}{o}{\366}% U+00F6
 15036 % U+00F7 DIVISION SIGN; divide
 15037 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7
 15038 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash
 15039 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8
 15040 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave
 15041 \DeclareTextCompositeCommand{\`}{PD1}{u}{\371}% U+00F9
 15042 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute
 15043 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372}% U+00FA
 15044 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex
 15045 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373}% U+00FB
 15046 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis
 15047 \DeclareTextCompositeCommand{"}{PD1}{u}{\374}% U+00FC
 15048 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute
 15049 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375}% U+00FD
 15050 % U+00FE LATIN SMALL LETTER THORN; thorn; \th, \thorn (wasysym)
 15051 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE
 15052 \DeclareTextCommand{\textthorn}{PD1}{\376}%* U+00FE
 15053 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis
 15054 \DeclareTextCompositeCommand{"}{PD1}{y}{\377}% U+00FF
 15055 \DeclareTextCommand{\ij}{PD1}{ij}% ligature U+0069 U+006A
 Glyphs that consist of several characters.
 15056 \DeclareTextCommand{\SS}{PD1}{SS}%
 15057 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}%
 Aliases (german.sty)
 15058 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}%
 15059 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}%
 15060 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}%
 15061 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}%
 15062 \DeclareTextCommand{\textflqq}{PD1}{\guillemetleft}%
 15063 \DeclareTextCommand{\textfrqq}{PD1}{\guillemetright}%
 15064 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}%
 15065 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}%
 Aliases (math names)
 15066 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}%
 15067 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}%
 15068 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}%

```

15069 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}%
15070 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}%
15071 \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).

```

15072 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
15073 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute
15074 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
15075 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute
15076 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute
15077 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
15078 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
15079 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
15080 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
15081 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
15082 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
15083 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
15084 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
15085 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot
15086 </pd1enc>

```

47.2 PU encoding

```

15087 <*puenc>
15088 \DeclareFontEncoding{PU}{}{}

```

47.2.1 NFSS2 accents

```

15089 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
15090 \DeclareTextCommand{\`}{PU}[1]{#1\83\000}% U+0300
15091 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
15092 \DeclareTextCommand{\'}{PU}[1]{#1\83\001}% U+0301
15093 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
15094 \DeclareTextCommand{\^}{PU}[1]{#1\83\002}% U+0302
15095 % U+0303 COMBINING TILDE; tildecmb, *tildecmb
15096 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303
15097 % U+0304 COMBINING MACRON; macroncmb
15098 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304
15099 % U+0306 COMBINING BREVE; brevecmb
15100 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306
15101 \ifx\CYRDZE@undefined \else
15102 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306
15103 \fi
15104 % U+0307 COMBINING DOT ABOVE; dotaccentcmb
15105 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307
15106 % U+0308 COMBINING DIAERESIS; dieresiscmb
15107 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308
15108 % U+030A COMBINING RING ABOVE; ringcmb
15109 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A
15110 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb
15111 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B
15112 % U+030C COMBINING CARON; caroncmb
15113 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C
15114 </puenc>

```

```

15115 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
15116 \DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F
15117 \*puenc)
15118 \ifx\CYRDZE\@undefined \else
15119 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F
15120 \fi
15121 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
15122 \DeclareTextCommand{\textinvbreve}{PU}[1]{#1\83\021}% U+0311
15123 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311
15124 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcmb
15125 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323
15126 % U+0324 COMBINING DIAERESIS BELOW; dieresisbelowcmb; \textsubum-
    laut (tipa)
15127 \DeclareTextCommand{\textsubumlaut}{PU}[1]{#1\83\044}% U+0324
15128 % U+0325 COMBINING RING BELOW; ringbelowcmb; \textsubring (tipa)
15129 \DeclareTextCommand{\textsubring}{PU}[1]{#1\83\045}% U+0325
15130 % U+0327 COMBINING CEDILLA; cedillacmb
15131 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327
15132 % U+0328 COMBINING OGONEK; ogonekcmb
15133 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328
15134 % U+032D COMBINING CIRCUMFLEX ACCENT BELOW;
15135 % \textsubcircum (tipa)
15136 \DeclareTextCommand{\textsubcircum}{PU}[1]{#1\83\055}% U+032D
15137 % U+032E COMBINING BREVE BELOW; brevebelowcmb
15138 \DeclareTextCommand{\textsubbreve}{PU}[1]{#1\83\056}% U+032E
15139 % U+0330 COMBINING TILDE BELOW; tildebelowcmb; \textsubtilde (tipa)
15140 \DeclareTextCommand{\textsubtilde}{PU}[1]{#1\83\060}% U+0330
15141 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
15142 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331
15143 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-
    blecmb
15144 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361
15145 % U+20DD COMBINING ENCLOSING CIRCLE
15146 \DeclareTextCommand{\textcircled}{PU}[1]{#1\9040\335}% U+20DD

```

Double accents.

```

15147 \DeclareTextCommand{\textacutemacron}{PU}[1]{#1\83\001\83\004}% U+0301 U+0304
15148 \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.

```

15149 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textasciigrave}%
15150 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}%
15151 \DeclareTextCompositeCommand{\^}{PU}{\@empty}{\textasciicircum}%
15152 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}%
15153 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}%
15154 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textstring}%
15155 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}%
15156 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}%
15157 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}%
15158 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}%
15159 \*puenc)
15160 \puextra\DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}%
15161 \*puenc)
15162 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}%

```



```

15163 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}%
15164 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}%
15165 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\@empty}{\{\ \83\021\}}% U+0311
15166 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\@empty}{\{\ \83\044\}}% U+0324
15167 \DeclareTextCompositeCommand{\textsubring}{PU}{\@empty}{\textringlow}%
15168 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\@empty}{\textcirc-
low}%
15169 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\@empty}{\{\ \83\056\}}% U+032E
15170 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\@empty}{\texttildebelow}%
15171 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}%
15172 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}%
15173 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}%
15174 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}%
15175 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}%
15176 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\@empty}{\{\ \83\001\83\004\}}% U+0301 U
15177 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\@empty}{\{\ \83\000\83\004\}}% U+0300 U
15178 \DeclareTextCompositeCommand{\`}{PU}{\ }{\textasciigrave}%
15179 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}%
15180 \DeclareTextCompositeCommand{\~}{PU}{\ }{\textasciicircum}%
15181 \DeclareTextCompositeCommand{\~}{PU}{\ }{\texttilde}%
15182 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}%
15183 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}%
15184 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}%
15185 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}%
15186 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}%
15187 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}%
15188 (/puenc)
15189 \puextra\DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}%
15190 (*puenc)
15191 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}%
15192 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}%
15193 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}%
15194 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\ }{\{\ \83\021\}}% U+0311
15195 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\ }{\{\ \83\044\}}% U+0324
15196 \DeclareTextCompositeCommand{\textsubring}{PU}{\ }{\textringlow}%
15197 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\ }{\textcirc-
low}%
15198 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\ }{\{\ \83\056\}}% U+032E
15199 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\ }{\texttildebelow}%
15200 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}%
15201 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}%
15202 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}%
15203 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}%
15204 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}%
15205 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\ }{\{\ \83\001\83\004\}}% U+0301 U+0304
15206 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\ }{\{\ \83\000\83\004\}}% U+0300 U+0304

Accents for capitals (see encoding TS1)
15207 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}%
15208 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}%
15209 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}%
15210 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}%
15211 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}%
15212 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}%
15213 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\"{#1}}%

```

```

15214 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}%
15215 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}%
15216 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}%
15217 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}%
15218 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}%
15219 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.\{#1\}}%
15220 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}%
15221 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}%

```

47.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

```

15222 % U+0009 (CHARACTER TABULATION)
15223 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
15224 % U+000A (LINE FEED)
15225 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A
15226 % U+000D (CARRIAGE RETURN)
15227 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D

\80\040: U+0020 SPACE; space, spacehackarabic
\80\041: U+0021 EXCLAMATION MARK; exclam

15228 % U+0022 QUOTATION MARK; quotedbl
15229 \DeclareTextCommand{\textquotedbl}{PU}{"}% \80\042 U+0022
15230 % U+0023 NUMBER SIGN; numbersign
15231 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023
15232 % U+0024 DOLLAR SIGN; dollar
15233 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024
15234 %* \textdollar -> \mathdollar
15235 %* \textdollar -> \EyesDollar (marvosym)
15236 % U+0025 PERCENT SIGN; percent
15237 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025
15238 % U+0026 AMPERSAND; ampersand
15239 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026
15240 %* \textampersand -> \binampersand (stmaryrd)
15241 %* \textampersand -> \with (cml)
15242 % U+0027 APOSTROPHE; quotesingle
15243 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027
15244 % U+0028 LEFT PARENTHESIS; parenleft
15245 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028
15246 % U+0029 RIGHT PARENTHESIS; parenright
15247 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029
15248 % U+002A ASTERISK; asterisk; (?)
15249 \DeclareTextCommand{\textasteriskcentered}{PU}{\80\052}% U+002A
15250 % U+002B PLUS SIGN; plus; \MVPlus (marvosym)
15251 \DeclareTextCommand{\textMVPlus}{PU}{\80\053}%* U+002B
15252 % U+002C COMMA; comma; \MVComma (marvosym)
15253 \DeclareTextCommand{\textMVComma}{PU}{\80\054}%* U+002C
15254 % U+002D HYPHEN-MINUS; hyphen; \MVMinus (marvosym)
15255 \DeclareTextCommand{\textMVMinus}{PU}{\80\055}%* U+002D
15256 % U+002E FULL STOP; period; \MVPeriod (marvosym)
15257 \DeclareTextCommand{\textMVPeriod}{PU}{\80\056}%* U+002E
15258 % U+002F SOLIDUS; slash; \MVDivision (marvosym)
15259 \DeclareTextCommand{\textMVDivision}{PU}{\80\057}%* U+002F
15260 % U+0030 DIGIT ZERO; zero; \MVZero (marvosym)
15261 \DeclareTextCommand{\textMVZero}{PU}{\80\060}%* U+0030

```

15262 % U+0031 DIGIT ONE; one; \MVOne (marvosym)
 15263 \DeclareTextCommand{\textMVOne}{PU}{\80\061}%* U+0031
 15264 % U+0032 DIGIT TWO; two; \MVTwo (marvosym)
 15265 \DeclareTextCommand{\textMVTwo}{PU}{\80\062}%* U+0032
 15266 % U+0033 DIGIT THREE; three; \MVThree (marvosym)
 15267 \DeclareTextCommand{\textMVThree}{PU}{\80\063}%* U+0033
 15268 % U+0034 DIGIT FOUR; four; \MVFour (marvosym)
 15269 \DeclareTextCommand{\textMVFour}{PU}{\80\064}%* U+0034
 15270 % U+0035 DIGIT FIVE; five; \MVFive (marvosym)
 15271 \DeclareTextCommand{\textMVFive}{PU}{\80\065}%* U+0035
 15272 % U+0036 DIGIT SIX; six; \MVSix (marvosym)
 15273 \DeclareTextCommand{\textMVSix}{PU}{\80\066}%* U+0036
 15274 % U+0037 DIGIT SEVEN; seven; \MVSeven (marvosym)
 15275 \DeclareTextCommand{\textMVSeven}{PU}{\80\067}%* U+0037
 15276 % U+0038 DIGIT EIGHT; eight; \MVEight (marvosym)
 15277 \DeclareTextCommand{\textMVEight}{PU}{\80\070}%* U+0038
 15278 % U+0039 DIGIT NINE; nine; \MVNine (marvosym)
 15279 \DeclareTextCommand{\textMVNine}{PU}{\80\071}%* U+0039
 \80\072: U+003A COLON; colon
 \80\073: U+003B SEMICOLON; semicolon
 15280 % U+003C LESS-THAN SIGN; less
 15281 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C
 \80\075: U+003D EQUALS SIGN; equal
 15282 % U+003E GREATER-THAN SIGN; greater
 15283 \DeclareTextCommand{\textgreater}{PU}{>}% \80\076 U+003E
 \80\077: U+003F QUESTION MARK; question
 15284 % U+0040 COMMERCIAL AT; at; \MVAt (marvosym)
 15285 \DeclareTextCommand{\textMVAt}{PU}{\80\100}%* U+0040
 \80\101: U+0041 LATIN CAPITAL LETTER A; A
 ...
 \80\132: U+005A LATIN CAPITAL LETTER Z; Z
 \80\133: U+005B LEFT SQUARE BRACKET; bracketleft
 15286 % U+005C REVERSE SOLIDUS; backslash
 15287 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C
 \80\135: U+005D RIGHT SQUARE BRACKET; bracketright
 15288 % U+005E CIRCUMFLEX ACCENT; asciicircum
 15289 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E
 15290 % U+005F LOW LINE; underscore
 15291 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F
 15292 %* \textunderscore -> \mathunderscore (LaTeX)
 15293 % U+0060 GRAVE ACCENT; grave
 15294 \DeclareTextCommand{\textasciigrave}{PU}{\80\140}% U+0060
 \80\141: U+0061 LATIN SMALL LETTER A; a
 ...
 \80\150: U+0068 LATIN SMALL LETTER H; h
 15295 % U+0069 LATIN SMALL LETTER I; i
 15296 \DeclareTextCompositeCommand{\.}{PU}{i}% \80\151 U+0069
 15297 \DeclareTextCompositeCommand{\.}{PU}{i}% \80\151 U+0069

$\backslash 80\backslash 152$: U+006A LATIN SMALL LETTER J; j
 ...
 $\backslash 80\backslash 172$: U+007A LATIN SMALL LETTER Z; z
 15298 % U+007B LEFT CURLY BRACKET; braceleft
 15299 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B
 15300 % U+007C VERTICAL LINE; *bar, verticalbar
 15301 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C
 15302 %* \textbar -> \textvertline (tipa)
 15303 % U+007D RIGHT CURLY BRACKET; braceright
 15304 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D
 15305 % U+007E TILDE; asciitilde
 15306 \DeclareTextCommand{\textasciitilde}{PU}{\80\176}% U+007E

47.2.3 Latin-1 Supplement: U+0080 to U+00FF

$\backslash 80\backslash 240$: U+00A0 NO-BREAK SPACE; nbspace, nonbreakingspace
 15307 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown
 15308 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1
 15309 % U+00A2 CENT SIGN; cent
 15310 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2
 15311 % U+00A3 POUND SIGN; sterling
 15312 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3
 15313 %* \textsterling -> \mathsterling (LaTeX)
 15314 %* \textsterling -> \pounds (LaTeX)
 15315 % U+00A4 CURRENCY SIGN; currency
 15316 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4
 15317 % U+00A5 YEN SIGN; yen
 15318 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5
 15319 % U+00A6 BROKEN BAR; brokenbar
 15320 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6
 15321 %* \textbrokenbar -> \brokenvert (wasysym)
 15322 % U+00A7 SECTION SIGN; section
 15323 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7
 15324 %* \textsection -> \mathsection (LaTeX)
 15325 %* \textsection -> \S (LaTeX)
 15326 % U+00A8 DIAERESIS; diaeresis
 15327 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8
 15328 % U+00A9 COPYRIGHT SIGN; copyright
 15329 \DeclareTextCommand{\textcopyright}{PU}{\80\251}%* U+00A9
 15330 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine
 15331 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA
 15332 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetleft
 15333 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB
 15334 \DeclareTextCommand{\guillemetleft}{PU}{\80\253}% U+00AB
 15335 % U+00AC NOT SIGN; logicalnot
 15336 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC
 15337 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC
 $\backslash 80\backslash 255$: U+00AD SOFT HYPHEN; sfthyphen, softthyphen
 15338 % U+00AE REGISTERED SIGN; registered
 15339 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE
 15340 % U+00AF MACRON; *macron, overscore
 15341 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF
 15342 % U+00B0 DEGREE SIGN; degree

15343 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0
15344 % U+00B1 PLUS-MINUS SIGN; plusminus
15345 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1
15346 % U+00B2 SUPERSCRIPT TWO; twosuperior
15347 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}%* U+00B2
15348 % U+00B3 SUPERSCRIPT THREE; threesuperior
15349 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}%* U+00B3
15350 % U+00B4 ACUTE ACCENT; acute
15351 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4
15352 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4
15353 % U+00B5 MICRO SIGN; mu, mu1
15354 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5
15355 % U+00B6 PILCROW SIGN; paragraph
15356 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6
15357 %* \textparagraph -> \mathparagraph (LaTeX)
15358 % U+00B7 MIDDLE DOT; middot, *periodcentered
15359 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7
15360 %* \textperiodcentered -> \MultiplicationDot (marvosym)
15361 %* \textperiodcentered -> \Squaredot (marvosym)
15362 % U+00B8 CEDILLA; cedilla
15363 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8
15364 % U+00B9 SUPERSCRIPT ONE; onesuperior
15365 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}%* U+00B9
15366 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine
15367 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA
15368 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetright
15369 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB
15370 \DeclareTextCommand{\guillemetright}{PU}{\80\273}% U+00BB
15371 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter
15372 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC
15373 % U+00BD VULGAR FRACTION ONE HALF; onehalf
15374 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD
15375 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters
15376 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE
15377 % U+00BF INVERTED QUESTION MARK; questiondown
15378 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF
15379 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave
15380 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0
15381 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute
15382 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1
15383 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex
15384 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2
15385 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde
15386 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3
15387 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis
15388 \DeclareTextCompositeCommand{\\"}{PU}{A}{\80\304}% U+00C4
15389 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring
15390 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5
15391 % U+00C6 LATIN CAPITAL LETTER AE; AE
15392 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6
15393 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla
15394 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7
15395 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave
15396 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8

15397 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute
15398 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9
15399 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex
15400 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA
15401 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis
15402 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB
15403 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave
15404 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC
15405 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute
15406 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD
15407 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex
15408 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE
15409 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis
15410 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF
15411 % U+00D0 LATIN CAPITAL LETTER ETH; Eth
15412 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0
15413 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde
15414 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1
15415 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve
15416 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2
15417 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute
15418 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3
15419 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex
15420 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4
15421 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde
15422 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5
15423 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis
15424 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6
15425 % U+00D7 MULTIPLICATION SIGN; multiply
15426 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7
15427 %* \textmultiply -> \vartimes (stmaryrd)
15428 %* \textmultiply -> \MVMultiplication (marvosym)
15429 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash
15430 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8
15431 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave
15432 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9
15433 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute
15434 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA
15435 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex
15436 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB
15437 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis
15438 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC
15439 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute
15440 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD
15441 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)
15442 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE
15443 \DeclareTextCommand{\textThorn}{PU}{\80\336}%* U+00DE
15444 % U+00DF LATIN SMALL LETTER SHARP S; germandbls
15445 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF
15446 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave
15447 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0
15448 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute
15449 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1
15450 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex

15451 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\342}% U+00E2
15452 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde
15453 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3
15454 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis
15455 \DeclareTextCompositeCommand{"}{PU}{a}{\80\344}% U+00E4
15456 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring
15457 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5
15458 % U+00E6 LATIN SMALL LETTER AE; ae
15459 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6
15460 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla
15461 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7
15462 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave
15463 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8
15464 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute
15465 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9
15466 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex
15467 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA
15468 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis
15469 \DeclareTextCompositeCommand{"}{PU}{e}{\80\353}% U+00EB
15470 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave
15471 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC
15472 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC
15473 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute
15474 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED
15475 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED
15476 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex
15477 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE
15478 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE
15479 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis
15480 \DeclareTextCompositeCommand{"}{PU}{i}{\80\357}% U+00EF
15481 \DeclareTextCompositeCommand{"}{PU}{i}{\80\357}% U+00EF
15482 % U+00F0 LATIN SMALL LETTER ETH; eth
15483 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0
15484 %* \dh -> \eth (wsuipa, phonetic)
15485 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde
15486 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1
15487 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve
15488 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2
15489 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute
15490 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3
15491 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex
15492 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4
15493 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otild
15494 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5
15495 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis
15496 \DeclareTextCompositeCommand{"}{PU}{o}{\80\366}% U+00F6
15497 % U+00F7 DIVISION SIGN; divide
15498 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7
15499 % U+00F8 LATIN SMALL LETTER O WITH STROKE; slash
15500 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8
15501 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave
15502 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9
15503 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute
15504 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA

15505 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex
 15506 \DeclareTextCompositeCommand{\~}{PU}{u}{\80\373}% U+00FB
 15507 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis
 15508 \DeclareTextCompositeCommand{\\"}{PU}{u}{\80\374}% U+00FC
 15509 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute
 15510 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD
 15511 % U+00FE LATIN SMALL LETTER THORN; thorn;
 15512 % \th, \thorn (wasysym), \textthorn (tipa)
 15513 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE
 15514 \DeclareTextCommand{\textthorn}{PU}{\80\376}%* U+00FE
 15515 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis
 15516 \DeclareTextCompositeCommand{\\"}{PU}{y}{\80\377}% U+00FF

47.2.4 Latin Extended-A: U+0080 to U+017F

15517 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron
 15518 \DeclareTextCompositeCommand{=}{PU}{A}{\81\000}% U+0100
 15519 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron
 15520 \DeclareTextCompositeCommand{=}{PU}{a}{\81\001}% U+0101
 15521 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve
 15522 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102
 15523 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve
 15524 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103
 15525 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek
 15526 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104
 15527 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek
 15528 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105
 15529 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute
 15530 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106
 15531 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute
 15532 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107
 15533 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex
 15534 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108
 15535 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex
 15536 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109
 15537 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotac-
 cent
 15538 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A
 15539 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent
 15540 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B
 15541 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron
 15542 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C
 15543 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron
 15544 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D
 15545 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron
 15546 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E
 15547 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron
 15548 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F
 15549 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash
 15550 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110
 15551 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron;
 15552 % \textcrd (tipa)
 15553 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111
 15554 \DeclareTextCommand{\textcrd}{PU}{\81\021}% U+0111

15555 %* \textcrd -> \crossd (wsuipa)
15556 % An alternate glyph with the stroke through the bowl:
15557 %* \textcrd -> \textbard (tipa)
15558 %* \textcrd -> \bard (wsuipa)
15559 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron
15560 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112
15561 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron
15562 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113
15563 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve
15564 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114
15565 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve
15566 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115
15567 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent
15568 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116
15569 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent
15570 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117
15571 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek
15572 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118
15573 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek
15574 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119
15575 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron
15576 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A
15577 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron
15578 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B
15579 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex
15580 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C
15581 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex
15582 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D
15583 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve
15584 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E
15585 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve
15586 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F
15587 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotac-
cent
15588 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120
15589 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent
15590 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121
15591 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcom-
maaccent
15592 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122
15593 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent
15594 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123
15595 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex
15596 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124
15597 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex
15598 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125
15599 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar
15600 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126
15601 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar; \hbar (AmS)
15602 \DeclareTextCommand{\textthbar}{PU}{\81\047}%* U+0127
15603 %* \textthbar -> \textcrh (tipa)
15604 %* \textthbar -> \crossh (wsuipa)
15605 %* \textthbar -> \planck (phonetic)
15606 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde

```

15607 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128
15608 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde
15609 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129
15610 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129
15611 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron
15612 \DeclareTextCompositeCommand{=} {PU}{I}{\81\052}% U+012A
15613 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron
15614 \DeclareTextCompositeCommand{=} {PU}{i}{\81\053}% U+012B
15615 \DeclareTextCompositeCommand{=} {PU}{i}{\81\053}% U+012B
15616 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve
15617 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C
15618 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve
15619 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D
15620 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D
15621 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek
15622 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E
15623 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek
15624 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F
15625 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F
15626 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent
15627 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130
15628 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi
15629 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131
15630 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ
15631 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132
15632 % U+0133 LATIN SMALL LIGATURE IJ; ij
15633 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133
15634 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex
15635 \DeclareTextCompositeCommand{^}{PU}{J}{\81\064}% U+0134
15636 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex
15637 \DeclareTextCompositeCommand{^}{PU}{j}{\81\065}% U+0135
15638 \DeclareTextCompositeCommand{^}{PU}{j}{\81\065}% U+0135
15639 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaac-
cent
15640 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136
15641 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent
15642 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067}% U+0137

```

The canonical name of U+0138, small letter kra, would be `\textkgreenlandic`, following the glyph naming convention. However `latex/base/inputenc.dtx` has chosen `\textkra`.

```

15643 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic
15644 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138
15645 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute
15646 \DeclareTextCompositeCommand{'}{PU}{L}{\81\071}% U+0139
15647 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute
15648 \DeclareTextCompositeCommand{'}{PU}{l}{\81\072}% U+013A
15649 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaac-
cent
15650 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B
15651 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent
15652 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C
15653 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron
15654 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D

```

15655 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron
 15656 \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.
 15657 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotac-
 cent
 15658 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F
 15659 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent
 15660 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140
 15661 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash
 15662 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141
 15663 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash
 15664 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142
 15665 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute
 15666 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143
 15667 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute
 15668 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144
 15669 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaac-
 cent
 15670 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145
 15671 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent
 15672 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146
 15673 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron
 15674 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147
 15675 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron
 15676 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148
 15677 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napos-
 trophe, quoterightn
 15678 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149
 15679 % U+014A LATIN CAPITAL LETTER ENG; Eng
 15680 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A
 15681 % U+014B LATIN SMALL LETTER ENG; eng
 15682 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B
 15683 %* \ng -> \eng (wsuipa)
 15684 %* \ng -> \engma (phonetic)
 15685 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron
 15686 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C
 15687 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron
 15688 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D
 15689 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve
 15690 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E
 15691 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve
 15692 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F
 15693 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odbla-
 cute, Ohungarumlaut
 15694 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150
 15695 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odbla-
 cute, ohungarumlaut
 15696 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151
 15697 % U+0152 LATIN CAPITAL LIGATURE OE; OE
 15698 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152
 15699 % U+0153 LATIN SMALL LIGATURE OE; oe
 15700 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153

15701 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute
 15702 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124}% U+0154
 15703 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute
 15704 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125}% U+0155
 15705 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaaccent
 15706 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156
 15707 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent
 15708 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157
 15709 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron
 15710 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158
 15711 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron
 15712 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159
 15713 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute
 15714 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A
 15715 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute
 15716 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B
 15717 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex
 15718 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C
 15719 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex
 15720 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D
 15721 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla
 15722 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E
 15723 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla
 15724 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F
 15725 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron
 15726 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160
 15727 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron
 15728 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161
 15729 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaaccent
 15730 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162
 15731 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent
 15732 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163
 15733 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron
 15734 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164
 15735 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron
 15736 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165
 15737 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar
 15738 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166
 15739 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar
 15740 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167
 15741 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde
 15742 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168
 15743 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde
 15744 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169
 15745 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron
 15746 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A
 15747 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron
 15748 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B
 15749 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve
 15750 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C
 15751 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve
 15752 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D

15753 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring
 15754 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E
 15755 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring
 15756 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F
 15757 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udbla-
 cute, Uhungarumlaut
 15758 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170
 15759 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udbla-
 cute, uhungarumlaut
 15760 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171
 15761 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek
 15762 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172
 15763 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek
 15764 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173
 15765 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex
 15766 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174
 15767 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex
 15768 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175
 15769 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex
 15770 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176
 15771 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex
 15772 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177
 15773 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis
 15774 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178
 15775 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute
 15776 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179
 15777 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute
 15778 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A
 15779 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent
 15780 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B
 15781 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent
 15782 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C
 15783 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron
 15784 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D
 15785 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron
 15786 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E
 15787 % U+017F LATIN SMALL LETTER LONG S; longs, slong
 15788 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

47.2.5 Latin Extended-B: U+0180 to U+024F

15789 % U+0180 LATIN SMALL LETTER B WITH STROKE; bstroke; \textcrb (tipa)
 15790 \DeclareTextCommand{\textcrb}{PU}{\81\200}% U+0180
 15791 %* \textcrb -> \crossb (wsuipa)
 15792 % An alternate glyph with the stroke through the bowl:
 15793 %* \textcrb -> \textbarb (tipa)
 15794 %* \textcrb -> \barb (wsuipa)
 15795 % U+0181 LATIN CAPITAL LETTER B WITH HOOK; Bhook; \hausab (pho-
 netic)
 15796 \DeclareTextCommand{\texthausab}{PU}{\81\201}%* U+0181
 15797 % U+0188 LATIN SMALL LETTER C WITH HOOK; chook; \texthtc (tipa)
 15798 \DeclareTextCommand{\texthtc}{PU}{\81\210}% U+0188
 15799 % U+018A LATIN CAPITAL LETTER D WITH HOOK; Dhook; \hausad (pho-
 netic)
 15800 \DeclareTextCommand{\texthausad}{PU}{\81\212}%* U+018A

15801 % U+018E LATIN CAPITAL LETTER REVERSED E; Ereversed
15802 \DeclareTextCommand{\textEreversed}{PU}{\81\216}% U+018E
15803 \DeclareTextCommand{\textrevE}{PU}{\81\216}% U+018E
15804 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin
15805 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192
15806 %* \textflorin -> \Florin (marvosym)
15807 % U+0195 LATIN SMALL LETTER HV; hv; \texthvlig (tipa)
15808 \DeclareTextCommand{\texthvlig}{PU}{\81\225}% U+0195
15809 %* \texthvlig -> \hv (wsuipa)
15810 % U+0198 LATIN CAPITAL LETTER K WITH HOOK; Khook; \hausak (phonetic)
15811 \DeclareTextCommand{\texthausak}{PU}{\81\230}%* U+0198
15812 % U+0199 LATIN SMALL LETTER K WITH HOOK; khook; \texthtk (tipa)
15813 \DeclareTextCommand{\texthtk}{PU}{\81\231}% U+0199
15814 %* \texthtk -> \hausak (phonetic)
15815 % U+019A LATIN SMALL LETTER L WITH BAR; lbar;
15816 % \textbarl (tipa), \barl (wsuipa)
15817 \DeclareTextCommand{\textbarl}{PU}{\81\232}%* U+019A
15818 % U+019B LATIN SMALL LETTER LAMBDA WITH STROKE/
15819 % LATIN SMALL LETTER BARRED LAMBDA; lambdastroke;
15820 % \textclambda (tipa)
15821 \DeclareTextCommand{\textclambda}{PU}{\81\233}% U+019B
15822 %* \textclambda -> \crossnilambda (wsuipa)
15823 %* \textclambda -> \barlambd (phonetic)
15824 %* \textclambda -> \lambdabar (txfonts/pxfonts)
15825 %* \textclambda -> \lambdaslash (txfonts/pxfonts)
15826 % U+019E LATIN SMALL LETTER N WITH LONG RIGHT LEG; nlegrightlong;
15827 % \textnrleg (tipx)
15828 \DeclareTextCommand{\textPUnrleg}{PU}{\81\236}% U+019E
15829 %* \textPUnrleg -> \textnrleg (tipx)
15830 % U+01A5 LATIN SMALL LETTER P WITH HOOK; phook; \texthtp (tipa)
15831 \DeclareTextCommand{\texthtp}{PU}{\81\245}% U+01A5
15832 % U+01AB LATIN SMALL LETTER T WITH PALATAL HOOK; tpalatalhook;
15833 % \textlhookt (tipa)
15834 \DeclareTextCommand{\textlhookt}{PU}{\81\253}% U+01AB
15835 % U+01AD LATIN SMALL LETTER T WITH HOOK; thook; \texthtt (tipa)
15836 \DeclareTextCommand{\texthtt}{PU}{\81\255}% U+01AD
15837 % U+01B9 LATIN SMALL LETTER EZH REVERSED/
15838 % LATIN SMALL LETTER REVERSED YOGH; \textrevyogh (tipa)
15839 \DeclareTextCommand{\textrevyogh}{PU}{\81\271}% U+01B9
15840 % U+01BB LATIN LETTER TWO WITH STROKE; twostroke; \textcrtwo (tipa)
15841 \DeclareTextCommand{\textcrtwo}{PU}{\81\273}% U+01BB
15842 % U+01BE LATIN LETTER INVERTED GLOTTAL STOP WITH STROKE;
15843 % glottalinvertedstroke; \textcrinvglotstop (tipa)
15844 \DeclareTextCommand{\textcrinvglotstop}{PU}{\81\276}% U+01BE
15845 % U+01BF LATIN LETTER WYNN; wynn; \textwynn (tipa)
15846 \DeclareTextCommand{\textwynn}{PU}{\81\277}% U+01BF
15847 % U+01C0 LATIN LETTER DENTAL CLICK/LATIN LETTER PIPE; clickdental;
15848 % \textpipe (tipa)
15849 \DeclareTextCommand{\textpipe}{PU}{\81\300}% U+01C0
15850 %* \textpipe -> \textpipevar (tipx)
15851 % U+01C1 LATIN LETTER LATERAL CLICK/LATIN LETTER

15852 % DOUBLE PIPE; clicklateral; \textdoublepipe (tipa)
15853 \DeclareTextCommand{\textdoublepipe}{PU}{\81\301}% U+01C1
15854 %* \textdoublepipe -> \textdoublepipevar (tipx)
15855 % U+01C2 LATIN LETTER ALVEOLAR CLICK/LATIN LETTER PIPE DOUBLE BAR;
15856 % clickalveolar; \textdoublebarpipe (tipa)
15857 \DeclareTextCommand{\textdoublebarpipe}{PU}{\81\302}% U+01C2
15858 %* \textdoublebarpipe -> \textdoublebarpipevar (tipx)
15859 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron
15860 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD
15861 % U+01CE LATIN SMALL LETTER A WITH CARON; acarón
15862 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE
15863 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron
15864 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF
15865 % U+01D0 LATIN SMALL LETTER I WITH CARON; icarón
15866 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0
15867 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0
15868 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron
15869 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1
15870 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocarón
15871 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2
15872 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron
15873 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3
15874 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucarón
15875 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4
15876 % U+01DD LATIN SMALL LETTER TURNED E; eturned; \inve (wasysym)
15877 \DeclareTextCommand{\textinve}{PU}{\81\335}%* U+01DD
15878 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke
15879 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4
15880 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke
15881 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5
15882 %* \textgslash -> \textcrg (tipa)
15883 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron
15884 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6
15885 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcarón
15886 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7
15887 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron
15888 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8
15889 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcarón
15890 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9
15891 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek
15892 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA
15893 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek
15894 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB
15895 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron
15896 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0
15897 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0
15898 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute
15899 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4
15900 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute
15901 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5
15902 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE
15903 \DeclareTextCompositeCommand{\`}{PU}{N}{\81\370}% U+01F8
15904 % U+01F9 LATIN SMALL LETTER N WITH GRAVE

15905 \DeclareTextCompositeCommand{\`}{PU}{n}{\81\371}% U+01F9
15906 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute
15907 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC
15908 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute
15909 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD
15910 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE;
15911 % *Oslashacute, Ostrokeacut
15912 \DeclareTextCompositeCommand{\'}{PU}{\O}{\81\376}% U+01FE
15913 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE;
15914 % *oslashacute, ostrokeacute
15915 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF
15916 </puenc>
15917 <*puextra>
15918 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave
15919 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200
15920 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave
15921 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201
15922 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave
15923 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204
15924 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave
15925 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205
15926 </puextra>
15927 <*puenc>
15928 % U+0206 LATIN CAPITAL LETTER E WITH INVERTED BREVE; Einvert-
edbreve
15929 \DeclareTextCompositeCommand{\textinvbreve}{PU}{E}{\82\006}% U+0206
15930 % U+0207 LATIN SMALL LETTER E WITH INVERTED BREVE; einvert-
breve
15931 \DeclareTextCompositeCommand{\textinvbreve}{PU}{e}{\82\007}% U+0207
15932 </puenc>
15933 <*puextra>
15934 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave
15935 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208
15936 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave
15937 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209
15938 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209
15939 </puextra>
15940 <*puenc>
15941 % U+020A LATIN CAPITAL LETTER I WITH INVERTED BREVE; Iinvert-
breve
15942 \DeclareTextCompositeCommand{\textinvbreve}{PU}{I}{\82\012}% U+020A
15943 % U+020B LATIN SMALL LETTER I WITH INVERTED BREVE; iinvert-
breve
15944 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B
15945 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B
15946 </puenc>
15947 <*puextra>
15948 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave
15949 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C
15950 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave
15951 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D
15952 </puextra>
15953 <*puenc>
15954 % U+020E LATIN CAPITAL LETTER O WITH INVERTED BREVE; Oinvert-

edbreve
 15955 \DeclareTextCompositeCommand{\textinvbreve}{PU}{O}{\82\016}% U+020E
 15956 % U+020F LATIN SMALL LETTER O WITH INVERTED BREVE; oinverted-
 breve
 15957 \DeclareTextCompositeCommand{\textinvbreve}{PU}{o}{\82\017}% U+020F
 15958 \puenc)
 15959 (*puextra)
 15960 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave
 15961 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210
 15962 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave
 15963 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211
 15964 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave
 15965 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214
 15966 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave
 15967 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215
 15968 \puextra)
 15969 (*puenc)
 15970 % U+0216 LATIN CAPITAL LETTER U WITH INVERTED BREVE; Uinvert-
 edbreve
 15971 \DeclareTextCompositeCommand{\textinvbreve}{PU}{U}{\82\026}% U+0216
 15972 % U+0217 LATIN SMALL LETTER U WITH INVERTED BREVE; uinverted-
 breve
 15973 \DeclareTextCompositeCommand{\textinvbreve}{PU}{u}{\82\027}% U+0217
 15974 % U+021E LATIN CAPITAL LETTER H WITH CARON
 15975 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E
 15976 % U+021F LATIN SMALL LETTER H WITH CARON
 15977 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F
 15978 % U+0221 LATIN SMALL LETTER D WITH CURL; \textctd (tipa)
 15979 \DeclareTextCommand{\textctd}{PU}{\82\041}% U+0221
 15980 % U+0225 LATIN SMALL LETTER Z WITH HOOK; \textcommatailz (tipa)
 15981 \DeclareTextCommand{\textcommatailz}{PU}{\82\045}% U+0225
 15982 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE
 15983 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226
 15984 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE
 15985 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227
 15986 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA
 15987 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228
 15988 % U+0229 LATIN SMALL LETTER E WITH CEDILLA
 15989 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229
 15990 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE
 15991 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E
 15992 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE
 15993 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F
 15994 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON
 15995 \DeclareTextCompositeCommand{\=}{PU}{Y}{\82\062}% U+0232
 15996 % U+0233 LATIN SMALL LETTER Y WITH MACRON
 15997 \DeclareTextCompositeCommand{\=}{PU}{y}{\82\063}% U+0233
 15998 % U+0235 LATIN SMALL LETTER N WITH CURL; \textctn (tipa)
 15999 \DeclareTextCommand{\textctn}{PU}{\82\065}% U+0235
 16000 % U+0236 LATIN SMALL LETTER T WITH CURL; \textctt (tipa)
 16001 \DeclareTextCommand{\textctt}{PU}{\82\066}% U+0236
 16002 % U+0237 LATIN SMALL LETTER DOTLESS J
 16003 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237
 16004 % U+0238 LATIN SMALL LETTER DB DIGRAPH; \textdblig (tipx)

16005 \DeclareTextCommand{\textPUdblig}{PU}{\82\070}% U+0238
 16006 %* \textPUdblig -> \textdblig (tipx)
 16007 % U+0239 LATIN SMALL LETTER QP DIGRAPH; \textqplig (tipx)
 16008 \DeclareTextCommand{\textPUqplig}{PU}{\82\071}% U+0239
 16009 %* \textPUqplig -> \textqplig (tipx)
 16010 % U+023C LATIN SMALL LETTER C WITH STROKE; \slashc (wsuipa)
 16011 \DeclareTextCommand{\textslashc}{PU}{\82\074}%* U+023C
 16012 %* \textslashc -> \textcentoldstyle (textcomp)
 16013 % With bar instead of stroke:
 16014 %* \textslashc -> \textbarc (tipa)

47.2.6 IPA Extensions: U+0250 to U+02AF

16015 % U+0250 LATIN SMALL LETTER TURNED A; aturned; \textturna (tipa)
 16016 \DeclareTextCommand{\textturna}{PU}{\82\120}% U+0250
 16017 %* \textturna -> \inva (wasysym)
 16018 % U+0251 LATIN SMALL LETTER ALPHA/LATIN SMALL LETTER
 16019 % SCRIPT A; ascript; \textscripta (tipa), \scripta (wsuipa)
 16020 \DeclareTextCommand{\textscripta}{PU}{\82\121}%* U+0251
 16021 %* \textscripta -> \vara (phonetic)
 16022 % U+0252 LATIN SMALL LETTER TURNED ALPHA; ascriptturned;
 16023 % \textturnscripta (tipa)
 16024 \DeclareTextCommand{\textturnscripta}{PU}{\82\122}% U+0252
 16025 %* \textturnscripta -> \invscripta (wsuipa)
 16026 %* \textturnscripta -> \rotvara (phonetic)
 16027 % U+0253 LATIN CAPITAL LETTER B WITH HOOK; bhook; \texthtb (tipa)
 16028 \DeclareTextCommand{\texthtb}{PU}{\82\123}% U+0253
 16029 %* \texthtb -> \hookb (wsuipa)
 16030 %* \texthtb -> \hausab (phonetic)
 16031 % U+0254 LATIN SMALL LETTER OPEN O; oopen;
 16032 % \textopeno (tipa), \openo (wasysym)
 16033 \DeclareTextCommand{\textopeno}{PU}{\82\124}%* U+0254
 16034 %* \textopeno -> \varopeno (phonetic)
 16035 % U+0255 LATIN SMALL LETTER C WITH CURL; ccurl; \textctc (tipa)
 16036 \DeclareTextCommand{\textctc}{PU}{\82\125}% U+0255
 16037 %* \textctc -> \curlyc (wsuipa)
 16038 % U+0256 LATIN SMALL LETTER D WITH TAIL; dtail; \textrtaild (tipa)
 16039 \DeclareTextCommand{\textrtaild}{PU}{\82\126}%* U+0256
 16040 %* \textrtaild -> \taild (wsuipa)
 16041 % U+0257 LATIN SMALL LETTER D WITH HOOK; dhook; \texthtd (tipa)
 16042 \DeclareTextCommand{\texthtd}{PU}{\82\127}% U+0257
 16043 %* \texthtd -> \hookd (wsuipa)
 16044 %* \texthtd -> \hausad (phonetic)
 16045 % U+0258 LATIN SMALL LETTER REVERSED E; ereversed;
 16046 % \textreve (tipa), \reve (wsuipa)
 16047 \DeclareTextCommand{\textreve}{PU}{\82\130}%* U+0258
 16048 % U+0259 LATIN SMALL LETTER SCHWA; schwa;
 16049 % \textschwa (tipa), \schwa (wsuipa, phonetic)
 16050 \DeclareTextCommand{\textschwa}{PU}{\82\131}%* U+0259
 16051 % U+025A LATIN SMALL LETTER SCHWA WITH HOOK; schwahook;
 16052 % \textrhookschwa (tipa)
 16053 \DeclareTextCommand{\textrhookschwa}{PU}{\82\132}% U+025A
 16054 %* \textrhookschwa -> \ver (wsuipa)
 16055 % U+025B LATIN SMALL LETTER OPEN E/LATIN SMALL LETTER EP-
 SILON; eopen;

16056 % \niepsilon (wsuipa)
16057 \DeclareTextCommand{\textniepsilon}{PU}{\82\133}%* U+025B
16058 %* \textniepsilon -> \epsi (phonetic)
16059 % U+025C LATIN SMALL LETTER REVERSED OPEN E; eopenreversed;
16060 % \textreversedepsilon (tipa), \reversedepsilon (wsuipa)
16061 \DeclareTextCommand{\textreversedepsilon}{PU}{\82\134}%* U+025C
16062 % U+025D LATIN SMALL LETTER REVERSED OPEN E WITH HOOK; eopenreversedhook;
16063 % \texthookreversedepsilon (tipa)
16064 \DeclareTextCommand{\texthookreversedepsilon}{PU}{\82\135}%* U+025D
16065 %* \texthookreversedepsilon -> \hookreversedepsilon (wsuipa)
16066 % U+025E LATIN SMALL LETTER CLOSED REVERSED OPEN E; eopenreversedclosed;
16067 % \textclosedreversedepsilon (tipa)
16068 \DeclareTextCommand{\textclosedreversedepsilon}{PU}{\82\136}% U+025E
16069 %* \textclosedreversedepsilon -> \closedreversedepsilon (wsuipa)
16070 % U+025F LATIN SMALL LETTER DOTLESS J WITH STROKE; jdotlessstroke;
16071 % \textbardotlessj (tipa)
16072 \DeclareTextCommand{\textbardotlessj}{PU}{\82\137}% U+025F
16073 %* \textbardotlessj -> \barj (phonetic)
16074 % U+0260 LATIN SMALL LETTER G WITH HOOK; ghook; \texthtg (tipa)
16075 \DeclareTextCommand{\texthtg}{PU}{\82\140}% U+0260
16076 %* \texthtg -> \hookg (wsuipa)
16077 % U+0261 LATIN SMALL LETTER SCRIPT G; gscript;
16078 % \textscriptg (tipa), \scriptg (wsuipa)
16079 \DeclareTextCommand{\textscriptg}{PU}{\82\141}%* U+0261
16080 %* \textscriptg -> \varg (phonetic)
16081 % U+0262 LATIN LETTER SMALL CAPITAL G; \textscg (tipa), \scg (wsuipa)
16082 \DeclareTextCommand{\textscg}{PU}{\82\142}%* U+0262
16083 % U+0263 LATIN SMALL LETTER GAMMA; gammalatin-small;
16084 % \ipagamma (wsuipa), \vod (phonetic)
16085 \DeclareTextCommand{\textipagamma}{PU}{\82\143}%* U+0263
16086 %* \textipagamma -> \vod (pnonetic)
16087 % U+0264 LATIN SMALL LETTER RAMS HORN; ramshorn;
16088 % \babygamma (wsuipa)
16089 \DeclareTextCommand{\textbabygamma}{PU}{\82\144}%* U+0264
16090 % U+0265 LATIN SMALL LETTER TURNED H; hturned; \textturnh (tipa)
16091 \DeclareTextCommand{\textturnh}{PU}{\82\145}% U+0265
16092 %* \textturnh -> \invh (wsuipa)
16093 %* \textturnh -> \udesc (phonetic)
16094 % U+0266 LATIN SMALL LETTER H WITH HOOK; hhook; \texthth (tipa)
16095 \DeclareTextCommand{\texthth}{PU}{\82\146}% U+0266
16096 %* \texthth -> \hookh (wsuipa)
16097 %* \texthth -> \voicedh (phonetic)
16098 % U+0267 LATIN SMALL LETTER HENG WITH HOOK; henghook; \textheng (tipa)
16099 \DeclareTextCommand{\textheng}{PU}{\82\147}% U+0267
16100 %* \textheng -> \hookheng (wsuipa)
16101 % U+0268 LATIN SMALL LETTER I WITH STROKE;
16102 % \textbari (tipa), \bari (wsuipa)
16103 \DeclareTextCommand{\textbari}{PU}{\82\150}%* U+0268
16104 %* \textbari -> \ibar (phonetic)
16105 % U+0269 LATIN SMALL LETTER IOTA; iotalatin; \niota (wsuipa)

16106 \DeclareTextCommand{\textniota}{PU}{\82\151}%* U+0269
16107 %* \textniota -> \vari (phonetic)
16108 % U+026A LATIN LETTER SMALL CAPITAL I; \textsci (tipa), \sci (wsuipa)
16109 \DeclareTextCommand{\textsci}{PU}{\82\152}%* U+026A
16110 % U+026B LATIN SMALL LETTER L WITH MIDDLE TILDE; \lmiddletilde;
16111 % \textltilde (tipa)
16112 \DeclareTextCommand{\textltilde}{PU}{\82\153}% U+026B
16113 %* \textltilde -> \tildel (wsuipa)
16114 % U+026C LATIN SMALL LETTER L WITH BELT; \lbelt; \textbeltl (tipa)
16115 \DeclareTextCommand{\textbeltl}{PU}{\82\154}% U+026C
16116 %* \textbeltl -> \latfric (wsuipa)
16117 % U+026D LATIN SMALL LETTER L WITH RETROFLEX HOOK;
16118 % \lhookretroflex; \textrtail (tipa)
16119 \DeclareTextCommand{\textrtail}{PU}{\82\155}% U+026D
16120 %* \textrtail -> \tail (wsuipa)
16121 % U+026E LATIN SMALL LETTER LEZH; \lezh; \textlyoghlig (tipa)
16122 \DeclareTextCommand{\textlyoghlig}{PU}{\82\156}% U+026E
16123 %* \textlyoghlig -> \lz (wsuipa)
16124 % U+026F LATIN SMALL LETTER TURNED M; \mturned; \textturnm (tipa)
16125 \DeclareTextCommand{\textturnm}{PU}{\82\157}% U+026F
16126 %* \textturnm -> \invm (wsuipa)
16127 %* \textturnm -> \rotm (phonetic)
16128 % U+0270 LATIN SMALL LETTER TURNED M WITH LONG LEG; \mlongleg-
turned;
16129 % \textturnmrl (tipa)
16130 \DeclareTextCommand{\textturnmrl}{PU}{\82\160}% U+0270
16131 %* \textturnmrl -> \legm (wsuipa)
16132 % U+0271 LATIN SMALL LETTER M WITH HOOK; \mhook; \textltailm (tipa)
16133 \DeclareTextCommand{\textltailm}{PU}{\82\161}% U+0271
16134 %* \textltailm -> \labdentalnas (wsuipa)
16135 %* \textltailm -> \emgma (phonetic)
16136 % U+0272 LATIN SMALL LETTER N WITH LEFT HOOK; \nhookleft; \textl-
tailn (tipa)
16137 \DeclareTextCommand{\textltailn}{PU}{\82\162}% U+0272
16138 %* \textltailn -> \nj (wsuipa)
16139 %* \textltailn -> \nya (phonetic)
16140 % U+0273 LATIN SMALL LETTER N WITH RETROFLEX HOOK;
16141 % \nhookretroflex; \textrtailn (tipa)
16142 \DeclareTextCommand{\textrtailn}{PU}{\82\163}% U+0273
16143 %* \textrtailn -> \tailn (wsuipa)
16144 % U+0274 LATIN LETTER SMALL CAPITAL N; \textscn (tipa), \scn (wsuipa)
16145 \DeclareTextCommand{\textscn}{PU}{\82\164}%* U+0274
16146 % U+0275 LATIN CAPITAL LETTER O WITH MIDDLE TILDE/
16147 % LATIN CAPITAL LETTER BARRED O; \obarred;
16148 % \textbaro (tipa), \baro (wsuipa)
16149 % But \baro from stmaryrd is different!
16150 \DeclareTextCommand{\textbaro}{PU}{\82\165}% U+0275
16151 % U+0276 LATIN LETTER SMALL CAPITAL OE; \textscoelig (tipa)
16152 \DeclareTextCommand{\textscoelig}{PU}{\82\166}% U+0276
16153 % U+0277 LATIN SMALL LETTER CLOSED OMEGA; \omegalatinclosed;
16154 % \textcloseomega (tipa)
16155 \DeclareTextCommand{\textcloseomega}{PU}{\82\167}% U+0277
16156 %* \textcloseomega -> \closedniomega (wsuipa)
16157 %* \textcloseomega -> \varomega (phonetic)

16158 % U+0278 LATIN SMALL LETTER PHI; philatin; \nphi (wsuipa)
 16159 \DeclareTextCommand{\textnphi}{PU}{\82\170}%* U+0278
 16160 % U+0279 LATIN SMALL LETTER TURNED R; rturned; \textturnr (tipa)
 16161 \DeclareTextCommand{\textturnr}{PU}{\82\171}% U+0279
 16162 %* \textturnr -> \invr (wsuipa)
 16163 %* \textturnr -> \rotr (phonetic)
 16164 % U+027A LATIN SMALL LETTER TURNED R WITH LONG LEG;
 16165 % rlonglegturned; \textturnlongleg (tipa)
 16166 \DeclareTextCommand{\textturnlongleg}{PU}{\82\172}% U+027A
 16167 %* \textturnlongleg -> \invleg (wsuipa)
 16168 % U+027B LATIN SMALL LETTER TURNED R WITH HOOK; rhocturned;
 16169 % \textturnrrtail (tipa)
 16170 \DeclareTextCommand{\textturnrrtail}{PU}{\82\173}% U+027B
 16171 %* \textturnrrtail -> \tailinvr (wsuipa)
 16172 % U+027C LATIN SMALL LETTER R WITH LONG LEG; rlongleg; \textlong-
 16173 % leg (tipa)
 16173 \DeclareTextCommand{\textlongleg}{PU}{\82\174}%* U+027C
 16174 %* \textlongleg -> \leg (wsuipa)
 16175 % U+027D LATIN SMALL LETTER R WITH TAIL; rhoct; \textrtailr (tipa)
 16176 \DeclareTextCommand{\textrtailr}{PU}{\82\175}% U+027D
 16177 %* \textrtailr -> \tailr (wsuipa)
 16178 % U+027E LATIN SMALL LETTER R WITH FISHHOOK; rfishhook;
 16179 % \textfishhookr (tipa)
 16180 \DeclareTextCommand{\textfishhookr}{PU}{\82\176}% U+027E
 16181 %* \textfishhookr -> \flapr (wsuipa)
 16182 %* \textfishhookr -> \flap (phonetic)
 16183 % U+027F LATIN SMALL LETTER REVERSED R WITH FISHHOOK; rfish-
 16184 % hookreversed;
 16184 % \textlhtlongi (tipa)
 16185 \DeclareTextCommand{\textlhtlongi}{PU}{\82\177}% U+027F
 16186 % U+0280 LATIN LETTER SMALL CAPITAL R; \textscr (tipa), \scr (wsuipa)
 16187 \DeclareTextCommand{\textscr}{PU}{\82\200}%* U+0280
 16188 % U+0281 LATIN LETTER SMALL CAPITAL INVERTED R; Rsmallinverted;
 16189 % \textinvscr (tipa), \invscr (wsuipa)
 16190 \DeclareTextCommand{\textinvscr}{PU}{\82\201}%* U+0281
 16191 % U+0282 LATIN SMALL LETTER S WITH HOOK; shook; \textrtails (tipa)
 16192 \DeclareTextCommand{\textrtails}{PU}{\82\202}% U+0282
 16193 %* \textrtails -> \tails (wsuipa)
 16194 % U+0283 LATIN SMALL LETTER ESH; esh; \textesh (tipa), \esh (wsuipa)
 16195 \DeclareTextCommand{\textesh}{PU}{\82\203}%* U+0283
 16196 % U+0284 LATIN SMALL LETTER DOTLESS J WITH STROKE AND HOOK;
 16197 % dotlessjstrokehook; \texthtbardotlessj (tipa)
 16198 \DeclareTextCommand{\texthtbardotlessj}{PU}{\82\204}% U+0284
 16199 % U+0285 LATIN SMALL LETTER SQUAT REVERSED ESH; eshsquat-
 16200 % reversed;
 16200 % \textvibyi (tipa)
 16201 \DeclareTextCommand{\textvibyi}{PU}{\82\205}% U+0285
 16202 % U+0286 LATIN SMALL LETTER ESH WITH CURL; eshcurl; \textctesh (tipa)
 16203 \DeclareTextCommand{\textctesh}{PU}{\82\206}% U+0286
 16204 %* \textctesh -> \curlyesh (wsuipa)
 16205 % U+0287 LATIN SMALL LETTER TURNED T; tturned; \textturnt (tipa)
 16206 \DeclareTextCommand{\textturnt}{PU}{\82\207}% U+0287
 16207 %* \textturnt -> \clickt (wsuipa)
 16208 % U+0288 LATIN SMALL LETTER T WITH RETROFLEX HOOK; retroflex-

```

hook;
16209 % \texttrtail (tipa)
16210 \DeclareTextCommand{\texttrtail}{PU}{\82\210}% U+0288
16211 %* \texttrtail -> \tail (wsuipa)
16212 % U+0289 LATIN SMALL LETTER U BAR; ubar;
16213 % \textbaru (tipa), \baru (wsuipa)
16214 \DeclareTextCommand{\textbaru}{PU}{\82\211}%* U+0289
16215 %* \textbaru -> \ubar (phonetic)
16216 % U+028A LATIN SMALL LETTER UPSILON; \niupsilon (wsuipa)
16217 \DeclareTextCommand{\textniupsilon}{PU}{\82\212}%* U+028A
16218 %* \textniupsilon -> \rotOmega (phonetic)
16219 % U+028B LATIN SMALL LETTER V WITH HOOK/LATIN SMALL LET-
TER SCRIPT V;
16220 % vhook; \textscriptv (tipa), \scriptv (wsuipa)
16221 \DeclareTextCommand{\textscriptv}{PU}{\82\213}%* U+028B
16222 % U+028C LATIN SMALL LETTER TURNED V; vturned; \textturnv (tipa)
16223 \DeclareTextCommand{\textturnv}{PU}{\82\214}%* U+028C
16224 %* \textturnv -> \invv (wsuipa)
16225 %* \textturnv -> \pwedge (phonetic)
16226 % U+028D LATIN SMALL LETTER TURNED W; wturned; \textturnw (tipa)
16227 \DeclareTextCommand{\textturnw}{PU}{\82\215}%* U+028D
16228 %* \textturnw -> \invw (wsuipa)
16229 %* \textturnw -> \rotw (phonetic)
16230 % U+028E LATIN SMALL LETTER TURNED Y; yturned; \textturny (tipa)
16231 \DeclareTextCommand{\textturny}{PU}{\82\216}%* U+028E
16232 %* \textturny -> \invy (wsuipa)
16233 %* \textturny -> \roty (phonetic)
16234 % U+028F LATIN LETTER SMALL CAPITAL Y; \textscy (tipa), \scy (wsuipa)
16235 \DeclareTextCommand{\textscy}{PU}{\82\217}%* U+028F
16236 % U+0290 LATIN SMALL LETTER Z WITH RETROFLEX HOOK; zretroflex-
hook;
16237 % \textrtailz (tipa)
16238 \DeclareTextCommand{\textrtailz}{PU}{\82\220}% U+0290
16239 %* \textrtailz -> \tailz (wsuipa)
16240 % U+0291 LATIN SMALL LETTER Z WITH CURL; zcurl; \textctz (tipa)
16241 \DeclareTextCommand{\textctz}{PU}{\82\221}% U+0291
16242 %* \textctz -> \curlyz (wsuipa)
16243 % U+0292 LATIN SMALL LETTER EZH/LATIN SMALL LETTER YOGH; ezh;
16244 % \textyogh (tipa), \yogh (wsuipa)
16245 \DeclareTextCommand{\textyogh}{PU}{\82\222}%* U+0292
16246 % U+0293 LATIN SMALL LETTER EZH WITH CURL/LATIN SMALL LET-
TER YOGH CURL;
16247 % ezhcurl; \textctyogh (tipa)
16248 \DeclareTextCommand{\textctyogh}{PU}{\82\223}% U+0293
16249 %* \textctyogh -> \curlyyogh (wsuipa)
16250 % U+0294 LATIN LETTER GLOTTAL STOP; glottalstop;
16251 % \textglotstop (tipa), \glotstop (wsuipa)
16252 \DeclareTextCommand{\textglotstop}{PU}{\82\224}%* U+0294
16253 %* \textglotstop -> \ejective (wsuipa)
16254 %* \textglotstop -> \glottal (phonetic)
16255 % U+0295 LATIN LETTER PHARYNGEAL VOICED FRICATIVE/
16256 % LATIN LETTER REVERSED GLOTTAL STOP; glottalstopreversed;
16257 % \textrevglotstop (tipa), \revglotstop (wsuipa)
16258 \DeclareTextCommand{\textrevglotstop}{PU}{\82\225}%* U+0295

```

16259 %* \textrevglotstop -> \reveject (wsuipa)
 16260 % U+0296 LATIN LETTER INVERTED GLOTTAL STOP; glottalstopinverted;
 16261 % \textinvglotstop (tipa), \invglotstop (wsuipa)
 16262 \DeclareTextCommand{\textinvglotstop}{PU}{\82\226}%* U+0296
 16263 % U+0297 LATIN LETTER STRETCHED C; cstretched; \textstretchc (tipa)
 16264 \DeclareTextCommand{\textstretchc}{PU}{\82\227}% U+0297
 16265 %* \textstretchc -> \clickc (wsuipa)
 16266 %* \textstretchc -> \textstretchcvar (tipx)
 16267 % U+0298 LATIN LETTER BILABIAL CLICK; bilabialclick;
 16268 % \textbullseye (tipa)
 16269 \DeclareTextCommand{\textbullseye}{PU}{\82\230}% U+0298
 16270 %* \textbullseye -> \clickb (wsuipa)
 16271 %* \textbullseye -> \textObullseye (tipx)
 16272 % U+0299 LATIN LETTER SMALL CAPITAL B; \textscb (tipa)
 16273 \DeclareTextCommand{\textscb}{PU}{\82\231}% U+0299
 16274 % U+029A LATIN SMALL LETTER CLOSED OPEN E; eopenclosed;
 16275 % \textcloseepsilon (tipa)
 16276 \DeclareTextCommand{\textcloseepsilon}{PU}{\82\232}% U+029A
 16277 % U+029B LATIN LETTER SMALL CAPITAL G WITH HOOK; Gsmallhook;
 16278 % \texthtscg (tipa)
 16279 \DeclareTextCommand{\texthtscg}{PU}{\82\233}% U+029B
 16280 % U+029C LATIN LETTER SMALL CAPITAL H; \textsch (tipa)
 16281 \DeclareTextCommand{\textsch}{PU}{\82\234}% U+029C
 16282 % U+029D LATIN SMALL LETTER J WITH CROSSED-TAIL; jcros-
 tail; \textcdj (tipa)
 16283 \DeclareTextCommand{\textctj}{PU}{\82\235}% U+029D
 16284 %* \textctj -> \textctjvar (tipx)
 16285 % U+029E LATIN SMALL LETTER TURNED K; kturned; \textturnk (tipa)
 16286 \DeclareTextCommand{\textturnk}{PU}{\82\236}% U+029E
 16287 %* \textturnk -> \textturnsck (tipx)
 16288 % U+029F LATIN LETTER SMALL CAPITAL L; \textsl (tipa)
 16289 \DeclareTextCommand{\textsl}{PU}{\82\237}% U+029F
 16290 % U+02A0 LATIN SMALL LETTER Q WITH HOOK; qhook; \texthtq (tipa)
 16291 \DeclareTextCommand{\texthtq}{PU}{\82\240}% U+02A0
 16292 % U+02A1 LATIN LETTER GLOTTAL STOP WITH STROKE; glottalstop-
 stroke;
 16293 % \textbarglotstop (tipa)
 16294 \DeclareTextCommand{\textbarglotstop}{PU}{\82\241}% U+02A1
 16295 % U+02A2 LATIN LETTER REVERSED GLOTTAL STOP WITH STROKE/
 16296 % LATIN LETTER REVERSED GLOTTAL STOP BAR; glottalstopstrokere-
 versed;
 16297 % \textbarrevglotstop (tipa)
 16298 \DeclareTextCommand{\textbarrevglotstop}{PU}{\82\242}% U+02A2
 16299 % U+02A3 LATIN SMALL LETTER DZ DIGRAPH; dzaltone; \textdzlig (tipa)
 16300 \DeclareTextCommand{\textdzlig}{PU}{\82\243}% U+02A3
 16301 %* \textdzlig -> \dz (wsupipa)
 16302 % U+02A4 LATIN SMALL LETTER DEZH DIGRAPH; dezh; \textdyogh-
 lig (tipa)
 16303 \DeclareTextCommand{\textdyoghlig}{PU}{\82\244}% U+02A4
 16304 % U+02A5 LATIN SMALL LETTER DZ DIGRAPH WITH CURL; dzcurl;
 16305 % \textdctzlig (tipa)
 16306 \DeclareTextCommand{\textdctzlig}{PU}{\82\245}% U+02A5
 16307 % U+02A6 LATIN SMALL LETTER TS DIGRAPH; ts; \texttslig (tipa)
 16308 \DeclareTextCommand{\texttslig}{PU}{\82\246}% U+02A6

16309 % U+02A7 LATIN SMALL LETTER TESH DIGRAPH; tesh; \texttreshlig (tipa)
 16310 \DeclareTextCommand{\texttreshlig}{PU}{\82\247}% U+02A7
 16311 %* \texttreshlig -> \tesh (wsuipa)
 16312 % U+02A8 LATIN SMALL LETTER TC DIGRAPH WITH CURL; tccurl;
 16313 % \texttctclig (tipa)
 16314 \DeclareTextCommand{\texttctclig}{PU}{\82\250}% U+02A8
 16315 % U+02AE LATIN SMALL LETTER TURNED H WITH FISHHOOK;
 16316 % \textlhtlongy (tipa)
 16317 \DeclareTextCommand{\textlhtlongy}{PU}{\82\256}% U+02AE
 16318 % U+02AF LATIN SMALL LETTER TURNED H WITH FISHHOOK AND TAIL;
 16319 % \textvibyy (tipa)
 16320 \DeclareTextCommand{\textvibyy}{PU}{\82\257}% U+02AF

47.2.7 Spacing Modifier Letters: U+02B0 to U+02FF

16321 % U+02BD MODIFIER LETTER REVERSED COMMA;
 16322 % commareversedmod, afi64937; \textrevapostrophe (tipa)
 16323 \DeclareTextCommand{\textrevapostrophe}{PU}{\82\275}% U+02BD
 16324 % U+02C0 MODIFIER LETTER GLOTTAL STOP; glottalstopmod;
 16325 % \textraseglotstop (tipa)
 16326 \DeclareTextCommand{\textraseglotstop}{PU}{\82\300}% U+02C0
 16327 % U+02C2 MODIFIER LETTER LEFT ARROWHEAD; arrowheadleftmod;
 16328 % \textlptr (tipa)
 16329 \DeclareTextCommand{\textlptr}{PU}{\82\302}% U+02C2
 16330 % U+02C3 MODIFIER LETTER RIGHT ARROWHEAD; arrowheadrightmod;
 16331 % \textrptr (tipa)
 16332 \DeclareTextCommand{\textrptr}{PU}{\82\303}% U+02C3
 16333 % U+02C7 CARON; caron
 16334 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7
 16335 % U+02C8 MODIFIER LETTER VERTICAL LINE; verticallinemod;
 16336 % \textprimstress (tipa)
 16337 \DeclareTextCommand{\textprimstress}{PU}{\82\310}% U+02C8
 16338 % U+02CC MODIFIER LETTER LOW VERTICAL LINE; verticallinelowmod;
 16339 % \textsecstress (tipa)
 16340 \DeclareTextCommand{\textsecstress}{PU}{\82\314}% U+02CC
 16341 % U+02D0 MODIFIER LETTER TRIANGULAR COLON; colontriangularmod;
 16342 % \textlengthmark (tipa)
 16343 \DeclareTextCommand{\textlengthmark}{PU}{\82\320}% U+02D0
 16344 % U+02D1 MODIFIER LETTER HALF TRIANGULAR COLON; colontriangu-
 larhalfmod;
 16345 % \texthalflength (tipa)
 16346 \DeclareTextCommand{\texthalflength}{PU}{\82\321}% U+02D1
 16347 % U+02D8 BREVE; breve
 16348 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8
 16349 % U+02D9 DOT ABOVE; dotaccent
 16350 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9
 16351 % U+02DA RING ABOVE; ring
 16352 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA
 16353 % U+02DB OGONEK; ogonek
 16354 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB
 16355 % U+02DC SMALL TILDE; ilde, *tilde
 16356 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC
 16357 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
 16358 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD
 16359 \DeclareTextCommand{\textacutedbl}{PU}{\82\335}% U+02DD


```

16360 % U+02F3 MODIFIER LETTER LOW RING
16361 \DeclareTextCommand{\textringlow}{PU}{\82\363}% U+02F3
16362 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT
16363 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5
16364 % U+02F7 MODIFIER LETTER LOW TILDE
16365 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7
16366 % U+02F9 MODIFIER LETTER BEGIN HIGH TONE; \textopencorner (tipa)
16367 \DeclareTextCommand{\textopencorner}{PU}{\82\371}% U+02F9
16368 % U+02FA MODIFIER LETTER END HIGH TONE; \textcorner (tipa)
16369 \DeclareTextCommand{\textcorner}{PU}{\82\372}% U+02FA

```

47.2.8 Combining Diacritical Marks: U+0300 to U+036F

```

16370 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
16371 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F
16372 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
16373 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311
16374 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcomb
16375 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323
16376 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
16377 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331
16378 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-
    blecmb
16379 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

```

47.2.9 Greek and Coptic: U+0370 to U+03FF

Greek is only loaded if \textBeta is defined.

```

16380 \ifx\textBeta\@undefined \else
16381 \input{puenc-greek.def}
16382 \fi
16383 \</puenc>

```

47.2.10 Cyrillic: U+0400 to U+04FF

Thanks to Vladimir Volovich (vvv@vvv.vsu.ru) for the help with the Cyrillic glyph names. Cyrillic only loaded if \CYRDZE is defined.

```

16384 (*puenc)
16385 \ifx\CYRDZE\@undefined \else
16386 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE
16387 \DeclareTextCompositeCommand{\`}{PU}{\CYRE}{\84\000}% U+0400
16388 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, *afi10023
16389 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401
16390 \DeclareTextCompositeCommand{\"}{PU}{\CYRE}{\84\001}% U+0401
16391 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, *afi10051
16392 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402
16393 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, *afi10052
16394 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403
16395 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, *afi10053
16396 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404
16397 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, *afi10054
16398 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405
16399 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I;
16400 % Icyrillic, *afi10055
16401 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406

```

16402 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, *afii10056
16403 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407
16404 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407
16405 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, *afii10057
16406 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408
16407 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, *afii10058
16408 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409
16409 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, *afii10059
16410 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A
16411 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, *afii10060
16412 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B
16413 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, *afii10061
16414 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C
16415 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE
16416 \DeclareTextCompositeCommand{\`}{PU}{\CYRI}{\84\015}% U+040D
16417 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, *afii10062
16418 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E
16419 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E
16420 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, *afii10145
16421 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F
16422 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, *afii10017
16423 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410
16424 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, *afii10018
16425 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411
16426 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, *afii10019
16427 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412
16428 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, *afii10020
16429 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413
16430 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, *afii10021
16431 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414
16432 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, *afii10022
16433 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415
16434 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, *afii10024
16435 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416
16436 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, *afii10025
16437 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417
16438 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, *afii10026
16439 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418
16440 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, *afii10027
16441 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419
16442 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419
16443 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, *afii10028
16444 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A
16445 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, *afii10029
16446 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B
16447 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, *afii10030
16448 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C
16449 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, *afii10031
16450 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D
16451 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, *afii10032
16452 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E
16453 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, *afii10033
16454 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F
16455 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, *afii10034

16456 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420
16457 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, *afii10035
16458 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421
16459 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, *afii10036
16460 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422
16461 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, *afii10037
16462 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423
16463 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, *afii10038
16464 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424
16465 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, *afii10039
16466 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425
16467 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, *afii10040
16468 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426
16469 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, *afii10041
16470 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427
16471 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, *afii10042
16472 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428
16473 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, *afii10043
16474 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429
16475 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN;
16476 % Hardsigncyrillic, *afii10044
16477 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A
16478 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, *afii10045
16479 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B
16480 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN;
16481 % Softsigncyrillic, *afii10046
16482 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C
16483 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, *afii10047
16484 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D
16485 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, *afii10048
16486 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E
16487 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, *afii10049
16488 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F
16489 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, *afii10065
16490 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430
16491 % U+0431 CYRILLIC SMALL LETTER BE; *afii10066, becyrillic
16492 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431
16493 % U+0432 CYRILLIC SMALL LETTER VE; *afii10067, vecyrillic
16494 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432
16495 % U+0433 CYRILLIC SMALL LETTER GHE; *afii10068, gecyrillic
16496 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433
16497 % U+0434 CYRILLIC SMALL LETTER DE; *afii10069, decyrillic
16498 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434
16499 % U+0435 CYRILLIC SMALL LETTER IE; *afii10070, iecyrillic
16500 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435
16501 % U+0436 CYRILLIC SMALL LETTER ZHE; *afii10072, zhacyrillic
16502 \DeclareTextCommand{\cyrz}{PU}{\84\066}% U+0436
16503 % U+0437 CYRILLIC SMALL LETTER ZE; *afii10073, zecyrillic
16504 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437
16505 % U+0438 CYRILLIC SMALL LETTER I; *afii10074, iicyrillic
16506 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438
16507 % U+0439 CYRILLIC SMALL LETTER SHORT I; *afii10075, iishortcyrillic
16508 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439
16509 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439

16510 % U+043A CYRILLIC SMALL LETTER KA; *afii10076, kacyrillic
16511 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A
16512 % U+043B CYRILLIC SMALL LETTER EL; *afii10077, elcyrillic
16513 \DeclareTextCommand{\cyrl}{PU}{\84\073}% U+043B
16514 % U+043C CYRILLIC SMALL LETTER EM; *afii10078, emcyrillic
16515 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C
16516 % U+043D CYRILLIC SMALL LETTER EN; *afii10079, encyrillic
16517 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D
16518 % U+043E CYRILLIC SMALL LETTER O; *afii10080, ocyrillic
16519 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E
16520 % U+043F CYRILLIC SMALL LETTER PE; *afii10081, pecyrillic
16521 \DeclareTextCommand{\cyrf}{PU}{\84\077}% U+043F
16522 % U+0440 CYRILLIC SMALL LETTER ER; *afii10082, ercyrillic
16523 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440
16524 % U+0441 CYRILLIC SMALL LETTER ES; *afii10083, escyrillic
16525 \DeclareTextCommand{\cyrs}{PU}{\84\101}% U+0441
16526 % U+0442 CYRILLIC SMALL LETTER TE; *afii10084, tecyrillic
16527 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442
16528 % U+0443 CYRILLIC SMALL LETTER U; *afii10085, ucyrillic
16529 \DeclareTextCommand{\cyru}{PU}{\84\103}% U+0443
16530 % U+0444 CYRILLIC SMALL LETTER EF; *afii10086, efcyrillic
16531 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444
16532 % U+0445 CYRILLIC SMALL LETTER HA; *afii10087, khacyrillic
16533 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445
16534 % U+0446 CYRILLIC SMALL LETTER TSE; *afii10088, tsecyrillic
16535 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446
16536 % U+0447 CYRILLIC SMALL LETTER CHE; *afii10089, checyrillic
16537 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447
16538 % U+0448 CYRILLIC SMALL LETTER SHA; *afii10090, shacyrillic
16539 \DeclareTextCommand{\cyrrh}{PU}{\84\110}% U+0448
16540 % U+0449 CYRILLIC SMALL LETTER SHCHA; *afii10091, shchacyrillic
16541 \DeclareTextCommand{\cyrrhch}{PU}{\84\111}% U+0449
16542 % U+044A CYRILLIC SMALL LETTER HARD SIGN; *afii10092, hardsigncyril-
lic
16543 \DeclareTextCommand{\cyrrhdsn}{PU}{\84\112}% U+044A
16544 %* \cyrrhdsn -> \hardsign (tipa)
16545 % U+044B CYRILLIC SMALL LETTER YERU; *afii10093, yericyrillic
16546 \DeclareTextCommand{\cyrry}{PU}{\84\113}% U+044B
16547 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; *afii10094, softsigncyrillic
16548 \DeclareTextCommand{\cyrrfts}{PU}{\84\114}% U+044C
16549 %* \cyrrfts -> \softsign (tipa)
16550 % U+044D CYRILLIC SMALL LETTER E; *afii10095, ereversedcyrillic
16551 \DeclareTextCommand{\cyrrrev}{PU}{\84\115}% U+044D
16552 % U+044E CYRILLIC SMALL LETTER YU; *afii10096, iucyrillic
16553 \DeclareTextCommand{\cyryu}{PU}{\84\116}% U+044E
16554 % U+044F CYRILLIC SMALL LETTER YA; *afii10097, iacyrillic
16555 \DeclareTextCommand{\cyrya}{PU}{\84\117}% U+044F
16556 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE
16557 \DeclareTextCompositeCommand{\`}{PU}{\cyre}{\84\120}% U+0450
16558 % U+0451 CYRILLIC SMALL LETTER IO; *afii10071, iocyrillic
16559 \DeclareTextCommand{\cyryo}{PU}{\84\121}% U+0451
16560 \DeclareTextCompositeCommand{\`}{PU}{\cyre}{\84\121}% U+0451
16561 % U+0452 CYRILLIC SMALL LETTER DJE; *afii10099, djecyrillic
16562 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452

16563 % U+0453 CYRILLIC SMALL LETTER GJE; *afii10100, gjecyrillic
 16564 \DeclareTextCompositeCommand{\'}{PU}{\cyr}{\84\123}% U+0453
 16565 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; *afii10101, ecyrillic
 16566 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454
 16567 % U+0455 CYRILLIC SMALL LETTER DZE; *afii10102, dzecyrillic
 16568 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455
 16569 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I;
 16570 % *afii10103, icyrillic
 16571 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456
 16572 % U+0457 CYRILLIC SMALL LETTER YI; *afii10104, yicyrillic
 16573 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457
 16574 \DeclareTextCompositeCommand{\"}{PU}{\cyrii}{\84\127}% U+0457
 16575 % U+0458 CYRILLIC SMALL LETTER JE; *afii10105, jecyrillic
 16576 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458
 16577 % U+0459 CYRILLIC SMALL LETTER LJE; *afii10106, ljecyrillic
 16578 \DeclareTextCommand{\cyrkje}{PU}{\84\131}% U+0459
 16579 % U+045A CYRILLIC SMALL LETTER NJE; *afii10107, njecyrillic
 16580 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A
 16581 % U+045B CYRILLIC SMALL LETTER TSHE; *afii10108, tshecyrillic
 16582 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B
 16583 % U+045C CYRILLIC SMALL LETTER KJE; *afii10109, kjecyrillic
 16584 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C
 16585 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE
 16586 \DeclareTextCompositeCommand{\`}{PU}{\cyri}{\84\135}% U+045D
 16587 % U+045E CYRILLIC SMALL LETTER SHORT U; *afii10110, ushortcyrillic
 16588 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E
 16589 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E
 16590 % U+045F CYRILLIC SMALL LETTER DZHE; *afii10193, dzhecyrillic
 16591 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F
 16592 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic
 16593 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460
 16594 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic
 16595 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461
 16596 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, *afii10146
 16597 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462
 16598 % U+0463 CYRILLIC SMALL LETTER YAT; *afii10194, yatcyrillic
 16599 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463
 16600 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic
 16601 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464
 16602 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic
 16603 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465
 16604 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslitlecyrillic
 16605 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466
 16606 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslitlecyrillic
 16607 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467
 16608 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslitlei-
 otifiedcyrillic
 16609 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468
 16610 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslitlei-
 otifiedcyrillic
 16611 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469
 16612 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic
 16613 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A
 16614 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic

16615 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B
16616 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbgiotified-cyrillic
16617 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C
16618 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbgiotified-cyrillic
16619 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D
16620 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic
16621 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E
16622 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic
16623 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F
16624 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic
16625 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470
16626 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic
16627 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471
16628 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, *afii10147
16629 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472
16630 % U+0473 CYRILLIC SMALL LETTER FITA; *afii10195, fitacyrillic
16631 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473
16632 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, *afii10148
16633 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474
16634 % U+0475 CYRILLIC SMALL LETTER IZHITSA; *afii10196, izhitsacyrillic
16635 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475
16636 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE GRAVE ACCENT; Izhitsadblgravecyrillic
16637 % GRAVE ACCENT; Izhitsadblgravecyrillic
16638 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476
16639 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE GRAVE ACCENT; izhitsadblgravecyrillic
16640 % GRAVE ACCENT; izhitsadblgravecyrillic
16641 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477
16642 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic
16643 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478
16644 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic
16645 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479
16646 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyrillic
16647 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A
16648 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic
16649 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B
16650 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlocyrillic
16651 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C
16652 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlocyrillic
16653 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D
16654 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic
16655 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E
16656 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic
16657 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F
16658 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic
16659 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480
16660 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic
16661 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481
16662 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic
16663 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482

\84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrillicmb
 \84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalization-cyrillicmb
 \84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneumatacyrillicmb
 \84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumatacyrillicmb
 \84\207: U+0487 COMBINING CYRILLIC POKRYTIE
 \84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN
 \84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN
 16664 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL
 16665 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A
 16666 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL
 16667 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B
 16668 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN
 16669 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C
 16670 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN
 16671 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D
 16672 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK
 16673 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E
 16674 % U+048F CYRILLIC SMALL LETTER ER WITH TICK
 16675 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F
 16676 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturn-cyrillic, *afii10050
 16677 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490
 16678 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; *afii10098, gheupturncyrillic
 16679 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491
 16680 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestroke-cyrillic
 16681 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492
 16682 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic
 16683 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493
 16684 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK;
 16685 % Ghemiddlehookcyrillic
 16686 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494
 16687 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK;
 16688 % ghemiddlehookcyrillic
 16689 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495
 16690 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER;
 16691 % Zhedescendercyrillic
 16692 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496
 16693 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER;
 16694 % zhedescendercyrillic
 16695 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497
 16696 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescendercyrillic
 16697 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498
 16698 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498
 16699 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescendercyrillic
 16700 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499
 16701 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499

16702 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescendercyrillic
 16703 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A
 16704 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescendercyrillic
 16705 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B
 16706 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE;
 16707 % Kavertikalstrokecyrillic
 16708 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C
 16709 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE;
 16710 % kavertikalstrokecyrillic
 16711 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D
 16712 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic
 16713 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E
 16714 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic
 16715 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F
 16716 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic
 16717 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0
 16718 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic
 16719 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1
 16720 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescendercyrillic
 16721 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2
 16722 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescendercyrillic
 16723 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3
 16724 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic
 16725 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4
 16726 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic
 16727 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5
 16728 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemiddlehookcyrillic
 16729 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6
 16730 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic
 16731 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7
 16732 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic
 16733 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8
 16734 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic
 16735 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9
 16736 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic
 16737 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA
 16738 \DeclareTextCompositeCommand{\k}{PU}{\CYRS}{\84\252}% U+04AA
 16739 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic
 16740 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB
 16741 \DeclareTextCompositeCommand{\k}{PU}{\cyrs}{\84\253}% U+04AB
 16742 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic
 16743 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC
 16744 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic

16745 \DeclareTextCommand{\cyrttdsc}{PU}{\84\255}% U+04AD
16746 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic
16747 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE
16748 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic
16749 \DeclareTextCommand{\cyry}{PU}{\84\257}% U+04AF
16750 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic
16751 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0
16752 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; ustraightstrokecyrillic
16753 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% U+04B1
16754 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadesccendercyrillic
16755 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2
16756 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic
16757 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3
16758 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic
16759 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4
16760 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic
16761 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5
16762 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER;
16763 % Chedescendercyrillic
16764 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6
16765 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic
16766 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7
16767 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE;
16768 % Cheverticalstrokecyrillic
16769 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8
16770 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE;
16771 % cheverticalstrokecyrillic
16772 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9
16773 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic
16774 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA
16775 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic
16776 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB
16777 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasiancyrillic
16778 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC
16779 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyrillic
16780 \DeclareTextCommand{\cyrahbch}{PU}{\84\275}% U+04BD
16781 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCENDER; Chedescenderabkhasiancyrillic
16782 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE
16783 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE
16784 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCENDER; chedescenderabkhasiancyrillic
16785 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF
16786 \DeclareTextCompositeCommand{\k}{PU}{\cyrahbch}{\84\277}% U+04BF
16787 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic
16788 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0
16789 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic

16790 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1
 16791 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic
 16792 \DeclareTextCompositeCommand{\U}{PU}{\cyrz}{\84\302}% U+04C2
 16793 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic
 16794 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3
 16795 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic
 16796 \DeclareTextCommand{\cyrk}{PU}{\84\304}% U+04C4
 16797 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL
 16798 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5
 16799 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL
 16800 \DeclareTextCommand{\cyrl}{PU}{\84\306}% U+04C6
 16801 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic
 16802 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7
 16803 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic
 16804 \DeclareTextCommand{\cyrn}{PU}{\84\310}% U+04C8
 16805 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakas-
 siancyrillic
 16806 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB
 16807 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-
 cyrillic
 16808 \DeclareTextCommand{\cyrch}{PU}{\84\314}% U+04CC
 16809 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL
 16810 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD
 16811 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL
 16812 \DeclareTextCommand{\cyrm}{PU}{\84\316}% U+04CE
 \84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA
 16813 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevecyrillic
 16814 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0
 16815 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevecyrillic
 16816 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1
 16817 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyril-
 lic
 16818 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\322}% U+04D2
 16819 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic
 16820 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\323}% U+04D3
 16821 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic
 16822 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4
 16823 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic
 16824 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5
 16825 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevecyrillic
 16826 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6
 16827 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevecyrillic
 16828 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7
 16829 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic
 16830 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8
 16831 % U+04D9 CYRILLIC SMALL LETTER SCHWA; *afii10846, schwacyrillic
 16832 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% U+04D9
 16833 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS;
 16834 % Schwadiesiscyrillic
 16835 \DeclareTextCompositeCommand{\U}{PU}{\CYRSCHWA}{\84\332}% U+04DA
 16836 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS;
 16837 % schwadiesiscyrillic
 16838 \DeclareTextCompositeCommand{\U}{PU}{\cyrschwa}{\84\333}% U+04DB
 16839 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhediere-

siscyrillic
 16840 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% U+04DC
 16841 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieresis-
 cyrillic
 16842 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% U+04DD
 16843 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieresis-
 cyrillic
 16844 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% U+04DE
 16845 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresiscyril-
 lic
 16846 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% U+04DF
 16847 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-
 cyrillic
 16848 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0
 16849 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyril-
 lic
 16850 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1
 16851 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic
 16852 \DeclareTextCompositeCommand{=} {PU}{\CYRI}{\84\342}% U+04E2
 16853 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic
 16854 \DeclareTextCompositeCommand{=} {PU}{\cyri}{\84\343}% U+04E3
 16855 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic
 16856 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% U+04E4
 16857 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic
 16858 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% U+04E5
 16859 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyril-
 lic
 16860 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6
 16861 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic
 16862 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7
 16863 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic
 16864 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8
 16865 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic
 16866 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9
 16867 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS;
 16868 % Obarreddieresiscyrillic
 16869 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA
 16870 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS;
 16871 % obarreddieresiscyrillic
 16872 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB
 16873 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS
 16874 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC
 16875 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS
 16876 \DeclareTextCompositeCommand{"}{PU}{\cyrerev}{\84\355}% U+04ED
 16877 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic
 16878 \DeclareTextCompositeCommand{=} {PU}{\CYRU}{\84\356}% U+04EE
 16879 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic
 16880 \DeclareTextCompositeCommand{=} {PU}{\cyru}{\84\357}% U+04EF
 16881 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyril-
 lic
 16882 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0
 16883 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic
 16884 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1
 16885 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhun-

```

garumlautcyrillic
16886 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U+04F2
16887 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhun-
garumlautcyrillic
16888 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% U+04F3
16889 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chediere-
siscyrillic
16890 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% U+04F4
16891 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieres-
cyrillic
16892 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5
16893 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER
16894 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6
16895 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER
16896 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7
16897 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudiere-
siscyrillic
16898 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8
16899 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudiere-
siscyrillic
16900 \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

16901 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK
16902 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC
16903 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK
16904 \DeclareTextCommand{\cyrrhk}{PU}{\84\375}% U+04FD
16905 \fi

\84\376: U+04FE CYRILLIC CAPITAL LETTER HA WITH STROKE
\84\377: U+04FF CYRILLIC SMALL LETTER HA WITH STROKE

