

Hypertext marks in L^AT_EX

Sebastian Rahtz (deceased)

Heiko Oberdiek (inactive)

The L^AT_EX Project

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

2026-10-09 v7.01s

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	Disable patches	12
4.3	Version check	13
4.4	Checks with regular expressions	14
4.5	Compatibility with format dumps	15
4.6	Switches	16
5	Common help macros	18
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	19
6.1	Description of PDF strings	19
6.2	Definition of <code>\pdfstringdef</code>	19
6.2.1	Preprocessing	20
6.2.2	Expansion	27
6.2.3	Postprocessing	28
6.3	Encodings	32
6.3.1	XeTeX	32
6.3.2	Workaround for package linguex	33
6.3.3	Catcodes saving and restoring for <code>.def</code> files	33
6.3.4	PD1 encoding	34
6.3.5	PU encoding	34
6.4	Additional user commands	35
6.4.1	<code>\texorpdfstring</code>	35
6.4.2	Hooks for <code>\pdfstringdef</code>	35
6.5	Help macros for expansion	36
6.5.1	<code>\ignorespaces</code>	36
6.5.2	Babel languages	37
6.5.3	CJK patch	37
6.5.4	CJK bookmarks	38
6.5.5	CJK unicode	39
6.5.6	<code>\@inmathwarn-Patch</code>	44
6.5.7	Unexpandable spaces	45
6.5.8	Marker for commands	46
6.5.9	<code>\hspace fix</code>	46
6.5.10	Fix for AMS classes	46
6.5.11	Reference commands	46
6.5.12	Redefining the defining commands	49
6.5.13	<code>\ifnextchar</code>	50

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

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

37 Bibliographic references	188
37.1 Package harvard	191
37.2 Package chicago	192
38 Page numbers	193
39 Table of contents	195
40 New counters	200
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	234
44.6 VTeX typesetting system	244
44.7 Fix for Adobe bug number 466320	257
44.8 Direct pdfmark support	258
44.9 Rokicki's dvips	272
44.10 VTeX's vtexpdfmark driver	275
44.11 Textures	277
44.12 dvipsone	281
44.13 TeX4ht	285
45 Driver-specific form support	288
45.1 pdfmarks	288
45.2 HyperTeX	296
45.3 TeX4ht	297
45.4 pdfTeX	300
45.5 dvipdfm, xetex	309
45.6 Common forms part	317
46 Bookmarks in the PDF file	324
46.1 Bookmarks	325
46.1.1 Rerun warning	328
46.1.2 Driver stuff	328
47 Encoding definition files for encodings of PDF strings	335
47.1 PD1 encoding	335
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	382
47.2.13	Phonetic Extensions: U+1D00 to U+1D7F	382
47.2.14	Phonetic Extensions Supplement: U+1D80 to U+1DBF	383
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	394
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	414
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	426
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	430
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	431
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 $\text{\LaTeX}$ definition (number of arguments).

```

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

```

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

```

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

```

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

```

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

```

```

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

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

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

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

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

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

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

```

```

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

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

```

4 Package options and setup

4.1 Save catcodes

There are many packages that change the standard catcodes.

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

```

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

```

\Hy@SetCatcodes

```

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

```

```

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

```

\Hy@RestoreCatcodes

```

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

231 \Hy@SetCatcodes

```

4.2 Disable patches

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

```

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

```

```

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

```

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

```

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

```

4.3 Version check

\Hy@VersionChecked

```

267 \chardef\Hy@VersionChecked=0 %

```

\Hy@VersionCheck

```

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

```

```

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

```

\Hy@@VersionCheck

```

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

```

4.4 Checks with regular expressions

```

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

```

```

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

```

4.5 Compatibility with format dumps

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

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

```

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

```

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

```

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

```

`\Hy@AtEndOfPackage`

```

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

```

`\Hy@AtBeginDocumentHook`

```

367 \let\Hy@AtBeginDocumentHook\@empty

```

`\Hy@AtEndOfPackageHook`

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

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

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

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

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

4.6 Switches

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



```

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

```

Defaults for the switches are now set.

```

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

```

```

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

```

5 Common help macros

`\Hy@StepCount`

```

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

```

`\Hy@GlobalStepCount`

```

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

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

```

5.1 Macros for recursions

```

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

```

5.2 Babel's protection of shorthand characters

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

```

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

```

5.3 Coordinate transformations

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

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

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

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

Example (T_EX):

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

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

6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

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

6.1 Description of PDF strings

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

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

6.2 Definition of `\pdfstringdef`

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

Important: In T_EX's view PDF strings are written to a file and are expanded only in its mouth. Stomach commands that cannot be expanded further aren't executed, they are written verbatim. But the PDF reader that reads such a string isn't a T_EX 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 $\text{\TeX}$ 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.

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

```

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

```

```

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

```

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

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

The result is stored in the command token given in $\text{\#1}$.

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

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

```
516   \begingroup
```

6.2.1 Preprocessing

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

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

```

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

```

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

```

```

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

```

Package pifont.

```

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

```

Environments.

```

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

```

Package color.

```

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

```

Upper- and lowercase.

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

```

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

```

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

```

634 \let\cyr\relax

```


Package german.

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

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

Package FrenchPro. This package uses:

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

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

AMS classes.

```
644 \HyPsd@AMSclassfix
```

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

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

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

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

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

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

Miscellaneous commands.

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

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

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

Patch for cjk bookmarks.

```
661 \HyPsd@CJKhook
```

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

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

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

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

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

Package xspace.

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

Redefinitions of miscellaneous commands. Hyphenation does not make sense.

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

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

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

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

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

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

Support for package 'xargs':

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

6.2.2 Expansion

There are several possibilities to expand tokens within 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).

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

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

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

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

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

6.2.3 Postprocessing

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

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

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

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

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

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

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

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

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

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

```

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

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

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

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

```

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

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

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

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

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

```

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

```

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

```

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

```

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

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

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

```

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

```

Ligatures. T_EX forms ligatures in its stomach, but the PDF strings are treated only by T_EX's mouth. The PDFDocEncoding contains some ligatures, but the current version 3 of the AcrobatReader lacks the `fi` and `fl` glyphs, and the Linux version lacks the `emdash` and `endash` glyphs. So the necessary code is provided here, but currently disabled, hoping that version 4 of the AcrobatReader is better. To break the ligatures the user can use an empty group, because it leads to an insertion of an `\HyPsd@empty`. If this ligature code will be enabled some day, then the italic correction should also break the ligatures. Currently this occurs only, if package `xspace` is loaded.

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

```

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

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

```

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

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

An optimization is possible. Matched parentheses can be replaced by a `()` pair. But this code is removed to save T_EX memory and time.

```

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

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

With Unicode the spaces are replaced by their octal sequences.

```

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

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

```

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

```

Try conversion back to PDFDocEncoding.

```

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

```

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

```

802 \pdfstringdefPostHook#1%
803 \endgroup
804 }

```

`\Hy@pdfstringdef`

```

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

```

6.3 Encodings

6.3.1 XeTeX

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

6.3.2 Workaround for package linguex

```

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

```

6.3.3 Catcodes saving and restoring for .def files

\Hy@SaveCatcodeSettings

```

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

```

```

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

```

`\Hy@RestoreCatcodeSettings`

```

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

```

6.3.4 PD1 encoding

The PD1 encoding implements the PDFDocEncoding for use with L^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.

```

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

```

6.3.5 PU encoding

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

```

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

```

```

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

```

\HyPsd@LoadExtra

```

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

```

6.4 Additional user commands

6.4.1 \texorpdfstring

\texorpdfstring While expanding the string in \pdfstringdef the switch \ifHy@pdfstring is set. This is used by the full expandible macro \texorpdfstring. It expects two arguments, the first contains the string that will be set and processed by T_EX's stomach, the second contains the replacement for PDF strings.

```

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

```

6.4.2 Hooks for \pdfstringdef

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

```

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

```

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

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

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

In the argument of `\pdfstringdefDisableCommands` the character @ can be used in command names. So it is easy to use useful L^AT_EX commands like `\@gobble` or `\@firstofone`.

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

`\HyPsd@DisableCommands`

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

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

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

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

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

6.5 Help macros for expansion

6.5.1 `\ignorespaces`

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

```
936 \begingroup
```

```

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

```

6.5.2 Babel languages

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

```

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

```

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

```

\pdfstringdefDisableCommands{%
\languageshorthands{system}%
}

```

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

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

```

947 \*package>

```

6.5.3 CJK patch

```

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

\HyPsd@CJKhook

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

```

6.5.4 CJK bookmarks

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

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

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

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

```

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

```

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

```

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

```

```

999 \HyPsd@CJKActiveChars
1000 }

```

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

```

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

```

6.5.5 CJK unicode

\HyPsd@CJKhook@unicode

```

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

```

\HyPsd@CJK@Unicode

```

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

```

```

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

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

```



```

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

```

```

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

```

```

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

```

```

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

```

6.5.6 \@inmathwarn-Patch

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

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

```

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

```

```

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

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

\HyPsd@add@accent

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

```

6.5.7 Unexpandable spaces

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

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

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

```

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

```

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

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

6.5.8 Marker for commands

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

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

6.5.9 \hspace fix

\HyPsd@hspace

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

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

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

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

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

6.5.10 Fix for AMS classes

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

6.5.11 Reference commands

\HyPsd@href

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

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

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

```

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

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

```

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

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

```

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

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

```

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

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

```

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


`\HyPsd@@autorefname`

```

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

```

6.5.12 Redefining the defining commands

Definitions aren't allowed, because they aren't executed in an only expanding context. So the command to be defined isn't defined and can perhaps be undefined. This would 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`

```

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

```

```

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

```

6.5.13 \ifnextchar

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

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

```

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

```

6.5.14 \@protected@testoptifnextchar

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

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

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

6.6 Help macros for postprocessing

6.6.1 Generic warning.

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

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

6.6.2 Protecting spaces

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

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

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

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

Remove mask.

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

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

6.6.3 Remove grouping braces

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

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

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

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

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

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

```

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

```

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

```

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

```

6.6.4 Catcode check

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

```

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

```

Check catcodes.

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

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

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

```

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

```

```

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

```

```

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

```

Remove counts, dimens, skips.

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

```

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

```

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

```

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

```

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

```

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

```

Catcode warnings.

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

```

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

```

\HyPsd@RemoveSpaceWarning

```

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

```

\HyPsd@ReplaceSpaceWarning


```

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

```

6.6.5 Check for wrong glyphs

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

```

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

```

Spaces.

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

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

```

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

6.6.6 Replacing tokens

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

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

```

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

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

```

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

`\HyPsd@EscapeTeX`

```

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

```

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

```

6.6.7 Support for package xspace

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

```

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

```

6.6.8 Converting to Unicode

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

```

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

```

`\HyPsd@ConvertToUnicode`

```

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

```

```

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

```

\HyPsd@DoConvert

```

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

```

\HyPsd@DoEscape

```

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

```

\HyPsd@GetTwoBytes

```

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

```

\HyPsd@GetOneByte

```

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

```

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

```

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

```

`\HyPsd@Char`

```

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

```

```

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

```

6.6.9 Support for UTF-8 input encoding

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

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

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

```

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

```

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

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

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

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

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

$$(5)$$

```

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

```

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

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

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

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

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

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

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

$$(12)$$

```

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

```

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

```

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

```

```

1973 \def\HyPsd@UTFviii@four#1#2{%
1974 \expandafter\HyPsd@@UTFviii@four\number
1975 \numexpr-1+(\`#1-240)*4+\dimexpr.0625\dimexpr`#2sp-128sp%
1976 \expandafter|\number
1977 \numexpr`#2-16*\dimexpr.0625\dimexpr`#2sp| %
1978 }%
1979 \def\HyPsd@@UTFviii@four#1|#2|#3{%
1980 \933\number\dimexpr.25\dimexpr#1sp\relax\relax
1981 \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1982 \ifodd#2 %
1983 \number\numexpr(#2-1)/2\relax
1984 \else
1985 \number\numexpr#2/2\relax
1986 \fi
1987 \number\numexpr\ifodd#2 4+\fi
1988 \dimexpr.0625\dimexpr`#3sp-128sp\relax\relax\relax
1989 \933%
1990 \expandafter\HyPsd@@@UTFviii@four\number
1991 \numexpr`#3-16*\dimexpr.0625\dimexpr`#3sp| %
1992 }%
1993 \def\HyPsd@@@UTFviii@four#1|#2{%
1994 \number\numexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
1995 \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
1996 \number\dimexpr.125\dimexpr`#2sp-128sp\relax\relax
1997 \number\numexpr`#2-8*\dimexpr.125\dimexpr`#2sp\relax\relax\relax
1998 }%

```

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

```

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

```

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

```

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

```

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

```

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

```



```

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

```

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

```

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

```

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

`\HyPsd@DieFace` Die faces are provided by

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

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

```

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

`\HyPsd@DieFaceLarge`

```

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

6.6.11 Support for moon phases of package china2e

```

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

```

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

```

6.6.12 Support for package pifont

\HyPsd@ding

```

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

```

\HyPsd@@@ding

```

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

```

```

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

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

```

7 Support of other packages

7.1 Package subfigure

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

```

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

```

```

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

```

7.2 Package xr and xr-hyper

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

```

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

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

```

8 Help macros for links

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

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

```

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

```

\HyperRaiseLinkHook allows the user to reassign \HyperRaiseLinkLength.