```

47.2.11 Hebrew: U+0590 to U+05FF

Macro names are taken from `he8enc.def`. `hebrew` is only loaded if `\hebdalet` is defined

```

16906 \ifx\hebdalet\@undefined\else
16907 % U+05C3 HEBREW PUNCTUATION SOF PASUQ
16908 \DeclareTextCommand{\sofpasuq}{PU}{\85\303}% U+05C3
16909 % U+05D0 HEBREW LETTER ALEF
16910 \DeclareTextCommand{\hebalef}{PU}{\85\320}% U+05D0
16911 % U+05D1 HEBREW LETTER BET
16912 \DeclareTextCommand{\hebbet}{PU}{\85\321}% U+05D1
16913 % U+05D2 HEBREW LETTER GIMEL
16914 \DeclareTextCommand{\hebgimel}{PU}{\85\322}% U+05D2
16915 % U+05D3 HEBREW LETTER DALET
16916 \DeclareTextCommand{\hebdalet}{PU}{\85\323}% U+05D3
16917 % U+05D4 HEBREW LETTER HE
16918 \DeclareTextCommand{\hebhe}{PU}{\85\324}% U+05D4
16919 % U+05D5 HEBREW LETTER VAV
16920 \DeclareTextCommand{\hebvav}{PU}{\85\325}% U+05D5

```

16921 % U+05D6 HEBREW LETTER ZAYIN
 16922 \DeclareTextCommand{\hebzayin}{PU}{\85\326}% U+05D6
 16923 % U+05D7 HEBREW LETTER HET
 16924 \DeclareTextCommand{\hebheth}{PU}{\85\327}% U+05D7
 16925 % U+05D8 HEBREW LETTER TET
 16926 \DeclareTextCommand{\hebtet}{PU}{\85\330}% U+05D8
 16927 % U+05D9 HEBREW LETTER YOD
 16928 \DeclareTextCommand{\hebyod}{PU}{\85\331}% U+05D9
 16929 % U+05DA HEBREW LETTER FINAL KAF
 16930 \DeclareTextCommand{\hebfinalkaf}{PU}{\85\332}% U+05DA
 16931 % U+05DB HEBREW LETTER KAF
 16932 \DeclareTextCommand{\hebkaf}{PU}{\85\333}% U+05DB
 16933 % U+05DC HEBREW LETTER LAMED
 16934 \DeclareTextCommand{\heblamed}{PU}{\85\334}% U+05DC
 16935 % U+05DD HEBREW LETTER FINAL MEM
 16936 \DeclareTextCommand{\hebfinalmem}{PU}{\85\335}% U+05DD
 16937 % U+05DE HEBREW LETTER MEM
 16938 \DeclareTextCommand{\hebmeme}{PU}{\85\336}% U+05DE
 16939 % U+05DF HEBREW LETTER FINAL NUN
 16940 \DeclareTextCommand{\hebfinalnun}{PU}{\85\337}% U+05DF
 16941 % U+05E0 HEBREW LETTER NUN
 16942 \DeclareTextCommand{\hebnnun}{PU}{\85\340}% U+05E0
 16943 % U+05E1 HEBREW LETTER SAMEKH
 16944 \DeclareTextCommand{\hebsamekh}{PU}{\85\341}% U+05E1
 16945 % U+05E2 HEBREW LETTER AYIN
 16946 \DeclareTextCommand{\hebayin}{PU}{\85\342}% U+05E2
 16947 % U+05E3 HEBREW LETTER FINAL PE
 16948 \DeclareTextCommand{\hebfinalpe}{PU}{\85\343}% U+05E3
 16949 % U+05E4 HEBREW LETTER PE
 16950 \DeclareTextCommand{\hebpe}{PU}{\85\344}% U+05E4
 16951 % U+05E5 HEBREW LETTER FINAL TSADI
 16952 \DeclareTextCommand{\hebfinaltsadi}{PU}{\85\345}% U+05E5
 16953 % U+05E6 HEBREW LETTER TSADI
 16954 \DeclareTextCommand{\hebtsadi}{PU}{\85\346}% U+05E6
 16955 % U+05E7 HEBREW LETTER QOF
 16956 \DeclareTextCommand{\hebqof}{PU}{\85\347}% U+05E7
 16957 % U+05E8 HEBREW LETTER RESH
 16958 \DeclareTextCommand{\hebresh}{PU}{\85\350}% U+05E8
 16959 % U+05E9 HEBREW LETTER SHIN
 16960 \DeclareTextCommand{\hebshin}{PU}{\85\351}% U+05E9
 16961 %* \hebshin -> \hebsin (he8)
 16962 % U+05EA HEBREW LETTER TAV
 16963 \DeclareTextCommand{\hebtav}{PU}{\85\352}% U+05EA
 16964 % U+05F0 HEBREW LIGATURE YIDDISH DOUBLE VAV
 16965 \DeclareTextCommand{\doublevav}{PU}{\85\360}% U+05F0
 16966 % U+05F1 HEBREW LIGATURE YIDDISH VAV YOD
 16967 \DeclareTextCommand{\vavyod}{PU}{\85\361}% U+05F1
 16968 % U+05F2 HEBREW LIGATURE YIDDISH DOUBLE YOD
 16969 \DeclareTextCommand{\doubleyod}{PU}{\85\362}% U+05F2
 16970 \fi

47.2.12 Thai: U+0E00 to U+0E7F

16971 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai

16972 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

47.2.13 Phonetic Extensions: U+1D00 to U+1D7F

16973 % U+1D00 LATIN LETTER SMALL CAPITAL A; \textscA (tipa)
16974 \DeclareTextCommand{\textscA}{PU}{\9035\000}% U+1D00
16975 % U+1D05 LATIN LETTER SMALL CAPITAL D; \scd (wsuipa)
16976 \DeclareTextCommand{\textscd}{PU}{\9035\005}% U+1D05
16977 % U+1D07 LATIN LETTER SMALL CAPITAL E; \textscE (tipa)
16978 \DeclareTextCommand{\textscE}{PU}{\9035\007}% U+1D07
16979 % U+1D0A LATIN LETTER SMALL CAPITAL J; \textscJ (tipa)
16980 \DeclareTextCommand{\textscJ}{PU}{\9035\012}% U+1D0A
16981 % U+1D0B LATIN LETTER SMALL CAPITAL K; \textscK (tipx)
16982 \DeclareTextCommand{\textPUscK}{PU}{\9035\013}% U+1D0B
16983 %* \textPUscK -> \textscK (tipx)
16984 % U+1D0D LATIN LETTER SMALL CAPITAL M; \textscM (tipx)
16985 \DeclareTextCommand{\textPUscM}{PU}{\9035\015}% U+1D0D
16986 %* \textPUscM -> \textscM (tipx)
16987 % U+1D18 LATIN LETTER SMALL CAPITAL P; \textscP (tipx)
16988 \DeclareTextCommand{\textPUscP}{PU}{\9035\030}% U+1D18
16989 %* \textPUscP -> \textscP (tipx)
16990 % U+1D19 LATIN LETTER SMALL CAPITAL REVERSED R; \textrevscr (tipx)
16991 \DeclareTextCommand{\textPUrevscr}{PU}{\9035\031}% U+1D19
16992 %* \textPUrevscr -> \textrevscr (tipx)
16993 % U+1D1C LATIN LETTER SMALL CAPITAL U; \textscU (tipa), \scu (wsuipa)
16994 \DeclareTextCommand{\textscU}{PU}{\9035\034}% U+1D1C
16995 % U+1D62 LATIN SUBSCRIPT SMALL LETTER I
16996 \DeclareTextCommand{\textiinferior}{PU}{\9035\142}% U+1D62
16997 % U+1D63 LATIN SUBSCRIPT SMALL LETTER R
16998 \DeclareTextCommand{\textrinferior}{PU}{\9035\143}% U+1D63
16999 % U+1D64 LATIN SUBSCRIPT SMALL LETTER U
17000 \DeclareTextCommand{\textuinferior}{PU}{\9035\144}% U+1D64
17001 % U+1D65 LATIN SUBSCRIPT SMALL LETTER V
17002 \DeclareTextCommand{\textvinferior}{PU}{\9035\145}% U+1D65
17003 % U+1D66 GREEK SUBSCRIPT SMALL LETTER BETA
17004 \DeclareTextCommand{\textbetainferior}{PU}{\9035\146}% U+1D66
17005 % U+1D67 GREEK SUBSCRIPT SMALL LETTER GAMMA
17006 \DeclareTextCommand{\textgammainferior}{PU}{\9035\147}% U+1D67
17007 % U+1D68 GREEK SUBSCRIPT SMALL LETTER RHO
17008 \DeclareTextCommand{\textrhoinferior}{PU}{\9035\150}% U+1D68
17009 % U+1D69 GREEK SUBSCRIPT SMALL LETTER PHI
17010 \DeclareTextCommand{\textphiinferior}{PU}{\9035\151}% U+1D69
17011 % U+1D6A GREEK SUBSCRIPT SMALL LETTER CHI
17012 \DeclareTextCommand{\textchiinferior}{PU}{\9035\152}% U+1D6A
17013 % U+1D7B LATIN SMALL CAPITAL LETTER I WITH STROKE;
17014 % \barsci (wsuipa)
17015 \DeclareTextCommand{\textbarsci}{PU}{\9035\173}% U+1D7B
17016 % U+1D7D LATIN SMALL LETTER P WITH STROKE; \barp (wsuipa)
17017 \DeclareTextCommand{\textbarp}{PU}{\9035\175}% U+1D7D
17018 % U+1D7E LATIN SMALL CAPITAL LETTER U WITH STROKE;
17019 % \barscu (wsuipa)
17020 \DeclareTextCommand{\textbarscu}{PU}{\9035\176}% U+1D7E

47.2.14 Phonetic Extensions Supplement: U+1D80 to U+1DBF

17021 % U+1D8F LATIN SMALL LETTER A WITH RETROFLEX HOOK; \tex-
 trhooka (tipx)
 17022 \DeclareTextCommand{\textPurhooka}{PU}{\9035\217}% U+1D8F
 17023 %* \textPurhooka -> \textrhooka (tipx)
 17024 % U+1D91 LATIN SMALL LETTER D WITH HOOK AND TAIL; \texthtr-
 taild (tipa)
 17025 \DeclareTextCommand{\texthtrtaild}{PU}{\9035\221}%* U+1D91
 17026 % U+1D92 LATIN SMALL LETTER E WITH RETROFLEX HOOK; \tex-
 trhooke (tipx)
 17027 \DeclareTextCommand{\textPurhooke}{PU}{\9035\222}% U+1D92
 17028 %* \textPurhooke -> \textrhooke (tipx)
 17029 % U+1D93 LATIN SMALL LETTER OPEN E WITH RETROFLEX HOOK;
 17030 % \textrhookepsilon (tipx)
 17031 \DeclareTextCommand{\textPurhookepsilon}{PU}{\9035\223}% U+1D93
 17032 %* \textPurhookepsilon -> \textrhookepsilon (tipx)
 17033 % U+1D97 LATIN SMALL LETTER OPEN O WITH RETROFLEX HOOK;
 17034 % \textrhookopeno (tipx)
 17035 \DeclareTextCommand{\textPurhookopeno}{PU}{\9035\227}% U+1D97
 17036 %* \textPurhookopeno -> \textrhookopeno (tipx)

47.2.15 Latin Extended Additional: U+1E00 to U+1EFF

17037 % U+1E00 LATIN CAPITAL LETTER A WITH RING BELOW; Aringbelow
 17038 \DeclareTextCompositeCommand{\textsubring}{PU}{A}{\9036\000}% U+1E00
 17039 % U+1E01 LATIN SMALL LETTER A WITH RING BELOW; aringbelow
 17040 \DeclareTextCompositeCommand{\textsubring}{PU}{a}{\9036\001}% U+1E01
 17041 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent
 17042 \DeclareTextCompositeCommand{.}{PU}{B}{\9036\002}% U+1E02
 17043 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent
 17044 \DeclareTextCompositeCommand{.}{PU}{b}{\9036\003}% U+1E03
 17045 % U+1E04 LATIN CAPITAL LETTER B WITH DOT BELOW; Bdotbelow
 17046 \DeclareTextCompositeCommand{\d}{PU}{B}{\9036\004}% U+1E04
 17047 % U+1E05 LATIN SMALL LETTER B WITH DOT BELOW; bdotbelow
 17048 \DeclareTextCompositeCommand{\d}{PU}{b}{\9036\005}% U+1E05
 17049 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow
 17050 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06
 17051 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow
 17052 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07
 17053 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent
 17054 \DeclareTextCompositeCommand{.}{PU}{D}{\9036\012}% U+1E0A
 17055 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent
 17056 \DeclareTextCompositeCommand{.}{PU}{d}{\9036\013}% U+1E0B
 17057 % U+1E0C LATIN CAPITAL LETTER D WITH DOT BELOW; Ddotbelow
 17058 \DeclareTextCompositeCommand{\d}{PU}{D}{\9036\014}% U+1E0C
 17059 % U+1E0D LATIN SMALL LETTER D WITH DOT BELOW; ddotbelow
 17060 \DeclareTextCompositeCommand{\d}{PU}{d}{\9036\015}% U+1E0D
 17061 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow
 17062 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E
 17063 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow
 17064 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F
 17065 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla
 17066 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10
 17067 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla
 17068 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11
 17069 % U+1E12 LATIN CAPITAL LETTER D WITH CIRCUMFLEX BELOW; Dcir-

cumflexbelow
 17070 \DeclareTextCompositeCommand{\textsubcircum}{PU}{D}{\9036\022}% U+1E12
 17071 % U+1E13 LATIN SMALL LETTER D WITH CIRCUMFLEX BELOW; dcir-
 cumflexbelow
 17072 \DeclareTextCompositeCommand{\textsubcircum}{PU}{d}{\9036\023}% U+1E13
 17073 % U+1E14 LATIN CAPITAL LETTER E WITH MACRON AND GRAVE;
 17074 % E macrongrave
 17075 \DeclareTextCompositeCommand{\textgravemacron}{PU}{E}{\9036\024}% U+1E14
 17076 % U+1E15 LATIN SMALL LETTER E WITH MACRON AND GRAVE;
 17077 % e macrongrave
 17078 \DeclareTextCompositeCommand{\textgravemacron}{PU}{e}{\9036\025}% U+1E15
 17079 % U+1E16 LATIN CAPITAL LETTER E WITH MACRON AND ACUTE;
 17080 % E macronacute
 17081 \DeclareTextCompositeCommand{\textacutemacron}{PU}{E}{\9036\026}% U+1E16
 17082 % U+1E17 LATIN SMALL LETTER E WITH MACRON AND ACUTE;
 17083 % e macronacute
 17084 \DeclareTextCompositeCommand{\textacutemacron}{PU}{e}{\9036\027}% U+1E17
 17085 % U+1E18 LATIN CAPITAL LETTER E WITH CIRCUMFLEX BELOW; Ecir-
 cumflexbelow
 17086 \DeclareTextCompositeCommand{\textsubcircum}{PU}{E}{\9036\030}% U+1E18
 17087 % U+1E19 LATIN SMALL LETTER E WITH CIRCUMFLEX BELOW; ecir-
 cumflexbelow
 17088 \DeclareTextCompositeCommand{\textsubcircum}{PU}{e}{\9036\031}% U+1E19
 17089 % U+1E1A LATIN CAPITAL LETTER E WITH TILDE BELOW; Etildebelow
 17090 \DeclareTextCompositeCommand{\textsubtilde}{PU}{E}{\9036\032}% U+1E1A
 17091 % U+1E1B LATIN SMALL LETTER E WITH TILDE BELOW; etildebelow
 17092 \DeclareTextCompositeCommand{\textsubtilde}{PU}{e}{\9036\033}% U+1E1B
 17093 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent
 17094 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E
 17095 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent
 17096 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F
 17097 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron
 17098 \DeclareTextCompositeCommand{\=}{PU}{G}{\9036\040}% U+1E20
 17099 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron
 17100 \DeclareTextCompositeCommand{\=}{PU}{g}{\9036\041}% U+1E21
 17101 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent
 17102 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22
 17103 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent
 17104 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23
 17105 % U+1E24 LATIN CAPITAL LETTER H WITH DOT BELOW; Hdotbelow
 17106 \DeclareTextCompositeCommand{\d}{PU}{H}{\9036\044}% U+1E24
 17107 % U+1E25 LATIN SMALL LETTER H WITH DOT BELOW; hdotbelow
 17108 \DeclareTextCompositeCommand{\d}{PU}{h}{\9036\045}% U+1E25
 17109 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis
 17110 \DeclareTextCompositeCommand{\"}{PU}{H}{\9036\046}% U+1E26
 17111 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis
 17112 \DeclareTextCompositeCommand{\"}{PU}{h}{\9036\047}% U+1E27
 17113 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla
 17114 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28
 17115 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla
 17116 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29
 17117 % U+1E2A LATIN CAPITAL LETTER H WITH BREVE BELOW; Hbrevebelow
 17118 \DeclareTextCompositeCommand{\textsubbreve}{PU}{H}{\9036\052}% U+1E2A
 17119 % U+1E2B LATIN SMALL LETTER H WITH BREVE BELOW; hbrevebelow

17120 \DeclareTextCompositeCommand{\textsubbreve}{PU}{h}{\9036\053}% U+1E2B
17121 % U+1E2C LATIN CAPITAL LETTER I WITH TILDE BELOW; Itildebelow
17122 \DeclareTextCompositeCommand{\textsubtilde}{PU}{i}{\9036\054}% U+1E2C
17123 % U+1E2D LATIN SMALL LETTER I WITH TILDE BELOW; itildebelow
17124 \DeclareTextCompositeCommand{\textsubtilde}{PU}{i}{\9036\055}% U+1E2D
17125 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute
17126 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30
17127 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute
17128 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31
17129 % U+1E32 LATIN CAPITAL LETTER K WITH DOT BELOW; Kdotbelow
17130 \DeclareTextCompositeCommand{\d}{PU}{K}{\9036\062}% U+1E32
17131 % U+1E33 LATIN SMALL LETTER K WITH DOT BELOW; kdotbelow
17132 \DeclareTextCompositeCommand{\d}{PU}{k}{\9036\063}% U+1E33
17133 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow
17134 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34
17135 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow
17136 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35
17137 % U+1E36 LATIN CAPITAL LETTER L WITH DOT BELOW; Ldotbelow
17138 \DeclareTextCompositeCommand{\d}{PU}{L}{\9036\066}% U+1E36
17139 % U+1E37 LATIN SMALL LETTER L WITH DOT BELOW; ldotbelow
17140 \DeclareTextCompositeCommand{\d}{PU}{l}{\9036\067}% U+1E37
17141 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow
17142 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A
17143 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow
17144 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B
17145 % U+1E3C LATIN CAPITAL LETTER L WITH CIRCUMFLEX BELOW; Lcir-
cumflexbelow
17146 \DeclareTextCompositeCommand{\textsubcircum}{PU}{L}{\9036\074}% U+1E3C
17147 % U+1E3D LATIN SMALL LETTER L WITH CIRCUMFLEX BELOW; lcir-
cumflexbelow
17148 \DeclareTextCompositeCommand{\textsubcircum}{PU}{l}{\9036\075}% U+1E3D
17149 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute
17150 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E
17151 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute
17152 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F
17153 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent
17154 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40
17155 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent
17156 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41
17157 % U+1E42 LATIN CAPITAL LETTER M WITH DOT BELOW; Mdotbelow
17158 \DeclareTextCompositeCommand{\d}{PU}{M}{\9036\102}% U+1E42
17159 % U+1E43 LATIN SMALL LETTER M WITH DOT BELOW; mdotbelow
17160 \DeclareTextCompositeCommand{\d}{PU}{m}{\9036\103}% U+1E43
17161 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent
17162 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44
17163 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent
17164 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45
17165 % U+1E46 LATIN CAPITAL LETTER N WITH DOT BELOW; Ndotbelow
17166 \DeclareTextCompositeCommand{\d}{PU}{N}{\9036\106}% U+1E46
17167 % U+1E47 LATIN SMALL LETTER N WITH DOT BELOW; ndotbelow
17168 \DeclareTextCompositeCommand{\d}{PU}{n}{\9036\107}% U+1E47
17169 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow
17170 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48
17171 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow

17172 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49
17173 % U+1E4A LATIN CAPITAL LETTER N WITH CIRCUMFLEX BELOW; Ncir-
cumflexbelow
17174 \DeclareTextCompositeCommand{\textsubcircum}{PU}{N}{\9036\112}% U+1E4A
17175 % U+1E4B LATIN SMALL LETTER N WITH CIRCUMFLEX BELOW; ncir-
cumflexbelow
17176 \DeclareTextCompositeCommand{\textsubcircum}{PU}{n}{\9036\113}% U+1E4B
17177 % U+1E50 LATIN CAPITAL LETTER O WITH MACRON AND GRAVE;
17178 % Omacrongrave
17179 \DeclareTextCompositeCommand{\textgravemacron}{PU}{O}{\9036\120}% U+1E50
17180 % U+1E51 LATIN SMALL LETTER O WITH MACRON AND GRAVE;
17181 % omacrongrave
17182 \DeclareTextCompositeCommand{\textgravemacron}{PU}{o}{\9036\121}% U+1E51
17183 % U+1E52 LATIN CAPITAL LETTER O WITH MACRON AND ACUTE;
17184 % Omacronacute
17185 \DeclareTextCompositeCommand{\textacutemacron}{PU}{O}{\9036\122}% U+1E52
17186 % U+1E53 LATIN SMALL LETTER O WITH MACRON AND ACUTE;
17187 % omacronacute
17188 \DeclareTextCompositeCommand{\textacutemacron}{PU}{o}{\9036\123}% U+1E53
17189 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute
17190 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54
17191 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute
17192 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55
17193 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent
17194 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56
17195 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent
17196 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57
17197 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent
17198 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58
17199 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent
17200 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59
17201 % U+1E5A LATIN CAPITAL LETTER R WITH DOT BELOW; Rdotbelow
17202 \DeclareTextCompositeCommand{\d}{PU}{R}{\9036\132}% U+1E5A
17203 % U+1E5B LATIN SMALL LETTER R WITH DOT BELOW; rdotbelow
17204 \DeclareTextCompositeCommand{\d}{PU}{r}{\9036\133}% U+1E5B
17205 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow
17206 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E
17207 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow
17208 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F
17209 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent
17210 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60
17211 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent
17212 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61
17213 % U+1E62 LATIN CAPITAL LETTER S WITH DOT BELOW; Sdotbelow
17214 \DeclareTextCompositeCommand{\d}{PU}{S}{\9036\142}% U+1E62
17215 % U+1E63 LATIN SMALL LETTER S WITH DOT BELOW; sdotbelow
17216 \DeclareTextCompositeCommand{\d}{PU}{s}{\9036\143}% U+1E63
17217 % U+1E6A LATIN CAPITAL LETTER T WITH DOT ABOVE; Tdotaccent
17218 \DeclareTextCompositeCommand{\.}{PU}{T}{\9036\152}% U+1E6A
17219 % U+1E6B LATIN SMALL LETTER T WITH DOT ABOVE; tdotaccent
17220 \DeclareTextCompositeCommand{\.}{PU}{t}{\9036\153}% U+1E6B
17221 % U+1E6C LATIN CAPITAL LETTER T WITH DOT BELOW; Tdotbelow
17222 \DeclareTextCompositeCommand{\d}{PU}{T}{\9036\154}% U+1E6C
17223 % U+1E6D LATIN SMALL LETTER T WITH DOT BELOW; tdotbelow

17224 \DeclareTextCompositeCommand{\d}{PU}{t}{\9036\155}% U+1E6D
17225 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow
17226 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E
17227 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow
17228 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F
17229 % U+1E70 LATIN CAPITAL LETTER T WITH CIRCUMFLEX BELOW; Tcir-
cumflexbelow
17230 \DeclareTextCompositeCommand{\textsubcircum}{PU}{T}{\9036\160}% U+1E70
17231 % U+1E71 LATIN SMALL LETTER T WITH CIRCUMFLEX BELOW; tcir-
cumflexbelow
17232 \DeclareTextCompositeCommand{\textsubcircum}{PU}{t}{\9036\161}% U+1E71
17233 % U+1E72 LATIN CAPITAL LETTER U WITH DIAERESIS BELOW; Udiere-
sisbelow
17234 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{U}{\9036\162}% U+1E72
17235 % U+1E73 LATIN SMALL LETTER U WITH DIAERESIS BELOW; udieresis-
below
17236 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{u}{\9036\163}% U+1E73
17237 % U+1E74 LATIN CAPITAL LETTER U WITH TILDE BELOW; Utildebelow
17238 \DeclareTextCompositeCommand{\textsubtilde}{PU}{U}{\9036\164}% U+1E74
17239 % U+1E75 LATIN SMALL LETTER U WITH TILDE BELOW; utildebelow
17240 \DeclareTextCompositeCommand{\textsubtilde}{PU}{u}{\9036\165}% U+1E75
17241 % U+1E76 LATIN CAPITAL LETTER U WITH CIRCUMFLEX BELOW; Ucir-
cumflexbelow
17242 \DeclareTextCompositeCommand{\textsubcircum}{PU}{U}{\9036\166}% U+1E76
17243 % U+1E77 LATIN SMALL LETTER U WITH CIRCUMFLEX BELOW; ucir-
cumflexbelow
17244 \DeclareTextCompositeCommand{\textsubcircum}{PU}{u}{\9036\167}% U+1E77
17245 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde
17246 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C
17247 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde
17248 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D
17249 % U+1E7E LATIN CAPITAL LETTER V WITH DOT BELOW; Vdotbelow
17250 \DeclareTextCompositeCommand{\d}{PU}{V}{\9036\176}% U+1E7E
17251 % U+1E7F LATIN SMALL LETTER V WITH DOT BELOW; vdotbelow
17252 \DeclareTextCompositeCommand{\d}{PU}{v}{\9036\177}% U+1E7F
17253 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave
17254 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80
17255 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave
17256 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81
17257 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute
17258 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82
17259 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute
17260 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83
17261 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis
17262 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84
17263 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis
17264 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85
17265 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent
17266 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86
17267 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent
17268 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87
17269 % U+1E88 LATIN CAPITAL LETTER W WITH DOT BELOW; wdotbelow
17270 \DeclareTextCompositeCommand{\d}{PU}{W}{\9036\210}% U+1E88
17271 % U+1E89 LATIN SMALL LETTER W WITH DOT BELOW; wdotbelow

17272 \DeclareTextCompositeCommand{\d}{PU}{w}{\9036\211}% U+1E89
17273 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent
17274 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A
17275 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent
17276 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B
17277 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis
17278 \DeclareTextCompositeCommand{"}{PU}{X}{\9036\214}% U+1E8C
17279 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis
17280 \DeclareTextCompositeCommand{"}{PU}{x}{\9036\215}% U+1E8D
17281 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent
17282 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E
17283 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent
17284 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F
17285 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex
17286 \DeclareTextCompositeCommand{\^}{PU}{Z}{\9036\220}% U+1E90
17287 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex
17288 \DeclareTextCompositeCommand{\^}{PU}{z}{\9036\221}% U+1E91
17289 % U+1E92 LATIN CAPITAL LETTER Z WITH DOT BELOW; Zdotbelow
17290 \DeclareTextCompositeCommand{\d}{PU}{Z}{\9036\222}% U+1E92
17291 % U+1E93 LATIN SMALL LETTER Z WITH DOT BELOW; zdotbelow
17292 \DeclareTextCompositeCommand{\d}{PU}{z}{\9036\223}% U+1E93
17293 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow
17294 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94
17295 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow
17296 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95
17297 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow
17298 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96
17299 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis
17300 \DeclareTextCompositeCommand{"}{PU}{t}{\9036\227}% U+1E97
17301 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring
17302 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98
17303 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring
17304 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99
17305 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdotaccent
17306 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B
17307 % U+1EA0 LATIN CAPITAL LETTER A WITH DOT BELOW; Adotbelow
17308 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0
17309 % U+1EA1 LATIN SMALL LETTER A WITH DOT BELOW; adotbelow
17310 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1
17311 % U+1EB8 LATIN CAPITAL LETTER E WITH DOT BELOW; Edotbelow
17312 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8
17313 % U+1EB9 LATIN SMALL LETTER E WITH DOT BELOW; edotbelow
17314 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9
17315 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde
17316 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC
17317 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde
17318 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD
17319 % U+1ECA LATIN CAPITAL LETTER I WITH DOT BELOW; Idotbelow
17320 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA
17321 % U+1ECB LATIN SMALL LETTER I WITH DOT BELOW; idotbelow
17322 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB
17323 % U+1ECC LATIN CAPITAL LETTER O WITH DOT BELOW; Odotbelow
17324 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC

17325 % U+1ECD LATIN SMALL LETTER O WITH DOT BELOW; odotbelow
 17326 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD
 17327 % U+1EE4 LATIN CAPITAL LETTER U WITH DOT BELOW; Udotbelow
 17328 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4
 17329 % U+1EE5 LATIN SMALL LETTER U WITH DOT BELOW; udotbelow
 17330 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5
 17331 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave
 17332 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2
 17333 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave
 17334 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3
 17335 % U+1EF4 LATIN CAPITAL LETTER Y WITH DOT BELOW; Ydotbelow
 17336 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4
 17337 % U+1EF5 LATIN SMALL LETTER Y WITH DOT BELOW; ydotbelow
 17338 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5
 17339 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde
 17340 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8
 17341 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde
 17342 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

47.2.16 General Punctuation: U+2000 to U+206F

17343 % U+200C ZERO WIDTH NON-JOINER; *afi61664, zerowidthnonjoiner
 17344 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C
 17345 % U+2013 EN DASH; endash
 17346 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013
 17347 % U+2014 EM DASH; emdash
 17348 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014
 17349 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar
 17350 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016
 17351 %* \textbardbl -> \textdoublevertline (tipa)
 17352 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft
 17353 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018
 17354 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright
 17355 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019
 17356 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase
 17357 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A
 17358 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft
 17359 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C
 17360 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright
 17361 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D
 17362 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase
 17363 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E
 17364 % U+2020 DAGGER; dagger
 17365 \DeclareTextCommand{\textdagger}{PU}{\9040\040}%* U+2020
 17366 %* \textdagger -> \dag (LaTeX)
 17367 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)
 17368 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021
 17369 %* \textdaggerdbl -> \ddagger (LaTeX)
 17370 %* \textdaggerdbl -> \ddag (LaTeX)
 17371 % U+2022 BULLET; bullet
 17372 \DeclareTextCommand{\textbullet}{PU}{\9040\042}%* U+2022
 17373 % U+2025 TWO DOT LEADER; \hdotfor (MnSymbol)
 17374 \DeclareTextCommand{\texthdotfor}{PU}{\9040\045}%* U+2025
 17375 % U+2026 HORIZONTAL ELLIPSIS; ellipsis
 17376 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026

17377 %* \textellipsis -> \mathellipsis
 17378 % U+2030 PER MILLE SIGN; perthousand
 17379 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030
 17380 % U+2031 PER TEN THOUSAND SIGN
 17381 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031
 17382 % U+2032 PRIME; minute; \prime (MnSymbol)
 17383 \DeclareTextCommand{\textprime}{PU}{\9040\062}%* U+2032
 17384 % U+2033 DOUBLE PRIME; \second (mathabx)
 17385 \DeclareTextCommand{\textsecond}{PU}{\9040\063}%* U+2033
 17386 % U+2034 TRIPLE PRIME; \third (mathabx)
 17387 \DeclareTextCommand{\texttthird}{PU}{\9040\064}%* U+2034
 17388 % U+2035 REVERSED PRIME; \backprime (AmsS)
 17389 \DeclareTextCommand{\textbackprime}{PU}{\9040\065}%* U+2035
 17390 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-
 inglleft
 17391 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071}% U+2039
 17392 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-
 inglright
 17393 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072}% U+203A
 17394 % U+203B REFERENCE MARK; referencemark
 17395 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B
 17396 % U+203D INTERROBANG
 17397 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D
 17398 % U+2044 FRACTION SLASH; fraction
 17399 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044
 17400 % U+2045 LEFT SQUARE BRACKET WITH QUILL
 17401 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045
 17402 % U+2046 RIGHT SQUARE BRACKET WITH QUILL
 17403 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046
 17404 % U+2052 COMMERCIAL MINUS SIGN
 17405 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052
 17406 % U+2056 THREE DOT PUNCTUATION; \lefttherefore (MnSymbol)
 17407 \DeclareTextCommand{\textlefttherefore}{PU}{\9040\126}%* U+2056
 17408 % U+2057 QUADRUPLE PRIME; \fourth (mathabx)
 17409 \DeclareTextCommand{\textfourth}{PU}{\9040\127}%* U+2057
 17410 % U+2058 FOUR DOT PUNCTUATION; \diamonddots (MnSymbol)
 17411 \DeclareTextCommand{\textdiamonddots}{PU}{\9040\130}%* U+2058

47.2.17 Superscripts and Subscripts: U+2070 to U+209F

17412 % U+2070 SUPERSCRIPT ZERO; zerosuperior
 17413 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}%* U+2070
 17414 % U+2071 SUPERSCRIPT LATIN SMALL LETTER I
 17415 \DeclareTextCommand{\textisuperior}{PU}{\9040\161}%* U+2071
 17416 % U+2074 SUPERSCRIPT FOUR; foursuperior
 17417 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}%* U+2074
 17418 % U+2075 SUPERSCRIPT FIVE; fivesuperior
 17419 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}%* U+2075
 17420 % U+2076 SUPERSCRIPT SIX; sixsuperior
 17421 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}%* U+2076
 17422 % U+2077 SUPERSCRIPT SEVEN; sevensuperior
 17423 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}%* U+2077
 17424 % U+2078 SUPERSCRIPT EIGHT; eightsuperior
 17425 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}%* U+2078
 17426 % U+2079 SUPERSCRIPT NINE; ninesuperior

17427 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}%* U+2079
17428 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior
17429 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}%* U+207A
17430 % U+207B SUPERSCRIPT MINUS
17431 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}%* U+207B
17432 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior
17433 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}%* U+207C
17434 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior
17435 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}%* U+207D
17436 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior
17437 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}%* U+207E
17438 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior
17439 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}%* U+207F
17440 % U+2080 SUBSCRIPT ZERO; zeroinferior
17441 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}%* U+2080
17442 % U+2081 SUBSCRIPT ONE; oneinferior
17443 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}%* U+2081
17444 % U+2082 SUBSCRIPT TWO; twoinferior
17445 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}%* U+2082
17446 % U+2083 SUBSCRIPT THREE; threeinferior
17447 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}%* U+2083
17448 % U+2084 SUBSCRIPT FOUR; fourinferior
17449 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}%* U+2084
17450 % U+2085 SUBSCRIPT FIVE; fiveinferior
17451 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}%* U+2085
17452 % U+2086 SUBSCRIPT SIX; sixinferior
17453 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}%* U+2086
17454 % U+2087 SUBSCRIPT SEVEN; seveninferior
17455 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}%* U+2087
17456 % U+2088 SUBSCRIPT EIGHT; eightinferior
17457 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}%* U+2088
17458 % U+2089 SUBSCRIPT NINE; nineinferior
17459 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}%* U+2089
17460 % U+208A SUBSCRIPT PLUS SIGN
17461 \DeclareTextCommand{\textplusinferior}{PU}{\9040\212}%* U+208A
17462 % U+208B SUBSCRIPT MINUS
17463 \DeclareTextCommand{\textminusinferior}{PU}{\9040\213}%* U+208B
17464 % U+208C SUBSCRIPT EQUALS SIGN
17465 \DeclareTextCommand{\textequalsinferior}{PU}{\9040\214}%* U+208C
17466 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior
17467 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}%* U+208D
17468 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior
17469 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}%* U+208E
17470 % U+2090 LATIN SUBSCRIPT SMALL LETTER A
17471 \DeclareTextCommand{\textainferior}{PU}{\9040\220}%* U+2090
17472 % U+2091 LATIN SUBSCRIPT SMALL LETTER E
17473 \DeclareTextCommand{\texteinferior}{PU}{\9040\221}%* U+2091
17474 % U+2092 LATIN SUBSCRIPT SMALL LETTER O
17475 \DeclareTextCommand{\textoinferior}{PU}{\9040\222}%* U+2092
17476 % U+2093 LATIN SUBSCRIPT SMALL LETTER X
17477 \DeclareTextCommand{\textxinferior}{PU}{\9040\223}%* U+2093
17478 % U+2094 LATIN SUBSCRIPT SMALL LETTER SCHWA
17479 \DeclareTextCommand{\textschwainferior}{PU}{\9040\224}%* U+2094
17480 % U+2095 LATIN SUBSCRIPT SMALL LETTER H

17481 \DeclareTextCommand{\textthininferior}{PU}{\9040\225}%* U+2095
 17482 % U+2096 LATIN SUBSCRIPT SMALL LETTER K
 17483 \DeclareTextCommand{\textkinferior}{PU}{\9040\226}%* U+2096
 17484 % U+2097 LATIN SUBSCRIPT SMALL LETTER L
 17485 \DeclareTextCommand{\textlinferior}{PU}{\9040\227}%* U+2097
 17486 % U+2098 LATIN SUBSCRIPT SMALL LETTER M
 17487 \DeclareTextCommand{\textminferior}{PU}{\9040\230}%* U+2098
 17488 % U+2099 LATIN SUBSCRIPT SMALL LETTER N
 17489 \DeclareTextCommand{\textninferior}{PU}{\9040\231}%* U+2099
 17490 % U+209A LATIN SUBSCRIPT SMALL LETTER P
 17491 \DeclareTextCommand{\textpinferior}{PU}{\9040\232}%* U+209A
 17492 % U+209B LATIN SUBSCRIPT SMALL LETTER S
 17493 \DeclareTextCommand{\textsinferior}{PU}{\9040\233}%* U+209B
 17494 % U+209C LATIN SUBSCRIPT SMALL LETTER T
 17495 \DeclareTextCommand{\texttinferior}{PU}{\9040\234}%* U+209C

47.2.18 Currency Symbols: U+20A0 to U+20CF

17496 % U+20A1 COLON SIGN; *colonmonetary, colonsign
 17497 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1
 17498 % U+20A4 LIRA SIGN; afii08941, *lira
 17499 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4
 17500 % U+20A6 NAIRA SIGN
 17501 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6
 17502 % U+20A7 PESETA SIGN; peseta
 17503 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7
 17504 % U+20A9 WON SIGN; won
 17505 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9
 17506 % U+20AB DONG SIGN; dong
 17507 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB
 17508 % U+20AC EURO SIGN; *Euro, euro
 17509 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC
 17510 %* \texteuro -> \EurDig (marvosym)
 17511 %* \texteuro -> \EURdig (marvosym)
 17512 %* \texteuro -> \EurHv (marvosym)
 17513 %* \texteuro -> \EURhv (marvosym)
 17514 %* \texteuro -> \EurCr (marvosym)
 17515 %* \texteuro -> \EURcr (marvosym)
 17516 %* \texteuro -> \EurTm (marvosym)
 17517 %* \texteuro -> \EURtm (marvosym)
 17518 %* \texteuro -> \Eur (marvosym)
 17519 % U+20B0 GERMAN PENNY SIGN; \Deleatur (marvosym)
 17520 \DeclareTextCommand{\textDeleatur}{PU}{\9040\260}%* U+20B0
 17521 %* \textDeleatur -> \Denarius (marvosym)
 17522 % U+20B1 PESO SIGN
 17523 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1
 17524 % U+20B2 GUARANI SIGN
 17525 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

47.2.19 Letterlike Symbols: U+2100 to U+214F

17526 % U+2103 DEGREE CELSIUS; centigrade
 17527 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103
 17528 % U+210F PLANCK CONSTANT OVER TWO PI; \hslash (AmS)
 17529 \DeclareTextCommand{\texthslash}{PU}{\9041\017}%* U+210F
 17530 % U+2111 BLACK-LETTER CAPITAL I (=imaginary part); Ifraktur; \Im (La-

TeX)

```

17531 \DeclareTextCommand{\textIm}{PU}{\9041\021}%* U+2111
17532 % U+2113 SCRIPT SMALL L (=ell, liter); afii61289, lsquare; \ell (LaTeX)
17533 \DeclareTextCommand{\textell}{PU}{\9041\023}%* U+2113
17534 % U+2116 NUMERO SIGN; *afii61352, numero
17535 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116
17536 % U+2117 SOUND RECORDING COPYRIGHT
17537 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117
17538 % U+2118 SCRIPT CAPITAL P (=Weierstrass elliptic function);
17539 % weierstrass; \wp (LaTeX)
17540 \DeclareTextCommand{\textwp}{PU}{\9041\030}%* U+2118
17541 % U+211C BLACK-LETTER CAPITAL R (=real part); Rfraktur; \Re (LaTeX)
17542 \DeclareTextCommand{\textRe}{PU}{\9041\034}%* U+211C
17543 % U+211E PRESCRIPTION TAKE; prescription
17544 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E
17545 % U+2120 SERVICE MARK
17546 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120
17547 % U+2122 TRADE MARK SIGN; trademark
17548 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122
17549 % U+2126 OHM SIGN; Ohm, Omega
17550 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126
17551 % U+2127 INVERTED OHM SIGN
17552 \DeclareTextCommand{\textmho}{PU}{\9041\047}%* U+2127
17553 %* \textmho -> \agemO (wasysym)
17554 % U+2129 TURNED GREEK SMALL LETTER IOTA; \riota (phonetic)
17555 \DeclareTextCommand{\textriota}{PU}{\9041\051}%* U+2129
17556 % U+212B ANGSTROM SIGN; angstrom
17557 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B
17558 % U+212E ESTIMATED SYMBOL; estimated
17559 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E
17560 %* \textestimated -> \EstimatedSign (marvosym)
17561 %* \textestimated -> \Ecommerce (marvosym)
17562 % U+2132 TURNED CAPITAL F; \Finv (AmS)
17563 \DeclareTextCommand{\textFinv}{PU}{\9041\062}%* U+2132
17564 % U+2135 ALEF SYMBOL; aleph; \aleph (LaTeX)
17565 \DeclareTextCommand{\textaleph}{PU}{\9041\065}%* U+2135
17566 % U+2136 BET SYMBOL; \beth (AmS, MnSymbol)
17567 \DeclareTextCommand{\textbeth}{PU}{\9041\066}%* U+2136
17568 % U+2137 GIMEL SYMBOL; \gimel (AmS, MnSymbol)
17569 \DeclareTextCommand{\textgimel}{PU}{\9041\067}%* U+2137
17570 % U+2138 DALET SYMBOL; \daleth (AmS, MnSymbol)
17571 \DeclareTextCommand{\textdaleth}{PU}{\9041\070}%* U+2138
17572 % U+213B FACSIMILE SIGN; \fax (marvosym)
17573 \DeclareTextCommand{\textfax}{PU}{\9041\073}%* U+213B
17574 % U+2141 TURNED SANS-SERIF CAPITAL G (=game); \Game
17575 \DeclareTextCommand{\textGame}{PU}{\9041\101}%* U+2141
17576 % U+214B TURNED AMPERSAND; \invamp (txfonts/pxfonts)
17577 \DeclareTextCommand{\textinvamp}{PU}{\9041\113}% U+214B
17578 %* \textinvamp -> \bindnasrepma (stmaryrd)
17579 %* \textinvamp -> \parr (cml)

```

47.2.20 Number Forms: U+2150 to U+218F

```

17580 % U+2150 VULGAR FRACTION ONE SEVENTH
17581 \DeclareTextCommand{\textoneseventh}{PU}{\9041\120}% U+2150

```

17582 % U+2151 VULGAR FRACTION ONE NINTH
 17583 \DeclareTextCommand{\textoneninth}{PU}{\9041\121}% U+2151
 17584 % U+2152 VULGAR FRACTION ONE TENTH
 17585 \DeclareTextCommand{\textonetenth}{PU}{\9041\122}% U+2152
 17586 % U+2153 VULGAR FRACTION ONE THIRD; onethird
 17587 \DeclareTextCommand{\textonethird}{PU}{\9041\123}% U+2153
 17588 % U+2154 VULGAR FRACTION TWO THIRDS; twothirds
 17589 \DeclareTextCommand{\texttwothirds}{PU}{\9041\124}% U+2154
 17590 % U+2155 VULGAR FRACTION ONE FIFTH
 17591 \DeclareTextCommand{\textonefifth}{PU}{\9041\125}% U+2155
 17592 % U+2156 VULGAR FRACTION TWO FIFTHS
 17593 \DeclareTextCommand{\texttwofifths}{PU}{\9041\126}% U+2156
 17594 % U+2157 VULGAR FRACTION THREE FIFTHS
 17595 \DeclareTextCommand{\textthreelfths}{PU}{\9041\127}% U+2157
 17596 % U+2158 VULGAR FRACTION FOUR FIFTHS
 17597 \DeclareTextCommand{\textfourfifths}{PU}{\9041\130}% U+2158
 17598 % U+2159 VULGAR FRACTION ONE SIXTH
 17599 \DeclareTextCommand{\textonesixth}{PU}{\9041\131}% U+2159
 17600 % U+215A VULGAR FRACTION FIVE SIXTHS
 17601 \DeclareTextCommand{\textfivesixths}{PU}{\9041\132}% U+215A
 17602 % U+215B VULGAR FRACTION ONE EIGHTH; oneeighth
 17603 \DeclareTextCommand{\textoneeighth}{PU}{\9041\133}% U+215B
 17604 % U+215C VULGAR FRACTION THREE EIGHTHS; threeeighths
 17605 \DeclareTextCommand{\textthreeeighths}{PU}{\9041\134}% U+215C
 17606 % U+215D VULGAR FRACTION FIVE EIGHTHS; fiveeighths
 17607 \DeclareTextCommand{\textfiveeighths}{PU}{\9041\135}% U+215D
 17608 % U+215E VULGAR FRACTION SEVEN EIGHTHS; seveneighths
 17609 \DeclareTextCommand{\textseveneighths}{PU}{\9041\136}% U+215E
 17610 % U+2184 LATIN SMALL LETTER REVERSED C
 17611 \DeclareTextCommand{\textrevc}{PU}{\9041\204}% U+2184
 17612 % U+2189 VULGAR FRACTION ZERO THIRDS
 17613 \DeclareTextCommand{\textzerthirds}{PU}{\9041\211}% U+2189

47.2.21 Arrows: U+2190 to U+21FF

17614 % U+2190 LEFTWARDS ARROW; arrowleft
 17615 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}%* U+2190
 17616 % U+2191 UPWARDS ARROW; arrowup
 17617 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}%* U+2191
 17618 % U+2192 RIGHTWARDS ARROW; arrowright
 17619 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}%* U+2192
 17620 %* \textrightarrow -> \MVRightArrow (marvosym)
 17621 %* \textrightarrow -> \MVRightarrow (marvosym)
 17622 % U+2193 DOWNWARDS ARROW; arrowdown
 17623 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}%* U+2193
 17624 %* \textdownarrow -> \MVArrowDown (marvosym)
 17625 %* \textdownarrow -> \Force (marvosym)
 17626 % U+2194 LEFT RIGHT ARROW; arrowboth; \leftrightarrow (LaTeX)
 17627 \DeclareTextCommand{\textleftrightarrow}{PU}{\9041\224}%* U+2194
 17628 % U+2195 UP DOWN ARROW; arrowupdn; \updownarrow (LaTeX)
 17629 \DeclareTextCommand{\textupdownarrow}{PU}{\9041\225}%* U+2195
 17630 % U+2196 NORTH WEST ARROW; arrowupleft; \nwarrow (LaTeX)
 17631 \DeclareTextCommand{\textnwarrow}{PU}{\9041\226}%* U+2196
 17632 % U+2197 NORTH EAST ARROW; arrowupright; \nearrow (LaTeX)
 17633 \DeclareTextCommand{\textnearrow}{PU}{\9041\227}%* U+2197

17634 %* \textnearrow -> \textglobrise (tipa)
17635 % U+2198 SOUTH EAST ARROW; arrowdownright; \searrow (LaTeX)
17636 \DeclareTextCommand{\textsearrow}{PU}{\9041\230}%* U+2198
17637 %* \textsearrow -> \textglobfall (tipa)
17638 % U+2199 SOUTH WEST ARROW; arrowdownleft; \swarrow (LaTeX)
17639 \DeclareTextCommand{\textswarrow}{PU}{\9041\231}%* U+2199
17640 % U+219A LEFTWARDS ARROW WITH STROKE; \leftarrow (AmS)
17641 \DeclareTextCommand{\textleftarrow}{PU}{\9041\232}%* U+219A
17642 % U+219B RIGHTWARDS ARROW WITH STROKE; \rightarrow (AmS)
17643 \DeclareTextCommand{\textrightarrow}{PU}{\9041\233}%* U+219B
17644 % U+219E LEFTWARDS TWO HEADED ARROW; \twoheadleftarrow (AmS)
17645 \DeclareTextCommand{\texttwoheadleftarrow}{PU}{\9041\236}%* U+219E
17646 % \twoheadleftarrow (txfonts/pxfonts)
17647 \DeclareTextCommand{\textntwoheadleftarrow}{PU}{\9041\236\83\070}%* U+219E U+0338
17648 % U+219F UPWARDS TWO HEADED ARROW; \twoheaduparrow (MnSymbol)
17649 \DeclareTextCommand{\texttwoheaduparrow}{PU}{\9041\237}%* U+219F
17650 % U+21A0 RIGHTWARDS TWO HEADED ARROW;
17651 % \twoheadrightarrow (AmS)
17652 \DeclareTextCommand{\texttwoheadrightarrow}{PU}{\9041\240}%* U+21A0
17653 % \twoheadrightarrow (txfonts/pxfonts)
17654 \DeclareTextCommand{\textntwoheadrightarrow}{PU}{\9041\240\83\070}%* U+21A0 U+0338
17655 % U+21A1 DOWNWARDS TWO HEADED ARROW; \twoheaddownarrow (Mn-
Symbol)
17656 \DeclareTextCommand{\texttwoheaddownarrow}{PU}{\9041\241}%* U+21A1
17657 % U+21A2 LEFTWARDS ARROW WITH TAIL; \leftarrowtail (AmS)
17658 \DeclareTextCommand{\textleftarrowtail}{PU}{\9041\242}%* U+21A2
17659 % U+21A3 RIGHTWARDS ARROW WITH TAIL; \rightarrowtail (AmS)
17660 \DeclareTextCommand{\textrightarrowtail}{PU}{\9041\243}%* U+21A3
17661 % U+21A6 RIGHTWARDS ARROW FROM BAR; \mapsto (LaTeX)
17662 \DeclareTextCommand{\textmapsto}{PU}{\9041\246}%* U+21A6
17663 % U+21A9 LEFTWARDS ARROW WITH HOOK; \hookleftarrow (LaTeX)
17664 \DeclareTextCommand{\texthookleftarrow}{PU}{\9041\251}%* U+21A9
17665 % U+21AA RIGHTWARDS ARROW WITH HOOK; \hookrightarrow (LaTeX)
17666 \DeclareTextCommand{\texthookrightarrow}{PU}{\9041\252}%* U+21AA
17667 % U+21AB LEFTWARDS ARROW WITH LOOP; \looparrowleft (AmS)
17668 \DeclareTextCommand{\textlooparrowleft}{PU}{\9041\253}%* U+21AB
17669 % U+21AC RIGHTWARDS ARROW WITH LOOP; \looparrowright (AmS)
17670 \DeclareTextCommand{\textlooparrowright}{PU}{\9041\254}%* U+21AC
17671 % U+21AE LEFT RIGHT ARROW WITH STROKE; \leftrightharrow (AmS)
17672 \DeclareTextCommand{\textleftrightharrow}{PU}{\9041\256}%* U+21AE
17673 % U+21AF DOWNWARDS ZIGZAG ARROW; \lightning (stmaryrd)
17674 \DeclareTextCommand{\textlightning}{PU}{\9041\257}%* U+21AF
17675 %* \textlightning -> \Lightning (marvosym)
17676 % U+21B5 DOWNWARDS ARROW WITH CORNER LEFTWARDS;
17677 % \dls (mathabx)
17678 \DeclareTextCommand{\textdls}{PU}{\9041\265}%* U+21B5
17679 % U+21B6 ANTICLOCKWISE TOP SEMICIRCLE ARROW;
17680 % \curvearrowleft (AmS)
17681 \DeclareTextCommand{\textcurvearrowleft}{PU}{\9041\266}%* U+21B6
17682 % U+21B7 CLOCKWISE TOP SEMICIRCLE ARROW; \curvearrowright (AmS)
17683 \DeclareTextCommand{\textcurvearrowright}{PU}{\9041\267}%* U+21B7
17684 % U+21BC LEFTWARDS HARPOON WITH BARB UPWARDS; harpoonleft-
barbup;
17685 % \leftharpoonup (LaTeX)

```

17686 \DeclareTextCommand{\textleftharpoonup}{PU}{\9041\274}%* U+21BC
17687 % U+21BD LEFTWARDS HARPOON WITH BARB DOWNWARDS;
17688 % \leftharpoondown (LaTeX)
17689 \DeclareTextCommand{\textleftharpoondown}{PU}{\9041\275}%* U+21BD
17690 % U+21BE UPWARDS HARPOON WITH BARB RIGHTWARDS;
17691 % \upharpoonright (AmS)
17692 \DeclareTextCommand{\textupharpoonright}{PU}{\9041\276}%* U+21BE
17693 % U+21BF UPWARDS HARPOON WITH BARB LEFTWARDS;
17694 % \upharpoonleft (AmS)
17695 \DeclareTextCommand{\textupharpoonleft}{PU}{\9041\277}%* U+21BF
17696 % U+21C0 RIGHTWARDS HARPOON WITH BARB UPWARDS; harpoonright-
    barbup
17697 % \rightharpoonup (LaTeX)
17698 \DeclareTextCommand{\textrightharpoonup}{PU}{\9041\300}%* U+21C0
17699 % U+21C1 RIGHTWARDS HARPOON WITH BARB DOWNWARDS;
17700 % \rightharpoondown (LaTeX)
17701 \DeclareTextCommand{\textrightharpoondown}{PU}{\9041\301}%* U+21C1
17702 % U+21C2 DOWNWARDS HARPOON WITH BARB RIGHTWARDS;
17703 % \downharpoonright (AmS)
17704 \DeclareTextCommand{\textdownharpoonright}{PU}{\9041\302}%* U+21C2
17705 % U+21C3 DOWNWARDS HARPOON WITH BARB LEFTWARDS;
17706 % \downharpoonleft (AmS)
17707 \DeclareTextCommand{\textdownharpoonleft}{PU}{\9041\303}%* U+21C3
17708 % U+21C4 RIGHTWARDS ARROW OVER LEFTWARDS ARROW;
17709 % \arrowrightoverleft; \rightleftarrows (MnSymbol)
17710 \DeclareTextCommand{\textrightleftarrows}{PU}{\9041\304}%* U+21C4
17711 % U+21C5 UPWARDS ARROW LEFTWARDS OF DOWNWARDS ARROW; ar-
    rowupleftofdown;
17712 % \updownarrows (MnSymbol)
17713 \DeclareTextCommand{\textupdownarrows}{PU}{\9041\305}%* U+21C5
17714 % U+21C6 LEFTWARDS ARROW OVER RIGHTWARDS ARROW; arrowleft-
    overright;
17715 % \leftrightharrows (AmS)
17716 \DeclareTextCommand{\textleftrightharrows}{PU}{\9041\306}%* U+21C6
17717 % U+21C7 LEFTWARDS PAIRED ARROWS; \leftleftarrows (AmS)
17718 \DeclareTextCommand{\textleftleftarrows}{PU}{\9041\307}%* U+21C7
17719 % U+21C8 UPWARDS PAIRED ARROWS; \upuparrows (AmS)
17720 \DeclareTextCommand{\textupuparrows}{PU}{\9041\310}%* U+21C8
17721 % U+21C9 RIGHTWARDS PAIRED ARROWS; \rightrightarrows (AmS)
17722 \DeclareTextCommand{\textrightarrows}{PU}{\9041\311}%* U+21C9
17723 % U+21CA DOWNWARDS PAIRED ARROWS; \downdownarrows (AmS)
17724 \DeclareTextCommand{\textdowndownarrows}{PU}{\9041\312}%* U+21CA
17725 % U+21CB LEFTWARDS HARPOON OVER RIGHTWARDS HARPOON;
17726 % \leftrightharpoons (AmS);
17727 \DeclareTextCommand{\textleftrightharpoons}{PU}{\9041\313}%* U+21CB
17728 % U+21CC RIGHTWARDS HARPOON OVER LEFTWARDS HARPOON;
17729 % \rightleftharpoons (LaTeX, AmS)
17730 \DeclareTextCommand{\textrightleftharpoons}{PU}{\9041\314}%* U+21CC
17731 % U+21CD LEFTWARDS DOUBLE ARROW WITH STROKE; arrowleftd-
    blstroke;
17732 % \nLeftarrow (AmS)
17733 \DeclareTextCommand{\textnLeftarrow}{PU}{\9041\315}%* U+21CD
17734 % U+21CE LEFT RIGHT DOUBLE ARROW WITH STROKE; \nLeftrightarrow
    (AmS)

```

```

17735 \DeclareTextCommand{\textnLeftrightarrow}{PU}{\9041\316}%* U+21CE
17736 % U+21CF RIGHTWARDS DOUBLE ARROW WITH STROKE; arrowrightd-
      blstroke;
17737 % \nRrightarrow (AmS)
17738 \DeclareTextCommand{\textnRrightarrow}{PU}{\9041\317}%* U+21CF
17739 % U+21D0 LEFTWARDS DOUBLE ARROW; arrowdblleft, arrowleftdbl;
17740 % \Leftarrow (LaTeX)
17741 \DeclareTextCommand{\textLeftarrow}{PU}{\9041\320}%* U+21D0
17742 % U+21D1 UPWARDS DOUBLE ARROW; arrowdblup; \Uparrow (LaTeX)
17743 \DeclareTextCommand{\textUparrow}{PU}{\9041\321}%* U+21D1
17744 % U+21D2 RIGHTWARDS DOUBLE ARROW; arrowdblright, dblarrowright;
17745 % \Rrightarrow (LaTeX)
17746 \DeclareTextCommand{\textRrightarrow}{PU}{\9041\322}%* U+21D2
17747 %* \textRrightarrow -> \Conclusion (marvosym)
17748 % U+21D3 DOWNWARDS DOUBLE ARROW; arrowdbldown; \Downarrow (La-
      TeX)
17749 \DeclareTextCommand{\textDownarrow}{PU}{\9041\323}%* U+21D3
17750 % U+21D4 LEFT RIGHT DOUBLE ARROW; arrowdblboth;
17751 % \Leftrightarrow (LaTeX)
17752 \DeclareTextCommand{\textLeftrightarrow}{PU}{\9041\324}%* U+21D4
17753 %* \textLeftrightarrow -> \Equivalence (marvosym)
17754 % U+21D5 UP DOWN DOUBLE ARROW; \Updownarrow (LaTeX)
17755 \DeclareTextCommand{\textUpdownarrow}{PU}{\9041\325}%* U+21D5
17756 % U+21D6 NORTH WEST DOUBLE ARROW; \Nwarrow (MnSymbol)
17757 \DeclareTextCommand{\textNwarrow}{PU}{\9041\326}%* U+21D6
17758 % U+21D7 NORTH EAST DOUBLE ARROW; \Nearrow (MnSymbol)
17759 \DeclareTextCommand{\textNearrow}{PU}{\9041\327}%* U+21D7
17760 % U+21D8 SOUTH EAST DOUBLE ARROW; \Searrow (MnSymbol)
17761 \DeclareTextCommand{\textSearrow}{PU}{\9041\330}%* U+21D8
17762 % U+21D9 SOUTH WEST DOUBLE ARROW; \Swarrow (MnSymbol)
17763 \DeclareTextCommand{\textSwarrow}{PU}{\9041\331}%* U+21D9
17764 % U+21DA LEFTWARDS TRIPLE ARROW; \Lleftarrow (AmS)
17765 \DeclareTextCommand{\textLleftarrow}{PU}{\9041\332}%* U+21DA
17766 % U+21DB RIGHTWARDS TRIPLE ARROW; \Rrightarrow (MnSymbol)
17767 \DeclareTextCommand{\textRrightarrow}{PU}{\9041\333}%* U+21DB
17768 % U+21DC LEFTWARDS SQUIGGLE ARROW; \leftsquigarrow (mathabx)
17769 \DeclareTextCommand{\textleftsquigarrow}{PU}{\9041\334}%* U+21DC
17770 % U+21DD RIGHTWARDS SQUIGGLE ARROW; \rightsquigarrow (mathabx)
17771 \DeclareTextCommand{\textright squigarrow}{PU}{\9041\335}%* U+21DD
17772 % U+21E0 LEFTWARDS DASHED ARROW; arrowdashleft;
17773 % \dashleftarrow (AmS)
17774 \DeclareTextCommand{\textdashleftarrow}{PU}{\9041\340}%* U+21E0
17775 %* \textdashleftarrow -> \dashedleftarrow (MnSymbol)
17776 % U+21E1 UPWARDS DASHED ARROW; arrowdashup; \dasheduparrow (Mn-
      Symbol)
17777 \DeclareTextCommand{\textdasheduparrow}{PU}{\9041\341}%* U+21E1
17778 % U+21E2 RIGHTWARDS DASHED ARROW; arrowdashright; \dashrightar-
      row (AmS)
17779 \DeclareTextCommand{\textdashrightarrow}{PU}{\9041\342}%* U+21E2
17780 %* \textdashrightarrow -> \dashedrightarrow (MnSymbol)
17781 % U+21E3 DOWNWARDS DASHED ARROW; arrowdashdown; \dasheddownar-
      row (MnSymbol)
17782 \DeclareTextCommand{\textdasheddownarrow}{PU}{\9041\343}%* U+21E3
17783 % U+21E8 RIGHTWARDS WHITE ARROW; \pointer (wasysym)

```

```

17784 \DeclareTextCommand{\textpointer}{PU}{\9041\350}%* U+21E8
17785 % U+21F5 DOWNWARDS ARROW LEFTWARDS OF UPWARDS ARROW;
17786 % \downuparrows (MnSymbol)
17787 \DeclareTextCommand{\textdownuparrows}{PU}{\9041\365}%* U+21F5
17788 % U+21FD LEFTWARDS OPEN-HEADED ARROW; \leftarrowtriangle (stmaryrd)
17789 \DeclareTextCommand{\textleftarrowtriangle}{PU}{\9041\375}%* U+21FD
17790 % U+21FE RIGHTWARDS OPEN-HEADED ARROW; \rightarrowtriangle (stmaryrd)
17791 \DeclareTextCommand{\textrightarrowtriangle}{PU}{\9041\376}%* U+21FE
17792 % U+21FF LEFT RIGHT OPEN-HEADED ARROW; \leftrightarrowtriangle
      gle (stmaryrd)
17793 \DeclareTextCommand{\textleftrightarrowtriangle}{PU}{\9041\377}%* U+21FF

```

47.2.22 Mathematical Operators: U+2200 to U+22FF

```

17794 % U+2200 FOR ALL; forall; \forall (LaTeX)
17795 \DeclareTextCommand{\textforall}{PU}{\9042\000}%* U+2200
17796 % U+2201 COMPLEMENT; \complement (AmS)
17797 \DeclareTextCommand{\textcomplement}{PU}{\9042\001}%* U+2201
17798 % U+2202 PARTIAL DIFFERENTIAL; partialdiff; \partial (LaTeX)
17799 \DeclareTextCommand{\textpartial}{PU}{\9042\002}%* U+2202
17800 % U+2203 THERE EXISTS; existential; \exists (LaTeX)
17801 \DeclareTextCommand{\textexists}{PU}{\9042\003}%* U+2203
17802 % U+2204 THERE DOES NOT EXIST; \nexists (AmS)
17803 \DeclareTextCommand{\textnexists}{PU}{\9042\004}%* U+2204
17804 % U+2205 EMPTY SET; emptyset; \emptyset (LaTeX), \varnothing (AmS)
17805 \DeclareTextCommand{\textemptyset}{PU}{\9042\005}%* U+2205
17806 %* \textemptyset -> \varnothing (AmS)
17807 % U+2206 INCREMENT; increment, Delta; \triangle (LaTeX)
17808 \DeclareTextCommand{\texttriangle}{PU}{\9042\006}%* U+2206
17809 % U+2207 NABLA; nabla, gradient; \nabla (LaTeX)
17810 \DeclareTextCommand{\textnabla}{PU}{\9042\007}%* U+2207
17811 % U+2208 ELEMENT OF; element; \in (LaTeX)
17812 \DeclareTextCommand{\textinsymbol}{PU}{\9042\010}%* U+2208
17813 % U+2209 NOT AN ELEMENT OF; notelement, notelementof; \notin (LaTeX)
17814 \DeclareTextCommand{\textnotin}{PU}{\9042\011}%* U+2209
17815 % U+220A SMALL ELEMENT OF; \smallin (mathdesign)
17816 \DeclareTextCommand{\textsmallin}{PU}{\9042\012}%* U+220A
17817 % U+220B CONTAINS AS MEMBER; suchthat; \ni (LaTeX)
17818 \DeclareTextCommand{\textni}{PU}{\9042\013}%* U+220B
17819 %* \textni -> \owns (mathabx)
17820 % U+220C DOES NOT CONTAIN AS MEMBER; \notowner (mathabx)
17821 \DeclareTextCommand{\textnotowner}{PU}{\9042\014}%* U+220C
17822 %* \textnotowner -> \notni (txfonts/pxfonts)
17823 % U+220D SMALL CONTAINS AS MEMBER; \smallowns (mathdesign)
17824 \DeclareTextCommand{\textsmallowns}{PU}{\9042\015}%* U+220D
17825 % U+220F N-ARY PRODUCT; \prod (LaTeX)
17826 \DeclareTextCommand{\textprod}{PU}{\9042\017}%* U+220F
17827 % U+2210 N-ARY COPRODUCT; \amalg (LaTeX)
17828 \DeclareTextCommand{\textamalg}{PU}{\9042\020}%* U+2210
17829 % U+2211 N-ARY SUMMATION; summation; \sum (LaTeX)
17830 \DeclareTextCommand{\textsum}{PU}{\9042\021}%* U+2211
17831 % U+2212 MINUS SIGN; minus
17832 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212
17833 % U+2213 MINUS-OR-PLUS SIGN; minusplus; \mp (LaTeX)
17834 \DeclareTextCommand{\textmp}{PU}{\9042\023}%* U+2213

```

17835 % U+2214 DOT PLUS; \dotplus (AmS)
17836 \DeclareTextCommand{\textdotplus}{PU}{\9042\024}%* U+2214
17837 % U+2215 DIVISION SLASH; divisionslash; \Divides (marvosym)
17838 \DeclareTextCommand{\textDivides}{PU}{\9042\025}%* U+2215
17839 % \DividesNot (marvosym)
17840 \DeclareTextCommand{\textDividesNot}{PU}{\9042\025\9040\322}%* U+2215 U+20D2
17841 % U+2216 SET MINUS; \setminus (LaTeX)
17842 \DeclareTextCommand{\textsetminus}{PU}{\9042\026}%* U+2216
17843 % U+2217 ASTERISK OPERATOR; asteriskmath; \ast (LaTeX)
17844 \DeclareTextCommand{\textast}{PU}{\9042\027}%* U+2217
17845 % U+2218 RING OPERATOR; \circ (LaTeX)
17846 \DeclareTextCommand{\textcirc}{PU}{\9042\030}%* U+2218
17847 % U+2219 BULLET OPERATOR; bulletoperator; \bullet (LaTeX)
17848 \DeclareTextCommand{\textbulletoperator}{PU}{\9042\031}% U+2219
17849 % U+221A SQUARE ROOT; radical
17850 \DeclareTextCommand{\textsqrt}{PU}{\9042\032}%* U+221A
17851 % U+221D PROPORTIONAL TO; proportional; \propto (LaTeX)
17852 \DeclareTextCommand{\textpropto}{PU}{\9042\035}%* U+221D
17853 %* \textpropto -> \varprop (wasysym)
17854 % U+221E INFINITY; infinity; \infty (LaTeX)
17855 \DeclareTextCommand{\textinfinity}{PU}{\9042\036}%* U+221E
17856 % U+2220 ANGLE; angle; \angle (LaTeX)
17857 \DeclareTextCommand{\textangle}{PU}{\9042\040}%* U+2220
17858 % U+2221 MEASURED ANGLE; \measuredangle (mathabx, MnSymbol)
17859 \DeclareTextCommand{\textmeasuredangle}{PU}{\9042\041}%* U+2221
17860 % U+2222 SPHERICAL ANGLE; \sphericalangle (AmS)
17861 \DeclareTextCommand{\textsphericalangle}{PU}{\9042\042}%* U+2222
17862 %* \textsphericalangle -> \varangle (wasysym)
17863 %* \textsphericalangle -> \Anglesign (marvosym)
17864 %* \textsphericalangle -> \AngleSign (marvosym)
17865 % U+2223 DIVIDES; divides; \mid (LaTeX)
17866 \DeclareTextCommand{\textmid}{PU}{\9042\043}%* U+2223
17867 % U+2224 DOES NOT DIVIDE; \nmid (AmS)
17868 \DeclareTextCommand{\textnmid}{PU}{\9042\044}%* U+2224
17869 %* \textnmid -> \notdivides (mathabx)
17870 % U+2225 PARALLEL TO; parallel; \parallel (LaTeX)
17871 \DeclareTextCommand{\textparallel}{PU}{\9042\045}%* U+2225
17872 % U+2226 NOT PARALLEL TO; notparallel; \nparallel (AmS)
17873 \DeclareTextCommand{\textnparallel}{PU}{\9042\046}%* U+2226
17874 %* \textnparallel -> nUpdownline (MnSymbol)
17875 % U+2227 LOGICAL AND; logicaland; \wedge (LaTeX)
17876 \DeclareTextCommand{\textwedge}{PU}{\9042\047}%* U+2227
17877 % \owedge (stmaryrd)
17878 \DeclareTextCommand{\textowedge}{PU}{\9042\047\9040\335}%* U+2227 U+20DD
17879 %* \textowedge -> \varowedge (stmaryrd)
17880 % U+2228 LOGICAL OR; logicalor; \vee (LaTeX)
17881 \DeclareTextCommand{\textvee}{PU}{\9042\050}%* U+2228
17882 % \ovee (stmaryrd)
17883 \DeclareTextCommand{\textovee}{PU}{\9042\050\9040\335}%* U+2228 U+20DD
17884 %* \textovee -> \varovee (stmaryrd)
17885 % U+2229 INTERSECTION; intersection; \cap (LaTeX)
17886 \DeclareTextCommand{\textcap}{PU}{\9042\051}%* U+2229
17887 % U+222A UNION; union; \cup (LaTeX)
17888 \DeclareTextCommand{\textcup}{PU}{\9042\052}%* U+222A

```

17889 % U+222B INTEGRAL; integral; \int (LaTeX)
17890 \DeclareTextCommand{\textint}{PU}{\9042\053}%* U+222B
17891 %* \textint -> \varint (wasysym)
17892 % U+222C DOUBLE INTEGRAL; dblintegral; \iint (AmS)
17893 \DeclareTextCommand{\textiint}{PU}{\9042\054}%* U+222C
17894 % U+222D TRIPLE INTEGRAL; \iiint (AmS)
17895 \DeclareTextCommand{\textiiint}{PU}{\9042\055}%* U+222D
17896 % U+222E CONTOUR INTEGRAL; contourintegral; \oint (LaTeX)
17897 \DeclareTextCommand{\textoint}{PU}{\9042\056}%* U+222E
17898 %* \textoint -> \varoint (wasysym)
17899 % U+222F SURFACE INTEGRAL; \oiint (wasysym)
17900 \DeclareTextCommand{\textoiint}{PU}{\9042\057}%* U+222F
17901 % U+2232 CLOCKWISE CONTOUR INTEGRAL;
17902 % \ointclockwise (txfonts/pxfonts)
17903 \DeclareTextCommand{\textointclockwise}{PU}{\9042\062}%* U+2232
17904 % U+2233 ANTICLOCKWISE CONTOUR INTEGRAL; \ointctrclockwise (tx-
    fonts/pxfonts)
17905 \DeclareTextCommand{\textointctrclockwise}{PU}{\9042\063}%* U+2233
17906 % U+2234 THEREFORE; therefore; \therefore (AmS)
17907 \DeclareTextCommand{\texttherefore}{PU}{\9042\064}%* U+2234
17908 %* \texttherefore -> uptherefore (MnSymbol)
17909 % U+2235 BECAUSE; because; \because (AmS)
17910 \DeclareTextCommand{\textbecause}{PU}{\9042\065}%* U+2235
17911 %* \textbecause -> \downtherefore (MnSymbol)
17912 % U+2236 RATIO; \vdotdot (MnSymbol)
17913 \DeclareTextCommand{\textvdotdot}{PU}{\9042\066}%* U+2236
17914 % U+2237 PROPORTION; \squaredots (MnSymbol)
17915 \DeclareTextCommand{\textsquaredots}{PU}{\9042\067}%* U+2237
17916 % U+2238 DOT MINUS; \dotminus (MnSymbol)
17917 \DeclareTextCommand{\textdotminus}{PU}{\9042\070}%* U+2238
17918 %* \textdotminus -> \textdotdiv (mathabx)
17919 % U+2239 EXCESS; \eqcolon (txfonts/pxfonts)
17920 \DeclareTextCommand{\texteqcolon}{PU}{\9042\071}%* U+2239
17921 % U+223C TILDE OPERATOR; similar; \sim (LaTeX)
17922 \DeclareTextCommand{\textsim}{PU}{\9042\074}%* U+223C
17923 %* \textsim -> \AC (wasysym)
17924 % U+223D REVERSED TILDE; reversedtilde; \backsim (AmS)
17925 \DeclareTextCommand{\textbacksim}{PU}{\9042\075}%* U+223D
17926 % \nbacksim (txfonts/pxfonts)
17927 \DeclareTextCommand{\textnbacksim}{PU}{\9042\075\83\070}%* U+223D U+0338
17928 % U+2240 WREATH PRODUCT; \wr (LaTeX)
17929 \DeclareTextCommand{\textwr}{PU}{\9042\100}%* U+2240
17930 %* \textwr -> \wreath (MnSymbol)
17931 % U+2241 NOT TILDE; \nsim (AmS)
17932 \DeclareTextCommand{\textnsim}{PU}{\9042\101}%* U+2241
17933 % U+2242 MINUS TILDE; \eqsim (MnSymbol)
17934 \DeclareTextCommand{\texteqsim}{PU}{\9042\102}%* U+2242
17935 % \neqsim (MnSymbol)
17936 \DeclareTextCommand{\textneqsim}{PU}{\9042\102\83\070}%* U+2242 U+0338
17937 % U+2243 ASYMPTOTICALLY EQUAL TO; asymptoticallyequal; \simeq (La-
    TeX)
17938 \DeclareTextCommand{\textsimeq}{PU}{\9042\103}%* U+2243
17939 % U+2244 NOT ASYMPTOTICALLY EQUAL TO; \nsimeq (txfonts/pxfonts)
17940 \DeclareTextCommand{\textnsimeq}{PU}{\9042\104}%* U+2244

```


17941 % U+2245 APPROXIMATELY EQUAL TO; approximatelyequal; \cong (LaTeX)
17942 \DeclareTextCommand{\textcong}{PU}{\9042\105}%* U+2245
17943 % U+2247 NEITHER APPROXIMATELY NOR ACTUALLY EQUAL TO;
17944 % \ncong (AmS)
17945 \DeclareTextCommand{\textncong}{PU}{\9042\107}%* U+2247
17946 % U+2248 ALMOST EQUAL TO; approxequal; \approx (LaTeX)
17947 \DeclareTextCommand{\textapprox}{PU}{\9042\110}%* U+2248
17948 % U+2249 NOT ALMOST EQUAL TO; \napprox (txfonts/pxfonts0
17949 \DeclareTextCommand{\textnapprox}{PU}{\9042\111}%* U+2249
17950 %* \textnapprox -> \nthickapprox (txfonts/pxfonts)
17951 % U+224A ALMOST EQUAL OR EQUAL TO; \approxeq (AmS)
17952 \DeclareTextCommand{\textapproxeq}{PU}{\9042\112}%* U+224A
17953 % \napproxeq (txfonts/pxfonts)
17954 \DeclareTextCommand{\textnapproxeq}{PU}{\9042\112\83\070}%* U+224A U+0338
17955 % U+224B TRIPLE TILDE; \triplesim (MnSymbol)
17956 \DeclareTextCommand{\texttriplesim}{PU}{\9042\113}%* U+224B
17957 %* \texttriplesim -> \VHF (wasysym)
17958 % \ntriplesim (MnSymbol)
17959 \DeclareTextCommand{\textntriplesim}{PU}{\9042\113\83\070}%* U+224B U+0338
17960 % U+224C ALL EQUAL TO; allequal; \backcong (MnSymbol)
17961 \DeclareTextCommand{\textbackcong}{PU}{\9042\114}%* U+224C
17962 % \nbackcong (MnSymbol)
17963 \DeclareTextCommand{\textnbackcong}{PU}{\9042\114\83\070}%* U+224C U+0338
17964 % U+224D EQUIVALENT TO; \asymp (LaTeX)
17965 \DeclareTextCommand{\textasympt}{PU}{\9042\115}%* U+224D
17966 % \nasympt (txfonts/pxfonts)
17967 \DeclareTextCommand{\textnasympt}{PU}{\9042\115\83\070}%* U+224D U+0338
17968 %* \textnasympt -> \notasympt (mathabx)
17969 % U+224E GEOMETRICALLY EQUIVALENT TO; \Bumpeq (AmS)
17970 \DeclareTextCommand{\textBumpeq}{PU}{\9042\116}%* U+224E
17971 % \nBumpeq (txfonts/pxfonts)
17972 \DeclareTextCommand{\textnBumpeq}{PU}{\9042\116\83\070}%* U+224E U+0338
17973 % U+224F DIFFERENCE BETWEEN; \bumpeq (AmS)
17974 \DeclareTextCommand{\textbumpeq}{PU}{\9042\117}%* U+224F
17975 % \nbumpeq (txfonts/pxfonts)
17976 \DeclareTextCommand{\textnbumpeq}{PU}{\9042\117\83\070}%* U+224F U+0338
17977 % U+2250 APPROACHES THE LIMIT; approaches; \doteq (LaTeX)
17978 \DeclareTextCommand{\textdoteq}{PU}{\9042\120}%* U+2250
17979 % \ndoteq (MnSymbol)
17980 \DeclareTextCommand{\textndoteq}{PU}{\9042\120\83\070}%* U+2250 U+0338
17981 % U+2251 GEOMETRICALLY EQUAL TO; geometricallyequal;
17982 % \doteqdot (AmS)
17983 \DeclareTextCommand{\textdoteqdot}{PU}{\9042\121}%* U+2251
17984 %* \textdoteqdot -> \Doteq (MnSymbol)
17985 % \nDoteq (MnSymbol)
17986 \DeclareTextCommand{\textnDoteq}{PU}{\9042\121\83\070}%* U+2251 U+0338
17987 % U+2252 APPROXIMATELY EQUAL TO OR THE IMAGE OF; approx-
qualorimage;
17988 % \fallingdotseq (AmS)
17989 \DeclareTextCommand{\textfallingdoteq}{PU}{\9042\122}%* U+2252
17990 % \nfallingdotseq (MnSymbol)
17991 \DeclareTextCommand{\textnfallingdoteq}{PU}{\9042\122\83\070}%* U+2252 U+0338
17992 % U+2253 IMAGE OF OR APPROXIMATELY EQUAL TO; imageorapproxi-
matelyequal;

```

17993 % \risingdotseq (AmS)
17994 \DeclareTextCommand{\textrisingdoteq}{PU}{\9042\123}%* U+2253
17995 % \nrisingdoteq (MnSymbol)
17996 \DeclareTextCommand{\textnrisingdoteq}{PU}{\9042\123\83\070}%* U+2253 U+0338
17997 % U+2254 COLON EQUALS; \colonequals (colonequals)
17998 \DeclareTextCommand{\textcolonequals}{PU}{\9042\124}%* U+2254
17999 % U+2255 EQUALS COLON; \equalscolon (colonequals)
18000 \DeclareTextCommand{\textequalscolon}{PU}{\9042\125}%* U+2255
18001 % U+2256 RING IN EQUAL TO; \eqcirc (AmS)
18002 \DeclareTextCommand{\texteqcirc}{PU}{\9042\126}%* U+2256
18003 % \neqcirc (MnSymbol)
18004 \DeclareTextCommand{\textneqcirc}{PU}{\9042\126\83\070}%* U+2256 U+0338
18005 % U+2257 RING EQUAL TO; \circeq (AmS)
18006 \DeclareTextCommand{\textcirceq}{PU}{\9042\127}%* U+2257
18007 % \ncirceq (MnSymbol)
18008 \DeclareTextCommand{\textncirceq}{PU}{\9042\127\83\070}%* U+2257 U+0338
18009 % U+2259 ESTIMATES; \hateq (MnSymbol)
18010 \DeclareTextCommand{\texthateq}{PU}{\9042\131}%* U+2259
18011 %* \texthateq -> \corresponds (mathabx)
18012 %* \texthateq -> \Corresponds (marvosym)
18013 % \nhateq (MnSymbol)
18014 \DeclareTextCommand{\textnhateq}{PU}{\9042\131\83\070}%* U+2259 U+0338
18015 % U+225C DELTA EQUAL TO; \triangleeq (AmS)
18016 \DeclareTextCommand{\texttriangleeq}{PU}{\9042\134}%* U+225C
18017 % U+2260 NOT EQUAL TO; notequal; \ne (LaTeX), \neq (LaTeX)
18018 \DeclareTextCommand{\textneq}{PU}{\9042\140}%* U+2260
18019 \DeclareTextCommand{\textne}{PU}{\9042\140}%* U+2260
18020 %* \textneq -> \nequal (MnSymbol)
18021 % U+2261 IDENTICAL TO; equivalence; \equiv (LaTeX)
18022 \DeclareTextCommand{\textequiv}{PU}{\9042\141}%* U+2261
18023 %* \textequiv -> \Congruent (marvosym)
18024 % U+2262 NOT IDENTICAL TO; notidentical; \nequiv (txfonts/pxfonts)
18025 \DeclareTextCommand{\textnequiv}{PU}{\9042\142}%* U+2262
18026 %* \textnequiv -> \NotCongruent (marvosym)
18027 %* \textnequiv -> \notequiv (mathabx)
18028 % U+2264 LESS-THAN OR EQUAL TO; lessequal; \le (LaTeX), \leq (LaTeX)
18029 \DeclareTextCommand{\textleq}{PU}{\9042\144}%* U+2264
18030 \DeclareTextCommand{\textile}{PU}{\9042\144}%* U+2264
18031 %* \textleq -> \LessOrEqual (marvosym)
18032 % U+2265 GREATER-THAN OR EQUAL TO; greaterequal;
18033 % \ge (LaTeX), \geq (LaTeX)
18034 \DeclareTextCommand{\textgeq}{PU}{\9042\145}%* U+2265
18035 \DeclareTextCommand{\textge}{PU}{\9042\145}%* U+2265
18036 %* \textgeq -> \LargerOrEqual (marvosym)
18037 % U+2266 LESS-THAN OVER EQUAL TO; lessoverequal; \leqq (AmS)
18038 \DeclareTextCommand{\textleqq}{PU}{\9042\146}%* U+2266
18039 % \nleqq (txfonts/pxfonts)
18040 \DeclareTextCommand{\textnleqq}{PU}{\9042\146\83\070}%* U+2266 U+0338
18041 % U+2267 GREATER-THAN OVER EQUAL TO; greateroverequal; \geqq (AmS)
18042 \DeclareTextCommand{\textgeqq}{PU}{\9042\147}%* U+2267
18043 % \ngeqq (txfonts/pxfonts)
18044 \DeclareTextCommand{\textngeqq}{PU}{\9042\147\83\070}%* U+2267 U+0338
18045 % U+2268 LESS-THAN BUT NOT EQUAL TO; \lneqq (AmS)
18046 \DeclareTextCommand{\textlneqq}{PU}{\9042\150}%* U+2268

```

18047 % U+2269 GREATER-THAN BUT NOT EQUAL TO; \gneqq (AmS)
 18048 \DeclareTextCommand{\textgneqq}{PU}{\9042\151}%* U+2269
 18049 % U+226A MUCH LESS-THAN; muchless; \ll (LaTeX)
 18050 \DeclareTextCommand{\textll}{PU}{\9042\152}%* U+226A
 18051 % \ll (txfonts/pxfonts)
 18052 \DeclareTextCommand{\textnll}{PU}{\9042\152\83\070}%* U+226A U+0338
 18053 % U+226B MUCH GREATER-THAN; muchgreater; \gg (LaTeX)
 18054 \DeclareTextCommand{\textgg}{PU}{\9042\153}%* U+226B
 18055 % \gg (txfonts/pxfonts)
 18056 \DeclareTextCommand{\textngg}{PU}{\9042\153\83\070}%* U+226B U+0338
 18057 % U+226C BETWEEN; \between (AmS)
 18058 \DeclareTextCommand{\textbetween}{PU}{\9042\154}%* U+226C
 18059 % U+226E NOT LESS-THAN; notless; \nless (AmS)
 18060 \DeclareTextCommand{\textnless}{PU}{\9042\156}%* U+226E
 18061 % U+226F NOT GREATER-THAN; notgreater; \ngtr (AmS)
 18062 \DeclareTextCommand{\textngtr}{PU}{\9042\157}%* U+226F
 18063 % U+2270 NEITHER LESS-THAN NOR EQUAL TO; notlessnorequal;
 18064 % \nleq (AmS)
 18065 \DeclareTextCommand{\textnleq}{PU}{\9042\160}%* U+2270
 18066 % U+2271 NEITHER GREATER-THAN NOR EQUAL TO; notgreaternorequal;
 18067 % \ngeq (AmS)
 18067 \DeclareTextCommand{\textngeq}{PU}{\9042\161}%* U+2271
 18068 % U+2272 LESS-THAN OR EQUIVALENT TO; lessorequivalent; \lessim (AmS)
 18069 \DeclareTextCommand{\textlessim}{PU}{\9042\162}%* U+2272
 18070 %* $\textlessim \rightarrow \text{apprle}$ (wasysym)
 18071 % U+2273 GREATER-THAN OR EQUIVALENT TO; greaterorequivalent; \gtrsim
 18072 % (AmS)
 18072 \DeclareTextCommand{\textgtrsim}{PU}{\9042\163}%* U+2273
 18073 %* $\textgtrsim \rightarrow \text{apprge}$ (wasysym)
 18074 % U+2274 NEITHER LESS-THAN NOR EQUIVALENT TO; \nlessim (tx-
 18075 % fonts/pxfonts)
 18075 \DeclareTextCommand{\textnlessim}{PU}{\9042\164}%* U+2274
 18076 % U+2275 NEITHER GREATER-THAN NOR EQUIVALENT TO; \ngtrsim (tx-
 18077 % fonts/pxfonts)
 18077 \DeclareTextCommand{\textngtrsim}{PU}{\9042\165}%* U+2275
 18078 % U+2276 LESS-THAN OR GREATER-THAN; lessorgreater; \lessgtr (AmS)
 18079 \DeclareTextCommand{\textlessgtr}{PU}{\9042\166}%* U+2276
 18080 % U+2277 GREATER-THAN OR LESS-THAN; greaterorless; \gtrless (AmS)
 18081 \DeclareTextCommand{\textgtrless}{PU}{\9042\167}%* U+2277
 18082 % U+2278 NEITHER LESS-THAN NOR GREATER-THAN; \ngtrless (tx-
 18083 % fonts/pxfonts)
 18083 \DeclareTextCommand{\textngtrless}{PU}{\9042\170}%* U+2278
 18084 % U+2279 NEITHER GREATER-THAN NOR LESS-THAN; \nlessgtr (tx-
 18085 % fonts/pxfonts)
 18085 \DeclareTextCommand{\textnlessgtr}{PU}{\9042\171}%* U+2279
 18086 % U+227A PRECEDES; precedes; \prec (LaTeX)
 18087 \DeclareTextCommand{\textprec}{PU}{\9042\172}%* U+227A
 18088 % U+227B SUCCEEDS; succeeds; \succ (LaTeX)
 18089 \DeclareTextCommand{\textsucc}{PU}{\9042\173}%* U+227B
 18090 % U+227C PRECEDES OR EQUAL TO; \preccurlyeq (AmS)
 18091 \DeclareTextCommand{\textpreccurlyeq}{PU}{\9042\174}%* U+227C
 18092 % U+227D SUCCEEDS OR EQUAL TO; \succcurlyeq (AmS)
 18093 \DeclareTextCommand{\textsuccurlyeq}{PU}{\9042\175}%* U+227D
 18094 % U+227E PRECEDES OR EQUIVALENT TO; \precsim (AmS)

```

18095 \DeclareTextCommand{\textprecsim}{PU}{\9042\176}%* U+227E
18096 % \nprecsim (txfonts/pxfonts)
18097 \DeclareTextCommand{\textnprecsim}{PU}{\9042\176\83\070}%* U+227E U+0338
18098 % U+227F SUCCEEDS OR EQUIVALENT TO; \succsim (AmS)
18099 \DeclareTextCommand{\textsuccsim}{PU}{\9042\177}%* U+227F
18100 % \nsuccsim (txfonts/pxfonts)
18101 \DeclareTextCommand{\textnsuccsim}{PU}{\9042\177\83\070}%* U+227F U+0338
18102 % U+2280 DOES NOT PRECEDE; notprecedes; \nprec (AmS)
18103 \DeclareTextCommand{\textnprec}{PU}{\9042\200}%* U+2280
18104 % U+2281 DOES NOT SUCCEED; notsucceeds; \nsucc (AmS)
18105 \DeclareTextCommand{\textnsucc}{PU}{\9042\201}%* U+2281
18106 % U+2282 SUBSET OF; propersubset; \subset (LaTeX)
18107 \DeclareTextCommand{\textsubset}{PU}{\9042\202}%* U+2282
18108 % U+2283 SUPERSET OF; propersuperset; \supset (LaTeX)
18109 \DeclareTextCommand{\textsupset}{PU}{\9042\203}%* U+2283
18110 % U+2284 NOT A SUBSET OF; notsubset; \nsubset (mathabx)
18111 \DeclareTextCommand{\textnsubset}{PU}{\9042\204}%* U+2284
18112 % U+2285 NOT A SUPERSET OF; notsuperset; \nsupset (mathabx)
18113 \DeclareTextCommand{\textnsupset}{PU}{\9042\205}%* U+2285
18114 % U+2286 SUBSET OF OR EQUAL TO; reflexsubset; \subseteq (LaTeX)
18115 \DeclareTextCommand{\textsubseteq}{PU}{\9042\206}%* U+2286
18116 % U+2287 SUPERSET OF OR EQUAL TO; reflexsuperset; \supseteq (LaTeX)
18117 \DeclareTextCommand{\textsupseteq}{PU}{\9042\207}%* U+2287
18118 % U+2288 NEITHER A SUBSET OF NOR EQUAL TO; \nsubseteq (AmS)
18119 \DeclareTextCommand{\textnsubseteq}{PU}{\9042\210}%* U+2288
18120 % U+2289 NEITHER A SUPERSET OF NOR EQUAL TO; \nsupseteq (AmS)
18121 \DeclareTextCommand{\textnsupseteq}{PU}{\9042\211}%* U+2289
18122 % U+228A SUBSET OF WITH NOT EQUAL TO; subsetnotequal; \subsetneq
      neq (AmS)
18123 \DeclareTextCommand{\textsubsetneq}{PU}{\9042\212}%* U+228A
18124 % U+228B SUPERSET OF WITH NOT EQUAL TO; supersetnotequal; \supsetneq
      neq (AmS)
18125 \DeclareTextCommand{\textsupsetneq}{PU}{\9042\213}%* U+228B
18126 % U+228D MULTISSET MULTIPLICATION; \cupdot (MnSymbol)
18127 \DeclareTextCommand{\textcupdot}{PU}{\9042\215}%* U+228D
18128 % U+228E MULTISSET UNION; \cupplus (MnSymbol)
18129 \DeclareTextCommand{\textcupplus}{PU}{\9042\216}%* U+228E
18130 % U+228F SQUARE IMAGE OF; \sqsubset (latexsym, ...)
18131 \DeclareTextCommand{\textsqsubset}{PU}{\9042\217}%* U+228F
18132 % \nsqsubset (txfonts/pxfonts)
18133 \DeclareTextCommand{\textnsqsubset}{PU}{\9042\217\83\070}%* U+228F U+0338
18134 % U+2290 SQUARE ORIGINAL OF; \sqsupset (latexsym, ...)
18135 \DeclareTextCommand{\textsqsupset}{PU}{\9042\220}%* U+2290
18136 % \nsqsupset (txfonts/pxfonts)
18137 \DeclareTextCommand{\textnsqsupset}{PU}{\9042\220\83\070}%* U+2290 U+0338
18138 % U+2291 SQUARE IMAGE OF OR EQUAL TO; \sqsubseteq (LaTeX)
18139 \DeclareTextCommand{\textsqsubseteq}{PU}{\9042\221}%* U+2291
18140 % \nsqsubseteq (txfonts/pxfonts)
18141 \DeclareTextCommand{\textnsqsubseteq}{PU}{\9042\221\83\070}%* U+2291 U+0338
18142 % U+2292 SQUARE ORIGINAL OF OR EQUAL TO; \sqsupseteq (LaTeX)
18143 \DeclareTextCommand{\textsqsupseteq}{PU}{\9042\222}%* U+2292
18144 % \nsqsupseteq (txfonts/pxfonts)
18145 \DeclareTextCommand{\textnsqsupseteq}{PU}{\9042\222\83\070}%* U+2292 U+0338
18146 % U+2293 SQUARE CAP; \sqcap (LaTeX)

```

```

18147 \DeclareTextCommand{\textsqcap}{PU}{\9042\223}%* U+2293
18148 % U+2294 SQUARE CUP; \sqcup (LaTeX)
18149 \DeclareTextCommand{\textsqcup}{PU}{\9042\224}%* U+2294
18150 % U+2295 CIRCLED PLUS; circleplus; \oplus (LaTeX)
18151 \DeclareTextCommand{\textoplus}{PU}{\9042\225}%* U+2295
18152 %* \textoplus -> \varoplus (stmaryrd)
18153 % U+2296 CIRCLED MINUS; minuscircle; \ominus (LaTeX)
18154 \DeclareTextCommand{\textominus}{PU}{\9042\226}%* U+2296
18155 %* \textominus -> \varominus (stmaryrd)
18156 % U+2297 CIRCLED TIMES; circlemultiply; \otimes (LaTeX)
18157 \DeclareTextCommand{\textotimes}{PU}{\9042\227}%* U+2297
18158 %* \textotimes -> \varotimes (stmaryrd)
18159 % U+2298 CIRCLED DIVISION SLASH; \oslash (LaTeX)
18160 \DeclareTextCommand{\textoslash}{PU}{\9042\230}%* U+2298
18161 %* \textoslash -> \varoslash (stmaryrd)
18162 % U+2299 CIRCLED DOT OPERATOR; circle(d?)ot; \odot (LaTeX)
18163 \DeclareTextCommand{\textodot}{PU}{\9042\231}%* U+2299
18164 %* \textodot -> \varodot (stmaryrd)
18165 % U+229A CIRCLED RING OPERATOR; \circledcirc (AmS)
18166 \DeclareTextCommand{\textcircledcirc}{PU}{\9042\232}%* U+229A
18167 %* \textcircledcirc -> \ocirc (mathabx)
18168 %* \textcircledcirc -> \varocircle (stmaryrd)
18169 % U+229B CIRCLED ASTERISK OPERATOR; \circledast (AmS)
18170 \DeclareTextCommand{\textcircledast}{PU}{\9042\233}%* U+229B
18171 %* \textcircledast -> \varoast (stmaryrd)
18172 %* \textcircledast -> \oasterisk (mathabx)
18173 % U+229D CIRCLED DASH; \circleddash (AmS)
18174 \DeclareTextCommand{\textcircleddash}{PU}{\9042\235}%* U+229D
18175 % U+229E SQUARED PLUS; \boxplus (AmS)
18176 \DeclareTextCommand{\textboxplus}{PU}{\9042\236}%* U+229E
18177 % U+229F SQUARED MINUS; \boxminus (AmS)
18178 \DeclareTextCommand{\textboxminus}{PU}{\9042\237}%* U+229F
18179 % U+22A0 SQUARED TIMES; \boxtimes (AmS)
18180 \DeclareTextCommand{\textboxtimes}{PU}{\9042\240}%* U+22A0
18181 % U+22A1 SQUARED DOT OPERATOR; \boxdot (AmS)
18182 \DeclareTextCommand{\textboxdot}{PU}{\9042\241}%* U+22A1
18183 % U+22A2 RIGHT TACK; \vdash (LaTeX)
18184 \DeclareTextCommand{\textvdash}{PU}{\9042\242}%* U+22A2
18185 %* \textvdash -> \rightvdash (MnSymbol)
18186 % U+22A3 LEFT TACK; \dashleftarrow; \dashv (LaTeX)
18187 \DeclareTextCommand{\textdashv}{PU}{\9042\243}%* U+22A3
18188 %* \textdashv -> \leftvdash (MnSymbol)
18189 % \ndashv (mathabx)
18190 \DeclareTextCommand{\textndashv}{PU}{\9042\243\83\070}%* U+22A3 U+0338
18191 %* \textndashv -> \nleftvdash (MnSymbol)
18192 % U+22A4 DOWN TACK (=top); \tackdown; \top (LaTeX)
18193 \DeclareTextCommand{\textttop}{PU}{\9042\244}%* U+22A4
18194 %* \textttop -> \downvdash (MnSymbol)
18195 % \ndownvdash (MnSymbol)
18196 \DeclareTextCommand{\textndownvdash}{PU}{\9042\244\83\070}%* U+22A4 U+0338
18197 % U+22A5 UP TACK (=base, bottom); \bot (LaTeX)
18198 \DeclareTextCommand{\textbot}{PU}{\9042\245}%* U+22A5
18199 %* \textbot -> \upvdash (MnSymbol)
18200 % \nupvdash (MnSymbol)

```

```

18201 \DeclareTextCommand{\textnupvdash}{PU}{\9042\245\83\070}%* U+22A5 U+0338
18202 %* \textnupvdash -> \nperp (MnSymbol)
18203 % U+22A8 TRUE; \vdash (AmS)
18204 \DeclareTextCommand{\textvDash}{PU}{\9042\250}%* U+22A8
18205 %* \textvDash -> \models (LaTeX)
18206 %* \textvDash -> \rightmodels (MnSymbol)
18207 % U+22A9 FORCES; \Vdash (AmS)
18208 \DeclareTextCommand{\textVdash}{PU}{\9042\251}%* U+22A9
18209 %* \textVdash -> \rightVdash (MnSymbol)
18210 % U+22AA TRIPLE VERTICAL BAR RIGHT TURNSTILE; \Vvdash (AmS)
18211 \DeclareTextCommand{\textVvdash}{PU}{\9042\252}%* U+22AA
18212 % \nVdash (mathabx)
18213 \DeclareTextCommand{\textnVdash}{PU}{\9042\252\83\070}%* U+22AA U+0338
18214 % U+22AB DOUBLE VERTICAL BAR DOUBLE RIGHT TURNSTILE;
18215 % \VDash (mathabx)
18216 \DeclareTextCommand{\textVDash}{PU}{\9042\253}%* U+22AB
18217 %* \textVDash -> \rightModels (MnSymbol)
18218 % U+22AC DOES NOT PROVE; \nvdash (AmS)
18219 \DeclareTextCommand{\textnvdash}{PU}{\9042\254}%* U+22AC
18220 %* \textnvdash -> \nrightrvdash (MnSymbol)
18221 % U+22AD NOT TRUE; \nvDash (AmS)
18222 \DeclareTextCommand{\textnvDash}{PU}{\9042\255}%* U+22AD
18223 %* \textnvDash -> \nrightrmodels (MnSymbol)
18224 %* \textnvDash -> \nmodels (MnSymbol)
18225 % U+22AE DOES NOT FORCE; \nVdash (txfonts/pxfonts)
18226 \DeclareTextCommand{\textnVdash}{PU}{\9042\256}%* U+22AE
18227 %* \textnVdash -> \nrightrVdash (MnSymbol)
18228 % U+22AF NEGATED DOUBLE VERTICAL BAR DOUBLE RIGHT TURN-
      STILE; \nVDash (AmS)
18229 \DeclareTextCommand{\textnVDash}{PU}{\9042\257}%* U+22AF
18230 %* \textnVDash -> \nrightrModels (MnSymbol)
18231 % U+22B2 NORMAL SUBGROUP OF; \lhd (latexsym, ...)
18232 \DeclareTextCommand{\textlhd}{PU}{\9042\262}%* U+22B2
18233 %* \textlhd -> \lessclosed (MnSymbol)
18234 % U+22B3 CONTAINS AS NORMAL SUBGROUP; \rhd (latexsym, ...)
18235 \DeclareTextCommand{\textrhd}{PU}{\9042\263}%* U+22B3
18236 %* \textrhd -> \gtrclosed (MnSymbol)
18237 % U+22B4 NORMAL SUBGROUP OF OR EQUAL TO; \unlhd (latexsym, ...)
18238 \DeclareTextCommand{\textunlhd}{PU}{\9042\264}%* U+22B4
18239 %* \textunlhd -> \leqclosed (MnSymbol)
18240 %* \textunlhd -> \trianglelefteq (MnSymbol)
18241 % U+22B5 CONTAINS AS NORMAL SUBGROUP OR EQUAL TO; \unrhd (la-
      texsym, ...)
18242 \DeclareTextCommand{\textunrhd}{PU}{\9042\265}%* U+22B5
18243 %* \textunrhd -> \geqclosed (MnSymbol)
18244 %* \textunrhd -> \trianglerighteq (MnSymbol)
18245 % U+22B6 ORIGINAL OF; \multimapdotbothA (txfonts/pxfonts)
18246 \DeclareTextCommand{\textmultimapdotbothA}{PU}{\9042\266}%* U+22B6
18247 % U+22B7 IMAGE OF; \multimapdotbothB (txfonts/pxfonts)
18248 \DeclareTextCommand{\textmultimapdotbothB}{PU}{\9042\267}%* U+22B7
18249 % U+22B8 MULTIMAP; \multimap (AmS, txfonts/pxfonts)
18250 \DeclareTextCommand{\textmultimap}{PU}{\9042\270}%* U+22B8
18251 % U+22BB XOR; \veebar (AmS)
18252 \DeclareTextCommand{\textveebar}{PU}{\9042\273}%* U+22BB

```

```

18253 % U+22BC NAND; \barwedge (mathabx)
18254 \DeclareTextCommand{\textbarwedge}{PU}{\9042\274}%* U+22BC
18255 % U+22C6 STAR OPERATOR; \star (LaTeX)
18256 \DeclareTextCommand{\textstar}{PU}{\9042\306}%* U+22C6
18257 % U+22C7 DIVISION TIMES; \divideontimes (AmS)
18258 \DeclareTextCommand{\textdivideontimes}{PU}{\9042\307}%* U+22C7
18259 % U+22C8 BOWTIE; \bowtie (LaTeX)
18260 \DeclareTextCommand{\textbowtie}{PU}{\9042\310}%* U+22C8
18261 %* \textbowtie -> \Bowtie (wasysym)
18262 % U+22C9 LEFT NORMAL FACTOR SEMIDIRECT PRODUCT; \ltimes (AmS)
18263 \DeclareTextCommand{\textltimes}{PU}{\9042\311}%* U+22C9
18264 % U+22CA RIGHT NORMAL FACTOR SEMIDIRECT PRODUCT;
18265 % \rtimes (AmS)
18266 \DeclareTextCommand{\textrtimes}{PU}{\9042\312}%* U+22CA
18267 % U+22CB LEFT SEMIDIRECT PRODUCT; \leftthreetimes (AmS)
18268 \DeclareTextCommand{\textleftthreetimes}{PU}{\9042\313}%* U+22CB
18269 % U+22CC RIGHT SEMIDIRECT PRODUCT; \rightthreetimes (AmS)
18270 \DeclareTextCommand{\textrightthreetimes}{PU}{\9042\314}%* U+22CC
18271 % U+22CD REVERSED TILDE EQUALS; \backsimeq (AmS)
18272 \DeclareTextCommand{\textbacksimeq}{PU}{\9042\315}%* U+22CD
18273 % \nbacksimeq (txfonts/pxfonts)
18274 \DeclareTextCommand{\textnbacksimeq}{PU}{\9042\315\83\070}%* U+22CD U+0338
18275 % U+22CE CURLY LOGICAL OR; curlyor; \curlyvee (AmS)
18276 \DeclareTextCommand{\textcurlyvee}{PU}{\9042\316}%* U+22CE
18277 %* \textcurlyvee -> \varcurlyvee (stmaryrd)
18278 % U+22CF CURLY LOGICAL AND; curlyand; \curlywedge (AmS)
18279 \DeclareTextCommand{\textcurlywedge}{PU}{\9042\317}%* U+22CF
18280 %* \textcurlywedge -> \varcurlywedge (stmaryrd)
18281 % U+22D0 DOUBLE SUBSET; \Subset (AmS)
18282 \DeclareTextCommand{\textSubset}{PU}{\9042\320}%* U+22D0
18283 % \nSubset (txfonts/pxfonts)
18284 \DeclareTextCommand{\textnSubset}{PU}{\9042\320\83\070}%* U+22D0 U+0338
18285 % U+22D1 DOUBLE SUPERSET; \Supset (AmS)
18286 \DeclareTextCommand{\textSupset}{PU}{\9042\321}%* U+22D1
18287 % \nSupset (txfonts/pxfonts)
18288 \DeclareTextCommand{\textnSupset}{PU}{\9042\321\83\070}%* U+22D1 U+0338
18289 % U+22D2 DOUBLE INTERSECTION; \Cap (AmS)
18290 \DeclareTextCommand{\textCap}{PU}{\9042\322}%* U+22D2
18291 %* \textCap -> \doublecap (mathabx)
18292 % U+22D3 DOUBLE UNION; \Cup (AmS)
18293 \DeclareTextCommand{\textCup}{PU}{\9042\323}%* U+22D3
18294 %* \textCup -> \doublecup (mathabx)
18295 % U+22D4 PITCHFORK; \pitchfork (mathabx)
18296 \DeclareTextCommand{\textpitchfork}{PU}{\9042\324}%* U+22D4
18297 % U+22D6 LESS-THAN WITH DOT; \lessdot (AmS)
18298 \DeclareTextCommand{\textlessdot}{PU}{\9042\326}%* U+22D6
18299 % U+22D7 GREATER-THAN WITH DOT; \gtrdot (AmS)
18300 \DeclareTextCommand{\textgtrdot}{PU}{\9042\327}%* U+22D7
18301 % U+22D8 VERY MUCH LESS-THAN; \lll (AmS)
18302 \DeclareTextCommand{\textlll}{PU}{\9042\330}%* U+22D8
18303 % U+22D9 VERY MUCH GREATER-THAN; \ggg (AmS)
18304 \DeclareTextCommand{\textggg}{PU}{\9042\331}%* U+22D9
18305 % U+22DA LESS-THAN EQUAL TO OR GREATER-THAN; lessequalorgreater;
18306 % \lesseqgtr (AmS)

```

```

18307 \DeclareTextCommand{\textlesseqgtr}{PU}{\9042\332}%* U+22DA
18308 % U+22DB GREATER-THAN EQUAL TO OR LESS-THAN; greaterqualorless;
18309 % \gtreqless (AmS)
18310 \DeclareTextCommand{\textgtreqless}{PU}{\9042\333}%* U+22DB
18311 % U+22DE EQUAL TO OR PRECEDES; \curlyeqprec (MnSymbol)
18312 \DeclareTextCommand{\textcurlyeqprec}{PU}{\9042\336}%* U+22DE
18313 % \ncurlyeqprec (mathabx)
18314 \DeclareTextCommand{\textncurlyeqprec}{PU}{\9042\336\83\070}%* U+22DE U+0338
18315 % U+22DF EQUAL TO OR SUCCEEDS; \curlyeqsucc (MnSymbol)
18316 \DeclareTextCommand{\textcurlyeqsucc}{PU}{\9042\337}%* U+22DF
18317 % \ncurlyeqsucc (mathabx)
18318 \DeclareTextCommand{\textncurlyeqsucc}{PU}{\9042\337\83\070}%* U+22DF U+0338
18319 % U+22E0 DOES NOT PRECEDE OR EQUAL; \npreccurlyeq (txfonts/pxfonts)
18320 \DeclareTextCommand{\textnpreccurlyeq}{PU}{\9042\340}%* U+22E0
18321 % U+22E1 DOES NOT SUCCEED OR EQUAL; \nsucccurlyeq (txfonts/pxfonts)
18322 \DeclareTextCommand{\textnsucccurlyeq}{PU}{\9042\341}%* U+22E1
18323 % U+22E2 NOT SQUARE IMAGE OF OR EQUAL TO; \nsqsubseteq (tx-
      fonts/pxfonts)
18324 \DeclareTextCommand{\textnqsubseteq}{PU}{\9042\342}%* U+22E2
18325 % U+22E3 NOT SQUARE ORIGINAL OF OR EQUAL TO; \nsqsupseteq (tx-
      fonts/pxfonts)
18326 \DeclareTextCommand{\textnqsupseteq}{PU}{\9042\343}%* U+22E3
18327 % U+22E4 SQUARE IMAGE OF OR NOT EQUAL TO; \sqsubsetneq (mathabx)
18328 \DeclareTextCommand{\textsqsubsetneq}{PU}{\9042\344}%* U+22E4
18329 %* \textsqsubsetneq -> \varsqsubsetneq (mathabx)
18330 % U+22E5 SQUARE ORIGINAL OF OR NOT EQUAL TO; \sqsupsetneq (math-
      abx)
18331 \DeclareTextCommand{\textsqsupsetneq}{PU}{\9042\345}%* U+22E5
18332 %* \textsqsupsetneq -> \varsqsupsetneq (mathabx)
18333 % U+22E6 LESS-THAN BUT NOT EQUIVALENT TO; \lnsim (AmS)
18334 \DeclareTextCommand{\textlnsim}{PU}{\9042\346}%* U+22E6
18335 % U+22E7 GREATER-THAN BUT NOT EQUIVALENT TO; \gnsim (AmS)
18336 \DeclareTextCommand{\textgnsim}{PU}{\9042\347}%* U+22E7
18337 % U+22E8 PRECEDES BUT NOT EQUIVALENT TO; \precsim (AmS)
18338 \DeclareTextCommand{\textprecsim}{PU}{\9042\350}%* U+22E8
18339 % U+22E9 SUCCEEDS BUT NOT EQUIVALENT TO; \succsim (AmS)
18340 \DeclareTextCommand{\textsuccsim}{PU}{\9042\351}%* U+22E9
18341 % U+22EA NOT NORMAL SUBGROUP OF; \ntriangleleft (AmS)
18342 \DeclareTextCommand{\textntriangleleft}{PU}{\9042\352}%* U+22EA
18343 %* \textntriangleleft -> \nlessclosed (MnSymbol)
18344 % U+22EB DOES NOT CONTAIN AS NORMAL SUBGROUP; \ntriangleright-
      leright (AmS)
18345 \DeclareTextCommand{\textntriangleright}{PU}{\9042\353}%* U+22EB
18346 %* \textntriangleright -> \ngtrclosed (MnSymbol)
18347 % U+22EC NOT NORMAL SUBGROUP OF OR EQUAL TO;
18348 % \ntrianglelefteq (AmS)
18349 \DeclareTextCommand{\textntrianglelefteq}{PU}{\9042\354}%* U+22EC
18350 % U+22ED DOES NOT CONTAIN AS NORMAL SUBGROUP OR EQUAL;
18351 % \ntrianglerighteq (AmS)
18352 \DeclareTextCommand{\textntrianglerighteq}{PU}{\9042\355}%* U+22ED
18353 %* \textntrianglerighteq -> \textngeqclosed
18354 % U+22EE VERTICAL ELLIPSIS; ellipsisvertical; \vdots (LaTeX)
18355 \DeclareTextCommand{\textvdots}{PU}{\9042\356}%* U+22EE
18356 % U+22EF MIDLINE HORIZONTAL ELLIPSIS; \cdots (LaTeX)

```


18357 \DeclareTextCommand{\textcdots}{PU}{\9042\357}%* U+22EF
 18358 % U+22F0 UP RIGHT DIAGONAL ELLIPSIS; \udots (MnSymbol)
 18359 \DeclareTextCommand{\textudots}{PU}{\9042\360}%* U+22F0
 18360 % U+22F1 DOWN RIGHT DIAGONAL ELLIPSIS; \ddots (LaTeX)
 18361 \DeclareTextCommand{\textddots}{PU}{\9042\361}%* U+22F1
 18362 % U+22F6 ELEMENT OF WITH OVERBAR; \barin (mathabx)
 18363 \DeclareTextCommand{\textbarin}{PU}{\9042\366}%* U+22F6

47.2.23 Miscellaneous Technical: U+2300 to U+23FF

18364 % U+2300 DIAMETER SIGN; \diameter (mathabx,wasysym)
 18365 \DeclareTextCommand{\textdiameter}{PU}{\9043\000}%* U+2300
 18366 % U+2310 REVERSED NOT SIGN; \backneg (MnSymbol)
 18367 \DeclareTextCommand{\textbackneg}{PU}{\9043\020}%* U+2310
 18368 % U+2311 SQUARE LOZENGE; \wasylozenge (wasysym)
 18369 \DeclareTextCommand{\textwasylozenge}{PU}{\9043\021}%* U+2311
 18370 % U+2319 TURNED NOT SIGN; \invbackneg (MnSymbol)
 18371 \DeclareTextCommand{\textinvbackneg}{PU}{\9043\031}%* U+2319
 18372 % U+231A WATCH; \clock (wasysym)
 18373 \DeclareTextCommand{\textclock}{PU}{\9043\032}%* U+231A
 18374 %* \textclock -> \Clocklogo (marvosym)
 18375 %* \textclock -> \ClockLogo (marvosym)
 18376 % U+231C TOP LEFT CORNER; \ulcorner (AmS)
 18377 \DeclareTextCommand{\textulcorner}{PU}{\9043\034}%* U+231C
 18378 % U+231D TOP RIGHT CORNER; \urcorner (AmS)
 18379 \DeclareTextCommand{\texturcorner}{PU}{\9043\035}%* U+231D
 18380 % U+231E BOTTOM LEFT CORNER; \llcorner (AmS)
 18381 \DeclareTextCommand{\textllcorner}{PU}{\9043\036}%* U+231E
 18382 % U+231F BOTTOM RIGHT CORNER; \lrcorner (AmS)
 18383 \DeclareTextCommand{\textlrcorner}{PU}{\9043\037}%* U+231F
 18384 % U+2322 FROWN; \frown (LaTeX)
 18385 \DeclareTextCommand{\textfrown}{PU}{\9043\042}%* U+2322
 18386 % U+2323 SMILE; \smile (LaTeX)
 18387 \DeclareTextCommand{\textsmile}{PU}{\9043\043}%* U+2323
 18388 % U+2328 KEYBOARD; \Keyboard (marvosym)
 18389 \DeclareTextCommand{\textKeyboard}{PU}{\9043\050}%* U+2328
 18390 % U+2329 LEFT-POINTING ANGLE BRACKET; \angleleft; \angle (LaTeX)
 18391 \DeclareTextCommand{\textlangle}{PU}{\9043\051}%* U+2329
 18392 % U+232A RIGHT-POINTING ANGLE BRACKET; \angleright; \rangle (LaTeX)
 18393 \DeclareTextCommand{\textrangle}{PU}{\9043\052}%* U+232A
 18394 % U+2339 APL FUNCTIONAL SYMBOL QUAD DIVIDE; \APLinv (wasysym)
 18395 \DeclareTextCommand{\textAPLinv}{PU}{\9043\071}%* U+2339
 18396 % U+233C APL FUNCTIONAL SYMBOL QUAD CIRCLE; \Tumbler (marvosym)
 18397 \DeclareTextCommand{\textTumbler}{PU}{\9043\074}%* U+233C
 18398 % U+233D APL FUNCTIONAL SYMBOL CIRCLE STILE; \baro (stmaryrd)
 18399 \DeclareTextCommand{\textstmaryrdbaro}{PU}{\9043\075}%* U+233D
 18400 %* \textstmaryrdbaro -> \baro (stmaryrd)
 18401 % U+233F APL FUNCTIONAL SYMBOL SLASH BAR; \notslash (wasysym)
 18402 \DeclareTextCommand{\textnotslash}{PU}{\9043\077}%* U+233F
 18403 % U+2340 APL FUNCTIONAL SYMBOL BACKSLASH BAR;
 18404 % \notbackslash (wasysym)
 18405 \DeclareTextCommand{\textnotbackslash}{PU}{\9043\100}%* U+2340
 18406 % U+2342 APL FUNCTIONAL SYMBOL QUAD BACKSLASH; \boxbackslash (mathabx)

18407 \DeclareTextCommand{\textboxbackslash}{PU}{\9043\102}%* U+2342
 18408 % U+2347 APL FUNCTIONAL SYMBOL QUAD LEFTWARDS ARROW;
 18409 % \APLleftarrowbox (wasysym)
 18410 \DeclareTextCommand{\textAPLleftarrowbox}{PU}{\9043\107}%* U+2347
 18411 % U+2348 APL FUNCTIONAL SYMBOL QUAD RIGHTWARDS ARROW;
 18412 % \APLrightarrowbox (wasysym)
 18413 \DeclareTextCommand{\textAPLrightarrowbox}{PU}{\9043\110}%* U+2348
 18414 % U+2350 APL FUNCTIONAL SYMBOL QUAD UPWARDS ARROW; \APLuparrowbox (wasysym)
 18415 \DeclareTextCommand{\textAPLuparrowbox}{PU}{\9043\120}%* U+2350
 18416 % U+2357 APL FUNCTIONAL SYMBOL QUAD DOWNWARDS ARROW;
 18417 % \APLdownarrowbox (wasysym)
 18418 \DeclareTextCommand{\textAPLdownarrowbox}{PU}{\9043\127}%* U+2357
 18419 % U+235E APL FUNCTIONAL SYMBOL QUOTE QUAD;
 18420 % \APLinput (wasysym)
 18421 \DeclareTextCommand{\textAPLinput}{PU}{\9043\136}%* U+235E
 18422 % U+2370 APL FUNCTIONAL SYMBOL QUAD QUESTION; \Request (china2e)
 18423 \DeclareTextCommand{\textRequest}{PU}{\9043\160}%* U+2370
 18424 % U+2393 DIRECT CURRENT SYMBOL FORM TWO; \Beam (marvosym)
 18425 \DeclareTextCommand{\textBeam}{PU}{\9043\223}%* U+2393
 18426 % U+2394 SOFTWARE-FUNCTION SYMBOL; \hexagon (wasysym)
 18427 \DeclareTextCommand{\texthexagon}{PU}{\9043\224}%* U+2394
 18428 % U+2395 APL FUNCTIONAL SYMBOL QUAD; \APLbox (wasysym)
 18429 \DeclareTextCommand{\textAPLbox}{PU}{\9043\225}%* U+2395
 18430 % U+23ED BLACK RIGHT-POINTING DOUBLE TRIANGLE WITH VERTICAL BAR;
 18431 % \ForwardToIndex (marvosym)
 18432 \DeclareTextCommand{\textForwardToIndex}{PU}{\9043\355}%* U+23ED
 18433 % U+23EE BLACK LEFT-POINTING DOUBLE TRIANGLE WITH VERTICAL BAR;
 18434 % \RewindToIndex (marvosym)
 18435 \DeclareTextCommand{\textRewindToIndex}{PU}{\9043\356}%* U+23EE

47.2.24 Control Pictures: U+2400 to U+243F

18436 % U+2422 BLANK SYMBOL
 18437 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422
 18438 % U+2423 OPEN BOX; blank
 18439 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

47.2.25 Optical Character Recognition: U+2440 to U+245F

18440 % U+244A OCR DOUBLE BACKSLASH; \bbslash (stmaryrd)
 18441 \DeclareTextCommand{\textbbslash}{PU}{\9044\112}%* U+244A
 18442 %* \textbbslash -> \varparalelinv (txfonts/pxfonts)

47.2.26 Enclosed Alphanumerics: U+2460 to U+24FF

18443 % U+2460 CIRCLED DIGIT ONE; onecircle
 18444 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460
 18445 % U+2461 CIRCLED DIGIT TWO; twocircle
 18446 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461
 18447 % U+2462 CIRCLED DIGIT THREE; threecircle
 18448 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462
 18449 % U+2463 CIRCLED DIGIT FOUR; fourcircle
 18450 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463
 18451 % U+2464 CIRCLED DIGIT FIVE; fivecircle

18452 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464
18453 % U+2465 CIRCLED DIGIT SIX; sixcircle
18454 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465
18455 % U+2466 CIRCLED DIGIT SEVEN; sevenscircle
18456 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466
18457 % U+2467 CIRCLED DIGIT EIGHT; eightcircle
18458 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467
18459 % U+2468 CIRCLED DIGIT NINE; ninecircle
18460 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468
18461 % U+2469 CIRCLED NUMBER TEN; tencircle
18462 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469
18463 % U+246A CIRCLED NUMBER ELEVEN; elevencircle
18464 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A
18465 % U+246B CIRCLED NUMBER TWELVE; twelvecircle
18466 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B
18467 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle
18468 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C
18469 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle
18470 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D
18471 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle
18472 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E
18473 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle
18474 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F
18475 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle
18476 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470
18477 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle
18478 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471
18479 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle
18480 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472
18481 % U+2473 CIRCLED NUMBER TWENTY; twentycircle
18482 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473
18483 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle
18484 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6
18485 % \CircledA (marvosym)
18486 \DeclareTextCommand{\textCircledA}{PU}{\9044\266}%* U+24B6
18487 %* \textCircledA -> \CleaningA
18488 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle
18489 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7
18490 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle
18491 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8
18492 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle
18493 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9
18494 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle
18495 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA
18496 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle
18497 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB
18498 % \CleaningF (marvosym)
18499 \DeclareTextCommand{\textCleaningF}{PU}{\9044\273}%* U+24BB
18500 % \CleaningFF (marvosym)
18501 \DeclareTextCommand{\textCleaningFF}{PU}{\9044\273\83\062}%* U+24BB U+0332
18502 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle
18503 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC
18504 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle
18505 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD

18506 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle
18507 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE
18508 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle
18509 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF
18510 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle
18511 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0
18512 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle
18513 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1
18514 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle
18515 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2
18516 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle
18517 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3
18518 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle
18519 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4
18520 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle
18521 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5
18522 % \CleaningP (marvosym)
18523 \DeclareTextCommand{\textCleaningP}{PU}{\9044\305}%* U+24C5
18524 % \CleaningPP (marvosym)
18525 \DeclareTextCommand{\textCleaningPP}{PU}{\9044\305\83\062}%* U+24C5 U+0332
18526 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle
18527 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6
18528 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle
18529 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7
18530 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle
18531 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8
18532 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle
18533 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9
18534 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle
18535 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA
18536 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle
18537 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB
18538 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle
18539 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC
18540 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle
18541 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD
18542 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle
18543 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE
18544 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle
18545 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF
18546 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle
18547 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0
18548 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle
18549 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1
18550 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle
18551 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2
18552 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle
18553 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3
18554 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle
18555 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4
18556 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle
18557 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5
18558 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle
18559 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6

18560 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle
 18561 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7
 18562 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle
 18563 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8
 18564 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle
 18565 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9
 18566 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle
 18567 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA
 18568 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle
 18569 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB
 18570 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle
 18571 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC
 18572 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle
 18573 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD
 18574 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle
 18575 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE
 18576 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle
 18577 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF
 18578 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle
 18579 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0
 18580 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle
 18581 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1
 18582 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle
 18583 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2
 18584 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle
 18585 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3
 18586 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle
 18587 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4
 18588 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle
 18589 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5
 18590 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle
 18591 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6
 18592 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle
 18593 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7
 18594 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle
 18595 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8
 18596 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle
 18597 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9
 18598 % U+24EA CIRCLED DIGIT ZERO
 18599 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

47.2.27 Box Drawing: U+2500 to 257F

18600 % U+2504 BOX DRAWINGS LIGHT TRIPLE DASH HORIZONTAL; \Cutting-
 Line (marvosym)
 18601 \DeclareTextCommand{\textCuttingLine}{PU}{\9045\004}%* U+2504
 18602 %* \textCuttingLine -> \Kutline (marvosym)
 18603 %* \textCuttingLine -> \CutLine (marvosym)
 18604 %* \textCuttingLine -> \Cutline (marvosym)

47.2.28 Geometric Shapes: U+25A0 to U+25FF

18605 % U+25B2 BLACK UP-POINTING TRIANGLE; \UParrow (wasysym)
 18606 \DeclareTextCommand{\textUParrow}{PU}{\9045\262}%* U+25B2
 18607 %* \textUParrow -> \MoveUp (marvosym)
 18608 % U+25B3 WHITE UP-POINTING TRIANGLE; whiteuppointingtriangle;

```

18609 % \bigtriangleup (LaTeX)
18610 \DeclareTextCommand{\textbigtriangleup}{PU}{\9045\263}%* U+25B3
18611 %* \textbigtriangleup -> \APLup (wasysym)
18612 %* \textbigtriangleup -> \Bleech (marvosym)
18613 % U+25B6 BLACK RIGHT-POINTING TRIANGLE; \Forward (marvosym)
18614 \DeclareTextCommand{\textForward}{PU}{\9045\266}%* U+25B6
18615 % U+25B7 WHITE RIGHT-POINTING TRIANGLE (= z notation range restric-
tion);
18616 % whiterightpointingtriangle; \triangleright (LaTeX)
18617 \DeclareTextCommand{\texttriangleright}{PU}{\9045\267}%* U+25B7
18618 % U+25BA BLACK RIGHT-POINTING POINTER; \RHD (wasysym)
18619 \DeclareTextCommand{\textRHD}{PU}{\9045\272}%* U+25BA
18620 % U+25BC BLACK DOWN-POINTING TRIANGLE; \DOWNarrow (wasysym)
18621 \DeclareTextCommand{\textDOWNarrow}{PU}{\9045\274}%* U+25BC
18622 %* \textDOWNarrow -> \MoveDown (marvosym)
18623 % U+25BD WHITE DOWN-POINTING TRIANGLE; whitedownpointingtrian-
gle;
18624 % \bigtriangledown (LaTeX)
18625 \DeclareTextCommand{\textbigtriangledown}{PU}{\9045\275}%* U+25BD
18626 %* \textbigtriangledown -> \APLdown (wasysym)
18627 % U+25C0 BLACK LEFT-POINTING TRIANGLE; \Rewind (marvosym)
18628 \DeclareTextCommand{\textRewind}{PU}{\9045\300}%* U+25C0
18629 % U+25C1 WHITE RIGHT-POINTING TRIANGLE (= z notation domain re-
striction);
18630 % whiteleftpointingtriangle; \triangleleft (LaTeX)
18631 \DeclareTextCommand{\texttriangleleft}{PU}{\9045\301}%* U+25C1
18632 % U+25C4 BLACK LEFT-POINTING POINTER; \LHD (wasysym)
18633 \DeclareTextCommand{\textLHD}{PU}{\9045\304}%* U+25C4
18634 % U+25C7 WHITE DIAMOND; whitediamond; \diamond (LaTeX)
18635 \DeclareTextCommand{\textdiamond}{PU}{\9045\307}%* U+25C7
18636 %* \textdiamond -> \Diamond (wasysym)
18637 % U+25CA LOZENGE; lozenge; \lozenge (AmS)
18638 \DeclareTextCommand{\textlozenge}{PU}{\9045\312}%* U+25CA
18639 % U+25D6 LEFT HALF BLACK CIRCLE; \LEFTCIRCLE (wasysym)
18640 \DeclareTextCommand{\textLEFTCIRCLE}{PU}{\9045\326}%* U+25D6
18641 % U+25D7 RIGHT HALF BLACK CIRCLE; \RIGHTCIRCLE (wasysym)
18642 \DeclareTextCommand{\textRIGHTCIRCLE}{PU}{\9045\327}%* U+25D7
18643 % U+25E6 WHITE BULLET; *openbullet, whitebullet
18644 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}%* U+25E6
18645 % U+25EB WHITE SQUARE WITH VERTICAL BISECTING LINE;
18646 % \boxbar (stmaryrd)
18647 \DeclareTextCommand{\textboxbar}{PU}{\9045\353}%* U+25EB
18648 % U+25EF LARGE CIRCLE; largecircle
18649 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}%* U+25EF
18650 %* \textbigcircle -> \varbigcirc (stmaryrd)
18651 %

```

47.2.29 Miscellaneous Symbols: U+2600 to U+26FF

```

18652 % U+2601 CLOUD; \Cloud (ifsym)
18653 \DeclareTextCommand{\textCloud}{PU}{\9046\001}%* U+2601
18654 % U+2605 BLACK STAR; \FiveStar (bbding)
18655 \DeclareTextCommand{\textFiveStar}{PU}{\9046\005}%* U+2605
18656 % U+2606 WHITE STAR; \FiveStarOpen (bbding)
18657 \DeclareTextCommand{\textFiveStarOpen}{PU}{\9046\006}%* U+2606

```

18658 % U+260E BLACK TELEPHONE; telephoneblack; \Phone (bbding)
18659 \DeclareTextCommand{\textPhone}{PU}{\9046\016}%* U+260E
18660 %* \textPhone -> \Telefon (marvosym)
18661 % U+2610 BALLOT BOX; \boxempty (stmaryrd)
18662 \DeclareTextCommand{\textboxempty}{PU}{\9046\020}%* U+2610
18663 %* \textboxempty -> \Box (wasysym)
18664 % U+2611 BALLOT BOX WITH CHECK; \Checkedbox (marvosym)
18665 \DeclareTextCommand{\textCheckedbox}{PU}{\9046\021}%* U+2611
18666 %* \textCheckedbox -> \CheckedBox (marvosym)
18667 % U+2612 BALLOT BOX WITH X; \Crossedbox (marvosym)
18668 \DeclareTextCommand{\textCrossedbox}{PU}{\9046\022}%* U+2612
18669 %* \textCrossedbox -> \XBox (wasysym)
18670 %* \textCrossedbox -> \CrossedBox (marvosym)
18671 % U+2615 HOT BEVERAGE; \Coffeecup (marvosym)
18672 \DeclareTextCommand{\textCoffeecup}{PU}{\9046\025}%* U+2615
18673 % U+261A BLACK LEFT POINTING INDEX; \HandCuffLeft (bbding)
18674 \DeclareTextCommand{\textHandCuffLeft}{PU}{\9046\032}%* U+261A
18675 % U+261B BLACK RIGHT POINTING INDEX; \HandCuffRight (bbding)
18676 \DeclareTextCommand{\textHandCuffRight}{PU}{\9046\033}%* U+261B
18677 % U+261C WHITE LEFT POINTING INDEX; \HandLeft (bbding)
18678 \DeclareTextCommand{\textHandLeft}{PU}{\9046\034}%* U+261C
18679 %* \textHandLeft -> \rightpointleft (fourier)
18680 % U+261E WHITE RIGHT POINTING INDEX; \HandRight (bbding)
18681 \DeclareTextCommand{\textHandRight}{PU}{\9046\036}%* U+261E
18682 %* \textHandRight -> \leftpointright (fourier)
18683 %* \textHandRight -> \PointingHand (marvosym)
18684 %* \textHandRight -> \Pointinghand (marvosym)
18685 % U+2622 RADIOACTIVE SIGN; \Radioactivity (marvosym)
18686 \DeclareTextCommand{\textRadioactivity}{PU}{\9046\042}%* U+2622
18687 %* \textRadioactivity -> \Radiation (ifsym)
18688 % U+2623 BIOHAZARD SIGN; \Biohazard (marvosym)
18689 \DeclareTextCommand{\textBiohazard}{PU}{\9046\043}%* U+2623
18690 % U+2625 ANKH; \Ankh (marvosym)
18691 \DeclareTextCommand{\textAnkh}{PU}{\9046\045}%* U+2625
18692 % U+262F YIN YANG; \YinYang (marvosym)
18693 \DeclareTextCommand{\textYinYang}{PU}{\9046\057}%* U+262F
18694 %* \textYinYang -> \Yinyang (marvosym)
18695 %* \textYinYang -> \YingYang (marvosym)
18696 %* \textYinYang -> \Yingyang (marvosym)
18697 % U+2639 WHITE FROWNING FACE; \frownie (wasysym)
18698 \DeclareTextCommand{\textfrownie}{PU}{\9046\071}%* U+2639
18699 %* \textfrownie -> \Frowny (marvosym)
18700 % U+263A WHITE SMILING FACE; \smiley (wasysym)
18701 \DeclareTextCommand{\textsmiley}{PU}{\9046\072}%* U+263A
18702 %* \textsmiley -> \Smiley (marvosym)
18703 % U+263B BLACK SMILING FACE; \blacksmiley (wasysym)
18704 \DeclareTextCommand{\textblacksmiley}{PU}{\9046\073}%* U+263B
18705 % U+263C WHITE SUN WITH RAYS; \sun (wasysym)
18706 \DeclareTextCommand{\textsun}{PU}{\9046\074}%* U+263C
18707 %* \textsun -> \Sun (marvosym)
18708 % U+263D FIRST QUARTER MOON; \leftmoon (wasysym, mathabx)
18709 \DeclareTextCommand{\textleftmoon}{PU}{\9046\075}%* U+263D
18710 % U+263E LAST QUARTER MOON; \rightmoon (wasysym, mathabx)
18711 \DeclareTextCommand{\textrightmoon}{PU}{\9046\076}%* U+263E

18712 % U+263F MERCURY; \mercury (wasysym)
18713 \DeclareTextCommand{\textmercury}{PU}{\9046\077}%* U+263F
18714 %* \textmercury -> \Mercury (marvosym)
18715 % U+2640 FEMALE SIGN; female; \female (wasysym)
18716 \DeclareTextCommand{\textPUfemale}{PU}{\9046\100}% U+2640
18717 %* \textPUfemale -> \textfemale (tipx)
18718 %* \textPUfemale -> \female (wasysym)
18719 %* \textPUfemale -> \venus (wasysym)
18720 %* \textPUfemale -> \Venus (marvosym)
18721 %* \textPUfemale -> \Female (marvosym)
18722 % U+2641 EARTH; \earth (wasysym)
18723 \DeclareTextCommand{\textearth}{PU}{\9046\101}%* U+2641
18724 %* \textearth -> \Earth (marvosym)
18725 % U+2642 MALE SIGN; male, mars; \male (wasysym)
18726 \DeclareTextCommand{\textmale}{PU}{\9046\102}%* U+2642
18727 %* \textmale -> \mars (wasysym)
18728 %* \textmale -> \Mars (marvosym)
18729 %* \textmale -> \Male (marvosym)
18730 % U+2643 JUPITER; \jupiter (wasysym)
18731 \DeclareTextCommand{\textjupiter}{PU}{\9046\103}%* U+2643
18732 %* \textjupiter -> \Jupiter (marvosym)
18733 % U+2644 SATURN; \saturn (wasysym)
18734 \DeclareTextCommand{\textsaturn}{PU}{\9046\104}%* U+2644
18735 %* \textsaturn -> \Saturn (marvosym)
18736 % U+2645 URANUS; \uranus (wasysym)
18737 \DeclareTextCommand{\texturanus}{PU}{\9046\105}%* U+2645
18738 %* \texturanus -> \Uranus (marvosym)
18739 % U+2646 NEPTUNE; \neptune (wasysym)
18740 \DeclareTextCommand{\textneptune}{PU}{\9046\106}%* U+2646
18741 %* \textneptune -> \Neptune (marvosym)
18742 % U+2647 PLUTO; \pluto (wasysym)
18743 \DeclareTextCommand{\textpluto}{PU}{\9046\107}%* U+2647
18744 %* \textpluto -> \Pluto (marvosym)
18745 % U+2648 ARIES; \aries (wasysym)
18746 \DeclareTextCommand{\textaries}{PU}{\9046\110}%* U+2648
18747 %* \textaries -> \Aries (marvosym)
18748 % U+2649 TAURUS; \taurus (wasysym)
18749 \DeclareTextCommand{\texttaurus}{PU}{\9046\111}%* U+2649
18750 %* \texttaurus -> \Taurus (marvosym)
18751 % U+264A GEMINI; \gemini (wasysym)
18752 \DeclareTextCommand{\textgemini}{PU}{\9046\112}%* U+264A
18753 %* \textgemini -> \Gemini (marvosym)
18754 % U+264B CANCER; \cancer (wasysym)
18755 \DeclareTextCommand{\textcancer}{PU}{\9046\113}%* U+264B
18756 %* \textcancer -> \Cancer (marvosym)
18757 % U+264C LEO; \leo (wasysym)
18758 \DeclareTextCommand{\textleo}{PU}{\9046\114}%* U+264C
18759 %* \textleo -> \Leo (marvosym)
18760 % U+264D VIRGO; \virgo (wasysym)
18761 \DeclareTextCommand{\textvirgo}{PU}{\9046\115}%* U+264D
18762 %* \textvirgo -> \Virgo (marvosym)
18763 % U+264E LIBRA; \libra (wasysym)
18764 \DeclareTextCommand{\textlibra}{PU}{\9046\116}%* U+264E
18765 %* \textlibra -> \Libra (marvosym)

18766 % U+264F SCORPIO; \scorpio (wasysym)
18767 \DeclareTextCommand{\textscorpio}{PU}{\9046\117}%* U+264F
18768 %* \textscorpio -> \Scorpio (marvosym)
18769 % U+2650 SAGITTARIUS; \sagittarius (wasysym)
18770 \DeclareTextCommand{\textsagittarius}{PU}{\9046\120}%* U+2650
18771 %* \textsagittarius -> \Sagittarius (marvosym)
18772 % U+2651 CAPRICORN; \capricornus (wasysym)
18773 \DeclareTextCommand{\textcapricornus}{PU}{\9046\121}%* U+2651
18774 %* \textcapricornus -> \Capricorn (marvosym)
18775 % U+2652 AQUARIUS; \aquarius (wasysym)
18776 \DeclareTextCommand{\textaquarius}{PU}{\9046\122}%* U+2652
18777 %* \textaquarius -> \Aquarius (marvosym)
18778 % U+2653 PISCES; \pisces (wasysym)
18779 \DeclareTextCommand{\textpisces}{PU}{\9046\123}%* U+2653
18780 %* \textpisces -> \Pisces (marvosym)
18781 % U+2660 BLACK SPADE SUIT; spade, spadesuitblack; \spadesuit (LaTeX)
18782 \DeclareTextCommand{\textspadesuitblack}{PU}{\9046\140}% U+2660
18783 %* \textspadesuitblack -> \spadesuit (MnSymbol)
18784 % U+2661 WHITE HEART SUIT; heartsuitwhite; \heartsuit (LaTeX)
18785 \DeclareTextCommand{\textheartsuitwhite}{PU}{\9046\141}% U+2661
18786 %* \textheartsuitwhite -> \Heart (marvosym)
18787 %* \textheartsuitwhite -> \heartsuit (MnSymbol)
18788 % U+2662 WHITE DIAMOND SUIT; diamondsuitwhite; \diamondsuit (LaTeX)
18789 \DeclareTextCommand{\textdiamondsuitwhite}{PU}{\9046\142}% U+2662
18790 %* \textdiamondsuitwhite -> \diamondsuit (MnSymbol)
18791 % U+2663 BLACK CLUB SUIT; club, clubsuitblack; \clubsuit (LaTeX)
18792 \DeclareTextCommand{\textclubsuitblack}{PU}{\9046\143}% U+2663
18793 %* \textclubsuitblack -> \clubsuit (MnSymbol)
18794 % U+2664 WHITE SPADE SUIT; spadesuitwhite
18795 \DeclareTextCommand{\textspadesuitwhite}{PU}{\9046\144}% U+2664
18796 % U+2665 BLACK HEART SUIT; heartsuitblack, heart
18797 \DeclareTextCommand{\textheartsuitblack}{PU}{\9046\145}% U+2665
18798 % U+2666 BLACK DIAMOND SUIT; diamond
18799 \DeclareTextCommand{\textdiamondsuitblack}{PU}{\9046\146}% U+2666
18800 % U+2667 WHITE CLUB SUIT; clubsuitwhite
18801 \DeclareTextCommand{\textclubsuitwhite}{PU}{\9046\147}% U+2667
18802 % U+2669 QUARTER NOTE; quarternote; \quarternote (wasysym, arev)
18803 \DeclareTextCommand{\textquarternote}{PU}{\9046\151}%* U+2669
18804 % U+266A EIGHTH NOTE; musicalnote; \textmusicalnote (textcomp)
18805 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A
18806 %* \textmusicalnote -> \eighthnote (wasysym, arev)
18807 % U+266B BEAMED EIGHTH NOTES; eighthnotebeamed; \twonotes (wasysym)
18808 \DeclareTextCommand{\texttwonotes}{PU}{\9046\153}%* U+266B
18809 % U+266C BEAMED SIXTEENTH NOTES; beamedsixteenthnotes; \sixteenth-
note (arev)
18810 \DeclareTextCommand{\textsixteenthnote}{PU}{\9046\154}%* U+266C
18811 % U+266D MUSIC FLAT SIGN; musicflatsign; \flat (LaTeX)
18812 \DeclareTextCommand{\textflat}{PU}{\9046\155}%* U+266D
18813 % U+266E MUSIC NATURAL SIGN; \natural (LaTeX)
18814 \DeclareTextCommand{\textnatural}{PU}{\9046\156}%* U+266E
18815 % U+266F MUSIC SHARP SIGN; musicsharpsign; \sharp (LaTeX)
18816 \DeclareTextCommand{\textsharp}{PU}{\9046\157}%* U+266F
18817 % U+2672 UNIVERSAL RECYCLING SYMBOL; \recycle (recycle)
18818 \DeclareTextCommand{\textrecycle}{PU}{\9046\162}%* U+2672

18819 %* \textrecycle -> \Recycling (marvosym)
18820 % U+267F WHEELCHAIR SYMBOL; \Wheelchair (marvosym)
18821 \DeclareTextCommand{\textWheelchair}{PU}{\9046\177}%* U+267F
18822 % U+2691 BLACK FLAG; \Flag (ifsym)
18823 \DeclareTextCommand{\textFlag}{PU}{\9046\221}%* U+2691
18824 %* \textFlag -> \VarFlag (ifsym)
18825 % U+2692 HAMMER AND PICK; \MineSign (marvosym)
18826 \DeclareTextCommand{\textMineSign}{PU}{\9046\222}%* U+2692
18827 % U+2694 CROSSED SWORDS; \dsmilitary (dictsym)
18828 \DeclareTextCommand{\textdsmilitary}{PU}{\9046\224}%* U+2694
18829 %* \textdsmilitary -> \textxswup (fourier)
18830 % U+2695 STAFF OF AESCULAPIUS; \dsmedical (dictsym)
18831 \DeclareTextCommand{\textdsmedical}{PU}{\9046\225}%* U+2695
18832 % U+2696 SCALES; \dsjuridical (dictsym)
18833 \DeclareTextCommand{\textdsjuridical}{PU}{\9046\226}%* U+2696
18834 % U+2697 ALEMBIC; \dschemical (dictsym)
18835 \DeclareTextCommand{\textdschemical}{PU}{\9046\227}%* U+2697
18836 % U+2698 FLOWER; \dsbiological (dictsym)
18837 \DeclareTextCommand{\textdsbiological}{PU}{\9046\230}%* U+2698
18838 % U+269A STAFF OF HERMES; \dscommercial (dictsym)
18839 \DeclareTextCommand{\textdscommercial}{PU}{\9046\232}%* U+269A
18840 % U+269D OUTLINED WHITE STAR; \manstar (manfnt)
18841 \DeclareTextCommand{\textmanstar}{PU}{\9046\235}%* U+269D
18842 % U+26A0 WARNING SIGN; \danger (fourier)
18843 \DeclareTextCommand{\textdanger}{PU}{\9046\240}%* U+26A0
18844 % U+26A2 DOUBLED FEMALE SIGN; \FemaleFemale (marvosym)
18845 \DeclareTextCommand{\textFemaleFemale}{PU}{\9046\242}%* U+26A2
18846 % U+26A3 DOUBLED MALE SIGN; \MaleMale (marvosym)
18847 \DeclareTextCommand{\textMaleMale}{PU}{\9046\243}%* U+26A3
18848 % U+26A4 INTERLOCKED FEMALE AND MALE SIGN; \FemaleMale (marvosym)
18849 \DeclareTextCommand{\textFemaleMale}{PU}{\9046\244}%* U+26A4
18850 % U+26A5 MALE AND FEMALE SIGN; \Hermaphrodite (marvosym)
18851 \DeclareTextCommand{\textHermaphrodite}{PU}{\9046\245}%* U+26A5
18852 % U+26AA MEDIUM WHITE CIRCLE; \Neural (marvosym)
18853 \DeclareTextCommand{\textNeutral}{PU}{\9046\252}%* U+26AA
18854 % U+26AD MARRIAGE SYMBOL
18855 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD
18856 % U+26AE DIVORCE SYMBOL
18857 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE
18858 % U+26B2 NEUTER; \textunconfemale (tipx)
18859 \DeclareTextCommand{\textPUunconfemale}{PU}{\9046\262}% U+26B2
18860 %* \textPUunconfemale -> \textunconfemale (tipx)
18861 % U+26B9 SEXTILE; \hexstar (wasysym)
18862 \DeclareTextCommand{\texthexstar}{PU}{\9046\271}%* U+26B9
18863 % U+26BD SOCCER BALL; \Football (marvosym)
18864 \DeclareTextCommand{\textSoccerBall}{PU}{\9046\275}% U+26BD
18865 %* \textSoccerBall -> \Football (marvosym)
18866 % U+26C5 SUN BEHIND CLOUD; \SunCloud (ifsym)
18867 \DeclareTextCommand{\textSunCloud}{PU}{\9046\305}%* U+26C5
18868 % U+26C6 RAIN; \Rain (ifsym)
18869 \DeclareTextCommand{\textRain}{PU}{\9046\306}%* U+26C6
18870 % U+26D4 NO ENTRY; \noway (fourier)
18871 \DeclareTextCommand{\textnoway}{PU}{\9046\324}%* U+26D4

18872 % U+26F0 MOUNTAIN; \Mountain (ifsym)
18873 \DeclareTextCommand{\textMountain}{PU}{\9046\360}%* U+26F0
18874 % U+26FA TENT; \Tent (ifsym)
18875 \DeclareTextCommand{\textTent}{PU}{\9046\372}%* U+26FA

47.2.30 Dingbats: U+2700 to U+27BF

18876 % U+2701 UPPER BLADE SCISSORS; \ScissorRightBrokenBottom (bding)
18877 \DeclareTextCommand{\textScissorRightBrokenBottom}{PU}{\9047\001}% U+2701
18878 %* \textScissorRightBrokenBottom -> \CutLeft (marvosym)
18879 %* \textScissorRightBrokenBottom -> \Cutright (marvosym)
18880 % U+2702 BLACK SCISSORS; \ScissorRight (bding)
18881 \DeclareTextCommand{\textScissorRight}{PU}{\9047\002}%* U+2702
18882 %* \textScissorRight -> \RightScissors (marvosym)
18883 %* \textScissorRight -> \Leftscissors (marvosym)
18884 % U+2703 LOWER BLADE SCISSORS; \ScissorRightBrokenTop (bding)
18885 \DeclareTextCommand{\textScissorRightBrokenTop}{PU}{\9047\003}%* U+2703
18886 % U+2704 WHITE SCISSORS; \ScissorHollowRight (bding)
18887 \DeclareTextCommand{\textScissorHollowRight}{PU}{\9047\004}%* U+2704
18888 % U+2706 TELEPHONE LOCATION SIGN; \PhoneHandset (bding)
18889 \DeclareTextCommand{\textPhoneHandset}{PU}{\9047\006}%* U+2706
18890 % U+2707 TAPE DRIVE; \Tape (bding)
18891 \DeclareTextCommand{\textTape}{PU}{\9047\007}%* U+2707
18892 % U+2708 AIRPLANE; \Plane (bding)
18893 \DeclareTextCommand{\textPlane}{PU}{\9047\010}%* U+2708
18894 % U+2709 ENVELOPE; \Envelope (bding),
18895 \DeclareTextCommand{\textEnvelope}{PU}{\9047\011}%* U+2709
18896 %* \textEnvelope -> \Letter (marvosym)
18897 % U+270C VICTORY HAND; \Peace (bding)
18898 \DeclareTextCommand{\textPeace}{PU}{\9047\014}%* U+270C
18899 % U+270D WRITING HAND; \WritingHand (marvosym)
18900 \DeclareTextCommand{\textWritingHand}{PU}{\9047\015}%* U+270D
18901 %* \textWritingHand -> \Writinghand (marvosym)
18902 % U+270E LOWER RIGHT PENCIL; \PencilRightDown (bding)
18903 \DeclareTextCommand{\textPencilRightDown}{PU}{\9047\016}%* U+270E
18904 % U+270F PENCIL; \PencilRight (bding)
18905 \DeclareTextCommand{\textPencilRight}{PU}{\9047\017}%* U+270F
18906 % U+2710 UPPER RIGHT PENCIL; \PencilRightUp (bding)
18907 \DeclareTextCommand{\textPencilRightUp}{PU}{\9047\020}%* U+2710
18908 % U+2711 WHITE NIB; \NibRight (bding)
18909 \DeclareTextCommand{\textNibRight}{PU}{\9047\021}%* U+2711
18910 % U+2712 BLACK NIB; \NibSolidRight (bding)
18911 \DeclareTextCommand{\textNibSolidRight}{PU}{\9047\022}%* U+2712
18912 % U+2713 CHECK MARK; checkmark; \Checkmark (bding)
18913 \DeclareTextCommand{\textCheckmark}{PU}{\9047\023}%* U+2713
18914 %* \textCheckmark -> \checkmark (MnSymbol)
18915 % U+2714 HEAVY CHECK MARK; \CheckmarkBold (bding)
18916 \DeclareTextCommand{\textCheckmarkBold}{PU}{\9047\024}%* U+2714
18917 % U+2715 MULTIPLICATION X; \XSolid (bding)
18918 \DeclareTextCommand{\textXSolid}{PU}{\9047\025}%* U+2715
18919 % U+2716 HEAVY MULTIPLICATION X; \XSolidBold (bding)
18920 \DeclareTextCommand{\textXSolidBold}{PU}{\9047\026}%* U+2716
18921 % U+2717 BALLOT X; \XSolidBrush (bding)
18922 \DeclareTextCommand{\textXSolidBrush}{PU}{\9047\027}%* U+2717
18923 % U+2719 OUTLINED GREEK CROSS; \PlusOutline (bding)

18924 \DeclareTextCommand{\textPlusOutline}{PU}{\9047\031}%* U+2719
 18925 % U+271A HEAVY GREEK CROSS; \Plus (bding)
 18926 \DeclareTextCommand{\textPlus}{PU}{\9047\032}%* U+271A
 18927 % U+271B OPEN CENTRE CROSS; \PlusThinCenterOpen (bding)
 18928 \DeclareTextCommand{\textPlusThinCenterOpen}{PU}{\9047\033}%* U+271B
 18929 % U+271C HEAVY OPEN CENTRE CROSS; \PlusCenterOpen (bding)
 18930 \DeclareTextCommand{\textPlusCenterOpen}{PU}{\9047\034}%* U+271C
 18931 % U+271D LATIN CROSS; \Cross (bding)
 18932 \DeclareTextCommand{\textCross}{PU}{\9047\035}%* U+271D
 18933 % U+271E SHADOWED WHITE LATIN CROSS; \CrossOpenShadow (bding)
 18934 \DeclareTextCommand{\textCrossOpenShadow}{PU}{\9047\036}%* U+271E
 18935 % U+271F OUTLINED LATIN CROSS; \CrossOutline (bding)
 18936 \DeclareTextCommand{\textCrossOutline}{PU}{\9047\037}%* U+271F
 18937 % U+2720 MALTESE CROSS; \CrossMaltese (bding)
 18938 \DeclareTextCommand{\textCrossMaltese}{PU}{\9047\040}%* U+2720
 18939 % U+2721 STAR OF DAVID; \DavidStar (bding)
 18940 \DeclareTextCommand{\textDavidStar}{PU}{\9047\041}%* U+2721
 18941 %* \textDavidStar -> \davidstar (wasysym)
 18942 % U+2722 FOUR TEARDROP-SPOKED ASTERISK; \FourAsterisk (bding)
 18943 \DeclareTextCommand{\textFourAsterisk}{PU}{\9047\042}%* U+2722
 18944 % U+2723 FOUR BALLOON-SPOKED ASTERISK; \JackStar (bding)
 18945 \DeclareTextCommand{\textJackStar}{PU}{\9047\043}%* U+2723
 18946 % U+2724 HEAVY FOUR BALLOON-SPOKED ASTERISK; \JackStarBold (bding)
 18947 \DeclareTextCommand{\textJackStarBold}{PU}{\9047\044}%* U+2724
 18948 % U+2725 FOUR CLUB-SPOKED ASTERISK; \CrossClowerTips (bding)
 18949 \DeclareTextCommand{\textClowerTips}{PU}{\9047\045}%* U+2725
 18950 % U+2726 BLACK FOUR POINTED STAR; \FourStar (bding)
 18951 \DeclareTextCommand{\textFourStar}{PU}{\9047\046}%* U+2726
 18952 % U+2727 WHITE FOUR POINTED STAR; \FourStarOpen (bding)
 18953 \DeclareTextCommand{\textFourStarOpen}{PU}{\9047\047}%* U+2727
 18954 % U+272A CIRCLED WHITE STAR; \FiveStarOpenCircled (bding)
 18955 \DeclareTextCommand{\textFiveStarOpenCircled}{PU}{\9047\052}%* U+272A
 18956 % U+272B OPEN CENTRE BLACK STAR; \FiveStarCenterOpen (bding)
 18957 \DeclareTextCommand{\textFiveStarCenterOpen}{PU}{\9047\053}%* U+272B
 18958 % U+272C BLACK CENTRE WHITE STAR; \FiveStarOpenDotted (bding)
 18959 \DeclareTextCommand{\textFiveStarOpenDotted}{PU}{\9047\054}%* U+272C
 18960 % U+272D OUTLINED BLACK STAR; \FiveStarOutline (bding)
 18961 \DeclareTextCommand{\textFiveStarOutline}{PU}{\9047\055}%* U+272D
 18962 % U+272E HEAVY OUTLINED BLACK STAR; \FiveStarOutlineHeavy (bding)
 18963 \DeclareTextCommand{\textFiveStarOutlineHeavy}{PU}{\9047\056}%* U+272E
 18964 % U+272F PINWHEEL STAR; \FiveStarConvex (bding)
 18965 \DeclareTextCommand{\textFiveStarConvex}{PU}{\9047\057}%* U+272F
 18966 % U+2730 SHADOWED WHITE STAR; \FiveStarShadow (bding)
 18967 \DeclareTextCommand{\textFiveStarShadow}{PU}{\9047\060}%* U+2730
 18968 % U+2731 HEAVY ASTERISK; \AsteriskBold (bding)
 18969 \DeclareTextCommand{\textAsteriskBold}{PU}{\9047\061}%* U+2731
 18970 % U+2732 OPEN CENTRE ASTERISK; \AsteriskCenterOpen (bding)
 18971 \DeclareTextCommand{\textAsteriskCenterOpen}{PU}{\9047\062}%* U+2732
 18972 % U+2734 EIGHT POINTED BLACK STAR; \EightStarTaper (bding)
 18973 \DeclareTextCommand{\textEightStarTaper}{PU}{\9047\064}%* U+2734
 18974 % U+2735 EIGHT POINTED PINWHEEL STAR; \EightStarConvex (bding)
 18975 \DeclareTextCommand{\textEightStarConvex}{PU}{\9047\065}%* U+2735
 18976 % U+2736 SIX POINTED BLACK STAR; \SixStar (bding)

18977 \DeclareTextCommand{\textSixStar}{PU}{\9047\066}%* U+2736
 18978 % U+2737 EIGHT POINTED RECTILINEAR BLACK STAR; \EightStar (bding)
 18979 \DeclareTextCommand{\textEightStar}{PU}{\9047\067}%* U+2737
 18980 % U+2738 HEAVY EIGHT POINTED RECTILINEAR BLACK STAR; \EightStarBold (bding)
 18981 \DeclareTextCommand{\textEightStarBold}{PU}{\9047\070}%* U+2738
 18982 % U+2739 TWELVE POINTED BLACK STAR; \TwelveStar (bding)
 18983 \DeclareTextCommand{\textTwelveStar}{PU}{\9047\071}%* U+2739
 18984 % U+273A SIXTEEN POINTED ASTERISK; \SixteenStarLight (bding)
 18985 \DeclareTextCommand{\textSixteenStarLight}{PU}{\9047\072}%* U+273A
 18986 % U+273B TEARDROP-SPOKED ASTERISK; \SixFlowerPetalRemoved (bding)
 18987 \DeclareTextCommand{\textSixFlowerPetalRemoved}{PU}{\9047\073}%* U+273B
 18988 % U+273C OPEN CENTRE TEARDROP-SPOKED ASTERISK;
 18989 % \SixFlowerOpenCenter (bding)
 18990 \DeclareTextCommand{\textSixFlowerOpenCenter}{PU}{\9047\074}%* U+273C
 18991 % U+273D HEAVY TEARDROP-SPOKED ASTERISK; \Asterisk (bding)
 18992 \DeclareTextCommand{\textAsterisk}{PU}{\9047\075}%* U+273D
 18993 % U+273E SIX PETALLED BLACK AND WHITE FLORETTE; \SixFlowerAlternate (bding)
 18994 \DeclareTextCommand{\textSixFlowerAlternate}{PU}{\9047\076}%* U+273E
 18995 % U+273F BLACK FLORETTE; \FiveFlowerPetal (bding)
 18996 \DeclareTextCommand{\textFiveFlowerPetal}{PU}{\9047\077}%* U+273F
 18997 % U+2740 WHITE FLORETTE; \FiveFlowerOpen (bding)
 18998 \DeclareTextCommand{\textFiveFlowerOpen}{PU}{\9047\100}%* U+2740
 18999 % U+2741 EIGHT PETALLED OUTLINED BLACK FLORETTE; \EightFlowerPetal (bding)
 19000 \DeclareTextCommand{\textEightFlowerPetal}{PU}{\9047\101}%* U+2741
 19001 % U+2742 CIRCLED OPEN CENTRE EIGHT POINTED STAR; \SunshineOpenCircled (bding)
 19002 \DeclareTextCommand{\textSunshineOpenCircled}{PU}{\9047\102}%* U+2742
 19003 % U+2743 HEAVY TEARDROP-SPOKED PINWHEEL ASTERISK; \SixFlowerAltPetal (bding)
 19004 \DeclareTextCommand{\textSixFlowerAltPetal}{PU}{\9047\103}%* U+2743
 19005 % U+2744 SNOWFLAKE; \SnowflakeChevron (bding)
 19006 \DeclareTextCommand{\textSnowflakeChevron}{PU}{\9047\104}%* U+2744
 19007 % U+2745 TIGHT TRIFOLIATE SNOWFLAKE; \Snowflake (bding)
 19008 \DeclareTextCommand{\textSnowflake}{PU}{\9047\105}%* U+2745
 19009 % U+2746 HEAVY CHEVRON SNOWFLAKE; \SnowflakeChevronBold (bding)
 19010 \DeclareTextCommand{\textSnowflakeChevronBold}{PU}{\9047\106}%* U+2746
 19011 % U+2747 SPARKLE; \Sparkle (bding)
 19012 \DeclareTextCommand{\textSparkle}{PU}{\9047\107}%* U+2747
 19013 % U+2748 HEAVY SPARKLE; \SparkleBold (bding)
 19014 \DeclareTextCommand{\textSparkleBold}{PU}{\9047\110}%* U+2748
 19015 % U+2749 BALLOON-SPOKED ASTERISK; \AsteriskRoundedEnds (bding)
 19016 \DeclareTextCommand{\textAsteriskRoundedEnds}{PU}{\9047\111}%* U+2749
 19017 % U+274A EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;
 19018 % \EightFlowerPetalRemoved (bding)
 19019 \DeclareTextCommand{\textEightFlowerPetalRemoved}{PU}{\9047\112}%* U+274A
 19020 % U+274B HEAVY EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;
 19021 % \EightAsterisk (bding)
 19022 \DeclareTextCommand{\textEightAsterisk}{PU}{\9047\113}%* U+274B
 19023 % U+274D SHADOWED WHITE CIRCLE; \CircleShadow (bding)

19024 \DeclareTextCommand{\textCircleShadow}{PU}{\9047\115}%* U+274D
 19025 % U+274F LOWER RIGHT DROP-SHADOWED WHITE SQUARE;
 19026 % \SquareShadowBottomRight (bding)
 19027 \DeclareTextCommand{\textSquareShadowBottomRight}{PU}{\9047\117}%* U+274F
 19028 % U+2750 UPPER RIGHT DROP-SHADOWED WHITE SQUARE;
 19029 % \SquareShadowTopRight (bding)
 19030 \DeclareTextCommand{\textSquareTopRight}{PU}{\9047\120}%* U+2750
 19031 % U+2751 LOWER RIGHT SHADOWED WHITE SQUARE;
 19032 % \SquareCastShadowBottomRight (bding)
 19033 \DeclareTextCommand{\textSquareCastShadowBottomRight}{PU}{\9047\121}%* U+2751
 19034 % U+2752 UPPER RIGHT SHADOWED WHITE SQUARE;
 19035 % \SquareCastShadowTopRight (bding)
 19036 \DeclareTextCommand{\textSquareCastShadowTopRight}{PU}{\9047\122}%* U+2752
 19037 % U+2756 BLACK DIAMOND MINUS WHITE X; \OrnamentDiamondSolid (bding)
 19038 \DeclareTextCommand{\textDiamondSolid}{PU}{\9047\126}%* U+2756
 19039 % U+2758 LIGHT VERTICAL BAR; \RectangleThin (bding)
 19040 \DeclareTextCommand{\textRectangleThin}{PU}{\9047\130}%* U+2758
 19041 % U+2759 MEDIUM VERTICAL BAR; \Rectangle (bding)
 19042 \DeclareTextCommand{\textRectangle}{PU}{\9047\131}%* U+2759
 19043 % U+275A HEAVY VERTICAL BAR; \RectangleBold (bding)
 19044 \DeclareTextCommand{\textRectangleBold}{PU}{\9047\132}%* U+275A

47.2.31 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

19045 % U+27C2 PERPENDICULAR; perpendicular; \perp (LaTeX)
 19046 \DeclareTextCommand{\textperp}{PU}{\9047\302}%* U+27C2
 19047 % \notperp (mathabx)
 19048 \DeclareTextCommand{\textnotperp}{PU}{\9047\302\83\070}%* U+27C2 U+0338
 19049 % U+27C7 OR WITH DOT INSIDE; \veedot (MnSymbol)
 19050 \DeclareTextCommand{\textveedot}{PU}{\9047\307}%* U+27C7
 19051 % U+27D1 AND WITH DOT; \wedgedot (MnSymbol)
 19052 \DeclareTextCommand{\textwedgedot}{PU}{\9047\321}%* U+27D1
 19053 % U+27DC LEFT MULTIMAP; \leftspoon (MnSymbol)
 19054 \DeclareTextCommand{\textleftspoon}{PU}{\9047\334}%* U+27DC
 19055 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET
 19056 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}%* U+27E6
 19057 %* \textlbrackdbl -> \lbracket (stmaryrd)
 19058 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET
 19059 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}%* U+27E7
 19060 %* \textrbrackdbl -> \rrbracket (stmaryrd)

47.2.32 Supplemental Arrows-A: U+27F0 to U+27FF

19061 % U+27F2 ANTICLOCKWISE GAPPED CIRCLE ARROW;
 19062 % \circlearrowleft (AmS)
 19063 \DeclareTextCommand{\textcirclearrowleft}{PU}{\9047\362}%* U+27F2
 19064 % U+27F3 CLOCKWISE GAPPED CIRCLE ARROW; \circlearrowright (AmS)
 19065 \DeclareTextCommand{\textcirclearrowright}{PU}{\9047\363}%* U+27F3
 19066 % U+27F5 LONG LEFTWARDS ARROW; \longleftarrow (AmS)
 19067 \DeclareTextCommand{\textlongleftarrow}{PU}{\9047\365}%* U+27F5
 19068 % U+27F6 LONG RIGHTWARDS ARROW; \longrightarrow (AmS)
 19069 \DeclareTextCommand{\textlongrightarrow}{PU}{\9047\366}%* U+27F6
 19070 % U+27F7 LONG LEFT RIGHT ARROW; \longlefttrightarrow (AmS)
 19071 \DeclareTextCommand{\textlonglefttrightarrow}{PU}{\9047\367}%* U+27F7
 19072 % U+27F8 LONG LEFTWARDS DOUBLE ARROW; \Longleftarrow (AmS)

```

19073 \DeclareTextCommand{\textLongleftarrow}{PU}{\9047\370}%* U+27F8
19074 % U+27F9 LONG RIGHTWARDS DOUBLE ARROW; \Longrightarrow (AmS)
19075 \DeclareTextCommand{\textLongrightarrow}{PU}{\9047\371}%* U+27F9
19076 % U+27FA LONG LEFT RIGHT DOUBLE ARROW; \Longleftrightarrow (AmS)
19077 \DeclareTextCommand{\textLongleftrightarrow}{PU}{\9047\372}%* U+27FA
19078 % U+27FC LONG RIGHTWARDS ARROW FROM BAR; \longmapsto (AmS)
19079 \DeclareTextCommand{\textlongmapsto}{PU}{\9047\374}%* U+27FC
19080 % U+27FD LONG LEFTWARDS DOUBLE ARROW FROM BAR; \Longmaps-
    from (stmaryrd)
19081 \DeclareTextCommand{\textLongmapsfrom}{PU}{\9047\375}%* U+27FD
19082 % U+27FE LONG RIGHTWARDS DOUBLE ARROW FROM BAR; \Longmap-
    sto (stmaryrd)
19083 \DeclareTextCommand{\textLongmapsto}{PU}{\9047\376}%* U+27FE

```

47.2.33 Supplemental Arrows-B: U+2900 to U+297F

```

19084 % U+2921 NORTH WEST AND SOUTH EAST ARROW; \nwsearrow (MnSym-
    bol)
19085 \DeclareTextCommand{\textnwsearrow}{PU}{\9051\041}%* U+2921
19086 % U+2922 NORTH EAST AND SOUTH WEST ARROW; \neswarrow (MnSym-
    bol)
19087 \DeclareTextCommand{\textneswarrow}{PU}{\9051\042}%* U+2922
19088 % U+2923 NORTH WEST ARROW WITH HOOK; \hooknwarrow (MnSymbol)
19089 \DeclareTextCommand{\texthooknwarrow}{PU}{\9051\043}%* U+2923
19090 % U+2924 NORTH EAST ARROW WITH HOOK; \hooknearrow (MnSymbol)
19091 \DeclareTextCommand{\textrhooknearrow}{PU}{\9051\044}%* U+2924
19092 % U+2925 SOUTH EAST ARROW WITH HOOK; \hooksearrow (MnSymbol)
19093 \DeclareTextCommand{\texthooksearrow}{PU}{\9051\045}%* U+2925
19094 % U+2926 SOUTH WEST ARROW WITH HOOK; \hookswarrow (MnSymbol)
19095 \DeclareTextCommand{\textrhookswarrow}{PU}{\9051\046}%* U+2926
19096 % U+2933 WAVE ARROW POINTING DIRECTLY RIGHT; \leadsto (wasysym)
19097 \DeclareTextCommand{\textleadsto}{PU}{\9051\063}%* U+2933
19098 % U+2934 ARROW POINTING RIGHTWARDS THEN CURVING UPWARDS;
19099 % \rcurvearrowne (MnSymbol)
19100 \DeclareTextCommand{\textrcurvearrowne}{PU}{\9051\064}%* U+2934
19101 % U+2935 ARROW POINTING RIGHTWARDS THEN CURVING DOWN-
    WARDS;
19102 % \lcurvearrowse (MnSymbol)
19103 \DeclareTextCommand{\textlcurvearrowse}{PU}{\9051\065}%* U+2935
19104 % U+2936 ARROW POINTING DOWNWARDS THEN CURVING LEFT-
    WARDS;
19105 % \lcurvearrowsw (MnSymbol)
19106 \DeclareTextCommand{\textlcurvearrowsw}{PU}{\9051\066}%* U+2936
19107 % U+2937 ARROW POINTING DOWNWARDS THEN CURVING RIGHT-
    WARDS;
19108 % \rcurvearrowse (MnSymbol)
19109 \DeclareTextCommand{\textrcurvearrowse}{PU}{\9051\067}%* U+2937
19110 % U+2938 RIGHT-SIDE ARC CLOCKWISE ARROW; \lcurvearrowdown (Mn-
    Symbol)
19111 \DeclareTextCommand{\textlcurvearrowdown}{PU}{\9051\070}%* U+2938
19112 %* \textlcurvearrowdown -> \RightTorque (marvosym)
19113 %* \textlcurvearrowdown -> \Righttorque (marvosym)
19114 % U+2939 LEFT-SIDE ARC ANTICLOCKWISE ARROW;
19115 % \rcurvearrowdown (MnSymbol)
19116 \DeclareTextCommand{\textrcurvearrowdown}{PU}{\9051\071}%* U+2939

```

```

19117 %* \texttrcurvearrowdown -> \LeftTorque (marvosym)
19118 %* \texttrcurvearrowdown -> \Lefttorque (marvosym)
19119 % U+293A TOP ARC ANTICLOCKWISE ARROW; \rcurvearrowleft (MnSym-
      bol)
19120 \DeclareTextCommand{\texttrcurvearrowleft}{PU}{\9051\072}%* U+293A
19121 % U+293B BOTTOM ARC ANTICLOCKWISE ARROW;
19122 % \rcurvearrowright (MnSymbol)
19123 \DeclareTextCommand{\texttrcurvearrowright}{PU}{\9051\073}%* U+293B
19124 % U+294A LEFT BARB UP RIGHT BARB DOWN HARPOON; \leftrighthar-
      poon (mathabx)
19125 \DeclareTextCommand{\textleftrightharpoon}{PU}{\9051\112}%* U+294A
19126 % U+294B LEFT BARB DOWN RIGHT BARB UP HARPOON; \rightlefthar-
      poon (mathabx)
19127 \DeclareTextCommand{\textrightleftharpoon}{PU}{\9051\113}%* U+294B
19128 % U+294C UP BARB RIGHT DOWN BARB LEFT HARPOON;
19129 % \updownharpoonrightleft (MnSymbol)
19130 \DeclareTextCommand{\textupdownharpoonrightleft}{PU}{\9051\114}%* U+294C
19131 % U+294D UP BARB LEFT DOWN BARB RIGHT HARPOON;
19132 % \updownharpoonleftright (MnSymbol)
19133 \DeclareTextCommand{\textupdownharpoonleftright}{PU}{\9051\115}%* U+294D
19134 % U+2962 LEFTWARDS HARPOON WITH BARB UP ABOVE LEFTWARDS
19135 % HARPOON WITH BARB DOWN; \leftleftharpoons (mathabx)
19136 \DeclareTextCommand{\textleftleftharpoons}{PU}{\9051\142}%* U+2962
19137 % U+2963 UPWARDS HARPOON WITH BARB LEFT BESIDE UPWARDS
19138 % HARPOON WITH BARB RIGHT; \upupharpoons (mathabx)
19139 \DeclareTextCommand{\textupupharpoons}{PU}{\9051\143}%* U+2963
19140 % U+2964 RIGHTWARDS HARPOON WITH BARB UP ABOVE RIGHT-
      WARDS HARPOON
19141 % WITH BARB DOWN; \rightrightarpoons (mathabx)
19142 \DeclareTextCommand{\textrightarpoons}{PU}{\9051\144}%* U+2964
19143 % U+2965 DOWNWARDS HARPOON WITH BARB LEFT BESIDE DOWN-
      WARDS HARPOON
19144 % WITH BARB RIGHT; \downdownharpoons (mathabx)
19145 \DeclareTextCommand{\textdowndownharpoons}{PU}{\9051\145}%* U+2965
19146 % U+296A LEFTWARDS HARPOON WITH BARB UP ABOVE LONG DASH;
19147 % \leftbarharpoon (mathabx)
19148 \DeclareTextCommand{\textleftbarharpoon}{PU}{\9051\152}%* U+296A
19149 % U+296B LEFTWARDS HARPOON WITH BARB DOWN BELOW
19150 % LONG DASH; \barleftharpoon (mathabx)
19151 \DeclareTextCommand{\textbarleftharpoon}{PU}{\9051\153}%* U+296B
19152 % U+296C RIGHTWARDS HARPOON WITH BARB UP ABOVE
19153 % LONG DASH; \rightbarharpoon (mathabx)
19154 \DeclareTextCommand{\textrightbarharpoon}{PU}{\9051\154}%* U+296C
19155 % U+296D RIGHTWARDS HARPOON WITH BARB DOWN BELOW
19156 % LONG DASH; \barrightharpoon (mathabx)
19157 \DeclareTextCommand{\textbarrightharpoon}{PU}{\9051\155}%* U+296D
19158 % U+296E UPWARDS HARPOON WITH BARB LEFT BESIDE DOWN-
      WARDS HARPOON
19159 % WITH BARB RIGHT; \updownharpoons (mathabx)
19160 \DeclareTextCommand{\textupdownharpoons}{PU}{\9051\156}%* U+296E
19161 % U+296F DOWNWARDS HARPOON WITH BARB LEFT BESIDE UP-
      WARDS HARPOON
19162 % WITH BARB RIGHT; \downupharpoons (mathabx)
19163 \DeclareTextCommand{\textdownupharpoons}{PU}{\9051\157}%* U+296F

```


19164 % U+297F DOWN FISH TAIL
 19165 \DeclareTextCommand{\textmoo}{PU}{\9051\177\83\066}%* U+297F U+0336

47.2.34 Miscellaneous Mathematical Symbols-B: U+2980 to U+29FF

19166 % U+2987 Z NOTATION LEFT IMAGE BRACKET; \llparenthesis (stmaryrd)
 19167 \DeclareTextCommand{\textllparenthesis}{PU}{\9051\207}%* U+2987
 19168 % U+2988 Z NOTATION RIGHT IMAGE BRACKET; \rrparenthesis (stmaryrd)
 19169 \DeclareTextCommand{\textrrparenthesis}{PU}{\9051\210}%* U+2988
 19170 % U+29B0 REVERSED EMPTY SET; \invdiameter (wasysym)
 19171 \DeclareTextCommand{\textinvdiameter}{PU}{\9051\260}%* U+29B0
 19172 % U+29B6 CIRCLED VERTICAL BAR; \obar (stmaryrd)
 19173 \DeclareTextCommand{\textobar}{PU}{\9051\266}%* U+29B6
 19174 %* \textobar -> \textvarobar (stmaryrd)
 19175 % U+29B8 CIRCLED REVERSE SOLIDUS; \obslash (stmaryrd)
 19176 \DeclareTextCommand{\textobslash}{PU}{\9051\270}%* U+29B8
 19177 %* \textobslash -> \circledbslash (txfonts/pxfonts)
 19178 %* \textobslash -> \obackslash (mathabx)
 19179 %* \textobslash -> \varobslash (stmaryrd)
 19180 % U+29BA CIRCLE DIVIDED BY HORIZONTAL BAR AND TOP HALF
 19181 % DIVIDED BY VERTICAL BAR; \obot (mathabx)
 19182 \DeclareTextCommand{\textobot}{PU}{\9051\272}%* U+29BA
 19183 %* \textobot -> \odplus (ulsy)
 19184 % U+29BB CIRCLE WITH SUPERIMPOSED X; \NoChemicalCleaning (marvosym)
 19185 \DeclareTextCommand{\textNoChemicalCleaning}{PU}{\9051\273}%* U+29BB
 19186 % U+29C0 CIRCLED LESS-THAN; \olessthan (stmaryrd)
 19187 \DeclareTextCommand{\textolessthan}{PU}{\9051\300}%* U+29C0
 19188 %* \textolessthan -> \varolessthan (stmaryrd)
 19189 % U+29C1 CIRCLED GREATER-THAN; \ogreaterthan (stmaryrd)
 19190 \DeclareTextCommand{\textogreaterthan}{PU}{\9051\301}%* U+29C1
 19191 %* \textogreaterthan -> \varogreaterthan (stmaryrd)
 19192 % U+29C4 SQUARED RISING DIAGONAL SLASH; \boxslash (mathabx, stmaryrd)
 19193 \DeclareTextCommand{\textboxslash}{PU}{\9051\304}%* U+29C4
 19194 % U+29C5 SQUARED FALLING DIAGONAL SLASH; \boxbslash (stmaryrd)
 19195 \DeclareTextCommand{\textboxbslash}{PU}{\9051\305}%* U+29C5
 19196 % U+29C6 SQUARED ASTERISK; \boxast (stmaryrd)
 19197 \DeclareTextCommand{\textboxast}{PU}{\9051\306}%* U+29C6
 19198 % U+29C7 SQUARED SMALL CIRCLE; \boxcircle (stmaryrd)
 19199 \DeclareTextCommand{\textboxcircle}{PU}{\9051\307}%* U+29C7
 19200 % U+29C8 SQUARED SQUARE; \boxbox (stmaryrd)
 19201 \DeclareTextCommand{\textboxbox}{PU}{\9051\310}%* U+29C8
 19202 % U+29D3 BLACK BOWTIE; \Valve (marvosym)
 19203 \DeclareTextCommand{\textValve}{PU}{\9051\323}%* U+29D3
 19204 % U+29DF DOUBLE-ENDED MULTIMAP; \multimapboth (txfonts/pxfonts)
 19205 \DeclareTextCommand{\textmultimapboth}{PU}{\9051\337}%* U+29DF
 19206 % U+29E2 SHUFFLE PRODUCT; \shuffle (shuffle)
 19207 \DeclareTextCommand{\textshuffle}{PU}{\9051\342}%* U+29E2