```

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

```

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

```

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

```

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

```

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

```

```

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

```

9 Options

```

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

```

9.1 Help macros

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

```

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

\IfHyperBooleanExists

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

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

\IfHyperBoolean

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

\Hy@boolkey

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

```



```

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

```

\Hy@WarnOptionValue

```

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

```

\Hy@DisableOption

```

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

```

\Hy@WarnOptionDisabled

```

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

```

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

```

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

```

```

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

```

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

```

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

```

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

```

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

```

`\Hy@UseNameKey`

```

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

```

9.2 Defining the options

```

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

```

```

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

```

```

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

```

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

```

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

```

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

```

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

```

Determines whether an automatic anchor is put on each page

```

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

```

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

```

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

```

2544 }

Are the names for anchors made as per the HyperTeX system, or do they simply use what L^AT_EX provides?

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

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

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

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

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

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

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

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

2582 \define@key{Hyp}{pdfencoding}{%
2583   \edef\HyPsd@temp{#1}%
2584   \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2585     \let\HyPsd@pdfencoding\HyPsd@temp
2586   \Hy@unicodetrue
2587   \else
2588     \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2589       \z@
```

```

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

```

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

```

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

```

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

```

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

```

```

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

```

Legacy name, earlier releases assumed 1.x

```

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

```

if pdfminorversion is defined, make sure pdfmajorversion is too.

```

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

```

10 Options for different drivers

```

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

```

```

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

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

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

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

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

```



```

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

```

```

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

```

```

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

```

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

```

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

```

```

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

```

11 Options to add extra features

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

```

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

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

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

```

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

```

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

```

```

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

```

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

```

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

```

Configuration of encap char.

```

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

```

12 Language options

The `\autoref` feature depends on the language.

```

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

```

```

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

```

```

3038 \def\footnoteautorefname{nota}%
3039 \def\itemautorefname{punto}%
3040 \def\figureautorefname{Figura}%
3041 \def\tableautorefname{Tabella}%
3042 \def\partautorefname{Parte}%
3043 \def\appendixautorefname{Appendice}%
3044 \def\chapterautorefname{Capitolo}%
3045 \def\sectionautorefname{sezione}%
3046 \def\subsectionautorefname{sottosezione}%
3047 \def\subsubsectionautorefname{sottosottosezione}%
3048 \def\paragraphautorefname{paragrafo}%
3049 \def\subparagraphautorefname{sottoparagrafo}%
3050 \def\FancyVerbLineautorefname{linea}%
3051 \def\theoremautorefname{Teorema}%
3052 \def\pageautorefname{Pag.\@}%
3053 }
3054 \def\HyLang@magyar{%
3055 \def\equationautorefname{Egyenlet}%
3056 \def\footnoteautorefname{l\abjegyzet}%
3057 \def\itemautorefname{Elem}%
3058 \def\figureautorefname{\Abra}%
3059 \def\tableautorefname{T\abl\azat}%
3060 \def\partautorefname{R\esz}%
3061 \def\appendixautorefname{F"uggel\ek}%
3062 \def\chapterautorefname{fejezet}%
3063 \def\sectionautorefname{szakasz}%
3064 \def\subsectionautorefname{alszakasz}%
3065 \def\subsubsectionautorefname{alalszakasz}%
3066 \def\paragraphautorefname{bekezd'es}%
3067 \def\subparagraphautorefname{albekezd'es}%
3068 \def\FancyVerbLineautorefname{sor}%
3069 \def\theoremautorefname{T\etel}%
3070 \def\pageautorefname{oldal}%
3071 }
3072 \def\HyLang@portuges{%
3073 \def\equationautorefname{Equa\c c\~ao}%
3074 \def\footnoteautorefname{Nota de rodap'e}%
3075 \def\itemautorefname{Item}%
3076 \def\figureautorefname{Figura}%
3077 \def\tableautorefname{Tabela}%
3078 \def\partautorefname{Parte}%
3079 \def\appendixautorefname{Ap\~endice}%
3080 \def\chapterautorefname{Cap\itulo}%
3081 \def\sectionautorefname{Se\c c\~ao}%
3082 \def\subsectionautorefname{Subse\c c\~ao}%
3083 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
3084 \def\paragraphautorefname{par\agrafo}%
3085 \def\subparagraphautorefname{subpar\agrafo}%
3086 \def\FancyVerbLineautorefname{linha}%
3087 \def\theoremautorefname{Teorema}%
3088 \def\pageautorefname{P\agina}%
3089 }

```

Next commented section for Russian is provided by Olga Lapko.

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

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

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

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

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

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

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

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

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

```
3094 % }%
```

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

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

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

```
3097 }%
```

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

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

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

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

```
3101 % }%
```

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

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

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

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

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

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

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

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

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

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

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

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

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


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

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

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

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

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

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

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

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

```
3121 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%
```

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

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

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

```
3124 % \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 ...

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

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

```
3126 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
3127 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%
```

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

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

```

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

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

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

```

3183 }

Greek, see github issue 52

```
3184 \def\HyLang@greek{%
```

```

3185 \def\equationautorefname{\textEpsilon\textxi\acctonos\textiota\textsigma\textomega\textsigma\texteta}%

```

```

3186 \def\footnoteautorefname{\textupsi\textpi\textomicron\textsigma\texteta\textmu\textepsilon\acconos\textiota\textomega\textsigma\texteta}%

```

```

3187 \def\itemautorefname{\textalpha\textnu\texttau\textiota\textkappa\textep-
silon\acctonos\textiota\textmu\textepsilon\textnu\textomicron}%

```

```

3188 \def\figureautorefname{\textSigma\textchi\acctonos\texteta\textmu\textalpha}%

```

```
3189 \def\tableautorefname{\textPi\acconos\textiota\textnu\textalpha\textkappa\textalpha}%
```

```

3190 \def\partautorefname{\textMu\acconos\textepsilon\textrho\textomicron\textvar-
sigma}%

```

```

3191 \def\appendixautorefname{\textPi\textalpha\textrho\acconos\textalpha\textrho\texttau\texteta\textmu\textalpha}%

```

```

3192 \def\chapterautorefname{\textkappa\textepsilon\textphi\acctonos\textal-
    pha\textlambda\textalpha\textiota\textomicron}%

```

```

3193 \def\sectionautorefname{\textepsilon\textnu\acctonos\textomicron\texttau\texteta\textttau\textalpha}%

```

```

3194 \def\subsectionautorefname{\textupsi\textpi\textomicron\textepsilon\textnu\ac
ctonos\textomicron\texttau\texteta\texttau\textalpha}%

```

```

3195 \def\subsubsectionautorefname{\textuppsilon\textpi\textomicron-\textuppsilon\textpi\textomicron\text

```

3196 \def\paragraphautorefname{\textpi\textalpha\textrho\acctonos\textalpha\textgamma\textrho\textalpha\textphi\textomicron\textvarsigma}%

```

3197 \def\subparagraphautorefname{\textupsi\textpi\textomicron\textpi\textalpha\textrho\acctonos\textalpha\textgamma\textrho\textalpha\textphi\textomicron\textvarsigma}%

```

```

3198 \def\FancyVerbLineautorefname{\textgamma\textrho\textalpha\textmu\textmu\ac-
ctonos\texteta}%

```

```

3199 \def\theoremautorefname{\textTheta\textepsilon\acctonos\textomega\textrho\texteta\textmu\textalpha}%

```

```
3200 \def\pageautorefname{\textsigma\textepsilon\textlambda\acctonos\textiota\textdelta\textalpha}%
```

3201 }

```
3202 \def\HyLang@dutch{%
```

```
3203 \def\equationautorefname{Vergelijking}%
```

```
3204 \def\footnoteautorefname{voetnoot}%
```

```
3205 \def\itemautorefname{punt}%
```

```
3206 \def\figureautorefname{Figuur}%
```

```
3207 \def\tableautorefname{Tabel}%
```

```
3208 \def\partautorefname{Deel}%
```

```
3209 \def\appendixautorefname{Bijlage}%
```

```
3210 \def\chapterautorefname{hoofdstuk}%
```

```
3211 \def\sectionautorefname{paragraaf}%
```

```
3212 \def\subsectionautorefname{deelparagraaf}%
```

```
3213 \def\subsubsectionautorefname{deel-deelparagraaf}%
```

```
3214 \def\paragraphautorefname{alinea}%
```

```
3215 \def\subparagraphautorefname{deelalinea}%
```

```
3216 \def\FancyVerbLineautorefname{regel}%
```

```

3217 \def\theoremautorefname{Stelling}%

```

```
3218 \def\pageautorefname{pagina}%
```

```

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

```

3273 }

Instead of package babel's definition of `\addto` the implementation of package `varioref` is used. Additionally argument `#1` is checked for `\relax`. change 2026-06-17: do not execute `\yLang@XXX` here, gh/425

```

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

3287 \def\HyLang@DeclareLang#1#2#3{%
3288   \ifcsname extras#1\endcsname
3289     \expandafter\HyLang@addto
3290       \csname extras#1\expandafter\endcsname
3291       \csname HyLang@#2\endcsname
3292   \begingroup
3293     \edef\x{\endgroup
3294       #3%
3295     }%
3296     \x
3297     \@namedef{HyLang@#1@done}{}%
3298   \fi
3299   \begingroup
3300     \edef\x##1#2{%
3301       \noexpand\ifx##2\relax
3302         \errmessage{No definitions for language #2' found!}%
3303       \noexpand\fi
3304     \endgroup
3305     \noexpand\define@key{Hyp}{#1}[]{}%
3306     \noexpand\@ifundefined{HyLang@#1@done}{}%
3307     \noexpand\HyLang@addto{\noexpand##1}{\noexpand#2}%

```

Execute the command here to setup the language if babel is not used: gh/425

```

3308     \noexpand\UseName{HyLang@#2}%
3309     #3%
3310     \noexpand\@namedef{HyLang@#1@done}{}%
3311   }{}%
3312 }%
3313 }%
3314 \expandafter\x\csname extras#1\expandafter\endcsname
3315   \csname HyLang@#2\endcsname
3316 }

3317 \HyLang@DeclareLang{english}{english}{}
3318 \HyLang@DeclareLang{UKenglish}{english}{}
3319 \HyLang@DeclareLang{british}{english}{}
3320 \HyLang@DeclareLang{USenglish}{english}{}

```

```

3321 \HyLang@DeclareLang{american}{english}{}
3322 \HyLang@DeclareLang{german}{german}{}
3323 \HyLang@DeclareLang{austrian}{german}{}
3324 \HyLang@DeclareLang{ngerman}{german}{}
3325 \HyLang@DeclareLang{naustrian}{german}{}
3326 \HyLang@DeclareLang{nswissgerman}{german}{}
3327 \HyLang@DeclareLang{swissgerman}{german}{}
3328 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
3329 \HyLang@DeclareLang{brazil}{portuges}{}
3330 \HyLang@DeclareLang{brazilian}{portuges}{}
3331 \HyLang@DeclareLang{portuguese}{portuges}{}
3332 \HyLang@DeclareLang{spanish}{spanish}{}
3333 \HyLang@DeclareLang{catalan}{catalan}{}
3334 \HyLang@DeclareLang{afrikaans}{afrikaans}{}
3335 \HyLang@DeclareLang{french}{french}{}
3336 \HyLang@DeclareLang{frenchb}{french}{}
3337 \HyLang@DeclareLang{français}{french}{}
3338 \HyLang@DeclareLang{acadian}{french}{}
3339 \HyLang@DeclareLang{canadien}{french}{}
3340 \HyLang@DeclareLang{italian}{italian}{}
3341 \HyLang@DeclareLang{magyar}{magyar}{}
3342 \HyLang@DeclareLang{hungarian}{magyar}{}
3343 \HyLang@DeclareLang{greek}{greek}{}
3344 \HyLang@DeclareLang{dutch}{dutch}{}
3345 \HyLang@DeclareLang{norsk}{norsk}{}
3346 \HyLang@DeclareLang{norwegian}{norsk}{}
3347 \HyLang@DeclareLang{danish}{danish}{}
3348 \HyLang@DeclareLang{swedish}{swedish}{}

```

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

```

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

```

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

```

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

```

13 Options to change appearance of links

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

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

14 Bookmarking

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

```

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

```

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

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

```

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

```

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

```

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

```


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

```

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

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

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

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

```

15 PDF-specific options

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

and an option with an empty value.

```

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

```

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

```

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

```

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

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

```

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

```

```

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

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

```

```

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

```

```

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

```

```

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

```

```

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

```

```

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

```



```

3867     \kv@processor@default{pdfinfo}%
3868   }%
3869   \fi
3870 \fi
3871 }
3872 \def\HyInfo@GenerateAddons{%
3873   \ifHyInfo@AddonUnsupported
3874     \def\HyInfo@Addons{}%
3875   \else
3876     \begingroup
3877       \toks@{}%
3878       \def\HyInfo@do##1{%
3879         \edefEscapeName\HyInfo@Key{##1}%
3880         \edef\x{%
3881           \toks@{%
3882             \the\toks@
3883             /\HyInfo@Key(\csname HyInfo@Value@##1\endcsname)%
3884           }%
3885         }%
3886         \x
3887       }%
3888       \HyInfo@AddonList
3889       \edef\x{\endgroup
3890         \def\noexpand\HyInfo@Addons{\the\toks@}%
3891       }%
3892       \x
3893     \fi
3894   }
3895   \global\let\HyInfo@AddonList\@empty
3896
3897   \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \\\}
3898   \define@key{Hyp}{pdflinkmargin}{\setpdflinkmargin{#1}}
3899   \let\setpdflinkmargin\@gobble
3900   \def\calculate@pdfview#1 #2\{\%
3901     \def\@pdfview{#1}%
3902     \ifx\#2\%
3903       \def\@pdfviewparams{ -32768}%
3904     \else
3905       \def\@pdfviewparams{ #2}%
3906     \fi
3907   }
3908   \def\Hy@number#1{%
3909     \the\numexpr#1\relax
3910   }%
3911   \define@key{Hyp}{pdfstartpage}{\%
3912     \ifx\#1\%
3913       \let\@pdfstartpage\@empty
3914     \else
3915       \edef\@pdfstartpage{\Hy@number{#1}}%
3916     \fi
3917   }%
3918   \define@key{Hyp}{pdfstartview}{\%
3919     \ifx\#1\%
3920       \let\@pdfstartview\@empty
3921     \else

```

```

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

```

```

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

```

```

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

```

Test according to ABNF of RFC 3066.

```

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

```

Test according to ABNF of RFC 5646.

```

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

```

Test for unique extensions.

```

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

```

```

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

```

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

```

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

```

```

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

```

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

```

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

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

```

After processing options.

15.1 Package xspace support

```

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

```

15.2 Option draft

```

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

```


15.3 PDF/A

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

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

```

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

```

15.4 Patch for babel's \texttilde

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

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

```

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

```

```

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

```

15.4.1 Driver loading

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

```

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

```

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

```

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

```

```

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

```

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

```

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

```

```

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

```

```

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

```

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

```

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

```

15.4.2 Bookmarks

```

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

```

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

```

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

```

```

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

```

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

```

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

```



```

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

```

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

```

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

```

for grouping consistency:

```

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

```

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

```

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

```

16 User hypertext macros

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

```

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

```

```

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

```

```

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

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

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

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

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

4874 \def\Hy@AllowHyphens{%

```

```

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

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

```

Option ‘page’.

```

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

```

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

```

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

```

```

4924 \Hy@pdfnewwindowtrue
4925 \fi
4926 }

```

Option ‘pdfremotestartview’.

```

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

```

Option ‘pdfnewwindow’.

```

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

```

Option ‘ismap’.

```

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

```

Option ‘nextactionraw’.

```

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

```

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

```

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

```

```

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

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

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

```

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

```

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

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

```

We also have a need to give a L^AT_EX *label* to a hyper reference, to ease the pain of referring to it later. `\hyperrefundefinedlink` may be redefined by a user to add colour or other formatting.

```

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

```

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

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

To make this easier, we define `\hyperget`

```

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

```



```

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

```

16.1 Link box support for XeTeX and dvipdfmx

```

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

```

```

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

```

17 Underlying basic hypertext macros

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

```

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

```

```

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

```

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

```

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

```

Parameters are:

1. The URL or file name
2. The type

3. The internal name

4. The link string

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

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

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

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

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

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

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

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

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

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

otherwise its a URL

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

By default, turn run: into file:

```

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

```

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

```

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

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

5279 \def\Hy@StringLocalhost{localhost}

```

```

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

```

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

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

```

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

```

```

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

```

18 Option ‘destlabel’

```

5336 \ifHy@destlabel

```

```

\hyper@newdestlabel

```

```

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

```

```

\hyper@destlabel@hook

```

```

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

```

```

\Hy@DestRename

```

```

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

```

\HyperDestRename

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

\Hy@IsNotEmpty

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

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

\HyperDestLabelReplace

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

\HyperDestNameFilter

```
5396 \let\HyperDestNameFilter\HyperDestLabelReplace

5397 \else
```

\hyper@newdestlabel

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

\HyperDestLabelReplace

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

\HyperDestRename

```
5400 \let\HyperDestRename\@gobbletwo

5401 \fi

5402 \Hy@DisableOption{destlabel}
```


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

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

19 Forms creation

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

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

19.1 Field flags

The field flags are organized in a bit set.

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

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

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

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

#2: PDF name

#3: PDF position

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

`\HyField@NewFlagOnly`

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

`\HyField@NewOption` #1: option name

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

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

#1: option

#2: PDF name

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

#4: PDF position

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

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

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

\HyField@@UseFlag

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

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

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

\HyField@@SetFlag

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

\HyField@PrintFlags

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

```

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

```

19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

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

```

“Table 8.75 Field flags specific to button fields”

```

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

```

“Table 8.77 Field flags specific to text fields”

```

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

```

“Table 8.79 field flags specific to choice fields”

```

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

```

Signature fields are not supported.

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

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

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

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

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

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

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

```

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

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

```

19.1.2 Set submit flags

\HyField@FlagsSubmit

```

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

```

```

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

```

19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

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

```

19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

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

```

```

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

```

19.1.5 Check box field

\HyField@FlagsCheckBox

```

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

```

19.1.6 Radio button field

\HyField@FlagsRadioButton

```

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

```

19.1.7 Text fields

\HyField@FlagsText

```

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

```

```

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

```

19.1.8 Choice fields

\HyField@FlagsChoice

```

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

```


19.2 Choice field

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

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

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

```

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

`\HyField@@PDFChoices`

```

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

```

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

```

```

5830 \fi
5831 }

```

19.3 Forms

\HyField@SetKeys

```

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

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

```

```

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

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

```

```

5933 \else
5934 \def\Hy@WarnHTMLFieldOption#1{%
5935   \Hy@Warning{%
5936     HTML field option `#1'\MessageBreak
5937     is ignored%
5938   }%
5939 }%
5940 \fi
5941 \def\Fld@checkequals#1=#2=#3\\{%
5942 \def\@currDisplay{#1}%
5943 \ifx\\#2\\%
5944   \def\@currValue{#1}%
5945 \else
5946   \def\@currValue{#2}%
5947 \fi
5948 \expandafter\Hy@pdfstringdef\expandafter\@currValue\expandafter{\@currValue}%
5949 }
5950 \define@key{Field}{loc}{%
5951 \def\Fld@loc{#1}%
5952 }
5953 \define@key{Field}{checked}[true]{%
5954 \lowercase{\Field@boolkey{#1}}{checked}%
5955 }
5956 \define@key{Field}{disabled}[true]{%
5957 \lowercase{\Field@boolkey{#1}}{disabled}%
5958 }
5959 \ifHy@texht
5960 \define@key{Field}{accesskey}{%
5961 \Field@addtoks{accesskey}{#1}%
5962 }%
5963 \define@key{Field}{tabkey}{%
5964 \Field@addtoks{tabkey}{#1}%
5965 }%
5966 \else
5967 \define@key{Field}{accesskey}{%
5968 \Hy@WarnHTMLFieldOption{accesskey}%
5969 }%
5970 \define@key{Field}{tabkey}{%
5971 \Hy@WarnHTMLFieldOption{tabkey}%
5972 }%
5973 \fi
5974 \define@key{Field}{name}{%
5975 \def\Fld@name{#1}%
5976 }
5977 \let\Fld@altname\relax
5978 \define@key{Field}{altname}{%
5979 \def\Fld@altname{#1}%
5980 }
5981 \let\Fld@mappingname\relax
5982 \define@key{Field}{mappingname}{%
5983 \def\Fld@mappingname{#1}%
5984 }
5985 \define@key{Field}{width}{%
5986 \def\Fld@width{#1}%

```

```

5987 \Field@Width#1\setbox0=\hbox{m}%
5988 }
5989 \define@key{Field}{maxlen}{%
5990 \def\Fld@maxlen{#1}%
5991 }
5992 \define@key{Field}{menulength}{%
5993 \Fld@menulength=#1\relax
5994 }
5995 \define@key{Field}{height}{%
5996 \def\Fld@height{#1}%
5997 }
5998 \define@key{Field}{charsize}{%
5999 \setlength{\Fld@charsize}{#1}%
6000 }
6001 \define@key{Field}{borderwidth}{%
6002 \Hy@defaultbp\Fld@borderwidth{#1}%
6003 }
6004 \def\Hy@defaultbp#1#2{%
6005 \begingroup
6006 \afterassignment\Hy@defaultbpAux
6007 \dimen@=#2bp\relax{#1}{#2}%
6008 }
6009 \def\Hy@defaultbpAux#1\relax#2#3{%
6010 \ifx!#1!%
6011 \endgroup
6012 \def#2{#3}%
6013 \else
6014 \edef\x{\endgroup
6015 \def\noexpand#2{%
6016 \strip@pt\dimexpr\dimen@*800/803\relax
6017 }%
6018 }\x
6019 \fi
6020 }%
6021 \define@key{Field}{borderstyle}{%
6022 \let\Hy@temp\Fld@borderstyle
6023 \def\Fld@borderstyle{#1}%
6024 \Hy@Match\Fld@borderstyle{}{%
6025 ~[SDBIU]$%
6026 }{}{%
6027 \Hy@Warning{%
6028 Invalid value `~\pdfborderstyle'\MessageBreak
6029 for option `pdfborderstyle'. Valid values:\MessageBreak
6030 \space\space S (Solid), D (Dashed), B (Beveled),\MessageBreak
6031 \space\space I (Inset), U (Underline)\MessageBreak
6032 Option setting is ignored%
6033 }%
6034 \let\Fld@borderstyle\Hy@temp
6035 }%
6036 }
6037 \define@key{Field}{bordersep}{%
6038 \def\Fld@bordersep{#1}%
6039 }
6040 \define@key{Field}{default}{%