47.2.35 Supplemental Mathematical Operators: U+2A00 to U+2AFF

19208 % U+2A04 N-ARY UNION OPERATOR WITH PLUS; \uplus (LaTeX)
 19209 \DeclareTextCommand{\textuplus}{PU}{\9052\004}%* U+2A04
 19210 % U+2A07 TWO LOGICAL AND OPERATOR; \bigdoublewedge (MnSymbol)
 19211 \DeclareTextCommand{\textbigdoublewedge}{PU}{\9052\007}%* U+2A07
 19212 % U+2A08 TWO LOGICAL OR OPERATOR; \bigdoublevee (MnSymbol)

```

19213 \DeclareTextCommand{\textbigdoublevee}{PU}{\9052\010}%* U+2A08
19214 % U+2A1D JOIN; \Join (latexsym, amsfonts, amssymb, mathabx, txfonts,
19215 %   pxfonts, wasysym)
19216 \DeclareTextCommand{\textJoin}{PU}{\9052\035}%* U+2A1D
19217 % U+2A1F Z NOTATION SCHEMA COMPOSITION; \fatsemi (stmaryrd)
19218 \DeclareTextCommand{\textfatsemi}{PU}{\9052\037}%* U+2A1F
19219 % U+2A22 PLUS SIGN WITH SMALL CIRCLE ABOVE; \circplus (mathabx)
19220 \DeclareTextCommand{\textcircplus}{PU}{\9052\042}%* U+2A22
19221 % U+2A2A MINUS SIGN WITH DOT BELOW; \minusdot (MnSymbol)
19222 \DeclareTextCommand{\textminusdot}{PU}{\9052\052}%* U+2A2A
19223 %* \textminusdot -> \divdot (mathabx)
19224 % U+2A30 MULTIPLICATION SIGN WITH DOT ABOVE; \dottimes (mathabx)
19225 \DeclareTextCommand{\textdottimes}{PU}{\9052\060}%* U+2A30
19226 % U+2A32 SEMIDIRECT PRODUCT WITH BOTTOM CLOSED;
19227 %   \dtimes (mathdesign)
19228 \DeclareTextCommand{\textdtimes}{PU}{\9052\062}%* U+2A32
19229 % U+2A38 CIRCLED DIVISION SIGN; \odiv (mathabx)
19230 \DeclareTextCommand{\textodiv}{PU}{\9052\070}%* U+2A38
19231 % U+2A3C INTERIOR PRODUCT; \invneg (MnSymbol)
19232 \DeclareTextCommand{\textinvneg}{PU}{\9052\074}%* U+2A3C
19233 % U+2A4E DOUBLE SQUARE INTERSECTION; \sqdoublecap (mathabx)
19234 \DeclareTextCommand{\textsqdoublecap}{PU}{\9052\116}%* U+2A4E
19235 %* \textsqdoublecap -> \doublesqcap (MnSymbol)
19236 % U+2A40 INTERSECTION WITH DOT; \capdot (MnSymbol)
19237 \DeclareTextCommand{\textcapdot}{PU}{\9052\100}%* U+2A40
19238 % U+2A4F DOUBLE SQUARE UNION; \sqdoublecup (mathabx)
19239 \DeclareTextCommand{\textsqdoublecup}{PU}{\9052\117}%* U+2A4F
19240 %* \textsqdoublecup -> \doublesqcup (MnSymbol)
19241 % U+2A55 TWO INTERSECTING LOGICAL AND; \doublewedge (MnSymbol)
19242 \DeclareTextCommand{\textdoublewedge}{PU}{\9052\125}%* U+2A55
19243 % U+2A56 TWO INTERSECTING LOGICAL OR; \doublevee (MnSymbol)
19244 \DeclareTextCommand{\textdoublevee}{PU}{\9052\126}%* U+2A56
19245 %* \textdoublevee -> \merge (stmaryrd)
19246 % U+2A5E LOGICAL AND WITH DOUBLE OVERBAR;
19247 %   \doublebarwedge (AmS)
19248 \DeclareTextCommand{\textdoublebarwedge}{PU}{\9052\136}%* U+2A5E
19249 % U+2A63 LOGICAL OR WITH DOUBLE UNDERBAR;
19250 %   \veedoublebar (mahtabx)
19251 \DeclareTextCommand{\textveedoublebar}{PU}{\9052\143}%* U+2A63
19252 % U+2A66 EQUALS SIGN WITH DOT BELOW; \eqdot (MnSymbol)
19253 \DeclareTextCommand{\texteqdot}{PU}{\9052\146}%* U+2A66
19254 % \neqdot (MnSymbol)
19255 \DeclareTextCommand{\textneqdot}{PU}{\9052\146\83\070}%* U+2A66 U+0338
19256 % U+2A74 DOUBLE COLON EQUAL; \coloncolonequals (colonequals)
19257 \DeclareTextCommand{\textcoloncolonequals}{PU}{\9052\164}%* U+2A74
19258 % U+2A7D LESS-THAN OR SLANTED EQUAL TO; \leqslant (AmS)
19259 \DeclareTextCommand{\textleqslant}{PU}{\9052\175}%* U+2A7D
19260 % \nleqslant (txfonts/pxfonts)
19261 \DeclareTextCommand{\textnleqslant}{PU}{\9052\175\83\070}%* U+2A7D U+0338
19262 % U+2A7E GREATER-THAN OR SLANTED EQUAL TO; \geqslant (AmS)
19263 \DeclareTextCommand{\textgeqslant}{PU}{\9052\176}%* U+2A7E
19264 % \ngeqslant (txfonts/pxfonts)
19265 \DeclareTextCommand{\textngeqslant}{PU}{\9052\176\83\070}%* U+2A7E U+0338
19266 % U+2A85 LESS-THAN OR APPROXIMATE; \lessapprox (AmS)

```

```

19267 \DeclareTextCommand{\textlessapprox}{PU}{\9052\205}%* U+2A85
19268 % \nlessapprox (txfonts/pxfonts)
19269 \DeclareTextCommand{\textnlessapprox}{PU}{\9052\205\83\070}%* U+2A85 U+0338
19270 % U+2A86 GREATER-THAN OR APPROXIMATE; \gtrapprox (AmS)
19271 \DeclareTextCommand{\textgtrapprox}{PU}{\9052\206}%* U+2A86
19272 % \ngtrapprox (txfonts/pxfonts)
19273 \DeclareTextCommand{\textngtrapprox}{PU}{\9052\206\83\070}%* U+2A86 U+0338
19274 % U+2A87 LESS-THAN AND SINGLE-LINE NOT EQUAL TO; \lneq (AmS)
19275 \DeclareTextCommand{\textlneq}{PU}{\9052\207}%* U+2A87
19276 % U+2A88 GREATER-THAN AND SINGLE-LINE NOT EQUAL TO;
19277 % \gneq (AmS)
19278 \DeclareTextCommand{\textgneq}{PU}{\9052\210}%* U+2A88
19279 % U+2A89 LESS-THAN AND NOT APPROXIMATE; \lnapprox (AmS)
19280 \DeclareTextCommand{\textlnapprox}{PU}{\9052\211}%* U+2A89
19281 % U+2A8A GREATER-THAN AND NOT APPROXIMATE; \gnapprox (AmS)
19282 \DeclareTextCommand{\textgnapprox}{PU}{\9052\212}%* U+2A8A
19283 % U+2A8B LESS-THAN ABOVE DOUBLE-LINE EQUAL ABOVE GREATER-
    THAN;
19284 % \lesseqqgtr (AmS)
19285 \DeclareTextCommand{\textlesseqqgtr}{PU}{\9052\213}%* U+2A8B
19286 % U+2A8C GREATER-THAN ABOVE DOUBLE-LINE EQUAL ABOVE LESS-
    THAN;
19287 % \gtreqqless (AmS)
19288 \DeclareTextCommand{\textgtreqqless}{PU}{\9052\214}%* U+2A8C
19289 % U+2A95 SLANTED EQUAL TO OR LESS-THAN; \eqslantless (AmS)
19290 \DeclareTextCommand{\texteqslantless}{PU}{\9052\225}%* U+2A95
19291 % U+2A96 SLANTED EQUAL TO OR GREATER-THAN; \eqslantgtr (AmS)
19292 \DeclareTextCommand{\texteqslantgtr}{PU}{\9052\226}%* U+2A96
19293 % U+2AA6 LESS-THAN CLOSED BY CURVE; \leftslice (stmaryrd)
19294 \DeclareTextCommand{\textleftslice}{PU}{\9052\246}%* U+2AA6
19295 % U+2AA7 GREATER-THAN CLOSED BY CURVE; \rightslice (stmaryrd)
19296 \DeclareTextCommand{\textright slice}{PU}{\9052\247}%* U+2AA7
19297 % U+2AAF PRECEDES ABOVE SINGLE-LINE EQUALS SIGN; \preceq (Mn-
    Symbol)
19298 \DeclareTextCommand{\textpreceq}{PU}{\9052\257}%* U+2AAF
19299 % \npreceq (txfonts/pxfonts)
19300 \DeclareTextCommand{\textnpreceq}{PU}{\9052\257\83\070}%* U+2AAF U+0338
19301 % U+2AB0 SUCCEEDS ABOVE SINGLE-LINE EQUALS SIGN; \succeq (Mn-
    Symbol)
19302 \DeclareTextCommand{\textsucceq}{PU}{\9052\260}%* U+2AB0
19303 % \nsucceq (txfonts/pxfonts)
19304 \DeclareTextCommand{\textnsucceq}{PU}{\9052\260\83\070}%* U+2AB0 U+0338
19305 % U+2AB1 PRECEDES ABOVE SINGLE-LINE NOT EQUAL TO; \prec-
    neq (mathabx)
19306 \DeclareTextCommand{\textprecneq}{PU}{\9052\261}%* U+2AB1
19307 % U+2AB2 SUCCEEDS ABOVE SINGLE-LINE NOT EQUAL TO; \succ-
    neq (mathabx)
19308 \DeclareTextCommand{\textsuccneq}{PU}{\9052\262}%* U+2AB2
19309 % U+2AB3 PRECEDES ABOVE EQUALS SIGN; \preceqq (txfonts/pxfonts)
19310 \DeclareTextCommand{\textpreceqq}{PU}{\9052\263}%* U+2AB3
19311 % \npreceqq (txfonts/pxfonts)
19312 \DeclareTextCommand{\textnpreceqq}{PU}{\9052\263\83\070}%* U+2AB3 U+0338
19313 % U+2AB4 SUCCEEDS ABOVE EQUALS SIGN; \succeqq (txfonts/pxfonts)
19314 \DeclareTextCommand{\textsucceqq}{PU}{\9052\264}%* U+2AB4

```

```

19315 % \nsucceqq (txfonts/pxfonts)
19316 \DeclareTextCommand{\textnsucceqq}{PU}{\9052\264\83\070}%* U+2AB4 U+0338
19317 % U+2AB5 PRECEDES ABOVE NOT EQUAL TO; \precneqq (txfonts/pxfonts)
19318 \DeclareTextCommand{\textprecneqq}{PU}{\9052\265}%* U+2AB5
19319 % U+2AB6 SUCCEEDS ABOVE NOT EQUAL TO; \succneqq (txfonts/pxfonts)
19320 \DeclareTextCommand{\textsucneqq}{PU}{\9052\266}%* U+2AB6
19321 % U+2AB7 PRECEDES ABOVE ALMOST EQUAL TO; \precapprox (AmS)
19322 \DeclareTextCommand{\textprecapprox}{PU}{\9052\267}%* U+2AB7
19323 % \nprecapprox (txfonts/pxfonts)
19324 \DeclareTextCommand{\textnprecapprox}{PU}{\9052\267\83\070}%* U+2AB7 U+0338
19325 % U+2AB8 SUCCEEDS ABOVE ALMOST EQUAL TO; \succapprox (AmS)
19326 \DeclareTextCommand{\textsuccapprox}{PU}{\9052\270}%* U+2AB8
19327 % \nsuccapprox (txfonts/pxfonts)
19328 \DeclareTextCommand{\textnsuccapprox}{PU}{\9052\270\83\070}%* U+2AB8 U+0338
19329 % U+2AB9 PRECEDES ABOVE NOT ALMOST EQUAL TO; \precnap-
      prox (AmS)
19330 \DeclareTextCommand{\textprecnapprox}{PU}{\9052\271}%* U+2AB9
19331 % U+2ABA SUCCEEDS ABOVE NOT ALMOST EQUAL TO; \succnap-
      prox (AmS)
19332 \DeclareTextCommand{\textsuccnapprox}{PU}{\9052\272}%* U+2ABA
19333 % U+2AC5 SUBSET OF ABOVE EQUALS SIGN; \subseteqq (AmS)
19334 \DeclareTextCommand{\textsubseteqq}{PU}{\9052\305}%* U+2AC5
19335 % \nsubseteqq (txfonts/pxfonts, mathabx)
19336 \DeclareTextCommand{\textnsubseteqq}{PU}{\9052\305\83\070}%* U+2AC5 U+0338
19337 % U+2AC6 SUPERSET OF ABOVE EQUALS SIGN; \supseteqq (AmS)
19338 \DeclareTextCommand{\textsupseteqq}{PU}{\9052\306}%* U+2AC6
19339 % \nsupseteqq (mathabx)
19340 \DeclareTextCommand{\textnsupseteqq}{PU}{\9052\306\83\070}%* U+2AC6 U+0338
19341 % U+2AE3 DOUBLE VERTICAL BAR LEFT TURNSTILE
19342 \DeclareTextCommand{\textdashV}{PU}{\9052\343}%* U+2AE3
19343 %* \textdashV -> \leftVdash (MnSymbol)
19344 % \ndashV (mathabx)
19345 \DeclareTextCommand{\textndashV}{PU}{\9052\343\83\070}%* U+2AE3 U+0338
19346 %* \textndashV -> \nleftVdash (MnSymbol)
19347 % U+2AE4 VERTICAL BAR DOUBLE LEFT TURNSTILE; \Dashv (mathabx)
19348 \DeclareTextCommand{\textDashv}{PU}{\9052\344}%* U+2AE4
19349 %* \textDashv -> \leftmodels (MnSymbol)
19350 % \nDashv (mathabx)
19351 \DeclareTextCommand{\textnDashv}{PU}{\9052\344\83\070}%* U+2AE4 U+0338
19352 %* \textnDashv -> \nleftmodels (MnSymbol)
19353 % U+2AE5 DOUBLE VERTICAL BAR DOUBLE LEFT TURNSTILE;
19354 % \DashV (mathabx)
19355 \DeclareTextCommand{\textDashV}{PU}{\9052\345}%* U+2AE5
19356 %* \textDashV -> \leftModels (MnSymbol)
19357 % \nDashV (mathabx)
19358 \DeclareTextCommand{\textnDashV}{PU}{\9052\345\83\070}%* U+2AE5 U+0338
19359 %* \textnDashV -> \nleftModels (MnSymbol)
19360 % U+2AEA DOUBLE DOWN TACK; \downmodels (MnSymbol)
19361 \DeclareTextCommand{\textdownmodels}{PU}{\9052\352}%* U+2AEA
19362 % \ndownmodels (MnSymbol)
19363 \DeclareTextCommand{\textndownmodels}{PU}{\9052\352\83\070}%* U+2AEA U+0338
19364 % U+2AEB DOUBLE UP TACK; \upmodels (MnSymbol)
19365 \DeclareTextCommand{\textupmodels}{PU}{\9052\353}%* U+2AEB
19366 % \nupmodels (MnSymbol)

```

19367 \DeclareTextCommand{\textnupmodels}{PU}{\9052\353\83\070}%* U+2AEB U+0338
 19368 % U+2AEF VERTICAL LINE WITH CIRCLE ABOVE; \upspoon (MnSymbol)
 19369 \DeclareTextCommand{\textupspoon}{PU}{\9052\357}%* U+2AEF
 19370 % U+2AF4 TRIPLE VERTICAL BAR BINARY RELATION;
 19371 % \interleave (stmaryrd)
 19372 \DeclareTextCommand{\textinterleave}{PU}{\9052\364}%* U+2AF4
 19373 % U+2AFD DOUBLE SOLIDUS OPERATOR; \sslash (stmaryrd)
 19374 \DeclareTextCommand{\textsslash}{PU}{\9052\375}%* U+2AFD
 19375 %* \textsslash -> \varparallel (txfonts\pxfonts)

47.2.36 Miscellaneous Symbols and Arrows: U+2B00 to U+2BFF

19376 % U+2B20 WHITE PENTAGON; \pentagon (wasysym)
 19377 \DeclareTextCommand{\textpentagon}{PU}{\9053\040}%* U+2B20
 19378 % U+2B21 WHITE HEXAGON; \varhexagon (wasysym)
 19379 \DeclareTextCommand{\textvarhexagon}{PU}{\9053\041}%* U+2B21

47.2.37 Latin Extended-C: U+2C60 to U+2C7F

19380 % U+2C7C LATIN SUBSCRIPT SMALL LETTER J
 19381 \DeclareTextCommand{\textjinferior}{PU}{\9054\174}%* U+2C7C

47.2.38 Supplemental Punctuation: U+2E00 to U+2E7F

19382 % U+2E13 DOTTED OBELOS; \slashdiv (MnSymbol)
 19383 \DeclareTextCommand{\textslashdiv}{PU}{\9056\023}%* U+2E13
 19384 % U+2E18 INVERTED INTERROBANG; \textinterrobangdown (textcomp)
 19385 \DeclareTextCommand{\textinterrobangdown}{PU}{\9056\030}% U+2E18
 19386 % U+2E2D FIVE DOT MARK; \fivedots (MnSymbol)
 19387 \DeclareTextCommand{\textfivedots}{PU}{\9056\055}%* U+2E2D

47.2.39 Modifier Tone Letters: U+A700 to U+A71F

19388 % U+A71B MODIFIER LETTER RAISED UP ARROW; \textupstep (tipa)
 19389 \DeclareTextCommand{\textupstep}{PU}{\9247\033}% U+A71B
 19390 % U+A71C MODIFIER LETTER RAISED DOWN ARROW;
 19391 % \textdownstep (tipa)
 19392 \DeclareTextCommand{\textdownstep}{PU}{\9247\034}% U+A71C

47.2.40 Latin Extended-D: U+A720 to U+A7FF

19393 % U+A727 LATIN SMALL LETTER HENG; \textheng (tipx)
 19394 \DeclareTextCommand{\textPUheng}{PU}{\9247\047}% U+A727
 19395 %* \textPUheng -> \textheng (tipx)
 19396 % U+A72C LATIN CAPITAL LETTER CUATRILLO; \textlhookfour (tipx)
 19397 \DeclareTextCommand{\textPULhookfour}{PU}{\9247\054}% U+A72C
 19398 %* \textPULhookfour -> \textlhookfour (tipx)
 19399 % U+A730 LATIN LETTER SMALL CAPITAL F; \textscf (tipx)
 19400 \DeclareTextCommand{\textPUscf}{PU}{\9247\060}% U+A730
 19401 %* \textPUscf -> \textscf (tipx)
 19402 % U+A735 LATIN SMALL LETTER AO; \textao lig (tipx)
 19403 \DeclareTextCommand{\textPUaolig}{PU}{\9247\065}% U+A735
 19404 %* \textPUaolig -> \textao lig (tipx)
 19405 % U+A74F LATIN SMALL LETTER OO; \oo (wsuipa)
 19406 \DeclareTextCommand{\textoo}{PU}{\9247\117}%* U+A74F
 19407 % U+A788 MODIFIER LETTER LOW CIRCUMFLEX ACCENT
 19408 \DeclareTextCommand{\textcircumlowlow}{PU}{\9247\210}% U+A788

47.2.41 Alphabetic Presentation Forms: U+FB00 to U+FB4F

19409 % U+FB01 LATIN SMALL LIGATURE FI; fi
 19410 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01
 19411 % U+FB02 LATIN SMALL LIGATURE FL; fl
 19412 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

47.2.42 Musical Symbols: U+1D100 to U+1D1FF

19413 % U+1D13B MUSICAL SYMBOL WHOLE REST; \GaPa (harmony)
 19414 \DeclareTextCommand{\textGaPa}{PU}{\9330\064\9335\073}%* U+1D13B
 19415 % U+1D13C MUSICAL SYMBOL HALF REST; \HaPa (harmony)
 19416 \DeclareTextCommand{\textHaPa}{PU}{\9330\064\9335\074}%* U+1D13C
 19417 % U+1D13D MUSICAL SYMBOL QUARTER REST; \ViPa (harmony)
 19418 \DeclareTextCommand{\textViPa}{PU}{\9330\064\9335\075}%* U+1D13D
 19419 % U+1D13E MUSICAL SYMBOL EIGHTH REST; \AcPa (harmony)
 19420 \DeclareTextCommand{\textAcPa}{PU}{\9330\064\9335\076}%* U+1D13E
 19421 % U+1D13F MUSICAL SYMBOL SIXTEENTH REST; \SePa (harmony)
 19422 \DeclareTextCommand{\textSePa}{PU}{\9330\064\9335\077}%* U+1D13F
 19423 % U+1D140 MUSICAL SYMBOL THIRTY-SECOND REST; \ZwPa (harmony)
 19424 \DeclareTextCommand{\textZwPa}{PU}{\9330\064\9335\100}%* U+1D140
 19425 % U+1D15D MUSICAL SYMBOL WHOLE NOTE; \fullnote (wasysym)
 19426 \DeclareTextCommand{\textfullnote}{PU}{\9330\064\9335\135}%* U+1D15D
 19427 %* \textfullnote -> \Ganz (harmony)
 19428 % U+1D15E MUSICAL SYMBOL HALF NOTE; \halfnote (wasysym)
 19429 \DeclareTextCommand{\texthalfnote}{PU}{\9330\064\9335\136}%* U+1D15E
 19430 %* \texthalfnote -> \Halb (harmony)
 19431 % U+1D15F MUSICAL SYMBOL QUARTER NOTE; \Vier (harmony)
 19432 \DeclareTextCommand{\textVier}{PU}{\9330\064\9335\137}%* U+1D15F
 19433 % U+1D160 MUSICAL SYMBOL EIGHTH NOTE; \Acht (harmony)
 19434 \DeclareTextCommand{\textAcht}{PU}{\9330\064\9335\140}%* U+1D160
 19435 % U+1D161 MUSICAL SYMBOL SIXTEENTH NOTE; \Sech (harmony)
 19436 \DeclareTextCommand{\textSech}{PU}{\9330\064\9335\141}%* U+1D161
 19437 % U+1D162 MUSICAL SYMBOL THIRTY-SECOND NOTE; \Zwdr (harmony)
 19438 \DeclareTextCommand{\textZwdr}{PU}{\9330\064\9335\142}%* U+1D162

47.2.43 Miscellaneous Symbols and Pictographs: U+1F300 to U+1F5FF

19439 % U+1F30D EARTH GLOBE EUROPE-AFRICA; \Mundus (marvosym)
 19440 \DeclareTextCommand{\textMundus}{PU}{\9330\074\9337\015}%* U+1F30D
 19441 % U+1F319 CRESCENT MOON; \Moon (marvosym)
 19442 \DeclareTextCommand{\textMoon}{PU}{\9330\074\9337\031}%* U+1F319
 19443 % U+1F468 MAN; \ManFace (marvosym)
 19444 \DeclareTextCommand{\textManFace}{PU}{\9330\075\9334\150}%* U+1F468
 19445 % U+1F469 WOMAN; \WomanFace (marvosym)
 19446 \DeclareTextCommand{\textWomanFace}{PU}{\9330\075\9334\151}%* U+1F469
 19447 %* \textWomanFace -> \Womanface (marvosym)
 19448 % U+1F4E0 FAX MACHINE; \Fax (marvosym)
 19449 \DeclareTextCommand{\textFax}{PU}{\9330\075\9334\340}%* U+1F4E0
 19450 %* \textFax -> \Faxmachine (marvosym)
 19451 % U+1F525 FIRE; \Fire (ifsym)
 19452 \DeclareTextCommand{\textFire}{PU}{\9330\075\9335\045}%* U+1F525

47.2.44 Transport and Map Symbols: U+1F680 to U+1F6FF

19453 % U+1F6B2 BICYCLE; \Bicycle (marvosym)
 19454 \DeclareTextCommand{\textBicycle}{PU}{\9330\075\9336\262}%* U+1F6B2
 19455 % U+1F6B9 MENS SYMBOL; \Gentsroom (marvosym)
 19456 \DeclareTextCommand{\textGentsroom}{PU}{\9330\075\9336\271}%* U+1F6B9

```

19457 % U+1F6BA WOMENS SYMBOL; \Ladiesroom (marvosym)
19458 \DeclareTextCommand{\textLadiesroom}{PU}{\9330\075\9336\272}%* U+1F6BA

```

47.2.45 Miscellaneous

```

19459 \DeclareTextCommand{\SS}{PU}{SS}%
19460 % \textcopyleft (textcomp)
19461 \DeclareTextCommand{\textcopyleft}{PU}{\9041\204\9040\335}% U+2184 U+20DD
19462 % \ccnc (ccllicenses)
19463 \DeclareTextCommand{\textccnc}{PU}{\80\044\9040\340}%* U+0024 U+20E0
19464 % \ccnd (ccllicenses)
19465 \DeclareTextCommand{\textccnd}{PU}{=\9040\335}%* U+003D U+20DD
19466 % \ccsa (ccllicenses)
19467 \DeclareTextCommand{\textccsa}{PU}{\9047\362\9040\335}%* U+27F2 U+20DD
19468 % \Info (marvosym, china2e)
19469 \DeclareTextCommand{\textInfo}{PU}{\9330\065\9334\042\9040\336}%* U+1D422 U+20DE
19470 % \CESign (marvosym)
19471 \DeclareTextCommand{\textCESign}{PU}{\80\103\80\105}%* U+0043 U+0045
19472 %* \textCESign -> \CESign (marvosym)

```

47.2.46 Aliases

Aliases (german.sty)

```

19473 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}%
19474 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}%
19475 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}%
19476 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}%
19477 \DeclareTextCommand{\textflqq}{PU}{\guillemetleft}%
19478 \DeclareTextCommand{\textfrqq}{PU}{\guillemetright}%
19479 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}%
19480 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}%

```

Aliases (math names)

```

19481 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}%*
19482 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}%*
19483 \DeclareTextCommand{\textdiv}{PU}{\textdivide}%*
19484 \DeclareTextCommand{\textpm}{PU}{\textplusminus}%*
19485 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}%*
19486 \puenc

```

47.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

19487 \puvnenc
19488 \DeclareTextCommand{\abreve}{PU}{\81\003}% U+0103
19489 \DeclareTextCommand{\acircumflex}{PU}{\80\342}% U+00E2
19490 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}% U+00EA
19491 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}% U+00F4
19492 \DeclareTextCommand{\ohorn}{PU}{\81\241}% U+01A1
19493 \DeclareTextCommand{\uhorn}{PU}{\81\260}% U+01B0
19494 \DeclareTextCommand{\ABREVE}{PU}{\81\002}% U+0102
19495 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}% U+00C2
19496 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}% U+00CA
19497 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}% U+00D4

```

19498 \DeclareTextCommand{\OHORN}{PU}{\81\240}% U+01A0
 19499 \DeclareTextCommand{\UHORN}{PU}{\81\257}% U+01AF

 19500 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1
 19501 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1
 19502 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0
 19503 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}% U+1EA3
 19504 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3
 19505 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}% U+1EAF
 19506 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}% U+1EB7
 19507 \DeclareTextCompositeCommand{\`}{PU}{\abreve}{\9036\261}% U+1EB1
 19508 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}% U+1EB3
 19509 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}% U+1EB5
 19510 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}% U+1EA5
 19511 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}% U+1EAD
 19512 \DeclareTextCompositeCommand{\`}{PU}{\acircumflex}{\9036\247}% U+1EA7
 19513 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}% U+1EA9
 19514 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}% U+1EAB
 19515 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9
 19516 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9
 19517 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8
 19518 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}% U+1EBB
 19519 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD
 19520 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}% U+1EBF
 19521 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}% U+1EC7
 19522 \DeclareTextCompositeCommand{\`}{PU}{\ecircumflex}{\9036\301}% U+1EC1
 19523 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}% U+1EC3
 19524 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}% U+1EC5
 19525 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED
 19526 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB
 19527 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC
 19528 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}% U+1EC9
 19529 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129
 19530 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3
 19531 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD
 19532 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2
 19533 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}% U+1ECF
 19534 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5
 19535 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}% U+1ED1
 19536 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}% U+1ED9
 19537 \DeclareTextCompositeCommand{\`}{PU}{\ocircumflex}{\9036\323}% U+1ED3
 19538 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}% U+1ED5
 19539 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}% U+1ED7
 19540 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}% U+1EDB
 19541 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}% U+1EE3
 19542 \DeclareTextCompositeCommand{\`}{PU}{\ohorn}{\9036\335}% U+1EDD
 19543 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}% U+1EDF
 19544 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}% U+1EE1
 19545 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA
 19546 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5
 19547 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9
 19548 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}% U+1EE7
 19549 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169
 19550 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}% U+1EE9
 19551 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}% U+1EF1

19552 \DeclareTextCompositeCommand{\`}{PU}{\uhorn}{\9036\353}% U+1EEB
19553 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}% U+1EED
19554 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}% U+1EEF
19555 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD
19556 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5
19557 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3
19558 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}% U+1EF7
19559 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9
19560 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1
19561 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0
19562 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0
19563 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}% U+1EA2
19564 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3
19565 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}% U+1EAE
19566 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}% U+1EB6
19567 \DeclareTextCompositeCommand{\`}{PU}{\ABREVE}{\9036\260}% U+1EB0
19568 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}% U+1EB2
19569 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}% U+1EB4
19570 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}% U+1EA4
19571 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}% U+1EAC
19572 \DeclareTextCompositeCommand{\`}{PU}{\ACIRCUMFLEX}{\9036\246}% U+1EA6
19573 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}% U+1EA8
19574 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}% U+1EAA
19575 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9
19576 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8
19577 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8
19578 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}% U+1EBA
19579 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC
19580 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}% U+1EBE
19581 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}% U+1EC6
19582 \DeclareTextCompositeCommand{\`}{PU}{\ECIRCUMFLEX}{\9036\300}% U+1EC0
19583 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}% U+1EC2
19584 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}% U+1EC4
19585 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD
19586 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA
19587 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC
19588 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}% U+1EC8
19589 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128
19590 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3
19591 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC
19592 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2
19593 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}% U+1ECE
19594 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5
19595 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}% U+1ED0
19596 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}% U+1ED8
19597 \DeclareTextCompositeCommand{\`}{PU}{\OCIRCUMFLEX}{\9036\322}% U+1ED2
19598 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}% U+1ED4
19599 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}% U+1ED6
19600 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}% U+1EDA
19601 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}% U+1EE2
19602 \DeclareTextCompositeCommand{\`}{PU}{\OHORN}{\9036\334}% U+1EDC
19603 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}% U+1EDE
19604 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}% U+1EE0
19605 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA

```

19606 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4
19607 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9
19608 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}% U+1EE6
19609 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168
19610 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}% U+1EE8
19611 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}% U+1EF0
19612 \DeclareTextCompositeCommand{\`}{PU}{\UHORN}{\9036\352}% U+1EEA
19613 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}% U+1EEC
19614 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}% U+1EEE
19615 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD
19616 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4
19617 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2
19618 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}% U+1EF6
19619 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8
19620 </puvnenc>

```

47.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```

19621 <*puarenc>
19622 % U+0621;afii57409;ARABIC LETTER HAMZA
19623 \DeclareTextCommand{\hamza}{PU}{\86\041}% U+0621
19624 % U+0622;afii57410;ARABIC LETTER ALEF WITH MADDA ABOVE
19625 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% U+0622
19626 % U+0623;afii57411;ARABIC LETTER ALEF WITH HAMZA ABOVE
19627 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% U+0623
19628 % U+0624;afii57412;ARABIC LETTER WAW WITH HAMZA ABOVE
19629 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% U+0624
19630 % U+0625;afii57413;ARABIC LETTER ALEF WITH HAMZA BELOW
19631 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% U+0625
19632 % U+0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
19633 \DeclareTextCommand{\yahamza}{PU}{\86\046}% U+0626
19634 % U+0627;afii57415;ARABIC LETTER ALEF
19635 \DeclareTextCommand{\alef}{PU}{\86\047}% U+0627
19636 % U+0628;afii57416;ARABIC LETTER BEH
19637 \DeclareTextCommand{\baa}{PU}{\86\050}% U+0628
19638 % U+0629;afii57417;ARABIC LETTER TEH MARBUTA
19639 \DeclareTextCommand{\T}{PU}{\86\051}% U+0629
19640 % U+062A;afii57418;ARABIC LETTER TEH
19641 \DeclareTextCommand{\taa}{PU}{\86\052}% U+062A
19642 % U+062B;afii57419;ARABIC LETTER THEH
19643 \DeclareTextCommand{\thaa}{PU}{\86\053}% U+062B
19644 % U+062C;afii57420;ARABIC LETTER JEEM
19645 \DeclareTextCommand{\jeem}{PU}{\86\054}% U+062C
19646 % U+062D;afii57421;ARABIC LETTER HAH
19647 \DeclareTextCommand{\Haa}{PU}{\86\055}% U+062D
19648 % U+062E;afii57422;ARABIC LETTER KHAH
19649 \DeclareTextCommand{\kha}{PU}{\86\056}% U+062E
19650 % U+062F;afii57423;ARABIC LETTER DAL
19651 \DeclareTextCommand{\dal}{PU}{\86\057}% U+062F
19652 % U+0630;afii57424;ARABIC LETTER THAL
19653 \DeclareTextCommand{\dhal}{PU}{\86\060}% U+0630
19654 % U+0631;afii57425;ARABIC LETTER REH

```

19655 \DeclareTextCommand{\ra}{PU}{\86\061}% U+0631
 19656 % U+0632;afii57426;ARABIC LETTER ZAIN
 19657 \DeclareTextCommand{\zay}{PU}{\86\062}% U+0632
 19658 % U+0633;afii57427;ARABIC LETTER SEEN
 19659 \DeclareTextCommand{\seen}{PU}{\86\063}% U+0633
 19660 % U+0634;afii57428;ARABIC LETTER SHEEN
 19661 \DeclareTextCommand{\sheen}{PU}{\86\064}% U+0634
 19662 % U+0635;afii57429;ARABIC LETTER SAD
 19663 \DeclareTextCommand{\sad}{PU}{\86\065}% U+0635
 19664 % U+0636;afii57430;ARABIC LETTER DAD
 19665 \DeclareTextCommand{\dad}{PU}{\86\066}% U+0636
 19666 % U+0637;afii57431;ARABIC LETTER TAH
 19667 \DeclareTextCommand{\Ta}{PU}{\86\067}% U+0637
 19668 % U+0638;afii57432;ARABIC LETTER ZAH
 19669 \DeclareTextCommand{\za}{PU}{\86\070}% U+0638
 19670 % U+0639;afii57433;ARABIC LETTER AIN
 19671 \DeclareTextCommand{\ayn}{PU}{\86\071}% U+0639
 19672 % U+063A;afii57434;ARABIC LETTER GHAIN
 19673 \DeclareTextCommand{\ghayn}{PU}{\86\072}% U+063A
 19674 % U+0640;afii57440;ARABIC TATWEEL
 19675 \DeclareTextCommand{\tatweel}{PU}{\86\100}% U+0640
 19676 % U+0641;afii57441;ARABIC LETTER FEH
 19677 \DeclareTextCommand{\fa}{PU}{\86\101}% U+0641
 19678 % U+0642;afii57442;ARABIC LETTER QAF
 19679 \DeclareTextCommand{\qaf}{PU}{\86\102}% U+0642
 19680 % U+0643;afii57443;ARABIC LETTER KAF
 19681 \DeclareTextCommand{\kaf}{PU}{\86\103}% U+0643
 19682 % U+0644;afii57444;ARABIC LETTER LAM
 19683 \DeclareTextCommand{\lam}{PU}{\86\104}% U+0644
 19684 % U+0645;afii57445;ARABIC LETTER MEEM
 19685 \DeclareTextCommand{\meem}{PU}{\86\105}% U+0645
 19686 % U+0646;afii57446;ARABIC LETTER NOON
 19687 \DeclareTextCommand{\nun}{PU}{\86\106}% U+0646
 19688 % U+0647;afii57470;ARABIC LETTER HEH
 19689 \DeclareTextCommand{\ha}{PU}{\86\107}% U+0647
 19690 % U+0648;afii57448;ARABIC LETTER WAW
 19691 \DeclareTextCommand{\waw}{PU}{\86\110}% U+0648
 19692 % U+0649;afii57449;ARABIC LETTER ALEF MAKURA
 19693 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% U+0649
 19694 % U+064A;afii57450;ARABIC LETTER YEH
 19695 \DeclareTextCommand{\ya}{PU}{\86\112}% U+064A
 19696 % U+064B;afii57451;ARABIC FATHATAN
 19697 \DeclareTextCommand{\nasb}{PU}{\86\113}% U+064B
 19698 % U+064C;afii57452;ARABIC DAMMATAN
 19699 \DeclareTextCommand{\raff}{PU}{\86\114}% U+064C
 19700 % U+064D;afii57453;ARABIC KASRATAN
 19701 \DeclareTextCommand{\jarr}{PU}{\86\115}% U+064D
 19702 % U+064E;afii57454;ARABIC FATHA
 19703 \DeclareTextCommand{\fatha}{PU}{\86\116}% U+064E
 19704 % U+064F;afii57455;ARABIC DAMMA
 19705 \DeclareTextCommand{\damma}{PU}{\86\117}% U+064F
 19706 % U+0650;afii57456;ARABIC KASRA
 19707 \DeclareTextCommand{\kasra}{PU}{\86\120}% U+0650
 19708 % U+0651;afii57457;ARABIC SHADDA

19709 \DeclareTextCommand{\shadda}{PU}{\86\121}% U+0651
 19710 % U+0652;afi57458;ARABIC SUKUN
 19711 \DeclareTextCommand{\sukun}{PU}{\86\122}% U+0652
 Farsi
 19712 % U+067E ARABIC LETTER PEH; afi57506
 19713 \DeclareTextCommand{\peh}{PU}{\86\176}% U+067E
 19714 % U+0686 ARABIC LETTER TCHEH; afi57507
 19715 \DeclareTextCommand{\tcheh}{PU}{\86\206}% U+0686
 19716 % U+0698 ARABIC LETTER JEH; afi57508
 19717 \DeclareTextCommand{\jeh}{PU}{\86\230}% U+0698
 19718 % U+06A9 ARABIC LETTER KEHEH
 19719 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% U+06A9
 19720 % U+06AF ARABIC LETTER GAF; afi57509
 19721 \DeclareTextCommand{\gaf}{PU}{\86\257}% U+06AF
 19722 % U+06CC ARABIC LETTER FARSI YEH
 19723 \DeclareTextCommand{\farsiya}{PU}{\86\314}% U+06CC
 19724 % U+200C ZERO WIDTH NON-JOINER; afi61664
 19725 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% U+200C
 19726 % U+200D ZERO WIDTH JOINER; afi301
 19727 \DeclareTextCommand{\textEncodingNoboundary}{PU}{\9040\015}% U+200D
 19728 </puarenc>
 19729 <*psdextra>
 19730 \Hy@VersionCheck{psdextra.def}
 19731 \DeclareTextCommand{\textGamma}{PU}{\83\223}%* U+0393
 19732 \DeclareTextCommand{\textDelta}{PU}{\83\224}%* U+0394
 19733 \DeclareTextCommand{\textTheta}{PU}{\83\230}%* U+0398
 19734 \DeclareTextCommand{\textLambda}{PU}{\83\233}%* U+039B
 19735 \DeclareTextCommand{\textXi}{PU}{\83\236}%* U+039E
 19736 \DeclareTextCommand{\textPi}{PU}{\83\240}%* U+03A0
 19737 \DeclareTextCommand{\textSigma}{PU}{\83\243}%* U+03A3
 19738 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}%* U+03A5
 19739 \DeclareTextCommand{\textPhi}{PU}{\83\246}%* U+03A6
 19740 \DeclareTextCommand{\textChi}{PU}{\83\247}%* U+03A7
 19741 \DeclareTextCommand{\textPsi}{PU}{\83\250}%* U+03A8
 19742 \DeclareTextCommand{\textOmega}{PU}{\83\251}%* U+03A9
 19743 \DeclareTextCommand{\textalpha}{PU}{\83\261}%* U+03B1
 19744 \DeclareTextCommand{\textbeta}{PU}{\83\262}%* U+03B2
 19745 \DeclareTextCommand{\textgamma}{PU}{\83\263}%* U+03B3
 19746 \DeclareTextCommand{\textdelta}{PU}{\83\264}%* U+03B4
 19747 \DeclareTextCommand{\textepsilon}{PU}{\83\265}%* U+03B5
 19748 \DeclareTextCommand{\textzeta}{PU}{\83\266}%* U+03B6
 19749 \DeclareTextCommand{\texteta}{PU}{\83\267}%* U+03B7
 19750 \DeclareTextCommand{\texttheta}{PU}{\83\270}%* U+03B8
 19751 \DeclareTextCommand{\textiota}{PU}{\83\271}%* U+03B9
 19752 \DeclareTextCommand{\textkappa}{PU}{\83\272}%* U+03BA
 19753 \DeclareTextCommand{\textlambda}{PU}{\83\273}%* U+03BB
 19754 \DeclareTextCommand{\textmugreek}{PU}{\83\274}%* U+03BC
 19755 \DeclareTextCommand{\textnu}{PU}{\83\275}%* U+03BD
 19756 \DeclareTextCommand{\textxi}{PU}{\83\276}%* U+03BE
 19757 \DeclareTextCommand{\textpi}{PU}{\83\300}%* U+03C0
 19758 \DeclareTextCommand{\textrho}{PU}{\83\301}%* U+03C1
 19759 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}%* U+03C2

```

19760 \DeclareTextCommand{\textsigma}{PU}{\83\303}%* U+03C3
19761 \DeclareTextCommand{\texttau}{PU}{\83\304}%* U+03C4
19762 \DeclareTextCommand{\textupsilon}{PU}{\83\305}%* U+03C5
19763 \DeclareTextCommand{\textphi}{PU}{\83\306}%* U+03C6
19764 \DeclareTextCommand{\textchi}{PU}{\83\307}%* U+03C7
19765 \DeclareTextCommand{\textpsi}{PU}{\83\310}%* U+03C8
19766 \DeclareTextCommand{\textomega}{PU}{\83\311}%* U+03C9
19767 \newcommand*{\psdmapshortnames}{%
19768   \let\MVPlus\textMVPlus
19769   \let\MVComma\textMVComma
19770   \let\MVMinus\textMVMinus
19771   \let\MVPeriod\textMVPeriod
19772   \let\MVDivision\textMVDivision
19773   \let\MVZero\textMVZero
19774   \let\MVOne\textMVOne
19775   \let\MVTwo\textMVTwo
19776   \let\MVThree\textMVThree
19777   \let\MVFour\textMVFour
19778   \let\MVFive\textMVFive
19779   \let\MVSix\textMVSix
19780   \let\MVSeven\textMVSeven
19781   \let\MVEight\textMVEight
19782   \let\MVNine\textMVNine
19783   \let\MVAt\textMVAt
19784   \let\copyright\textcopyright
19785   \let\twosuperior\texttwosuperior
19786   \let\threesuperior\textthreesuperior
19787   \let\onesuperior\textonesuperior
19788   \let\Thorn\textThorn
19789   \let\thorn\textthorn
19790   \let\hbar\texthbar
19791   \let\hausA\texthausA
19792   \let\hausD\texthausD
19793   \let\hausK\texthausK
19794   \let\barl\textbarl
19795   \let\inve\textinve
19796   \let\slashc\textslashc
19797   \let\scripta\textscripta
19798   \let\openo\textopeno
19799   \let\rtaild\textrtaild
19800   \let\reve\textreve
19801   \let\schwa\textschwa
19802   \let\niepsilon\textniepsilon
19803   \let\repsilon\textrepsilon
19804   \let\rhookrepsilon\texthookrepsilon
19805   \let\scriptg\textscriptg
19806   \let\scg\textscg
19807   \let\ipagamma\textipagamma
19808   \let\babygamma\textbabygamma
19809   \let\bari\textbari
19810   \let\niiota\textniiota
19811   \let\sci\textsci
19812   \let\scn\textscn
19813   \let\niphi\textniphi

```

19814 \let\longlegr\textlonglegr
 19815 \let\scr\textscr
 19816 \let\invscr\textinvscr
 19817 \let\esh\textesh
 19818 \let\baru\textbaru
 19819 \let\niupsilon\textniupsilon
 19820 \let\scriptv\textscriptv
 19821 \let\turnv\textturnv
 19822 \let\turnw\textturnw
 19823 \let\turny\textturny
 19824 \let\scy\textscy
 19825 \let\yogh\textyogh
 19826 \let\glotstop\textglotstop
 19827 \let\revglotstop\textrevglotstop
 19828 \let\invglotstop\textinvglotstop
 19829 \let\Gamma\textGamma
 19830 \let\Delta\textDelta
 19831 \let\Theta\textTheta
 19832 \let\Lambda\textLambda
 19833 \let\Xi\textXi
 19834 \let\Pi\textPi
 19835 \let\Sigma\textSigma
 19836 \let\Upsilon\textUpsilon
 19837 \let\Phi\textPhi
 19838 \let\Psi\textPsi
 19839 \let\Omega\textOmega
 19840 \let\alpha\textalpha
 19841 \let\beta\textbeta
 19842 \let\gamma\textgamma
 19843 \let\delta\textdelta
 19844 \let\epsilon\textepsilon
 19845 \let\zeta\textzeta
 19846 \let\eta\texteta
 19847 \let\theta\texttheta
 19848 \let\iota\textiota
 19849 \let\kappa\textkappa
 19850 \let\lambda\textlambda
 19851 \let\mu\textmu
 19852 \let\mugreek\textmugreek
 19853 \let\nu\textnu
 19854 \let\xi\textxi
 19855 \let\pi\textpi
 19856 \let\rho\rho
 19857 \let\varsigma\textvarsigma
 19858 \let\sigma\textsigma
 19859 \let\tau\texttau
 19860 \let\upsilon\textupsilon
 19861 \let\phi\textphi
 19862 \let\chi\textchi
 19863 \let\psi\textpsi
 19864 \let\omega\textomega
 19865 \let\scd\textscd
 19866 \let\scu\textscu
 19867 \let\iinferior\textiinferior

19868 \let\rinferior\textrinferior
 19869 \let\uinferior\textuinferior
 19870 \let\vinferior\textvinferior
 19871 \let\betainferior\textbetainferior
 19872 \let\gammainferior\textgammainferior
 19873 \let\rhoinferior\textrhoinferior
 19874 \let\phiinferior\textphiinferior
 19875 \let\chiinferior\textchiinferior
 19876 \let\barsci\textbarsci
 19877 \let\barp\textbarp
 19878 \let\barscu\textbarscu
 19879 \let\htrtaild\texthtrtaild
 19880 \let\dagger\textdagger
 19881 \let\bullet\textbullet
 19882 \let\hdotfor\texthdotfor
 19883 \let\prime\textprime
 19884 \let\second\textsecond
 19885 \let\third\textthird
 19886 \let\backprime\textbackprime
 19887 \let\lefttherefore\textlefttherefore
 19888 \let\fourth\textfourth
 19889 \let\diamonddots\textdiamonddots
 19890 \let\zerosuperior\textzerosuperior
 19891 \let\isuperior\textisuperior
 19892 \let\foursuperior\textfoursuperior
 19893 \let\fivesuperior\textfivesuperior
 19894 \let\sixsuperior\textsixsuperior
 19895 \let\sevensuperior\textsevensuperior
 19896 \let\eightsuperior\texteightsuperior
 19897 \let\ninesuperior\textninesuperior
 19898 \let\plussuperior\textplussuperior
 19899 \let\minussuperior\textminussuperior
 19900 \let>equalsuperior\textequalsuperior
 19901 \let\parenleftsuperior\textparenleftsuperior
 19902 \let\parenrightsuperior\textparenrightsuperior
 19903 \let\nsuperior\textnsuperior
 19904 \let\zeroinferior\textzeroinferior
 19905 \let\oneinferior\textoneinferior
 19906 \let\twoinferior\texttwoinferior
 19907 \let\threeinferior\textthreeinferior
 19908 \let\fourinferior\textfourinferior
 19909 \let\fiveinferior\textfiveinferior
 19910 \let\sixinferior\textsixinferior
 19911 \let\seveninferior\textseveninferior
 19912 \let\eightinferior\texteightinferior
 19913 \let\nineinferior\textnineinferior
 19914 \let\plusinferior\textplusinferior
 19915 \let\minusinferior\textminusinferior
 19916 \let>equalsinferior\textequalsinferior
 19917 \let\parenleftinferior\textparenleftinferior
 19918 \let\parenrightinferior\textparenrightinferior
 19919 \let\ainferior\textainferior
 19920 \let\einferior\texteinferior
 19921 \let\oinferior\textoinferior

19922 \let\xinferior\textxinferior
 19923 \let\schwainferior\textschwainferior
 19924 \let\hinferior\texthinferior
 19925 \let\kinferior\textkinferior
 19926 \let\linferior\textlinferior
 19927 \let\minferior\textminferior
 19928 \let\ninferior\textninferior
 19929 \let\pinferior\textpinferior
 19930 \let\sinferior\textsinferior
 19931 \let\tinferior\texttinferior
 19932 \let\Deleatur\textDeleatur
 19933 \let\hslash\texthslash
 19934 \let\Im\textIm
 19935 \let\ell\textell
 19936 \let\wp\textwp
 19937 \let\Re\textRe
 19938 \let\mho\textmho
 19939 \let\riota\textriota
 19940 \let\Finv\textFinv
 19941 \let\aleph\textaleph
 19942 \let\beth\textbeth
 19943 \let\gimel\textgimel
 19944 \let\daleth\textdaleth
 19945 \let\xfax\textfax
 19946 \let\Game\textGame
 19947 \let\leftarrow\textleftarrow
 19948 \let\uparrow\textuparrow
 19949 \let\rightarrow\textrightarrow
 19950 \let\downarrow\textdownarrow
 19951 \let\leftrightarrow\textleftrightarrow
 19952 \let\updownarrow\textupdownarrow
 19953 \let\rightarrowtail\textrightarrowtail
 19954 \let\nearrow\textnearrow
 19955 \let\searrow\textsearrow
 19956 \let\swarrow\textswarrow
 19957 \let\rightarrowtail\textrightarrowtail
 19958 \let\hookrightarrow\texthookrightarrow
 19959 \let\hookleftarrow\texthookleftarrow
 19960 \let\looparrowleft\textlooparrowleft
 19961 \let\looparrowright\textlooparrowright
 19962 \let\leftrightharpoonup\textleftrightharpoonup
 19963 \let\leftrightharpoonright\textleftrightharpoonright
 19964 \let\rightleftharpoonup\textrightleftharpoonup
 19965 \let\rightleftharpoonright\textrightleftharpoonright
 19966 \let\curvearrowleft\textcurvearrowleft
 19967 \let\curvearrowright\textcurvearrowright
 19968 \let\curvearrowleft\textcurvearrowleft
 19969 \let\curvearrowright\textcurvearrowright
 19970 \let\curvearrowleft\textcurvearrowleft
 19971 \let\curvearrowright\textcurvearrowright
 19972 \let\curvearrowleft\textcurvearrowleft
 19973 \let\curvearrowright\textcurvearrowright
 19974 \let\curvearrowleft\textcurvearrowleft
 19975 \let\curvearrowright\textcurvearrowright

19976 $\backslash\text{let}\backslash\text{curvearrowright}\backslash\text{textcurvearrowright}$
 19977 $\backslash\text{let}\backslash\text{leftharpoonup}\backslash\text{textleftharpoonup}$
 19978 $\backslash\text{let}\backslash\text{leftharpoondown}\backslash\text{textleftharpoondown}$
 19979 $\backslash\text{let}\backslash\text{upharpoonright}\backslash\text{textupharpoonright}$
 19980 $\backslash\text{let}\backslash\text{upharpoonleft}\backslash\text{textupharpoonleft}$
 19981 $\backslash\text{let}\backslash\text{rightharpoonup}\backslash\text{textrightharpoonup}$
 19982 $\backslash\text{let}\backslash\text{rightharpoondown}\backslash\text{textrightharpoondown}$
 19983 $\backslash\text{let}\backslash\text{downharpoonright}\backslash\text{textdownharpoonright}$
 19984 $\backslash\text{let}\backslash\text{downharpoonleft}\backslash\text{textdownharpoonleft}$
 19985 $\backslash\text{let}\backslash\text{rightleftarrows}\backslash\text{textrightleftarrows}$
 19986 $\backslash\text{let}\backslash\text{updownarrows}\backslash\text{textupdownarrows}$
 19987 $\backslash\text{let}\backslash\text{leftrightharpoons}\backslash\text{textleftrightharpoons}$
 19988 $\backslash\text{let}\backslash\text{leftleftarrows}\backslash\text{textleftleftarrows}$
 19989 $\backslash\text{let}\backslash\text{upuparrows}\backslash\text{textupuparrows}$
 19990 $\backslash\text{let}\backslash\text{rightrightarrows}\backslash\text{textrightrightarrows}$
 19991 $\backslash\text{let}\backslash\text{downdownarrows}\backslash\text{textdowndownarrows}$
 19992 $\backslash\text{let}\backslash\text{leftrightharpoons}\backslash\text{textleftrightharpoons}$
 19993 $\backslash\text{let}\backslash\text{rightleftharpoons}\backslash\text{textrightleftharpoons}$
 19994 $\backslash\text{let}\backslash\text{nLeftarrow}\backslash\text{textnLeftarrow}$
 19995 $\backslash\text{let}\backslash\text{nLeftrightarrow}\backslash\text{textnLeftrightarrow}$
 19996 $\backslash\text{let}\backslash\text{nRrightarrow}\backslash\text{textnRrightarrow}$
 19997 $\backslash\text{let}\backslash\text{Leftarrow}\backslash\text{textLeftarrow}$
 19998 $\backslash\text{let}\backslash\text{Uparrow}\backslash\text{textUparrow}$
 19999 $\backslash\text{let}\backslash\text{Rrightarrow}\backslash\text{textRrightarrow}$
 20000 $\backslash\text{let}\backslash\text{Downarrow}\backslash\text{textDownarrow}$
 20001 $\backslash\text{let}\backslash\text{Leftrightarrow}\backslash\text{textLeftrightarrow}$
 20002 $\backslash\text{let}\backslash\text{Updownarrow}\backslash\text{textUpdownarrow}$
 20003 $\backslash\text{let}\backslash\text{Narrow}\backslash\text{textNarrow}$
 20004 $\backslash\text{let}\backslash\text{Nearrow}\backslash\text{textNearrow}$
 20005 $\backslash\text{let}\backslash\text{Searrow}\backslash\text{textSearrow}$
 20006 $\backslash\text{let}\backslash\text{Swarrow}\backslash\text{textSwarrow}$
 20007 $\backslash\text{let}\backslash\text{Lleftarrow}\backslash\text{textLleftarrow}$
 20008 $\backslash\text{let}\backslash\text{Rrightarrow}\backslash\text{textRrightarrow}$
 20009 $\backslash\text{let}\backslash\text{leftsquigarrow}\backslash\text{textleftsquigarrow}$
 20010 $\backslash\text{let}\backslash\text{rightsquigarrow}\backslash\text{textrightsquigarrow}$
 20011 $\backslash\text{let}\backslash\text{dashleftarrow}\backslash\text{texdashleftarrow}$
 20012 $\backslash\text{let}\backslash\text{dasheduparrow}\backslash\text{texdasheduparrow}$
 20013 $\backslash\text{let}\backslash\text{dashrightarrow}\backslash\text{texdashrightarrow}$
 20014 $\backslash\text{let}\backslash\text{dasheddownarrow}\backslash\text{texdasheddownarrow}$
 20015 $\backslash\text{let}\backslash\text{pointer}\backslash\text{textpointer}$
 20016 $\backslash\text{let}\backslash\text{downuparrows}\backslash\text{textdownuparrows}$
 20017 $\backslash\text{let}\backslash\text{leftarrowtriangle}\backslash\text{textleftarrowtriangle}$
 20018 $\backslash\text{let}\backslash\text{rightarrowtriangle}\backslash\text{textrightarrowtriangle}$
 20019 $\backslash\text{let}\backslash\text{leftrightharpoonuptriangle}\backslash\text{textleftrightharpoonuptriangle}$
 20020 $\backslash\text{let}\backslash\text{forall}\backslash\text{textforall}$
 20021 $\backslash\text{let}\backslash\text{complement}\backslash\text{textcomplement}$
 20022 $\backslash\text{let}\backslash\text{partial}\backslash\text{textpartial}$
 20023 $\backslash\text{let}\backslash\text{exists}\backslash\text{textexists}$
 20024 $\backslash\text{let}\backslash\text{nexists}\backslash\text{textnexists}$
 20025 $\backslash\text{let}\backslash\text{emptyset}\backslash\text{textemptyset}$
 20026 $\backslash\text{let}\backslash\text{triangle}\backslash\text{texttriangle}$
 20027 $\backslash\text{let}\backslash\text{nabla}\backslash\text{textnabla}$
 20028 $\backslash\text{let}\backslash\text{in}\backslash\text{textinsymbol}$
 20029 $\backslash\text{let}\backslash\text{notin}\backslash\text{textnotin}$

20030 \let\smallin\textsmallin
 20031 \let\ni\textni
 20032 \let\notowner\textnotowner
 20033 \let\smallowns\textsmallowns
 20034 \let\prod\textprod
 20035 \let\amalg\textamalg
 20036 \let\sum\textsum
 20037 \let\mp\textmp
 20038 \let\dotplus\textdotplus
 20039 \let\Divides\textDivides
 20040 \let\DividesNot\textDividesNot
 20041 \let\setminus\textsetminus
 20042 \let\ast\textast
 20043 \let\circ\textcirc
 20044 \let\surd\textsurd
 20045 \let\propto\textpropto
 20046 \let\infty\textinfty
 20047 \let\angle\textangle
 20048 \let\measuredangle\textmeasuredangle
 20049 \let\sphericalangle\textsphericalangle
 20050 \let\mid\textmid
 20051 \let\nmid\textnmid
 20052 \let\parallel\textparallel
 20053 \let\nparallel\textnparallel
 20054 \let\wedge\textwedge
 20055 \let\owedge\textowedge
 20056 \let\vee\textvee
 20057 \let\ovee\textovee
 20058 \let\cap\textcap
 20059 \let\cup\textcup
 20060 \let\int\textint
 20061 \let\iint\textiint
 20062 \let\iiint\textiiint
 20063 \let\oint\textoint
 20064 \let\oiint\textoiint
 20065 \let\ointclockwise\textointclockwise
 20066 \let\ointctrlockwise\textointctrlockwise
 20067 \let\therefore\texttherefore
 20068 \let\because\textbecause
 20069 \let\vdots\textvdots
 20070 \let\squaredots\textsquaredots
 20071 \let\dotminus\textdotminus
 20072 \let\eqcolon\texteqcolon
 20073 \let\sim\textsim
 20074 \let\backsim\textbacksim
 20075 \let\nbacksim\textnbacksim
 20076 \let\wr\textwr
 20077 \let\sim\textsim
 20078 \let\eqsim\texteqsim
 20079 \let\neqsim\textneqsim
 20080 \let\simeq\textsimeq
 20081 \let\nsimeq\textnsimeq
 20082 \let\cong\textcong
 20083 \let\ncong\textncong

20084 \let\approx\textapprox
 20085 \let\napprox\textnapprox
 20086 \let\approxeq\textapproxeq
 20087 \let\napproxeq\textnapproxeq
 20088 \let\triplesim\texttriplesim
 20089 \let\ntriplesim\textntriplesim
 20090 \let\backcong\textbackcong
 20091 \let\nbackcong\textnbackcong
 20092 \let\asymp\textasymp
 20093 \let\nasymp\textnasymp
 20094 \let\Bumpeq\textBumpeq
 20095 \let\NBumpeq\textNBumpeq
 20096 \let\bumpeq\textbumpeq
 20097 \let\Nbumpeq\textNbumpeq
 20098 \let\doteq\textdoteq
 20099 \let\ndoteq\textndoteq
 20100 \let\doteqdot\textdoteqdot
 20101 \let\NDoteq\textNDoteq
 20102 \let\fallingdoteq\textfallingdoteq
 20103 \let\Nfallingdoteq\textNfallingdoteq
 20104 \let\risingdoteq\textrisingdoteq
 20105 \let\Nrisingdoteq\textNrisingdoteq
 20106 \let\colonequals\textcolonequals
 20107 \let\equalscolon\textequalscolon
 20108 \let\eqcirc\texteqcirc
 20109 \let\neqcirc\textneqcirc
 20110 \let\circeq\textcirceq
 20111 \let\ncirceq\textncirceq
 20112 \let\hateq\texthateq
 20113 \let\nhateq\textnhateq
 20114 \let\triangleeq\texttriangleeq
 20115 \let\neq\textneq
 20116 \let\ne\textne
 20117 \let\equiv\textequiv
 20118 \let\nequiv\textnequiv
 20119 \let\leq\textleq
 20120 \let\le\textle
 20121 \let\geq\textgeq
 20122 \let\ge\textge
 20123 \let\leqq\textleqq
 20124 \let\Nleqq\textNleqq
 20125 \let\geqq\textgeqq
 20126 \let\Ngeqq\textNgeqq
 20127 \let\lneqq\textlneqq
 20128 \let\gneqq\textgneqq
 20129 \let\ll\textll
 20130 \let\nll\textnll
 20131 \let\gg\textgg
 20132 \let\ngg\textngg
 20133 \let\between\textbetween
 20134 \let\nless\textnless
 20135 \let\ngtr\textngtr
 20136 \let\lneq\textlneq
 20137 \let\ngeq\textngeq

20138 $\backslash\text{let}\backslash\text{lesssim}\backslash\text{textlessim}$
 20139 $\backslash\text{let}\backslash\text{gtrsim}\backslash\text{textgtrsim}$
 20140 $\backslash\text{let}\backslash\text{nlessim}\backslash\text{textnlessim}$
 20141 $\backslash\text{let}\backslash\text{ngtrsim}\backslash\text{textngtrsim}$
 20142 $\backslash\text{let}\backslash\text{lessgtr}\backslash\text{textlessgtr}$
 20143 $\backslash\text{let}\backslash\text{gtrless}\backslash\text{textgtrless}$
 20144 $\backslash\text{let}\backslash\text{ngtrless}\backslash\text{textngtrless}$
 20145 $\backslash\text{let}\backslash\text{nlessgtr}\backslash\text{textnlessgtr}$
 20146 $\backslash\text{let}\backslash\text{prec}\backslash\text{textprec}$
 20147 $\backslash\text{let}\backslash\text{succ}\backslash\text{textsucc}$
 20148 $\backslash\text{let}\backslash\text{preccurlyeq}\backslash\text{textpreccurlyeq}$
 20149 $\backslash\text{let}\backslash\text{succcurlyeq}\backslash\text{textsucccurlyeq}$
 20150 $\backslash\text{let}\backslash\text{precsim}\backslash\text{textprecsim}$
 20151 $\backslash\text{let}\backslash\text{nprecsim}\backslash\text{textnprecsim}$
 20152 $\backslash\text{let}\backslash\text{succsim}\backslash\text{textsuccsim}$
 20153 $\backslash\text{let}\backslash\text{nsuccsim}\backslash\text{textnsuccsim}$
 20154 $\backslash\text{let}\backslash\text{nprec}\backslash\text{textnprec}$
 20155 $\backslash\text{let}\backslash\text{nsucc}\backslash\text{textnsucc}$
 20156 $\backslash\text{let}\backslash\text{subset}\backslash\text{textsubset}$
 20157 $\backslash\text{let}\backslash\text{supset}\backslash\text{textsupset}$
 20158 $\backslash\text{let}\backslash\text{nssubset}\backslash\text{textnssubset}$
 20159 $\backslash\text{let}\backslash\text{nsupset}\backslash\text{textnsupset}$
 20160 $\backslash\text{let}\backslash\text{subseteq}\backslash\text{textsubseteq}$
 20161 $\backslash\text{let}\backslash\text{supseteq}\backslash\text{textsupseteq}$
 20162 $\backslash\text{let}\backslash\text{nsubseteq}\backslash\text{textnsubseteq}$
 20163 $\backslash\text{let}\backslash\text{nsupseteq}\backslash\text{textnsupseteq}$
 20164 $\backslash\text{let}\backslash\text{subsetneq}\backslash\text{textsubsetneq}$
 20165 $\backslash\text{let}\backslash\text{supsetneq}\backslash\text{textsupsetneq}$
 20166 $\backslash\text{let}\backslash\text{cupdot}\backslash\text{textcupdot}$
 20167 $\backslash\text{let}\backslash\text{cupplus}\backslash\text{textcupplus}$
 20168 $\backslash\text{let}\backslash\text{sqsubset}\backslash\text{textsqsubset}$
 20169 $\backslash\text{let}\backslash\text{nsqsubset}\backslash\text{textnsqsubset}$
 20170 $\backslash\text{let}\backslash\text{sqsupset}\backslash\text{textsqsupset}$
 20171 $\backslash\text{let}\backslash\text{nsqsupset}\backslash\text{textnsqsupset}$
 20172 $\backslash\text{let}\backslash\text{sqsubseq}\backslash\text{textsqsubseq}$
 20173 $\backslash\text{let}\backslash\text{nsqsubseq}\backslash\text{textnsqsubseq}$
 20174 $\backslash\text{let}\backslash\text{sqsupseteq}\backslash\text{textsqsupseteq}$
 20175 $\backslash\text{let}\backslash\text{nsqsupseteq}\backslash\text{textnsqsupseteq}$
 20176 $\backslash\text{let}\backslash\text{sqcap}\backslash\text{textsqcap}$
 20177 $\backslash\text{let}\backslash\text{sqcup}\backslash\text{textsqcup}$
 20178 $\backslash\text{let}\backslash\text{oplus}\backslash\text{textoplus}$
 20179 $\backslash\text{let}\backslash\text{ominus}\backslash\text{textominus}$
 20180 $\backslash\text{let}\backslash\text{otimes}\backslash\text{textotimes}$
 20181 $\backslash\text{let}\backslash\text{oslash}\backslash\text{textoslash}$
 20182 $\backslash\text{let}\backslash\text{odot}\backslash\text{textodot}$
 20183 $\backslash\text{let}\backslash\text{circledcirc}\backslash\text{textcircledcirc}$
 20184 $\backslash\text{let}\backslash\text{circledast}\backslash\text{textcircledast}$
 20185 $\backslash\text{let}\backslash\text{circleddash}\backslash\text{textcircleddash}$
 20186 $\backslash\text{let}\backslash\text{boxplus}\backslash\text{textboxplus}$
 20187 $\backslash\text{let}\backslash\text{boxminus}\backslash\text{textboxminus}$
 20188 $\backslash\text{let}\backslash\text{boxtimes}\backslash\text{textboxtimes}$
 20189 $\backslash\text{let}\backslash\text{boxdot}\backslash\text{textboxdot}$
 20190 $\backslash\text{let}\backslash\text{vdash}\backslash\text{textvdash}$
 20191 $\backslash\text{let}\backslash\text{dashv}\backslash\text{textdashv}$

20192 \let\ndashv\textndashv
 20193 \let\top\texttop
 20194 \let\ndownvdash\textndownvdash
 20195 \let\bot\textbot
 20196 \let\nupvdash\textnupvdash
 20197 \let\vDash\textvDash
 20198 \let\Vdash\textVdash
 20199 \let\Vvdash\textVvdash
 20200 \let\NVdash\textNVdash
 20201 \let\VDash\textVDash
 20202 \let\ndash\textndash
 20203 \let\NVdash\textNVdash
 20204 \let\NVdash\textNVdash
 20205 \let\NVdash\textNVdash
 20206 \let\lhd\textlhd
 20207 \let\rhd\textrhd
 20208 \let\unlhd\textunlhd
 20209 \let\unrhd\textunrhd
 20210 \let\multimapdotbothA\textmultimapdotbothA
 20211 \let\multimapdotbothB\textmultimapdotbothB
 20212 \let\multimap\textmultimap
 20213 \let\veebar\textveebar
 20214 \let\barwedge\textbarwedge
 20215 \let\star\textstar
 20216 \let\divideontimes\textdivideontimes
 20217 \let\bowtie\textbowtie
 20218 \let\ltimes\textltimes
 20219 \let\rtimes\textrtimes
 20220 \let\leftthreetimes\textleftthreetimes
 20221 \let\rightthreetimes\textrightthreetimes
 20222 \let\backsimeq\textbacksimeq
 20223 \let\Nbacksimeq\textNbacksimeq
 20224 \let\curlyvee\textcurlyvee
 20225 \let\curlywedge\textcurlywedge
 20226 \let\Subset\textSubset
 20227 \let\NSubset\textNSubset
 20228 \let\Supset\textSupset
 20229 \let\NSupset\textNSupset
 20230 \let\Cap\textCap
 20231 \let\Cup\textCup
 20232 \let\pitchfork\textpitchfork
 20233 \let\lessdot\textlessdot
 20234 \let\gtrdot\textgtrdot
 20235 \let\lll\textlll
 20236 \let\ggg\textggg
 20237 \let\lesseqgtr\textlesseqgtr
 20238 \let\gtreqless\textgtreqless
 20239 \let\curlyeqprec\textcurlyeqprec
 20240 \let\Ncurlyeqprec\textNcurlyeqprec
 20241 \let\curlyeqsucc\textcurlyeqsucc
 20242 \let\Ncurlyeqsucc\textNcurlyeqsucc
 20243 \let\preccurlyeq\textpreccurlyeq
 20244 \let\nsucccurlyeq\textnsucccurlyeq
 20245 \let\sqsubset\textsqsubset

20246 \let\nqsupseteq\textnqsupseteq
 20247 \let\sqsubsetneq\textsqssubsetneq
 20248 \let\sqsupsetneq\textsqsupsetneq
 20249 \let\lnsim\textlnsim
 20250 \let\gnsim\textgnsim
 20251 \let\precnsim\textprecnsim
 20252 \let\succnsim\textsuccnsim
 20253 \let\ntriangleleft\textntriangleleft
 20254 \let\ntriangleright\textntriangleright
 20255 \let\ntrianglelefteq\textntrianglelefteq
 20256 \let\ntrianglerighteq\textntrianglerighteq
 20257 \let\vdots\textvdots
 20258 \let\cdots\textcdots
 20259 \let\udots\textudots
 20260 \let\ddots\textddots
 20261 \let\barin\textbarin
 20262 \let\diameter\textdiameter
 20263 \let\backneg\textbackneg
 20264 \let\wasylozenge\textwasylozenge
 20265 \let\invbackneg\textinvbackneg
 20266 \let\clock\textclock
 20267 \let\ulcorner\textulcorner
 20268 \let\urcorner\texturcorner
 20269 \let\llcorner\textllcorner
 20270 \let\lrcorner\textlrcorner
 20271 \let\frown\textfrown
 20272 \let\smile\textsmile
 20273 \let\Keyboard\textKeyboard
 20274 \let\langle\textlangle
 20275 \let\rangle\textrangle
 20276 \let\APLinv\textAPLinv
 20277 \let\Tumbler\textTumbler
 20278 \let\notslash\textnotslash
 20279 \let\notbackslash\textnotbackslash
 20280 \let\boxbackslash\textboxbackslash
 20281 \let\APLleftarrowbox\textAPLleftarrowbox
 20282 \let\APLrightarrowbox\textAPLrightarrowbox
 20283 \let\APLuparrowbox\textAPLuparrowbox
 20284 \let\APLdownarrowbox\textAPLdownarrowbox
 20285 \let\APLinput\textAPLinput
 20286 \let\Request\textRequest
 20287 \let\Beam\textBeam
 20288 \let\hexagon\texthexagon
 20289 \let\APLbox\textAPLbox
 20290 \let\ForwardToIndex\textForwardToIndex
 20291 \let\RewindToIndex\textRewindToIndex
 20292 \let\bbslash\textbbslash
 20293 \let\CircledA\textCircledA
 20294 \let\CleaningF\textCleaningF
 20295 \let\CleaningFF\textCleaningFF
 20296 \let\CleaningP\textCleaningP
 20297 \let\CleaningPP\textCleaningPP
 20298 \let\CuttingLine\textCuttingLine
 20299 \let\UParrow\textUParrow

20300 \let\bigtriangleup\textbigtriangleup
 20301 \let\Forward\textForward
 20302 \let\triangleright\texttriangleright
 20303 \let\RHD\textRHD
 20304 \let\DOWNarrow\textDOWNarrow
 20305 \let\bigtriangledown\textbigtriangledown
 20306 \let\Rewind\textRewind
 20307 \let\triangleleft\texttriangleleft
 20308 \let\LHD\textLHD
 20309 \let\diamond\textdiamond
 20310 \let\lozenge\textlozenge
 20311 \let\LEFTCIRCLE\textLEFTCIRCLE
 20312 \let\RIGHTCIRCLE\textRIGHTCIRCLE
 20313 \let\openbullet\textopenbullet
 20314 \let\boxbar\textboxbar
 20315 \let\bigcirc\textbigcirc
 20316 \let\Cloud\textCloud
 20317 \let\FiveStar\textFiveStar
 20318 \let\FiveStarOpen\textFiveStarOpen
 20319 \let\Phone\textPhone
 20320 \let\boxempty\textboxempty
 20321 \let\Checkedbox\textCheckedbox
 20322 \let\Crossedbox\textCrossedbox
 20323 \let\Coffeecup\textCoffeecup
 20324 \let\HandCuffLeft\textHandCuffLeft
 20325 \let\HandCuffRight\textHandCuffRight
 20326 \let\HandLeft\textHandLeft
 20327 \let\HandRight\textHandRight
 20328 \let\Radioactivity\textRadioactivity
 20329 \let\Biohazard\textBiohazard
 20330 \let\Ankh\textAnkh
 20331 \let\YinYang\textYinYang
 20332 \let\frownie\textfrownie
 20333 \let\smiley\textsmiley
 20334 \let\blacksmiley\textblacksmiley
 20335 \let\sun\textsun
 20336 \let\leftmoon\textleftmoon
 20337 \let\rightmoon\textrightmoon
 20338 \let\mercury\textmercury
 20339 \let\earth\textearth
 20340 \let\male\textmale
 20341 \let\jupiter\textjupiter
 20342 \let\saturn\textsaturn
 20343 \let\uranus\texturanus
 20344 \let\neptune\textneptune
 20345 \let\pluto\textpluto
 20346 \let\aries\textaries
 20347 \let\taurus\texttaurus
 20348 \let\gemini\textgemini
 20349 \let\cancer\textcancer
 20350 \let\leo\textleo
 20351 \let\virgo\textvirgo
 20352 \let\libra\textlibra
 20353 \let\scorpio\textscorpio

20354 \let\sagittarius\textsagittarius
 20355 \let\capricornus\textcapricornus
 20356 \let\aquarius\textaquarius
 20357 \let\pisces\textpisces
 20358 \let\quarternote\textquarternote
 20359 \let\twonotes\texttwonotes
 20360 \let\sixteenthnote\textsixteenthnote
 20361 \let\flat\textflat
 20362 \let\natural\textnatural
 20363 \let\sharp\textsharp
 20364 \let\recycle\textrecycle
 20365 \let\Wheelchair\textWheelchair
 20366 \let\Flag\textFlag
 20367 \let\MineSign\textMineSign
 20368 \let\ds military\textds military
 20369 \let\ds medical\textds medical
 20370 \let\ds juridical\textds juridical
 20371 \let\ds chemical\textds chemical
 20372 \let\ds biological\textds biological
 20373 \let\ds commercial\textds commercial
 20374 \let\manstar\textmanstar
 20375 \let\danger\textdanger
 20376 \let\FemaleFemale\textFemaleFemale
 20377 \let\MaleMale\textMaleMale
 20378 \let\FemaleMale\textFemaleMale
 20379 \let\Hermaphrodite\textHermaphrodite
 20380 \let\Neutral\textNeutral
 20381 \let\hexstar\texthexstar
 20382 \let\SunCload\textSunCload
 20383 \let\Rain\textRain
 20384 \let\noway\textnoway
 20385 \let\Mountain\textMountain
 20386 \let\Tent\textTent
 20387 \let\ScissorRight\textScissorRight
 20388 \let\ScissorRightBrokenTop\textScissorRightBrokenTop
 20389 \let\ScissorHollowRight\textScissorHollowRight
 20390 \let\PhoneHandset\textPhoneHandset
 20391 \let\Tape\textTape
 20392 \let\Plane\textPlane
 20393 \let\Envelope\textEnvelope
 20394 \let\Peace\textPeace
 20395 \let\WritingHand\textWritingHand
 20396 \let\PencilRightDown\textPencilRightDown
 20397 \let\PencilRight\textPencilRight
 20398 \let\PencilRightUp\textPencilRightUp
 20399 \let\NibRight\textNibRight
 20400 \let\NibSolidRight\textNibSolidRight
 20401 \let\Checkmark\textCheckmark
 20402 \let\CheckmarkBold\textCheckmarkBold
 20403 \let\XSolid\textXSolid
 20404 \let\XSolidBold\textXSolidBold
 20405 \let\XSolidBrush\textXSolidBrush
 20406 \let\PlusOutline\textPlusOutline
 20407 \let\Plus\textPlus

20408 \let\PlusThinCenterOpen\textPlusThinCenterOpen
 20409 \let\PlusCenterOpen\textPlusCenterOpen
 20410 \let\Cross\textCross
 20411 \let\CrossOpenShadow\textCrossOpenShadow
 20412 \let\CrossOutline\textCrossOutline
 20413 \let\CrossMaltese\textCrossMaltese
 20414 \let\DavidStar\textDavidStar
 20415 \let\FourAsterisk\textFourAsterisk
 20416 \let\JackStar\textJackStar
 20417 \let\JackStarBold\textJackStarBold
 20418 \let\ClowerTips\textClowerTips
 20419 \let\FourStar\textFourStar
 20420 \let\FourStarOpen\textFourStarOpen
 20421 \let\FiveStarOpenCircled\textFiveStarOpenCircled
 20422 \let\FiveStarCenterOpen\textFiveStarCenterOpen
 20423 \let\FiveStarOpenDotted\textFiveStarOpenDotted
 20424 \let\FiveStarOutline\textFiveStarOutline
 20425 \let\FiveStarOutlineHeavy\textFiveStarOutlineHeavy
 20426 \let\FiveStarConvex\textFiveStarConvex
 20427 \let\FiveStarShadow\textFiveStarShadow
 20428 \let\AsteriskBold\textAsteriskBold
 20429 \let\AsteriskCenterOpen\textAsteriskCenterOpen
 20430 \let\EightStarTaper\textEightStarTaper
 20431 \let\EightStarConvex\textEightStarConvex
 20432 \let\SixStar\textSixStar
 20433 \let\EightStar\textEightStar
 20434 \let\EightStarBold\textEightStarBold
 20435 \let\TwelveStar\textTwelveStar
 20436 \let\SixteenStarLight\textSixteenStarLight
 20437 \let\SixFlowerPetalRemoved\textSixFlowerPetalRemoved
 20438 \let\SixFlowerOpenCenter\textSixFlowerOpenCenter
 20439 \let\Asterisk\textAsterisk
 20440 \let\SixFlowerAlternate\textSixFlowerAlternate
 20441 \let\FiveFlowerPetal\textFiveFlowerPetal
 20442 \let\FiveFlowerOpen\textFiveFlowerOpen
 20443 \let\EightFlowerPetal\textEightFlowerPetal
 20444 \let\SunshineOpenCircled\textSunshineOpenCircled
 20445 \let\SixFlowerAltPetal\textSixFlowerAltPetal
 20446 \let\SnowflakeChevron\textSnowflakeChevron
 20447 \let\Snowflake\textSnowflake
 20448 \let\SnowflakeChevronBold\textSnowflakeChevronBold
 20449 \let\Sparkle\textSparkle
 20450 \let\SparkleBold\textSparkleBold
 20451 \let\AsteriskRoundedEnds\textAsteriskRoundedEnds
 20452 \let\EightFlowerPetalRemoved\textEightFlowerPetalRemoved
 20453 \let\EightAsterisk\textEightAsterisk
 20454 \let\CircleShadow\textCircleShadow
 20455 \let\SquareShadowBottomRight\textSquareShadowBottomRight
 20456 \let\SquareTopRight\textSquareTopRight
 20457 \let\SquareCastShadowBottomRight\textSquareCastShadowBottomRight
 20458 \let\SquareCastShadowTopRight\textSquareCastShadowTopRight
 20459 \let\DiamondSolid\textDiamondSolid
 20460 \let\RectangleThin\textRectangleThin
 20461 \let\Rectangle\textRectangle

20462 \let\RectangleBold\textRectangleBold
 20463 \let\perp\textperp
 20464 \let\notperp\textnotperp
 20465 \let\veedot\textveedot
 20466 \let\wedgedot\textwedgedot
 20467 \let\leftspoon\textleftspoon
 20468 \let\lbrackdbl\textlbrackdbl
 20469 \let\rbrackdbl\textrbrackdbl
 20470 \let\circlearrowleft\textcirclearrowleft
 20471 \let\circlearrowright\textcirclearrowright
 20472 \let\longleftarrow\textlongleftarrow
 20473 \let\longrightarrow\textlongrightarrow
 20474 \let\longleftarrow\textLongleftarrow
 20475 \let\Longleftarrow\textLongleftarrow
 20476 \let\Longrightarrow\textLongrightarrow
 20477 \let\Longleftarrow\textLongleftarrow
 20478 \let\longmapsto\textlongmapsto
 20479 \let\Longmapsfrom\textLongmapsfrom
 20480 \let\Longmapsto\textLongmapsto
 20481 \let\nwsearrow\textnwsearrow
 20482 \let\neswarrow\textneswarrow
 20483 \let\hookrightarrow\texthookrightarrow
 20484 \let\rhookrightarrow\texthookrightarrow
 20485 \let\hookrightarrow\texthookrightarrow
 20486 \let\rhookrightarrow\texthookrightarrow
 20487 \let\leadsto\textleadsto
 20488 \let\curvearrowright\textcurvearrowright
 20489 \let\curvearrowleft\textcurvearrowleft
 20490 \let\curvearrowright\textcurvearrowright
 20491 \let\curvearrowright\textcurvearrowright
 20492 \let\curvearrowright\textcurvearrowright
 20493 \let\curvearrowright\textcurvearrowright
 20494 \let\curvearrowright\textcurvearrowright
 20495 \let\curvearrowright\textcurvearrowright
 20496 \let\lefttharpoonup\textlefttharpoonup
 20497 \let\righttharpoonup\textrighttharpoonup
 20498 \let\updownharpoonright\textupdownharpoonright
 20499 \let\updownharpoonleft\textupdownharpoonleft
 20500 \let\lefttharpoons\textlefttharpoons
 20501 \let\uptharpoons\textuptharpoons
 20502 \let\righttharpoons\textrighttharpoons
 20503 \let\downtharpoons\textdowntharpoons
 20504 \let\leftbarharpoon\textleftbarharpoon
 20505 \let\barlefttharpoon\textbarlefttharpoon
 20506 \let\rightbarharpoon\textrightbarharpoon
 20507 \let\barrighttharpoon\textbarrighttharpoon
 20508 \let\updownharpoons\textupdownharpoons
 20509 \let\downupharpoons\textdownupharpoons
 20510 \let\moo\textmoo
 20511 \let\llparenthesis\textllparenthesis
 20512 \let\rrparenthesis\textrrparenthesis
 20513 \let\invdiameter\textinvdiameter
 20514 \let\obar\textobar
 20515 \let\obslash\textobslash

20516 $\backslash\text{let}\backslash\text{obot}\backslash\text{textobot}$
 20517 $\backslash\text{let}\backslash\text{NoChemicalCleaning}\backslash\text{textNoChemicalCleaning}$
 20518 $\backslash\text{let}\backslash\text{olessthan}\backslash\text{textolessthan}$
 20519 $\backslash\text{let}\backslash\text{ogreaterthan}\backslash\text{textogreaterthan}$
 20520 $\backslash\text{let}\backslash\text{boxslash}\backslash\text{textboxslash}$
 20521 $\backslash\text{let}\backslash\text{boxbslash}\backslash\text{textboxbslash}$
 20522 $\backslash\text{let}\backslash\text{boxast}\backslash\text{textboxast}$
 20523 $\backslash\text{let}\backslash\text{boxcircle}\backslash\text{textboxcircle}$
 20524 $\backslash\text{let}\backslash\text{boxbox}\backslash\text{textboxbox}$
 20525 $\backslash\text{let}\backslash\text{Valve}\backslash\text{textValve}$
 20526 $\backslash\text{let}\backslash\text{multimapboth}\backslash\text{textmultimapboth}$
 20527 $\backslash\text{let}\backslash\text{shuffle}\backslash\text{textshuffle}$
 20528 $\backslash\text{let}\backslash\text{uplus}\backslash\text{textuplus}$
 20529 $\backslash\text{let}\backslash\text{bigdoublewedge}\backslash\text{textbigdoublewedge}$
 20530 $\backslash\text{let}\backslash\text{bigdoublevee}\backslash\text{textbigdoublevee}$
 20531 $\backslash\text{let}\backslash\text{Join}\backslash\text{textJoin}$
 20532 $\backslash\text{let}\backslash\text{fatsemi}\backslash\text{textfatsemi}$
 20533 $\backslash\text{let}\backslash\text{circplus}\backslash\text{textcircplus}$
 20534 $\backslash\text{let}\backslash\text{minusdot}\backslash\text{textminusdot}$
 20535 $\backslash\text{let}\backslash\text{dottimes}\backslash\text{textdottimes}$
 20536 $\backslash\text{let}\backslash\text{dtimes}\backslash\text{texdtimes}$
 20537 $\backslash\text{let}\backslash\text{odiv}\backslash\text{textodiv}$
 20538 $\backslash\text{let}\backslash\text{invneg}\backslash\text{textinvneg}$
 20539 $\backslash\text{let}\backslash\text{sqdoublecap}\backslash\text{textsdoublecap}$
 20540 $\backslash\text{let}\backslash\text{capdot}\backslash\text{textcapdot}$
 20541 $\backslash\text{let}\backslash\text{sqdoublecup}\backslash\text{textsdoublecup}$
 20542 $\backslash\text{let}\backslash\text{doublewedge}\backslash\text{texdoublewedge}$
 20543 $\backslash\text{let}\backslash\text{doublevee}\backslash\text{texdoublevee}$
 20544 $\backslash\text{let}\backslash\text{doublebarwedge}\backslash\text{texdoublebarwedge}$
 20545 $\backslash\text{let}\backslash\text{veedoublebar}\backslash\text{texveedoublebar}$
 20546 $\backslash\text{let}\backslash\text{eqdot}\backslash\text{texeqdot}$
 20547 $\backslash\text{let}\backslash\text{neqdot}\backslash\text{texneqdot}$
 20548 $\backslash\text{let}\backslash\text{coloncolonequals}\backslash\text{textcoloncolonequals}$
 20549 $\backslash\text{let}\backslash\text{leqslant}\backslash\text{textleqslant}$
 20550 $\backslash\text{let}\backslash\text{nleqslant}\backslash\text{texnleqslant}$
 20551 $\backslash\text{let}\backslash\text{geqslant}\backslash\text{textgeqslant}$
 20552 $\backslash\text{let}\backslash\text{ngeqslant}\backslash\text{texngeqslant}$
 20553 $\backslash\text{let}\backslash\text{lessapprox}\backslash\text{textlessapprox}$
 20554 $\backslash\text{let}\backslash\text{nlessapprox}\backslash\text{texnlessapprox}$
 20555 $\backslash\text{let}\backslash\text{gtrapprox}\backslash\text{textgtrapprox}$
 20556 $\backslash\text{let}\backslash\text{ngtrapprox}\backslash\text{texngtrapprox}$
 20557 $\backslash\text{let}\backslash\text{lneq}\backslash\text{texlneq}$
 20558 $\backslash\text{let}\backslash\text{gneq}\backslash\text{texgneq}$
 20559 $\backslash\text{let}\backslash\text{lnapprox}\backslash\text{texlnapprox}$
 20560 $\backslash\text{let}\backslash\text{gnapprox}\backslash\text{texgnapprox}$
 20561 $\backslash\text{let}\backslash\text{lesseqqgtr}\backslash\text{texlesseqqgtr}$
 20562 $\backslash\text{let}\backslash\text{gtreqqlless}\backslash\text{texgtreqqlless}$
 20563 $\backslash\text{let}\backslash\text{eqslantless}\backslash\text{texeqslantless}$
 20564 $\backslash\text{let}\backslash\text{eqslantgtr}\backslash\text{texeqslantgtr}$
 20565 $\backslash\text{let}\backslash\text{leftslice}\backslash\text{texleftslice}$
 20566 $\backslash\text{let}\backslash\text{rightslice}\backslash\text{texrightslice}$
 20567 $\backslash\text{let}\backslash\text{preceq}\backslash\text{texpreceq}$
 20568 $\backslash\text{let}\backslash\text{npreceq}\backslash\text{texnpreceq}$
 20569 $\backslash\text{let}\backslash\text{succeq}\backslash\text{texsucceq}$

20570 `\let\nsucceq\textnsucceq`
 20571 `\let\precneq\textprecneq`
 20572 `\let\succneq\textsuccneq`
 20573 `\let\preceqq\textpreceqq`
 20574 `\let\preceqq\textnpreceqq`
 20575 `\let\succeqq\textsucceqq`
 20576 `\let\nsucceqq\textnsucceqq`
 20577 `\let\precneqq\textprecneqq`
 20578 `\let\succneqq\textsuccneqq`
 20579 `\let\precapprox\textprecapprox`
 20580 `\let\precapprox\textnprecapprox`
 20581 `\let\succapprox\textsuccapprox`
 20582 `\let\precapprox\textnsuccapprox`
 20583 `\let\precnapprox\textprecnapprox`
 20584 `\let\succnapprox\textsuccnapprox`
 20585 `\let\subteqq\textsubteqq`
 20586 `\let\subteqq\textnsubteqq`
 20587 `\let\supseteq\textsupseteq`
 20588 `\let\supseteq\textnsupseteq`
 20589 `\let\dashV\textdashV`
 20590 `\let\ndashV\textndashV`
 20591 `\let\Dashv\textDashv`
 20592 `\let\ndashv\textndashv`
 20593 `\let\DashV\textDashV`
 20594 `\let\ndashV\textndashV`
 20595 `\let\downmodels\textdownmodels`
 20596 `\let\downmodels\textndownmodels`
 20597 `\let\upmodels\textupmodels`
 20598 `\let\upmodels\textnupmodels`
 20599 `\let\upspoon\textupspoon`
 20600 `\let\interleave\textinterleave`
 20601 `\let\slash\textslash`
 20602 `\let\pentagon\textpentagon`
 20603 `\let\varhexagon\textvarhexagon`
 20604 `\let\jinferior\textjinferior`
 20605 `\let\slashdiv\textslashdiv`
 20606 `\let\fivedots\textfivedots`
 20607 `\let\oo\textoo`
 20608 `\let\GaPa\textGaPa`
 20609 `\let\HaPa\textHaPa`
 20610 `\let\ViPa\textViPa`
 20611 `\let\AcPa\textAcPa`
 20612 `\let\SePa\textSePa`
 20613 `\let\ZwPa\textZwPa`
 20614 `\let\fullnote\textfullnote`
 20615 `\let\halfnote\texthalfnote`
 20616 `\let\Vier\textVier`
 20617 `\let\Acht\textAcht`
 20618 `\let\Sech\textSech`
 20619 `\let\Zwdr\textZwdr`
 20620 `\let\Mundus\textMundus`
 20621 `\let\Moon\textMoon`
 20622 `\let\ManFace\textManFace`
 20623 `\let\WomanFace\textWomanFace`

20624 \let\Fax\textFax
 20625 \let\Fire\textFire
 20626 \let\Bicycle\textBicycle
 20627 \let\Gentsroom\textGentsroom
 20628 \let\Ladiesroom\textLadiesroom
 20629 \let\ccnc\textccnc
 20630 \let\ccsa\textccsa
 20631 \let\Info\textInfo
 20632 \let\CESign\textCESign
 20633 \let\neg\textneg
 20634 \let\times\texttimes
 20635 \let\div\textdiv
 20636 \let\pm\textpm
 20637 \let\cdot\textcdot
 20638 }% \psdmapshortnames
 20639 \newcommand*{\psdaliasnames}{%
 20640 \let\epsdice\HyPsd@DieFace
 20641 \let\fcdice\HyPsd@DieFace
 20642 \let\MoonPha\HyPsd@MoonPha
 20643 \let\mathdollar\textdollar
 20644 \let\EyesDollar\textdollar
 20645 \let\binampersand\textampersand
 20646 \let\with\textampersand
 20647 \let\mathunderscore\textunderscore
 20648 \let\textvertline\textbar
 20649 \let\mathsterling\textsterling
 20650 \let\pounds\textsterling
 20651 \let\brokenvert\textbrokenbar
 20652 \let\mathsection\textsection
 20653 \let\S\textsection
 20654 \let\mathparagraph\textparagraph
 20655 \let\MultiplicationDot\textperiodcentered
 20656 \let\Squaredot\textperiodcentered
 20657 \let\var times\textmultiply
 20658 \let\MVMultiplication\textmultiply
 20659 \let\eth\dh
 20660 \let\crossd\textcrd
 20661 \let\textbard\textcrd
 20662 \let\bard\textcrd
 20663 \let\textcrh\textthbar
 20664 \let\crossh\textthbar
 20665 \let\planck\textthbar
 20666 \let\eng\ng
 20667 \let\engma\ng
 20668 \let\crossb\textcrb
 20669 \let\textbarb\textcrb
 20670 \let\barb\textcrb
 20671 \let\Florin\textflorin
 20672 \let\hv\texthvl
 20673 \let\hausak\texthtk
 20674 \let\crossnilambda\textcrlambda
 20675 \let\barlambda\textcrlambda
 20676 \let\lambdabar\textcrlambda
 20677 \let\lambdash\textcrlambda

20678 \let\textnrleg\textPUnrleg
 20679 \let\textpipevar\textpipe
 20680 \let\textdoublepipevar\textdoublepipe
 20681 \let\textdoublebarpipevar\textdoublebarpipe
 20682 \let\textcrg\textgslash
 20683 \let\textdblig\textPUdblig
 20684 \let\textqplig\textPUqplig
 20685 \let\textcentoldstyle\textslashc
 20686 \let\textbarc\textslashc
 20687 \let\inva\textturna
 20688 \let\vara\textscripta
 20689 \let\invscripta\textturnscripta
 20690 \let\rotvara\textturnscripta
 20691 \let\hookb\texthtb
 20692 \let\hausab\texthtb
 20693 \let\varopeno\textopeno
 20694 \let\curlyc\textctc
 20695 \let\taild\textrtaild
 20696 \let\hookd\texthtd
 20697 \let\hausad\texthtd
 20698 \let\er\textrhooschwa
 20699 \let\epsi\textniepsilon
 20700 \let\hookrepsilon\textrhooschwa
 20701 \let\closedrepsilon\textcloseepsilon
 20702 \let\barj\textbardotlessj
 20703 \let\hookg\texthtg
 20704 \let\varg\textscriptg
 20705 \let\vod\textipagamma
 20706 \let\invh\textturnh
 20707 \let\udesc\textturnh
 20708 \let\hookh\texthth
 20709 \let\voicedh\texthth
 20710 \let\hookheng\texththeng
 20711 \let\ibar\textbari
 20712 \let\vari\textniota
 20713 \let\tildel\texttilde
 20714 \let\latfric\textbeltl
 20715 \let\taill\textrtail
 20716 \let\lz\textlyoghlig
 20717 \let\invm\textturnm
 20718 \let\rotr\textturnm
 20719 \let\legm\textturnmrleg
 20720 \let\labdentalnas\textltailm
 20721 \let\emgma\textltailm
 20722 \let\nj\textltailn
 20723 \let\enya\textltailn
 20724 \let\tailn\textrtailn
 20725 \let\closedniomega\textcloseomega
 20726 \let\varomega\textcloseomega
 20727 \let\invr\textturnr
 20728 \let\rotr\textturnr
 20729 \let\invlegr\textturnlonglegr
 20730 \let\tailinvr\textturnrrtail
 20731 \let\legr\textlonglegr

20732 \let\tailr\textrtailr
 20733 \let\flapr\textfishhookr
 20734 \let\flap\textfishhookr
 20735 \let\tails\textrtails
 20736 \let\curlyesh\textctesh
 20737 \let\clickt\textturnt
 20738 \let\tailt\textrtailt
 20739 \let\ubar\textbaru
 20740 \let\rotOmega\textniupsilon
 20741 \let\invv\textturnv
 20742 \let\pwedge\textturnv
 20743 \let\invw\textturnw
 20744 \let\rotw\textturnw
 20745 \let\invy\textturny
 20746 \let\roty\textturny
 20747 \let\tailz\textrtailz
 20748 \let\curlyz\textctz
 20749 \let\curlyyogh\textctyogh
 20750 \let\ejective\textglotstop
 20751 \let\glottal\textglotstop
 20752 \let\reject\textrevglotstop
 20753 \let\clickc\textstretchc
 20754 \let\textstretchcvar\textstretchc
 20755 \let\clickb\textbullseye
 20756 \let\textObullseye\textbullseye
 20757 \let\textctjvar\textctj
 20758 \let\textturnsck\textturnk
 20759 \let\dz\textdzlig
 20760 \let\tesh\textteshlig
 20761 \let\digamma\textdigammagreek
 20762 \let\hardsign\cyrhrdsn
 20763 \let\softsign\cyrsoftsn
 20764 \let\hebsin\hebshin
 20765 \let\textsck\textPUscck
 20766 \let\textscm\textPUscm
 20767 \let\textscp\textPUscp
 20768 \let\textrevscr\textPUrevscr
 20769 \let\textrhoaka\textPURhooka
 20770 \let\textrhooke\textPURhooke
 20771 \let\textrhookepsilon\textPURhookepsilon
 20772 \let\textrhookeno\textPURhookopeno
 20773 \let\textdoublevertline\textbardbl
 20774 \let\dag\textdagger
 20775 \let\ddagger\textdaggerdbl
 20776 \let\ddag\textdaggerdbl
 20777 \let\mathellipsis\textellipsis
 20778 \let\EurDig\texteuro
 20779 \let\EURdig\texteuro
 20780 \let\EurHv\texteuro
 20781 \let\EURhv\texteuro
 20782 \let\EurCr\texteuro
 20783 \let\EURcr\texteuro
 20784 \let\EurTm\texteuro
 20785 \let\EURtm\texteuro

20786 \let\Eur\texteuro
 20787 \let\Denarius\textDeleatur
 20788 \let\agemO\textmho
 20789 \let\EstimatedSign\textestimated
 20790 \let\Ecommerce\textestimated
 20791 \let\bindnasrepma\textinvamp
 20792 \let\parr\textinvamp
 20793 \let\MVRightArrow\textrightarrow
 20794 \let\MVRightarrow\textrightarrow
 20795 \let\MVArrowDown\textdownarrow
 20796 \let\Force\textdownarrow
 20797 \let\textglobrise\textnearrow
 20798 \let\textglobfall\textsearrow
 20799 \let\Lightning\textlightning
 20800 \let\Conclusion\textrightarrow
 20801 \let\dashedleftarrow\textdashleftarrow
 20802 \let\dashedrightarrow\textdashrightarrow
 20803 \let\varnothing\textemptyset
 20804 \let\owns\textni
 20805 \let\notni\textnotowner
 20806 \let\varprop\textpropto
 20807 \let\varangle\text{sphericalangle}
 20808 \let\Anglesign\text{sphericalangle}
 20809 \let\AngleSign\text{sphericalangle}
 20810 \let\notdivides\textnmid
 20811 \let\varowedge\textowedge
 20812 \let\varovee\textovee
 20813 \let\varint\textint
 20814 \let\varoint\textoint
 20815 \let\downtherefore\textbecause
 20816 \let\textdotdiv\textdotminus
 20817 \let\AC\textsim
 20818 \let\wreath\textwr
 20819 \let\nthickapprox\textnapprox
 20820 \let\VHF\texttriplesim
 20821 \let\notasymp\textnasyp
 20822 \let\Doteq\textdoteqdot
 20823 \let\corresponds\texthateq
 20824 \let\Corresponds\texthateq
 20825 \let\nequal\textneq
 20826 \let\Congruent\textequiv
 20827 \let\NotCongruent\textnequiv
 20828 \let\notequiv\textnequiv
 20829 \let\LessOrEqual\textleq
 20830 \let\LargerOrEqual\textgeq
 20831 \let\apprle\textlesssim
 20832 \let\apprge\textgtsim
 20833 \let\varoplus\textoplus
 20834 \let\varominus\textominus
 20835 \let\varotimes\textotimes
 20836 \let\varoslash\textoslash
 20837 \let\varodot\textodot
 20838 \let\ocirc\textcircledcirc
 20839 \let\varocircle\textcircledcirc

20840 \let\varoast\textcircledast
 20841 \let\oasterisk\textcircledast
 20842 \let\rightvdash\textvdash
 20843 \let\leftvdash\textdashv
 20844 \let\leftvdash\textndashv
 20845 \let\downvdash\texttop
 20846 \let\upvdash\textbot
 20847 \let\nperp\textnupvdash
 20848 \let\models\textvDash
 20849 \let\rightmodels\textvDash
 20850 \let\rightVdash\textVdash
 20851 \let\rightModels\textVDash
 20852 \let\rightvdash\textnvdash
 20853 \let\rightmodels\textnvDash
 20854 \let\nmodels\textnvDash
 20855 \let\rightVdash\textnVdash
 20856 \let\rightModels\textnVDash
 20857 \let\lessclosed\textlhd
 20858 \let\gtrclosed\textrhd
 20859 \let\leqclosed\textunlhd
 20860 \let\trianglelefteq\textunlhd
 20861 \let\geqclosed\textunrhd
 20862 \let\trianglerighteq\textunrhd
 20863 \let\Bowtie\textbowtie
 20864 \let\varcurlyvee\textcurlyvee
 20865 \let\varcurlywedge\textcurlywedge
 20866 \let\doublecap\textCap
 20867 \let\doublecup\textCup
 20868 \let\varsubsetneq\textsubsetneq
 20869 \let\varsupsetneq\textsupsetneq
 20870 \let\lessclosed\textntriangleleft
 20871 \let\ngtrclosed\textntriangleright
 20872 \let\Clocklogo\textclock
 20873 \let\ClockLogo\textclock
 20874 \let\baro\textstmaryrdbaro
 20875 \let\varparallelinv\textbbslash
 20876 \let\CleaningA\textCircledA
 20877 \let\Kutline\textCuttingLine
 20878 \let\CutLine\textCuttingLine
 20879 \let\Cutline\textCuttingLine
 20880 \let\MoveUp\textUParrow
 20881 \let\APLup\textbigtriangleup
 20882 \let\Bleech\textbigtriangleup
 20883 \let\MoveDown\textDOWNarrow
 20884 \let\APLdown\textbigtriangledown
 20885 \let\Diamond\textdiamond
 20886 \let\varbigcirc\textbigcircle
 20887 \let\Telefon\textPhone
 20888 \let\Box\textboxempty
 20889 \let\CheckedBox\textCheckedbox
 20890 \let\XBox\textCrossedbox
 20891 \let\CrossedBox\textCrossedbox
 20892 \let\rightpointleft\textHandLeft
 20893 \let\leftpointright\textHandRight

20894 \let\PointingHand\textHandRight
 20895 \let\Pointinghand\textHandRight
 20896 \let\Radiation\textRadioactivity
 20897 \let\Yinyang\textYinYang
 20898 \let\YingYang\textYinYang
 20899 \let\Yingyang\textYinYang
 20900 \let\Frowny\textfrownie
 20901 \let\Smiley\textsmiley
 20902 \let\Sun\textsun
 20903 \let\Mercury\textmercury
 20904 \let\textfemale\textPUfemale
 20905 \let\female\textPUfemale
 20906 \let\venus\textPUfemale
 20907 \let\Venus\textPUfemale
 20908 \let\Female\textPUfemale
 20909 \let\Earth\textearth
 20910 \let\mars\textmale
 20911 \let\Mars\textmale
 20912 \let\Male\textmale
 20913 \let\Jupiter\textjupiter
 20914 \let\Saturn\textsaturn
 20915 \let\Uranus\texturanus
 20916 \let\Neptune\textneptune
 20917 \let\Pluto\textpluto
 20918 \let\Aries\textaries
 20919 \let\Taurus\texttaurus
 20920 \let\Gemini\textgemini
 20921 \let\Cancer\textcancer
 20922 \let\Leo\textleo
 20923 \let\Virgo\textvirgo
 20924 \let\Libra\textlibra
 20925 \let\Scorpio\textscorpio
 20926 \let\Sagittarius\textsagittarius
 20927 \let\Capricorn\textcapricornus
 20928 \let\Aquarius\textaquarius
 20929 \let\Pisces\textpisces
 20930 \let\spadesuit\textspadesuitblack
 20931 \let\Heart\textheartsuitwhite
 20932 \let\heartsuit\textheartsuitwhite
 20933 \let\diamondsuit\textdiamondsuitwhite
 20934 \let\clubsuit\textclubsuitblack
 20935 \let\ eighthnote\textmusicalnote
 20936 \let\Recycling\textrecycle
 20937 \let\VarFlag\textFlag
 20938 \let\textxswup\textdsmilitary
 20939 \let\textuncrfemale\textPUuncrfemale
 20940 \let\Football\textSoccerBall
 20941 \let\CutLeft\textScissorRightBrokenBottom
 20942 \let\Cutright\textScissorRightBrokenBottom
 20943 \let\RightScissors\textScissorRight
 20944 \let\Leftscissors\textScissorRight
 20945 \let\Letter\textEnvelope
 20946 \let\Writinghand\textWritingHand
 20947 \let\checkmark\textCheckmark

```

20948 \let\DavidStar\textDavidStar
20949 \let\llbracket\textlbrackdbl
20950 \let\rrbracket\textrrackdbl
20951 \let\RightTorque\textlcurvearrowdown
20952 \let\Righttorque\textlcurvearrowdown
20953 \let\LeftTorque\textrcurvearrowdown
20954 \let\Lefttorque\textrcurvearrowdown
20955 \let\textvarobar\textobar
20956 \let\circledbslash\textobslash
20957 \let\obackslash\textobslash
20958 \let\varobslash\textobslash
20959 \let\odplus\textobot
20960 \let\varolessthan\textolessthan
20961 \let\varogreaterthan\textogreaterthan
20962 \let\divdot\textminusdot
20963 \let\doublesqcap\textsquaddoublecap
20964 \let\doublesqcup\textsquaddoublecup
20965 \let\merge\textdoublevee
20966 \let\leftVdash\textdashV
20967 \let\nleftVdash\textndashV
20968 \let\leftmodels\textDashv
20969 \let\nleftmodels\textnDashv
20970 \let\leftModels\textDashV
20971 \let\nleftModels\textnDashV
20972 \let\varparallel\textsslash
20973 \let\textheng\textPUheng
20974 \let\textlhookfour\textPUlhookfour
20975 \let\textscf\textPUscf
20976 \let\textaoig\textPUaolig
20977 \let\Ganz\textfullnote
20978 \let\Halb\texthalfnote
20979 \let\Womanface\textWomanFace
20980 \let\Faxmachine\textFax
20981 \let\CEsign\textCESign
20982 }% \psdaliasnames
20983 </psdextra>

```

48 End of file hycheck.tex

```

20984 <*check>
20985 \typeout{}
20986 \begin{document}
20987 \end{document}
20988 </check>

```

49 Index

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

Symbols				
\!	195, 220, 1747	15440, 15449, 15465, 15474, 15475, 15490, 15504, 15510, 15530, 15532, 15646, 15648, 15666, 15668, 15702, 15704, 15714, 15716, 15776, 15778, 15899, 15901, 15907, 15909, 15912, 15915, 16394, 16414, 16564, 16584, 17126, 17128, 17150, 17152, 17190, 17192, 17258, 17260, 19500, 19505, 19510, 19515, 19520, 19525, 19530, 19535, 19540, 19545, 19550, 19555, 19560, 19565, 19570, 19575, 19580, 19585, 19590, 19595, 19600, 19605, 19610, 19615	16854, 16878, 16880, 17098, 17100	\> 197, 222
\"	202, 227, 3044, 14375, 14691, 14703, 14715, 14841, 14929, 14943, 14951, 14966, 14978, 14995, 15009, 15020, 15021, 15035, 15047, 15054, 15107, 15153, 15182, 15213, 15388, 15402, 15410, 15424, 15438, 15455, 15469, 15480, 15481, 15496, 15508, 15516, 15774, 16390, 16404, 16560, 16574, 16818, 16820, 16835, 16838, 16840, 16842, 16844, 16846, 16856, 16858, 16860, 16862, 16869, 16872, 16874, 16876, 16882, 16884, 16890, 16892, 16898, 16900, 17110, 17112, 17262, 17264, 17278, 17280, 17300	\(. . . 190, 215, 312, 741, 744, 746, 1749, 14441, 14761	\? 317	\@ 3035
\#	521, 1832, 1833, 4752, 4764, 4766, 4782, 4814, 4874, 8690, 8692, 9434, 9443, 9478, 10321, 11969, 11980, 12016, 12254, 12263, 12303, 14295	\) . . . 191, 216, 313, 713, 719, 722, 1750, 14442, 14763	\@@@ 2191	\@@BOOKMARK 14356, 14359, 14417, 14482, 14489
\\$	184, 209, 311, 522, 4754, 4873	* 315	\@@ListBox 12658, 12689, 13260, 13294, 13616, 13657	\@@Menu 12899, 12907
\%	523, 1747, 1807, 1808, 4751, 4761, 4763, 4815, 8692	\+ 200, 225, 316	\@@PasswordField 12848, 12854	\@@PasswordField 12848, 12854
\&	185, 210, 524, 4755, 4767, 4769, 12026	\- 201, 226	\@@Radio 12643, 12664, 12897, 12921, 13245, 13266, 13601, 13622	\@@Radio 12643, 12664, 12897, 12921, 13245, 13266, 13601, 13622
\'	203, 228, 2984, 2998, 3039, 3041, 3042, 3043, 3044, 3049, 3050, 3052, 3057, 3063, 3067, 3068, 3071, 3114, 3115, 3120, 3121, 3122, 3123, 3124, 3125, 3126, 3127, 3129, 3132, 3139, 3140, 3141, 3142, 3145, 3151, 3164, 14373, 14688, 14700, 14712, 14923, 14939, 14947, 14960, 14974, 14980, 14989, 15005, 15014, 15015, 15029, 15043, 15049, 15073, 15075, 15076, 15077, 15080, 15082, 15083, 15084, 15092, 15150, 15179, 15210, 15382, 15398, 15406, 15418, 15434,	\. 198, 223, 309, 3495, 3908, 14694, 14706, 14718, 14782, 15078, 15085, 15105, 15156, 15185, 15219, 15296, 15297, 15538, 15540, 15568, 15570, 15588, 15590, 15627, 15658, 15660, 15780, 15782, 15983, 15985, 15991, 15993, 17042, 17044, 17054, 17056, 17094, 17096, 17102, 17104, 17154, 17156, 17162, 17164, 17194, 17196, 17198, 17200, 17210, 17212, 17218, 17220, 17266, 17268, 17274, 17276, 17282, 17284, 17306	\@Chyper@Creadexternallink 5168, 5170	\@@Textfield . . . 12850, 12865
		\/ . . . 194, 219, 654, 655, 656, 724, 1516, 8250	\@@commahyperpage 8384, 8385	\@@commahyperpage 8384, 8385
		\: 189, 214	\@Chyperref 4977, 4978	\@Chyperref 4977, 4978
		\; 199, 224	\@Cwindex 8285, 8286	\@Cwindex 8285, 8286
		\< 196, 221	\@Cwritetorep . . . 14217, 14223	\@Cwritetorep . . . 14217, 14223
		\= . . . 167, 173, 180, 183, 14696, 14708, 14720, 15098, 15162, 15191, 15218, 15518, 15520, 15560, 15562, 15612, 15614, 15615, 15686, 15688, 15746, 15748, 15995, 15997, 16852,	\@Alpha 7084, 7086	\@Alpha 7084, 7086
			\@BIBLABEL . . . 7750, 7756, 7762	\@BIBLABEL . . . 7750, 7756, 7762
			\@BOOKMARK . . . 14356, 14358	\@BOOKMARK . . . 14356, 14358
			\@CheckBox 6157, 10386, 12778, 12814, 12952, 13382, 13759	\@CheckBox 6157, 10386, 12778, 12814, 12952, 13382, 13759
			\@ChoiceMenu 6154, 10389, 12596, 12817, 12887, 13197, 13553	\@ChoiceMenu 6154, 10389, 12596, 12817, 12887, 13197, 13553
			\@Form 5830, 10376, 12348, 12804, 12831, 13086, 13467	\@Form 5830, 10376, 12348, 12804, 12831, 13086, 13467
			\@Gauge . . . 6163, 10380, 12533, 12808, 12836, 12973, 13464	\@Gauge . . . 6163, 10380, 12533, 12808, 12836, 12973, 13464
			\@Localurlfalse 10329	\@Localurlfalse 10329
			\@Localurltrue 10326	\@Localurltrue 10326
			\@M 2236, 4860	\@M 2236, 4860
			\@MM 7506	\@MM 7506
			\@PushButton 6160, 10392, 12700, 12820, 12933, 13304, 13673	\@PushButton 6160, 10392, 12700, 12820, 12933, 13304, 13673
			\@Refstar 4725, 8493	\@Refstar 4725, 8493
			\@Reset 6169, 10395, 12751, 12823, 12949, 13357, 13730	\@Reset 6169, 10395, 12751, 12823, 12949, 13357, 13730
			\@Submit . . . 6166, 10398, 12731, 12826, 12946, 13334, 13707	\@Submit . . . 6166, 10398, 12731, 12826, 12946, 13334, 13707
			\@TextField 6151, 10383, 12564, 12811, 12839, 13167, 13516	\@TextField 6151, 10383, 12564, 12811, 12839, 13167, 13516
			\@addtoreset . . . 8182, 8183, 8198	\@addtoreset . . . 8182, 8183, 8198

<code>\@alph</code>	7080, 7082	<code>\@currentHpage</code>	7921, 7926, 7933, 7984, 7995, 8002	10534, 10536, 11600	
<code>\@anchorcolor</code>	3474, 9403, 9498, 10448, 11937, 12224	<code>\@currentHref</code>	2193, 5070, 5361, 6274, 6969, 7110, 7112, 7122, 7124, 7131, 7147, 7149, 7159, 7187, 7198, 7200, 7218, 7239, 7243, 7248, 7271, 7312, 7319, 7321, 7335, 7337, 7422, 7432, 7434, 7435, 7491, 7520, 7620, 7646, 7650, 7678, 7680, 7840, 8031, 8054, 8067, 8074, 8158, 14207, 14594, 14607, 14618, 14645, 14662	<code>\@filecolor</code>	3464, 3476, 9091, 9617, 9634, 10029, 10540
<code>\@arabic</code>	6987, 7003, 7079, 8141	<code>\@currentcounter</code>	6906, 6924, 7509	<code>\@firstoffive</code>	4715, 8485, 8583
<code>\@auxout</code>	2185, 5025, 5332, 6374, 7770, 7785, 7802, 7812, 7831, 7837, 7861	<code>\@currentlabel</code>	7510, 7833, 7840, 8163, 8170	<code>\@firstofone</code>	554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 608, 641, 1252, 2661, 4205, 4604, 4998, 5356, 5373, 5796, 5802, 6052, 6396, 6840, 7077, 7089, 7613, 7696, 7988, 8239, 9296, 13040, 13846, 13863, 13881, 14316, 14328
<code>\@backslashchar</code>	308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 320, 1050, 1709, 1713, 1716, 1854, 1871, 1877, 1881, 1889, 4067, 4777, 8705, 8715	<code>\@currentlabelname</code>	2183, 7423, 7492, 7521, 7625	<code>\@firstoftwo</code>	327, 335, 600, 624, 880, 896, 2067, 2323, 2330, 5248, 6353, 7388, 7408, 14652
<code>\@baseurl</code>	3481, 3483, 5226, 9142, 9145, 9388, 9390, 9675, 9677, 10198, 10208, 10294, 10296, 10831, 10833, 11215, 11229, 11922, 11924, 12122, 12136, 12210, 12212	<code>\@currentlabstr</code>	2182, 2190	<code>\@fnssymbol</code>	7078
<code>\@bibitem</code>	7777, 7809	<code>\@currname</code>	2306	<code>\@footnotemark</code>	7365, 7428, 7446, 7529, 7541, 7543, 7555, 7556, 7587, 7589
<code>\@biblabel</code>	7750, 7798	<code>\@curropt</code>	12605, 12606, 12667, 12668, 12905, 12912, 12913, 12915, 12922, 12923, 12925, 13206, 13207, 13269, 13270, 13562, 13563, 13628, 13629	<code>\@footnotetext</code>	7364, 7371, 7405, 7445, 7542, 7544, 7558, 7559, 7580
<code>\@bookmarkopenstatus</code>	4602, 4619, 14277	<code>\@dblarg</code>	7615, 7698	<code>\@for</code>	3506, 5438, 12605, 12667, 12905, 12912, 12922, 13206, 13269, 13562, 13628
<code>\@bookmarkopenlevel</code>	3435, 3437, 4605	<code>\@definecounter</code>	8136, 8137	<code>\@fourthoffive</code>	5013, 8573, 8580
<code>\@bsphack</code>	2178, 5018, 7835	<code>\@documentclasshook</code>	4211	<code>\@gobble</code>	49, 56, 117, 245, 250, 547, 548, 549, 550, 587, 588, 589, 590, 610, 627, 628, 629, 638, 640, 903, 1189, 1250, 1269, 1282, 1286, 1349, 1412, 1413, 1420, 1425, 1439, 1444, 2041, 2205, 2502, 2514, 2667, 3881, 4198, 4203, 4225, 4234, 4240, 4307, 4619, 4742, 5352, 5354, 5781, 6042, 6312, 6313, 6319, 6323, 6324, 6326, 6327, 6339, 6341, 6357, 6358, 6361, 6362, 6364, 6449, 6668, 6814, 6834, 6838, 7602, 7693, 8030, 8638, 9298, 10717, 10720, 12315, 12996, 13012, 13017, 13087, 13468, 14264, 14265, 14266, 14267, 14314, 14326
<code>\@capstartfalse</code>	7640	<code>\@ehc</code>	2558, 2666, 2692, 2708, 2743, 2782, 2789, 2800, 2806, 2844, 4305, 4922, 5190, 5542, 5666, 5862, 5895, 6089, 6142, 12709, 12762, 13314, 13368, 13683, 13741	<code>\@gobblefour</code>	553, 664, 946, 947, 948, 3689
<code>\@caption</code>	7605, 7617, 7661, 7698, 7700	<code>\@elt</code>	6975, 6977, 6978, 6983	<code>\@gobbleopt</code>	6364, 6366
<code>\@capttype</code>	2187, 7600, 7604, 7608, 7615, 7622, 7677, 7691, 7695, 7698	<code>\@endForm</code>	5831, 10379, 12532, 12807, 12835, 13140, 13494	<code>\@gobblethreethree</code>	7962
<code>\@car</code>	1332, 1348, 1366, 1386, 3414, 5448	<code>\@eqncr</code>	7259		
<code>\@chapter</code>	14613, 14614	<code>\@eqnstarfalse</code>	7233, 7262		
<code>\@cite</code>	7896, 7902	<code>\@eqnstartrue</code>	7259		
<code>\@cite@opt</code>	7897, 7903, 7907, 7917	<code>\@esphack</code>	2199, 5029, 7845, 8297		
<code>\@citebordercolor</code>	3529, 4130	<code>\@extra@b@citeb</code>	7735, 7738, 7755, 7760, 7780		
<code>\@citecolor</code>	3475	<code>\@extra@binfo</code>	7734, 7737, 7741		
<code>\@citedata@opt</code>	7898, 7904, 7906	<code>\@fifthoffive</code>	5012, 8445, 8578		
<code>\@citedatax</code>	7913, 7918	<code>\@filebordercolor</code>	3530, 4128, 9070, 9072, 10011, 10013,		
<code>\@citedatax@opt</code>	7910, 7916				
<code>\@citeseppen</code>	7895, 7901				
<code>\@commahyperpage</code>	8379, 8384				
<code>\@cons</code>	8179				
<code>\@ctrerr</code>	7052, 7061				
<code>\@currDisplay</code>	5918, 12608, 12671, 12916, 12930, 13209, 13273, 13565, 13632				
<code>\@currValue</code>	5920, 5922, 5924, 12669, 12680, 12916, 12927, 13271, 13281, 13630, 13647				
<code>\@currentHlabel</code>	7131				

<code>\@gobbletwo</code>	551, 631, 657, 665, 666, 945, 1367, 1444, 1448, 2390, 3687, 3688, 4244, 5372, 5374, 5727, 6315, 6329, 6343, 6352, 6360, 6364, 8562, 12997, 14604	7354, 7361, 7598, 7606, 7624, 7731, 7733, 7744, 7941, 7957, 8027, 8082, 8134, 8143, 8149, 8153, 8180, 8187, 8196, 8197, 8207, 8211, 8212, 8219, 8313, 8504, 8550, 8551, 8595, 8596, 8598, 8599, 8640, 8746, 8777, 8808, 9007, 9017, 10471, 10574, 10913, 10914, 10960, 11003, 11082, 11267, 12985, 13087, 13143, 13468, 13844, 13855, 14273, 14585, 14612, 14622, 14632	<code>\@menucolor</code>	3478, 9379, 10120, 10653	
<code>\@harvarditem</code>	7850, 7852	<code>\@indexfile</code>	8289, 8304, 8319, 8323, 8333	<code>\@mkboth</code>	631, 14604
<code>\@hyper@anchor</code>	5276, 5277	<code>\@inmathwarn</code>	515, 516	<code>\@mpfn</code>	7368, 7564, 7577
<code>\@hyper@itemfalse</code>	6875, 6892, 6921, 6943	<code>\@inpencc@undefined@</code>	1916	<code>\@mpfootnotetext</code>	7371, 7384, 7385, 7447
<code>\@hyper@itemtrue</code>	6876	<code>\@kernel@refstepcounter</code>	6888	<code>\@mycount</code>	14421, 14431
<code>\@hyper@launch</code>	5196, 5205, 9095, 10035, 10609, 11618	<code>\@latex@</code>	6436, 6437	<code>\@namedef</code>	2144, 2146, 2148, 2150, 2152, 2154, 2156, 2158, 2160, 2162, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2326, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 3281, 3293, 5548, 5549, 5550, 5551, 5873, 5874, 7258, 7261, 7825, 7826, 7827, 7828
<code>\@hyper@linkfile</code>	5177, 5180, 5184, 5216	<code>\@latex@error</code>	7601, 7692	<code>\@namerefstar</code>	4721, 8490
<code>\@hyper@readexternallink</code>	5171, 5175	<code>\@latex@warning</code>	5005, 8420, 8440, 8457, 8589	<code>\@nameuse</code>	2187, 2617, 5554, 5865
<code>\@hyperdef</code>	4985, 4986	<code>\@lbibitem</code>	7751, 7797	<code>\@ne</code>	2577, 2731, 4516, 4590, 4892, 6523, 6524, 6531, 7925, 7927, 7936, 7939, 7940, 7953, 8768, 9939, 9940, 9945, 10810, 11761, 12539, 13149, 13503
<code>\@hyperpage</code>	8376, 8377	<code>\@linkbordercolor</code>	3531, 4125, 9025, 10438	<code>\@newctr</code>	8145, 8146
<code>\@hyperref</code>	4965, 4977	<code>\@linkcolor</code>	3473, 11268	<code>\@newl@bel</code>	5315, 6398, 7737
<code>\@ifclassloaded</code>	6521, 7922, 9301	<code>\@linkdim</code>	459, 9452, 9453, 9461, 9462, 9463, 9532, 9533, 9545, 9546, 9547, 9569, 9570, 9583, 9584, 9585, 9609, 9610, 9623, 9624, 9625, 11990, 11991, 11999, 12000, 12001, 12272, 12273, 12286, 12287, 12288	<code>\@nil</code>	271, 298, 1244, 1247, 1255, 1332, 1350, 1368, 1384, 1386, 1389, 1392, 1395, 1925, 1927, 1943, 1945, 3414, 4799, 4803, 4808, 5243, 5251, 5257, 5259, 5448, 6033, 6036, 6055, 6424, 6427, 6434, 6436, 6437, 6550, 6598, 6599, 6601, 6624, 6641, 6695, 6697, 7182, 7191, 7193, 7205, 8363, 8365, 8372, 8395, 8398, 8408, 8424, 8427, 8597, 8628, 8701, 8707, 8711, 8717, 10682, 10684, 13853, 13866, 13872, 14305, 14308, 14311, 14320, 14323, 14332
<code>\@ifct@r</code>	2228, 6370, 7134	<code>\@listctr</code>	7786, 7813	<code>\@nocnterr</code>	8197, 8212
<code>\@ifnextchar</code>	12, 88, 103, 123, 658, 4867, 4965, 4985, 5124, 5830, 6151, 6154, 6157, 6160, 6163, 6166, 6169, 6364, 6405, 6414, 7545, 7563, 7850, 7908, 11240, 11529, 11543, 14356, 14359	<code>\@m</code>	9326, 10262, 10406, 10764, 11720	<code>\@nocounterr</code>	8196, 8211
<code>\@ifpackagelater</code>	6901	<code>\@mainaux</code>	5380, 6797, 6805, 13033, 13036, 13064, 13079	<code>\@number</code>	7077, 7988
<code>\@ifpackagegeloader</code>	790, 931, 2173, 4188, 4398, 7142, 7175, 7212, 7345, 7442, 7458, 7498, 7674, 7820, 7893, 8245, 8246, 8247, 8503, 12202, 13145	<code>\@makecaption</code>	7641, 7643, 7711	<code>\@nx</code>	8200, 8215, 8218, 8220
<code>\@ifpackagewith</code>	4186	<code>\@makefnmark</code>	7437, 7592	<code>\@onelevel@sanitize</code>	2383, 2387, 2589, 3413, 4282, 4312,
<code>\@ifstar</code>	66, 8542	<code>\@makefntext</code>	7511		
<code>\@ifundefined</code>	34, 256, 262, 303, 339, 480, 530, 609, 649, 725, 801, 802, 803, 857, 867, 880, 899, 902, 1301, 1396, 1397, 1521, 2124, 2174, 2303, 2322, 2323, 2366, 2479, 2610, 2631, 2632, 3290, 3335, 3343, 3350, 3372, 3412, 4191, 4220, 4222, 4395, 4396, 4917, 5321, 5352, 5364, 5537, 5857, 6442, 6767, 6853, 6973, 6993, 7000, 7022, 7037, 7176, 7179, 7180, 7211, 7236, 7264, 7327, 7343, 7352,	<code>\@makeoother</code>	166, 167, 179, 180, 182, 183, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 4758, 4767, 8677, 14445, 14448, 14472, 14475		

4326, 4833, 5238, 5241,
 5254, 5268, 5538, 5774,
 5858, 6651, 6653, 6976,
 6995, 7118, 8060, 8352,
 8471, 9797, 14302
 \@outlinefile 14275, 14364, 14459,
 14461, 14538, 14540
 \@pagerefstar . 4717, 8487, 8508,
 8515, 8524, 8533
 \@pagesetref 8436
 \@parboxrestore 7508, 7633, 7706
 \@parcount 14423, 14431
 \@part 14631, 14635
 \@partaux 5378
 \@pdfauthor . 3705, 4133, 9202,
 9655, 10143, 10884, 11139,
 12051
 \@pdfborder
 . . 3364, 3550, 3551, 3552,
 3559, 3563, 3586, 3588,
 4685, 8958, 9815, 10436,
 11017, 11100, 11520, 11533,
 11548, 11569, 11597, 11628,
 11657, 11767, 11863, 12031
 \@pdfborderstyle . . 3365, 3567,
 3568, 3569, 3578, 3582,
 3590, 3592, 4686, 6004,
 8959, 9816, 10437, 11018,
 11101, 11521, 11534, 11549,
 11570, 11598, 11629, 11658,
 11768, 11864, 12032
 \@pdfcreationdate
 . . 3727, 4136, 9206, 9208,
 9647, 9649, 10135, 10137,
 11114, 11116, 12043, 12045
 \@pdfcreator . 3717, 3722, 4135,
 9205, 9646, 10134, 10887,
 11138, 12042
 \@pdfdirection 9165, 9713,
 10178, 10843, 11195, 12102
 \@pdfduplex 9171, 9719, 10184,
 10849, 11201, 12108
 \@pdfhighlight 3536, 3544, 3546,
 4131, 11016, 11099, 11519,
 11568, 11596, 11627
 \@pdfkeywords 3746, 4139, 9218,
 9644, 10148, 10892, 11140,
 12040
 \@pdflang 4006, 4008, 4009, 4011,
 4013, 4015, 4021, 4051,
 4052, 4054, 4075, 4079,
 4081, 4098, 4107, 4114,
 4146, 9191, 9193, 9741,
 9743, 10218, 10220, 11225,
 11227, 12132, 12134
 \@pdfm@dest . . 9759, 9818, 9822
 \@pdfm@mark 6785, 9758, 9810,
 9830, 9844, 9846, 9860,
 9862, 9867, 9868, 9898,
 9922, 9924, 9929, 9947,
 9970, 10004, 10040, 10072,
 10102, 10130, 10199, 10226,
 13471, 13472, 13473, 13492,
 13510, 13513, 13543, 13638,
 13665, 13696, 13721, 13749,
 13778, 13789, 13822, 13830,
 14509
 \@pdfm@date
 . . 3733, 4137, 9210, 9212,
 9651, 9653, 10139, 10141,
 11118, 11122, 12047, 12049
 \@pdfnonfullscreenpagemode . .
 9164, 9712, 10177, 10842,
 11194, 12101
 \@pdfnumcopies 9180, 9182, 9728,
 9730, 10193, 10195, 10858,
 10860, 11210, 11212, 12117,
 12119
 \@pdfpageduration . 3491, 9263,
 9267, 9272, 10243, 10245,
 10248, 10773, 10775, 10778,
 11056, 11058, 11066
 \@pdfpagelayout 9190,
 9740, 10217, 10863, 10865,
 11224, 12131
 \@pdfpagemode 4384, 4385, 4615,
 4616, 4625, 4626, 9144,
 9696, 10212, 10830, 11178,
 12085
 \@pdfpagescrop 3951, 4141, 9129,
 9133, 9679, 9680, 9701,
 9703, 10224, 10226, 10819,
 10821, 11183, 11185, 12090,
 12092
 \@pdfpagetransition . 3487, 9239,
 9243, 9248, 10232, 10234,
 10237, 10662, 10664, 10666,
 11039, 11041, 11049
 \@pdfpicktraybypdfsize
 . . 9172, 9174, 9720, 9722,
 10185, 10187, 10850, 10852,
 11202, 11204, 12109, 12111
 \@pdfprintarea 9168, 9716,
 10181, 10846, 11198, 12105
 \@pdfprintclip 9169, 9717, 10182,
 10847, 11199, 12106
 \@pdfprintpagerange
 . . 3657, 4145, 9176, 9178,
 9724, 9726, 10189, 10191,
 10854, 10856, 11206, 11208,
 12113, 12115
 \@pdfprintscaling . . 9170, 9718,
 10183, 10848, 11200, 12107
 \@pdfproducer
 . . 3711, 4134, 9214, 9216,
 9656, 9658, 10144, 10146,
 10787, 10788, 10792, 10795,
 10796, 10888, 10890, 11125,
 11129, 11654, 11655, 11760,
 11762, 11764, 11860, 11861,
 12052, 12054
 \@pdfremotestartview
 . . 3912, 3914, 3915, 3938,
 3942, 3944, 3945, 3947,
 4143, 9083, 10020, 11608
 \@pdfstartpage
 . . 3895, 3897, 4144, 9150,
 9154, 9683, 9688, 10201,
 10205, 10823, 10827, 11165,
 11170, 12072, 12077
 \@pdfstartview
 . . 3902, 3904, 4142, 9152,
 9154, 9685, 9689, 10203,
 10205, 10825, 11167, 11171,
 12074, 12078
 \@pdfsubject . 3740, 4138, 9204,
 9660, 10133, 10886, 11137,
 12056
 \@pdftempa . . . 5182, 5183, 5186
 \@pdftempwordfile . . 5173, 5183
 \@pdftempwordrun . 5174, 5186
 \@pdftitle 3699, 4132, 9203, 9645,
 10132, 10885, 11136, 12041
 \@pdftrapped 3751, 3754, 3757,
 3766, 3775, 4140, 9219,
 9221, 10149, 10151, 11141
 \@pdfview . . . 3883, 8940, 8948,
 9765, 9769, 9773, 9777,
 9781, 9785, 9786, 9789,
 9790, 9793, 9797, 9799,
 9814, 10435, 10445, 10457,
 10954, 10974, 11659, 11769,
 11865, 12144
 \@pdfviewarea 9166, 9714, 10179,
 10844, 11196, 12103
 \@pdfviewclip 9167, 9715, 10180,
 10845, 11197, 12104
 \@pdfviewparams 3885,
 3887, 10954, 10974, 11660,
 11770, 11866, 12145

\@percentchar	4762, 4763, 4815, 14279	14342, 14345, 14346, 14347, 14348, 14349, 14557, 14558, 14559	\@x@sfsf . . . 7430, 7439, 7591, 7593
\@processme	5906, 5907, 9245, 9251, 9269, 9275, 11243, 11244, 11366, 11367, 11370, 11371	\@tempdima . . 2239, 6206, 6207, 6208, 6209, 6210, 6211, 6212, 6213, 12604, 12609, 12611, 12647, 12648, 12649, 12653, 12654, 12655, 12656, 13205, 13210, 13212, 13249, 13250, 13251, 13255, 13256, 13257, 13258, 13561, 13566, 13568, 13605, 13606, 13607, 13611, 13612, 13613, 13614	\@xfootnote 7563
\@protected@testopt	661	\@tempdimb 12608, 12609, 13209, 13210, 13565, 13566	\@xfootnotemark 7377, 7582
\@protected@testopt@xargs	662	\@tempdima 7912	\@xfootnotenext 7366, 7575
\@refstar	4713, 8484	\@tempdima 7912	\@xp 8169, 8199, 8200, 8214, 8215, 8217, 8218
\@runbordercolor	3533, 4129, 9104, 9106, 10047, 10049, 10628, 10630, 11631	\@tempdima 7912	\@xxxii 5080
\@runcolor	3479, 9124, 10063, 10634	\@tempdima 7912	\[192, 217, 310, 3556, 3574, 4934
\@safe@activesfalse	614	\@tempdima 7912	\{ . . 318, 518, 1749, 10945, 14297
\@safe@activestrue	613	\@tempdima 7912	\} . . 319, 519, 1750, 10945, 14298
\@savsf	8943, 8951	\@tempdima 7912	_ 321, 646, 3079, 3082, 3908, 14711, 14712, 14713, 14714, 14715, 14716, 14717, 14718, 14719, 14720, 14721, 14722, 15178, 15179, 15180, 15181, 15182, 15183, 15184, 15185, 15186, 15187, 15189, 15191, 15192, 15193, 15194, 15195, 15196, 15197, 15198, 15199, 15200, 15201, 15202, 15203, 15204, 15205, 15206
\@schapter	14601, 14602	\@tempdima 7912	\] 193, 218
\@secondoffive	4719, 8446, 8447, 8488	\@tempdima 7912	\^ 186, 211, 308, 1847, 1848, 3062, 4749, 4750, 4759, 14689, 14701, 14713, 14925, 14941, 14949, 14962, 14976, 14991, 15007, 15017, 15018, 15031, 15045, 15094, 15151, 15180, 15211, 15384, 15400, 15408, 15420, 15436, 15451, 15467, 15477, 15478, 15492, 15506, 15534, 15536, 15580, 15582, 15596, 15598, 15635, 15637, 15638, 15718, 15720, 15766, 15768, 15770, 15772, 17286, 17288
\@secondoftwo	324, 597, 600, 607, 880, 894, 1318, 2069, 2322, 2323, 2332, 2334, 5142, 5246, 7390, 7410, 13002, 13005, 13008, 13011, 13015, 13016, 13019, 14654	\@tempdima 7912	_ 187, 212, 526, 4753, 4771, 4772, 5042, 5055, 5068
\@sect	14649, 14650	\@tempdima 7912	\` 166, 172, 179, 182, 2998, 3133, 3138, 3143, 3144, 3147, 3150, 3153, 3155, 3163, 14296, 14687, 14699, 14711, 14921, 14937, 14945, 14958, 14972, 14987, 15003, 15011, 15012, 15027, 15041, 15090, 15149, 15178, 15209, 15380, 15396, 15404, 15416, 15432, 15447, 15463, 15471, 15472, 15488, 15502, 15903, 15905, 16387, 16416, 16557, 16586, 17254, 17256, 17332, 17334, 19502, 19507, 19512, 19517, 19522, 19527, 19532, 19537, 19542, 19547,
\@seqncr	7259	\@tempdima 7912	
\@serial@counter	14371, 14419, 14421, 14422	\@tempdima 7912	
\@setminipage	7635, 7708	\@tempdima 7912	
\@setref	8415, 8416, 8453	\@tempdima 7912	
\@sharp	7182, 7188	\@tempdima 7912	
\@skiphyperreffalse	6893, 7766, 7778	\@tempdima 7912	
\@skiphyperreftrue	7752, 7778	\@tempdima 7912	
\@spaces	248	\@tempdima 7912	
\@spart	14641, 14642	\@tempdima 7912	
\@ssect	14587, 14588	\@tempdima 7912	
\@tempa	7460, 7464, 7467, 7479	\@tempdima 7912	
\@tempb	7283, 7287	\@tempdima 7912	
\@tempboxa	9450, 9452, 9461, 9530, 9532, 9535, 9536, 9545, 9551, 9552, 9567, 9569, 9572, 9573, 9583, 9589, 9590, 9607, 9609, 9612, 9613, 9623, 9629, 9630, 11988, 11990, 11999, 12270, 12272, 12286	\@tempdima 7912	
\@tempcnta	1895, 14229, 14230, 14231, 14232, 14233, 14235, 14238, 14239, 14240, 14246, 14248, 14250, 14340, 14341,	\@tempdima 7912	

	19552, 19557, 19562, 19567, 19572, 19577, 19582, 19587, 19592, 19597, 19602, 19607, 19612, 19617	15424, 15426, 15430, 15432, 15434, 15436, 15438, 15440, 15442, 15443, 15445, 15447, 15449, 15451, 15453, 15455, 15457, 15459, 15461, 15463, 15465, 15467, 15469, 15471, 15472, 15474, 15475, 15477, 15478, 15480, 15481, 15483, 15486, 15488, 15490, 15492, 15494, 15496, 15498, 15500, 15502, 15504, 15506, 15508, 15510, 15513, 15514, 15516, 15849, 15853, 15857, 15860, 15862, 15864, 15866, 15867, 15869, 15871, 15873, 15875, 15877, 15879, 15881, 15884, 15886, 15888, 15890, 15892, 15894, 15896, 15897, 15899, 15901, 15903, 15905, 15907, 15909, 15912, 15915, 16326, 16329, 16332, 16334, 16337, 16340, 16343, 16346, 16348, 16350, 16352, 16354, 16356, 16358, 16359, 16361, 16363, 16365, 16367, 16369, 16788, 16790, 16792, 16794, 16796, 16798, 16800, 16802, 16804, 16806, 16808, 16810, 16812, 16814, 16816, 16818, 16820, 16822, 16824, 16826, 16828, 16830, 16832, 16835, 16838, 16840, 16842, 16844, 16846, 16848, 16850, 16852, 16854, 16856, 16858, 16860, 16862, 16864, 16866, 16869, 16872, 16874, 16876, 16878, 16880, 16882, 16884, 16886, 16888, 16890, 16892, 16894, 16896, 16898, 16900, 16902, 16904, 16908, 16910, 16912, 16914, 16916, 16918, 16920, 16922, 16924, 16926, 16928, 16930, 16932, 16934, 16936, 16938, 16940, 16942, 16944, 16946, 16948, 16950, 16952, 16954, 16956, 16958, 16960, 16963, 16965, 16967, 16969, 17320, 17322, 17324, 17326, 17328, 17330, 17332, 17334, 17336, 17338, 17340, 17342, 17698, 17701, 17704, 17707, 17710, 17713, 17716, 17718, 17720, 17722, 17724, 17727, 17730, 17733, 17735, 17738, 17741,	17743, 17746, 17749, 17752, 17755, 17757, 17759, 17761, 17763, 17765, 17767, 17769, 17771, 17774, 17777, 17779, 17782, 17784, 17787, 17789, 17791, 17793, 17840, 17878, 17883, 18256, 18258, 18260, 18263, 18266, 18268, 18270, 18272, 18274, 18276, 18279, 18282, 18284, 18286, 18288, 18290, 18293, 18296, 18298, 18300, 18302, 18304, 18307, 18310, 18312, 18314, 18316, 18318, 18320, 18322, 18324, 18326, 18328, 18331, 18334, 18336, 18338, 18340, 18342, 18345, 18349, 18352, 18355, 18357, 18359, 18361, 18363, 18432, 18435, 18511, 18513, 18515, 18517, 18519, 18521, 18523, 18525, 18527, 18529, 18531, 18533, 18535, 18537, 18539, 18541, 18543, 18545, 18547, 18549, 18551, 18553, 18555, 18557, 18559, 18561, 18563, 18565, 18567, 18569, 18571, 18573, 18575, 18577, 18579, 18581, 18583, 18585, 18587, 18589, 18591, 18593, 18595, 18597, 18599, 18628, 18631, 18633, 18635, 18638, 18640, 18642, 18644, 18647, 18649, 18867, 18869, 18871, 18873, 18875, 19046, 19048, 19050, 19052, 19054, 19056, 19059, 19063, 19065, 19067, 19069, 19071, 19073, 19075, 19077, 19079, 19081, 19083, 19187, 19190, 19193, 19195, 19197, 19199, 19201, 19203, 19205, 19207, 19334, 19336, 19338, 19340, 19342, 19345, 19348, 19351, 19355, 19358, 19361, 19363, 19365, 19367, 19369, 19372, 19374, 19449, 19461, 19463, 19465, 19467, 19469, 19489, 19490, 19491, 19495, 19496, 19497, 19500, 19502, 19504, 19515, 19517, 19521, 19522, 19523, 19524, 19525, 19526, 19527, 19528, 19530, 19531, 19532, 19533, 19534, 19535, 19536, 19537, 19538, 19539, 19540, 19541,
\backslash I	188, 213, 314, 1655, 1748, 1789, 2944, 4169, 8249, 8676, 8686		
\backslash ~	525, 964, 1903, 3056, 3064, 3065, 3066, 4775, 14690, 14702, 14714, 14927, 14956, 14964, 14993, 15025, 15033, 15096, 15152, 15181, 15212, 15386, 15414, 15422, 15453, 15486, 15494, 15607, 15609, 15610, 15742, 15744, 17246, 17248, 17316, 17318, 17340, 17342, 19504, 19509, 19514, 19519, 19524, 19529, 19534, 19539, 19544, 19549, 19554, 19559, 19564, 19569, 19574, 19579, 19584, 19589, 19594, 19599, 19604, 19609, 19614, 19619		
Numbers			
\backslash 3	502, 1008, 1009, 1010, 1011, 1012, 1013, 1014, 1015, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 2018, 2154, 2162, 2164, 14440, 14921, 14923, 14925, 14927, 14929, 14931, 14933, 14935, 14937, 14939, 14941, 14943, 14945, 14947, 14949, 14951, 14953, 14954, 14956, 14958, 14960, 14962, 14964, 14966, 14968, 14970, 14972, 14974, 14976, 14978, 14980, 14982, 14983, 14985, 14987, 14989, 14991, 14993, 14995, 14997, 14999, 15001, 15003, 15005, 15007, 15009, 15011, 15012, 15014, 15015, 15017, 15018, 15020, 15021, 15023, 15025, 15027, 15029, 15031, 15033, 15035, 15037, 15039, 15041, 15043, 15045, 15047, 15049, 15051, 15052, 15054, 15146, 15380, 15382, 15384, 15386, 15388, 15390, 15392, 15394, 15396, 15398, 15400, 15402, 15404, 15406, 15408, 15410, 15412, 15414, 15416, 15418, 15420, 15422,		

19542, 19543, 19544, 19545,
19546, 19547, 19548, 19550,
19551, 19552, 19553, 19554,
19555, 19556, 19557, 19558,
19559, 19560, 19562, 19564,
19575, 19577, 19581, 19582,
19583, 19584, 19585, 19586,
19587, 19588, 19590, 19591,
19592, 19593, 19594, 19595,
19596, 19597, 19598, 19599,
19600, 19601, 19602, 19603,
19604, 19605, 19606, 19607,
19608, 19610, 19611, 19612,
19613, 19614, 19615, 19616,
19617, 19618, 19619, 19723,
19757, 19758, 19759, 19760,
19761, 19762, 19763, 19764,
19765, 19766

\9 . 505, 1028, 1031, 1062, 1946,
1961, 1970, 1998, 2018,
2054, 2058, 2072, 2076,
2084, 2089, 2092, 2126,
2130, 2133, 2136, 2146,
2148, 2150, 2152, 2154,
2156, 2158, 2160, 2162,
2164, 15146, 16972, 16974,
16976, 16978, 16980, 16982,
16985, 16988, 16991, 16994,
16996, 16998, 17000, 17002,
17004, 17006, 17008, 17010,
17012, 17015, 17017, 17020,
17022, 17025, 17027, 17031,
17035, 17038, 17040, 17042,
17044, 17046, 17048, 17050,
17052, 17054, 17056, 17058,
17060, 17062, 17064, 17066,
17068, 17070, 17072, 17075,
17078, 17081, 17084, 17086,
17088, 17090, 17092, 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, 17148, 17150,
17152, 17154, 17156, 17158,
17160, 17162, 17164, 17166,
17168, 17170, 17172, 17174,
17176, 17179, 17182, 17185,
17188, 17190, 17192, 17194,
17196, 17198, 17200, 17202,
17204, 17206, 17208, 17210,
17212, 17214, 17216, 17218,

17220, 17222, 17224, 17226,
17228, 17230, 17232, 17234,
17236, 17238, 17240, 17242,
17244, 17246, 17248, 17250,
17252, 17254, 17256, 17258,
17260, 17262, 17264, 17266,
17268, 17270, 17272, 17274,
17276, 17278, 17280, 17282,
17284, 17286, 17288, 17290,
17292, 17294, 17296, 17298,
17300, 17302, 17304, 17306,
17308, 17310, 17312, 17314,
17316, 17318, 17320, 17322,
17324, 17326, 17328, 17330,
17332, 17334, 17336, 17338,
17340, 17342, 17344, 17346,
17348, 17350, 17353, 17355,
17357, 17359, 17361, 17363,
17365, 17368, 17372, 17374,
17376, 17379, 17381, 17383,
17385, 17387, 17389, 17391,
17393, 17395, 17397, 17399,
17401, 17403, 17405, 17407,
17409, 17411, 17413, 17415,
17417, 17419, 17421, 17423,
17425, 17427, 17429, 17431,
17433, 17435, 17437, 17439,
17441, 17443, 17445, 17447,
17449, 17451, 17453, 17455,
17457, 17459, 17461, 17463,
17465, 17467, 17469, 17471,
17473, 17475, 17477, 17479,
17481, 17483, 17485, 17487,
17489, 17491, 17493, 17495,
17497, 17499, 17501, 17503,
17505, 17507, 17509, 17520,
17523, 17525, 17527, 17529,
17531, 17533, 17535, 17537,
17540, 17542, 17544, 17546,
17548, 17550, 17552, 17555,
17557, 17559, 17563, 17565,
17567, 17569, 17571, 17573,
17575, 17577, 17581, 17583,
17585, 17587, 17589, 17591,
17593, 17595, 17597, 17599,
17601, 17603, 17605, 17607,
17609, 17611, 17613, 17615,
17617, 17619, 17623, 17627,
17629, 17631, 17633, 17636,
17639, 17641, 17643, 17645,
17647, 17649, 17652, 17654,
17656, 17658, 17660, 17662,
17664, 17666, 17668, 17670,
17672, 17674, 17678, 17681,

17683, 17686, 17689, 17692,
17695, 17698, 17701, 17704,
17707, 17710, 17713, 17716,
17718, 17720, 17722, 17724,
17727, 17730, 17733, 17735,
17738, 17741, 17743, 17746,
17749, 17752, 17755, 17757,
17759, 17761, 17763, 17765,
17767, 17769, 17771, 17774,
17777, 17779, 17782, 17784,
17787, 17789, 17791, 17793,
17795, 17797, 17799, 17801,
17803, 17805, 17808, 17810,
17812, 17814, 17816, 17818,
17821, 17824, 17826, 17828,
17830, 17832, 17834, 17836,
17838, 17840, 17842, 17844,
17846, 17848, 17850, 17852,
17855, 17857, 17859, 17861,
17866, 17868, 17871, 17873,
17876, 17878, 17881, 17883,
17886, 17888, 17890, 17893,
17895, 17897, 17900, 17903,
17905, 17907, 17910, 17913,
17915, 17917, 17920, 17922,
17925, 17927, 17929, 17932,
17934, 17936, 17938, 17940,
17942, 17945, 17947, 17949,
17952, 17954, 17956, 17959,
17961, 17963, 17965, 17967,
17970, 17972, 17974, 17976,
17978, 17980, 17983, 17986,
17989, 17991, 17994, 17996,
17998, 18000, 18002, 18004,
18006, 18008, 18010, 18014,
18016, 18018, 18019, 18022,
18025, 18029, 18030, 18034,
18035, 18038, 18040, 18042,
18044, 18046, 18048, 18050,
18052, 18054, 18056, 18058,
18060, 18062, 18065, 18067,
18069, 18072, 18075, 18077,
18079, 18081, 18083, 18085,
18087, 18089, 18091, 18093,
18095, 18097, 18099, 18101,
18103, 18105, 18107, 18109,
18111, 18113, 18115, 18117,
18119, 18121, 18123, 18125,
18127, 18129, 18131, 18133,
18135, 18137, 18139, 18141,
18143, 18145, 18147, 18149,
18151, 18154, 18157, 18160,
18163, 18166, 18170, 18174,
18176, 18178, 18180, 18182,

18184, 18187, 18190, 18193,
18196, 18198, 18201, 18204,
18208, 18211, 18213, 18216,
18219, 18222, 18226, 18229,
18232, 18235, 18238, 18242,
18246, 18248, 18250, 18252,
18254, 18256, 18258, 18260,
18263, 18266, 18268, 18270,
18272, 18274, 18276, 18279,
18282, 18284, 18286, 18288,
18290, 18293, 18296, 18298,
18300, 18302, 18304, 18307,
18310, 18312, 18314, 18316,
18318, 18320, 18322, 18324,
18326, 18328, 18331, 18334,
18336, 18338, 18340, 18342,
18345, 18349, 18352, 18355,
18357, 18359, 18361, 18363,
18365, 18367, 18369, 18371,
18373, 18377, 18379, 18381,
18383, 18385, 18387, 18389,
18391, 18393, 18395, 18397,
18399, 18402, 18405, 18407,
18410, 18413, 18415, 18418,
18421, 18423, 18425, 18427,
18429, 18432, 18435, 18437,
18439, 18441, 18444, 18446,
18448, 18450, 18452, 18454,
18456, 18458, 18460, 18462,
18464, 18466, 18468, 18470,
18472, 18474, 18476, 18478,
18480, 18482, 18484, 18486,
18489, 18491, 18493, 18495,
18497, 18499, 18501, 18503,
18505, 18507, 18509, 18511,
18513, 18515, 18517, 18519,
18521, 18523, 18525, 18527,
18529, 18531, 18533, 18535,
18537, 18539, 18541, 18543,
18545, 18547, 18549, 18551,
18553, 18555, 18557, 18559,
18561, 18563, 18565, 18567,
18569, 18571, 18573, 18575,
18577, 18579, 18581, 18583,
18585, 18587, 18589, 18591,
18593, 18595, 18597, 18599,
18601, 18606, 18610, 18614,
18617, 18619, 18621, 18625,
18628, 18631, 18633, 18635,
18638, 18640, 18642, 18644,
18647, 18649, 18653, 18655,
18657, 18659, 18662, 18665,
18668, 18672, 18674, 18676,
18678, 18681, 18686, 18689,

18691, 18693, 18698, 18701,
18704, 18706, 18709, 18711,
18713, 18716, 18723, 18726,
18731, 18734, 18737, 18740,
18743, 18746, 18749, 18752,
18755, 18758, 18761, 18764,
18767, 18770, 18773, 18776,
18779, 18782, 18785, 18789,
18792, 18795, 18797, 18799,
18801, 18803, 18805, 18808,
18810, 18812, 18814, 18816,
18818, 18821, 18823, 18826,
18828, 18831, 18833, 18835,
18837, 18839, 18841, 18843,
18845, 18847, 18849, 18851,
18853, 18855, 18857, 18859,
18862, 18864, 18867, 18869,
18871, 18873, 18875, 18877,
18881, 18885, 18887, 18889,
18891, 18893, 18895, 18898,
18900, 18903, 18905, 18907,
18909, 18911, 18913, 18916,
18918, 18920, 18922, 18924,
18926, 18928, 18930, 18932,
18934, 18936, 18938, 18940,
18943, 18945, 18947, 18949,
18951, 18953, 18955, 18957,
18959, 18961, 18963, 18965,
18967, 18969, 18971, 18973,
18975, 18977, 18979, 18981,
18983, 18985, 18987, 18990,
18992, 18994, 18996, 18998,
19000, 19002, 19004, 19006,
19008, 19010, 19012, 19014,
19016, 19019, 19022, 19024,
19027, 19030, 19033, 19036,
19038, 19040, 19042, 19044,
19046, 19048, 19050, 19052,
19054, 19056, 19059, 19063,
19065, 19067, 19069, 19071,
19073, 19075, 19077, 19079,
19081, 19083, 19085, 19087,
19089, 19091, 19093, 19095,
19097, 19100, 19103, 19106,
19109, 19111, 19116, 19120,
19123, 19125, 19127, 19130,
19133, 19136, 19139, 19142,
19145, 19148, 19151, 19154,
19157, 19160, 19163, 19165,
19167, 19169, 19171, 19173,
19176, 19182, 19185, 19187,
19190, 19193, 19195, 19197,
19199, 19201, 19203, 19205,
19207, 19209, 19211, 19213,

19216, 19218, 19220, 19222,
19225, 19228, 19230, 19232,
19234, 19237, 19239, 19242,
19244, 19248, 19251, 19253,
19255, 19257, 19259, 19261,
19263, 19265, 19267, 19269,
19271, 19273, 19275, 19278,
19280, 19282, 19285, 19288,
19290, 19292, 19294, 19296,
19298, 19300, 19302, 19304,
19306, 19308, 19310, 19312,
19314, 19316, 19318, 19320,
19322, 19324, 19326, 19328,
19330, 19332, 19334, 19336,
19338, 19340, 19342, 19345,
19348, 19351, 19355, 19358,
19361, 19363, 19365, 19367,
19369, 19372, 19374, 19377,
19379, 19381, 19383, 19385,
19387, 19389, 19392, 19394,
19397, 19400, 19403, 19406,
19408, 19410, 19412, 19414,
19416, 19418, 19420, 19422,
19424, 19426, 19429, 19432,
19434, 19436, 19438, 19440,
19442, 19444, 19446, 19449,
19452, 19454, 19456, 19458,
19461, 19463, 19465, 19467,
19469, 19501, 19503, 19505,
19506, 19507, 19508, 19509,
19510, 19511, 19512, 19513,
19514, 19516, 19518, 19519,
19520, 19521, 19522, 19523,
19524, 19526, 19528, 19531,
19533, 19535, 19536, 19537,
19538, 19539, 19540, 19541,
19542, 19543, 19544, 19546,
19548, 19550, 19551, 19552,
19553, 19554, 19556, 19557,
19558, 19559, 19561, 19563,
19565, 19566, 19567, 19568,
19569, 19570, 19571, 19572,
19573, 19574, 19576, 19578,
19579, 19580, 19581, 19582,
19583, 19584, 19586, 19588,
19591, 19593, 19595, 19596,
19597, 19598, 19599, 19600,
19601, 19602, 19603, 19604,
19606, 19608, 19610, 19611,
19612, 19613, 19614, 19616,
19617, 19618, 19619, 19725,
19727

A		
\a	277, 279, 283, 289	
\ABREVE	19494, 19565, 19566, 19567, 19568, 19569	
\abreve	19488, 19505, 19506, 19507, 19508, 19509	
\AC	17923, 20817	
\AccFancyVerbLineautorefname	3106	
\Accfootnoteautorefname .	3086	
\Acctheoremautorefname .	3110	
\acctonos	3168, 3169, 3170, 3171, 3172, 3173, 3174, 3175, 3176, 3177, 3178, 3179, 3180, 3181, 3182, 3183	
\Acht	19433, 20617	
\ACIRCUMFLEX	19495, 19570, 19571, 19572, 19573, 19574	
\acircumflex	3155, 19489, 19510, 19511, 19512, 19513, 19514	
\AcPa	19419, 20611	
\Acrobatmenu	2207, 4249, 6351, 9356, 10098, 10639, 11513	
\active	942, 949, 1526, 4750, 4751, 4752, 4753, 4754, 4755, 4759, 4761, 4764, 4772, 14444, 14471	
\add@accent	517	
\addcontentsline	7629, 7702, 8028, 8033, 8127	
\addtocontents	8073, 8128	
\addtocounter	7300	
\AddToDocumentProperties	2302, 3696, 3702, 3708, 3714, 3737, 3743	
\AddToHook	5377, 5379, 6469, 6481, 6486, 6715, 6899, 6959, 7136, 7296, 7303, 7325, 7346, 8155, 8209, 8650, 9895, 10259, 11717, 11856, 13096	
\AddToHookNext	7066, 7317, 7318, 7333, 7334	
\AddToNoCaseChangeList .	14584	
\adl@LT@array	7180	
\advance	457, 458, 963, 4900, 5089, 5102, 5398, 5726, 5772, 6207, 6208, 6211, 6212, 6523, 6531, 6568, 7925, 7936, 7939, 7953, 9462, 9546, 9584, 9624, 9939, 9949, 10794, 12000, 12287, 12539, 12611,	12654, 12655, 13149, 13212, 13256, 13257, 13503, 13568, 13612, 13613, 14230, 14232, 14233, 14239, 14248, 14348, 14558
\AE	14933, 15392, 15907	
\ae	14999, 15459, 15909	
\afterassignment	1535, 1541, 1547, 5982	
\AfterBeginDocument	339, 358	
\aftergroup	7514	
\agemO	17553, 20788	
\ainferior	19919	
\alef	19635	
\alefhamza	19627	
\aleflowerhamza	19631	
\alefmadda	19625	
\alefmaqsura	19693	
\aleph	17564, 19941	
\Alph	6617, 7032	
\alph	6618, 7276, 7305	
\alpha	19840	
\amalg	17827, 20035	
\AMSautorefname	8651	
\anchor@spot	5281, 5294, 5301, 5307, 5309, 8995, 9403, 9498, 10371, 10448, 10951, 11298, 11301, 11937, 12224	
\and	6448	
\angle	17856, 20047	
\AngleSign	17864, 20809	
\Anglesign	17863, 20808	
\Ankh	18690, 20330	
\APLbox	18428, 20289	
\APLdown	18626, 20884	
\APLdownarrowbox	18417, 20284	
\APLinput	18420, 20285	
\APLin	18394, 20276	
\APLleftarrowbox	18409, 20281	
\APLrightarrowbox	18412, 20282	
\APLup	18611, 20881	
\APLuparrowbox	18414, 20283	
\appendix	7024, 7036	
\appendixautorefname	2954, 2972, 2990, 3008, 3026, 3044, 3062, 3094, 3095, 3120, 3138, 3156, 3174, 3192, 3210, 3228, 3246, 8661	
\apprge	18073, 20832	
\apprle	18070, 20831	
\approx	17946, 20084	
\approxseq	17951, 20086	
\appto	7139	
\Aquarius	18777, 20928	
\aquarius	18775, 20356	
\arabic	6614, 6847, 6849, 6851, 6854, 6855, 6856, 6858, 6859, 6860, 6861, 6863, 6864, 6865, 6866, 6867, 6868, 6873, 6885, 6886, 8149, 8195, 8210	
\Aries	18747, 20918	
\aries	18745, 20346	
\AssignSocketPlug	6898, 6908, 6928, 7139	
\ast	17843, 20042	
\Asterisk	18991, 20439	
\AsteriskBold	18968, 20428	
\AsteriskCenterOpen	18970, 20429	
\AsteriskRoundedEnds	19015, 20451	
\asympt	17964, 20092	
\AtBeginDocument	340, 5344, 5348, 6376, 7344, 12316	
\AtEndDocument	6385	
\AtEndOfPackage	355	
\author	6404, 6414	
\autopageref	4383, 8541	
\autoref	635, 4382, 8560, 12311	
\ayn	19671	
B		
\b	278, 279, 791, 795, 801, 14697, 14709, 14721, 15142, 15171, 15200, 17050, 17052, 17062, 17064, 17134, 17136, 17142, 17144, 17170, 17172, 17206, 17208, 17226, 17228, 17294, 17296, 17298	
\baa	19637	
\babygamma	16088, 19808	
\back@none	2889, 2899, 2912	
\back@page	2891, 2904	
\back@section	2890, 2896, 2902, 2908	
\back@slide	2892, 2901	
\backcite	7839	
\backcong	17960, 20090	
\backneg	18366, 20263	
\backprime	17388, 19886	
\backref	7870, 12315	
\backsim	17924, 20074	
\backsimeq	18271, 20222	
\barb	15794, 20670	
\bard	15558, 20662	

\bari	16102, 19809	\bitsetSetValue	5419, 5429	7936, 7939, 7940, 7953, 7983, 7984		
\barin	18362, 20261	\blacksmiley	18703, 20334			
\barj	16073, 20702	\Bleech	18612, 20882	\c@secnumdepth	14621, 14636, 14651	
\barl	15816, 19794	\BOOKMARK	14276, 14355			
\barlambda	15823, 20675	\booknumberline . .	14260, 14265	\c@slide	7926	
\barleftharpoon . . .	19150, 20505	\bool	6913, 6935	\c@tocdepth	3405, 3410	
\baro	16148, 16149, 18398, 18400, 20874	\bot	18197, 20195	\calc@bm@number	14483, 14556	
\barp	17016, 19877	\Bowtie	18261, 20863	\calculate@pdfview . .	3879, 3882	
\barrightharpoon . .	19156, 20507	\bowtie	18259, 20217	\Cancer	18756, 20921	
\barsci	17014, 19876	\Box	18663, 20888	\cancer	18754, 20349	
\barscu	17019, 19878	\box	6214, 6476, 8922, 9927, 11345, 11348	\Cap	18289, 20230	
\baru	16213, 19818			\cap	17885, 20058	
\barwedge	18253, 20214	\boxast	19196, 20522	\capdot	19236, 20540	
\baselineskip	2210, 9517, 10970, 11002, 11700	\boxbackslash	18406, 20280	\capitalacute	15210	
\bbl@cite@choice	7745	\boxbar	18646, 20314	\capitalbreve	15217	
\bbl@info	610	\boxbox	19200, 20524	\capitalcaron	15216	
\bbslash	18440, 20292	\boxbslash	19194, 20521	\capitalcedilla	15207	
\BCPdata	478, 485, 491	\boxcircle	19198, 20523	\capitalcircumflex	15211	
\Beam	18424, 20287	\boxdot	18181, 20189	\capitaldieresis	15213	
\because	17909, 20068	\boxempty	18661, 20320	\capitaldotaccent	15219	
\BeforeTeXIVht	2673	\boxminus	18177, 20187	\capitalgrave	15209	
\begin	595, 12337, 20986	\boxplus	18175, 20186	\capitalhungarumlaut	15214	
\belowpdfbookmark	14344	\boxslash	19192, 20520	\capitalmacron	15218	
\beta	19841	\boxtimes	18179, 20188	\capitalnewtie	15221	
\betainferior	19871	\brokenvert	15321, 20651	\capitalogonek	15208	
\beth	17566, 19942	\bullet	17847, 19881	\capitalring	15215	
\between	18057, 20133	\Bumpeq	17969, 20094	\capitaltie	15220	
\bfseries	569, 8419, 8439, 8456, 8588	\bumpeq	17973, 20096	\capitaltilde	15212	
\bgroup	655, 4867, 7500, 7513, 8908, 9913, 10371, 10991, 12843, 12935, 12956	C			\Capricorn	18774, 20927
\biblecite	7736, 7742, 7746, 7771, 7786, 7803, 7813	\C	15119, 16638, 16641	\capricornus	18772, 20355	
\Bicycle	19453, 20626	\c	792, 796, 802, 3056, 3064, 3065, 3066, 6427, 6434, 14695, 14707, 14719, 14935, 15001, 15131, 15157, 15186, 15207, 15394, 15461, 15592, 15594, 15640, 15642, 15650, 15652, 15670, 15672, 15706, 15708, 15722, 15724, 15730, 15732, 15987, 15989, 16698, 16701, 17066, 17068, 17114, 17116	\caption	7599, 7601, 7690, 7692	
\bigcircle	20315			\catcode	172, 173, 184, 185, 186, 187, 206, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 918, 942, 949, 1526, 1655, 1656, 1789, 1790, 1846, 1847, 1848, 4635, 4637, 4749, 4750, 4751, 4752, 4753, 4754, 4755, 4759, 4761, 4764, 4772, 4782, 4873, 4874, 8676, 11032, 11033, 14373, 14375, 14444, 14447, 14471, 14474	
\bigdoublevee	19212, 20530	\c@footnote	7379, 7462, 7470, 7584	\ccnc	19462, 20629	
\bigdoublewedge . . .	19210, 20529	\c@Hy@AnnotLevel . .	9939, 9940, 9949	\ccnd	19464	
\bigtriangledown . . .	18624, 20305	\c@Hy@tempcnt	4885, 4886, 4892, 4900	\ccsa	19466, 20630	
\bigtriangleup	18609, 20300			\cdot	20637	
\binampersand	15240, 20645	\c@note	7926	\cdots	18356, 20258	
\bindnasrepma	17578, 20791	\c@overlay	7926	\CESign	19470, 20632	
\Biohazard	18688, 20329	\c@page	6523, 6531, 6548, 6568, 6569, 6573, 6585, 6587, 6592, 6599, 6601, 6603, 6632, 7925, 7927, 7929,			
\bitsetGetDec	5450, 5583, 5601, 5615, 5628, 5644, 5676, 5701					
\bitsetGetHex	5451					
\bitsetGetSetBitList	5439					
\bitsetIsEmpty	5580, 5598, 5612, 5625, 5641, 5673, 5698					
\bitsetReset	5553, 5587, 5606, 5620, 5633, 5649, 5681					

\CEsign	19472, 20981	\CJK@hundredmillion . . .	1174	\Congruent	18023, 20826
\cf@encoding	1267	\CJK@ignorespaces	944	\contentsline	8074, 8079, 8128, 8130
\chapterautorefname	2955, 2973, 2991, 3009, 3027, 3045, 3063, 3092, 3121, 3139, 3157, 3175, 3193, 3211, 3229, 3247, 8662	\CJK@kern	932	\copy	5098, 5100, 5111, 5119, 8918, 9897, 9923
\chapternumberline	14262, 14267	\CJK@minus	1136	\copyright	19784
\char	13130, 14377, 14414	\CJK@nine	1145, 1149, 1262	\Corresponds	18012, 20824
\chardef	253, 296, 2469, 2470, 2471, 2472, 2731, 2733, 4558, 4590, 11293, 11296, 11302	\CJK@null	1238	\corresponds	18011, 20823
\check@bm@number	14494, 14502, 14549, 14557	\CJK@one	1144, 1146, 1261	\count@	961, 962, 963, 964, 1536, 1894, 3421, 3422, 3427, 3428, 5397, 5398, 5413, 5709, 5724, 5726, 5750, 5772, 5788, 10790, 10791, 10792, 10793, 10794, 10797
\CheckBox	6156	\CJK@punctchar	947	\Cross	18931, 20410
\CheckCommand	7459	\CJK@punctcharx	948	\crossb	15791, 20668
\checkcommand	42, 7575, 7582, 7589, 7690, 7700, 7797, 7809, 8127, 8130, 8195, 8453	\CJK@seven	1145, 1148, 1262	\CrossClowerTips	18948
\CheckedBox	18666, 20889	\CJK@six	1145, 1148, 1262	\crossd	15555, 20660
\Checkedbox	18664, 20321	\CJK@ten	1146, 1147, 1148, 1149, 1226	\CrossedBox	18670, 20891
\checklatex	4, 7574, 7689, 7796, 8126, 8452	\CJK@tenthousand	1159, 1180	\Crossedbox	18667, 20322
\Checkmark	18912, 20401	\CJK@thousand	1196	\crossh	15604, 20664
\checkmark	18914, 20947	\CJK@three	1144, 1147, 1261	\CrossMaltese	18937, 20413
\CheckmarkBold	18915, 20402	\CJK@two	1144, 1146, 1261	\crossnilambda	15822, 20674
\checkpackage	9, 8194	\CJK@zero	1144, 1162, 1179, 1183, 1199, 1214, 1236	\CrossOpenShadow	18933, 20411
\chi	19862	\CJKdigits	1021	\CrossOutline	18935, 20412
\chiinferior	19875	\CJKkern	933	\cs	5037, 5042, 5046, 5055, 5059, 5068
\ChoiceBox	5776	\CJKnumber	1020	\Cube	592
\ChoiceMenu	6153	\cl@ckpt	6982	\Cup	18292, 20231
\circ	17845, 20043	\CleaningA	18487, 20876	\cup	17887, 20059
\circeq	18005, 20110	\CleaningF	18498, 20294	\cupdot	18126, 20166
\circlearrowleft	19062, 20470	\CleaningFF	18500, 20295	\cupplus	18128, 20167
\circlearrowright	19064, 20471	\CleaningP	18522, 20296	\curlyc	16037, 20694
\CircledA	18485, 20293	\CleaningPP	18524, 20297	\curlyeqprec	18311, 20239
\circledast	18169, 20184	\clickb	16270, 20755	\curlyeqsucc	18315, 20241
\circledbslash	19177, 20956	\clickc	16265, 20753	\curlyesh	16204, 20736
\circledcirc	18165, 20183	\clickt	16207, 20737	\curlyvee	18275, 20224
\circleddash	18173, 20185	\clock	18372, 20266	\curlywedge	18278, 20225
\CircleShadow	19023, 20454	\ClockLogo	18375, 20873	\curlyyogh	16249, 20749
\circplus	19219, 20533	\Clocklogo	18374, 20872	\curlyz	16242, 20748
\citation	7831	\close@pdfink	8989, 9014, 9023, 9055, 9092, 9125, 9380	\CurrentBorderColor	8979, 8981, 9008, 9010, 9018, 9020, 9025, 10438, 10472, 10474, 10490, 10492, 10511, 10513, 10575, 10577, 10594, 10596
\citeauthoryear	7897, 7903	\closedniomega	16156, 20725	\currentpdfbookmark	14336
\citeN	7894	\closedrepepsilon	16069, 20701	\curu	16589
\CJK@char	945	\closeout	14364	\curvearrowleft	17680, 19975
\CJK@charx	946	\Cloud	18652, 20316	\curvearrowright	17682, 19976
\CJK@CJK	934	\ClowerTips	20418	\CutLeft	18878, 20941
\CJK@eight	1145, 1148, 1262	\clubsuit	18791, 18793, 20934	\CutLine	18603, 20878
\CJK@five	1145, 1147, 1262	\codeof	7861	\Cutline	18604, 20879
\CJK@four	1144, 1147, 1261	\Coffeecup	18671, 20323		
\CJK@hundred	1211	\coloncolonequals	19256, 20548		
		\colonequals	17997, 20106		
		\color@begingroup	8908, 9913		
		\color@endgroup	8915, 9920		
		\columnwidth	7507		
		\comma@entry	5767, 5774, 5776		
		\comma@parse	5766		
		\complement	17796, 20021		
		\Conclusion	17747, 20800		
		\cong	17941, 20082		

\Cutright	18879, 20942	\CYREREV	16484, 16874	\cyrkbeak	16719
\CuttingLine	18600, 20298	\cyrerev	16551, 16876	\CYRKDSC	16703
\cyr	615, 3074, 3076, 3079, 3082, 3085, 3086, 3087, 3088, 3089, 3090, 3091, 3092, 3093, 3094, 3096, 3098, 3099, 3100, 3101, 3102, 3103, 3104, 3105, 3106, 3107, 3108, 3109, 3110, 3111	\CYRERY	16479, 16898	\cyrkdsc	16705
\CYRA	16423, 16814, 16818	\cyrery	3074, 3076, 16546, 16900	\CYRKHCRS	16713
\cyra	3076, 3083, 3085, 3090, 3093, 3098, 3099, 3105, 3109, 16490, 16816, 16820	\CYRF	16464	\cyrkhcrs	16715
\CYRABHCH	16778, 16783	\cyrf	16531	\CYRKHK	16794
\cyrabhch	16780, 16786	\CYRFITA	16629	\cyrkhk	16796
\CYRABHCHDSC	16782	\cyrfita	16631	\CYRKOPPA	16659
\cyrabhchdsc	16785	\CYRG	16394, 16429	\cyrkoppa	16661
\CYRABHDZE	16848	\cyrgr	3092, 16496, 16564	\CYRKSI	16621
\cyrabhdze	16850	\CYRGDSC	16894	\cyrksi	16623
\CYRABHHA	16733	\cyrigdsc	16896	\CYRKVCRS	16708
\cyrabhha	16735	\CYRGHCRS	16681	\cyrkvcrs	16711
\CYRAE	16822	\cyrghcrs	16683	\CYRL	16446
\cyrae	16824	\CYRGHK	16686	\cyrll	3090, 3092, 3094, 3096, 16513
\CYRB	16425	\cyrghk	16689	\CYRLDSC	16798
\cyrb	3090, 16492	\CYRGUP	16677	\cyrldsc	16800
\CYRBYUS	16613	\cyrgup	16679	\CYRLJE	16408
\cyrbyus	16615	\CYRH	16466	\cyrlje	16578
\CYRC	16468	\cyrh	16533	\CYRLYUS	16605
\cyr	16535	\CYRHDSC	16755	\cyrlyus	16607
\CYRCH	16470, 16890	\cyrhdsc	16757	\CYRM	16448
\cyrch	3082, 3083, 3091, 16537, 16892	\CYRHHK	16902	\cyr	3079, 3083, 3109, 3110, 16515
\CYRCHLDSC	16806	\cyrhhk	16904	\CYRMDSC	16810
\cyrchldsc	16808	\CYRHRDSN	16477	\cyrmdsc	16812
\CYRCHRDSC	16764	\cyrhrdsn	16543, 16544, 20762	\CYRN	16450
\cyrchrdsc	16766	\CYRI	16416, 16439, 16442, 16852, 16856	\cyrn	3076, 3082, 3083, 3085, 3086, 3088, 3096, 3102, 3103, 16517
\CYRCHVCRS	16769	\cyri	3076, 3079, 3083, 3089, 3094, 3096, 16506, 16509, 16586, 16854, 16858	\CYRNDSC	16721
\cyrchvcrs	16772	\CYRIE	16396	\cyrndsc	16723
\CYRD	16431	\cyrie	16566	\CYRNG	16725
\cyrd	3079, 3082, 3093, 3098, 3099, 16498	\CYRII	16401, 16404	\cyrng	16727
\CYRDJE	16392	\cyrii	16571, 16574	\CYRNHK	16802
\cyrdje	16562	\CYRIOTBYUS	16617	\cyrnhk	16804
\CYRDZE	15101, 15118, 16385, 16398	\cyriotbyus	16619	\CYRNJE	16410
\cyrdze	16568	\CYRIOTE	16601	\cyrnje	16580
\CYRDZHE	16421	\cyriote	16603	\CYRO	16452, 16860
\cyrdzhe	16591	\CYRIOTLYUS	16609	\cyro	3079, 3082, 3085, 3086, 3096, 3105, 3106, 3108, 3109, 3110, 16519, 16862
\CYRE	16387, 16390, 16433, 16826	\cyrlyus	16611	\CYROMEGA	16593
\cyre	3076, 3082, 3083, 3096, 3108, 3109, 3110, 16500, 16557, 16560, 16828	\CYRISHRT	16441	\cyromega	16595
		\cyrishrt	16508	\CYROMEGARND	16647
		\CYRISHRTDSC	16665	\cyromegarnd	16649
		\cyrishrtdsc	16667	\CYROMEGATITLO	16651
		\CYRIZH	16633, 16638	\cyromegatitlo	16653
		\cyrizh	16635, 16641	\CYROT	16655
		\CYRJE	16406	\cyrot	16657
		\cyrje	16576	\CYROTLD	16864, 16869
		\CYRK	16414, 16444	\cyrotld	16866, 16872
		\cyrk	3085, 3086, 3088, 3102, 3103, 3105, 3106, 3107, 16511, 16584	\CYRP	16454
		\CYRKBEAK	16717		