```

```

6041 \Hy@pdfstringdef\Fld@default{#1}%
6042 }
6043 \define@key{Field}{align}{%
6044 \def\Fld@align{#1}%
6045 }
6046 \define@key{Field}{value}{%
6047 \Hy@pdfstringdef\Fld@value{#1}%
6048 }
6049 \define@key{Field}{checkboxsymbol}{%
6050 \Fld@DingDef\Fld@cbsymbol{#1}%
6051 }
6052 \define@key{Field}{radiosymbol}{%
6053 \Fld@DingDef\Fld@radiosymbol{#1}%
6054 }
6055 \def\Fld@DingDef#1#2{%
6056 \let\Fld@temp\@empty
6057 \Fld@@DingDef#2\ding{ }\@nil
6058 \let#1\Fld@temp
6059 }
6060 \def\Fld@@DingDef#1\ding#2#3\@nil{%
6061 \expandafter\def\expandafter\Fld@temp\expandafter{%
6062 \Fld@temp
6063 #1%
6064 }%
6065 \ifx\\#3\\%
6066 \expandafter\@gobble
6067 \else
6068 \begingroup
6069 \lccode`0=#2\relax
6070 \lowercase{\endgroup
6071 \expandafter\def\expandafter\Fld@temp\expandafter{%
6072 \Fld@temp
6073 0%
6074 }%
6075 }%
6076 \expandafter\@firstofone
6077 \fi
6078 {%
6079 \Fld@@DingDef#3\@nil
6080 }%
6081 }

6082 \define@key{Field}{rotation}{%
6083 \def\Fld@rotation{#1}%
6084 }

6085 \define@key{Field}{backgroundcolor}{%
6086 \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
6087 }
6088 \define@key{Field}{bordercolor}{%
6089 \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
6090 }
6091 \define@key{Field}{color}{%
6092 \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
6093 }

```

```

6094 \let\Fld@onclick@code\@empty
6095 \let\Fld@format@code\@empty
6096 \let\Fld@validate@code\@empty
6097 \let\Fld@calculate@code\@empty
6098 \let\Fld@keystroke@code\@empty
6099 \let\Fld@onfocus@code\@empty
6100 \let\Fld@onblur@code\@empty
6101 \let\Fld@onmousedown@code\@empty
6102 \let\Fld@onmouseup@code\@empty
6103 \let\Fld@onenter@code\@empty
6104 \let\Fld@onexit@code\@empty
6105 \def\Hy@temp#1{%
6106   \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
6107 }
6108 \def\Hy@@temp#1#2{%
6109   \ifHy@pdfa
6110     \define@key{Field}{#2}{%
6111       \Hy@Error{%
6112         PDF/A: Additional action `#2' is prohibited%
6113       }\@ehc
6114     }%
6115   \else
6116     \define@key{Field}{#2}{%
6117       \def#1{##1}%
6118     }%
6119   \fi
6120 }
6121 \Hy@temp{keystroke}
6122 \Hy@temp{format}
6123 \Hy@temp{validate}
6124 \Hy@temp{calculate}
6125 \Hy@temp{onfocus}
6126 \Hy@temp{onblur}
6127 \Hy@temp{onmousedown}
6128 \Hy@temp{onmouseup}
6129 \Hy@temp{onenter}
6130 \Hy@temp{onexit}

6131 \let\Fld@calculate@sortkey\@empty
6132 \define@key{Field}{calculatesortkey}[1]{%
6133   \def\Fld@calculate@sortkey{#1}%
6134 }

6135 \ifHy@texht
6136   \def\Hy@temp#1{%
6137     \define@key{Field}{#1}{%
6138       \Field@addtoks{#1}{##1}%
6139     }%
6140   }%
6141 \else
6142   \def\Hy@temp#1{%
6143     \define@key{Field}{#1}{%
6144       \Hy@WarnHTMLFieldOption{#1}%
6145     }%
6146   }%

```



```

6147 \fi
6148 \Hy@temp{ondblclick}
6149 \Hy@temp{onmouseover}
6150 \Hy@temp{onmousemove}
6151 \Hy@temp{onmouseout}
6152 \Hy@temp{onkeydown}
6153 \Hy@temp{onkeyup}
6154 \Hy@temp{onselect}
6155 \Hy@temp{onchange}
6156 \Hy@temp{onkeypress}
6157 \ifHy@texht
6158   \define@key{Field}{onclick}{%
6159     \Field@addtoks{onclick}{#1}%
6160   }%
6161 \else
6162   \ifHy@pdfa
6163     \define@key{Field}{onclick}{%
6164       \Hy@Error{%
6165         PDF/A: Action `onclick' is prohibited%
6166       } \@ehc
6167     }%
6168   \else
6169     \define@key{Field}{onclick}{%
6170       \def\Fld@onclick@code{#1}%
6171     }%
6172   \fi
6173 \fi

6174 \DeclareRobustCommand\TextField{%
6175   \@ifnextchar[{\@TextField}{\@TextField[]}%
6176 }
6177 \DeclareRobustCommand\ChoiceMenu{%
6178   \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
6179 }
6180 \DeclareRobustCommand\CheckBox{%
6181   \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
6182 }
6183 \DeclareRobustCommand\PushButton{%
6184   \@ifnextchar[{\@PushButton}{\@PushButton[]}%
6185 }
6186 \DeclareRobustCommand\Gauge{%
6187   \@ifnextchar[{\@Gauge}{\@Gauge[]}%
6188 }
6189 \DeclareRobustCommand\Submit{%
6190   \@ifnextchar[{\@Submit}{\@Submit[]}%
6191 }
6192 \DeclareRobustCommand\Reset{%
6193   \@ifnextchar[{\@Reset}{\@Reset[]}%
6194 }
6195 \def\LayoutTextField#1#2{% label, field
6196   \def\Hy@temp{#1}%
6197   \ifx\Hy@temp@empty
6198     #2%
6199   \else
6200     #1 #2%

```

```

6201 \fi
6202 }
6203 \def\LayoutChoiceField#1#2{% label, field
6204 \def\Hy@temp{#1}%
6205 \ifx\Hy@temp\@empty
6206 #2%
6207 \else
6208 #1 #2%
6209 \fi
6210 }
6211 \def\LayoutCheckField#1#2{% label, field
6212 \def\Hy@temp{#1}%
6213 \ifx\Hy@temp\@empty
6214 #2%
6215 \else
6216 #1 #2%
6217 \fi
6218 }
6219 \def\LayoutPushButtonField#1{% button
6220 #1%
6221 }
6222 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6223 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6224 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6225 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
6226 \def\MakeButtonField#1{%
6227 \sbox0{%
6228 \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
6229 }%
6230 \@tempdima\ht0 %
6231 \advance\@tempdima by \Fld@borderwidth bp %
6232 \advance\@tempdima by \Fld@borderwidth bp %
6233 \ht0\@tempdima
6234 \@tempdima\dp0 %
6235 \advance\@tempdima by \Fld@borderwidth bp %
6236 \advance\@tempdima by \Fld@borderwidth bp %
6237 \dp0\@tempdima
6238 \box0\relax
6239 }
6240 \def\DefaultHeightofSubmit{14pt}
6241 \def\DefaultWidthofSubmit{2cm}
6242 \def\DefaultHeightofReset{14pt}
6243 \def\DefaultWidthofReset{2cm}
6244 \def\DefaultHeightofCheckBox{\normalbaselineskip}
6245 \def\DefaultWidthofCheckBox{\normalbaselineskip}
6246 \def\DefaultHeightofChoiceMenu{\normalbaselineskip}
6247 \def\DefaultWidthofChoiceMenu{\normalbaselineskip}
6248 \def\DefaultHeightofText{\normalbaselineskip}
6249 \def\DefaultHeightofTextMultiline{4\normalbaselineskip}
6250 \def\DefaultWidthofText{3cm}
6251 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
6252 \def\DefaultOptionsofReset{print,name=Reset,noexport}
6253 \def\DefaultOptionsofPushButton{print}
6254 \def\DefaultOptionsofCheckBox{print}

```

```
6255 \def\DefaultOptionsofText{print}
```

Default options for the types of \ChoiceMenu.

```
6256 \def\DefaultOptionsofListBox{print}
```

```
6257 \def\DefaultOptionsofComboBox{print,edit,sort}
```

```
6258 \def\DefaultOptionsofPopdownBox{print}
```

```
6259 \def\DefaultOptionsofRadio{print,notoggletooff}
```

20 Setup

```
6260 \ifHy@hyperfigures
```

```
6261 \Hy@Info{Hyper figures ON}%
```

```
6262 \else
```

```
6263 \Hy@Info{Hyper figures OFF}%
```

```
6264 \fi
```

```
6265 \ifHy@nesting
```

```
6266 \Hy@Info{Link nesting ON}%
```

```
6267 \else
```

```
6268 \Hy@Info{Link nesting OFF}%
```

```
6269 \fi
```

```
6270 \ifHy@hyperindex
```

```
6271 \Hy@Info{Hyper index ON}%
```

```
6272 \else
```

```
6273 \Hy@Info{Hyper index OFF}%
```

```
6274 \fi
```

```
6275 \ifHy@backref
```

```
6276 \Hy@Info{backreferencing ON}%
```

```
6277 \else
```

```
6278 \Hy@Info{backreferencing OFF}%
```

```
6279 \fi
```

```
6280 \ifHy@colorlinks
```

```
6281 \Hy@Info{Link coloring ON}%
```

```
6282 \else
```

```
6283 \Hy@Info{Link coloring OFF}%
```

```
6284 \fi
```

```
6285 \ifHy@ocgcolorlinks
```

```
6286 \Hy@Info{Link coloring with OCG ON}%
```

```
6287 \else
```

```
6288 \Hy@Info{Link coloring with OCG OFF}%
```

```
6289 \fi
```

```
6290 \ifHy@pdfa
```

```
6291 \Hy@Info{PDF/A mode ON}%
```

```
6292 \else
```

```
6293 \Hy@Info{PDF/A mode OFF}%
```

```
6294 \fi
```

21 Low-level utility macros

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

```
6295 \edef\hyper@hash{\string#}
```

```
6296 \edef\hyper@tilde{\string~}
```

```
6297 \edef\hyper@quote{\string"}
```

Support \label before \begin{document}.

```
6298 \def\@currentHref{Doc-Start}
6299 \let\Hy@footnote@currentHref\@empty
```

We give the start of document a special label; this is used in backreferencing-by-section, to allow for cites before any sectioning commands. Set up PDF info.

```
6300 \Hy@AtBeginDocument{%
6301   \Hy@pdfstringtrue
6302   \PDF@SetupDoc
6303   \let\PDF@SetupDoc\@empty
6304   \Hy@DisableOption{pdfpagescrop}%
6305   \Hy@DisableOption{pdfpagemode}%
6306   \Hy@DisableOption{pdfnonfullscreenpagemode}%
6307   \Hy@DisableOption{pdfdirection}%
6308   \Hy@DisableOption{pdfviewarea}%
6309   \Hy@DisableOption{pdfviewclip}%
6310   \Hy@DisableOption{pdfprintarea}%
6311   \Hy@DisableOption{pdfprintclip}%
6312   \Hy@DisableOption{pdfprintscaling}%
6313   \Hy@DisableOption{pdfduplex}%
6314   \Hy@DisableOption{pdfpicktraybypdftype}%
6315   \Hy@DisableOption{pdfprintpagerange}%
6316   \Hy@DisableOption{pdfnumcopies}%
6317   \Hy@DisableOption{pdfstartview}%
6318   \Hy@DisableOption{pdfstartpage}%
6319   \Hy@DisableOption{pdftoolbar}%
6320   \Hy@DisableOption{pdfmenubar}%
6321   \Hy@DisableOption{pdfwindowui}%
6322   \Hy@DisableOption{pdfwindow}%
6323   \Hy@DisableOption{pdfcenterwindow}%
6324   \Hy@DisableOption{pdfdisplaydoctitle}%
6325   \Hy@DisableOption{pdfpagelayout}%
6326   \Hy@DisableOption{pdflang}%
6327   \Hy@DisableOption{baseurl}%
6328   \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi
6329   \Hy@pdfstringfalse
6330 }
```

22 Localized nullifying of package

Sometimes we just don't want the wretched package interfering with us. Define an environment we can put in manually, or include in a style file, which stops the hypertext functions doing anything. This is used, for instance, in the Elsevier classes, to stop hyperref playing havoc in the front matter.

```
6331 \def\NoHyper{%
6332   \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6333   \def\hyper@anchor##1##2{##2\Hy@xspace@end}%
6334   \global\let\hyper@livelink\hyper@link
6335   \gdef\hyper@link##1##2##3{##3\Hy@xspace@end}%
6336   \let\hyper@anchor\@gobble
6337   \let\hyper@anchorstart\@gobble
6338   \def\hyper@anchorend{\Hy@xspace@end}%
6339   \let\hyper@linkstart\@gobbletwo
```

```

6340 \def\hyper@linkend{\Hy@xspace@end}%
6341 \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6342 \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6343 \let\Hy@backout\@gobble
6344 }
6345 \def\stop@hyper{%
6346 \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6347 \let\Hy@backout\@gobble
6348 \let\hyper@@anchor\@gobble
6349 \def\hyper@link##1##2##3{##3\Hy@xspace@end}%
6350 \let\hyper@anchor\@gobble
6351 \let\hyper@anchorstart\@gobble
6352 \def\hyper@anchorend{\Hy@xspace@end}%
6353 \let\hyper@linkstart\@gobbletwo
6354 \def\hyper@linkend{\Hy@xspace@end}%
6355 \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6356 \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6357 }
6358 \def\endNoHyper{%
6359 \global\let\hyper@link\hyper@livelink
6360 }
6361 \end{package}

```

23 Package nohyperref

This package is introduced by Sebastian Rahtz.