\cyrp . . .	3079, 3082, 3083, 3087, 3088, 3094, 3096, 3100, 3101, 3102, 3103, 16521	\cyrushrt	16588	\daleth	17570, 19944
\CYRpalochka	16788	\CYRV	16427	\damma	19705
\CYRPHK	16729	\cyrv	3074, 3076, 16494	\danger	18842, 20375
\cyrphk	16731	\CYRY	16747	\dasheddownarrow	17781, 20014
\CYRPSI	16625	\cyrY	16749	\dashedleftarrow	17775, 20801
\cyrpsi	16627	\CYRYA	16488	\dashedrightarrow	17780, 20802
\CYRR	16456	\cyrYA	16555	\dasheduparrow	17776, 20012
\cyr . . .	3074, 3076, 3079, 3082, 3083, 3089, 3093, 3094, 3096, 3098, 3099, 3104, 3105, 3106, 3107, 3108, 3109, 3110, 16523	\CYRYAT	16597	\dashleftarrow	17773, 20011
\CYRRTICK	16673	\cyrYat	16599	\dashrightarrow	17778, 20013
\cyrrtick	16675	\CYRYHCRS	16751	\DashV	19354, 20593
\CYRS	16458, 16738	\cyrYhcrs	16753	\Dashv	19347, 20591
\cyrS . . .	3079, 3082, 3085, 3086, 3089, 3104, 3105, 3106, 3107, 3111, 16525, 16741	\CYRYI	16403	\dashV	20589
\CYRSCHWA	16830, 16835	\cyrYi	16573	\dashv	18186, 20191
\cyrschwa	16832, 16838	\CYRYO	16389	\DavidStar	18939, 20414
\CYRSDSC	16737	\cyrY	16559	\davidstar	18941, 20948
\cyrsdsc	16740	\CYRYU	16486	\ddag	17370, 20776
\CYRSEMISFTSN	16669	\cyrYU	16553	\ddagger	14795, 17367, 17369, 20775
\cyrsemisftsn	16671	\CYRZ . . .	16437, 16698, 16844	\ddots	18360, 20260
\CYRSFTSN	16482	\cyrZ . .	3093, 3098, 3099, 16504, 16701, 16846	\DeclareFontEncoding	14686, 15088
\cyrSFTSN . .	16548, 16549, 20763	\CYRZDSC	16697	\DeclareFontFamily	863, 873
\CYRSH	16472	\cyrzdsc	16700	\DeclareFontShape	864, 874
\cyrsh	16539	\CYRZH . .	16435, 16790, 16840	\DeclareFontSubstitution	865, 875
\CYRSHCH	16474	\cyrzh . .	3076, 3096, 16502, 16792, 16842	\DeclareLocalOptions	4183
\cyrshch	16541	\CYRZHDSC	16692	\DeclareRobustCommand	4864, 4951, 4953, 4955, 4964, 6150, 6153, 6156, 6159, 6162, 6165, 6168, 8541, 14574
\CYRSHHA	16774	\cyrzhdsc	16695	\DeclareTextAccent	14687, 14688, 14689, 14690, 14691, 14692, 14693, 14694, 14695, 14696, 14697, 14698
\cyrshha	16776			\DeclareVoidOption	2670, 2684, 2695, 2711, 2717, 2722, 2736, 2746, 2751, 2757, 2763, 2792, 2809, 2816, 2822, 2827, 2832, 2847, 3332, 3340, 3348, 3358
\CYRT	16460			\DefaultHeightofCheckBox	6220, 12783, 13387, 13764
\cyrT . . .	3079, 3082, 3088, 3090, 3102, 3103, 3104, 3105, 3106, 3107, 3108, 3109, 3110, 16527			\DefaultHeightofChoiceMenu	6222, 12601, 13202, 13558
\CYRTDSC	16743			\DefaultHeightofReset	6218, 12753, 13359, 13732
\cyrtdsc	16745			\DefaultHeightofSubmit	6216, 12733, 13336, 13709
\CYRTETSE	16759			\DefaultHeightofText	6224, 12573, 13176, 13525
\cyrtetse	16761			\DefaultHeightofTextMultiline	6225, 12571, 13174, 13523
\cyrthousands	16663				
\CYRTSHE	16412				
\cyrtshe	16582				
\CYRU . . .	16419, 16462, 16878, 16882, 16886				
\cyrU . . .	3086, 3088, 3102, 3103, 3106, 3110, 16529, 16880, 16884, 16888				
\CYRUK	16643				
\cyruk	16645				
\CYRUSHRT	16418				

\DefaultOptionsofCheckBox ..	5943, 5946, 5950, 5954,	2023, 2028, 2031, 2036,
6230, 12785, 13389, 13766	5958, 5961, 5965, 5968,	2037, 5992
\DefaultOptionsofComboBox ..	5971, 5974, 5977, 5997,	\ding 591, 6033, 6036
..... 6233	6013, 6016, 6019, 6022,	\DingObject 13281
\DefaultOptionsofListBox 6232	6025, 6028, 6058, 6061,	\discretionary 657
\DefaultOptionsofPopdownBox	6064, 6067, 6086, 6092,	\div 20635
..... 6234	6108, 6113, 6119, 6134,	\divdot 19223, 20962
\DefaultOptionsofPushButton .	6139, 6145, 6727, 6738,	\divide 10791
6229, 12704, 13308, 13677	7065, 10869, 10875, 11377,	\divideontimes ... 18257, 20216
\DefaultOptionsofRadio .. 6235	11379, 11382, 11385, 11387,	\Divides 17837, 20039
\DefaultOptionsofReset .. 6228,	11389, 11398, 11406, 11413,	\DividesNot 17839, 20040
12756, 13362, 13735	11415, 11417, 11419, 11421,	\DJ 3164, 14954, 15550
\DefaultOptionsofSubmit 6227,	11423, 11432, 11442, 11444,	\dj 3161, 3162, 15553
12736, 13339, 13712	11446, 11447, 11453, 11462,	\dlsh 17677, 19974
\DefaultOptionsofText .. 6231,	11464, 11466, 11468, 11470,	\do 962, 2385, 2390, 2395, 3506,
12578, 13181, 13530	11472, 11474, 11476, 11478,	3538, 3539, 3540, 3541,
\DefaultWidthofCheckBox 6221,	11480, 11482, 11484, 11486,	3596, 3597, 3598, 3599,
12782, 13386, 13763	11488, 11490, 11492, 11493,	3600, 3601, 3604, 3605,
\DefaultWidthofChoiceMenu ..	11494, 11495, 11496, 11497,	3606, 3607, 3608, 3609,
6223, 12600, 13201, 13557	11498, 11499, 11500, 11501,	3612, 3613, 3616, 3617,
\DefaultWidthofReset ... 6219,	11502, 11503	3618, 3619, 3620, 3623,
12752, 13358, 13731	\Deleatur 17519, 19932	3624, 3625, 3626, 3627,
\DefaultWidthofSubmit .. 6217,	\Delta 19830	3630, 3631, 3632, 3633,
12732, 13335, 13708	\delta 19843	3634, 3637, 3638, 3639,
\DefaultWidthofText 6226,	\Denarius 17521, 20787	3640, 3641, 3644, 3645,
12568, 13171, 13520	\dest@name 5324	3648, 3649, 3650, 3653,
\deferred@thm@head 7329, 7330	\df@tag 8161, 8167	3654, 3660, 3661, 3662,
\define@key .. 2367, 2369, 2413,	\DH 14953, 15412	3663, 3998, 3999, 4000,
2428, 2431, 2434, 2442,	\dh . 15023, 15483, 15484, 20659	4001, 4002, 4003, 5439,
2445, 2455, 2458, 2461,	\dhal 19653	7287, 12605, 12667, 12905,
2478, 2490, 2492, 2495,	\diameter 18364, 20262	12912, 12922, 13206, 13269,
2512, 2516, 2522, 2525,	\Diamond 18636, 20885	13562, 13628, 14443, 14470
2528, 2531, 2534, 2537,	\diamond 18634, 20309	\documentclass 2, 8792
2540, 2565, 2603, 2609,	\diamonddots ... 17410, 19889	\DocumentMetadata 3974, 3976
2728, 2854, 2873, 2883,	\DiamondSolid 20459	\dospecials 14452, 14479
2886, 2893, 2922, 2941,	\diamondsuit 18788, 18790,	\Doteq 17984, 20822
2944, 3289, 3355, 3367,	20933	\doteq 17977, 20098
3382, 3399, 3402, 3406,	\digamma 20761	\doteqdot 17982, 20100
3434, 3439, 3443, 3446,	\dimen@ 1542, 1619, 1620, 1623,	\dotminus 17916, 20071
3453, 3465, 3472, 3482,	1625, 4155, 4156, 4158,	\dotplus 17835, 20038
3485, 3488, 3492, 3508,	4165, 4166, 5088, 5089,	\dots 529
3518, 3525, 3536, 3549,	5092, 5101, 5102, 5106,	\dottimes 19224, 20535
3566, 3656, 3665, 3695,	5983, 5992, 6757, 6758,	\doublebarwedge . 19247, 20544
3701, 3707, 3713, 3719,	8935, 8937, 10763, 10764,	\doublecap 18291, 20866
3724, 3730, 3736, 3742,	10766, 11335, 11350, 11353,	\doublecup 18294, 20867
3748, 3781, 3788, 3879,	11747, 11749, 11814, 11816,	\doublesqcap ... 19235, 20963
3880, 3893, 3900, 3910,	11908, 11910, 12192, 12194	\doublesqcup ... 19240, 20964
3951, 3952, 3955, 3958,	\dimeexpr 475, 1300, 1922, 1924,	\doublevav 16965
3961, 3964, 3967, 3970,	1932, 1937, 1940, 1942,	\doublevee 19243, 20543
3982, 4005, 4119, 4122,	1956, 1958, 1961, 1962,	\doublewedge ... 19241, 20542
4881, 4910, 4916, 4928,	1969, 1972, 1975, 1976,	\doubleyod 16969
5391, 5479, 5535, 5837,	1977, 1978, 1988, 1993,	\DOWNNarrow ... 18620, 20304
5842, 5855, 5883, 5926,	2001, 2005, 2010, 2020,	\Downarrow 17748, 20000
5929, 5932, 5936, 5939,		\downarrow 19950

<code>\downdownarrows</code>	17723, 19991	<code>\einferior</code>	19920	<code>\Equivalence</code>	17753
<code>\downdownharpoons</code>	19144, 20503	<code>\ejective</code>	16253, 20750	<code>\er</code>	16054, 20698
<code>\downharpoonleft</code>	17706, 19984	<code>\ell</code>	17532, 19935	<code>\errmessage</code>	3286
<code>\downharpoonright</code>	17703, 19983	<code>\em</code>	575	<code>\escapechar</code>	498, 4333, 7280, 14303, 14481, 14532
<code>\downmodels</code>	19360, 20595	<code>\emgma</code>	16135, 20721	<code>\esh</code>	16194, 19817
<code>\downtherefore</code>	17911, 20815	<code>\emph</code>	554	<code>\EstimatedSign</code>	17560, 20789
<code>\downuparrows</code>	17786, 20016	<code>\empty</code>	944, 3409	<code>\eta</code>	19846
<code>\downupharpoons</code>	19162, 20509	<code>\emptyset</code>	17804, 20025	<code>\eTeX</code>	540, 12343
<code>\downvdash</code>	18194, 20845	<code>\enc@html</code>	5841, 5844	<code>\eth</code>	15484, 20659
<code>\dp</code>	5088, 5096, 5109, 6210, 6213, 7505, 9452, 9532, 9569, 9609, 11336, 11339, 11990, 12272, 13498	<code>\enc@update</code>	514	<code>\Eur</code>	17518, 20786
<code>\dsbiological</code>	18836, 20372	<code>\END</code>	1292, 1293, 1319, 1320, 1335, 1336, 1353, 1354, 1371, 1372, 1728, 1734, 1739, 1841, 1843, 9242, 9255, 9259, 9266, 9279, 9283	<code>\EURcr</code>	17515, 20783
<code>\dschemical</code>	18834, 20371	<code>\end</code>	596, 20987	<code>\EurCr</code>	17514, 20782
<code>\dscommercial</code>	18838, 20373	<code>\endeqnarray</code>	7235, 7254, 7262	<code>\EURdig</code>	17511, 20779
<code>\dsjuridical</code>	18832, 20370	<code>\endequation</code>	7210, 7222	<code>\EurDig</code>	17510, 20778
<code>\dsmedical</code>	18830, 20369	<code>\endForm</code>	5831	<code>\EURhV</code>	17513, 20781
<code>\dsmilitary</code>	18827, 20368	<code>\endinput</code>	64, 2681, 2776, 4379, 4510, 8413, 10960, 12335, 14564	<code>\EurHv</code>	17512, 20780
<code>\dtimes</code>	19227, 20536	<code>\endlinechar</code>	811, 832, 4748	<code>\EURtm</code>	17517, 20785
<code>\dvipdfm@setdim</code>	13495, 13545, 13644, 13667, 13698, 13723, 13751, 13780	<code>\endNoHyper</code>	6334	<code>\EurTm</code>	17516, 20784
<code>\dz</code>	16301, 20759	<code>\EndPreamble</code>	12338	<code>\evensidemargin</code>	8013
E					
<code>\Earth</code>	18724, 20909	<code>\endsubeqnarray</code>	7266, 7273	<code>\ExecuteOptions</code>	4170, 4171, 4175
<code>\earth</code>	18722, 20339	<code>\eng</code>	15683, 20666	<code>\exists</code>	17800, 20023
<code>\ECIRCUMFLEX</code>	19496, 19580, 19581, 19582, 19583, 19584	<code>\engma</code>	15684, 20667	<code>\exp</code>	484, 490, 2308
<code>\ecircumflex</code>	19490, 19520, 19521, 19522, 19523, 19524	<code>\ensuremath</code>	641	<code>\ExplSyntaxOff</code>	346, 495, 2320, 4271, 5072, 6952
<code>\Ecommerce</code>	17561, 20790	<code>\Envelope</code>	18894, 20393	<code>\ExplSyntaxOn</code>	342, 479, 2302, 4260, 5036, 6894
<code>\EdefEscapeName</code>	3812, 3862, 9359, 10101, 10640, 11514, 12666, 12669, 13268, 13271, 13624, 13630	<code>\enya</code>	16139, 20723	<code>\extrasvietnam</code>	3341
<code>\EdefEscapeString</code>	765, 775	<code>\epsdice</code>	593, 20640	<code>\extrasvietnamese</code>	3333
<code>\EdefUnescapeName</code>	3813	<code>\epsi</code>	16058, 20699	<code>\EyesDollar</code>	15235, 20644
<code>\EdefUnescapeString</code>	760, 7993	<code>\epsilon</code>	19844	F	
<code>\egroup</code>	656, 8915, 9920, 10371, 11027, 12852, 12944, 12969	<code>\eqcirc</code>	18001, 20108	<code>\fa</code>	19677
<code>\EightAsterisk</code>	19021, 20453	<code>\eqcolon</code>	17919, 20072	<code>\fallingdotseq</code>	20102
<code>\EightFlowerPetal</code>	18999, 20443	<code>\eqdot</code>	19252, 20546	<code>\fallingdotseq</code>	17988
<code>\EightFlowerPetalRemoved</code>	19018, 20452	<code>\eqnarray</code>	7234, 7237, 7259	<code>\FancyVerbLineautorefname</code>	2961, 2979, 2997, 3015, 3033, 3051, 3069, 3104, 3107, 3127, 3145, 3163, 3181, 3199, 3217, 3235, 3253, 8668
<code>\eighthnote</code>	18806, 20935	<code>\eqsim</code>	17933, 20078	<code>\farsikaf</code>	19719
<code>\eighthinferior</code>	19912	<code>\eqslantgtr</code>	19291, 20564	<code>\farsiya</code>	19723
<code>\EightStar</code>	18978, 20433	<code>\eqslantless</code>	19289, 20563	<code>\fatha</code>	19703
<code>\EightStarBold</code>	18980, 20434	<code>\equal</code>	7858	<code>\fatsemi</code>	19217, 20532
<code>\EightStarConvex</code>	18974, 20431	<code>\equalscolon</code>	17999, 20107	<code>\Fax</code>	19448, 20624
<code>\EightStarTaper</code>	18972, 20430	<code>\equalsinferior</code>	19916	<code>\fax</code>	17572, 19945
<code>\eightsuperior</code>	19896	<code>\equalsuperior</code>	19900	<code>\Faxmachine</code>	19450, 20980
		<code>\equation</code>	7209, 7213	<code>\fbox</code>	13134, 13137
		<code>\equationautorefname</code>	2948, 2966, 2984, 3002, 3020, 3038, 3056, 3074, 3075, 3114, 3132, 3150, 3168, 3186, 3204, 3222, 3240, 8651, 8655	<code>\fcdice</code>	594, 20641
		<code>\equiv</code>	18021, 20117	<code>\Female</code>	18721, 20908
				<code>\female</code>	18715, 18718, 20905
				<code>\FemaleFemale</code>	18844, 20376

\FemaleMale	18848, 20378	
\Field@addtoks	5905, 5937, 5940, 6114, 6135	
\Field@boolkey	5392, 5480, 5899, 5930, 5933	
\Field@toks	5903, 5904, 5906, 12844, 12861, 12872, 12883, 12893, 12910, 12928, 12936, 12941, 12957, 12966	
\Field@Width	5816, 5963	
\figureautorefname	2951, 2969, 2987, 3005, 3023, 3041, 3059, 3089, 3117, 3135, 3153, 3171, 3189, 3207, 3225, 3243, 8658	
\filename@area	5222	
\filename@base	5222	
\filename@ext	5219, 5220, 5222, 5223	
\filename@parse	5218	
\find@pdfink	8961, 9012, 9022	
\Finv	17562, 19940	
\Fire	19451, 20625	
\firstaid@cref@updatelabeldata	6906	
\fivedots	19386, 20606	
\FiveFlowerOpen	18997, 20442	
\FiveFlowerPetal	18995, 20441	
\fiveinferior	19909	
\FiveStar	18654, 20317	
\FiveStarCenterOpen	18956, 20422	
\FiveStarConvex	18964, 20426	
\FiveStarOpen	18656, 20318	
\FiveStarOpenCircled	18954, 20421	
\FiveStarOpenDotted	18958, 20423	
\FiveStarOutline	18960, 20424	
\FiveStarOutlineHeavy	18962, 20425	
\FiveStarShadow	18966, 20427	
\fivesuperior	19893	
\Flag	18822, 20366	
\flap	16182, 20734	
\flapr	16181, 20733	
\flat	18811, 20361	
\Fld@@additionalactions	13908, 13951, 13955	
\Fld@@@DingDef	6033, 6036, 6055	
\Fld@additionalactions	13908, 13999, 14028, 14063, 14098, 14133, 14168, 14200	
\Fld@align	5820, 6020, 13977, 14038, 14107	
\Fld@altname	5953, 5955, 13888, 13890, 13961, 13963	
\Fld@annotflags	5599, 5601, 13972, 14005, 14033, 14067, 14102, 14138, 14174	
\Fld@annotnames	13959, 13974, 14007, 14035, 14069, 14104, 14140, 14176	
\Fld@bcolor	5822, 6062, 13989, 13991, 14054, 14056, 14083, 14085, 14111, 14123, 14125	
\fld@bcolor	14042	
\Fld@bordercolor	5823, 6065, 13985, 13987, 14013, 14021, 14023, 14041, 14050, 14052, 14079, 14081, 14110, 14119, 14121, 14146, 14154, 14156, 14182, 14190, 14192	
\Fld@bordersep	5824, 6014	
\Fld@borderstyle	5826, 5998, 5999, 6000, 6010, 13978, 14011, 14039, 14073, 14108, 14144, 14198	
\Fld@borderwidth	5825, 5978, 6204, 6207, 6208, 6211, 6212, 12654, 12655, 13256, 13257, 13612, 13613, 13978, 14011, 14039, 14073, 14108, 14144, 14198	
\Fld@calculate@code	6073, 12553, 13057, 13511, 13921, 13923	
\Fld@calculate@sortkey	6107, 6109, 13066	
\Fld@cbsymbol	5827, 6026, 13993	
\Fld@charsize	5817, 5818, 5975, 12653, 13255, 13611, 13995, 14060, 14089, 14129, 14180	
\Fld@checkedfalse	5813	
\Fld@checkequals	5917, 12606, 12668, 12913, 12923, 13207, 13270, 13563, 13629	
\Fld@choices	5706, 5714, 5716, 5720, 5729, 5737, 5742, 5790, 5792, 5800, 5801, 14062	
\Fld@color	5821, 6068, 13996, 14061, 14090, 14130	
\Fld@default	5731, 5734, 5736, 6017, 12566, 12582, 12598, 12638, 12666, 12780, 12842, 12860, 12874, 12882, 12889, 12915, 12925, 12955, 12965,	13169, 13186, 13199, 13240, 13268, 13384, 13518, 13535, 13555, 13596, 13624, 13761, 14091, 14095, 14096, 14131
\Fld@DingDef	6026, 6029, 6031	
\Fld@disabledfalse	5814	
\Fld@export	5544, 5547, 5554, 5846	
\Fld@findlength	12892, 12903	
\Fld@flags	5613, 5615, 5626, 5628, 5642, 5644, 5674, 5676, 5699, 5701, 13976, 14009, 14037, 14071, 14106, 14142, 14178	
\Fld@format@code	6071, 13913, 13915	
\Fld@getmethodfalse	5866	
\Fld@getmethodtrue	5868	
\Fld@height	5972, 12569, 12587, 12601, 12656, 12676, 12693, 12733, 12753, 12783, 12793, 13172, 13192, 13202, 13258, 13286, 13300, 13336, 13359, 13387, 13399, 13521, 13537, 13558, 13614, 13626, 13660, 13709, 13732, 13764, 13772	
\Fld@hiddenfalse	5502	
\Fld@hiddentrue	5503	
\Fld@invisiblefalse	5498	
\Fld@invisibletrue	5499	
\Fld@keystroke@code	6074, 13909, 13911	
\Fld@listcount	12665, 12670, 12673, 12678, 12683, 12688, 13267, 13272, 13287, 13293, 13623, 13631, 13635, 13640, 13651, 13656	
\Fld@loc	5927	
\Fld@mappingname	5957, 5959, 13892, 13894, 13965, 13967	
\Fld@maxlen	5819, 5966, 14134	
\Fld@menulength	5815, 5969, 12603, 12607, 12653, 12904, 12905, 12908, 13204, 13208, 13255, 13560, 13564, 13611	
\Fld@name	5951, 12565, 12597, 12701, 12779, 12841, 12846, 12857, 12858, 12869, 12870, 12879, 12880, 12888, 12909, 12926, 12934, 12939, 12954, 12963, 13168, 13198, 13305, 13383, 13517, 13554, 13674, 13760, 13887, 13960	
\Fld@norotatefalse	5515	

\Fld@norotatetrue	5514	13520, 13534, 13537, 13557,	\frqq	621
\Fld@noviewfalse	5518	13594, 13605, 13607, 13626,	\fullnote	19425, 20614
\Fld@noviewtrue	5519	13660, 13691, 13708, 13716,	\futurelet	676, 1286
\Fld@nozoomfalse	5511	13731, 13745, 13763, 13770,		
\Fld@nozoomtrue	5510	13772		
\Fld@onblur@code	6076, 13929,	\float@caption	G	
	13931	7609, 7682	\G	15116, 15160, 15189, 15919,
\Fld@onclick@code	6070, 6146,	\float@makebox		15921, 15923, 15925, 15935,
	14027	7684, 7685		15937, 15938, 15949, 15951,
\Fld@onenter@code	6079, 13941,	\floatingpenalty		15961, 15963, 15965, 15967
	13943	7506	\g	2305, 2309, 2317
\Fld@onexit@code	6080, 13945,	\Florin	\g@addto@macro	6490, 6662,
	13947	15806, 20671		7745, 7965, 7968, 7971,
\Fld@onfocus@code	6075, 13925,	\flq		8023, 9287, 10253, 10782,
	13927	622		11072, 11662, 11771, 11841,
\Fld@onmousedown@code	6077,	\flqq		12150, 12349
	13933, 13935	620	\G@refundefinedtrue	5004, 8418,
\Fld@onmouseup@code	6078,	\fmtname		8438, 8455, 8587
	13937, 13939	7	\gaf	19721
\Fld@pageobjref	12544, 13142,	\fmtversion	\Game	17574, 19946
	13153, 13508, 13843, 13973,	7, 2228, 6370, 7134	\Gamma	19829
	14006, 14034, 14068, 14103,	\font	\gamma	19842
	14139, 14175	5076	\gammainferior	19872
\Fld@printfalse	5507	\fontencoding	\Ganz	19427, 20977
\Fld@printrtrue	5506	506, 510, 547,	\GaPa	19413, 20608
\Fld@radiosymbol	5828, 6029,	13126	\Gauge	6162
	14087	\fontfamily	\ge	18033, 20122
\Fld@rotation	5829,	548, 13125	\Gemini	18753, 20920
	6059, 13981, 13983, 14012,	\fontseries	\gemini	18751, 20348
	14017, 14019, 14040, 14046,	549, 13127	\GenericError	664, 3689
	14048, 14075, 14077, 14109,	\fontshape	\GenericInfo	666, 3687
	14115, 14117, 14145, 14150,	550, 4698, 13128	\GenericWarning	247, 665, 3688
	14152, 14181, 14186, 14188	\fontsize	\Gentsroom	19455, 20627
\Fld@submitflags	5581, 5583,	\Football	\geq	18033, 20121
	14166	18863, 18865, 20940	\geqclosed	18243, 20861
\Fld@temp	6032, 6034, 6037,	\footins	\geqq	18041, 20125
	6038, 6047, 6048	7500	\geqslant	19262, 20551
\Fld@validate@code	6072, 13917,	\footnoteautorefname	\GetDocumentProperties	2302,
	13919	. . . . .		4263
\Fld@value	5732, 5739, 5741,	. . . . .	\getrefbykeydefault . . . . .	7132, 7133
	6023, 12567, 12582, 12599,	. . . . .	\gexmode . . . . .	10812, 10813, 10915
	12637, 12638, 13170, 13186,	\footnotesep	\gg	18053, 20131
	13200, 13239, 13240, 13519,	7504, 7512	\ggg	18303, 20236
	13535, 13556, 13595, 13596,	\footnotesize	\ghayn	19673
	14132	580, 7502	\gimel	17568, 19943
\Fld@width	5962, 12568, 12581,	\footnotetext	\Gin@setfile	8228, 8229
	12587, 12600, 12636, 12647,	7462	\glossary	629
	12649, 12676, 12693, 12716,	\footref	\glotstop	16251, 19826
	12732, 12740, 12752, 12766,	7531, 7532	\glottal	16254, 20751
	12782, 12788, 12793, 13171,	\forall	\glq	618
	13185, 13192, 13201, 13238,	17794, 20020	\glqq	616
	13249, 13251, 13286, 13300,	\Force	\gnapprox	19281, 20560
	13321, 13335, 13343, 13358,	17625, 20796	\gneq	19277, 20558
	13372, 13386, 13393, 13399,	\forcecjktoken	\gneqq	18047, 20128
		448	\gnsim	18335, 20250
		\foreignlanguage		
		607		
		\Form		
		5830		
		\Form@aaction		
		5840, 12833, 14164		
		\Form@boolkey		
		5834		
		\Form@htmlfalse		
		5833, 5852		
		\Form@htmltrue		
		5845		
		\Form@method		
		5864, 5872, 12833		
		\Forward		
		18613, 20301		
		\ForwardToIndex		
		18431, 20290		
		\FourAsterisk		
		18942, 20415		
		\fourinferior		
		19908		
		\FourStar		
		18950, 20419		
		\FourStarOpen		
		18952, 20420		
		\foursuperior		
		19892		
		\fourth		
		17408, 19888		
		\frown		
		18384, 20271		
		\frownie		
		18697, 20332		
		\Frowny		
		18699, 20900		
		\frq		
		623		

<code>\grq</code>	619	<code>\H@refstepcounter</code> . .	6888, 6934, 7185, 7214, 7310, 7604	<code>\hebalef</code>	16910
<code>\grqq</code>	617	<code>\H@subeqnarray</code> . . .	7265, 7269	<code>\hebayin</code>	16946
<code>\gtrapprox</code>	19270, 20555	<code>\ha</code>	19689	<code>\hebbet</code>	16912
<code>\gtrclosed</code>	18236, 20858	<code>\Haa</code>	19647	<code>\hebdalet</code>	16906, 16916
<code>\gtrdot</code>	18299, 20234	<code>\Halb</code>	19430, 20978	<code>\hebfinalkaf</code>	16930
<code>\gtreqless</code>	18309, 20238	<code>\halfnote</code>	19428, 20615	<code>\hebfinalmem</code>	16936
<code>\gtreqqlless</code>	19287, 20562	<code>\halign</code>	638	<code>\hebfinalnun</code>	16940
<code>\gtrless</code>	18080, 20143	<code>\hamza</code>	19623	<code>\hebfinalpe</code>	16948
<code>\gtrsim</code>	18071, 20139	<code>\HandCuffLeft</code> . . .	18673, 20324	<code>\hebfinaltsadi</code>	16952
<code>\guillemetleft</code>	14879, 15062, 15334, 19477	<code>\HandCuffRight</code> . .	18675, 20325	<code>\hebgimel</code>	16914
<code>\guillemetright</code> . .	14911, 15063, 15370, 19478	<code>\HandLeft</code>	18677, 20326	<code>\hebhe</code>	16918
<code>\guillemotleft</code> . . .	14878, 15333	<code>\HandRight</code>	18680, 20327	<code>\hebheth</code>	16924
<code>\guillemotright</code> . .	14910, 15369	<code>\HaPa</code>	19415, 20609	<code>\hebkaf</code>	16932
<code>\guilsinglleft</code>	14809, 15064, 17391, 19479	<code>\HAR@checkcitations</code>	7874	<code>\heblamed</code>	16934
<code>\guilsinglright</code> . . .	14811, 15065, 17393, 19480	<code>\HAR@citetoaux</code>	7830	<code>\hebmam</code>	16938
H		<code>\HAR@tempa</code> 7875, 7876, 7877, 7878, 7879, 7880		<code>\hebnun</code>	16942
<code>\H</code> . 15111, 15163, 15192, 15214, 15694, 15696, 15758, 15760, 16886, 16888		<code>\hardsign</code>	16544, 20762	<code>\hebpe</code>	16950
<code>\h</code> . . 3154, 19503, 19508, 19513, 19518, 19523, 19528, 19533, 19538, 19543, 19548, 19553, 19558, 19563, 19568, 19573, 19578, 19583, 19588, 19593, 19598, 19603, 19608, 19613, 19618		<code>\harvardcite</code>	7824, 7861	<code>\hebpof</code>	16956
<code>\H@footnotemark</code>		<code>\harvarditem</code>	7849	<code>\hebresh</code>	16958
.. 7365, 7382, 7446, 7536, 7543, 7555, 7566		<code>\hateq</code>	18009, 20112	<code>\hebsamekh</code>	16944
<code>\H@footnotetext</code>		<code>\hausab</code>	15795, 19791	<code>\hebshin</code> . . 16960, 16961, 20764	
.. 7364, 7374, 7406, 7445, 7484, 7544, 7558, 7566		<code>\hausab</code>	16030, 20692	<code>\hebsin</code>	16961, 20764
<code>\H@mpfootnotetext</code> 7372, 7384, 7386, 7447		<code>\hausad</code>	15799, 19792	<code>\hebtav</code>	16963
<code>\H@theHfootnote</code> . 7356, 7359		<code>\hausad</code>	16044, 20697	<code>\hebtet</code>	16926
<code>\H@definecounter</code> . . 8136, 8138		<code>\hausak</code>	15810, 19793	<code>\hebttsadi</code>	16954
<code>\H@endeqnarray</code> . . . 7235, 7255		<code>\hausak</code>	15814, 20673	<code>\hebvav</code>	16920
<code>\H@endequation</code> . . . 7210, 7228		<code>\hb@xt@</code>	5091, 5104	<code>\hebyod</code>	16928
<code>\H@endsubeqnarray</code> . 7266, 7274		<code>\hbar</code>	15601, 19790	<code>\hebzayin</code>	16922
<code>\H@eqnarray</code> 7234, 7240		<code>\hbox</code> . . 1534, 1540, 1546, 2243, 3420, 3426, 5092, 5106, 5257, 5259, 5963, 6198, 6199, 6200, 6201, 8008, 8908, 9453, 9463, 9533, 9547, 9570, 9585, 9610, 9625, 9896, 9913, 10991, 11339, 11353, 11991, 12001, 12273, 12288, 12981, 13536, 13625, 13659, 13689, 13717, 13746, 13771, 14576		<code>\Hermaphrodite</code> . . 18850, 20379	
<code>\H@equation</code> 7209, 7215		<code>\hc@currentHref</code>	7620	<code>\hexagon</code>	18426, 20288
<code>\H@item</code> 6870, 6877, 7753, 7778		<code>\HCode</code> . . 12833, 12835, 12846, 12855, 12867, 12875, 12877, 12908, 12914, 12919, 12924, 12938, 12943, 12947, 12950, 12959		<code>\hexstar</code>	18861, 20381
<code>\H@newctr</code> 8145, 8147		<code>\hdotfor</code>	17373, 19882	<code>\hfill</code> . . . 6198, 6199, 6200, 6201, 7764, 7798	
<code>\H@old@part</code> 14631, 14639		<code>\headerps@out</code>	6770, 11652, 11663, 11758, 11772, 11833, 11842, 11855, 11869, 11916, 12034, 12151, 12350	<code>\Hfootnoteautorefname</code> . . 8652	
<code>\H@old@schapter</code> . 14601, 14610		<code>\Heart</code>	18786, 20931	<code>\hinferior</code>	19924
<code>\H@old@ssect</code> 14649, 14660, 14669		<code>\heartsuit</code> . 18784, 18787, 20932		<code>\hoffset</code>	8009
<code>\H@old@spart</code> . . . 14641, 14647				<code>\hookb</code>	16029, 20691
<code>\H@old@ssect</code> 14587, 14592				<code>\hookd</code>	16043, 20696
				<code>\hookg</code>	16076, 20703
				<code>\hookh</code>	16096, 20708
				<code>\hookheng</code>	16100, 20710
				<code>\hookleftarrow</code> . . .	17663, 19968
				<code>\hookrightarrow</code> . .	17665, 19969
				<code>\hphantom</code>	590
				<code>\href</code>	630, 4864, 6359
				<code>\href@</code>	4867, 4870, 4875
				<code>\href@split</code>	4875, 4876
				<code>\hsize</code>	7507
				<code>\hskip</code> . . 1545, 1632, 2288, 2289, 4861, 6204, 12981	
				<code>\hslash</code>	17528, 19933
				<code>\hspace</code>	626, 7864, 7865
				<code>\hss</code> . . . 5093, 5105, 8017, 14581	

<code>\ht</code> 5097, 5101, 5110, 6206, 6209, 9461, 9536, 9545, 9552, 9573, 9583, 9590, 9613, 9623, 9630, 11335, 11999, 12286, 13496	<code>\hvtex@trans@effect@Wipe</code> 10675 <code>\hvtex@trans@par</code> 10709, 10713, 10715, 10718, 10721 <code>\hvtex@trans@params</code> .. 10703, 10705, 10729 <code>\Hy@@CleanupFile</code> . 5257, 5259 <code>\Hy@@DefNameKey</code> . 2410, 2412 <code>\Hy@@escapeform</code> 13853, 13866, 13872 <code>\Hy@@SectionAnchor</code> ... 14571, 14574, 14584 <code>\Hy@@temp</code> .. 3450, 3452, 6082, 6084 <code>\Hy@@VersionCheck</code> .. 269, 298 <code>\Hy@abspage</code> . 6510, 6596, 6712, 6796 <code>\Hy@Acrobatmenu</code> .. 4278, 4319, 9357, 10099, 10641, 11515 <code>\Hy@activeanchorfalse</code> 4746, 9003, 9405, 9420, 9499, 9509, 9825, 10356, 10373, 10449, 10462, 10977, 11939, 11954, 12226, 12240 <code>\Hy@activeanchortrue</code> 8999, 9402, 9416, 9497, 9506, 9821, 10352, 10370, 10447, 10459, 10967, 11936, 11950, 12223, 12236 <code>\Hy@ActiveCarriageReturn</code> 4783, 4786 <code>\Hy@AllowHyphens</code> 4857, 10965, 10997, 11322 <code>\Hy@AlphNoErr</code> 7025, 7038, 7040 <code>\Hy@AnchorName</code> .. 4988, 4990, 4993, 4995, 5020, 5022, 5026, 5031, 5033 <code>\Hy@appendixstring</code> 7020, 7042 <code>\Hy@AtBeginDocument</code> 342, 2549, 2677, 2772, 3370, 4152, 4221, 4238, 4375, 4381, 4506, 4669, 4733, 6276, 6372, 6803, 7821, 8502, 8903, 9294, 9908, 10431, 11868, 11914, 12998, 13031 <code>\Hy@AtBeginDocumentHook</code> 348, 353, 359, 360 <code>\Hy@AtEndOfPackage</code> 350, 799, 3334, 3342, 3349, 4389, 4397, 4621 <code>\Hy@AtEndOfPackageHook</code> 351, 354, 356, 357 <code>\Hy@author</code> 6416, 6420 <code>\Hy@babelnormalise</code> 4965, 4967	<code>\Hy@backout</code> . 4742, 6319, 6323, 7717 <code>\Hy@backreffalse</code> ... 414, 2913, 2935, 4387 <code>\Hy@backreftrue</code> ... 2906, 2910, 2932 <code>\Hy@BeginAnnot</code> ... 9938, 9955, 9998, 10037, 10070, 10100 <code>\Hy@bibcite</code> 7742, 7746 <code>\Hy@bookmarksdepth</code> ... 3405, 3410, 3422, 3428, 14215 <code>\Hy@bookmarksnumberedfalse</code> 415 <code>\Hy@bookmarksopenfalse</code> . 416 <code>\Hy@bookmarkstrue</code> 417 <code>\Hy@bookmarkstype</code> 3440, 3442, 8041, 14226 <code>\Hy@boolkey</code> . 2336, 2429, 2432, 2435, 2456, 2459, 2462, 2493, 2496, 2513, 2520, 2523, 2526, 2529, 2532, 2535, 2538, 2541, 2604, 2884, 2887, 2942, 3356, 3368, 3383, 3400, 3403, 3444, 3447, 3666, 3953, 3956, 3959, 3962, 3965, 3968, 3979, 3988, 4120, 4123, 6728 <code>\Hy@BorderArrayPatch</code> . 11393, 11396, 11661, 12149 <code>\Hy@breaklinks@unsupported</code> 2501, 10943 <code>\Hy@breaklinksfalse</code> 418 <code>\Hy@breaklinksunhbox</code> . 11289, 11343 <code>\Hy@CatcodeWrapper</code> ... 4630, 4687, 4736 <code>\Hy@chapapp</code> 7021, 7042, 7074, 14605, 14616 <code>\Hy@chapterstring</code> .. 7016, 7018, 7021, 7073 <code>\Hy@CheckOptionValue</code> .. 2380, 2417 <code>\Hy@CJKbookmarksfalse</code> .. 420 <code>\Hy@cjkpu</code> 955, 957, 978 <code>\Hy@CleanupFile</code> ... 5255, 9061, 10000, 10526, 11587 <code>\Hy@colorlink</code> 3362, 4690, 4698, 4702, 8904, 8984, 9054, 9091, 9124, 9379, 9403, 9426, 9457, 9470, 9498, 9514, 9539, 9555, 9577, 9594, 9617, 9634, 9909, 9988, 10029, 10063, 10093,
<code>\htrtaild</code> 19879 <code>\Huge</code> 577 <code>\huge</code> 581 <code>\Hurl</code> 4950, 4952, 4954 <code>\hv</code> 15809, 20672 <code>\hv@pdf@char</code> ... 14372, 14437, 14438, 14439, 14440 <code>\hvtex@buffer</code> ... 10682, 10686, 10694, 10697, 10706, 10710, 10726 <code>\hvtex@gettoken</code> . 10681, 10695, 10699, 10708, 10712 <code>\hvtex@gettoken@</code> 10682, 10684 <code>\hvtex@par@dimension</code> . 10677, 10718 <code>\hvtex@par@direction</code> .. 10678, 10721 <code>\hvtex@par@duration</code> ... 10679, 10713 <code>\hvtex@par@motion</code> 10680, 10715 <code>\hvtex@param@dimension</code> 10690, 10719, 10737, 10740 <code>\hvtex@param@direction</code> 10691, 10722, 10748, 10756 <code>\hvtex@param@duration</code> 10692, 10714, 10761, 10763 <code>\hvtex@param@motion</code> . 10693, 10716, 10737, 10744 <code>\hvtex@parse@trans</code> 10666, 10688 <code>\hvtex@produce@trans</code> .. 10727, 10733 <code>\hvtex@token</code> ... 10685, 10696, 10702, 10709, 10714, 10717, 10720, 10722 <code>\hvtex@trans@code</code> 10670, 10671, 10672, 10673, 10674, 10675, 10676, 10689, 10735, 10736, 10738, 10740, 10742, 10744, 10746, 10748, 10750, 10751, 10752, 10753, 10754, 10756 <code>\hvtex@trans@effect@Blinds</code> 10670 <code>\hvtex@trans@effect@Box</code> 10671 <code>\hvtex@trans@effect@Dissolve</code> 10672 <code>\hvtex@trans@effect@Glitter</code> 10673 <code>\hvtex@trans@effect@R</code> .. 10676 <code>\hvtex@trans@effect@Split</code> 10674		

10120, 10448, 10470, 10540, 10566, 10601, 10634, 10653, 10995, 11268, 11270, 11937, 11960, 11995, 12008, 12224, 12246, 12281, 12294	9671, 9672, 9936, 10156, 10157, 10158, 10159, 10160, 10161, 10162, 10163, 10164, 10165, 10166, 10167, 10285, 10433, 10893, 10894, 10895, 10896, 10897, 10898, 10899, 10900, 10901, 10902, 10903, 10904, 11150, 11151, 11152, 11153, 11154, 11155, 11156, 11157, 11158, 11159, 11160, 11161, 11743, 12057, 12058, 12059, 12060, 12061, 12062, 12063, 12064, 12065, 12066, 12067, 12068	4667
\Hy@colorlinksfalse 3359	\Hy@DistillerDestFix 7979, 10908, 10910	\Hy@Error 241, 257, 263, 286, 2553, 2663, 2689, 2705, 2740, 2779, 2786, 2797, 2803, 2841, 4303, 4918, 5188, 5539, 5663, 5859, 5891, 6087, 6140, 12707, 12760, 13312, 13366, 13681, 13739
\Hy@ColorList 3505, 3506	\Hy@draftfalse 377	\Hy@Escapeform . 12586, 12672, 12691, 12720, 12741, 12767, 12792, 13190, 13276, 13298, 13325, 13346, 13374, 13397, 13542, 13634, 13663, 13695, 13719, 13747, 13777, 13847, 13877, 13884
\Hy@CounterExists . 6831, 6846, 6850	\Hy@drafttrue 378	\Hy@Escapestring 13844, 13911, 13915, 13919, 13923, 13927, 13931, 13935, 13939, 13943, 13947, 13993, 14027, 14087, 14131, 14132, 14164
\Hy@currentbookmarklevel 14221, 14231, 14232, 14238, 14245, 14337, 14340, 14345, 14349	\Hy@driver 460, 2506, 2674, 2686, 2698, 2701, 2713, 2719, 2724, 2738, 2748, 2753, 2759, 2766, 2769, 2795, 2811, 2818, 2824, 2835, 2849, 4399, 4402, 4410, 4413, 4417, 4420, 4422, 4426, 4432, 4436, 4439, 4443, 4448, 4452, 4455, 4459, 4463, 4467, 4470, 4474, 4477, 4479, 4483, 4489, 4494, 4496, 4500, 4503, 4514, 4517, 4520, 4523, 4532, 4533, 4545, 4547, 4555, 4557, 4559, 4561	\Hy@EveryPageAnchor . . 7978, 8024
\Hy@debugfalse 410	\Hy@dth@currentHref . . . 7312, 7313, 7320	\Hy@EveryPageBoxHook 6467, 6471, 6475, 8023, 10253, 10782, 11072
\Hy@debugtrue 409	\Hy@dviErrMsg 2641, 2643, 2646, 2652, 2665	\Hy@EveryPageHook 6466, 6470, 6662, 9287
\Hy@defaultbp 5978, 5980	\Hy@dviModetrue . . . 2650, 2655	\Hy@ExchangeLeftParenthesis 8701, 8707
\Hy@defaultbpAux . . . 5982, 5985	\Hy@dvipdfmxOutlineOpentrue 4591, 4598	\Hy@ExchangeRightParenthesis 8711, 8717
\Hy@defaultdriver . . 4491, 4523, 4533, 4545	\Hy@endAnnot 9944, 9991, 10032, 10066, 10096, 10123	\Hy@false 2204, 2346, 2898, 2934, 5888
\Hy@deferred@thm@head . 7329, 7330	\Hy@endcolorlink . . 3363, 4694, 4699, 4703, 8913, 8990, 9403, 9440, 9464, 9472, 9498, 9522, 9543, 9557, 9581, 9596, 9621, 9636, 9918, 9946, 10448, 10521, 10542, 10568, 10603, 10636, 10655, 11022, 11282, 11937, 11976, 12002, 12010, 12224, 12260, 12285, 12296	\Hy@float@caption . . 7610, 7661, 7675
\Hy@DefFormAction 5838, 5840	\Hy@endWrap 4631, 4633, 4634,	\Hy@float@currentHref 7665, 7668, 7670, 7676, 7678, 7680
\Hy@DefNameKey . . 2409, 3537, 3595, 3603, 3611, 3615, 3622, 3629, 3636, 3643, 3647, 3652, 3659, 3997		\Hy@footnote@currentHref 6275, 7394, 7399, 7414, 7419, 7422, 7434, 7436, 7475, 7517, 7520
\Hy@DEST 11290, 11357		\Hy@FormObjects 13090, 13405, 13460, 13470, 13788, 13839
\Hy@destlabelfalse 421		\Hy@frenchlinksfalse 3361
\Hy@DestName 8948, 8955		\Hy@Gin@setfile . . . 8228, 8230
\Hy@DestRename . . 5320, 5345, 5349		
\Hy@DisableOption 2365, 4256, 4257, 4258, 4272, 4277, 4394, 4565, 4566, 4567, 4568, 4569, 4570, 4571, 4572, 4573, 4574, 4575, 4576, 4577, 4578, 4579, 4580, 4581, 4582, 4583, 4584, 4629, 4682, 4707, 4708, 4744, 4745, 5376, 6280, 6281, 6282, 6283, 6284, 6285, 6286, 6287, 6288, 6289, 6290, 6291, 6292, 6293, 6294, 6295, 6296, 6297, 6298, 6299, 6300, 6301, 6302, 6303, 6440, 6664, 7571, 8233, 8359, 8360, 8827, 8931, 9226, 9227, 9228, 9229, 9230, 9231, 9232, 9233, 9234, 9235, 9236, 9352, 9661, 9662, 9663, 9664, 9665, 9666, 9667, 9668, 9669, 9670,		

\Hy@GlobalAppendToMacro 344, 911, 5360	\Hy@linkfileprefix .. 3484, 5207, 9443, 10321, 11980, 12263	\Hy@next ... 6612, 6622, 6627, 14615, 14624, 14627
\Hy@GlobalStepCount 458, 6596, 7104, 7128, 7998	\Hy@LinkMath .. 10986, 10988, 10993, 11025, 11314, 11316, 11321, 11323, 11329, 11331	\Hy@nextfalse 8244
\Hy@gtemp 787, 788, 4334, 4340, 4342, 5736, 5737, 5741, 5742, 5753, 5767, 7451, 7456, 8725, 8727, 13904, 13906	\Hy@linktoc . 2464, 2466, 2474, 2476, 2486, 8092	\Hy@NextPage 4283
\Hy@href 4867, 4869	\Hy@linktoc@all 2472	\Hy@nexttrue . 8245, 8246, 8247
\Hy@href@nextactionraw 4904, 4927, 4929, 4930, 4932, 4937, 4941, 4943, 9050, 9087, 9120, 9375, 9984, 10025, 10059, 10089, 10116, 10485, 10555, 10623, 11612, 11641	\Hy@linktoc@none 2469	\Hy@NIL 4195, 4208, 4211
\Hy@href@page 4882, 4884, 4888, 4889, 4891, 4898, 4901, 9083, 10020, 11608	\Hy@linktoc@page .. 2464, 2471, 2474	\Hy@number 3890, 3897
\Hy@hyperfiguresfalse 423	\Hy@linktoc@section 2466, 2470, 2476	\Hy@numberline . 14222, 14259, 14260, 14261, 14262
\Hy@hyperfootnotetrue .. 425	\Hy@linktocpagefalse 429	\Hy@ObsoletePaperOption 2438, 2446
\Hy@hyperindextrue 426	\Hy@localanchornamefalse . 430	\Hy@ocgcolor 8907, 8921, 9912, 9926
\Hy@hypertextnamesfalse . 2175	\Hy@LocalAppendToMacro 343, 348, 351, 6985, 7001, 7006	\Hy@ocgcolorlinksfalse ... 3360, 4677
\Hy@hypertextnamestrue .. 427	\Hy@LookForParentCounter 6991	\Hy@org@chapter 14613, 14628
\Hy@ifempty 345, 5131	\Hy@LT@currentHref 7187, 7198	\Hy@OrgMakeLabel 12318, 12325
\Hy@iffileloaded . 879, 884, 6480	\Hy@LT@footnotetext 7474, 7483	\Hy@OutlineName 14493, 14545
\Hy@ifnotmeasuring 6958, 6961, 6967	\Hy@make@anchor . 8156, 8162, 8168	\Hy@OutlineRerunCheck 14361, 14460, 14539
\Hy@ifStringEndsWith .. 5223, 5235	\Hy@make@cdf@tag@@ 8160, 8175	\Hy@PageAnchorSlide ... 7938, 7976, 7990
\Hy@implicittrue 428	\Hy@make@cdf@tag@@@ .. 8166, 8176	\Hy@PageAnchorSlidesPlain 7924, 7975, 7985
\Hy@Info 244, 2354, 4345, 4347, 4350, 4352, 4355, 4357, 4360, 4362, 4365, 4367, 4614, 4620, 4695, 4700, 4704, 4826, 4853, 5446, 6237, 6239, 6242, 6244, 6247, 6249, 6252, 6254, 6257, 6259, 6262, 6264, 6267, 6269, 7822, 8046, 8063	\Hy@MakeCurrentHref .. 7067, 7116, 7129	\Hy@pageanchortrue 436
\Hy@InfoNoLine 245, 4370, 4372, 4557, 8749, 12203	\Hy@MakeCurrentHrefAuto 7127, 7144, 8157, 14206, 14589, 14605, 14616, 14643, 14657	\Hy@pagecounter 463, 465, 7998, 8000, 8002
\Hy@IsNotEmpty .. 5327, 5328, 5351	\Hy@MakeRemoteAction . 4887, 9064, 10003, 11590	\Hy@pageheight ... 4166, 11773, 11870
\Hy@LastPage 4292	\Hy@maketitle@end . 7547, 7552, 7554	\Hy@param .. 4196, 4197, 4200, 4201, 7072, 7073, 7074, 7101, 7105
\Hy@leftbracechar 301, 318	\Hy@maketitle@optarg ... 7545, 7550	\Hy@pdf@majorminor@version . .. 2629, 4274, 5713, 8745, 8759, 8786, 8807, 13899
\Hy@level 14227, 14229, 14240, 14245, 14246, 14247, 14277	\Hy@Match 304, 306, 2857, 3494, 3552, 3569, 3915, 4015, 4021, 4051, 4052, 4055, 4066, 4081, 4932, 6000	\Hy@pdf@majorversion 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2629, 6762, 8753, 8782, 8804, 8822, 8825
\Hy@levelcheck .. 14228, 14243	\Hy@MaybeStopNow 2762, 4176, 4179	\Hy@pdf@minorversion 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 6763, 8753, 8783, 8805, 8822, 8826
\Hy@linkcounter 462, 464, 7104, 7105, 7128, 7129	\Hy@Message . 246, 2676, 2771, 4374, 4505, 10377, 10381, 10384, 10387, 10390, 10393, 10396, 10399, 12534, 12805, 12809, 12812, 12815, 12818, 12821, 12824, 12827, 12837, 12974, 13465	\Hy@pdfafalse 456, 4265
	\Hy@naturalnamesfalse ... 432	\Hy@pdfatrue 4268
	\Hy@nestingfalse 433	\Hy@pdfcenterwindowfalse 419
	\Hy@newline@author 6461	\Hy@pdfdisplaydoctitlefalse 455
	\Hy@newline@title 6460	\Hy@pdfescapeformfalse .. 422
		\Hy@pdffitwindowfalse ... 424
		\Hy@pdfmajorminor@version 2630, 8740, 8759

\Hy@pdfmajorversion	2630, 2638, 8782, 8804, 8820, 8825	9999, 10000, 10001, 10017, 10038, 10052, 10057, 10525, 10526, 10530, 10610, 10617, 10621, 11586, 11587, 11588, 11605, 11620, 11636, 11639	\Hy@ReturnAfterElseFi . . .	469, 4787	
\Hy@pdfmarkerrorfalse	. . . 11242		\Hy@ReturnAfterElseFiFiEnd	471, 1501	
\Hy@pdfmarkerrortrue	. . . 11426, 11435		\Hy@ReturnAfterFi . . .	468, 1695, 4791, 4807, 8371, 8407, 8706, 8716, 13871	
\Hy@pdfmenubartrue	. . . . . 431	\Hy@pstringName	14492, 14493, 14508, 14522	\Hy@ReturnAfterFiFiEnd . . .	470, 1493, 1507, 1600, 1607
\Hy@pdfminorversion	. . . . . 2630, 8737, 8738, 8783, 8805, 8821, 8826	\Hy@pstringP	. . . . . 9098, 9118, 10039, 10057, 10611, 10621, 11621, 11639	\Hy@ReturnEnd . . .	467, 470, 471, 1513, 1612
\Hy@pdfnewwindowfalse	. . . 435	\Hy@pstringURI	. . . 9028, 9046, 10071, 10085, 10469, 10481, 10547, 10551, 11562, 11574	\Hy@rightbracechar . . .	302, 319
\Hy@pdfnewwindowsetfalse	434, 3985	\Hy@PutCatalog	. . . 6658, 6666, 6785	\Hy@safe@activesfalse	472, 5156, 8576
\Hy@pdfnewwindowsettrue	3987, 4906	\Hy@raisedlink	. . . . . 2231, 6968, 7146, 7167, 7168, 7169, 7172, 7199, 7218, 7223, 7226, 7247, 7397, 7417, 7488, 7515, 7648, 7728, 7754, 7759, 7779, 8158, 11650, 11756, 12030, 12201, 14207, 14578, 14606, 14617, 14644	\Hy@safe@activetrue	. . . . . 472, 4323, 4779, 4816, 4824, 4852, 4969, 5313, 5323, 7071, 8085, 8468, 8565, 13001, 13060, 14453, 14480
\Hy@pdfnewwindowtrue	. . . 4907	\Hy@raiselinksfalse	. . . 440, 7823	\Hy@SaveCatcodeSettings . . .	809, 858, 868, 885
\Hy@pdfpagelabelsfalse	. . . 6497	\Hy@RemoveDurPageAttr	9266, 9279	\Hy@saved@currentHref . . .	7432, 7435
\Hy@pdfpagelabelstrue	. . . . . 437	\Hy@RemovePercentCr	. . . 4799, 4803, 4808	\Hy@saved@footnotemark	7541, 7556
\Hy@pdfstringdef	. . . . . 786, 5711, 5719, 5924, 6017, 6023	\Hy@RemoveTransPageAttr	. . . . . 9241, 9255	\Hy@saved@footnotetext . . .	7542, 7559
\Hy@pdfstringfalse	. . . 438, 6305	\Hy@reserved@a	. . . . . 5123, 7238, 7268, 12840, 12890, 12953	\Hy@saved@hook . . .	6444, 6456
\Hy@pdfstringtrue	. . . . . 643, 6277	\Hy@RestoreCatcodes	205, 4172, 4564	\Hy@saved@refstepcounter	6953
\Hy@pdftoolbartrue	. . . . . 444	\Hy@RestoreCatcodeSettings	. . . . . 853, 860, 870, 887	\Hy@SavedSpaceFactor	. . . . . 2211, 2213, 2218, 2219, 2225, 12323
\Hy@pdfusetitlefalse	. . . . . 452	\Hy@RestoreLastskip	. . . . . 2252, 8949, 9406, 9421, 9500, 9510, 9812, 10357, 10374, 10450, 10463, 10958, 10978, 11940, 11955, 12227, 12241	\Hy@SaveLastskip	. . . . . 2252, 8945, 9394, 9409, 9491, 9503, 9760, 10344, 10360, 10440, 10453, 10948, 10962, 11929, 11943, 12216, 12230
\Hy@pdfversion	. . . . . 2628	\Hy@RestoreSavedSpaceFactor	. . . . . 2224, 9451, 9531, 9568, 9608, 11989, 12271	\Hy@SaveSavedSpaceFactor . . .	. . . . . 2223, 9449, 9529, 9566, 9606, 11987, 12269
\Hy@pdfwindowuitrue	. . . . . 454	\Hy@RestoreSpaceFactor	. . . . . 2215, 2244, 2249, 9450, 9458, 9465, 9530, 9540, 9548, 9567, 9578, 9586, 9607, 9618, 9626, 10992, 11028, 11320, 11328, 11355, 11988, 11996, 12003, 12270, 12282, 12289, 12326, 12330	\Hy@SaveSpaceFactor	. . . . . 2212, 2235, 2246, 9448, 9460, 9528, 9542, 9565, 9580, 9605, 9620, 10990, 11026, 11312, 11324, 11332, 11986, 11998, 12268, 12284, 12321, 12328
\Hy@pkg	. . . . . 4194, 4201			\Hy@scanauthor . . .	6414, 6419
\Hy@plainpagesfalse	. . . . . 439			\Hy@scanoptauthor . . .	6414, 6415
\Hy@PrevPage	. . . . . 4286			\Hy@scanopttitle . . .	6405, 6406
\Hy@ProvideTheHCounter	6972			\Hy@scantitle	. . . . . 6405, 6410
\Hy@ps@CR	. . . . . 11823, 11830, 11835, 11836, 11853, 11874, 11875, 11876, 11882, 11889, 11896, 11903				
\Hy@psdextrafalse	. . . . . 443				
\Hy@pstringB	. . . . . 9142, 9147, 10198, 10210, 11215, 11231, 12122, 12138				
\Hy@pstringD	9063, 9085, 10002, 10022, 11589, 11610				
\Hy@pstringdef	. . . . . 8672, 8947, 8971, 9028, 9062, 9063, 9097, 9098, 9142, 9763, 9964, 10001, 10002, 10038, 10039, 10071, 10198, 10469, 10547, 10610, 10611, 11215, 11424, 11433, 11562, 11588, 11589, 11620, 11621, 12122, 13870, 14492, 14508				
\Hy@pstringDest	. . . . . 8947, 8948, 9763, 9810, 11424, 11425, 11429, 11433, 11434, 11438				
\Hy@pstringF	9060, 9061, 9062, 9079, 9097, 9113, 9118,				

\Hy@secnum@part	14633, 14634, 14636	3798, 3799, 3800, 3983, 3984, 4007, 4008, 4054, 4055, 4062, 4066, 4310, 4314, 4315, 4316, 4317, 4405, 4407, 4410, 4415, 4417, 4420, 4434, 4436, 4441, 4443, 4450, 4452, 4457, 4459, 4465, 4467, 4472, 4474, 4477, 4546, 4547, 5436, 5440, 5441, 5452, 5536, 5537, 5538, 5540, 5544, 5856, 5857, 5858, 5860, 5864, 5865, 5998, 6010, 6081, 6097, 6098, 6099, 6100, 6101, 6102, 6103, 6104, 6105, 6106, 6112, 6118, 6124, 6125, 6126, 6127, 6128, 6129, 6130, 6131, 6132, 6172, 6173, 6180, 6181, 6188, 6189, 6553, 6556, 6565, 6567, 6571, 6575, 6619, 6621, 6975, 6976, 6997, 7525, 7531, 8099, 8100, 8108, 8109, 8314, 8316, 8320, 8351, 8352, 8353, 8368, 8369, 8761, 8764, 8765, 8781, 8800, 9157, 9186, 9188, 9682, 9687, 9693, 9697, 9700, 9705, 9736, 9738, 10170, 10213, 10215, 11113, 11116, 11120, 11121, 11127, 11128, 11134, 11164, 11169, 11175, 11179, 11182, 11187, 11220, 11222, 11294, 11295, 11299, 11390, 11391, 11399, 11400, 11504, 11505, 12071, 12076, 12082, 12086, 12089, 12094, 12127, 12129, 13061, 13073, 13852, 13853, 14490, 14496, 14504, 14519	9374, 10101, 10115, 10640, 10643, 11514, 11523
\Hy@SectionAnchorHref	.. 640, 14569, 14594, 14662	\Hy@tempa	.. 2337, 2339, 2341, 2342, 2344, 2346, 2348, 2351, 2354, 2355, 2894, 2895, 2896, 2898, 2899, 2901, 2902, 2904, 2908, 2912, 2923, 2925, 2927, 2928, 2930, 2934, 4785, 4786, 4797, 4801, 4971, 4975, 5135, 5137, 5843, 5844, 5884, 5885, 5888, 5892, 6602, 6604, 6642, 6644, 6796, 6798, 7282, 7284, 7285, 7288, 7289, 7290, 7319, 7321, 7335, 7337, 7605, 7610, 7615, 8040, 8041, 8059, 8060, 8066, 9427, 9428, 10325, 10478, 10479, 11961, 11962, 12247, 12248, 14225, 14226, 14249, 14251, 14269, 14270, 14278, 14302, 14304, 14305, 14307, 14308
\Hy@SectionHShift	14568, 14577, 14590, 14658	\Hy@tempb	.. 5136, 5138, 5159, 6603, 6604, 6643, 6644, 14250, 14251, 14278
\Hy@setbreaklinks	.. 2498, 2502, 2514, 8733, 9753	\Hy@tempcolor	.. 11004, 11006, 11019, 11083, 11085, 11097
\Hy@SetCatcodes	181, 231, 4174	\Hy@TempPageAnchor	.. 7931, 7983, 7994, 7999, 8016
\Hy@SetNewWindow	3991, 9081, 9115, 10024, 10054, 10618, 11604, 11635	\Hy@Test@Alph	.. 7055, 7084
\Hy@setouterhbox	11288, 11319	\Hy@Test@alph	.. 7046, 7080
\Hy@setpagesizetrue	..... 441	\Hy@testname	8963, 8964, 8969, 8971, 8972, 8983, 9956, 9957, 9962, 9964, 9966, 9983, 10497, 10498, 10503, 10507, 10580, 10581, 10586, 10590, 11088, 11089, 11094, 11105
\Hy@setpdfborder	..... 3585, 8977, 9033, 9068, 9102, 9362, 9975, 10009, 10045, 10077, 10107, 10489, 10510, 10533, 10559, 10593, 10627, 10646	\Hy@texhtfalse	..... 442
\Hy@setpdfhighlight	..... 3543, 8978, 9034, 9069, 9103, 9363, 9976, 10010, 10046, 10078, 10108	\Hy@texhttrue	..... 2671, 4400
\Hy@setpdfversiontrue	... 2616	\Hy@theorem@makelinktarget	... 7313, 7315, 7331
\Hy@setref@link	.... 8424, 8427	\Hy@theorem@refstepcounter	..... 7308, 7349
\Hy@SlidesFormatOptionalPage	. 6526, 7923, 7943, 7947	\Hy@TheSlideOptionalPage	7942, 7946, 7951, 7960
\Hy@SlidesPage	6533, 7957, 7958, 7964, 7966, 7969, 7972	\Hy@title	..... 6407, 6411
\Hy@space	..... 321, 466, 1452	\Hy@tocdestname	.. 8079, 8087, 8089
\Hy@StartlinkName	. 8975, 8986	\Hy@toclevel	.. 8051, 8055, 8068
\Hy@StepCount	..... 457, 6573, 12607, 12670, 12905, 13208, 13272, 13564, 13631, 14341, 14346, 14422		
\Hy@stoppedearlyfalse	... 4181, 6830		
\Hy@stoppedearlytrue	4178, 6827		
\Hy@StringLocalhost	5253, 5254, 5269		
\Hy@tabularx@hook	7444, 7452		
\Hy@temp	..... 671, 678, 2444, 2449, 2450, 2451, 2452, 2453, 2454, 3449, 3458, 3459, 3460, 3461, 3462, 3463, 3464, 3506, 3507, 3508, 3511, 3513, 3516, 3526, 3529, 3530, 3531, 3532, 3533, 3534, 3550, 3563, 3567, 3582, 3749, 3750, 3753, 3756, 3759, 3784, 3792, 3793, 3794, 3795, 3796, 3797,	\Hy@temp@A	..... 703, 704, 1485, 1487, 1498, 1500, 1505, 1506, 1509, 3785, 3787, 4195, 4208, 4211, 6992, 6995, 6996, 6997, 6998, 8263, 8264, 8265, 8272, 8300, 8301, 8302, 8311, 8338, 8762, 8773, 8774, 8775, 8776, 8779, 8785, 8788, 8815
		\Hy@temp@B	..... 1486, 1487
		\Hy@temp@menu	..... 9359,

\Hy@toclinkend	8080, 8096, 8104, 8111, 8115, 8117	\Hy@VerboseLinkStop	4837, 8991	6314, 6316, 6317, 6318,
\Hy@toclinkstart	8079, 8096, 8104, 8111, 8115, 8117	\Hy@verbostrue	409	6322, 6325, 6328, 6330,
\Hy@true 2203, 2342, 2344, 2928,	2930, 5885	\Hy@VersionCheck	254, 4561, 19730	6331, 6332, 9022, 9054,
\Hy@undefinedname	8960, 8967, 8969, 9951, 9960, 9962, 10466, 10501, 10503, 10584, 10586, 11079, 11092, 11094	\Hy@VersionChecked	253, 296, 4558, 4560	9091, 9124, 9470, 9541, 9556, 9579, 9595, 9619, 9635, 9993, 10031, 10065, 10095, 10122, 10305, 10315, 10541, 10567, 10602, 10635, 10654, 11322, 11330, 11997, 12008, 12283, 12295, 12327
\Hy@unicodefalse	449, 768, 778, 2560, 2561, 2569, 3726, 3732, 7989, 13901	\Hy@vt@PutCatalog	6695, 6697	\HyAnn@AbsPageLabel
\Hy@unicodetrue	445, 2561, 6722, 6735	\Hy@VTeXversion	6675, 6687, 10529, 10659, 10789, 14374	13148, 13189, 13275, 13297, 13324, 13345, 13373, 13396
\Hy@UseMaketitleInfos	6462, 9199, 9642, 10128, 10882, 11111, 12038	\Hy@WarnHTMLFieldOption	5910, 5944, 5947, 6120	\HyAnn@Count
\Hy@UseMaketitleString	6441, 6463, 6464	\Hy@Warning	242, 329, 1453, 2359, 2375, 2400, 2480, 2585, 2590, 2828, 2836, 2861, 2877, 3374, 3418, 3497, 3558, 3577, 3761, 3808, 3816, 3937, 4069, 4092, 4102, 4110, 4673, 4893, 4936, 5132, 5139, 5279, 5493, 5848, 5911, 6003, 6731, 6746, 8032, 8552, 8601, 8965, 9794, 9798, 9958, 10499, 10582, 10870, 10876, 11090, 11427, 11436, 14234, 14252	13146, 13147, 13149, 13150, 13151, 13154, 13156, 13158
\Hy@UseNameKey	2422, 9164, 9165, 9166, 9167, 9168, 9169, 9170, 9171, 9190, 9712, 9713, 9714, 9715, 9716, 9717, 9718, 9719, 9740, 10177, 10178, 10179, 10180, 10181, 10182, 10183, 10184, 10217, 10842, 10843, 10844, 10845, 10846, 10847, 10848, 10849, 11194, 11195, 11196, 11197, 11198, 11199, 11200, 11201, 11224, 12101, 12102, 12103, 12104, 12105, 12106, 12107, 12108, 12131	\Hy@WarningNoLine	243, 280, 2439, 2504, 2517, 3469, 3522, 3672, 3777, 4159, 4254, 4412, 4421, 4438, 4454, 4469, 4478, 6498, 6689, 6810, 8042, 8796, 11251	\HyC@cmd
\Hy@varioref@undefined	8571	\Hy@WarningPageBorderColor	3519, 3521, 3523	87, 109, 122
\Hy@VerboseAnchor	4849, 8946, 9395, 9410, 9492, 9504, 9761, 10345, 10361, 10441, 10454, 10949, 10963, 11930, 11944, 12217, 12231	\Hy@WarningPageColor	3466, 3468, 3470	\HyC@check
\Hy@verbosefalse	410, 453	\Hy@WarnOptionDisabled	2371, 2374	68, 71, 74
\Hy@VerboseGlobalTemp	4825, 4826, 4827, 4828, 4832	\Hy@WarnOptionValue	2352, 2358, 2915, 2937	\HyC@checkcommand
\Hy@VerboseLinkInfo	4832, 4833, 4836, 4843	\Hy@wrapper@babel	4321, 4339	50, 57, 59
\Hy@VerboseLinkStart	4821, 9006, 9016, 9425, 9477, 9513, 9525, 9953, 10301, 10324, 10468, 10573, 10981, 11081, 11959, 12015, 12245, 12302	\Hy@WrapperDef	4331, 8941, 9393, 9408, 9490, 9502, 9759, 10343, 10359, 10439, 10452, 10947, 10961, 11928, 11942, 12215, 12229	\HyC@checkFailed
		\Hy@writebookmark	2208, 8052, 14211, 14352	146, 157
		\Hy@xspace@end	4219, 4224, 4228, 4233, 4236, 4241, 4242, 4243, 4245, 4246, 4247, 4248, 4249, 6308, 6309, 6311,	\HyC@checkItem
				132, 133, 134, 135, 138
				\HyC@checklong
				45, 53
				\HyC@checkOk
				144, 154
				\HyC@checkPackage
				12, 16, 18
				\HyC@cmd
				62, 75, 87, 95, 118, 131
				\HyC@date
				11, 15, 23, 29, 31
				\HyC@DeclareRobustCommand
				114
				\HyC@def
				125
				\HyC@defcmd
				47, 54, 93
				\HyC@doCheck
				99, 130
				\HyC@edef
				125
				\HyC@getDate
				12, 14
				\HyC@meaning
				152, 160
				\HyC@nc@default
				103, 105
				\HyC@nc@noopt
				88, 91, 103, 112, 123, 127
				\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
..... [6979](#), [6991](#)
\HyCnt@ProvideTheHCounter .
..... [6965](#), [6972](#)
\HyColor@FieldBColor .. [6062](#),
[6065](#)
\HyColor@FieldColor ... [6068](#)
\HyColor@HyperrefBorderColor
..... [3509](#), [3527](#)
\HyColor@HyperrefColor
.. [3454](#), [3473](#), [3474](#), [3475](#),
[3476](#), [3477](#), [3478](#), [3479](#)
\HyColor@UseColor . [4692](#), [8910](#),
[8921](#), [9915](#), [9926](#)
\HyField@CAddToFields 13054,
[13076](#)
\HyField@C@PDFChoices . [5731](#),
[5732](#), [5747](#)
\HyField@C@SetFlag . [5426](#), [5428](#)
\HyField@C@UseFlag . [5416](#), [5418](#)
\HyField@ABD@AuxAddToCoFields
..... [12999](#), [13051](#)
\HyField@AddCoField .. [13009](#),
[13022](#), [13025](#)
\HyField@AddToFields . [12545](#),
[12593](#), [12684](#), [12698](#), [12727](#),
[12748](#), [12774](#), [12799](#), [12987](#),
[13053](#), [13193](#), [13288](#), [13302](#),
[13329](#), [13354](#), [13378](#), [13401](#),
[13509](#), [13549](#), [13652](#), [13671](#),
[13703](#), [13727](#), [13755](#), [13784](#)
\HyField@AdvanceAnnotCount
.... [12538](#), [12583](#), [12674](#),
[12692](#), [12717](#), [12742](#), [12768](#),
[12789](#), [13502](#), [13539](#), [13636](#),
[13664](#), [13692](#), [13720](#), [13748](#),
[13774](#)
\HyField@afields . [12983](#), [13042](#),
[13043](#), [13045](#), [13099](#)
\HyField@AfterAuxOpen [12998](#),
[13040](#), [13077](#)
\HyField@AnnotCount . [12536](#),
[12537](#), [12539](#), [12542](#), [13500](#),
[13503](#), [13506](#)
\HyField@AuxAddToCoFields .
.... [12997](#), [13037](#), [13051](#),
[13065](#)
\HyField@AuxAddToFields ...
.... [12996](#), [13034](#), [13041](#),
[13080](#)
\HyField@cofields [12984](#), [13003](#),
[13004](#), [13024](#), [13026](#), [13100](#),
[13102](#)
\HyField@FlagsAnnot [5586](#), [5605](#),
[5619](#), [5632](#), [5648](#), [5680](#)
\HyField@FlagsCheckBox [5618](#),
[12787](#), [13392](#), [13769](#)
\HyField@FlagsChoice ... [5679](#),
[12646](#), [13248](#), [13604](#)
\HyField@FlagsPushButton [5604](#),
[12715](#), [12738](#), [12765](#), [13320](#),
[13341](#), [13371](#), [13690](#), [13714](#),
[13744](#)
\HyField@FlagsRadioButton ..
[5631](#), [12642](#), [13244](#), [13600](#)
\HyField@FlagsSubmit .. [5552](#),
[12739](#), [13342](#), [13715](#)
\HyField@FlagsText [5647](#), [12580](#),
[13184](#), [13533](#)
\HyField@NeedAppearancesfalse
..... [5876](#), [5889](#)
\HyField@NeedAppearancestrue
... [5879](#), [5882](#), [5886](#)
\HyField@NewBitsetFlag . [5384](#),
[5387](#), [5395](#)
\HyField@NewFlag
.. [5382](#), [5458](#), [5459](#), [5460](#),
[5461](#), [5462](#), [5463](#), [5464](#),
[5465](#), [5466](#), [5467](#), [5468](#),
[5469](#), [5470](#), [5471](#), [5472](#),
[5473](#), [5474](#), [5475](#), [5476](#),
[5477](#), [5482](#), [5483](#), [5484](#),
[5485](#), [5486](#), [5487](#), [5488](#),
[5489](#), [5490](#), [5523](#), [5525](#),
[5526](#), [5528](#), [5529](#), [5531](#),
[5532](#), [5533](#), [5534](#)
\HyField@NewFlagOnly . [5386](#),
[5524](#), [5527](#), [5530](#)
\HyField@NewOption [5383](#), [5389](#)
\HyField@PDFAFlagWarning .
.. [5492](#), [5500](#), [5504](#), [5508](#),
[5512](#), [5516](#), [5520](#)
\HyField@PDFChoices .. [5704](#),
[12690](#), [13295](#), [13658](#)
\HyField@PrintFlags
.. [5433](#), [5579](#), [5597](#), [5611](#),
[5624](#), [5640](#), [5672](#), [5697](#)
\HyField@SetFlag .. [5425](#), [5565](#),
[5571](#), [5576](#), [5610](#), [5638](#)
\HyField@SetKeys . [5808](#), [12577](#),
[12613](#), [12616](#), [12635](#), [12703](#),
[12735](#), [12755](#), [12784](#), [13180](#),
[13214](#), [13217](#), [13236](#), [13307](#),
[13338](#), [13361](#), [13388](#), [13529](#),
[13570](#), [13573](#), [13592](#), [13676](#),
[13711](#), [13734](#), [13765](#)
\HyField@TheAnnotCount ...
.... [12541](#), [12550](#), [12559](#),
[12589](#), [12678](#), [12695](#), [12723](#),
[12745](#), [12771](#), [12795](#), [13505](#),
[13510](#), [13513](#), [13544](#), [13641](#),
[13666](#), [13697](#), [13722](#), [13750](#),
[13779](#)
\HyField@UseFlag
.. [5415](#), [5556](#), [5557](#), [5558](#),
[5559](#), [5560](#), [5561](#), [5562](#),
[5563](#), [5566](#), [5567](#), [5568](#),
[5569](#), [5572](#), [5573](#), [5574](#),
[5577](#), [5588](#), [5589](#), [5590](#),
[5591](#), [5592](#), [5593](#), [5594](#),
[5595](#), [5596](#), [5607](#), [5608](#),
[5609](#), [5621](#), [5622](#), [5623](#),
[5634](#), [5635](#), [5636](#), [5637](#),
[5639](#), [5650](#), [5651](#), [5652](#),
[5653](#), [5654](#), [5655](#), [5656](#),
[5657](#), [5668](#), [5671](#), [5682](#),
[5683](#), [5684](#), [5685](#), [5687](#),
[5689](#), [5690](#), [5693](#), [5696](#)
\HyInd@C@wrindex . [8259](#), [8262](#),
[8293](#), [8299](#)
\HyInd@C@hyperpage [8366](#), [8376](#)
\HyInd@C@wrindex .. [8254](#), [8255](#)
\HyInd@DefKey [8312](#), [8326](#),
[8339](#), [8348](#)
\HyInd@EncapChar . [2945](#), [4169](#),
[8249](#)
\HyInd@hyperpage . [8363](#), [8365](#),
[8372](#)
\HyInd@key .. [8313](#), [8317](#), [8328](#),
[8341](#), [8353](#)
\HyInd@org@wrindex [8253](#), [8257](#),
[8267](#), [8273](#), [8275](#), [8278](#)
\HyInd@pagelink ... [8381](#), [8387](#),
[8389](#), [8392](#)
\HyInd@ParenLeft .. [8235](#), [8264](#),
[8301](#), [8338](#)
\HyInd@ParenRight . [8236](#), [8265](#),
[8272](#), [8302](#), [8311](#)
\HyInd@removespaces ... [8395](#),
[8398](#), [8408](#)
\HyInfo@AddonHandler .. [3803](#),
[3806](#)
\HyInfo@AddonList . [3836](#), [3837](#),
[3871](#), [3878](#)
\HyInfo@Addons ... [3857](#), [3873](#),
[9223](#), [10153](#), [11143](#), [11147](#)
\HyInfo@AddonUnsupportedtrue
.. [9640](#), [10868](#), [12036](#)
\HyInfo@do ... [3805](#), [3838](#), [3861](#)

\HyInfo@GenerateAddons	3855, 9200, 10129, 11112	2747, 2752, 2758, 2810, 2817, 2823, 2848	7224, 7226, 7248, 7271, 7730, 7757, 7760, 7780, 7854, 8158, 9001, 9418, 9508, 9824, 10354, 10461, 10969, 11952, 12238, 14207, 14353, 14579, 14607, 14618, 14645
\HyInfo@Key	. 3813, 3814, 3832, 3834, 3835, 3838, 3841, 3848, 3862, 3866	\HyOpt@CustomDriver 278, 2870, 2871, 2875, 4488, 4555	\hyper@anchorstart 4242, 6304, 6313, 6327, 6341, 6969, 7147, 7200, 7218, 7248, 7271, 7728, 7755, 7760, 7780, 7854, 8158, 8997, 9408, 9502, 9820, 10343, 10452, 10961, 11942, 12229, 14207, 14353, 14579, 14607, 14618, 14645
\HyInfo@KeyEscaped	3812, 3813	\HyOpt@DriverFallback 2853, 2856, 2857, 2865, 4522, 4527	
\HyInfo@tmp	. . . . . 3822, 3832	\HyOpt@DriverType 4487, 4490, 4524, 4534, 4536, 4554, 4557	
\HyInfo@trapped@false	. . 3753, 3772	\HyOrg@addtoreset . 8179, 8182, 8184, 8213	
\HyInfo@trapped@true	. . . 3750, 3771	\HyOrg@appendix . . 7024, 7043	
\HyInfo@trapped@unknown	3756, 3773	\HyOrg@author 6404, 6417, 6421	
\HyInfo@TrappedUnsupported	. 3774, 3778, 9643, 10883, 12039	\HyOrg@celt 6977, 6983	
\HyInfo@Value	. . . . . 3826, 3829	\HyOrg@float@makebox . . 7663, 7684	\hyper@chars 4813, 9029, 9398, 9412, 9432, 9454, 9468, 9482, 9562, 9602, 10310, 10331, 10347, 10364, 10444, 10456, 10548, 11563, 11946, 11966, 11992, 12006, 12020, 12233, 12252, 12275, 12292, 12307
\HyLang@addto	. . . . 3257, 3273, 3291, 3333, 3341	\HyOrg@hyperpage . 8238, 8240, 8241	\hyper@currentanchor . . 10966, 10975, 10998, 11015
\HyLang@afrikaans	. . . . . 2947	\HyOrg@make@df@tag@@ 8173	\hyper@currentlinktype . 10999, 11003, 11007
\HyLang@catalan	. . . . . 3131	\HyOrg@make@df@tag@@@ 8174	\hyper@destlabel@hook . . 5319, 5326
\HyLang@danish	. . . . . 3221	\HyOrg@maketitle . . 7539, 7546, 7551	\hyper@hash . 4765, 4766, 4814, 5199, 5211, 5228, 5231, 6271, 10304
\HyLang@DeclareLang	. . . 3271, 3300, 3301, 3302, 3303, 3304, 3305, 3306, 3307, 3308, 3309, 3310, 3311, 3312, 3313, 3314, 3315, 3316, 3317, 3318, 3319, 3320, 3321, 3322, 3323, 3324, 3325, 3326, 3327, 3328, 3329, 3330, 3331	\HyOrg@title . . 6403, 6408, 6412	\hyper@image 4955, 4956, 9480, 10606, 11076, 12018, 12305
\HyLang@dutch	. . . . . 3185	\HyOrg@TX@cendtabularx 7443	\hyper@last 6392, 6397
\HyLang@english	. . . . . 2965	\HyOrg@url 4949	\hyper@link 4241, 5147, 6310, 6311, 6325, 6335, 6340, 9015, 9476, 9524, 9992, 10300, 10572, 11080, 12014, 12301
\HyLang@french	. . . . . 2983	\HyPat@NonNegativeReal 3553, 3554, 3555, 3556, 3572, 3574, 3907, 3918, 3919, 3920, 3927, 3930, 3931, 3932, 3933	\hyper@link@ . 4248, 5124, 5130, 6308, 6322, 6347
\HyLang@german	. . . . . 3001	\HyPat@ObjRef 4933, 4934, 4947, 8734, 9754, 10944	\hyper@linkend 4228, 4236, 4245, 6316, 6330, 6344, 7438, 7722, 7725, 8080, 9014, 9438, 9521, 9991, 9993, 10336, 10519, 11001, 11974, 12258
\HyLang@greek	. . . . . 3167	\hyper@@anchor . . . 4240, 4959, 4961, 4993, 4995, 5031, 5033, 5276, 6309, 6324, 6339, 7393, 7398, 7413, 7418, 7486, 7489, 7516, 7646, 7649, 7667, 7932, 7983, 7994, 8000	\hyper@linkfile 4247, 5224, 6318, 6332, 6346, 9058, 9442, 9600, 9995, 10320, 10523, 11584, 11978, 12262
\HyLang@italian	. . . . . 3019	\hyper@@@normalise . 4788, 4792, 4796	\hyper@linkstart
\HyLang@magyar	. . . . . 3037	\hyper@anchor 5303, 6312, 6326, 6378, 6386, 8994, 9393, 9490, 9817, 10359, 10439, 10947, 11928, 12215	
\HyLang@norsk	. . . . . 3203	\hyper@anchorend . . 4228, 4236, 4243, 6304, 6314, 6328, 6342, 6969, 7148, 7200,	
\HyLang@portuges	. . . . . 3055		
\HyLang@russian	. . . . . 3073		
\HyLang@spanish	. . . . . 3113		
\HyLang@swedish	. . . . . 3239		
\HyLang@vietnamese	3149, 3333, 3341		
\HyLinguex@OrgB	. . . 791, 795		
\HyLinguex@OrgC	. . . 792, 796		
\HyLinguex@OrgD	. . . 793, 797		
\HyLinguex@Restore	. 794, 807, 861, 871		
\HyNew@float@makebox	. 7662, 7685		
\HyOpt@CheckDvi	. . . . . . . 2659, 2712, 2718, 2723,		