Package nohyperref is a dummy package that defines some low level and some top-level commands. It is done for jadetex, which calls hyperref low-level commands, but it would also be useful with people using normal hyperref, who really do not want the package loaded at all.

Some low-level commands:

```

6362 \nohyperref
6363 \let\hyper@@anchor\@gobble
6364 \def\hyper@link#1#2#3{#3}%
6365 \let\hyper@anchorstart\@gobble
6366 \let\hyper@anchorend\@empty
6367 \let\hyper@linkstart\@gobbletwo
6368 \let\hyper@linkend\@empty
6369 \def\hyper@linkurl#1#2{#1}%
6370 \def\hyper@linkfile#1#2#3{#1}%
6371 \def\hyper@link@[#1]#2#3{#1}%
6372 \let\PDF@SetupDoc\@empty
6373 \let\PDF@FinishDoc\@empty
6374 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

6375 \def\Acrobatmenu#1#2{\leavevmode#2}
6376 \let\pdfstringdefDisableCommands\@gobbletwo
6377 \let\texorpdfstring\@firstoftwo
6378 \let\pdfbookmark\@undefined
6379 \newcommand\pdfbookmark[3]{}
6380 \let\phantomsection\@empty
6381 \let\hypersetup\@gobble

```

```

6382 \let\hyperbaseurl\@gobble
6383 \newcommand*{\href}[3][\#3]{
6384 \let\hyperdef\@gobbletwo
6385 \let\hyperlink\@gobble
6386 \let\hypertarget\@gobble
6387 \protected\def\hyperref{%
6388 \ifnextchar\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
6389 }
6390 \long\def\@gobbleopt[#1]{%
6391 \let\hyperpage\@empty
6392 \ifnohyperref

```

24 The Mangling Of Aux and Toc Files

Some extra tests so that the hyperref package may be removed or added to a document without having to remove .aux and .toc files (this section is by David Carlisle) All the code is delayed to `\begin{document}` change 2026-02-22: removed code for different `\newlabel` definitions.

25 Title strings

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

```

6393 \*package
6394 \ifHy@pdfusetitle
6395 \let\HyOrg@title\title
6396 \let\HyOrg@author\author
6397 \def\title{\ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
6398 \def\Hy@scanopttitle[#1]{%
6399 \gdef\Hy@title{#1}%
6400 \HyOrg@title{#1}%
6401 }%
6402 \def\Hy@scantitle#1{%
6403 \gdef\Hy@title{#1}%
6404 \HyOrg@title{#1}%
6405 }%
6406 \def\author{\ifnextchar{\Hy@scanoptauthor}{\Hy@scanauthor}}%
6407 \def\Hy@scanoptauthor[#1]{%
6408 \gdef\Hy@author{#1}%
6409 \HyOrg@author{#1}%
6410 }%
6411 \def\Hy@scanauthor#1{%
6412 \gdef\Hy@author{#1}%
6413 \HyOrg@author{#1}%
6414 }%

```

The case, that `\title`, or `\author` are given before `hyperref` is loaded, is much more complicate, because LaTeX initializes the macros `\@title` and `\@author` with LaTeX error and warning messages.

```

6415 \begingroup
6416 \def\process@me#1\@nil#2{%

```

```

6417 \expandafter\let\expandafter\x\csname @#2\endcsname
6418 \edef\y{\expandafter\strip@prefix\meaning\x}%
6419 \def\c##1##1##2\@nil{%
6420 \ifx\\##1\\%
6421 \else
6422 \expandafter\gdef\csname Hy@#2\expandafter\endcsname
6423 \expandafter{\x}%
6424 \fi
6425 }%
6426 \expandafter\c\y\relax#1\@nil
6427 }%
6428 \expandafter\process@me\string\@latex@\@nil{title}%
6429 \expandafter\process@me\string\@latex@\@nil{author}%
6430 \endgroup
6431 \fi
6432 \Hy@DisableOption{pdfusetitle}

```

Macro `\Hy@UseMaketitleInfos` is used in the driver files, before the information entries are used.

The newline macro `\newline` or `\\` is much more complicate. In the title a good replacement can be a space, but can be already a space after `\\` in the title string. So this space is removed by scanning for the next non-empty argument.

In the macro `\author` the newline can perhaps separate the different authors, so the newline expands here to a comma with space.

The possible arguments such as space or the optional argument after the newline macros are not detected.

A possible ¹ removes its argument.

```

6433 \def\Hy@UseMaketitleString#1{%
6434 \@ifundefined{Hy@#1}{ }{%
6435 \begingroup
6436 \let\Hy@saved@hook\pdfstringdefPreHook
6437 \pdfstringdefDisableCommands{%
6438 \expandafter\let\expandafter\\\csname Hy@newline@#1\endcsname
6439 \let\newline\\%
6440 \def\and{; }%
6441 \let\thanks\@gobble%
6442 }%
6443 \expandafter\ifx\csname @pdf#1\endcsname\@empty
6444 \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
6445 \csname Hy@#1\endcsname\@empty
6446 }%
6447 \fi
6448 \global\let\pdfstringdefPreHook\Hy@saved@hook
6449 \endgroup
6450 }%
6451 }
6452 \def\Hy@newline@title#1{ #1}
6453 \def\Hy@newline@author#1{, #1}
6454 \def\Hy@UseMaketitleInfos{%
6455 \Hy@UseMaketitleString{title}%
6456 \Hy@UseMaketitleString{author}%
6457 }

```

26 Page numbers

This stuff is done by Heiko Oberdiek.

27 Every page

```
6458 \let\Hy@EveryPageHook\@empty
6459 \let\Hy@EveryPageBoxHook\@empty
6460 \let\Hy@FirstPageHook\@empty
6461 \AddToHook{shipout/before}{%
6462   \Hy@EveryPageHook
6463   \ifx\Hy@EveryPageBoxHook\@empty
6464     \else
6465       \setbox\ShipoutBox=\vbox{%
6466         \offinterlineskip
6467         \Hy@EveryPageBoxHook
6468         \box\ShipoutBox
6469       }%
6470   \fi
6471 }
6472 \Hy@iffileloaded{hpdftex.def}{%
6473   \AddToHook{shipout/before}{%
6474     \Hy@FirstPageHook
6475     \global\let\Hy@FirstPageHook\@empty
6476   }%
6477 }{%
6478   \AddToHook{shipout/firstpage}{%
6479     \Hy@FirstPageHook
6480   }%
6481 }
6482 \g@addto@macro\Hy@FirstPageHook{%
6483   \PDF@FinishDoc
6484   \global\let\PDF@FinishDoc\@empty
6485 }
```

27.1 PDF /PageLabels

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

```
6486 \ifHy@pdfpagelabels
6487   \begingroup\expandafter\expandafter\expandafter\endgroup
6488   \expandafter\ifx\csname thepage\endcsname\relax
6489     \Hy@pdfpagelabelsfalse
6490     \Hy@WarningNoLine{%
6491       Option `pdfpagelabels' is turned off\MessageBreak
6492       because \string\thepage\space is undefined%
6493     }%
6494     \csname fi\endcsname
6495     \csname iffalse\expandafter\endcsname
6496   \fi
```

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

```
6497 \def\thispdfpagelabel#1{%
```



```

6498 \gdef\HyPL@thisLabel{#1}%
6499 }%
6500 \global\let\HyPL@thisLabel\relax

```

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

```

6501 \let\HyPL@Labels\@empty

```

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

```

6502 \newcount\Hy@abspage
6503 \Hy@abspage=0 %

```

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

```

6504 \def\HyPL@LastType{init}%
6505 \def\HyPL@LastNumber{0}%
6506 \let\HyPL@LastPrefix\@empty

```

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

```

6507 \def\HyPL@arabic{D}%
6508 \def\HyPL@Roman{R}%
6509 \def\HyPL@roman{r}%
6510 \def\HyPL@Alph{A}%
6511 \def\HyPL@alph{a}%

6512 \let\HyPL@SlidesSetPage\@empty
6513 \@ifclassloaded{slides}{%
6514   \def\HyPL@SlidesSetPage{%
6515     \advance\c@page\@ne
6516     \ifnum\value{page}>\@ne
6517       \protected@edef\HyPL@SlidesOptionalPage{%
6518         \Hy@SlidesFormatOptionalPage{\thepage}%
6519       }%
6520     \else
6521       \let\HyPL@SlidesOptionalPage\@empty
6522     \fi
6523     \advance\c@page-\@ne
6524     \def\HyPL@page{%
6525       \csname the\Hy@SlidesPage\endcsname
6526       \HyPL@SlidesOptionalPage
6527     }%
6528   }%
6529 }{}%

```

`\HyPL@EveryPage` If a page is shipout and the page number is known, `\HyPL@EveryPage` has to be called. It stores the current page label.

```

6530 \def\HyPL@EveryPage{%
6531   \begingroup
6532   \ifx\HyPL@thisLabel\relax
6533     \let\HyPL@page\thepage
6534     \HyPL@SlidesSetPage
6535   \else
6536     \let\HyPL@page\HyPL@thisLabel
6537     \global\let\HyPL@thisLabel\relax
6538   \fi

```

```

6539 \let\HyPL@Type\relax
6540 \ifnum\c@page>0 %
6541   \ifx\HyPL@SlidesSetPage\@empty
6542     \expandafter\HyPL@CheckThePage\HyPL@page\@nil
6543   \fi
6544 \fi
6545 \let\Hy@temp Y%
6546 \ifx\HyPL@Type\HyPL@LastType
6547 \else
6548   \let\Hy@temp N%
6549 \fi
6550 \ifx\HyPL@Type\relax
6551   \pdfstringdef\HyPL@Prefix{\HyPL@page}%
6552 \else
6553   \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6554 \fi
6555 \ifx\HyPL@Prefix\HyPL@LastPrefix
6556 \else
6557   \let\Hy@temp N%
6558 \fi
6559 \if Y\Hy@temp
6560   \advance\c@page by -1 %
6561   \ifnum\HyPL@LastNumber=\the\c@page\relax
6562   \else
6563     \let\Hy@temp N%
6564   \fi
6565   \Hy@StepCount\c@page
6566 \fi
6567 \if N\Hy@temp
6568   \ifx\HyPL@Type\relax
6569     \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
6570   \else
6571     \HyPL@StorePageLabel{%
6572       \ifx\HyPL@Prefix\@empty
6573       \else
6574         /P(\HyPL@Prefix)%
6575       \fi
6576       /S/\csname HyPL\HyPL@Type\endcsname
6577       \ifnum\the\c@page=1 %
6578       \else
6579         \space/St \the\c@page
6580       \fi
6581     }%
6582   \fi
6583 \fi
6584 \xdef\HyPL@LastNumber{\the\c@page}%
6585 \global\let\HyPL@LastType\HyPL@Type
6586 \global\let\HyPL@LastPrefix\HyPL@Prefix
6587 \endgroup
6588 \Hy@GlobalStepCount\Hy@abspage
6589 }%

```

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

```

6590 \def\HyPL@CheckThePage#1\@nil{%

```

```

6591 \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6592 }%

```

`\HyPL@@CheckThePage` The first check is, is `\thepage` is defined such as in L^AT_EX, e. g.: `\csname @arabic\endcsname\c@page`. In the current implementation the check fails, if there is another `\csname` before.