.. 4244, 6315, 6329, 6343, 7436, 7718, 7725, 8079, 9005, 9424, 9512, 9952, 9993, 10323, 10467, 10980, 11958, 12244	\HyperDestLabelReplace . 5363, 5370, 5373	\HyPL@CheckThePage .. 6550, 6598
\hyper@linkurl .. 4246, 4954, 5199, 5206, 5227, 5231, 6317, 6331, 6345, 9026, 9443, 9445, 9478, 9560, 10068, 10308, 10321, 10545, 10607, 11077, 11560, 11979, 11983, 12016, 12263, 12265, 12303	\HyperDestNameFilter .. 4151, 4853, 5044, 5057, 5070, 5370, 8947, 8972, 9400, 9414, 9434, 9478, 9763, 9965, 10304, 10314, 10332, 10350, 10368, 10445, 10457, 10506, 10589, 11424, 11433, 11934, 11948, 11969, 12016, 12221, 12234, 12254, 12303, 14431, 14492, 14508	\HyPL@Entry 6798, 6806, 6814, 6816
\hyper@livelink 6310, 6335	\HyperDestRename . 5343, 5361, 5374	\HyPL@EveryPage . 6538, 6662
\hyper@makecurrent 6966, 7069, 7186, 7216, 7245, 7270, 7311, 7433, 7622, 7677	\HyperFirstAtBeginDocument . 6375, 6377, 6393, 6396	\HyPL@Format 6614, 6615, 6616, 6617, 6618, 6630
\hyper@n@rmalise .. 4780, 4784	\hyperget 5036	\HyPL@found 6613, 6620, 6624, 6631, 6641, 6643
\hyper@nat@current 7719	\hypergetpageref 7133	\HyPL@Labels 6509, 6653, 6654, 6656, 6658, 6709, 6710, 6809, 6817, 6818
\hyper@nat@anchorend ... 7730	\hypergetref 7132	\HyPL@LastNumber 6513, 6569, 6592
\hyper@nat@anchorstart .. 7727	\HyperGlobalCurrentHref 7090, 7092, 7100, 7101, 7105, 7108, 7112, 7119, 7120, 7124	\HyPL@LastPrefix .. 6514, 6563, 6594
\hyper@nat@linkbreak 7724	\hyperimage 4955, 8230	\HyPL@LastType .. 6512, 6554, 6593
\hyper@nat@linkend 7721	\hyperindexformat 8243	\HyPL@page . 6532, 6541, 6544, 6550, 6559
\hyper@nat@linkstart 7716	\hyperlink 4818, 6361, 8404	\HyPL@Prefix 6559, 6561, 6563, 6577, 6580, 6582, 6594, 6608, 6646
\hyper@newdestlabel 5311, 5333, 5372, 5378, 5380	\hyperlinkfileprefix . 3484, 3485, 3486, 12207	\HyPL@Roman 6516
\hyper@nopatch@counter . 8133	\HyperLocalCurrentHref 7108, 7110, 7117, 7118, 7119, 7120, 7122	\HyPL@roman 6517
\hyper@normalise .. 4170, 4175, 4756, 4867, 4870, 4951, 4953, 4955, 4977, 5838	\hyperpage .. 6367, 8238, 8239, 8241, 8362	\HyPL@SetPageLabels ... 6652, 6716, 6812
\hyper@pageduration 9262, 9289, 10242, 10255, 10772, 10784, 11055, 11074	\HyperRaiseLinkDefault . 2210, 2240	\HyPL@SlidesOptionalPage 6525, 6529, 6534
\hyper@pagetransition ... 9238, 9288, 10231, 10254, 10661, 10783, 11038, 11073	\HyperRaiseLinkHook 2209, 2241	\HyPL@SlidesSetPage ... 6520, 6522, 6542, 6549
\hyper@quote 6273, 9400, 9414, 9429, 9434, 9455, 9469, 9483, 10304, 10314, 10327, 10350, 10368, 11934, 11948, 11963, 11969, 11993, 12007, 12021, 12221, 12234, 12249, 12254, 12277, 12293, 12308	\HyperRaiseLinkLength .. 2239, 2240, 2243	\HyPL@storePageLabel .. 6577, 6579, 6649, 6707, 6793
\hyper@readexternallink . 5153, 5164	\hyperref 4964, 6363, 8500, 8516, 8525, 8547	\HyPL@thisLabel .. 6506, 6508, 6540, 6544, 6545
\hyper@refstepcounter ... 6920, 6924, 6942, 6946, 6964	\hyperrefundefinedlink .. 4998, 5009	\HyPL@Type 6547, 6554, 6558, 6576, 6584, 6593, 6607, 6645
\hyper@tilde . 4774, 4775, 4776, 6272	\hypersetup .. 2581, 2607, 3311, 3789, 4171, 6357	\HyPL@Useless 6650, 6656
\hyperbaseurl . 3481, 3482, 6358	\hypertarget 4957, 6362	\HyPsd@@@autoref . 1374, 1376, 1379
\hypercalcbp 474, 474	\hyperxindexformat . 8237, 8243	\HyPsd@@@CJKdigits ... 1244, 1247, 1255
\hypercalcbpdef 477	\HyPL@@@CheckThePage 6623, 6641	\HyPsd@@@nameref 1356, 1358, 1361
\hyperdef 4985, 6360	\HyPL@@@CheckThePage . 6599, 6601	\HyPsd@@@pageref . 1338, 1340, 1343
	\HyPL@Alpha 6518	\HyPsd@@@ref . 1322, 1324, 1327
	\HyPL@alph 6519	\HyPsd@@@UTFviii@four 1971, 1974
	\HyPL@arabic 6515	\HyPsd@@@AppendItalcorr 1515
		\HyPsd@@@autoref .. 1371, 1372
		\HyPsd@@@autorefname .. 1392, 1395

[\HyPsd@@CJKdigits](#) [1236](#), [1238](#), [1241](#)
[\HyPsd@@CJKnumber](#)
 [1137](#), [1139](#), [1142](#), [1195](#),
 [1210](#), [1223](#), [1225](#), [1229](#)
[\HyPsd@@ConvertToUnicode](#) .
 [1843](#)
[\HyPsd@@ding](#) [2108](#), [2112](#), [2123](#)
[\HyPsd@@GetNextTwoTokens](#) .
 [1841](#)
[\HyPsd@@GlyphProcessWarning](#)
 [1701](#), [1704](#)
[\HyPsd@@hspace](#) [1292](#), [1293](#)
[\HyPsd@@LetCommand](#) . [1416](#),
 [1437](#)
[\HyPsd@@nameref](#) [1353](#), [1354](#)
[\HyPsd@@pageref](#) [1335](#), [1336](#)
[\HyPsd@@ProtectSpacesFi](#) [1460](#),
 [1466](#)
[\HyPsd@@ref](#) [1319](#), [1320](#)
[\HyPsd@@RemoveBraces](#) [1483](#)
[\HyPsd@@RemoveBracesFi](#) [1480](#),
 [1483](#)
[\HyPsd@@RemoveCmdPrefix](#) . .
 [1658](#), [1661](#)
[\HyPsd@@ReplaceFi](#) [1728](#), [1734](#),
 [1739](#)
[\HyPsd@@UTFviii@four](#) [1955](#),
 [1960](#)
[\HyPsd@add@accent](#) [517](#), [1281](#)
[\HyPsd@AfterCountRemove](#) . .
 [1535](#), [1615](#)
[\HyPsd@AfterDimenRemove](#) . .
 [1541](#), [1618](#)
[\HyPsd@AfterSkipRemove](#) [1547](#),
 [1630](#)
[\HyPsd@AMScsfix](#) [625](#), [1302](#),
 [1304](#)
[\HyPsd@AppendItalcorr](#) [1499](#),
 [1506](#), [1515](#)
[\HyPsd@autoref](#) [635](#), [1371](#)
[\HyPsd@autorefname](#) [1383](#), [1389](#)
[\HyPsd@CatcodeWarning](#)
 [1551](#), [1575](#), [1578](#), [1581](#),
 [1584](#), [1642](#)
[\HyPsd@Char](#) [1845](#)
[\HyPsd@CharOctByte](#) [1865](#),
 [1867](#), [1870](#), [1879](#), [1884](#)
[\HyPsd@CharSurrogate](#) [1859](#),
 [1876](#)
[\HyPsd@CharTwoByte](#) [1857](#),
 [1864](#)
[\HyPsd@CheckCatcodes](#) [689](#),
 [1525](#)
[\HyPsd@CJK@Unicode](#) [1019](#),
 [1023](#)
[\HyPsd@CJKActiveChars](#) [959](#),
 [974](#)
[\HyPsd@CJKdigit](#) [1248](#), [1258](#)
[\HyPsd@CJKdigits](#) [1021](#), [1234](#)
[\HyPsd@CJKhook](#) [642](#), [930](#), [941](#)
[\HyPsd@CJKhook@bookmarks](#)
 [936](#), [970](#)
[\HyPsd@CJKhook@unicode](#) [938](#),
 [1018](#)
[\HyPsd@CJKnumber](#) [1020](#), [1134](#)
[\HyPsd@CJKnumberFour](#)
 [1152](#), [1156](#), [1160](#), [1173](#),
 [1177](#), [1181](#), [1187](#)
[\HyPsd@CJKnumberLarge](#) [1165](#),
 [1172](#)
[\HyPsd@CJKnumberThree](#) [1193](#),
 [1197](#), [1203](#)
[\HyPsd@CJKnumberTwo](#) [1208](#),
 [1212](#), [1218](#)
[\HyPsd@ConvertToUnicode](#) [758](#),
 [1791](#)
[\HyPsd@DecimalToOctal](#) [951](#),
 [982](#)
[\HyPsd@DecimalToOctalFirst](#) .
 [1025](#), [1061](#)
[\HyPsd@DecimalToOctalSecond](#)
 [1026](#), [1035](#), [1098](#), [2127](#),
 [2133](#), [2136](#)
[\HyPsd@DefCommand](#) [672](#), [673](#),
 [674](#), [675](#), [1405](#)
[\HyPsd@DieFace](#) [592](#), [593](#), [594](#),
 [2048](#), [20640](#), [20641](#)
[\HyPsd@DieFaceLarge](#) [2056](#),
 [2065](#)
[\HyPsd@ding](#) [591](#), [2098](#)
[\HyPsd@DisableCommands](#) [908](#),
 [910](#)
[\HyPsd@DoConvert](#) [1793](#), [1803](#)
[\HyPsd@DoEscape](#) [1817](#)
[\HyPsd@doboxspace](#) [730](#), [1764](#)
[\HyPsd@empty](#) [715](#), [717](#), [721](#),
 [722](#), [724](#), [732](#), [739](#)
[\HyPsd@end](#) [689](#), [693](#), [1464](#),
 [1474](#), [1480](#), [1483](#), [1528](#),
 [1536](#), [1542](#), [1548](#), [1601](#),
 [1608](#), [1615](#), [1618](#), [1630](#)
[\HyPsd@endWithElse](#) [1271](#),
 [1280](#)
[\HyPsd@EscapeTeX](#) [767](#), [770](#),
 [777](#), [1746](#)
[\HyPsd@expand@utfviii](#) [1893](#),
 [1900](#), [1906](#)
[\HyPsd@fi](#) [1456](#), [1462](#), [1466](#), [1472](#)
[\HyPsd@GetNextTwoTokens](#) . .
 [1841](#)
[\HyPsd@GetOneBye](#) [1836](#)
[\HyPsd@GetTwoBytes](#) [1832](#)
[\HyPsd@GLYPHERR](#) [695](#), [1268](#),
 [1282](#), [1289](#)
[\HyPsd@GlyphProcess](#) [697](#),
 [1689](#), [1702](#)
[\HyPsd@GlyphProcessWarning](#)
 [1696](#), [1700](#)
[\HyPsd@GobbleFiFi](#) [1273](#), [1279](#)
[\HyPsd@HighA](#) [1029](#), [1038](#)
[\HyPsd@HighB](#) [1039](#), [1044](#)
[\HyPsd@HighC](#) [1045](#), [1048](#)
[\HyPsd@HighD](#) [1041](#), [1053](#)
[\HyPsd@href](#) [630](#), [1318](#)
[\HyPsd@hspace](#) [626](#), [1292](#)
[\HyPsd@hspacetest](#) [1295](#), [1297](#),
 [1300](#)
[\HyPsd@ifnextchar](#) [658](#), [659](#), [660](#),
 [1442](#)
[\HyPsd@ignorespaces](#) [639](#), [917](#)
[\HyPsd@inmathwarn](#) [516](#), [1265](#)
[\HyPsd@ITALCORR](#) [650](#), [654](#),
 [1289](#)
[\HyPsd@LetCommand](#) [676](#), [677](#),
 [1405](#)
[\HyPsd@LetUnexpandableSpace](#)
 [645](#), [646](#), [647](#), [648](#), [1285](#),
 [1288](#)
[\HyPsd@LoadExtra](#) [876](#), [879](#),
 [2605](#)
[\HyPsd@LoadUnicode](#)
 [866](#), [2544](#), [2550](#), [2552](#),
 [2559](#), [2602](#), [6721](#)
[\HyPsd@MoonPha](#) [2079](#), [2097](#),
 [20642](#)
[\HyPsd@nameref](#) [634](#), [1353](#)
[\HyPsd@pageref](#) [633](#), [1335](#)
[\HyPsd@pdfencoding](#)
 [759](#), [2543](#), [2546](#), [2568](#),
 [2580](#), [2583](#), [2586](#), [2601](#),
 [6723](#), [6725](#), [6741](#), [6744](#)
[\HyPsd@pdfencoding@auto](#) [759](#),
 [2574](#), [2598](#), [6725](#), [6743](#)
[\HyPsd@pdfencoding@pdfdoc](#) .
 [2567](#), [2586](#), [2599](#)
[\HyPsd@pdfencoding@unicode](#) .
 [2571](#), [2600](#), [2601](#), [6723](#),
 [6740](#)
[\HyPsd@PrerenderUnicode](#) [3682](#),
 [3698](#), [3704](#), [3710](#), [3716](#),
 [3721](#), [3739](#), [3745](#), [3825](#)

\HyPsd@protected@testopt 661,
662, 1446
\HyPsd@ProtectSpaces ... 682,
1456, 1505
\HyPsd@ref 632, 1319
\HyPsd@RemoveBraces ... 684,
1477, 1494, 1502, 1508
\HyPsd@RemoveCmdPrefix 1651,
1657
\HyPsd@RemoveMask 692, 1464,
1474
\HyPsd@RemoveSpaceWarning
... 1625, 1637, 1663
\HyPsd@ReplaceSpaceWarning
... 1620, 1632, 1676
\HyPsd@Rest 1529, 1597, 1605,
1608, 1616, 1621, 1627,
1633, 1639
\HyPsd@SanitizeForOutFile ..
..... 14270, 14301
\HyPsd@SanitizeOut@BraceLeft
.. 14305, 14311, 14320
\HyPsd@SanitizeOut@BraceRight
.. 14308, 14323, 14332
\HyPsd@SPACEOPTI 686, 702,
703, 705, 707, 709, 710, 749,
751, 1571, 1775
\HyPsd@spaceopti ... 751, 1720
\HyPsd@String 683, 685, 688, 690,
696, 698, 1488, 1489, 1499,
1559, 1561, 1565, 1566,
1570, 1571, 1586, 1587,
1619, 1631, 1690, 1691
\HyPsd@StringSubst . 699, 701,
707, 713, 716, 719, 722, 741,
744, 746, 1743
\HyPsd@Subst 695,
704, 708, 714, 720, 724, 728,
733, 734, 735, 736, 737, 738,
742, 745, 1727, 1744, 1759,
1760, 1761
\HyPsd@temp 760,
762, 763, 765, 766, 773, 775,
776, 2566, 2567, 2568, 2571,
2574, 2580, 2589, 2593,
6739, 6740, 6741, 6743,
6744, 6749
\HyPsd@tocsection
.. 1305, 1306, 1307, 1308,
1309, 1310, 1311, 1313
\HyPsd@UnescapedString . 762
\HyPsd@UnexpandableSpace ..
. 1288, 1471, 1621, 1633
\HyPsd@unichar ... 1913, 1980,
1986, 1991
\HyPsd@unichar@first@byte ...
..... 1999, 2019
\HyPsd@unichar@octtwo . 2021,
2029, 2035
\HyPsd@unichar@second@byte .
..... 2007, 2027
\HyPsd@UnicodeReplacementCharacter
.. 1983, 2018, 2051, 2081,
2086, 2094, 2101, 2104,
2114, 2172
\HyPsd@utf@viii@undeferr . 513,
2040
\HyPsd@UTFviii 507, 1905
\HyPsd@UTFviii@three . 1936,
1945
\HyPsd@UTFviii@two .. 1921,
1927
\HyPsd@UTFviii@ccxliv@def ..
..... 1911, 1917
\HyPsd@UTFviii@ccxliv@undef
..... 1910, 1916
\HyPsd@UTFviii@four ... 1909,
1954
\HyPsd@UTFviii@three .. 1908,
1935
\HyPsd@UTFviii@two 1907, 1920
\HyPsd@Warning .. 1450, 1643,
1664, 1677, 1706, 1712
\HyPsd@XSPACE 652, 729, 1289
\HyPsd@xspace .. 727, 729, 730
\HyRef@StarSetRef 8473, 8478
\HyRef@autopageref 8544, 8546
\HyRef@autopagerefname 8543,
8547, 8549
\HyRef@autoref 8562, 8563
\HyRef@autosetref .. 8566, 8569
\HyRef@CaseStar .. 8630, 8636
\HyRef@currentHtag
.. 8582, 8600, 8603, 8609,
8616, 8622, 8637
\HyRef@MakeUppercaseFirstOfFive
... 4727, 8494, 8496
\HyRef@name
.. 8598, 8599, 8604, 8611,
8629, 8630, 8631, 8633
\HyRef@Ref 4712, 8499
\HyRef@ShowKeysInit ... 8639,
8650
\HyRef@ShowKeysRef 8570, 8638
\HyRef@StarSetRef . 4715, 4719,
4723, 4727, 8466, 8485,
8488, 8491, 8494
\HyRef@StripStar .. 8597, 8628
\HyRef@testreftype . 8575, 8594
\HyRef@thisref 8572, 8575
\HyTmp@found 5758, 5768, 5771
\HyTmp@key 5752, 5753
\HyTmp@optitem
.. 5708, 5724, 5751, 5756,
5762, 5783, 5794
\HyTmp@optlist ... 5707, 5722,
5723, 5754, 5755, 5760,
5761, 5769, 5770, 5790,
5792, 5799, 5802
\HyXeTeX@CheckUnicode
.. 3668, 3679, 3697, 3703,
3709, 3715, 3720, 3738,
3744, 3824, 6754

I

\i ... 14846, 15012, 15015, 15018,
15021, 15296, 15472, 15475,
15478, 15481, 15610, 15615,
15620, 15625, 15629, 15866,
15937, 15945
\ibar 16104, 20711
\if 1314, 6567, 6575, 7288, 7289,
10735, 10738, 10742, 10746,
10750, 10752, 10754, 13951
\if@eqnstar 7232, 7241
\if@filesw 2180, 5024, 5331, 6373,
6794, 6804, 7767, 7782,
7799, 7811, 7831, 7836,
7855, 8287, 13032, 13063,
13078, 14271, 14458, 14537
\if@hyper@item 6890
\if@Localurl 10291, 10337
\if@mid@expandable 624
\if@minipage 7634, 7707
\if@nmbrlist 6876
\if@skiphyperref 6891
\IfBooleanTF 8562
\ifcase 322,
983, 1032, 1054, 1057, 1063,
1099, 1143, 1259, 1949,
2080, 2571, 3415, 4560,
5554, 5659, 5788, 5865,
7047, 7056, 8092, 8264,
8301, 8571, 10802, 11307,
14012, 14040, 14109, 14145,
14181, 14378
\ifcat ... 1530, 1557, 1564, 1569,
1574, 1577, 1580, 1583,
5287, 5289
\ifcsname 1892, 3272, 6954, 10403

\ifdim . . . 1300, 1619, 1623, 1631, 1635, 2255, 2278, 4154, 4156, 4588, 9307, 9311, 9316, 9320, 9327, 9328, 9332, 9333, 9340, 9341, 9342, 10263, 10264, 10267, 10268, 10274, 10275, 10276, 10407, 10408, 10412, 10413, 10420, 10421, 10422, 11336, 11350, 11721, 11722, 11725, 11726, 11732, 11733, 11734, 12609, 12647, 12648, 13210, 13249, 13250, 13566, 13605, 13606	\ifHy@backref . 367, 4364, 4739, 6251, 7832, 7868	\ifHy@pdfcenterwindow . . . 372, 9162, 9710, 10175, 10840, 11192, 12099
\IfDocumentMetadataT . . 4261	\ifHy@bookmarks . . . 368, 4613	\ifHy@pdfdisplaydoctitle . . 412, 9163, 9711, 10176, 10841, 11193, 12100
\IfDocumentMetadataTF . 3971	\ifHy@bookmarksnumbered 369, 14258	\ifHy@pdfescapeform 379, 13848, 13878
\iffalse 5877	\ifHy@bookmarksopen 370, 4603	\ifHy@pdffitwindow . 381, 9161, 9709, 10174, 10839, 11191, 12098
\IfFileExists . 2834, 2874, 8787, 12335	\ifHy@breaklinks . . . 371, 2503, 10982, 11023, 11318, 11341	\ifHy@pdfmarkerror 11239, 11248
\ifFld@checked . . . 5811, 12960, 13998	\ifHy@CJKbookmarks . 373, 935	\ifHy@pdfmenubar . . 389, 9159, 9707, 10172, 10837, 11189, 12096
\ifFld@comb 5658	\ifHy@colorlinks 374, 4684, 6256, 11915	\ifHy@pdfnewwindow 393, 3994, 10529
\ifFld@combo 5686, 5691, 12622, 12651, 13223, 13253, 13579, 13609	\ifHy@destlabel 375, 5310	\ifHy@pdfnewwindowset . . 392, 3992
\ifFld@disabled . . . 5812, 12961	\ifHy@draft 376, 4239	\ifHy@pdfpagelabels 396, 6494, 6707, 6792
\ifFld@edit 5692	\ifHy@DviMode 2640, 2660, 2855	\ifHy@pdfstring . 397, 893, 6897, 6904
\ifFld@fileselect 5661	\ifHy@DvipdfmxOutlineOpen 4586, 14510	\ifHy@pdftoolbar . . . 405, 9158, 9706, 10171, 10836, 11188, 12095
\ifFld@hidden . . . 12581, 12636, 12716, 12740, 12766, 12788, 12859, 12871, 12881, 12964, 13185, 13238, 13321, 13343, 13372, 13393, 13534, 13594, 13691, 13716, 13745, 13770	\ifHy@frenchlinks . . . 382, 4697	\ifHy@pdfusetitle 407, 6402
\ifFld@multiline . . . 5659, 12570, 12866, 13173, 13522	\ifHy@href@ismap . . 4915, 9047, 10086, 10482, 10552, 11575	\ifHy@pdfwindowui . 411, 9160, 9708, 10173, 10838, 11190, 12097
\ifFld@multiselect 5730	\ifHy@hyperfigures . 380, 4344, 6236, 8227	\ifHy@plainpages 398, 4359, 7982
\ifFld@password . . 5660, 12847	\ifHy@hyperfootnotes 383, 7353	\ifHy@psdextra . . 404, 601, 883
\ifFld@popdown . . 5478, 12623, 13224, 13580	\ifHy@hyperindex . . 384, 4354, 6246, 8234	\ifHy@psize 399
\ifFld@radio 12619, 12641, 12896, 13220, 13243, 13576, 13599	\ifHy@hypertextnames 385, 7076, 7981	\ifHy@raiselinks 400, 9447, 9527, 9564, 9604, 11985, 12267
\ifFld@readonly . . 12868, 12878, 12962	\ifHy@implicit . 386, 4369, 4711, 14562	\ifHy@seminarslides 401
\ifForm@html 5832	\ifHy@linktocpage . . 387, 2463, 2473	\ifHy@setpagesize . . 402, 9295, 10260, 10404, 11718
\IfFormatAtLeastTF 6844, 6872, 6879, 6895, 7655, 8133	\ifHy@localanchorname . . . 388, 7109, 7121	\ifHy@setpdfversion . 2608, 8744
\ifhint 2833, 4451, 4513	\ifHy@naturalnames . 390, 7088	\ifHy@stoppedearly 364
\ifhmode 2213, 2217, 2277, 2286, 4859, 7346, 7430, 7439, 7591, 7593, 8942, 8950, 11342, 12320	\ifHy@nesting . 391, 4349, 4958, 4992, 5030, 5285, 6241, 7387, 7407, 7485, 7645	\ifHy@texht . . . 403, 4430, 4709, 5902, 5935, 6111, 6133, 6304, 8412
\ifHy@activeanchor . . 366, 5300	\ifHy@next 926, 8252	\ifHy@typexml 365
	\ifHy@ocgcolorlinks 394, 3373, 4670, 4680, 6261, 8739, 8828, 8906, 8914, 9828, 9911, 9919	\ifHy@unicode . . . 406, 503, 538, 541, 602, 700, 712, 740, 748, 757, 954, 1645, 1666, 1679, 1708, 1714, 1981, 2049, 2099, 2542, 2582, 3670, 6729, 13900
	\ifHy@pageanchor . . . 395, 7980	\ifHy@verbose . 408, 4822, 4838, 4850, 5434, 8057, 8748
	\ifHy@pdfa 413, 4273, 4672, 5187, 5491, 6085, 6138, 6266, 8976, 9042, 9077, 9111, 9371, 9974, 10008, 10044, 10076, 10106, 10488, 10509, 10532, 10558, 10592, 10626, 10645, 11448, 12515, 12706, 12759, 13111, 13311, 13365, 13484, 13680, 13738, 13953, 14001, 14170	

<code>\ifHyField@NeedAppearances</code> . . . 5875, 5877, 5880, 12517, 13113, 13486	<code>\ifvtex</code> . . 2648, 2764, 2793, 4466, 4502, 4516, 4519	<code>\intcalcNum</code> . . 2080, 2108, 2112
<code>\ifHyInfo@AddonUnsupported</code> 3801, 3815, 3856	<code>\ifxetex</code> . . 2645, 2737, 3669, 4435, 4499, 4587, 5075	<code>\IntCalcSub</code> . . 2074, 2127, 2130, 2133, 2136
<code>\IfHyperBoolean</code> 2327	<code>\ignorespaces</code> . . 639, 7306, 7395, 7401, 7415, 7424, 7522, 7630, 7641, 7644, 7703, 7711, 7775, 7790, 7807, 7816, 7866	<code>\intcalcSub</code> 1860, 2056
<code>\IfHyperBooleanExists</code> . . . 2321, 2328	<code>\iiint</code> 17894, 20062	<code>\interfootnotelinepenalty</code> . 7503
<code>\ifn@</code> 6999	<code>\iinferior</code> 19867	<code>\interleave</code> 19371, 20600
<code>\ifmeasuring@</code> 6962	<code>\iint</code> 17892, 20061	<code>\interlinepenalty</code> 7503
<code>\ifmmode</code> . . . 600, 10985, 11313	<code>\IJ</code> 14842, 15631	<code>\inva</code> 16017, 20687
<code>\ifnum</code> . . 1024, 1135, 1151, 1155, 1175, 1188, 1191, 1204, 1206, 1219, 1221, 1227, 1853, 1856, 1939, 1982, 1985, 1997, 2050, 2053, 2066, 2100, 2103, 2106, 2110, 2125, 2129, 2132, 2218, 2256, 2649, 2765, 2768, 2794, 3416, 3417, 4274, 4466, 4502, 4516, 4519, 4597, 4604, 4892, 5713, 5784, 5795, 6524, 6548, 6569, 6585, 6687, 7026, 7029, 7927, 7940, 8740, 8745, 8759, 8763, 8768, 8786, 8807, 9326, 9940, 9945, 10262, 10406, 10529, 10659, 10789, 10797, 10799, 10800, 10810, 10813, 10913, 10915, 11035, 11720, 11761, 12673, 12678, 12683, 13014, 13091, 13287, 13635, 13640, 13651, 13899, 13981, 14012, 14017, 14040, 14046, 14075, 14109, 14115, 14134, 14145, 14150, 14181, 14186, 14215, 14231, 14374, 14444, 14447, 14471, 14474, 14512, 14621, 14636, 14651	<code>\Im</code> 17530, 19934	<code>\invamp</code> 17576
<code>\ifodd</code> 1963, 1968, 8010	<code>\immediate</code> 5378, 5380, 6374, 6700, 6797, 6805, 7770, 7785, 7802, 7812, 7831, 7861, 8830, 8845, 8860, 10918, 11758, 12977, 13033, 13036, 13097, 14364, 14430, 14461, 14540	<code>\invbackneg</code> 18370, 20265
<code>\ifpatchable</code> 7348	<code>\in</code> 17811, 20028	<code>\invdiameter</code> 19170, 20513
<code>\ifpdf</code> . . . 2642, 2685, 2696, 4409, 4492	<code>\in@</code> 6997	<code>\inve</code> 15876, 19795
<code>\IfPDFManagementActiveTF</code> 2869	<code>\index</code> 628	<code>\invglotstop</code> 16261, 19828
<code>\ifpdfstringunicode</code> . . . 508, 511	<code>\indexentry</code> . . 8290, 8305, 8320, 8324, 8334	<code>\invh</code> 16092, 20706
<code>\ifportrait</code> 9306	<code>\Info</code> 19468, 20631	<code>\invlegr</code> 16167, 20729
<code>\ifthenelse</code> 7858	<code>\infty</code> 17854, 20046	<code>\invm</code> 16126, 20717
<code>\iftrue</code> . 1459, 1738, 5880, 14623	<code>\input</code> 859, 869, 886, 3336, 3344, 3351, 4559, 11653, 11759, 11858, 12035, 16381	<code>\invneg</code> 19231, 20538
<code>\iftutex</code> 761	<code>\InputIfFileExists</code> . 4173, 14454, 14485, 14530, 14532	<code>\inr</code> 16162, 20727
<code>\ifvmode</code> 2232, 2254, 2267	<code>\inputlineno</code> 4829, 5292	<code>\invscr</code> 16189, 19816
<code>\ifvoid</code> 7193, 7197	<code>\insert</code> 7500	<code>\invscripta</code> 16025, 20689
	<code>\int</code> 17889, 20060	<code>\invv</code> 16224, 20741
	<code>\IntCalcAdd</code> 1882	<code>\invw</code> 16228, 20743
	<code>\IntCalcDec</code> 1046, 2076	<code>\invy</code> 16232, 20745
	<code>\IntCalcDec</code> 2058	<code>\iota</code> 19848
	<code>\IntCalcDiv</code> 1040, 1049, 1054, 1157, 1166, 1178, 1195, 1210, 1225, 1866, 1872, 1878	<code>\ipagamma</code> 16084, 19807
	<code>\intcalcDiv</code> . . 1030, 1873, 1880, 1883	<code>\isuperior</code> 19891
	<code>\IntCalcMod</code> 1042, 1051, 1057, 1161, 1167, 1182, 1198, 1213, 1227, 1229, 1868, 1873, 1874, 1880, 1883, 1885	<code>\item</code> . . . 6870, 6874, 7798, 7810, 7853
	<code>\intcalcMod</code> 1032	<code>\Itemautorefname</code> 8653
		<code>\itemautorefname</code> 2950, 2968, 2986, 3004, 3022, 3040, 3058, 3087, 3088, 3116, 3134, 3152, 3170, 3188, 3206, 3224, 3242, 8653, 8654, 8657
		<code>\itshape</code> 571
		J
		<code>\j</code> 15638, 15896, 16003
		<code>\JackStar</code> 18944, 20416
		<code>\JackStarBold</code> . . . 18946, 20417
		<code>\jarr</code> 19701
		<code>\jeem</code> 19645
		<code>\jeh</code> 19717
		<code>\jinferior</code> 20604
		<code>\jobname</code> . 12335, 14363, 14454, 14461, 14485, 14530, 14532, 14540
		<code>\Join</code> 19214, 20531
		<code>\Jupiter</code> 18732, 20913
		<code>\jupiter</code> 18730, 20341
		K
		<code>\k</code> . 14723, 15072, 15074, 15079, 15081, 15133, 15164, 15193,

15208, 15526, 15528, 15572, 15574, 15622, 15624, 15625, 15762, 15764, 15892, 15894, 16738, 16741, 16783, 16786	\kaf 19681	\Ladiesroom 19457, 20628	13323, 13344, 13364, 13395, 13541, 13633, 13662, 13685, 13694, 13718, 13737, 13776, 14575
\kanjiskip 446	\kappa 19849	\lam 19683	\Leftarrow 17740, 19997
\kasra 19707	\keepPDF@SetupDoc . . 11919, 11926	\Lambda 19832	\leftarrow 19947
\kern . . . 1539, 1620, 1625, 1637, 8005, 8006, 8007, 8009, 8010, 8015, 14577	\kernel@ifnextchar 659	\lambda 19850	\leftarrowtail 17657, 19965
\Keyboard 18388, 20273	\kha 19649	\lambdabar 15824, 20676	\leftarrowtriangle 17788, 20017
\kinferior 19925	\Kutline 18602, 20877	\lambdastash 15825, 20677	\leftbarharpoon 19147, 20504
\kv@define@key 3823	\KV@href@pdfnewwindow . 4913	\langle 18390, 20274	\LEFTCIRCLE 18639, 20311
\KV@href@pdfnewwindow@default 4914	\KV@Hyp@draft 2437	\language@group 611	\leftharpoondown 17688, 19978
\KV@Hyp@nolinks 2437	\KV@Hyp@pdfnewwindow . 4913	\LARGE 578	\leftharpoonup 17685, 19977
\KV@Hyp@pdfnewwindow@default 4914	\KV@Hyp@pdfnewwindow@default 4914	\Large 579	\leftleftarrows 17717, 19988
\kv@key . 3809, 3812, 3819, 5711, 5714, 5716, 5720, 5724	\kv@parse 5710	\large 582	\leftleftharpoons 19135, 20500
\kv@parse@normalized . . . 3840, 3847	\kv@processor@default . . . 3843, 3850	\LargerOrEqual . . . 18036, 20830	\leftModels 19356, 20970
\kv@set@family@handler . . 3802	\kv@value . 3807, 5712, 5719, 5720	\lastnodetype 2256	\leftmoon 18708, 20336
\kvsetkeys . 2607, 2672, 2812, 3676, 3782, 4275, 4529, 4548, 4671, 5809, 8741, 11247, 12530, 12832, 12845, 12894, 12937, 12958, 13088, 13469		\lastskip . 2255, 2263, 2270, 2278, 2282, 2289	\leftpointright 18682, 20893
		\LaTeX . . 535, 537, 12341, 12342	\Leftrightarrow 17751, 20001
		\LaTeXe 536, 12342	\leftrightharpoon 19124, 20496
		\latfric 16116, 20714	\leftrightharpoons 17726, 19992
		\LayoutCheckField . 6187, 12790, 13394, 13775	\Leftscissors 18883, 20944
		\LayoutChoiceField . 6179, 12640, 13242, 13598	\leftslice 19293, 20565
		\LayoutPushButtonField . 6195, 12710, 12718, 13315, 13322, 13684, 13693	\leftspoon 19053, 20467
		\LayoutTextField . . 6171, 12584, 13187, 13540	\leftsquigarrow 17768, 20009
		\lbrackdbl 20468	\lefttherefore 17406, 19887
		\lccode . . 964, 1747, 1748, 1749, 1750, 1751, 1752, 1753, 1754, 1755, 1756, 1903, 6045, 8249, 8250, 14288, 14289, 14290, 14291, 14292, 14293, 14294, 14295, 14296, 14297, 14298	\leftthreetimes 18267, 20220
		\lcurvearrowdown . 19110, 20492	\LeftTorque 19117, 20953
		\lcurvearrowse . . . 19102, 20489	\Lefttorque 19118, 20954
		\lcurvearrowsw . . 19105, 20490	\leftVdash 19343, 20966
		\ldots 528	\leftvdash 18188, 20843
		\le 18028, 20120	\legacy . . 6915, 6917, 6932, 6937, 6939
		\leadsto 19096, 20487	\legm 16131, 20719
		\leavevmode 636, 2207, 4249, 4279, 4319, 5085, 5117, 5192, 6351, 7429, 7590, 8561, 8962, 9030, 9065, 9099, 9358, 9446, 9526, 9563, 9603, 9954, 9996, 10036, 10069, 10302, 10311, 10365, 10524, 10549, 10579, 10612, 10984, 11311, 11564, 11591, 11622, 11984, 12266, 12585, 12711, 12719, 12758, 12791, 13188, 13274, 13296, 13316,	\leq 18028, 20119
			\leqclosed 18239, 20859
			\leqq 18037, 20123
			\leqslant 19258, 20549
			\lessapprox 19266, 20553
			\lessclosed 18233, 20857
			\lessdot 18297, 20233
			\lesseqgtr 18306, 20237
			\lesseqqgtr 19284, 20561
			\lessgtr 18078, 20142
			\LessOrEqual 18031, 20829
			\lesssim 18068, 20138
			\Letter 18896, 20945

L

\L 14835, 15662
\l 6914, 6936, 14848, 15664
\labdentalnas 16134, 20720
\label 627, 8030
\label@C@hyperref . . . 5000, 5002
\label@hook 5360
\label@hyperdef 4985, 5016
\label@hyperref 4965, 4999
\label@name . . 5325, 5335, 5361
\labelsep 7865
\labelwidth 7864

<code>\LHD</code>	18632, 20308	<code>\LT@start</code>	7195, 7205	<code>\mathunderscore</code> .	15292, 20647
<code>\lhd</code>	18231, 20206	<code>\ltimes</code>	18262, 20218	<code>\mathversion</code>	587
<code>\lhooknwarrow</code> . .	19088, 20483	<code>\lz</code>	16123, 20716	<code>\maxdimen</code>	3437, 12981
<code>\lhooksearrow</code> . . .	19092, 20485			<code>\MaybeStopEarly</code>	461, 2675, 2770, 4373, 4504, 6825, 6828
<code>\Libra</code>	18765, 20924	M		<code>\mbox</code>	637, 8916, 9921
<code>\libra</code>	18763, 20352	<code>\m@ne</code>	4333, 4466, 4502, 4516, 4519, 4841, 4900, 5398, 7280, 9949, 14532, 14621, 14634	<code>\mdseries</code>	570
<code>\Lightning</code>	17675, 20799	<code>\mag</code>	9326, 10262, 10406, 11720	<code>\meaning</code>	62, 153, 159, 2183, 6426, 7101, 7285, 14496, 14504, 14519
<code>\lightning</code>	17673, 19973	<code>\make@df@tag@@</code>	8173, 8175	<code>\measuredangle</code> . .	17858, 20048
<code>\limits</code>	4805	<code>\make@df@tag@@@</code>	8174, 8176	<code>\measuring@false</code>	6956
<code>\linferior</code>	19926	<code>\make@stripped@name</code> . .	7278	<code>\mediaheight</code>	10409, 10414, 10423
<code>\literalps@out</code>	2205, 10907, 10912, 10964, 10970, 10996, 11002, 11258, 11274, 11308, 11309, 11337, 11339, 11351, 11353, 11651, 11748, 11757, 11815, 11828, 11909, 12033, 12193	<code>\makeatletter</code>	3, 851, 907	<code>\mediawidth</code>	10410, 10415, 10424
<code>\ll</code>	18049, 20129	<code>\MakeButtonField</code>	6202, 12712, 12721, 12743, 12763, 12769, 13317, 13327, 13352, 13369, 13376, 13686, 13689, 13717, 13742, 13746	<code>\meem</code>	19685
<code>\llap</code>	5090	<code>\MakeCheckField</code>	6199, 12793, 13399, 13772	<code>\Mercury</code>	18714, 20903
<code>\llbracket</code>	19057, 20949	<code>\MakeChoiceField</code>	6201, 12693, 13300, 13660	<code>\mercury</code>	18712, 20338
<code>\llcorner</code>	18380, 20269	<code>\MakeFieldObject</code>	12976, 13123, 13133, 13136	<code>\merge</code>	19245, 20965
<code>\Lleftarrow</code>	17764, 20007	<code>\MakeLinkTarget</code>	7320, 7336	<code>\MessageBreak</code>	258, 264, 281, 282, 287, 288, 330, 331, 1651, 1672, 1685, 1708, 1713, 1715, 2360, 2361, 2376, 2398, 2401, 2403, 2481, 2482, 2505, 2506, 2554, 2555, 2556, 2591, 2592, 2612, 2664, 2690, 2706, 2741, 2780, 2787, 2798, 2804, 2828, 2837, 2842, 2862, 2878, 2916, 3375, 3498, 3499, 3559, 3560, 3578, 3579, 3673, 3762, 3817, 3818, 3938, 3939, 3974, 3975, 3976, 4070, 4071, 4072, 4093, 4095, 4103, 4104, 4111, 4161, 4413, 4414, 4422, 4423, 4439, 4440, 4455, 4456, 4470, 4471, 4479, 4480, 4674, 4894, 4895, 4919, 4920, 4936, 4937, 5437, 5442, 5451, 5494, 5540, 5664, 5777, 5849, 5860, 5892, 5893, 5912, 6004, 6005, 6006, 6007, 6499, 6732, 6747, 6748, 8034, 8064, 8065, 8066, 8067, 8068, 8751, 8769, 8789, 8791, 8797, 8799, 8802, 8810, 8966, 9959, 10500, 10583, 10871, 10877, 11091, 12990, 12992, 14236, 14254, 14366
<code>\lll</code>	18301, 20235	<code>\MakeLowercase</code>	599	<code>\MF</code>	545, 12344
<code>\llparenthesis</code>	19166, 20511	<code>\MakeLowercaseUnsupportedInPdfStrings</code>	478, 599		
<code>\lnapprox</code>	19279, 20559	<code>\MakeRadioField</code>	6198, 12676, 13286, 13626		
<code>\lneq</code>	19274, 20557	<code>\maketag@@@</code>	8162		
<code>\lneqq</code>	18045, 20127	<code>\MakeTextField</code>	6200, 12587, 13192, 13537		
<code>\lnsim</code>	18333, 20249	<code>\maketitle</code>	7539, 7540		
<code>\Longleftarrow</code>	19072, 20475	<code>\MakeUppercase</code>	598, 8497		
<code>\longleftarrow</code>	19066, 20472	<code>\MakeUppercaseUnsupportedInPdfStrings</code>	478, 598		
<code>\Longleftrightarrow</code> . .	19076, 20477	<code>\Male</code>	18729, 20912		
<code>\longleftrightarrow</code> . .	19070, 20474	<code>\male</code>	18725, 20340		
<code>\longlegr</code>	19814	<code>\MaleMale</code>	18846, 20377		
<code>\Longmapsfrom</code>	19080, 20479	<code>\ManFace</code>	19443, 20622		
<code>\Longmapsto</code>	19082, 20480	<code>\manstar</code>	18840, 20374		
<code>\longmapsto</code>	19078, 20478	<code>\mapsto</code>	17661, 19967		
<code>\Longrightarrow</code>	19074, 20476	<code>\Mars</code>	18728, 20911		
<code>\longrightarrow</code>	19068, 20473	<code>\mars</code>	18727, 20910		
<code>\looparrowleft</code>	17667, 19970	<code>\MathBSuppress</code>	10312, 10316		
<code>\looparrowright</code>	17669, 19971	<code>\mathclose</code>	7226		
<code>\lower</code>	5092, 9453, 9533, 9570, 9610, 11339, 11991, 12273	<code>\mathdollar</code>	15234, 20643		
<code>\lowercase</code>	965, 1757, 1904, 2338, 2894, 2924, 3749, 3785, 5383, 5384, 5387, 5392, 5416, 5426, 5480, 5536, 5856, 5930, 5933, 6046, 8251, 11034, 14299	<code>\mathellipsis</code>	17377, 20777		
<code>\lozenge</code>	18637, 20310	<code>\mathopen</code>	7217, 7246		
<code>\lrcorner</code>	18382, 20270	<code>\mathparagraph</code>	15357, 20654		
<code>\LT@array</code>	7178	<code>\mathsection</code>	15324, 20652		
<code>\LT@foot</code>	7193, 7197	<code>\mathsterling</code>	15313, 20649		
<code>\LT@p@ftn</code>	7461, 7464, 7468, 7478				
<code>\LT@p@ftntext</code>	7459, 7466				

<code>\mho</code>	19938	<code>\napproxeq</code>	17953, 20087	<code>\newdimen</code>	459, 4395, 4396, 5073, 5816, 5817
<code>\mid</code>	17865, 20050	<code>\nasb</code>	19697	<code>\NewDocumentCommand</code>	2306, 8560
<code>\MineSign</code>	18825, 20367	<code>\nasymp</code>	17966, 20093	<code>\NewExpandableDocumentCommand</code>	2315
<code>\inferior</code>	19927	<code>\natural</code>	18813, 20362	<code>\NewHook</code>	7064
<code>\minusdot</code>	19221, 20534	<code>\nbackcong</code>	17962, 20091	<code>\newif</code>	364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 411, 412, 413, 926, 2608, 2640, 3801, 4586, 4915, 5390, 5478, 5811, 5812, 5832, 5875, 6890, 6891, 6956, 7232, 10291, 11239
<code>\minusinferior</code>	19915	<code>\nbacksim</code>	17926, 20075	<code>\newlabel</code>	2186, 5026, 6379, 6380, 6387, 6398
<code>\minussuperior</code>	19899	<code>\nbacksimeq</code>	18273, 20223	<code>\newlabelxx</code>	6381, 6382
<code>\models</code>	18205, 20848	<code>\nBumpeq</code>	17971, 20095	<code>\newlength</code>	14568
<code>\moo</code>	20510	<code>\nbumpeq</code>	17975, 20097	<code>\newline</code>	533, 6447
<code>\Moon</code>	19441, 20621	<code>\ncirceq</code>	18007, 20111	<code>\newname</code>	7281, 7290
<code>\MoonPha</code>	2083, 2088, 2091, 2097, 20642	<code>\ncong</code>	17944, 20083	<code>\newsavebox</code>	9757, 11287
<code>\Mountain</code>	18872, 20385	<code>\ncurlyeqprec</code>	18313, 20240	<code>\NewSocket</code>	2229
<code>\MoveDown</code>	18622, 20883	<code>\ncurlyeqsucc</code>	18317, 20242	<code>\NewSocketPlug</code>	6897, 6903, 6911, 7138
<code>\MoveUp</code>	18607, 20880	<code>\nDashV</code>	19357, 20594	<code>\newtie</code>	14725, 14726, 15123, 15174, 15203, 15221
<code>\MP</code>	546, 12345	<code>\nDashv</code>	19350, 20592	<code>\newtoks</code>	90, 5903, 11109, 11362, 11363
<code>\mp</code>	17833, 20037	<code>\ndashV</code>	19344, 20590	<code>\newwrite</code>	14459, 14538
<code>\mu</code>	19851	<code>\ndashv</code>	18189, 20192	<code>\nexists</code>	17802, 20024
<code>\mugreek</code>	19852	<code>\nDoteq</code>	17985, 20101	<code>\next</code>	7859, 7860, 7861, 10727, 10729, 10731
<code>\multimap</code>	18249, 20212	<code>\ndoteq</code>	17979, 20099	<code>\nfallingdoteq</code>	20103
<code>\multimapboth</code>	19204, 20526	<code>\ndownmodels</code>	19362, 20596	<code>\nfallingdotseq</code>	17990
<code>\multimapdotbothA</code>	18245, 20210	<code>\ndownvdash</code>	18195, 20194	<code>\nfss@text</code>	8419, 8439, 8456, 8588
<code>\multimapdotbothB</code>	18247, 20211	<code>\ne</code>	18017, 20116	<code>\NG</code>	15680
<code>\MultiplicationDot</code>	15360, 20655	<code>\Narrow</code>	17758, 20004	<code>\ng</code>	15682, 15683, 15684, 20666, 20667
<code>\multiply</code>	10764, 10793	<code>\nearrow</code>	17632, 19954	<code>\ngeq</code>	18066, 20137
<code>\Mundus</code>	19439, 20620	<code>\neg</code>	20633	<code>\ngeqq</code>	18043, 20126
<code>\MVArrowDown</code>	17624, 20795	<code>\Neptune</code>	18741, 20916	<code>\ngeqslang</code>	19264
<code>\MVAt</code>	15284, 19783	<code>\neptune</code>	18739, 20344	<code>\ngeqslant</code>	20552
<code>\MVComma</code>	15252, 19769	<code>\neq</code>	18017, 20115	<code>\ngg</code>	18055, 20132
<code>\MVDivision</code>	15258, 19772	<code>\neqcirc</code>	18003, 20109	<code>\ngtr</code>	18061, 20135
<code>\MVEight</code>	15276, 19781	<code>\neqdot</code>	19254, 20547	<code>\ngtrapprox</code>	19272, 20556
<code>\MVFive</code>	15270, 19778	<code>\neqsim</code>	17935, 20079	<code>\ngtrclosed</code>	18346, 20871
<code>\MVFour</code>	15268, 19777	<code>\nequal</code>	18020, 20825	<code>\ngtrless</code>	18082, 20144
<code>\MVMinus</code>	15254, 19770	<code>\nequiv</code>	18024, 20118	<code>\ngtrsim</code>	18076, 20141
<code>\MVMultiplication</code>	15428, 20658	<code>\neswarrow</code>	19086, 20482		
<code>\MVNine</code>	15278, 19782	<code>\netscape</code>	9489		
<code>\MVOne</code>	15262, 19774	<code>\Neural</code>	18852		
<code>\MVPeriod</code>	15256, 19771	<code>\Neutral</code>	20380		
<code>\MVPlus</code>	15250, 19768	<code>\new@ifnextchar</code>	660		
<code>\MVRightArrow</code>	17620, 20793	<code>\new@pdfink</code>	8941, 8995, 8998		
<code>\MVRightarrow</code>	17621, 20794	<code>\new@refstepcounter</code>	7208, 7220		
<code>\MVSeven</code>	15274, 19780	<code>\newblock</code>	7869		
<code>\MVSix</code>	15272, 19779	<code>\newcommand</code>	4, 9, 42, 2206, 5077, 5083, 5115, 5320, 5343, 6355, 6359, 6958, 7308, 7315, 7662, 8195, 14336, 14339, 14344, 19767, 20639		
<code>\MVThree</code>	15266, 19776	<code>\newcount</code>	462, 463, 2211, 2633, 4885, 5815, 6510, 12536, 12688, 13146, 13293, 13500, 13656, 14371		
<code>\MVTwo</code>	15264, 19775	<code>\newcounter</code>	6871, 7355, 7358, 9827, 14286		
<code>\MVZero</code>	15260, 19773				
N					
<code>\nabla</code>	17809, 20027				
<code>\name@of@eq</code>	6889				
<code>\nameref</code>	634				
<code>\napprox</code>	17948, 20085				

<code>\nhateq</code>	18013, 20113	7471, 7472, 7474, 7601,	<code>\nrightmodels</code> . . .	18223, 20853
<code>\ni</code>	17817, 20031	7692, 7769, 7784, 7801,	<code>\nrightVdash</code>	18227, 20855
<code>\NibRight</code>	18908, 20399	7932, 8087, 8186, 8188,	<code>\nrightvdash</code>	18220, 20852
<code>\NibSolidRight</code> . .	18910, 20400	8473, 8474, 8604, 8605,	<code>\nrisingdoteq</code>	17995, 20105
<code>\niepsilon</code>	16056, 19802	8610, 8612, 8617, 8618,	<code>\nsim</code>	17931, 20077
<code>\niota</code>	16105, 19810	8623, 8624, 9694, 11176,	<code>\nsimeq</code>	17939, 20081
<code>\nineinferior</code>	19913	11243, 11825, 12083, 12615,	<code>\nqssubset</code>	18132, 20169
<code>\ninesuperior</code>	19897	12616, 12617, 12618, 13216,	<code>\nqsubseteq</code> 18140,	18323, 20173
<code>\ninferior</code>	19928	13217, 13218, 13219, 13572,	<code>\nqsupset</code>	18136, 20171
<code>\niphy</code>	16158, 19813	13573, 13574, 13575, 13850	<code>\nqsupseteq</code> 18144,	18325, 20175
<code>\niupsilon</code>	16216, 19819	<code>\noexpandQ</code>	<code>\nSubset</code>	18283, 20227
<code>\nj</code>	16138, 20722	1557	<code>\nsubset</code>	18110, 20158
<code>\nLeftarrow</code>	17732, 19994	<code>\nofrenchguillemets</code> . . .	<code>\nsubseteq</code>	18118, 20162
<code>\nleftarrow</code>	17640, 19957	667, 669	<code>\nsubseteqq</code>	19335, 20586
<code>\nleftModels</code>	19359, 20971	<code>\NoHyper</code>	<code>\nsucc</code>	18104, 20155
<code>\nleftmodels</code>	19352, 20969	6307	<code>\nsuccapprox</code>	19327, 20582
<code>\nLefttrightharpoon</code> .	17734, 19995	<code>\nohyperpage</code> 6350, <u>8361</u> ,	<code>\nsucccurlyeq</code> . . .	18321, 20244
<code>\nleftrightharpoon</code> .	17671, 19972	8363,	<code>\nsucceq</code>	19303, 20570
<code>\nleftVdash</code>	19346, 20967	8365	<code>\nsucceq</code>	19315, 20576
<code>\nleftvdash</code>	18191, 20844	<code>\nolinkurl</code>	<code>\nsuccsim</code>	18100, 20153
<code>\nleq</code>	18064, 20136	4951	<code>\nsuperior</code>	19903
<code>\nleqq</code>	18039, 20124	<code>\nolinkurl@</code>	<code>\nSupset</code>	18287, 20229
<code>\nleqslant</code>	19260, 20550	4951, 4952	<code>\nsupset</code>	18112, 20159
<code>\nless</code>	18059, 20134	<code>\NomFancyVerbLineautorefname</code>	<code>\nsupseteq</code>	18120, 20163
<code>\nlessapprox</code>	19268, 20554	. . . . .	<code>\nsupseteqq</code> . . . .	19339, 20588
<code>\nlessclosed</code>	18343, 20870	3105	<code>\nthickapprox</code> . . .	17950, 20819
<code>\nlessgtr</code>	18084, 20145	<code>\Nomfootnoteautorefname</code> 3085	<code>\ntriangleleft</code>	18341, 20253
<code>\nlesssim</code>	18074, 20140	<code>\Nomtheoremautorefname</code> 3109	<code>\ntrianglelefteq</code> . .	18348, 20255
<code>\nll</code>	18051, 20130	<code>\nonumber</code>	<code>\ntriangleright</code> . . .	18344, 20254
<code>\nmid</code>	17867, 20051	7259, 7262	<code>\ntrianglerighteq</code> . .	18351, 20256
<code>\nmodels</code>	18224, 20854	<code>\normalbaselineskip</code> . 6220, 6221,	<code>\ntriplesim</code>	17958, 20089
<code>\noboundary</code>	531	6222, 6223, 6224, 6225	<code>\ntwoheadleftarrow</code> 17646,	19960
<code>\nobreak</code> 2259, 2268, 2279, 2287,		<code>\normalfont</code>	<code>\ntwoheadrightarrow</code> . . .	17653,
7430, 7591		565		19963
<code>\nobreakspace</code> . 648, 8554, 8557		<code>\normalsize</code> . . . 583, 7637, 7710	<code>\nu</code>	19853
<code>\NoChemicalCleaning</code> . . 19184,		<code>\notasymp</code>	<code>\null</code> . . . 7850, 7858, 8461, 8584	
20517		17968, 20821	<code>\number</code> 1137, 1139, 1166, 1167,	
<code>\noexpand</code>		<code>\notbackslash</code> . . . 18404, 20279	1857, 1922, 1923, 1924,	
. 22, 93, 95, 108, 116, 169,		<code>\NotCongruent</code> . . 18026, 20827	1925, 1929, 1930, 1931,	
171, 172, 173, 176, 206, 915,		<code>\notdivides</code> 17869, 20810	1932, 1933, 1937, 1938,	
978, 1411, 1428, 1530, 1557,		<code>\note</code>	1939, 1940, 1941, 1942,	
1918, 2266, 2267, 2268,		7971	1943, 1947, 1948, 1949,	
2271, 2285, 2286, 2287,		<code>\notequiv</code>	1950, 1951, 1952, 1955,	
2290, 3285, 3287, 3289,		18027, 20828	1957, 1961, 1962, 1964,	
3290, 3291, 3293, 3311,		<code>\notin</code>	1966, 1968, 1971, 1975,	
3508, 3509, 3511, 3873,		17813, 20029	1976, 1977, 1978, 1987,	
4335, 4339, 4340, 4529,		<code>\notni</code>	1988, 1992, 1993, 2000,	
4799, 4973, 5287, 5289,		17822, 20805	2001, 2005, 2008, 2009,	
5315, 5446, 5991, 6623,		<code>\notowner</code>	2010, 2020, 2022, 2023,	
6624, 6633, 6635, 6638,		17820, 20032	2028, 2030, 2031, 2036,	
6770, 6979, 6980, 6997,		<code>\notperp</code>	2037, 4588, 4605, 5404,	
7146, 7147, 7148, 7149,		19047, 20464	7027, 7030, 7078, 7079,	
7150, 7158, 7159, 7160,		<code>\notslash</code>	7082, 7086, 8822, 8825,	
7284, 7452, 7462, 7470,		18401, 20278	8826, 9517, 9535, 9536,	
		<code>\noway</code>		
		18870, 20384		
		<code>\nparallel</code>		
		17872, 20053		
		<code>\nperp</code>		
		18202, 20847		
		<code>\nprec</code>		
		18102, 20154		
		<code>\nprecapprox</code>		
		19323, 20580		
		<code>\npreccurlyeq</code> . . .		
		18319, 20243		
		<code>\npreceq</code>		
		19299, 20568		
		<code>\npreceqq</code>		
		19311, 20574		
		<code>\nprecsim</code>		
		18096, 20151		
		<code>\nqsubseteq</code>		
		20245		
		<code>\nqsupseteq</code>		
		20246		
		<code>\NR@getttitle</code>		
		7627		
		<code>\NR@ref@showkeys</code> . 4714, 4718,		
		4722, 4726		
		<code>\nRightarrow</code>		
		17737, 19996		
		<code>\nrightarrow</code>		
		17642, 19958		
		<code>\nrightModels</code> . . .		
		18230, 20856		

9551, 9552, 9572, 9573,
9589, 9590, 9612, 9613,
9629, 9630
\numberline . 7630, 7703, 14259,
14264
\numberwithin 8192
\numexpr 1929, 1930, 1931, 1933,
1939, 1947, 1948, 1949,
1950, 1951, 1952, 1956,
1958, 1962, 1964, 1966,
1968, 1972, 1975, 1976,
1978, 1987, 1992, 2009,
2023, 2031, 2037, 2629,
2630, 3891
\nun 19687
\nupmodels 19366, 20598
\nupvdash 18200, 20196
\nVDash 18228, 20205
\nVdash 18225, 20204
\nvDash 18221, 20203
\nvdash 18218, 20202
\nVvash 18212, 20200
\Nwarrow 17756, 20003
\nwarrow 17630, 19953
\nwsearrow 19084, 20481

O

\O 14970, 15430, 15912
\o 15039, 15500, 15915
\oasterisk 18172, 20841
\obackslash 19178, 20957
\obar 19172, 20514
\obeylines 11824
\OBJ@acroform . . 13119, 13120
\OBJ@Helv 13094, 13107, 13459
\OBJ@OCG@print . . 8859, 8862,
8870, 8897, 9845, 9847,
9860, 9864, 9873, 9902
\OBJ@OCG@view
. . 8844, 8862, 8896, 9829,
9831, 9844, 9864, 9901
\OBJ@OCGs
. . 8865, 8868, 8874, 8879,
8884, 9861, 9863, 9867,
9871, 9877, 9882, 9887
\OBJ@pdfdocencoding . 13092,
13440, 13456
\OBJ@ZaDb 13093, 13106, 13449
\obot 19181, 20516
\obslash 19175, 20515
\ocirc 18167, 20838
\OCIRCUMFLEX 19497, 19595,
19596, 19597, 19598, 19599

\ocircumflex 19491, 19535,
19536, 19537, 19538, 19539
\oddsidemargin 8011
\odiv 19229, 20537
\odot 18162, 20182
\odplus 19183, 20959
\OE 14837, 15698
\oe 14850, 15700
\offinterlineskip 6474
\ogreaterthan . . . 19189, 20519
\OHORN . 19498, 19600, 19601,
19602, 19603, 19604
\ohorn 3150, 3157, 19492, 19540,
19541, 19542, 19543, 19544
\oiint 17899, 20064
\oinferior 19921
\oint 17896, 20063
\ointclockwise . . . 17902, 20065
\ointctrclockwise . 17904, 20066
\oldb 801
\oldc 802
\oldd 803
\oldnewlabel . . 6379, 6384, 6387
\olessthan 19186, 20518
\OMEGA 12340
\Omega 19839
\omega 19864
\ominus 18153, 20179
\on@line 8061, 8062
\oneinferior 19905
\onesuperior 19787
\oo 19405, 20607
\openbullet 20313
\openo 16032, 19798
\openout 14461, 14540
\oplus 18150, 20178
\OpMode 2649, 2765, 2768, 2781,
2794, 2799, 4466, 4502,
4516, 4519, 10810, 10915,
11761
\or 325, 984, 985, 986,
987, 988, 989, 990, 991, 992,
993, 994, 995, 996, 997, 998,
999, 1000, 1001, 1002, 1003,
1004, 1005, 1006, 1007,
1008, 1009, 1010, 1011,
1012, 1013, 1014, 1015,
1033, 1055, 1058, 1064,
1065, 1066, 1067, 1068,
1069, 1070, 1071, 1072,
1073, 1074, 1075, 1076,
1077, 1078, 1079, 1080,
1081, 1082, 1083, 1084,
1085, 1086, 1087, 1088,

1089, 1090, 1091, 1092,
1093, 1094, 1095, 1100,
1101, 1102, 1103, 1104,
1105, 1106, 1107, 1108,
1109, 1110, 1111, 1112,
1113, 1114, 1115, 1116,
1117, 1118, 1119, 1120,
1121, 1122, 1123, 1124,
1125, 1126, 1127, 1128,
1129, 1130, 1131, 1144,
1145, 1146, 1147, 1148,
1260, 1261, 1262, 2082,
2085, 2087, 2090, 5564,
5570, 5575, 5789, 7047,
7048, 7049, 7050, 7056,
7057, 7058, 7059, 8094,
8098, 10803, 14379, 14380,
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

\OrnamentDiamondSolid . 19037
\oslash 18159, 20181
\otimes 18156, 20180
\ovee 17882, 20057
\overlay 7968
\owedge 17877, 20055
\owns 17819, 20804

P

\P 527
\p@ 1988, 1993, 5818, 5824, 9462,
9546, 9584, 9624, 10763,
12000, 12287, 12611, 13212,
13568
\p@equation 8169
\PackageError 61, 241
\PackageInfo . . . 244, 245, 8819,
12988
\PackageWarning . . 242, 2611,
3973, 5775
\PackageWarningNoLine . . 243
\pageautorefname . . 2963, 2981,
2999, 3017, 3035, 3053,
3071, 3111, 3129, 3147,
3165, 3183, 3201, 3219,
3237, 3255, 8557, 8670
\pagename 8554
\pageref . . 633, 4383, 8543, 8547

<code>\paperheight</code> . 4154, 9311, 9313, 9316, 9318, 9333, 9335, 9342, 9344, 10268, 10269, 10276, 10277, 10413, 10414, 10422, 10423, 11726, 11727, 11734, 11735	<code>\pdf@box</code> . 11287, 11319, 11327, 11335, 11336, 11339, 11343, 11345, 11348	<code>\PDFForm@Push</code> . 12720, 12724, 13325, 13326, 13695, 13699, 14001
<code>\paperwidth</code> . 9307, 9309, 9320, 9322, 9332, 9334, 9341, 9343, 10267, 10269, 10275, 10277, 10412, 10415, 10421, 10424, 11725, 11727, 11733, 11735	<code>\pdf@defaulttoks</code> . 11243, 11363, 11364, 11374	<code>\PDFForm@Radio</code> 12672, 12680, 13276, 13278, 13634, 13646, 14065
<code>\par</code> 7629, 7658, 7701, 7711, 7852, 7872	<code>\pdf@docset</code> 11109	<code>\PDFForm@Reset</code> 12767, 12772, 13374, 13375, 13747, 13752, 14170
<code>\paragraphautorefname</code> 2959, 2977, 2995, 3013, 3031, 3049, 3067, 3100, 3102, 3125, 3143, 3161, 3179, 3197, 3215, 3233, 3251, 8666	<code>\pdf@endanchor</code> 8954, 8995, 9002	<code>\PDFForm@Submit</code> 12741, 12746, 13346, 13348, 13719, 13724, 14136
<code>\parallel</code> 17870, 20052	<code>\pdf@escapestring</code> 8725	<code>\PDFForm@Text</code> . 12586, 12590, 13190, 13191, 13542, 13545, 14100
<code>\parenleftinferior</code> 19917	<code>\PDF@FinishDoc</code> . . . 2678, 2679, 2773, 2774, 4148, 4251, 4376, 4377, 4507, 4508, 6349, 6491, 6492, 9197, 9386, 9641, 10127, 10292, 10881, 11110, 12037, 12208	<code>\pdfhorigin</code> 9303
<code>\parenleftsuperior</code> 19901	<code>\pdf@ciddraftmode</code> . . 6667, 8829, 9198, 9286, 13089, 14468	<code>\pdfinfo</code> 9201
<code>\parenrightinferior</code> 19918	<code>\pdf@linktype</code> . . . 11267, 11271, 11379, 11380	<code>\pdflastannot</code> 8776
<code>\parenrightsuperior</code> 19902	<code>\pdf@objdef</code> 11246, 11260, 11262, 11276, 11278, 11382, 11383	<code>\pdflastlink</code> . 8779, 13055, 13068
<code>\parr</code> 17579, 20792	<code>\pdf@rect</code> . 11254, 11273, 11291	<code>\pdflastmatch</code> 4063
<code>\partautorefname</code> . . 2953, 2971, 2989, 3007, 3025, 3043, 3061, 3091, 3119, 3137, 3155, 3173, 3191, 3209, 3227, 3245, 8660	<code>\PDF@SetupDoc</code> . . . 4147, 4250, 6278, 6279, 6348, 9128, 9387, 9674, 10169, 10293, 10818, 11163, 11921, 12070, 12209	<code>\pdflastobj</code> . . 8773, 8844, 8859, 8865, 13119, 13440, 13449, 13459
<code>\partial</code> 17798, 20022	<code>\PDF@SetupDox</code> 9128	<code>\pdflastxform</code> 8774, 12979, 12981
<code>\partnumberline</code> . 14261, 14266	<code>\pdf@toks</code> 11243, 11264, 11280, 11362, 11366, 11370	<code>\pdflastximage</code> 8775
<code>\PassOptionsToPackage</code> 2687, 2699, 2702, 2714, 2725, 2754, 2813, 2819, 2850, 2905, 2909, 2931, 4189, 4202, 4213, 4549	<code>\pdf@type</code> 11245, 11250, 11264, 11280, 11357, 11377	<code>\pdflinkmargin</code> 8937, 8939
<code>\patchcmd</code> 7349	<code>\pdfbookmark</code> 2206, 6354, 6355, 14337, 14342, 14347, 14351	<code>\pdfliteral</code> 8917, 8919, 8924
<code>\pdf@addtoks</code> . . . 11365, 11387, 11393, 11402, 11409, 11413, 11415, 11417, 11419, 11421, 11429, 11438, 11442, 11444, 11446, 11449, 11458, 11462, 11464, 11466, 11468, 11470, 11472, 11474, 11476, 11478, 11480, 11482, 11484, 11486, 11488, 11490, 11492, 11493, 11494, 11495, 11496, 11497, 11498, 11499, 11500, 11501, 11502, 11507	<code>\pdfcatalog</code> . . 6670, 8866, 9143, 9185, 13120	<code>\pdfm@box</code> 9757, 13496, 13497, 13498, 13536, 13548, 13625, 13650, 13659, 13670, 13689, 13702, 13717, 13726, 13746, 13754, 13771, 13783
<code>\pdf@addtoksxx</code> . . 11359, 11369, 11385	<code>\PDFdefaults</code> 11373	<code>\pdfmajorversion</code> . . . 2633, 2634, 2637, 2638
	<code>\pdfdest</code> 8956	<code>\pdfmark</code> 6788, 9694, 9703, 9733, 10951, 10971, 11010, 11045, 11062, 11096, 11133, 11145, 11176, 11185, 11216, 11240, 11516, 11531, 11546, 11558, 11565, 11592, 11623, 12083, 12092, 12123, 12546, 12555, 12587, 12676, 12693, 12721, 12743, 12769, 12793, 14500
	<code>\pdfendlink</code> 8992, 13192, 13286, 13301, 13328, 13353, 13377, 13400	<code>\pdfmark@</code> 11240, 11241
	<code>\pdfescapestring</code> 13879	<code>\pdfmatch</code> 322
	<code>\pdfextension</code> . 2697, 4404, 4493	<code>\pdfminorversion</code> 8738
	<code>\PDFForm@@@Name</code> 13887, 13890, 13894, 13897	<code>\PDFNextPage</code> 11529
	<code>\PDFForm@Check</code> 12792, 12796, 13397, 13398, 13777, 13781, 13970	<code>\PDFNextPage@</code> . 11529, 11530
	<code>\PDFForm@List</code> . 12691, 12696, 13298, 13299, 13663, 13668, 14031	<code>\pdfobj</code> 8830, 8845, 8860, 13097, 13406, 13441, 13450
	<code>\PDF</code>	

\pdfpageattr	\pinferior	\protected@write . . .
.. 9242, 9246, 9247, 9257,	\Pisces	5332, 7837, 8289, 8304,
9266, 9270, 9271, 9281	\pisces	8319, 8323, 8333, 14275
\pdfpageheight 9313, 9322, 9330,	\pitchfork	\protected@xdef . . .
9335, 9344	\planck	\providecommand
\pdfpageref . . . . .	\Plane . . . . .	... 478, 2230, 4491, 4813,
\pdfpageresources .. 8893, 8894	\Plus	4956, 5319, 5378, 5380,
\pdfpagesattr . 9132, 9134, 9136	\PlusCenterOpen . 18929, 20409	6375, 6649, 6674, 6806,
\pdfpagewidth 9309, 9318, 9329,	\plusinferior	6847, 6849, 6851, 6854,
9334, 9343	\PlusOutline	6855, 6856, 6858, 6859,
\PDFPreviousPage	\plussuperior	6860, 6861, 6863, 6864,
\PDFPreviousPage@ . . .	\PlusThinCenterOpen .. 18927,	6865, 6866, 6867, 6868,
11545	20408	6881, 6882, 6883, 6884,
\pdfrefobj . 13092, 13093, 13094	\Pluto	6885, 6886, 7276, 7734,
\pdfrefxform	\pluto	7735, 7750, 8026, 8651,
\pdfstartlink . 8987, 9031, 9066,	\pm	8652, 8653, 8654, 8655,
9100, 9360, 13191, 13277,	\pointer	8656, 8657, 8658, 8659,
13299, 13326, 13347, 13375,	\PointingHand . . .	8660, 8661, 8662, 8663,
13398	\Pointinghand . . .	8664, 8665, 8666, 8667,
\pdfstrcmp	\pounds	8668, 8669, 8670, 8732,
\pdfstringdef	\Preamble	8940, 8958, 8959, 9385,
496,	\prec	9488, 9489, 9752, 9814,
787, 3699, 3705, 3711, 3717,	\precapprox	9815, 9816, 10289, 10405,
3722, 3727, 3733, 3740,	\preccurlyeq	10435, 10436, 10437, 10908,
3746, 3826, 5736, 5741,	\preceq	11288, 11289, 11649, 11657,
5767, 6452, 6559, 6561,	\preceqq	11658, 11659, 11660, 11755,
7954, 7991, 13904, 14269	\precnapprox	11767, 11768, 11769, 11770,
\pdfstringdefDisableCommands	\precneq	11822, 11863, 11864, 11865,
.. 800, 905, 6352, 6445	\precneqq	11866, 12029, 12031, 12032,
\pdfstringdefPostHook . 783, 899	\precsim	12144, 12145, 12200, 13034,
\pdfstringdefPreHook 644, 899,	\PrerenderUnicode	13037, 13843
911, 6444, 6456	\prime	\psdaliasnames .. 20639, 20982
\pdfstringdefWarn 532, 533, 638,	\process@me . 6424, 6436, 6437,	\psdmapshortnames . . .
914, 1419, 1424, 1443, 1447	9131, 9140	20638
\pdfTeXversion	\ProcessKeyvalOptions .. 4218	\Psi
\pdfxorigin	\prod	\psi
\pdfxform	\prop	\PushButton
\Peace	\propto	\put@me@back 5282, 5295, 5305
\peh	\propto	\pwedge
\penalty	\protect . 1531, 4970, 5004, 7630,	\pxfonts
\PencilRight	7703, 7769, 7784, 7801,	
\PencilRightDown 18902, 20396	7857, 7864, 7865, 8074,	Q
\PencilRightUp .. 18906, 20398	8128, 8350, 8418, 8438,	\Q
\pentagon	8444, 8455, 8469, 8587,	\qaf
\perp	9397, 9494, 10363, 10443,	\quaternote
\phantom	11932, 12219, 14276, 14570	\quotedblbase . . .
\phantomsection . . .	\protected 6363, 7259, 8079, 8080	17363, 19473
8036, 14205, 14256, 14637	\protected@edef	\quotesinglbase .. 14827, 15060,
\Phi . . . . .	.. 5135, 6525, 6619, 7282,	17357, 19475
\phi	7299, 7510, 7942, 7946,	R
\phiinferior	8963, 9956, 10497, 10580,	\r . 14692, 14704, 14716, 14931,
\Phone	11088	14997, 15109, 15154, 15183,
\PhoneHandset .. 18888, 20390	\protected@file@percent .. 8026,	15215, 15390, 15457, 15754,
\Pi	8074	15756, 17302, 17304
\pi		

<code>\ra</code>	19655	<code>\RewindToIndex</code> .	18434, 20291	<code>\rule</code>	7512
<code>\Radiation</code>	18687, 20896	<code>\RHD</code>	18618, 20303		
<code>\Radioactivity</code> . . .	18685, 20328	<code>\rhd</code>	18234, 20207		
<code>\raff</code>	19699	<code>\rho</code>	19856		
<code>\Rain</code>	18868, 20383	<code>\rho inferior</code>	19873		
<code>\raise</code>	2243, 5106, 9463, 9547, 9585, 9625, 11353, 12001, 12288	<code>\rho hooknearrow</code> . . .	19090, 20484		
<code>\rangle</code>	18392, 20275	<code>\rho hookrepsilon</code>	19804		
<code>\rbrackdbl</code>	20469	<code>\rho hookswarrow</code> . .	19094, 20486		
<code>\rcurvearrowdown</code>	19115, 20493	<code>\rightarrow</code>	17745, 19999		
<code>\rcurvearrowleft</code> . .	19119, 20494	<code>\rightarrowtail</code> . . .	17659, 19966		
<code>\rcurvearrowne</code> . .	19099, 20488	<code>\rightarrowtriangle</code>	17790, 20018		
<code>\rcurvearrowright</code>	19122, 20495	<code>\rightarrowbarharpoon</code> .	19153, 20506		
<code>\rcurvearrowse</code> . . .	19108, 20491	<code>\RIGHTCIRCLE</code> .	18641, 20312		
<code>\Re</code>	17541, 19937	<code>\rightarrow harpoon down</code>	17700, 19982		
<code>\ReadBookmarks</code>		<code>\rightarrow harpoon up</code>	17697, 19981		
..	4217, 4252, 4390, 4622, 4734, 4736, 14435, 14467	<code>\rightarrow leftarrows</code> .	17709, 19985		
<code>\real@setref</code>	8415, 8482	<code>\rightarrow leftharpoon</code> .	19126, 20497		
<code>\realfootnote</code>	7562	<code>\rightarrow leftharpoons</code>	17729, 19993		
<code>\Rectangle</code>	19041, 20461	<code>\rightModels</code>	18217, 20851		
<code>\RectangleBold</code> . .	19043, 20462	<code>\rightmodels</code>	18206, 20849		
<code>\RectangleThin</code> . .	19039, 20460	<code>\rightmoon</code>	18710, 20337		
<code>\recycle</code>	18817, 20364	<code>\rightarrow pointleft</code> . .	18679, 20892		
<code>\Recycling</code>	18819, 20936	<code>\rightarrow rightarrows</code> .	17721, 19990		
<code>\Ref</code>	8500, 8509, 8517	<code>\rightarrow rightharpoons</code>	19141, 20502		
<code>\ref</code> 632, 4382, 7527, 7534, 8526, 8534, 12311		<code>\RightScissors</code> . . .	18882, 20943		
<code>\ref@one</code>	4979, 4980	<code>\rightslice</code>	19295, 20566		
<code>\rEfLiNK</code>	12312, 12313	<code>\rightsquigarrow</code> .	17770, 20010		
<code>\refstepcounter</code> 6931, 6953, 7171, 7182, 7208, 7214, 7220, 7348, 7349, 7695		<code>\rightarrow threetimes</code> .	18269, 20221		
<code>\rem@ptetc</code>	11035, 11037	<code>\RightTorque</code> . . .	19112, 20951		
<code>\renewcommand</code> . . .	2177, 6961, 7331, 8210, 8506, 8513, 8522, 8531, 14351	<code>\Righttorque</code>	19113, 20952		
<code>\Request</code>	18422, 20286	<code>\rightVdash</code>	18209, 20850		
<code>\RequirePackage</code> . .	22, 232, 233, 234, 235, 236, 237, 238, 239, 240, 363, 929, 2673, 4195, 4211, 4688, 4740, 4948, 5381, 8790, 10290, 12205, 14361	<code>\rightarrow vdash</code>	18185, 20842		
<code>\RerunFileCheck</code>	14363	<code>\r inferior</code>	19868		
<code>\Reset</code>	6168	<code>\riota</code>	17554, 19939		
<code>\reset@font</code> . .	8419, 8439, 8456, 8588	<code>\risingdoteq</code>	20104		
<code>\reve</code>	16046, 19800	<code>\risingdotseq</code>	17993		
<code>\revert</code>	16259, 20752	<code>\rlap</code>	5103, 8918, 9923		
<code>\revertsilon</code>	16060, 19803	<code>\rm</code>	576		
<code>\revglotstop</code>	16257, 19827	<code>\rmfamily</code>	566		
<code>\Rewind</code>	18627, 20306	<code>\Roman</code>	6615		
		<code>\roman</code>	6616		
		<code>\romannumeral</code> 921, 922, 13102			
		<code>\rotm</code>	16127, 20718		
		<code>\rotOmega</code>	16218, 20740		
		<code>\rotr</code>	16163, 20728		
		<code>\rotvara</code>	16026, 20690		
		<code>\rotrw</code>	16229, 20744		
		<code>\roty</code>	16233, 20746		
		<code>\rrbracket</code>	19060, 20950		
		<code>\Rrightarrow</code>	17766, 20008		
		<code>\rrparenthesis</code> . . .	19168, 20512		
		<code>\rtaild</code>	19799		
		<code>\rtimes</code>	18265, 20219		
				S	
				<code>\S</code>	15325, 20653
				<code>\sad</code>	19663
				<code>\Sagittarius</code>	18771, 20926
				<code>\sagittarius</code>	18769, 20354
				<code>\Saturn</code>	18735, 20914
				<code>\saturn</code>	18733, 20342
				<code>\sbox</code>	3686, 5086, 5118, 6203, 9450, 9530, 9567, 9607, 11288, 11327, 11988, 12270, 12976
				<code>\scd</code>	16975, 19865
				<code>\scdefault</code>	4698
				<code>\scg</code>	16081, 19806
				<code>\schwa</code>	16049, 19801
				<code>\schwainferior</code>	19923
				<code>\sci</code>	16108, 19811
				<code>\ScissorHollowRight</code> . . .	18886, 20389
				<code>\ScissorRight</code>	18880, 20387
				<code>\ScissorRightBrokenBottom</code> . .	18876
				<code>\ScissorRightBrokenTop</code>	18884, 20388
				<code>\scn</code>	16144, 19812
				<code>\Scorpio</code>	18768, 20925
				<code>\scorpio</code>	18766, 20353
				<code>\scr</code>	16186, 19815
				<code>\scr@LT@array</code>	7181
				<code>\scripta</code>	16019, 19797
				<code>\scriptg</code>	16078, 19805
				<code>\scriptsize</code>	584
				<code>\scriptv</code>	16220, 19820
				<code>\scrollmode</code> . .	1469, 1478, 1491, 1598, 1731
				<code>\scshape</code>	572
				<code>\scu</code>	16993, 19866
				<code>\scy</code>	16234, 19824
				<code>\Searrow</code>	17760, 20005
				<code>\searrow</code>	17635, 19955
				<code>\Sech</code>	19435, 20618
				<code>\second</code>	17384, 19884
				<code>\sectionautorefname</code>	2956, 2974, 2992, 3010, 3028, 3046, 3064, 3093, 3122, 3140, 3158, 3176, 3194, 3212, 3230, 3248, 8663
				<code>\seen</code>	19659
				<code>\selectfont</code>	552, 4698, 13129
				<code>\SePa</code>	19421, 20612
				<code>\set@display@protect</code>	4324

<code>\setbox</code>	1534, 1540, 1546, 3420, 3426, 5090, 5103, 5963, 6473, 8908, 9896, 9913, 13536, 13625, 13659, 13689, 13717, 13746, 13771	<code>\slashc</code>	16010, 19796	<code>\stepcounter</code> .	6919, 6941, 7298, 7431, 7564, 14272
<code>\setcounter</code>	4891	<code>\slashdiv</code>	19382, 20605	<code>\stockheight</code> .	4154, 4396, 9328, 9330, 10264, 10265, 10408, 10409, 11722, 11723
<code>\setkeys</code>	4866, 4911	<code>\slide</code>	7965	<code>\stockwidth</code> . .	4395, 9327, 9329, 9340, 10263, 10265, 10274, 10407, 10410, 10420, 11721, 11723, 11732
<code>\setlength</code> 2240, 5074, 5975, 6757, 8935, 9303, 9304, 9309, 9313, 9318, 9322, 9329, 9330, 9334, 9335, 9343, 9344, 10409, 10410, 10414, 10415, 10423, 10424, 10763, 11747, 11814, 11908, 12192, 14590, 14658		<code>\SliTeX</code>	544	<code>\stop@hyper</code>	6321
<code>\setminus</code>	17841, 20041	<code>\slshape</code>	573	<code>\StringEncodingConvertTest</code>	763, 773
<code>\setpdfinkmargin</code> . .	3880, 3881, 6755, 8933, 11745, 11812, 11906, 12190	<code>\small</code>	585	<code>\strip@period</code>	2190
<code>\settowidth</code> 12608, 13209, 13565		<code>\smallin</code>	17815, 20030	<code>\strip@prefix</code> 62, 2183, 4063, 6426, 7101, 7285, 14496, 14504, 14519	
<code>\SetupKeyvalOptions</code>	2298, 4182	<code>\smallowns</code>	17823, 20033	<code>\strip@pt</code>	475, 4166, 5992, 6758, 9309, 9313, 9318, 9322, 10766, 11749, 11816, 11910, 12194, 13995, 14060, 14089, 14129, 14180
<code>\seveninferior</code>	19911	<code>\smash</code>	2237	<code>\strip@pt@and@otherjunk</code>	10970, 11002, 11037
<code>\sevensuperior</code>	19895	<code>\smile</code>	18386, 20272	<code>\strutbox</code>	7505
<code>\sffamily</code>	567	<code>\Smiley</code>	18702, 20901	<code>\sub@label</code>	2177
<code>\shadda</code>	19709	<code>\smiley</code>	18700, 20333	<code>\subeqnarray</code>	7265, 7267
<code>\sharp</code>	18815, 20363	<code>\Snowflake</code>	19007, 20447	<code>\subfig@oldlabel</code>	2179
<code>\sheen</code>	19661	<code>\SnowflakeChevron</code>	19005, 20446	<code>\Submit</code>	6165
<code>\ShipoutBox</code> .	6473, 6476, 9896, 9897	<code>\SnowflakeChevronBold</code> .	19009, 20448	<code>\SubmitObject</code>	13349
<code>\shortciteN</code>	7900	<code>\sofpasuq</code>	16908	<code>\SubmitPObject</code>	13349
<code>\shuffle</code>	19206, 20527	<code>\softsign</code>	16549, 20763	<code>\subparagraphautorefname</code>	2960, 2978, 2996, 3014, 3032, 3050, 3068, 3101, 3103, 3126, 3144, 3162, 3180, 3198, 3216, 3234, 3252, 8667
<code>\Sigma</code>	19835	<code>\spacefactor</code>	2213, 2219, 7430, 7439, 7591, 7593, 8943, 8951	<code>\subpdfbookmark</code>	14339
<code>\sigma</code>	19858	<code>\spadesuit</code> .	18781, 18783, 20930	<code>\subsection</code>	12025
<code>\sim</code>	17921, 20073	<code>\Sparkle</code>	19011, 20449	<code>\subsectionautorefname</code> . .	2957, 2975, 2993, 3011, 3029, 3047, 3065, 3098, 3123, 3141, 3159, 3177, 3195, 3213, 3231, 3249, 8664
<code>\simeq</code>	17937, 20080	<code>\SparkleBold</code>	19013, 20450	<code>\Subset</code>	18281, 20226
<code>\sinferior</code>	19930	<code>\special@paper</code>	4150	<code>\subset</code>	18106, 20156
<code>\SixFlowerAlternate</code> . . .	18993, 20440	<code>\SpecialDvipdfmxOutlineOpen</code> . 2731, 2733, 4590, 4597		<code>\subseteq</code>	18114, 20160
<code>\SixFlowerAltPetal</code>	19003, 20445	<code>\sphericalangle</code> . .	17860, 20049	<code>\subseteqq</code>	19333, 20585
<code>\SixFlowerOpenCenter</code> .	18989, 20438	<code>\splitmaxdepth</code>	7505	<code>\subsetneq</code>	18122, 20164
<code>\SixFlowerPetalRemoved</code>	18986, 20437	<code>\splittopskip</code>	7504	<code>\subsubsectionautorefname</code>	2958, 2976, 2994, 3012, 3030, 3048, 3066, 3099, 3124, 3142, 3160, 3178, 3196, 3214, 3232, 3250, 8665
<code>\sixinferior</code>	19910	<code>\sqcap</code>	18146, 20176	<code>\succ</code>	18088, 20147
<code>\SixStar</code>	18976, 20432	<code>\sqcup</code>	18148, 20177		
<code>\sixsuperior</code>	19894	<code>\sqdoublecap</code>	19233, 20539		
<code>\SixteenStarLight</code>	18984, 20436	<code>\sqdoublecup</code>	19238, 20541		
<code>\sixteenthnote</code> . . .	18809, 20360	<code>\sqsubset</code>	18130, 20168		
<code>\SK@</code>	8645	<code>\sqsubsest</code>	18138, 20172		
<code>\SK@@ref</code>	8645	<code>\sqsubsetneq</code>	18327, 20247		
<code>\SK@ref</code>	8642	<code>\sqsupset</code>	18134, 20170		
<code>\skip@</code> . . .	1548, 1631, 1632, 1635, 1637, 2263, 2269, 2282, 2288	<code>\sqsupseteq</code>	18142, 20174		
		<code>\sqsupseteqq</code>	18330, 20248		
		<code>\SquareCastShadowBottomRight</code>	19032, 20457		
		<code>\SquareCastShadowTopRight</code> .	19035, 20458		
		<code>\Squaredot</code>	15361, 20656		
		<code>\squaredots</code>	17914, 20070		
		<code>\SquareShadowBottomRight</code> . .	19026, 20455		
		<code>\SquareShadowTopRight</code> .	19029		
		<code>\SquareTopRight</code>	20456		
		<code>\SS</code>	15056, 19459		
		<code>\ss</code>	3003, 14985, 15071, 15445		
		<code>\slash</code>	19373, 20601		
		<code>\star</code>	18255, 20215		

<code>\succapprox</code>	19325, 20581	<code>\tcheh</code>	19715	<code>\textasciicircum</code> . .	14689, 14701, 14713, 14775, 15151, 15180, 15289
<code>\succcurlyeq</code>	18092, 20149	<code>\Telefon</code>	18660, 20887	<code>\textasciidieresis</code> .	14691, 14703, 14715, 14872, 15153, 15182, 15327
<code>\succeq</code>	19301, 20569	<code>\temp@online</code>	8061, 8064	<code>\textasciigrave</code> . . .	14687, 14699, 14711, 14780, 15149, 15178, 15294
<code>\succeqq</code>	19313, 20575	<code>\Tent</code>	18874, 20386	<code>\textasciimacron</code> .	14696, 14708, 14720, 14886, 15162, 15191, 15341
<code>\succnapprox</code>	19331, 20584	<code>\tesh</code>	16311, 20760	<code>\textasciitilde</code> . . .	525, 4776, 14790, 15306
<code>\succneq</code>	19307, 20572	<code>\TeX</code>	534, 535, 542, 544, 12339, 12341, 12343	<code>\textast</code>	17844, 20042
<code>\succneqq</code>	19319, 20578	<code>\texorpdfstring</code>	892, 6353	<code>\textAsterisk</code>	18992, 20439
<code>\succnsim</code>	18339, 20252	<code>\text</code>	485, 491	<code>\textAsteriskBold</code> .	18969, 20428
<code>\succsim</code>	18098, 20152	<code>\textAcht</code>	19434, 20617	<code>\textAsteriskcentered</code>	15249
<code>\sukun</code>	19711	<code>\textAcPa</code>	19420, 20611	<code>\textAsteriskCenterOpen</code> .	18971, 20429
<code>\sum</code>	17829, 20036	<code>\textacute</code>	14688, 14700, 14712, 14896, 15150, 15179, 15351	<code>\textAsteriskRoundedEnds</code> . . .	19016, 20451
<code>\Sun</code>	18707, 20902	<code>\textacutedbl</code>	16359	<code>\textasymp</code>	17965, 20092
<code>\sun</code>	18705, 20335	<code>\textacutemacron</code>	15147, 15176, 15205, 17081, 17084, 17185, 17188	<code>\textbabygamma</code> .	16089, 19808
<code>\SunCloud</code>	20382	<code>\textainferior</code>	17471, 19919	<code>\textbackcong</code> . . .	17961, 20090
<code>\SunCloud</code>	18866	<code>\textaleph</code>	17565, 19941	<code>\textbackneg</code>	18367, 20263
<code>\SunshineOpenCircled</code> . .	19001, 20444	<code>\textalpha</code>	3170, 3171, 3172, 3174, 3175, 3176, 3177, 3178, 3179, 3180, 3181, 3182, 3183, 19743, 19840	<code>\textbackprime</code> . .	17389, 19886
<code>\Supset</code>	18285, 20228	<code>\textamalg</code>	17828, 20035	<code>\textbacksim</code>	17925, 20074
<code>\supset</code>	18108, 20157	<code>\textampersand</code>	524, 14759, 15239, 15240, 15241, 20645, 20646	<code>\textbackslash</code>	520, 699, 2043, 14771, 14773, 15287
<code>\supseteq</code>	18116, 20161	<code>\textangle</code>	17857, 20047	<code>\textbaht</code>	16972
<code>\supseteqq</code>	19337, 20587	<code>\textangstrom</code>	17557	<code>\textbar</code>	14786, 15301, 15302, 20648
<code>\supsetneq</code>	18124, 20165	<code>\textAnkh</code>	18691, 20330	<code>\textbarb</code>	15793, 20669
<code>\surd</code>	20044	<code>\textaoilig</code>	19402, 19404, 20976	<code>\textbarc</code>	16014, 20686
<code>\Swarrow</code>	17762, 20006	<code>\textAPLbox</code>	18429, 20289	<code>\textbard</code>	15557, 20661
<code>\swarrow</code>	17638, 19956	<code>\textAPLdownarrowbox</code> .	18418, 20284	<code>\textbardbl</code>	17350, 17351, 20773
T		<code>\textAPLinput</code>	18421, 20285	<code>\textbardotlessj</code> . .	16071, 16072, 16073, 20702
<code>\T</code>	19639	<code>\textAPLinv</code>	18395, 20276	<code>\textbarglotstop</code> .	16293, 16294
<code>\t</code>	14724, 15144, 15173, 15202, 15220	<code>\textAPLleftarrowbox</code> . .	18410, 20281	<code>\textbari</code>	16102, 16103, 16104, 19809, 20711
<code>\T@pageref</code>	8508, 8515, 8524, 8533	<code>\textAPLrightarrowbox</code> .	18413, 20282	<code>\textbarin</code>	18363, 20261
<code>\T@Ref</code>	4712	<code>\textAPLuparrowbox</code> . .	18415, 20283	<code>\textbarl</code>	15816, 15817, 19794
<code>\Ta</code>	19667	<code>\textapprox</code>	17947, 20084	<code>\textbarleftharpoon</code> .	19151, 20505
<code>\taa</code>	19641	<code>\textapproxeq</code>	17952, 20086	<code>\textbaro</code>	16148, 16150
<code>\tableautorefname</code> . .	2952, 2970, 2988, 3006, 3024, 3042, 3060, 3090, 3118, 3136, 3154, 3172, 3190, 3208, 3226, 3244, 8659	<code>\textaquarius</code>	18776, 18777, 20356, 20928	<code>\textbarp</code>	17017, 19877
<code>\tagform@</code>	8168	<code>\textaries</code>	18746, 18747, 20346, 20918	<code>\textbarrevglotstop</code> .	16297, 16298
<code>\taild</code>	16040, 20695	<code>\textasciicute</code>	15352	<code>\textbarriightharpoon</code> . . .	19157, 20507
<code>\tailinvr</code>	16171, 20730	<code>\textasciibreve</code> . . .	14735, 15158, 15187, 16348	<code>\textbarsci</code>	17015, 19876
<code>\taill</code>	16120, 20715	<code>\textasciicaron</code> . . .	14693, 14705, 14717, 14737, 15155, 15184, 16334	<code>\textbarscu</code>	17020, 19878
<code>\tailn</code>	16143, 20724				
<code>\tailr</code>	16177, 20732				
<code>\tails</code>	16193, 20735				
<code>\tailt</code>	16211, 20738				
<code>\tailz</code>	16239, 20747				
<code>\Tape</code>	18890, 20391				
<code>\tatweel</code>	19675				
<code>\tau</code>	19859				
<code>\Taurus</code>	18750, 20919				
<code>\taurus</code>	18748, 20347				

<code>\textbaru</code> . 16213, 16214, 16215, 19818, 20739	<code>\textbullseye</code> 16268, 16269, 16270, 16271, 20755, 20756	18567, 18569, 18571, 18573, 18575, 18577, 18579, 18581, 18583, 18585, 18587, 18589, 18591, 18593, 18595, 18597, 18599
<code>\textbarwedge</code> . . . 18254, 20214	<code>\textBumpeq</code> 17970, 20094	
<code>\textbbslash</code> 18441, 18442, 20292, 20875	<code>\textbumpeq</code> 17974, 20096	
<code>\textBeam</code> 18425, 20287	<code>\textcancer</code> 18755, 18756, 20349, 20921	<code>\textCircledA</code> . . . 18486, 18487, 20293, 20876
<code>\textbecause</code> 17910, 17911, 20068, 20815	<code>\textCap</code> . 18290, 18291, 20230, 20866	<code>\textcircledast</code> . . . 18170, 18171, 18172, 20184, 20840, 20841
<code>\textbeltl</code> . 16114, 16115, 16116, 20714	<code>\textcap</code> 17886, 20058	<code>\textcircledcirc</code> . . 18166, 18167, 18168, 20183, 20838, 20839
<code>\textBeta</code> 16380	<code>\textcapdot</code> 19237, 20540	<code>\textcircleddash</code> . . 18174, 20185
<code>\textbeta</code> . . 15071, 19744, 19841	<code>\textcapricornus</code> . 18773, 18774, 20355, 20927	<code>\textcircledP</code> 17537
<code>\textbetainferior</code> . 17004, 19871	<code>\textccnc</code> 19463, 20629	<code>\textCircleShadow</code> 19024, 20454
<code>\textbeth</code> 17567, 19942	<code>\textccnd</code> 19465	<code>\textcircplus</code> 19220, 20533
<code>\textbetween</code> 18058, 20133	<code>\textccsa</code> 19467, 20630	<code>\textcirccircumflex</code> 14739
<code>\textbf</code> 559	<code>\textcdj</code> 16282	<code>\textcirccircumlow</code> . . 15168, 15197, 19408
<code>\textBicycle</code> 19454, 20626	<code>\textcdot</code> . . 15070, 19485, 20637	<code>\textCleaningF</code> . . 18499, 20294
<code>\textbigcircle</code> 15175, 15204, 18649, 18650, 20315, 20886	<code>\textcdots</code> 18357, 20258	<code>\textCleaningFF</code> . 18501, 20295
<code>\textbigdoublevee</code> 19213, 20530	<code>\textcedilla</code> 14695, 14707, 14719, 14904, 15157, 15186, 15363	<code>\textCleaningP</code> . . 18523, 20296
<code>\textbigdoublewedge</code> . . . 19211, 20529	<code>\textcelsius</code> 15057, 17527	<code>\textCleaningPP</code> . 18525, 20297
<code>\textbigtriangledown</code> . . . 18625, 18626, 20305, 20884	<code>\textcent</code> 14860, 15310	<code>\textclock</code> 18373, 18374, 18375, 20266, 20872, 20873
<code>\textbigtriangleup</code> 18610, 18611, 18612, 20300, 20881, 20882	<code>\textcentoldstyle</code> . 16012, 20685	<code>\textcloseepsilon</code> . 16275, 16276
<code>\textBiohazard</code> . . 18689, 20329	<code>\textCESign</code> 19471, 19472, 20632, 20981	<code>\textcloseomega</code> . . 16154, 16155, 16156, 16157, 20725, 20726
<code>\textblacksmiley</code> . 18704, 20334	<code>\textCheckedbox</code> . 18665, 18666, 20321, 20889	<code>\textcloserevepsilon</code> 16067, 16068, 16069, 20701
<code>\textblank</code> 18437	<code>\textCheckmark</code> . 18913, 18914, 20401, 20947	<code>\textCloud</code> 18653, 20316
<code>\textbot</code> . 18198, 18199, 20195, 20846	<code>\textCheckmarkBold</code> . . . 18916, 20402	<code>\textClowerTips</code> . 18949, 20418
<code>\textbowtie</code> 18260, 18261, 20217, 20863	<code>\textChi</code> 19740	<code>\textclubsuitblack</code> . 2165, 18792, 18793, 20934
<code>\textboxast</code> 19197, 20522	<code>\textchi</code> 3171, 19764, 19862	<code>\textclubsuitwhite</code> 18801
<code>\textboxbackslash</code> 18407, 20280	<code>\textchiinferior</code> . . 17012, 19875	<code>\textCoffeecup</code> . . . 18672, 20323
<code>\textboxbar</code> 18647, 20314	<code>\textcirc</code> 17846, 20043	<code>\textcoloncolonequals</code> . . 19257, 20548
<code>\textboxbox</code> 19201, 20524	<code>\textcircceq</code> 18006, 20110	<code>\textcolonequals</code> . 17998, 20106
<code>\textboxbslash</code> . . . 19195, 20521	<code>\textcircclearrowleft</code> 19063, 20470	<code>\textcolonmonetary</code> 17497
<code>\textboxcircle</code> . . . 19199, 20523	<code>\textcircclearrowright</code> . . . 19065, 20471	<code>\textcolor</code> . . 597, 13087, 13134, 13137, 13468
<code>\textboxdot</code> 18182, 20189	<code>\textcircled</code> 15146, 15175, 15204, 18444, 18446, 18448, 18450, 18452, 18454, 18456, 18458, 18460, 18462, 18464, 18466, 18468, 18470, 18472, 18474, 18476, 18478, 18480, 18482, 18484, 18489, 18491, 18493, 18495, 18497, 18503, 18505, 18507, 18509, 18511, 18513, 18515, 18517, 18519, 18521, 18527, 18529, 18531, 18533, 18535, 18537, 18539, 18541, 18543, 18545, 18547, 18549, 18551, 18553, 18555, 18557, 18559, 18561, 18563, 18565,	<code>\textcommatailz</code> . 15980, 15981
<code>\textboxempty</code> . . 18662, 18663, 20320, 20888		<code>\textcomplement</code> . 17797, 20021
<code>\textboxminus</code> . . . 18178, 20187		<code>\textcompwordmark</code> 17344
<code>\textboxplus</code> 18176, 20186		<code>\textcong</code> 17942, 20082
<code>\textboxslash</code> 19193, 20520		<code>\textcopyleft</code> 19460, 19461
<code>\textboxtimes</code> . . . 18180, 20188		<code>\textcopyright</code> . . . 14874, 15329, 19784
<code>\textbraceleft</code> 518, 2044, 14784, 15299		<code>\textcorner</code> 16368, 16369
<code>\textbraceright</code> 519, 2044, 14788, 15304		<code>\textCR</code> 14733, 15227
<code>\textbrokenbar</code> . . 14868, 15320, 15321, 20651		<code>\textcrb</code> . . 15789, 15790, 15791, 15793, 15794, 20668, 20669, 20670
<code>\textbullet</code> . 14792, 17372, 19881		
<code>\textbulletoperator</code> 17848		

<code>\textcrd</code>	15552, 15554, 15555, 15557, 15558, 20660, 20661, 20662
<code>\textcrg</code>	15882, 20682
<code>\textcrh</code>	15603, 20663
<code>\textcrinvglotstop</code>	15843, 15844
<code>\textcrlambda</code> . . .	15820, 15821, 15822, 15823, 15824, 15825, 20674, 20675, 20676, 20677
<code>\textCross</code>	18932, 20410
<code>\textCrossedbox</code> .	18668, 18669, 18670, 20322, 20890, 20891
<code>\textCrossMaltese</code>	18938, 20413
<code>\textCrossOpenShadow</code> .	18934, 20411
<code>\textCrossOutline</code>	18936, 20412
<code>\textcrtwo</code>	15840, 15841
<code>\textctc</code>	16035, 16036, 16037, 20694
<code>\textctd</code>	15978, 15979
<code>\textctesh</code>	16202, 16203, 16204, 20736
<code>\textctj</code>	16283, 16284, 20757
<code>\textctjvar</code>	16284, 20757
<code>\textctn</code>	15998, 15999
<code>\textctt</code>	16000, 16001
<code>\textctyogh</code>	16247, 16248, 16249, 20749
<code>\textctz</code>	16240, 16241, 16242, 20748
<code>\textCup</code>	18293, 18294, 20231, 20867
<code>\textcup</code>	17888, 20059
<code>\textcupdot</code>	18127, 20166
<code>\textcupplus</code>	18129, 20167
<code>\textcurlyeqprec</code> .	18312, 20239
<code>\textcurlyeqsucc</code> .	18316, 20241
<code>\textcurlyvee</code>	18276, 18277, 20224, 20864
<code>\textcurlywedge</code> . .	18279, 18280, 20225, 20865
<code>\textcurrency</code> . . .	14864, 15316
<code>\textcurvearrowleft</code>	17681, 19975
<code>\textcurvearrowright</code> . . .	17683, 19976
<code>\textCuttingLine</code> .	18601, 18602, 18603, 18604, 20298, 20877, 20878, 20879
<code>\textdagger</code>	14794, 17365, 17366, 19880, 20774
<code>\textdaggerdbl</code> . . .	14796, 14797, 17368, 17369, 17370, 20775, 20776
<code>\textdaleth</code>	17571, 19944
<code>\textdanger</code>	18843, 20375
<code>\textdasheddownarrow</code> .	17782, 20014
<code>\textdasheduparrow</code>	17777, 20012
<code>\textdashleftarrow</code>	17774, 17775, 20011, 20801
<code>\textdashrightarrow</code>	17779, 17780, 20013, 20802
<code>\textDashV</code>	19355, 19356, 20593, 20970
<code>\textDashv</code>	19348, 19349, 20591, 20968
<code>\textdashV</code>	19342, 19343, 20589, 20966
<code>\textdashv</code>	18187, 18188, 20191, 20843
<code>\textDavidStar</code> . . .	18940, 18941, 20414, 20948
<code>\textdblig</code>	16004, 16006, 20683
<code>\textdctzlig</code>	16305, 16306
<code>\textddagger</code>	14797
<code>\textddots</code>	18361, 20260
<code>\textdegree</code>	14888, 15057, 15343
<code>\textDeleatur</code>	17520, 17521, 19932, 20787
<code>\textDelta</code>	19732, 19830
<code>\textdelta</code>	3183, 19746, 19843
<code>\textdiameter</code>	18365, 20262
<code>\textdiamond</code>	18635, 18636, 20309, 20885
<code>\textdiamonddots</code>	17411, 19889
<code>\textDiamondSolid</code>	19038, 20459
<code>\textdiamondsuitblack</code> . . .	2166, 18799
<code>\textdiamondsuitwhite</code> .	18789, 18790, 20933
<code>\textdigammagreek</code>	20761
<code>\textdiscount</code>	17405
<code>\textdiv</code>	15068, 19483, 20635
<code>\textdivide</code>	15037, 15068, 15498, 19483
<code>\textdivideontimes</code>	18258, 20216
<code>\textDivides</code>	17838, 20039
<code>\textDividesNot</code> . . .	17840, 20040
<code>\textdivorced</code>	18857
<code>\textdlsh</code>	17678, 19974
<code>\textdollar</code>	522, 14755, 15233, 15234, 15235, 20643, 20644
<code>\textdong</code>	17507
<code>\textdotaccent</code>	14694, 14706, 14718, 14741, 15156, 15185, 16350
<code>\textdotbelow</code>	14698, 14710, 14722, 14765, 15172, 15201, 16375
<code>\textdotdiv</code>	17918, 20816
<code>\textdoteq</code>	17978, 20098
<code>\textdoteqdot</code>	17983, 17984, 20100, 20822
<code>\textdotminus</code>	17917, 17918, 20071, 20816
<code>\textdotplus</code>	17836, 20038
<code>\textdottimes</code>	19225, 20535
<code>\textdoublebarpipe</code>	15856, 15857, 15858, 20681
<code>\textdoublebarpipevar</code> . .	15858, 20681
<code>\textdoublebarwedge</code> . . .	19248, 20544
<code>\textdoublegrave</code> . . .	15160, 15189, 16371
<code>\textdoublepipe</code>	15852, 15853, 15854, 20680
<code>\textdoublepipevar</code>	15854, 20680
<code>\textdoublevee</code>	19244, 19245, 20543, 20965
<code>\textdoublevertline</code>	17351, 20773
<code>\textdoublewedge</code>	19242, 20542
<code>\textDOWNarrow</code>	18621, 18622, 20304, 20883
<code>\textDownarrow</code>	17749, 20000
<code>\textdownarrow</code>	17623, 17624, 17625, 19950, 20795, 20796
<code>\textdownarrowarrows</code> . .	17724, 19991
<code>\textdownarrowharpoons</code>	19145, 20503
<code>\textdownarrowharpoonleft</code> . .	17707, 19984
<code>\textdownarrowharpoonright</code> .	17704, 19983
<code>\textdownmodels</code>	19361, 20595
<code>\textdownstep</code>	19391, 19392
<code>\textdownuparrows</code>	17787, 20016
<code>\textdownupharpoons</code> . .	19163, 20509
<code>\textdsbiological</code> . . .	18837, 20372
<code>\textdschemical</code>	18835, 20371
<code>\textdscommercial</code>	18839, 20373
<code>\textdsjuridical</code>	18833, 20370
<code>\textdsmedical</code>	18831, 20369
<code>\textdsmilitary</code>	18828, 18829, 20368, 20938
<code>\textdttimes</code>	19228, 20536
<code>\textdyoghlig</code>	16302, 16303

<code>\textdzlig</code> 16299, 16300, 16301, 20759	20778, 20779, 20780, 20781, 20782, 20783, 20784, 20785, 20786	<code>\textForward</code> 18614, 20301
<code>\textearth</code> 18723, 18724, 20339, 20909	<code>\textexclamdown</code> . . . 737, 14858, 15308	<code>\textForwardToIndex</code> . . . 18432, 20290
<code>\textEightAsterisk</code> 19022, 20453	<code>\textexists</code> 17801, 20023	<code>\textFourAsterisk</code> 18943, 20415
<code>\textEightFlowerPetal</code> . . 19000, 20443	<code>\textfallingdoteq</code> . 17989, 20102	<code>\textfourfifths</code> 17597
<code>\textEightFlowerPetalRemoved</code> 19019, 20452	<code>\textfatsemi</code> 19218, 20532	<code>\textfourinferior</code> . 17449, 19908
<code>\texteightinferior</code> . 17457, 19912	<code>\textFax</code> . 19449, 19450, 20624, 20980	<code>\textFourStar</code> . . . 18951, 20419
<code>\textEightStar</code> . . . 18979, 20433	<code>\textfax</code> 17573, 19945	<code>\textFourStarOpen</code> 18953, 20420
<code>\textEightStarBold</code> 18981, 20434	<code>\textfemale</code> 18717, 20904	<code>\textfoursuperior</code> . 17417, 19892
<code>\textEightStarConvex</code> . . 18975, 20431	<code>\textFemaleFemale</code> 18845, 20376	<code>\textfourth</code> 17409, 19888
<code>\textEightStarTaper</code> . . . 18973, 20430	<code>\textFemaleMale</code> . 18849, 20378	<code>\textfractionsolidus</code> 14807, 17399
<code>\texteightsuperior</code> 17425, 19896	<code>\textfi</code> 735, 14831, 19410	<code>\textfrown</code> 18385, 20271
<code>\texteinferior</code> 17473, 19920	<code>\TextField</code> 6150	<code>\textfrownie</code> 18698, 18699, 20332, 20900
<code>\textell</code> 17533, 19935	<code>\textFinv</code> 17563, 19940	<code>\textfrq</code> 623, 15065, 19480
<code>\textellipsis</code> . . . 528, 529, 14799, 17376, 17377, 20777	<code>\textFire</code> 19452, 20625	<code>\textfrqq</code> 621, 15063, 19478
<code>\textemdash</code> . 733, 14801, 17348	<code>\textfishhookr</code> . . . 16179, 16180, 16181, 16182, 20733, 20734	<code>\textfullnote</code> 19426, 19427, 20614, 20977
<code>\textemptyset</code> . . . 17805, 17806, 20025, 20803	<code>\textfivedots</code> 19387, 20606	<code>\textGame</code> 17575, 19946
<code>\textEncodingNoboundary</code> 531, 19727	<code>\textfiveeighths</code> 17607	<code>\textGamma</code> 19731, 19829
<code>\textendash</code> . . 734, 14803, 17346	<code>\textFiveFlowerOpen</code> . . 18998, 20442	<code>\textgamma</code> . . 3179, 3180, 3181, 19745, 19842
<code>\textEnvelope</code> . . . 18895, 18896, 20393, 20945	<code>\textFiveFlowerPetal</code> . . . 18996, 20441	<code>\textgammainferior</code> 17006, 19872
<code>\textEpsilon</code> 3168	<code>\textfiveinferior</code> . . 17451, 19909	<code>\textGaPa</code> 19414, 20608
<code>\textepsilon</code> . . 3169, 3170, 3173, 3175, 3176, 3177, 3178, 3182, 3183, 19747, 19844	<code>\textfivesixths</code> 17601	<code>\textge</code> 18035, 20122
<code>\texteqcirc</code> 18002, 20108	<code>\textFiveStar</code> 18655, 20317	<code>\textgemini</code> 18752, 18753, 20348, 20920
<code>\texteqcolon</code> 17920, 20072	<code>\textFiveStarCenterOpen</code> 18957, 20422	<code>\textGentsroom</code> . . 19456, 20627
<code>\texteqdot</code> 19253, 20546	<code>\textFiveStarConvex</code> . . . 18965, 20426	<code>\textgeq</code> 18034, 18036, 20121, 20830
<code>\texteqsim</code> 17934, 20078	<code>\textFiveStarOpen</code> 18657, 20318	<code>\textgeqq</code> 18042, 20125
<code>\texteqslantgtr</code> . . 19292, 20564	<code>\textFiveStarOpenCircled</code> 18955, 20421	<code>\textgeqslant</code> 19263, 20551
<code>\texteqslantless</code> . . 19290, 20563	<code>\textFiveStarOpenDotted</code> 18959, 20423	<code>\textgg</code> 18054, 20131
<code>\textequalscolon</code> . 18000, 20107	<code>\textFiveStarOutline</code> . . . 18961, 20424	<code>\textggg</code> 18304, 20236
<code>\textequalsinferior</code> 17465, 19916	<code>\textFiveStarOutlineHeavy</code> 18963, 20425	<code>\textgimel</code> 17569, 19943
<code>\textequalsuperior</code> 17433, 19900	<code>\textFiveStarShadow</code> . . . 18967, 20427	<code>\textglobfall</code> 17637, 20798
<code>\textequiv</code> 18022, 18023, 20117, 20826	<code>\textfivesuperior</code> . 17419, 19893	<code>\textglobrise</code> 17634, 20797
<code>\textEreversed</code> 15802	<code>\textfl</code> 736, 14833, 19412	<code>\textglotstop</code> 16251, 16252, 16253, 16254, 19826, 20750, 20751
<code>\textesh</code> . . . 16194, 16195, 19817	<code>\textFlag</code> . 18823, 18824, 20366, 20937	<code>\textglq</code> 618, 15060, 19475
<code>\textestimated</code> . . . 17559, 17560, 17561, 20789, 20790	<code>\textflat</code> 18812, 20361	<code>\textglqq</code> 616, 15058, 19473
<code>\texteta</code> . 3168, 3169, 3171, 3174, 3176, 3177, 3178, 3181, 3182, 19749, 19846	<code>\textflorin</code> 14805, 15805, 15806, 20671	<code>\textgnapprox</code> . . . 19282, 20560
<code>\texteuro</code> . 14856, 17509, 17510, 17511, 17512, 17513, 17514, 17515, 17516, 17517, 17518,	<code>\textflq</code> 622, 15064, 19479	<code>\textgneq</code> 19278, 20558
	<code>\textflqq</code> 620, 15062, 19477	<code>\textgneqq</code> 18048, 20128
	<code>\textforall</code> 17795, 20020	<code>\textgnsim</code> 18336, 20250
		<code>\textgravedbl</code> 16363
		<code>\textgravemacron</code> 15148, 15177, 15206, 17075, 17078, 17179, 17182
		<code>\textgreater</code> 14769, 15283
		<code>\textgrq</code> 619, 15061, 19476
		<code>\textgrqq</code> 617, 15059, 19474
		<code>\textGslash</code> 15879

<code>\textgslash</code>	15881, 15882, 20682	<code>\texthth</code>	16094, 16095, 16096, 16097, 20708, 20709	<code>\textkappa</code>	3170, 3172, 3175, 19752, 19849
<code>\textgtrapprox</code>	19271, 20555	<code>\texththeng</code>	16098, 16099, 16100, 20710	<code>\textKeyboard</code>	18389, 20273
<code>\textgtrdot</code>	18300, 20234	<code>\texthtk</code>	15812, 15813, 15814, 20673	<code>\textkinferior</code>	17483, 19925
<code>\textgtreqless</code>	18310, 20238	<code>\texthtp</code>	15830, 15831	<code>\textkra</code>	15644
<code>\textgtreqqlless</code>	19288, 20562	<code>\texthtq</code>	16290, 16291	<code>\textLadiesroom</code>	19458, 20628
<code>\textgtrless</code>	18081, 20143	<code>\texthtrtaild</code>	17024, 17025, 19879	<code>\textLambda</code>	19734, 19832
<code>\textgtrsim</code>	18072, 18073, 20139, 20832	<code>\texthtscg</code>	16278, 16279	<code>\textlambda</code>	3175, 3183, 19753, 19850
<code>\textguarani</code>	17525	<code>\texthtt</code>	15835, 15836	<code>\textlangle</code>	18391, 20274
<code>\texthalflength</code>	16345, 16346	<code>\texthungarumlaut</code>	14743, 15163, 15192, 16358	<code>\textlatin</code>	608, 7089
<code>\texthalfnote</code>	19429, 19430, 20615, 20978	<code>\texthvlig</code>	15807, 15808, 15809, 20672	<code>\textlbrackdbl</code>	19056, 19057, 20468, 20949
<code>\textHandCuffLeft</code>	18674, 20324	<code>\textiint</code>	17895, 20062	<code>\textlcurvearrowdown</code>	19111, 19112, 19113, 20492, 20951, 20952
<code>\textHandCuffRight</code>	18676, 20325	<code>\textiinferior</code>	16996, 19867	<code>\textlcurvearrowse</code>	19103, 20489
<code>\textHandLeft</code>	18678, 18679, 20326, 20892	<code>\textiint</code>	17893, 20061	<code>\textlcurvearrowsw</code>	19106, 20490
<code>\textHandRight</code>	18681, 18682, 18683, 18684, 20327, 20893, 20894, 20895	<code>\textIm</code>	17531, 19934	<code>\textle</code>	18030, 20120
<code>\textHaPa</code>	19416, 20609	<code>\textInfo</code>	19469, 20631	<code>\textleadsto</code>	19097, 20487
<code>\texthateq</code>	18010, 18011, 18012, 20112, 20823, 20824	<code>\textinfty</code>	17855, 20046	<code>\textLeftarrow</code>	17741, 19997
<code>\texthausaB</code>	15796, 19791	<code>\textinsymbol</code>	17812, 20028	<code>\textleftarrow</code>	17615, 19947
<code>\texthausaD</code>	15800, 19792	<code>\textint</code>	17890, 17891, 20060, 20813	<code>\textleftarrowtail</code>	17658, 19965
<code>\texthausaK</code>	15811, 19793	<code>\textinterleave</code>	19372, 20600	<code>\textleftarrowtriangle</code>	17789, 20017
<code>\texthbar</code>	15602, 15603, 15604, 15605, 19790, 20663, 20664, 20665	<code>\textinterrobang</code>	17397	<code>\textleftbarharpoon</code>	19148, 20504
<code>\texthdotfor</code>	17374, 19882	<code>\textinterrobangdown</code>	19384, 19385	<code>\textLEFTCIRCLE</code>	18640, 20311
<code>\textheartsuitblack</code>	2167, 18797	<code>\textinvamp</code>	17577, 17578, 17579, 20791, 20792	<code>\textleftharpoondown</code>	17689, 19978
<code>\textheartsuitwhite</code>	18785, 18786, 18787, 20931, 20932	<code>\textinvbackneg</code>	18371, 20265	<code>\textleftharpoonup</code>	17686, 19977
<code>\textheng</code>	19393, 19395, 20973	<code>\textinvbreve</code>	15122, 15165, 15194, 15929, 15931, 15942, 15944, 15945, 15955, 15957, 15971, 15973	<code>\textleftleftarrows</code>	17718, 19988
<code>\textHermaphrodite</code>	18851, 20379	<code>\textinvdiameter</code>	19171, 20513	<code>\textleftleftharpoons</code>	19136, 20500
<code>\texthexagon</code>	18427, 20288	<code>\textinve</code>	15877, 19795	<code>\textleftmoon</code>	18709, 20336
<code>\texthexstar</code>	18862, 20381	<code>\textinvglotstop</code>	16261, 16262, 19828	<code>\textLeftrightarrow</code>	17752, 20001
<code>\texthinferior</code>	17481, 19924	<code>\textinvneg</code>	19232, 20538	<code>\textleftrightharrow</code>	2170, 17627, 19951
<code>\texthookleftarrow</code>	17664, 19968	<code>\textinvscr</code>	16189, 16190, 19816	<code>\textleftrightharpoons</code>	17716, 19987
<code>\texthookrightarrow</code>	17666, 19969	<code>\textiota</code>	3168, 3169, 3170, 3172, 3175, 3183, 19751, 19848	<code>\textleftrightharrowtriangle</code>	17793, 20019
<code>\textHslash</code>	15600	<code>\textipagamma</code>	16085, 16086, 19807, 20705	<code>\textleftrightharpoons</code>	19125, 20496
<code>\texthslash</code>	17529, 19933	<code>\textisuperior</code>	17415, 19891	<code>\textleftrightharpoons</code>	17727, 19992
<code>\textHT</code>	14729, 15223	<code>\textit</code>	561	<code>\textleftslice</code>	19294, 20565
<code>\texthtb</code>	16027, 16028, 16029, 16030, 20691, 20692	<code>\textJackStar</code>	18945, 20416	<code>\textleftspoon</code>	19054, 20467
<code>\texthtbardotlessj</code>	16197, 16198	<code>\textJackStarBold</code>	18947, 20417	<code>\textleftsquigarrow</code>	17769, 20009
<code>\texthtc</code>	15797, 15798	<code>\textjinferior</code>	19381, 20604	<code>\textlefttherefore</code>	17407, 19887
<code>\texthtd</code>	16041, 16042, 16043, 16044, 20696, 20697	<code>\textJoin</code>	19216, 20531	<code>\textleftthreetimes</code>	18268, 20220
<code>\texthtg</code>	16074, 16075, 16076, 20703	<code>\textjupiter</code>	18731, 18732, 20341, 20913	<code>\textlengthmark</code>	16342, 16343
				<code>\textleo</code>	18758, 18759, 20350, 20922
				<code>\textleq</code>	18029, 18031, 20119, 20829

<code>\textleqq</code>	18038, 20123	<code>\textlooparrowleft</code>	17668, 19970	<code>\textmultimapdotbothB</code>	18248, 20211
<code>\textleqslant</code>	19259, 20549	<code>\textlooparrowright</code>	17670, 19971	<code>\textmultiply</code>	14968, 15067, 15426, 15427, 15428, 19482, 20657, 20658
<code>\textless</code>	14767, 15281	<code>\textlozenge</code>	18638, 20310	<code>\textMundus</code>	19440, 20620
<code>\textlessapprox</code> . .	19267, 20553	<code>\textlptr</code>	16328, 16329	<code>\textmusicalnote</code> .	18804, 18805, 18806, 20935
<code>\textlessdot</code>	18298, 20233	<code>\textlquill</code>	17401	<code>\textMVAt</code>	15285, 19783
<code>\textlesseqgtr</code> . . .	18307, 20237	<code>\textlrcorner</code>	18383, 20270	<code>\textMVComma</code> .	15253, 19769
<code>\textlesseqqgtr</code> . .	19285, 20561	<code>\textltailm</code> 16132, 16133, 16134, 16135, 20720, 20721		<code>\textMVDivision</code> .	15259, 19772
<code>\textlessgtr</code>	18079, 20142	<code>\textltailn</code> 16136, 16137, 16138, 16139, 20722, 20723		<code>\textMVEight</code> . . .	15277, 19781
<code>\textlessssim</code> 18069, 18070, 20138, 20831		<code>\textltilde</code> 16111, 16112, 16113, 20713		<code>\textMVFive</code>	15271, 19778
<code>\textLF</code>	14731, 15225	<code>\textltimes</code>	18263, 20218	<code>\textMVFour</code>	15269, 19777
<code>\textLHD</code>	18633, 20308	<code>\textlyoghlig</code>	16121, 16122, 16123, 20716	<code>\textMVMinus</code> . . .	15255, 19770
<code>\textlhd</code> . . 18232, 18233, 20206, 20857		<code>\textmacronbelow</code> 14697, 14709, 14721, 14778, 15171, 15200, 16377		<code>\textMVNine</code>	15279, 19782
<code>\textlhookfour</code> . . .	19396, 19398, 20974	<code>\textmale</code> 18726, 18727, 18728, 18729, 20340, 20910, 20911, 20912		<code>\textMVOne</code>	15263, 19774
<code>\textlhooknwarrow</code>	19089, 20483	<code>\textMaleMale</code> . . .	18847, 20377	<code>\textMVPeriod</code> . .	15257, 19771
<code>\textlhooksearrow</code>	19093, 20485	<code>\textManFace</code> . . .	19444, 20622	<code>\textMVPlus</code>	15251, 19768
<code>\textlhookt</code>	15833, 15834	<code>\textmanstar</code>	18841, 20374	<code>\textMVSeven</code> . . .	15275, 19780
<code>\textlhtlongi</code>	16184, 16185	<code>\textmapsto</code>	17662, 19967	<code>\textMVSix</code>	15273, 19779
<code>\textlhtlongy</code>	16316, 16317	<code>\textmarried</code>	18855	<code>\textMVThree</code> . . .	15267, 19776
<code>\textlibra</code> . 18764, 18765, 20352, 20924		<code>\textmd</code>	560	<code>\textMVTwo</code>	15265, 19775
<code>\textlightning</code> . . .	17674, 17675, 19973, 20799	<code>\textmeasuredangle</code>	17859, 20048	<code>\textMVZero</code>	15261, 19773
<code>\textlinferior</code>	17485, 19926	<code>\textmercury</code>	18713, 18714, 20338, 20903	<code>\textnabla</code>	17810, 20027
<code>\textlira</code>	17499	<code>\textmho</code> . 17552, 17553, 19938, 20788		<code>\textnaira</code>	17501
<code>\textll</code>	18050, 20129	<code>\textmid</code>	17866, 20050	<code>\textnapostrophe</code>	15678
<code>\textllcorner</code>	18381, 20269	<code>\textMineSign</code> . . .	18826, 20367	<code>\textnapprox</code>	17949, 17950, 20085, 20819
<code>\textLleftarrow</code> . .	17765, 20007	<code>\textminferior</code> . . .	17487, 19927	<code>\textnapproxeq</code> . .	17954, 20087
<code>\textlll</code>	18302, 20235	<code>\textminus</code>	14813, 17832	<code>\textnasymp</code>	17967, 17968, 20093, 20821
<code>\textllparenthesis</code> .	19167, 20511	<code>\textminusdot</code> . . .	19222, 19223, 20534, 20962	<code>\textnatural</code>	18814, 20362
<code>\textlnapprox</code> . . .	19280, 20559	<code>\textminusinferior</code>	17463, 19915	<code>\textnbackcong</code> . .	17963, 20091
<code>\textlneq</code>	19275, 20557	<code>\textminussuperior</code>	17431, 19899	<code>\textnbacksim</code> . . .	17927, 20075
<code>\textlneqq</code>	18046, 20127	<code>\textmoo</code>	19165, 20510	<code>\textnbacksimeq</code> .	18274, 20223
<code>\textlnot</code>	14882, 15337	<code>\textMoon</code>	19442, 20621	<code>\textnBumpeq</code> . . .	17972, 20095
<code>\textlnsim</code>	18334, 20249	<code>\textMountain</code> . . .	18873, 20385	<code>\textnbumpeq</code> . . .	17976, 20097
<code>\textlogicalnot</code> . . .	14881, 15066, 15336, 19481	<code>\texttmp</code>	17834, 20037	<code>\textncirceq</code>	18008, 20111
<code>\textLongleftarrow</code>	19073, 20475	<code>\textMu</code>	3173	<code>\textncong</code>	17945, 20083
<code>\textlongleftarrow</code>	19067, 20472	<code>\textmu</code> . 3169, 3170, 3171, 3174, 3181, 3182, 14898, 15354, 19851		<code>\textncurlyeqprec</code>	18314, 20240
<code>\textLongleftrightarrow</code> .	19077, 20477	<code>\textmugreek</code>	19754, 19852	<code>\textncurlyeqsucc</code>	18318, 20242
<code>\textlongleftrightarrow</code> .	19071, 20474	<code>\textmultimap</code> . . .	18250, 20212	<code>\textnDashV</code>	19358, 19359, 20594, 20971
<code>\textlonglegr</code>	16172, 16173, 16174, 19814, 20731	<code>\textmultimapboth</code>	19205, 20526	<code>\textnDashv</code>	19351, 19352, 20592, 20969
<code>\textLongmapsfrom</code>	19081, 20479	<code>\textmultimapdotbothA</code>	18246, 20210	<code>\textndashV</code> 19345, 19346, 20590, 20967	
<code>\textLongmapsto</code> .	19083, 20480			<code>\textndashv</code> 18190, 18191, 20192, 20844	
<code>\textlongmapsto</code> .	19079, 20478			<code>\textnDoteq</code>	17986, 20101
<code>\textLongrightarrow</code> . . .	19075, 20476			<code>\textndoteq</code>	17980, 20099
<code>\textlongrightarrow</code>	19069, 20473			<code>\textndownmodels</code>	19363, 20596
<code>\textlongs</code>	15788, 17306			<code>\textndownvdash</code> .	18196, 20194

<code>\textne</code>	18019, 20116	<code>\textnll</code>	18052, 20130	<code>\textntrianglerighteq</code> . . .	18352, 18353, 20256
<code>\textNearrow</code>	17759, 20004	<code>\textnmid</code> 17868, 17869, 20051, 20810		<code>\textntriplesim</code> . .	17959, 20089
<code>\textnearrow</code>	17633, 17634, 19954, 20797	<code>\textNoChemicalCleaning</code> 19185, 20517		<code>\textntwoheadleftarrow</code> .	17647, 19960
<code>\textneg</code> . .	15066, 19481, 20633	<code>\textnormal</code>	555	<code>\textntwoheadrightarrow</code>	17654, 19963
<code>\textneptune</code>	18740, 18741, 20344, 20916	<code>\textnotbackslash</code>	18405, 20279	<code>\textnu</code> .	3170, 3172, 3176, 3177, 3178, 19755, 19853
<code>\textneq</code> .	18018, 18020, 20115, 20825	<code>\textnotin</code>	17814, 20029	<code>\textnumbersign</code> . . .	521, 14753, 15231
<code>\textneqcirc</code>	18004, 20109	<code>\textnotowner</code> . . .	17821, 17822, 20032, 20805	<code>\textnumero</code>	17535
<code>\textneqdot</code>	19255, 20547	<code>\textnotperp</code>	19048, 20464	<code>\textnupmodels</code> . .	19367, 20598
<code>\textneqsim</code>	17936, 20079	<code>\textnotslash</code>	18402, 20278	<code>\textnupvdash</code> . . .	18201, 18202, 20196, 20847
<code>\textnequiv</code>	18025, 18026, 18027, 20118, 20827, 20828	<code>\textnoway</code>	18871, 20384	<code>\textnVDash</code>	18229, 18230, 20205, 20856
<code>\textneswarrow</code> . .	19087, 20482	<code>\textnparallel</code> . . .	17873, 17874, 20053	<code>\textnVdash</code>	18226, 18227, 20204, 20855
<code>\textNeutral</code>	18853, 20380	<code>\textnprec</code>	18103, 20154	<code>\textnvDash</code>	18222, 18223, 18224, 20203, 20853, 20854
<code>\textnewtie</code>	15174, 15203, 16373	<code>\textnprecapprox</code> .	19324, 20580	<code>\textnvdash</code>	18219, 18220, 20202, 20852
<code>\textnexists</code>	17803, 20024	<code>\textnpreccurlyeq</code>	18320, 20243	<code>\textnVdash</code>	18213, 20200
<code>\textnfallingdoteq</code>	17991, 20103	<code>\textnpreceq</code>	19300, 20568	<code>\textNwarrow</code> . . .	17757, 20003
<code>\textngeq</code>	18067, 20137	<code>\textnpreceqq</code> . . .	19312, 20574	<code>\textnwarrow</code>	17631, 19953
<code>\textngeqq</code>	18044, 20126	<code>\textnprecsim</code> . . .	18097, 20151	<code>\textnwsearrow</code> . .	19085, 20481
<code>\textngeqslant</code> . . .	19265, 20552	<code>\textnqsubseteq</code> . .	18324, 20245	<code>\textobar</code> .	19173, 19174, 20514, 20955
<code>\textngg</code>	18056, 20132	<code>\textnqsupseteq</code> . .	18326, 20246	<code>\textobot</code> .	19182, 19183, 20516, 20959
<code>\textngtr</code>	18062, 20135	<code>\textnRightarrow</code>	17738, 19996	<code>\textobslash</code>	19176, 19177, 19178, 19179, 20515, 20956, 20957, 20958
<code>\textngtrapprox</code> . .	19273, 20556	<code>\textnrightarrow</code> .	17643, 19958	<code>\textObullseye</code> . . .	16271, 20756
<code>\textngtrless</code>	18083, 20144	<code>\textnrisingdoteq</code> .	17996, 20105	<code>\textodiv</code>	19230, 20537
<code>\textngtrsim</code>	18077, 20141	<code>\textnrleg</code> .	15827, 15829, 20678	<code>\textodot</code> .	18163, 18164, 20182, 20837
<code>\textnhateq</code>	18014, 20113	<code>\textnsim</code>	17932, 20077	<code>\textogonek</code>	14745, 15164, 15193, 16354
<code>\textni</code> . . .	17818, 17819, 20031, 20804	<code>\textnsimeq</code>	17940, 20081	<code>\textogreaterthan</code>	19190, 19191, 20519, 20961
<code>\textNibRight</code> . . .	18909, 20399	<code>\textnsqsubset</code> . . .	18133, 20169	<code>\textohm</code>	17550
<code>\textNibSolidRight</code>	18911, 20400	<code>\textnsqsubseq</code> .	18141, 20173	<code>\textoiint</code>	17900, 20064
<code>\textniepsilon</code> . . .	16057, 16058, 19802, 20699	<code>\textnsqsupset</code> . . .	18137, 20171	<code>\textoinferior</code>	17475, 19921
<code>\textniiota</code>	16106, 16107, 19810, 20712	<code>\textnsqsupseteq</code> .	18145, 20175	<code>\textoint</code> .	17897, 17898, 20063, 20814
<code>\textnineinferior</code> .	17459, 19913	<code>\textnSubset</code>	18284, 20227	<code>\textointclockwise</code>	17903, 20065
<code>\textninesuperior</code> .	17427, 19897	<code>\textnsubset</code>	18111, 20158	<code>\textointctrclockwise</code> . . .	17905, 20066
<code>\textninferior</code>	17489, 19928	<code>\textnsubseq</code>	18119, 20162	<code>\textolesthan</code>	19187, 19188, 20518, 20960
<code>\textnippi</code>	16159, 19813	<code>\textnsubseqeq</code> . .	19336, 20586	<code>\textOmega</code>	19742, 19839
<code>\textniupsilon</code> . . .	16217, 16218, 19819, 20740	<code>\textnsucc</code>	18105, 20155		
<code>\textnLeftarrow</code> . .	17733, 19994	<code>\textnsuccapprox</code> .	19328, 20582		
<code>\textnleftarrow</code> . .	17641, 19957	<code>\textnsucccurlyeq</code>	18322, 20244		
<code>\textnLeftrightarrow</code> . . .	17735, 19995	<code>\textnsucceq</code>	19304, 20570		
<code>\textnleftrightharrow</code>	17672, 19972	<code>\textnsucceqq</code> . . .	19316, 20576		
<code>\textnleq</code>	18065, 20136	<code>\textnsuccsim</code> . . .	18101, 20153		
<code>\textnleqq</code>	18040, 20124	<code>\textnsuperior</code> . . .	17439, 19903		
<code>\textnleqslant</code> . . .	19261, 20550	<code>\textnSupset</code>	18288, 20229		
<code>\textnless</code>	18060, 20134	<code>\textnsubset</code>	18113, 20159		
<code>\textnlessapprox</code> .	19269, 20554	<code>\textnsubseq</code>	18121, 20163		
<code>\textnlessgtr</code>	18085, 20145	<code>\textnsubseqeq</code> . .	19340, 20588		
<code>\textnlessssim</code>	18075, 20140	<code>\textntriangleleft</code> .	18342, 18343, 20253, 20870		
		<code>\textntrianglelefteq</code>	18349, 20255		
		<code>\textntriangleright</code>	18345, 18346, 20254, 20871		

<code>\textomega</code>	3168, 3169, 3182, 19766, 19864	<code>\textPencilRightDown</code>	18903, 20396	<code>\textprecsim</code>	18095, 20150
<code>\textomicron</code>	3169, 3170, 3173, 3175, 3176, 3177, 3178, 3179, 3180	<code>\textPencilRightUp</code>	18907, 20398	<code>\textprime</code>	17383, 19883
<code>\textominus</code>	18154, 18155, 20179, 20834	<code>\textpentagon</code>	19377, 20602	<code>\textprimstress</code>	16336, 16337
<code>\textoneeighth</code>	17603	<code>\textpercent</code>	523, 14757, 15237	<code>\textprod</code>	17826, 20034
<code>\textonefifth</code>	17591	<code>\textperiodcentered</code>	14902, 15070, 15359, 15360, 15361, 19485, 20655, 20656	<code>\textpropto</code>	17852, 17853, 20045, 20806
<code>\textonehalf</code>	14915, 15374	<code>\textperp</code>	19046, 20463	<code>\textPsi</code>	19741, 19838
<code>\textoneinferior</code>	17443, 19905	<code>\textpertenthousand</code>	17381	<code>\textpsi</code>	19765, 19863
<code>\textoneninth</code>	17583	<code>\textperthousand</code>	14815, 17379	<code>\textPUaolig</code>	19403, 19404, 20976
<code>\textonequarter</code>	14913, 15372	<code>\textpeseta</code>	17503	<code>\textPUdblig</code>	16005, 16006, 20683
<code>\textoneseventh</code>	17581	<code>\textpeso</code>	17523	<code>\textPUfemale</code>	18716, 18717, 18718, 18719, 18720, 18721, 20904, 20905, 20906, 20907, 20908
<code>\textonesixth</code>	17599	<code>\textPhi</code>	19739, 19837	<code>\textPUheng</code>	19394, 19395, 20973
<code>\textonesuperior</code>	14906, 15365, 19787	<code>\textphi</code>	3175, 3179, 3180, 19763, 19861	<code>\textPULhookfour</code>	19397, 19398, 20974
<code>\textonetenth</code>	17585	<code>\textphiinferior</code>	17010, 19874	<code>\textPUNrleg</code>	15828, 15829, 20678
<code>\textonethird</code>	17587	<code>\textPhone</code>	18659, 18660, 20319, 20887	<code>\textPUqlig</code>	16008, 16009, 20684
<code>\textoo</code>	19406, 20607	<code>\textPhoneHandset</code>	18889, 20390	<code>\textPUrevscr</code>	16991, 16992, 20768
<code>\textopenbullet</code>	18644, 20313	<code>\textPi</code>	3172, 3174, 19736, 19834	<code>\textPURhooka</code>	17022, 17023, 20769
<code>\textopencorner</code>	16366, 16367	<code>\textpi</code>	3169, 3177, 3178, 3179, 3180, 19757, 19855	<code>\textPURhooke</code>	17027, 17028, 20770
<code>\textopeno</code>	16032, 16033, 16034, 19798, 20693	<code>\textpinferior</code>	17491, 19929	<code>\textPURhookepsilon</code>	17031, 17032, 20771
<code>\textoplus</code>	18151, 18152, 20178, 20833	<code>\textpipe</code>	15848, 15849, 15850, 20679	<code>\textPURhookopeno</code>	17035, 17036, 20772
<code>\textordfeminine</code>	14876, 15331	<code>\textpipevar</code>	15850, 20679	<code>\textPUscf</code>	19400, 19401, 20975
<code>\textordmasculine</code>	14908, 15367	<code>\textpiscus</code>	18779, 18780, 20357, 20929	<code>\textPUsc</code>	16982, 16983, 20765
<code>\TextOrMath</code>	600	<code>\textpitchfork</code>	18296, 20232	<code>\textPUscm</code>	16985, 16986, 20766
<code>\textoslash</code>	18160, 18161, 20181, 20836	<code>\textPlane</code>	18893, 20392	<code>\textPUscp</code>	16988, 16989, 20767
<code>\textotimes</code>	18157, 18158, 20180, 20835	<code>\textPlus</code>	18926, 20407	<code>\textPUuncrfemale</code>	18859, 18860, 20939
<code>\textovee</code>	17883, 17884, 20057, 20812	<code>\textPlusCenterOpen</code>	18930, 20409	<code>\textqplig</code>	16007, 16009, 20684
<code>\textowedge</code>	17878, 17879, 20055, 20811	<code>\textplusinferior</code>	17461, 19914	<code>\textquaternote</code>	18803, 20358
<code>\textparagraph</code>	527, 14900, 15356, 15357, 20654	<code>\textplusminus</code>	14890, 15069, 15345, 19484	<code>\textquestiondown</code>	738, 14919, 15378
<code>\textparallel</code>	17871, 20052	<code>\textPlusOutline</code>	18924, 20406	<code>\textquotedbl</code>	14751, 15229
<code>\textparenleft</code>	741, 742, 14761, 15245	<code>\textplussuperior</code>	17429, 19898	<code>\textquotedblleft</code>	14819, 15059, 17359, 19474
<code>\textparenleftinferior</code>	17467, 19917	<code>\textPlusThinCenterOpen</code>	18928, 20408	<code>\textquotedblright</code>	14821, 17361
<code>\textparenleftsuperior</code>	17435, 19901	<code>\textpluto</code>	18743, 18744, 20345, 20917	<code>\textquoteleft</code>	14823, 15061, 17353, 19476
<code>\textparenright</code>	14763, 15247	<code>\textpm</code>	15069, 19484, 20636	<code>\textquoteright</code>	14825, 17355
<code>\textparenrightinferior</code>	17469, 19918	<code>\textpointer</code>	17784, 20015	<code>\textquotesingle</code>	15243
<code>\textparenrightsuperior</code>	17437, 19902	<code>\textprec</code>	18087, 20146	<code>\textRadioactivity</code>	18686, 18687, 20328, 20896
<code>\textpartial</code>	17799, 20022	<code>\textprecapprox</code>	19322, 20579	<code>\textRain</code>	18869, 20383
<code>\textPeace</code>	18898, 20394	<code>\textpreccurlyeq</code>	18091, 20148	<code>\textraiseglotstop</code>	16325, 16326
<code>\textPencilRight</code>	18905, 20397	<code>\textpreceq</code>	19298, 20567	<code>\texttriangle</code>	18393, 20275
		<code>\textpreceqq</code>	19310, 20573		
		<code>\textprecnapprox</code>	19330, 20583		
		<code>\textprecneq</code>	19306, 20571		
		<code>\textprecneqq</code>	19318, 20577		
		<code>\textprecnsim</code>	18338, 20251		

<code>\textrbracketdbl</code> . . . 19059, 19060, 20469, 20950	<code>\textrightarrow</code> . . . 2169, 17619, 17620, 17621, 19949, 20793, 20794	<code>\textrtimes</code> 18266, 20219
<code>\textrcurvearrowdown</code> . . 19116, 19117, 19118, 20493, 20953, 20954	<code>\textrightarrowtail</code> 17660, 19966	<code>\texttsagittarius</code> . . 18770, 18771, 20354, 20926
<code>\textrcurvearrowleft</code> . . . 19120, 20494	<code>\textrightarrowtriangle</code> . 17791, 20018	<code>\texttsaturn</code> 18734, 18735, 20342, 20914
<code>\textrcurvearrowne</code> 19100, 20488	<code>\textrightbarharpoon</code> . . . 19154, 20506	<code>\textsc</code> 562
<code>\textrcurvearrowright</code> . . 19123, 20495	<code>\textRIGHTCIRCLE</code> . . . 18642, 20312	<code>\textsc a</code> 16973, 16974
<code>\textrcurvearrowse</code> 19109, 20491	<code>\textrightharpoondown</code> . 17701, 19982	<code>\textsc b</code> 16272, 16273
<code>\textRe</code> 17542, 19937	<code>\textrightharpoonup</code> . . . 17698, 19981	<code>\textsc d</code> 16976, 19865
<code>\textrecipe</code> 17544	<code>\textrightleftarrows</code> 17710, 19985	<code>\textsc e</code> 16977, 16978
<code>\textRectangle</code> . . . 19042, 20461	<code>\textrightleftharpoon</code> . . . 19127, 20497	<code>\textsc f</code> . . . 19399, 19401, 20975
<code>\textRectangleBold</code> 19044, 20462	<code>\textrightleftharpoons</code> . . 17730, 19993	<code>\textsc g</code> . . . 16081, 16082, 19806
<code>\textRectangleThin</code> 19040, 20460	<code>\textrightmoon</code> . . 18711, 20337	<code>\textsch</code> 16280, 16281
<code>\textrecycle</code> 18818, 18819, 20364, 20936	<code>\textrighttrightharpoons</code> . . 19142, 20502	<code>\textschwa</code> . 16049, 16050, 19801
<code>\textreferencemark</code> 17395	<code>\textrightslice</code> . . . 19296, 20566	<code>\textschwainferior</code> 17479, 19923
<code>\textregistered</code> . . . 14884, 15339	<code>\textrightsquigarrow</code> . . . 17771, 20010	<code>\textsci</code> . . . 16108, 16109, 19811
<code>\textRequest</code> 18423, 20286	<code>\textrightthreetimes</code> . . . 18270, 20221	<code>\textScissorHollowRight</code> 18887, 20389
<code>\textrevapostrophe</code> 16322, 16323	<code>\textrinferior</code> 16998, 19868	<code>\textScissorRight</code> . 18881, 18882, 18883, 20387, 20943, 20944
<code>\textrevc</code> 17611	<code>\textring</code> . 14692, 14704, 14716, 14747, 15154, 15183, 16352	<code>\textScissorRightBrokenBottom</code> 18877, 18878, 18879, 20941, 20942
<code>\textrevE</code> 15803	<code>\textringlow</code> 15167, 15196, 16361	<code>\textScissorRightBrokenTop</code> 18885, 20388
<code>\textreve</code> . . 16046, 16047, 19800	<code>\textriota</code> 17555, 19939	<code>\textscj</code> 16979, 16980
<code>\textreveysilon</code> . . 16060, 16061, 19803	<code>\textringdoteq</code> . . 17994, 20104	<code>\textsc k</code> . . . 16981, 16983, 20765
<code>\textrevglotstop</code> . 16257, 16258, 16259, 19827, 20752	<code>\textrm</code> 556	<code>\textsc l</code> 16288, 16289
<code>\textrevscr</code> 16990, 16992, 20768	<code>\textrp</code> 16331, 16332	<code>\textsc m</code> . . 16984, 16986, 20766
<code>\textrevyogh</code> 15838, 15839	<code>\textrquill</code> 17403	<code>\textsc n</code> . . . 16144, 16145, 19812
<code>\textRewind</code> 18628, 20306	<code>\textRrightarrow</code> . 17767, 20008	<code>\textsc oelig</code> 16151, 16152
<code>\textRewindToIndex</code> . . . 18435, 20291	<code>\textrrparenthesis</code> 19169, 20512	<code>\textscorpio</code> 18767, 18768, 20353, 20925
<code>\textRHD</code> 18619, 20303	<code>\textrtail</code> 16118, 16119, 16120, 20715	<code>\textsc p</code> . . . 16987, 16989, 20767
<code>\textrhd</code> . 18235, 18236, 20207, 20858	<code>\textrtailn</code> 16141, 16142, 16143, 20724	<code>\textscr</code> . . . 16186, 16187, 19815
<code>\textrho</code> 3173, 3174, 3179, 3180, 3181, 3182, 19758, 19856	<code>\textrtailr</code> 16175, 16176, 16177, 20732	<code>\textscripta</code> 16019, 16020, 16021, 19797, 20688
<code>\textrho inferior</code> . . 17008, 19873	<code>\textrtails</code> 16191, 16192, 16193, 20735	<code>\textscriptg</code> 16078, 16079, 16080, 19805, 20704
<code>\textrhooka</code> 17021, 17023, 20769	<code>\textrtailt</code> 16209, 16210, 16211, 20738	<code>\textscriptv</code> 16220, 16221, 19820
<code>\textrhooke</code> 17026, 17028, 20770	<code>\textrtailz</code> 16237, 16238, 16239, 20747	<code>\textscu</code> . . . 16993, 16994, 19866
<code>\textrhookepsilon</code> 17030, 17032, 20771		<code>\textscy</code> . . . 16234, 16235, 19824
<code>\textrhooknearrow</code> 19091, 20484		<code>\textsearrow</code> 17761, 20005
<code>\textrhookopeno</code> . 17034, 17036, 20772		<code>\textsearrow</code> 17636, 17637, 19955, 20798
<code>\textrhookreveysilon</code> . . . 16063, 16064, 16065, 19804, 20700		<code>\textSech</code> 19436, 20618
<code>\textrhookschwa</code> . 16052, 16053, 16054, 20698		<code>\textsecond</code> 17385, 19884
<code>\textrhookswarrow</code> 19095, 20486		<code>\textsecstress</code> 16339, 16340
<code>\textRightarrow</code> . 17746, 17747, 19999, 20800		<code>\textsection</code> 14870, 15323, 15324, 15325, 20652, 20653
		<code>\textSePa</code> 19422, 20612
		<code>\textservicemark</code> 17546
		<code>\textsetminus</code> . . . 14773, 17842, 20041

<code>\textseveneighths</code>	17609	<code>\textsqdoublecap</code> .	19234, 19235, 20539, 20963	<code>\textsucceqq</code>	19314, 20575
<code>\textseveninferior</code>	17455, 19911	<code>\textsqdoublecup</code> .	19239, 19240, 20541, 20964	<code>\textsuccnapprox</code> .	19332, 20584
<code>\textsevensuperior</code>	17423, 19895	<code>\textsqsubset</code>	18131, 20168	<code>\textsuccneq</code>	19308, 20572
<code>\textsf</code>	557, 13134, 13137	<code>\textsqsubseteq</code>	18139, 20172	<code>\textsuccneqq</code> . . .	19320, 20578
<code>\textsharp</code>	18816, 20363	<code>\textsqsubsetneq</code> .	18328, 18329, 20247, 20868	<code>\textsuccsim</code>	18340, 20252
<code>\textshuffle</code>	19207, 20527	<code>\textsqsupset</code>	18135, 20170	<code>\textsum</code>	18099, 20152
<code>\textSigma</code>	3171, 19737, 19835	<code>\textsqsupseteq</code> . . .	18143, 20174	<code>\textsun</code>	17830, 20036
<code>\textsigma</code>	3168, 3169, 3183, 19760, 19858	<code>\textsqsupsetneq</code> .	18331, 18332, 20248, 20869	<code>\textSunCloud</code> . . .	18706, 18707, 20335, 20902
<code>\textsim</code>	17922, 17923, 20073, 20817	<code>\textSquareCastShadowBottomRight</code>	19033, 20457	<code>\textSunshineOpenCircled</code>	19002, 20444
<code>\textsimeq</code>	17938, 20080	<code>\textSquareCastShadowTopRight</code>	19036, 20458	<code>\textSupset</code>	18286, 20228
<code>\textsinferior</code>	17493, 19930	<code>\textsqaredots</code> . . .	17915, 20070	<code>\textsupset</code>	18109, 20157
<code>\textSixFlowerAlternate</code>	18994, 20440	<code>\textSquareShadowBottomRight</code>	19027, 20455	<code>\textsupseteq</code>	18117, 20161
<code>\textSixFlowerAltPetal</code>	19004, 20445	<code>\textSquareTopRight</code>	19030, 20456	<code>\textsupseteqq</code>	19338, 20587
<code>\textSixFlowerOpenCenter</code>	18990, 20438	<code>\textsslash</code>	19374, 19375, 20601, 20972	<code>\textsupsetneq</code>	18125, 20165
<code>\textSixFlowerPetalRemoved</code>	18987, 20437	<code>\textstar</code>	18256, 20215	<code>\textsurd</code>	17850, 20044
<code>\textsixinferior</code>	17453, 19910	<code>\textsterling</code>	14862, 15312, 15313, 15314, 20649, 20650	<code>\textSwarrow</code>	17763, 20006
<code>\textSixStar</code>	18977, 20432	<code>\textstmarydbaro</code>	18399, 18400, 20874	<code>\textswarrow</code>	17639, 19956
<code>\textsixsuperior</code>	17421, 19894	<code>\textstretchc</code>	16263, 16264, 16265, 16266, 20753, 20754	<code>\TextSymbolUnavailable</code>	14723, 14724, 14726
<code>\textSixteenStarLight</code>	18985, 20436	<code>\textstretchcvar</code> . . .	16266, 20754	<code>\textTape</code>	18891, 20391
<code>\textsixteenthnote</code>	18810, 20360	<code>\textsubbreve</code>	15138, 15169, 15198, 17118, 17120	<code>\texttau</code>	3170, 3174, 3176, 3177, 3178, 19761, 19859
<code>\textsl</code>	563	<code>\textsubcircum</code>	15135, 15136, 15168, 15197, 17070, 17072, 17086, 17088, 17146, 17148, 17174, 17176, 17230, 17232, 17242, 17244	<code>\texttaurus</code>	18749, 18750, 20347, 20919
<code>\textslashc</code>	16011, 16012, 16014, 19796, 20685, 20686	<code>\textsubring</code>	15128, 15129, 15167, 15196, 17038, 17040	<code>\texttctclig</code>	16313, 16314
<code>\textslashdiv</code>	19383, 20605	<code>\textSubset</code>	18282, 20226	<code>\textTent</code>	18875, 20386
<code>\textsmallin</code>	17816, 20030	<code>\textsubset</code>	18107, 20156	<code>\textteshlig</code>	16309, 16310, 16311, 20760
<code>\textsmallowns</code>	17824, 20033	<code>\textsubseteq</code>	18115, 20160	<code>\texttherefore</code> . . .	17907, 17908, 20067
<code>\textsmile</code>	18387, 20272	<code>\textsubseteqq</code>	19334, 20585	<code>\textTheta</code>	3182, 19733, 19831
<code>\textsmiley</code>	18701, 18702, 20333, 20901	<code>\textsubsetneq</code> . . .	18123, 20164	<code>\texttheta</code>	19750, 19847
<code>\textSnowflake</code>	19008, 20447	<code>\textsubtilde</code>	15139, 15140, 15170, 15199, 17090, 17092, 17122, 17124, 17238, 17240	<code>\textthird</code>	17387, 19885
<code>\textSnowflakeChevron</code>	19006, 20446	<code>\textsubumlaut</code> . . .	15126, 15127, 15166, 15195, 17234, 17236	<code>\textThorn</code>	14983, 15443, 19788
<code>\textSnowflakeChevronBold</code>	19010, 20448	<code>\textsucc</code>	18089, 20147	<code>\textthorn</code>	15052, 15512, 15514, 19789
<code>\textSoccerBall</code>	18864, 18865, 20940	<code>\textsuccapprox</code> . . .	19326, 20581	<code>\textthreeeighths</code>	17605
<code>\textspadesuitblack</code>	2168, 18782, 18783, 20930	<code>\textsucccurlyeq</code> . .	18093, 20149	<code>\textthreelfths</code>	17595
<code>\textspadesuitwhite</code>	18795	<code>\textsucceq</code>	19302, 20569	<code>\textthreeinferior</code> .	17447, 19907
<code>\textSparkle</code>	19012, 20449			<code>\textthreequarters</code>	14917, 15376
<code>\textSparkleBold</code>	19014, 20450			<code>\textthreesuperior</code>	14894, 15349, 19786
<code>\textSphericalangle</code>	17861, 17862, 17863, 17864, 20049, 20807, 20808, 20809			<code>\texttie</code>	15173, 15202, 16379
<code>\textsqcap</code>	18147, 20176			<code>\texttilde</code>	14690, 14702, 14714, 14749, 15152, 15181, 16356
<code>\textsqcup</code>	18149, 20177			<code>\texttildelow</code>	15170, 15199, 16365

<code>\texttriangle</code>	17808, 20026	<code>\textuinferior</code>	17000, 19869	<code>\textvdotdot</code>	17913, 20069
<code>\texttriangleeq</code> . .	18016, 20114	<code>\textulcorner</code>	18377, 20267	<code>\textvdots</code>	18355, 20257
<code>\texttriangleleft</code> . .	18631, 20307	<code>\textuncrfemale</code> . .	18858, 18860, 20939	<code>\textvee</code>	17881, 20056
<code>\texttriangleright</code> . .	18617, 20302	<code>\textunderscore</code> 526, 4770, 4771, 4773, 14777, 15291, 15292, 20647		<code>\textveebar</code>	18252, 20213
<code>\texttriplesim</code> . . .	17956, 17957, 20088, 20820	<code>\textunlhd</code> 18238, 18239, 18240, 20208, 20859, 20860		<code>\textveedot</code>	19050, 20465
<code>\textTslash</code>	15738	<code>\textunrhd</code> 18242, 18243, 18244, 20209, 20861, 20862		<code>\textveedoublebar</code>	19251, 20545
<code>\texttslash</code>	15740	<code>\textup</code>	564	<code>\textvline</code>	15302, 20648
<code>\texttlig</code>	16307, 16308	<code>\textUParrow</code> . . .	18606, 18607, 20299, 20880	<code>\textvibyi</code>	16200, 16201
<code>\texttt</code>	558	<code>\textUparrow</code>	17743, 19998	<code>\textvibyy</code>	16319, 16320
<code>\textTumbler</code>	18397, 20277	<code>\textUpdownarrow</code> 17755, 20002		<code>\textVier</code>	19432, 20616
<code>\textturna</code> 16015, 16016, 16017, 20687		<code>\textupdownarrow</code> .	2171, 17629, 19952	<code>\textvinferior</code>	17002, 19870
<code>\textturnh</code> 16090, 16091, 16092, 16093, 20706, 20707		<code>\textupdownarrows</code> 17713, 19986		<code>\textViPa</code>	19418, 20610
<code>\textturnk</code> 16285, 16286, 16287, 20758		<code>\textupdownharpoonleftright</code>	19133, 20499	<code>\textvirgo</code> 18761, 18762, 20351, 20923	
<code>\textturnlongleg</code> .	16165, 16166, 16167, 20729	<code>\textupdownharpoonrightleft</code>	19130, 20498	<code>\textvisiblespace</code>	18439
<code>\textturnm</code> 16124, 16125, 16126, 16127, 20717, 20718		<code>\textupdownharpoons</code> . .	19160, 20508	<code>\textVdash</code>	18211, 20199
<code>\textturnmrlg</code> . .	16129, 16130, 16131, 20719	<code>\textupharpoonleft</code> 17695, 19980		<code>\textwasylounge</code> .	18369, 20264
<code>\textturnr</code> 16160, 16161, 16162, 16163, 20727, 20728		<code>\textupharpoonright</code> . . .	17692, 19979	<code>\textwedge</code>	17876, 20054
<code>\textturnrrtail</code> . .	16169, 16170, 16171, 20730	<code>\textuplus</code>	19209, 20528	<code>\textwedgedot</code> . . .	19052, 20466
<code>\textturnsck</code>	16287, 20758	<code>\textupmodels</code> . . .	19365, 20597	<code>\textWheelchair</code> . .	18821, 20365
<code>\textturnscripta</code> . .	16023, 16024, 16025, 16026, 20689, 20690	<code>\textUpsilon</code>	19738, 19836	<code>\textWomanFace</code> .	19446, 19447, 20623, 20979
<code>\textturnt</code> 16205, 16206, 16207, 20737		<code>\textupsilon</code> . . .	3169, 3177, 3178, 3180, 19762, 19860	<code>\textwon</code>	17505
<code>\textturnv</code> 16222, 16223, 16224, 16225, 19821, 20741, 20742		<code>\textupspoon</code>	19369, 20599	<code>\textwp</code>	17540, 19936
<code>\textturnw</code> 16226, 16227, 16228, 16229, 19822, 20743, 20744		<code>\textupstep</code>	19388, 19389	<code>\textwr</code> . .	17929, 17930, 20076, 20818
<code>\textturny</code> 16230, 16231, 16232, 16233, 19823, 20745, 20746		<code>\textupuparrows</code> .	17720, 19989	<code>\textWritingHand</code>	18900, 18901, 20395, 20946
<code>\textTwelveStar</code> . .	18983, 20435	<code>\textupupharpoons</code>	19139, 20501	<code>\textwynn</code>	15845, 15846
<code>\texttwofifths</code>	17593	<code>\texturanus</code> 18737, 18738, 20343, 20915		<code>\textXi</code>	19735, 19833
<code>\texttwoheaddownarrow</code>	17656, 19964	<code>\texturcorner</code>	18379, 20268	<code>\textxi</code>	3168, 19756, 19854
<code>\texttwoheadleftarrow</code> . .	17645, 19959	<code>\textValve</code>	19203, 20525	<code>\textxinferior</code>	17477, 19922
<code>\texttwoheadrightarrow</code> .	17652, 19962	<code>\textvarhexagon</code> .	19379, 20603	<code>\textXSolid</code>	18918, 20403
<code>\texttwoheaduparrow</code> . .	17649, 19961	<code>\textvarobar</code>	19174, 20955	<code>\textXSolidBold</code> .	18920, 20404
<code>\texttwoinferior</code> . .	17445, 19906	<code>\textvarsigma</code> 3173, 3179, 3180, 19759, 19857		<code>\textXSolidBrush</code>	18922, 20405
<code>\texttwoonotes</code> . . .	18808, 20359	<code>\textVDash</code> 18216, 18217, 20201, 20851		<code>\textxswup</code>	18829, 20938
<code>\texttwosuperior</code> .	14892, 15347, 19785	<code>\textVdash</code> 18208, 18209, 20198, 20850		<code>\textyen</code>	14866, 15318
<code>\texttwothirds</code>	17589	<code>\textvDash</code> 18204, 18205, 18206, 20197, 20848, 20849		<code>\textYinYang</code> . . .	18693, 18694, 18695, 18696, 20331, 20897, 20898, 20899
<code>\textudots</code>	18359, 20259	<code>\textvdash</code> 18184, 18185, 20190, 20842		<code>\textyogh</code> .	16244, 16245, 19825
				<code>\textzeroinferior</code> .	17441, 19904
				<code>\textzerosuperior</code> .	17413, 19890
				<code>\textzerthirds</code>	17613
				<code>\textzeta</code>	19748, 19845
				<code>\textZwdr</code>	19438, 20619
				<code>\textZwPa</code>	19424, 20613
				<code>\TH</code> .	14981, 14982, 15441, 15442
				<code>\th</code> .	15050, 15051, 15512, 15513
				<code>\thaa</code>	19643
				<code>\thanks</code>	6449
				<code>\thebookmark@seq@number</code>	14279
				<code>\thefootnote</code>	7380, 7585

<code>\theHchapter</code> . 6858, 6859, 6860, 6861, 7040	<code>\tiny</code> 586	<code>\ttl@Hy@PatchSaveWrite</code> . 7150, 7154
<code>\theHenumi</code> 6881	<code>\title</code> 6403, 6405	<code>\ttl@Hy@refstepcounter</code> . . 7166
<code>\theHenumii</code> 6882	<code>\tl</code> . . . 343, 344, 345, 2311, 4263, 5048, 5061	<code>\ttl@Hy@saveanchor</code> 7145, 7169
<code>\theHenumiii</code> 6883	<code>\TMP@EnsureCode</code>	<code>\ttl@Hy@SavedCurrentHref</code> 7149, 7160
<code>\theHenumiv</code> 6884	. . 4632, 4639, 4640, 4641, 4642, 4643, 4644, 4645, 4646, 4647, 4648, 4649, 4650, 4651, 4652, 4653, 4654, 4655, 4656, 4657, 4658, 4659, 4660, 4661, 4662, 4663, 4664, 4665	<code>\ttl@Hy@steplink</code> 7143
<code>\theHequation</code> 6847, 6849, 7276, 7299, 7305	<code>\tocappendix</code> 1307	<code>\ttl@savewrite</code> 7156, 7158
<code>\theHfigure</code> 6855, 6859	<code>\tocchapter</code> 1306	<code>\Tumbler</code> 18396, 20277
<code>\theHfootnote</code> . 7356, 7357, 7359	<code>\toclevel@chapter</code> 3391	<code>\turnv</code> 19821
<code>\theHHfootnote</code> 6885, 7362	<code>\toclevel@figure</code> 3397	<code>\turnw</code> 19822
<code>\theHHmpfootnote</code> 7362	<code>\toclevel@paragraph</code> 3395	<code>\turny</code> 19823
<code>\theHItem</code> . . . 6873, 6881, 6882, 6883, 6884	<code>\toclevel@part</code> 3387, 3389	<code>\tw@</code> . . . 4519, 5090, 5096, 5097, 5098, 5103, 5109, 5110, 5111, 14593, 14598, 14661, 14666
<code>\theHmpfootnote</code> 6886	<code>\toclevel@section</code> 3392	<code>\TwelveStar</code> 18982, 20435
<code>\theHpage</code> 7947	<code>\toclevel@subparagraph</code> . . 3396	<code>\twoheaddownarrow</code> . . . 17655, 19964
<code>\theHparagraph</code> 6865, 6866	<code>\toclevel@subsection</code> 3393	<code>\twoheadleftarrow</code> 17644, 19959
<code>\theHparentequation</code> 7299, 7305	<code>\toclevel@subsubsection</code> . . 3394	<code>\twoheadrightarrow</code> 17651, 19962
<code>\theHpart</code> 6851	<code>\toclevel@subsubsection</code> . . 3394	<code>\twoheaduparrow</code> . 17648, 19961
<code>\theHsection</code> . 6847, 6854, 6861, 6863, 6867, 6868, 7038	<code>\toclevel@table</code> 3398	<code>\twoinferior</code> 19906
<code>\theHsubequation</code> 7276	<code>\tocparagraph</code> 1311	<code>\twonotes</code> 18807, 20359
<code>\theHsubparagraph</code> 6866	<code>\tocpart</code> 1305	<code>\twosuperior</code> 19785
<code>\theHsubsection</code> . . . 6863, 6864	<code>\tocsection</code> 1308	<code>\TX@endtabularx</code> . . 7443, 7450, 7456
<code>\theHsubsubsection</code> . 6864, 6865	<code>\tocsubsection</code> 1309	<code>\typeout</code> . . . 5, 6, 7, 19, 26, 27, 36, 131, 155, 158, 159, 160, 5291, 20985
<code>\theHtable</code> 6856, 6860	<code>\toks</code> . . 8429, 8430, 8432, 14593, 14598, 14661, 14666	
<code>\theHtheorem</code> 6867	<code>\toks@</code> . 171, 208, 943, 966, 969, 971, 3266, 3267, 3269, 3860, 3864, 3865, 3873, 4327, 4328, 4527, 4529, 5140, 5145, 5151, 5157, 5158, 5161, 5261, 5266, 5270, 5274, 6621, 6623, 6709, 6711, 6768, 6780, 7156, 7161, 7450, 7453, 8169, 8170, 8394, 8399, 8401, 8404, 14592, 14598, 14660, 14666	
<code>\theHthm</code> 6868	<code>\top</code> 18192, 20193	
<code>\theHy@tempcnt</code> . . . 4886, 4894, 4901	<code>\topmargin</code> 8006	
<code>\thempfn</code> 7369, 7472, 7565, 7578	<code>\triangle</code> 17807, 20026	
<code>\theoremautorefname</code> 2962, 2980, 2998, 3016, 3034, 3052, 3070, 3108, 3128, 3146, 3164, 3182, 3200, 3218, 3236, 3254, 8669	<code>\triangleleft</code> 18015, 20114	
<code>\thepage</code> 2188, 5006, 6500, 6526, 6541, 7840, 7943, 7991, 8074, 8128, 8290, 8307, 8320, 8324, 8336, 8421, 8441, 8458, 8590	<code>\trianglelefteq</code> 18630, 20307	
<code>\therefore</code> 17906, 20067	<code>\trianglelefteq</code> . . . 18240, 20860	
<code>\Theta</code> 19831	<code>\triangleright</code> 18616, 20302	
<code>\theta</code> 19847	<code>\trianglerighteq</code> 18244, 20862	
<code>\third</code> 17386, 19885	<code>\triplesim</code> 17955, 20088	
<code>\thispdfpagelabel</code> 6505	<code>\tryhyper@link</code> 4980, 4982	
<code>\ThisShouldNotHappen</code> . . 13857	<code>\ttfamily</code> 568	
<code>\Thorn</code> . . . 14981, 15441, 19788	<code>\ttl@b</code> 7167, 7172	
<code>\thorn</code> . . . 15050, 15512, 19789		
<code>\threesinferior</code> 19907		
<code>\threesuperior</code> 19786		
<code>\tildel</code> 16113, 20713		
<code>\times</code> 20634		
<code>\tinferior</code> 19931		
		U
		<code>\U</code> . 15102, 16419, 16442, 16509, 16589, 16790, 16792, 16814, 16816, 16826, 16828
		<code>\u</code> . 15100, 15158, 15187, 15217, 15522, 15524, 15564, 15566, 15584, 15586, 15617, 15619, 15620, 15690, 15692, 15750, 15752
		<code>\ubar</code> 16215, 20739
		<code>\udesc</code> 16093, 20707
		<code>\udots</code> 18358, 20259
		<code>\UHORN</code> . 19499, 19610, 19611, 19612, 19613, 19614
		<code>\uhorn</code> 3150, 3157, 19493, 19550, 19551, 19552, 19553, 19554
		<code>\uinferior</code> 19869
		<code>\ulcorner</code> 18376, 20267
		<code>\UnDef</code> 12312
		<code>\undefined</code> 7357
		<code>\unexpanded</code> 1468, 1475
		<code>\unhbox</code> . 11289, 13548, 13670, 13702, 13726, 13754, 13783

<code>\unhcopy</code>	13650	15544, 15546, 15548, 15576,	<code>\vdash</code>	18183, 20190
<code>\unichar</code>	1913	15578, 15654, 15656, 15674,	<code>\vdotdot</code>	17912, 20069
<code>\Unicode</code>	1019	15676, 15710, 15712, 15726,	<code>\vdots</code>	18354, 20257
<code>\unlhd</code>	18237, 20208	15728, 15734, 15736, 15784,	<code>\vee</code>	17880, 20056
<code>\unrestored@protected@xdef</code> . .	7369, 7380, 7527, 7534,	15786, 15860, 15862, 15864,	<code>\veebar</code>	18251, 20213
..	7369, 7380, 7527, 7534,	15866, 15867, 15869, 15871,	<code>\veedot</code>	19049, 20465
	7578, 7585	15873, 15875, 15884, 15886,	<code>\veedoublebar</code> . . .	19250, 20545
<code>\unrhd</code>	18241, 20209	15888, 15890, 15896, 15897,	<code>\Venus</code>	18720, 20907
<code>\unskip</code>	7346	15975, 15977	<code>\venus</code>	18719, 20906
<code>\UParrow</code>	18605, 20299	<code>\V@@@footnotetext</code>	<code>\vfill</code> . . .	6198, 6199, 6200, 620
<code>\Uparrow</code>	17742, 19998	<code>\V@@footnotetext</code>	<code>\VHF</code>	17957, 20820
<code>\uparrow</code>	19948	<code>\value</code> . .	<code>\Vier</code>	19431, 20616
<code>\Updownarrow</code> . .	17754, 20002		<code>\vinferior</code>	19870
<code>\updownarrow</code> . . .	17628, 19952	6524, 7026, 7027, 7029,	<code>\ViPa</code>	19417, 20610
<code>\updownarrows</code> . .	17712, 19986	7030, 7786, 7813, 8010,	<code>\Virgo</code>	18762, 20923
<code>\updownharpoonleftright</code> 19132,		8188, 9945	<code>\virgo</code>	18760, 20351
	20499	<code>\Valve</code>	<code>\vod</code>	16084, 16086, 20705
<code>\updownharpoonrightleft</code> 19129,		19202, 20525	<code>\voffset</code>	8005
	20498	<code>\vara</code>	<code>\voicedh</code>	16097, 20709
<code>\updownharpoons</code> 19159, 20508		16021, 20688	<code>\vpageref</code> 8510, 8518, 8527, 8535	
<code>\upharpoonleft</code> . .	17694, 19980	<code>\varangle</code>	<code>\vphantom</code>	589
<code>\upharpoonright</code> .	17691, 19979	17862, 20807	<code>\Vr@f</code>	8513
<code>\uplus</code>	19208, 20528	<code>\varbigcirc</code>	<code>\vr@f</code>	8522
<code>\upmodels</code>	19364, 20597	18650, 20886	<code>\Vref@star</code>	8506
<code>\upshape</code>	574	<code>\varcurlyvee</code>	<code>\vref@star</code>	8531
<code>\Upsilon</code>	19836	<code>\varcurlywedge</code> . .	<code>\vskip</code>	2269, 2270
<code>\Upsilon</code>	19860	<code>\VarFlag</code>	<code>\vss</code>	8019
<code>\upspoon</code>	19368, 20599	<code>\varg</code>	<code>\vtex@trans@special</code> . . .	10734,
<code>\upuparrows</code> . . .	17719, 19989	<code>\varhexagon</code>		10736, 10739, 10743, 10747,
<code>\upupharpoons</code> . .	19138, 20501	<code>\varint</code>		10751, 10753, 10755, 10759,
<code>\upvdash</code>	18199, 20846	<code>\varnothing</code> 17804, 17806, 20803		10765, 10766, 10769
<code>\Uranus</code>	18738, 20915	<code>\varoast</code>	<code>\VTexInitMediaSize</code> . . .	10405,
<code>\uranus</code>	18736, 20343	18171, 20840		10431
<code>\urcorner</code>	18378, 20268	<code>\varobslash</code>	<code>\VTexOS</code> 10798, 10799, 10800,	10802
<code>\Url</code>	4950	<code>\varocircle</code>	<code>\VTexversion</code> 6676, 6679, 6682,	10790, 10794
<code>\url</code>	4949, 4953	<code>\varodot</code>	<code>\Vvdash</code>	18210, 20199
<code>\url@</code>	4953, 4954	<code>\varogreaterthan</code> .		
<code>\use</code>	483, 489, 5039	<code>\varoint</code>		
<code>\use@file</code>	5222, 5224, 5231	<code>\varolessthan</code> . . .		
<code>\usefont</code>	553	<code>\varomega</code>		
<code>\UseHook</code>	7114, 7130	<code>\varominus</code>		
<code>\UseSocket</code>	2230, 2233	<code>\varopeno</code>		
<code>\UseTaggingSocket</code>	7655	<code>\varoplus</code>		
<code>\utf@viii@undeferr</code>	513	<code>\varoslash</code>		
<code>\UTFviii@four@octets</code> 1909, 1918		<code>\varotimes</code>		
<code>\UTFviii@loop</code>	1897	<code>\varovee</code>		
<code>\UTFviii@three@octets</code> . .	1908	<code>\varowedge</code>		
<code>\UTFviii@tmp</code>	1896	<code>\varparallel</code>		
<code>\UTFviii@two@octets</code> . . .	1907	<code>\varparallelinv</code> . . .		
		<code>\varprop</code>		
		<code>\varsigma</code>		
		<code>\varsqsubsetneq</code> . .		
		<code>\varsqsupsetneq</code> . .		
		<code>\vartimes</code>		
		<code>\vavyod</code>		
		<code>\vbox</code> . .		
		6198, 6199, 6200, 6201,		
		6473, 8004		
		<code>\VDash</code>		
		18215, 20201		
		<code>\Vdash</code>		
		18207, 20198		
		<code>\vDash</code>		
		18203, 20197		
		<code>\wedge</code>		
		17875, 20054		
		<code>\wedgedot</code>		
		19051, 20466		
		<code>\Wheelchair</code>		
		18820, 20365		
		<code>\with</code>		
		15241, 20646		
		<code>\WomanFace</code>		
		19445, 20623		
		<code>\Womanface</code>		
		19447, 20979		
		<code>\wp</code>		
		17539, 19936		
		<code>\wr</code>		
		17928, 20076		
		<code>\wreath</code>		
		17930, 20818		

V	
<code>\v</code> .	14693, 14705, 14717, 14839, 14844, 14852, 14854, 15113, 15155, 15184, 15216, 15542,

\write . . 4841, 5378, 5380, 6374,
6797, 6805, 7770, 7785,
7802, 7812, 7831, 7861,
13033, 13036, 13064, 13079
\WriteBookmarks . . 4253, 4391,
4601, 4623, 14213, 14456,
14486, 14487, 14529, 14535
\WritingHand . . . 18899, 20395
\Writinghand 18901, 20946
\wwwbrowser . 9489, 9574, 9591

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, 268, 273, 274, 919,
925, 1406, 1434, 1849, 1851,
2264, 2274, 2283, 2293,
2382, 2383, 2388, 2404,
3277, 3280, 3284, 3297,
3408, 3409, 3412, 3413,
3414, 3418, 3421, 3427,
3863, 3869, 3872, 3875,
4154, 4155, 4160, 4161,
4281, 4282, 4283, 4286,
4289, 4292, 4325, 4326,
4328, 4329, 4528, 4531,
4840, 4846, 5237, 5238,
5239, 5251, 5262, 5263,
5264, 5265, 5268, 5269,
5314, 5317, 5399, 5413,
5438, 5442, 5445, 5455,
5990, 5994, 6425, 6426,
6431, 7157, 7164, 7182,
7191, 7193, 7205, 8086,
8088, 8401, 8402, 8431,
8434, 8470, 8471, 8472,
8474, 8476, 8892, 8901,
9764, 9765, 9766, 9768,
9769, 9770, 9772, 9773,
9774, 9776, 9777, 9778,
9780, 9781, 9782, 9784,
9785, 9786, 9788, 9789,
9790, 9792, 9793, 9795,

9801, 9810, 10912, 10917,
10921, 11293, 11296, 11302,
11307, 11455, 11456, 12614,
12634, 13215, 13235, 13571,
13591, 14597, 14599, 14665,
14667

\XBox 18669, 20890
\XeTeXLink@font . . 5076, 5079
\XeTeXLink@space . 5077, 5092,
5106
\XeTeXLinkBox . . . 5083, 5115
\XeTeXLinkMargin . 5073, 5074,
5089, 5091, 5102, 5104
\XeTeXrevision 4588
\XeTeXversion 4588
\Xi 19833
\xi 19854
\xinferior 19922
\XR@ext 2490, 2491, 5220, 5223,
6674, 8732, 9385, 9488,
9752, 10289, 11649, 11755,
11822, 12029, 12200
\XSolid 18917, 20403
\XSolidBold 18919, 20404
\XSolidBrush . . . 18921, 20405
\xspace 650, 652
\xspaceaddexceptions 4227, 4236

Y

\y 273, 275, 282,
288, 2384, 2389, 2394, 3414,
3415, 3416, 3417, 4284,
4287, 4290, 4293, 4295,
4301, 5240, 5241, 5242,
5243, 5251, 6426, 6434,
7178, 7180, 7181, 7184,
7191, 11298, 11299, 11300,
11301
\ya 19695
\yahamza 19633
\YingYang 18695, 20898
\Yingyang 18696, 20899
\YinYang 18692, 20331
\Yinyang 18694, 20897
\yogh 16244, 19825

Z

\z 274, 275, 283, 289, 2386, 2388, 5243, 5251
\z@ 1135, 1175, 1188, 1204, 1227, 1300, 1534, 1546, 1619, 1623, 1635, 1751, 1752, 1754, 1755, 1756, 2218, 2255, 2278, 2575, 2649, 2733, 3426, 4154, 4156, 5086, 5088, 5096, 5100, 5101, 5109, 5118, 5119, 6677, 7512, 8756, 8763, 9311, 9316, 9320, 9328, 9332, 9333, 9341, 9342, 10263, 10267, 10268, 10274, 10276, 10407, 10408, 10413, 10420, 10421, 10789, 10813, 11035, 11350, 11721, 11722, 11726, 11732, 11733, 12537, 12604, 13014, 13205, 13501, 13561, 14012, 14017, 14040, 14075, 14109, 14115, 14145, 14150, 14181, 14290, 14291, 14292, 14294, 14295, 14296, 14298, 14512, 14633
\z@skip 1
\za 1
\zay 1
\zeroinferior 1
\zerosuperior 1
\zeta 1
\zref@extractdefault . . . 1
\zref@ifrefcontainsprop . . 1
\zref@ifrefundefined . . . 1
\zref@labelbyprops 1
\zref@refused 1
\Zwdr 19437, 2
\ZWNJ 1
\ZwPa 19423, 2