The second check tries to detect `\arabic{page}` at the end of the definition text of `\thepage`.

```

6593 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6594   \def\Hy@tempa{#4}%
6595   \def\Hy@tempb{\csname\endcsname\c@page}%
6596   \ifx\Hy@tempa\Hy@tempb
6597     \expandafter\ifx\csname HyPL#3\endcsname\relax
6598     \else
6599       \def\HyPL@Type{#3}%
6600       \def\HyPL@Prefix{#2}%
6601       \fi
6602     \else
6603       \begingroup
6604         \let\Hy@next\endgroup
6605         \let\HyPL@found\@undefined
6606         \def\arabic{\HyPL@Format{arabic}}%
6607         \def\Roman{\HyPL@Format{Roman}}%
6608         \def\roman{\HyPL@Format{roman}}%
6609         \def\Alph{\HyPL@Format{Alph}}%
6610         \def\alph{\HyPL@Format{alph}}%
6611         \protected@edef\Hy@temp{#1}%
6612         \ifx\HyPL@found\relax
6613           \toks@{\expandafter{\Hy@temp}}%
6614           \edef\Hy@next{\endgroup
6615             \noexpand\HyPL@@@CheckThePage\the\toks@
6616             \noexpand\HyPL@found\relax\noexpand\@nil
6617           }%
6618         \fi
6619         \Hy@next
6620       \fi
6621     }%

```

`\HyPL@Format` The help macro `\HyPL@Format` is executed while a `\protected@edef` in the second check method of `\HyPL@@CheckPage`. The first occurrences of, for example, `\arabic{page}` is marked by `\HyPL@found` that is also defined by `\csname`.

```

6622 \def\HyPL@Format#1#2{%
6623   \ifx\HyPL@found\@undefined
6624     \expandafter\ifx\csname c@#2\endcsname\c@page
6625       \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
6626     \else
6627       \expandafter\noexpand\csname#1\endcsname{#2}%
6628     \fi
6629   \else
6630     \expandafter\noexpand\csname#1\endcsname{#2}%
6631   \fi
6632 }%

```

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

```

6633 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6634   \def\Hy@tempa{#3}%
6635   \def\Hy@tempb{\HyPL@found\relax}%
6636   \ifx\Hy@tempa\Hy@tempb
6637     \def\HyPL@Type{#2}%
6638     \def\HyPL@Prefix{#1}%
6639   \fi
6640 }%

```

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

```

6641 \providecommand*\HyPL@StorePageLabel}[1]{}%

```

`\HyPL@Useless` The `/PageLabels` entry does not make sense, if the absolute page numbers and the page labels are the same. Then `\HyPL@Labels` has the meaning of `\HyPL@Useless`.

```

6642 \def\HyPL@Useless{0<</S/D>>}%
6643 \@onelevel@sanitize\HyPL@Useless

```

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

```

6644 \def\HyPL@SetPageLabels{%
6645   \@onelevel@sanitize\HyPL@Labels
6646   \ifx\HyPL@Labels\@empty
6647     \else
6648       \ifx\HyPL@Labels\HyPL@Useless
6649       \else
6650         \Hy@PutCatalog{/PageLabels<</Nums\HyPL@Labels>>>}%
6651       \fi
6652     \fi
6653 }%

```

```

6654 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6655 \fi

```

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

```

6656 \Hy@DisableOption{pdfpagelabels}
6657 \</package>

```

27.1.1 pdfTeX and VTeX

Because of pdfTeX’s `\pdfcatalog` command the `/PageLabels` entry can set at end of document in the first run.

`\Hy@PutCatalog`

```

6658 <*pdfTeX>
6659 \pdf@ifdraftmode{%
6660   \let\Hy@PutCatalog\@gobble
6661 }{%
6662   \let\Hy@PutCatalog\pdfcatalog
6663 }
6664 </pdfTeX>

```

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

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

```

6665 <*vtex>
6666 \providecommand*\XR@ext}{pdf}
6667 \edef\Hy@VTeXversion{%
6668   \ifx\VTeXversion\@undefined
6669     \z@
6670   \else
6671     \ifx\VTeXversion\relax
6672       \z@
6673     \else
6674       \VTeXversion
6675     \fi
6676   \fi
6677 }
6678 \begingroup
6679   \ifnum\Hy@VTeXversion<660 %
6680     \gdef\Hy@PutCatalog#1{%
6681       \Hy@WarningNoLine{%
6682         VTeX 6.59g or above required for pdfpagelabels%
6683       }%
6684     }%
6685   \else
6686     \gdef\Hy@PutCatalog#1{%
6687       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6688     }%
6689     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
6690       \ifx\#2\%
6691         \else
6692           \immediate\special{!pdfpagelabels #2}%
6693         \fi
6694       }%
6695     \fi
6696 \endgroup
6697 </vtex>

6698 <*pdftex | vtex>

```

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

```

6699 \ifHy@pdfpagelabels
6700   \def\HyPL@StorePageLabel#1{%
6701     \toks@\expandafter{\HyPL@Labels}%
6702     \xdef\HyPL@Labels{%
6703       \the\toks@
6704       \the\Hy@abspage<<#1>>%
6705     }%
6706   }%

```

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

```

6707 \AddToHook{enddocument/afteraux}{%
6708   \HyPL@SetPageLabels
6709 }%

6710 \fi
6711 </pdfTeX | vTeX>

```

27.1.2 xetex

```

6712 <*xetex>
6713 \HyPsd@LoadUnicode
6714 \Hy@unicodetrue
6715 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
6716 \else
6717   \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6718 \fi
6719 \define@key{Hyp}{unicode}[true]{%
6720   \Hy@boolkey{unicode}{#1}%
6721   \ifHy@unicode
6722     \else
6723       \Hy@Warning{%
6724         XeTeX driver only supports `unicode=true'. Ignoring\MessageBreak
6725         option setting `unicode=false'%
6726       }%
6727       \Hy@unicodetrue
6728     \fi
6729 }
6730 \define@key{Hyp}{pdfencoding}{%
6731   \edef\HyPsd@temp{#1}%
6732   \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6733     \let\HyPsd@pdfencoding\HyPsd@temp
6734   \else
6735     \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6736       \let\HyPsd@pdfencoding\HyPsd@temp
6737     \else
6738       \Hy@Warning{%
6739         XeTeX driver only supports\MessageBreak
6740         `pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6741         setting `pdfencoding=\HyPsd@temp'%
6742       }%
6743     \fi
6744   \fi
6745 }
6746 \let\HyXeTeX@CheckUnicode\relax

```

Since 2016 (x)dvipdfmx has a special to control the spacing of annotation borders.

So let's make use of it:

```

6747 \def\setpdfinkmargin#1{%
6748   \begingroup
6749   \setlength{\dimen@}{#1}%
6750   \special{dvipdfmx:config g \strip@pt\dimen@}%
6751   \endgroup}
6752 </xetex>

```

set the pdf version

```

6753 <*dvipdfm | xetex>

```

```

6754 \special{pdf:majorversion \Hy@pdf@majorversion}
6755 \special{pdf:minorversion \Hy@pdf@minorversion}
6756 </dviptfm | xetex>

```

27.1.3 pdfmarkbase, dvipdfm, xetex

```

6757 (*pdfmarkbase)
6758 \begingroup
6759 \ifundefined{headerps@out}{%}{%
6760 \toks@ \expandafter{\Hy@FirstPageHook}%
6761 \xdef\Hy@FirstPageHook{%
6762 \noexpand\headerps@out{%
6763 systemdict /pdfmark known%
6764 {%
6765 userdict /?pdfmark systemdict /exec get put%
6766 }{%
6767 userdict /?pdfmark systemdict /pop get put %
6768 userdict /pdfmark systemdict /cleartomark get put%
6769 }%
6770 ifelse%
6771 }%
6772 \the\toks@
6773 }%
6774 }%
6775 \endgroup
6776 </pdfmarkbase>

```

\Hy@PutCatalog

```

6777 <dvipdfm | xetex>\def\Hy@PutCatalog#1{\@pdfm@mark{docview <<#1>>}}
6778 (*pdfmarkbase)
6779 \def\Hy@PutCatalog#1{%
6780 \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} <<#1>>}}%
6781 }
6782 </pdfmarkbase>

6783 (*pdfmarkbase | dvipdfm | xetex)
6784 \ifHy@pdfpagelabels

```

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

```

6785 \def\HyPL@StorePageLabel#1{%
6786 \if@filesw
6787 \begingroup
6788 \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6789 \immediate\write\@mainaux{%
6790 \string\HyPL@Entry{\Hy@tempa}%
6791 }%
6792 \endgroup
6793 \fi
6794 }%

```

Write a dummy definition of \HyPL@Entry for the case, that the next run is done without hyperref. A marker for the rerun warning is set and the /PageLabels is written.

```

6795 \Hy@AtBeginDocument{%
6796 \if@filesw

```

```

6797 \immediate\write\@mainaux{%
6798 \string\providecommand\string*\string\HyPL@Entry[1]{}%
6799 }%
6800 \fi
6801 \ifx\HyPL@Labels\@empty
6802 \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6803 \else
6804 \HyPL@SetPageLabels
6805 \fi
6806 \let\HyPL@Entry\@gobble
6807 }%

\HyPL@Entry
6808 \def\HyPL@Entry#1{%
6809 \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6810 \HyPL@Labels
6811 #1%
6812 }%
6813 }%

6814 \fi
6815 </pdfmarkbase | dvipdfm | xetex>
6816 <*\packageEnd>

6817 \ifx\MaybeStopEarly\relax
6818 \else
6819 \Hy@stoppedearlytrue
6820 \expandafter\MaybeStopEarly
6821 \fi
6822 \Hy@stoppedearlyfalse

```

28 Automated L^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

```

6823 \def\Hy@CounterExists#1{%

```



```

6824 \begingroup\expandafter\expandafter\expandafter\endgroup
6825 \expandafter\ifx\csname c@#1\endcsname\relax
6826 \expandafter\@gobble
6827 \else
6828 \begingroup\expandafter\expandafter\expandafter\endgroup
6829 \expandafter\ifx\csname the#1\endcsname\relax
6830 \expandafter\expandafter\expandafter\@gobble
6831 \else
6832 \expandafter\expandafter\expandafter\@firstofone
6833 \fi
6834 \fi
6835 }

```

change 2026-02-22: removed definitions provided for format before 2024-11-01

Thanks to Greta Meyer (gbd@pop.cwru.edu) for making me realize that enumeration starts at 0 for every list! But `\item` occurs inside `\trivlist`, so check if its a real `\item` before incrementing counters.

```

6836 \let\H@item\item
6837 \newcounter{Item}
6838 \def\item{%
6839 \@hyper@itemfalse
6840 \if@nmbrlist\@hyper@itemtrue\fi
6841 \H@item
6842 }

```

Tanmoy asked for this default handling of undefined `\theH<name>` situations. It really isn't clear what would be ideal, whether to turn off hyperizing of unknown elements, to pick up the textual definition of the counter, or to default it to something like `\arabic{name}`. We take the latter course, slightly worriedly.

```

6843 \let\H@refstepcounter\@kernel@refstepcounter
6844 \edef\name@of@eq{equation}%

```

We do not want the handler for `\refstepcounter` to cut in during the processing of `\item` (we handle that separately), so we provide a bypass conditional. change 2022-04-22: removed test for the slide counter and for the equation name. change 2022-05-02: added the new boolean set by `\LinkTargetOn/\LinkTargetOff`

```

6845 \newif\if@hyper@item
6846 \newif\if@skiphyperref
6847 \@hyper@itemfalse
6848 \@skiphyperreffalse
6849 \ExplSyntaxOn
6850 \NewSocketPlug{refstepcounter}{hyperref}{\ifHy@pdfstring\else#1\fi}
6851 \AssignSocketPlug{refstepcounter}{hyperref}

```

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

```

6852 \AddToHook{package/cleveref/after}
6853 {
6854 \ifpackagelater{cleveref}{2018/03/28}{
6855 {
6856 \NewSocketPlug{refstepcounter}{hyperref/fixcleveref}
6857 {\ifHy@pdfstring\else
6858 #1%
6859 {\firstaid@cref@updatelabeldata{\@currentcounter}}}%
6860 \fi}
6861 \AssignSocketPlug{refstepcounter}{hyperref/fixcleveref}

```

```

6862 }
6863 }
6864 \NewSocketPlug{refstepcounter/target}{hyperref}
6865 {
6866   \bool_lazy_and:nnT
6867   { \l__hyp_target_create_bool }
6868   { ! \legacy_if_p:n{@skiphyperref} }
6869   {
6870     \legacy_if:nTF {@hyper@item}
6871     {
6872       \stepcounter{Item}%
6873       \hyper@refstepcounter{Item}%
6874       \@hyper@itemfalse
6875     }
6876     {
6877       \hyper@refstepcounter{\@currentcounter}%
6878     }
6879   }
6880 }
6881 \AssignSocketPlug{refstepcounter/target}{hyperref}
6882 \ExplSyntaxOff
6883 \let\Hy@saved@refstepcounter\refstepcounter

```

AMS_{La}TeX processes all equations twice; we want to make sure that the hyper stuff is not executed twice, so we use the AMS `\ifmeasuring@`, initialized if AMS math is not used. change 2025-06-20: test if the switch already exist, see tagging-project issue 920.

```

6884 \ifcsname ifmeasuring@\endcsname
6885 \else
6886   \expandafter\newif\csname ifmeasuring@\endcsname\measuring@false
6887 \fi
6888 \newcommand\Hy@ifnotmeasuring[1]{#1}
6889 \AddToHook{package/amsmath/after}
6890 {
6891   \renewcommand\Hy@ifnotmeasuring[1]
6892   {\ifmeasuring@ \else #1\fi}
6893 }

```

`\hyper@refstepcounter` changed 2026-02-22 to use `\MakeLinkTarget`

```

6894 \def\hyper@refstepcounter#1{\ifHy@hypertexnames\MakeLinkTarget{#1}\else\Make-
LinkTarget{#1}\fi}

```

`\Hy@ProvideTheHCounter` `\theH<counter>` is not set for counters that are defined before ‘hyperref’ is loaded. In `\cl@@ckpt`, the clear counter list of the artificial counter `@ckpt`, L^AT_EX remembers the defined counters (needed for `\include`). We check the clear counter lists, whether our counter is present. If we found it, then we add the parent counter value to `\theH<counter>`. The `\@elt` list is used in sanitized form for the comparison, because the list might contain other stuff than `\@elts`. Also it simplifies the implementation, because L^AT_EX’, substring search `\in@` can be used.

```

6895 \def\HyCnt@ProvideTheHCounter#1{%
6896   \@ifundefined{theH#1}{%
6897     \expandafter\def\csname theH#1\endcsname{}%
6898     \def\Hy@temp{\@elt{#1}}%
6899     \@onelevel@sanitize\Hy@temp

```

```

6900 \let\HyOrg@elt\@elt
6901 \edef\@elt{%
6902   \noexpand\HyCnt@LookForParentCounter
6903   \expandafter\noexpand\csname theH#1\endcsname
6904 }%
6905 \cl@@ckpt
6906 \let\@elt\HyOrg@elt
6907 \expandafter
6908 \Hy@LocalAppendToMacro\csname theH#1\expandafter\endcsname
6909 \expandafter{%
6910   \expandafter\@arabic\csname c@#1\endcsname
6911 }%
6912 }{}%
6913 }

```

\Hy@LookForParentCounter

```

6914 \def\HyCnt@LookForParentCounter#1#2{%
6915   \expandafter\let\expandafter\Hy@temp@A\csname cl@#2\endcsname
6916   \@ifundefined{cl@#2}{%
6917     }{%
6918     \@onelevel@sanitize\Hy@temp@A
6919     \edef\Hy@temp@A{%
6920       \noexpand\in@{\Hy@temp}{\Hy@temp@A}%
6921     }\Hy@temp@A
6922     \ifn@
6923       \@ifundefined{theH#2}{%
6924         \expandafter\Hy@LocalAppendToMacro\expandafter#1%
6925         \expandafter{%
6926           \expandafter\@arabic\csname c@#2\endcsname.%
6927         }%
6928       }{%
6929         \expandafter\Hy@LocalAppendToMacro\expandafter#1%
6930         \expandafter{%
6931           \csname theH#2\endcsname.%
6932         }%
6933       }%
6934     }\fi
6935   }%
6936 }

```

After `\appendix` “chapter” (or “section” for classes without chapter) should be replaced by “appendix” to get `\autoref` work. Macro `\Hy@chapapp` contains the current valid name like `\@chapapp`, which cannot be used, because this string depends on the current language.

The “french” package defines counter `\thechapter` by `\newcounterchapter`, if `\@ifundefinedchapter`.

change 2026-06-17: set the target prefix, issue gh/424

```

6937 \begingroup\expandafter\expandafter\expandafter\endgroup
6938 \expandafter\ifx\csname chapter\endcsname\relax
6939   \def\Hy@chapterstring{section}%
6940 \else
6941   \def\Hy@chapterstring{chapter}%
6942 \fi

```

```

6943 \def\Hy@appendixstring{appendix}
6944 \def\Hy@chapapp{\Hy@chapterstring}
6945 \hypersetup{target-prefix={chapter}\Hy@chapapp}
6946 \@ifundefined{appendix}{%
6947 }{%
6948 \let\HyOrg@appendix\appendix
6949 \def\Hy@AlphNoErr#1{%
6950 \ifnum\value{#1}>26 %
6951 Alph\number\value{#1}%
6952 \else
6953 \ifnum\value{#1}<1 %
6954 Alph\number\value{#1}%
6955 \else
6956 \Alph{#1}%
6957 \fi
6958 \fi
6959 }%
6960 \def\appendix{%
6961 \@ifundefined{chapter}{%
6962 \gdef\theHsection{\Hy@AlphNoErr{section}}%
6963 }{%
6964 \gdef\theHchapter{\Hy@AlphNoErr{chapter}}%
6965 }%
6966 \xdef\Hy@chapapp{\Hy@appendixstring}%
6967 \hypersetup{target-prefix={section}\Hy@appendixstring}%
6968 \HyOrg@appendix
6969 }%
6970 }

```

\Hy@Test@Alph

```

6971 \def\Hy@Test@Alph#1{%
6972 \ifcase#1\or
6973 a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
6974 k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
6975 u\or v\or w\or x\or y\or z%
6976 \else
6977 \@ctrerr
6978 \fi
6979 }

```

\Hy@Test@Alph

```

6980 \def\Hy@Test@Alph#1{%
6981 \ifcase#1\or
6982 A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
6983 K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
6984 U\or V\or W\or X\or Y\or Z%
6985 \else
6986 \@ctrerr
6987 \fi
6988 }

```

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

```

6989 \NewHook{__hyp/target/setname }
6990 \define@key{Hyp}{next-anchor}{%

```

```

6991 \AddToHookNext{__hyp/target/setname}%
6992 {\Hy@MakeCurrentHref{#1}}%
6993 }

```

\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.

```

6994 \def\hyper@makecurrent#1{%
6995 \begingroup
6996 \Hy@safe@activetrue
6997 \edef\Hy@param{#1}%
6998 \ifx\Hy@param\Hy@chapterstring
6999 \let\Hy@param\Hy@chapapp
7000 \fi
7001 \ifHy@hypertextnames
7002 \let\@number\@firstofone
7003 \def\@fnsymbol##1{fnsymbol\number##1}%
7004 \def\@arabic##1{\number##1}%
7005 \ifx\@alph\Hy@Test@alph
7006 \else
7007 \def\@alph{alph\number}%
7008 \fi
7009 \ifx\@Alph\Hy@Test@Alph
7010 \else
7011 \def\@Alph{Alph\number}%
7012 \fi
7013 \ifHy@naturalnames
7014 \let\textlatin\@firstofone
7015 \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
7016 \else
7017 \xdef\HyperGlobalCurrentHref{%
7018 \csname
7019 the%
7020 \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
7021 #1%
7022 \endcsname
7023 }%
7024 \fi
7025 \xdef\HyperGlobalCurrentHref{%
7026 \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
7027 }%
7028 \else
7029 \Hy@GlobalStepCount\Hy@linkcounter
7030 \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
7031 \fi
7032 \endgroup
7033 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7034 \ifHy@localanchorname
7035 \let\@currentHref\HyperLocalCurrentHref
7036 \else
7037 \global\let\@currentHref\HyperGlobalCurrentHref
7038 \fi
7039 \UseHook{__hyp/target/setname}%
7040 }

```

`\Hy@MakeCurrentHref`

```
7041 \def\Hy@MakeCurrentHref#1{%
7042   \edef\HyperLocalCurrentHref{#1}%
7043   \@onelevel@sanitize\HyperLocalCurrentHref
7044   \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
7045   \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
7046   \ifHy@localanchorname
7047     \let\@currentHref\HyperLocalCurrentHref
7048   \else
7049     \global\let\@currentHref\HyperGlobalCurrentHref
7050   \fi
7051 }
```

`\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.

```
7052 \def\Hy@MakeCurrentHrefAuto#1{%
7053   \Hy@GlobalStepCount\Hy@linkcounter
7054   \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
7055   \UseHook{__hyp/target/setname}}
```

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

```
7056 \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.

```
7057 \def\hypergetref#1{\getrefbykeydefault{#1}{}}{??}
7058 \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.

```
7059 \AddToHook{package/varwidth/after}
7060 {
7061   \NewSocketPlug{hyp/raisedlink}{varwidth}{\@vwid@wrap{#1}}
7062   \appto\@vwid@setup{\AssignSocketPlug{hyp/raisedlink}{varwidth}}
7063 }
```

31 Package titlesec and titletoc support

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

Package `titlesec` support:

```
7064 \@ifpackageloaded{titlesec}{%
7065   \def\ttl@Hy@steplink#1{%
7066     \Hy@MakeCurrentHrefAuto{#1*}%
```

```

7067 \edef\ttl@Hy@saveanchor{%
7068 \noexpand\Hy@raisedlink{%
7069 \noexpand\hyper@anchorstart{\@currentHref}%
7070 \noexpand\hyper@anchorend
7071 \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
7072 \noexpand\ttl@Hy@PatchSaveWrite
7073 }%
7074 }%
7075 }%
7076 \def\ttl@Hy@PatchSaveWrite{%
7077 \begingroup
7078 \toks@\expandafter{\ttl@savewrite}%
7079 \edef\x{\endgroup
7080 \def\noexpand\ttl@savewrite{%
7081 \let\noexpand\@currentHref
7082 \noexpand\ttl@Hy@SavedCurrentHref
7083 \the\toks@
7084 }%
7085 }%
7086 \x
7087 }%
7088 \def\ttl@Hy@refstepcounter#1{%
7089 \let\ttl@b\Hy@raisedlink
7090 \def\Hy@raisedlink##1{%
7091 \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
7092 }%
7093 \refstepcounter{#1}%
7094 \let\Hy@raisedlink\ttl@b
7095 }%
7096 }{}

```

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

```

7097 \@ifpackageloaded{longtable}{%
7098 \@ifundefined{hyper@nopatch@longtable}{%
7099 \begingroup
7100 \def\y{\LT@array}%
7101 \@ifundefined{scr@LT@array}{%
7102 \@ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}%
7103 }{\def\y{\scr@LT@array}}%
7104 \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
7105 \expandafter\endgroup
7106 \expandafter\def\y[##1]##2{%
7107 \H@refstepcounter{#1}%
7108 \hyper@makecurrent{table}%
7109 \let\Hy@LT@currentHref\@currentHref
7110 #2\@sharp###4%

```

```

7111 }%
7112 }%
7113 \expandafter\expandafter\expandafter\x\y[{#1}]{#2}\@nil
Patch of \LT@start: add anchor before first line after \vskip\LTpre
7114 \begingroup
7115 \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
7116 \endgroup
7117 \def\LT@start{%
7118 #1%
7119 \ifvoid\LT@foot#2\fi
7120 \let\@currentHref\Hy@LT@currentHref
7121 \Hy@raisedlink{%
7122 \hyper@anchorstart{\@currentHref}\hyper@anchorend
7123 }%
7124 #3%
7125 }%
7126 }%
7127 \expandafter\x\LT@start\@nil
7128 }{}
7129 }{}

```

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`

```

7130 \let\new@refstepcounter\refstepcounter
7131 \let\H@equation\equation
7132 \let\H@endequation\endequation
7133 \@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.

```

7134 \@ifpackageloaded{amsmath}{%}{%
7135 \def\equation{%
7136 \let\refstepcounter\H@refstepcounter
7137 \H@equation
7138 \hyper@makecurrent{equation}%

```

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

```

7139 \mathopen{%
7140 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}{}}%
7141 }%
7142 \let\refstepcounter\new@refstepcounter
7143 }%
7144 \def\endequation{%

```



```

7145 \ifx\Hy@raisedlink\@empty
7146 \hyper@anchorend
7147 \else
7148 \mathclose{\Hy@raisedlink{\hyper@anchorend}}}%
7149 \fi
7150 \H@endequation
7151 }%
7152 }
7153 }{}

```

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.

```

7154 \newif\if@eqnstar
7155 \@eqnstarfalse
7156 \let\H@eqnarray\eqnarray
7157 \let\H@endeqnarray\endeqnarray
7158 \@ifundefined{hyper@nopatch@mathenv}{%
7159 \def\eqnarray{%
7160 \let\Hy@reserved@a\relax
7161 \def\@currentHref{}%
7162 \H@eqnarray
7163 \if@eqnstar
7164 \else
7165 \ifx\\\@currentHref\\%
7166 \else
7167 \hyper@makecurrent{equation}%
7168 \mathopen{%
7169 \Hy@raisedlink{%
7170 \hyper@anchorstart{\@currentHref}\hyper@anchorend
7171 }%
7172 }%
7173 \fi
7174 \fi
7175 }
7176 \def\endeqnarray{%
7177 \H@endeqnarray
7178 }
7179 }{}

```

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.

```

7180 \@namedef{eqnarray*}{%
7181 \protected\def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
7182 }
7183 \@namedef{endeqnarray*}{%
7184 \nonumber\endeqnarray\@eqnstarfalse
7185 }

```

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

```

7186 \@ifundefined{subeqnarray}{}{}%

```

```

7187 \let\H@subeqnarray\subeqnarray
7188 \let\H@endsubeqnarray\endsubeqnarray
7189 \def\subeqnarray{%
7190   \let\Hy@reserved@a\relax
7191   \H@subeqnarray
7192   \hyper@makecurrent{equation}%
7193   \hyper@anchorstart{\@currentHref}{\hyper@anchorend
7194 }%
7195 \def\endsubeqnarray{%
7196   \H@endsubeqnarray
7197 }%
7198 \providecommand\theHsubequation{\theHequation\alph{subequation}}%
7199 }

```

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

```

7200 \def\make@stripped@name#1{%
7201   \begingroup
7202   \escapechar\m@ne
7203   \global\let\newname\@empty
7204   \protected@edef\Hy@tempa{#1}%
7205   \edef\@tempb{%
7206     \noexpand\@tfor\noexpand\Hy@tempa:=%
7207     \expandafter\strip@prefix\meaning\Hy@tempa
7208   }%
7209   \@tempb\do{%
7210     \if\Hy@tempa\else
7211     \if\Hy@tempa\else
7212       \xdef\newname{\newname\Hy@tempa}%
7213     \fi
7214     \fi
7215   }%
7216 \endgroup
7217 }

```

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.

```

7218 \AddToHook{cmd/subequations/before}
7219 {%
7220   \stepcounter{equation}%
7221   \protected@edef\theHparentequation{\theHequation}%
7222   \addtocounter{equation}{-1}%
7223 }
7224
7225 \AddToHook{cmd/subequations/after}
7226 {%
7227   \def\theHequation{\theHparentequation\alph{equation}}%
7228   \ignorespaces
7229 }

```

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 a page break. The next item hook doesn't work for the same reason, also not every theorem environment actually uses `\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 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).

```

7230 \newcommand\Hy@theorem@refstepcounter[1]
7231 {%
7232   \H@refstepcounter{#1}%
7233   \hyper@makecurrent{#1}%
7234   \global\let\Hy@dth@currentHref\@currentHref
7235   \Hy@theorem@makelinktarget{\Hy@dth@currentHref}%
7236 }
7237 \newcommand\Hy@theorem@makelinktarget[1]
7238 {
7239   \AddToHookNext{cmd/item/before}
7240   {\AddToHookNext{para/begin}
7241     {\let\Hy@tempa\@currentHref
7242       \MakeLinkTarget*{#1}% \Hy@dth@currentHref
7243       \global\let\@currentHref\Hy@tempa
7244     }%
7245   }%
7246 }
```

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.

```

7247 \AddToHook{begindocument}
7248 {%
7249 \@ifundefined{deferred@thm@head}{}
7250 {%
7251 \let\Hy@deferred@thm@head\deferred@thm@head
7252 \def\deferred@thm@head#1{\Hy@deferred@thm@head{#1}}%
7253 \renewcommand\Hy@theorem@makelinktarget[1]
7254 {%
7255 \AddToHookNext{cmd/deferred@thm@head/before}
7256 {\AddToHookNext{para/begin}
7257 {\let\Hy@tempa\@currentHref
7258 \MakeLinkTarget*{#1}%
7259 \global\let\@currentHref\Hy@tempa
7260 }%
7261 }%
7262 }%
7263 }%
7264 }
7265 \@ifundefined{hyper@nopatch@thm}{%
7266 \AtBeginDocument{%
7267 \@ifpackageloaded{cleveref}
7268 {\AddToHook{cmd/@thm/before}{\ifhmode\unskip\fi}}
7269 {%
7270 \ifpatchable\@thm{\refstepcounter}
7271 {\patchcmd\@thm{\refstepcounter}{\Hy@theorem@refstepcounter}{}{}}
7272 {}%
7273 }}}{}

```

35 Footnotes

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

```

7274 \@ifundefined{hyper@nopatch@footnote}{%
7275 \ifHy@hyperfootnotes
7276 \@ifundefined{theHfootnote}
7277 {\newcounter{Hfootnote}}
7278 {\let\H@@theHfootnote\theHfootnote
7279 \let\theHfootnote\undefined
7280 \newcounter{Hfootnote}
7281 \let\theHfootnote\H@@theHfootnote
7282 }%

```

where is this used?

```

7283 \@ifundefined{theHHmpfootnote}{%
7284 \let\theHHmpfootnote\theHHfootnote
7285 }{}

```

```

7286 \let\H@@footnotetext\@footnotetext
7287 \let\H@@footnotemark\@footnotemark
7288 \def\@xfootnotenext[#1]{%
7289   \begingroup
7290     \csname c@\@mpfn\endcsname #1\relax
7291     \unrestored@protected@xdef\@thefnmark{\thempfn}%
7292   \endgroup
7293   \ifx\@footnotetext\@mpfootnotetext
7294     \expandafter\H@@mpfootnotetext
7295   \else
7296     \expandafter\H@@footnotetext
7297   \fi
7298 }%
7299 \def\@xfootnotemark[#1]{%
7300   \begingroup
7301     \c@footnote #1\relax
7302     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7303   \endgroup
7304   \H@@footnotemark
7305 }%
7306 \let\H@@mpfootnotetext\@mpfootnotetext
7307 \long\def\@mpfootnotetext#1{%
7308   \H@@mpfootnotetext{%
7309     \ifHy@nesting
7310       \expandafter\@firstoftwo
7311     \else
7312       \expandafter\@secondoftwo
7313     \fi
7314     {%
7315       \expandafter\hyper@@anchor\expandafter{%
7316         \Hy@footnote@currentHref
7317       }\ignorespaces #1}%
7318   }{%
7319     \Hy@raisedlink{%
7320       \expandafter\hyper@@anchor\expandafter{%
7321         \Hy@footnote@currentHref
7322       }\relax}%
7323   }%

```

Change 2025-09-29: set \@currentHref and \@currentlabelname for issue 402.

```

7324   \let\@currentHref\Hy@footnote@currentHref
7325   \let\@currentlabelname\@empty
7326   \ignorespaces #1%
7327 }%
7328 }%
7329 }%
7330 \long\def\@footnotetext#1{%
7331   \H@@footnotetext{%
7332     \ifHy@nesting
7333       \expandafter\@firstoftwo
7334     \else
7335       \expandafter\@secondoftwo
7336     \fi
7337     {%
7338       \expandafter\hyper@@anchor\expandafter{%

```

```

7339     \Hy@footnote@currentHref
7340     }{\ignorespaces #1}%
7341   }{%
7342     \Hy@raisedlink{%
7343       \expandafter\hyper@@anchor\expandafter{%
7344         \Hy@footnote@currentHref
7345       }{\relax}%
7346     }%
7347     \let\@currentHref\Hy@footnote@currentHref
7348     \let\@currentlabelname\@empty
7349     \ignorespaces #1%
7350   }%
7351 }%
7352 }%

```

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.

```

7353 \def\@footnotemark{%
7354   \leavevmode
7355   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7356   \stepcounter{Hfootnote}%
7357   \global\let\Hy@saved@currentHref\@currentHref
7358   \hyper@makecurrent{Hfootnote}%
7359   \global\let\Hy@footnote@currentHref\@currentHref
7360   \global\let\@currentHref\Hy@saved@currentHref
7361   \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7362   \@makefnmark
7363   \hyper@linkend
7364   \ifhmode\spacefactor\@x@sf\fi
7365   \relax
7366 }%

```

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

```

7367 \@ifpackageloaded{tabularx}{%
7368   \let\HyOrg@TX@endtabularx\TX@endtabularx
7369   \def\Hy@tabularx@hook{%
7370     \let\@footnotetext\H@@footnotetext
7371     \let\@footnotemark\H@@footnotemark
7372     \let\@mpfootnotetext\H@@mpfootnotetext
7373   }%
7374   \begingroup
7375     \toks@\expandafter{\TX@endtabularx}%
7376     \xdef\Hy@gtemp{%
7377       \noexpand\Hy@tabularx@hook
7378       \the\toks@
7379     }%
7380   \endgroup
7381   \let\TX@endtabularx\Hy@gtemp
7382 }{}%

```

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

```

7383 \ifpackageloaded{longtable}{%
7384   \CheckCommand{\LT@p@ftntext}[1]{%
7385     \edef\@tempa{%
7386       \the\LT@p@ftn
7387       \noexpand\footnotetext[\the\c@footnote]%
7388     }%
7389     \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7390   }%
7391 \long\def\LT@p@ftntext#1{%
7392   \edef\@tempa{%
7393     \the\LT@p@ftn
7394     \begingroup
7395     \noexpand\c@footnote=\the\c@footnote\relax
7396     \noexpand\protected@xdef\noexpand\@thefnmark{%
7397       \noexpand\thempfn
7398     }%
7399     \noexpand\Hy@LT@footnotetext{%
7400       \Hy@footnote@currentHref
7401     }%
7402   }%
7403   \global\LT@p@ftn\expandafter{%
7404     \@tempa{#1}%
7405   \endgroup
7406 }%
7407 }%
7408 \long\def\Hy@LT@footnotetext#1#2{%
7409   \H@@@footnotetext{%
7410     \ifHy@nesting
7411       \hyper@@anchor{#1}{#2}%
7412     \else
7413       \Hy@raisedlink{%
7414         \hyper@@anchor{#1}{\relax}%
7415       }%
7416       \def\@currentHref{#1}%
7417       \let\@currentlabelname\@empty
7418       #2%
7419     \fi
7420   }%
7421 }%
7422 }{}%
```

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

```

7423 \ifpackageloaded{fancyvrb}{%
7424   \def\V@@@footnotetext{%
7425     \insert\footins\bgroup
7426     \csname reset@font\endcsname
7427     \footnotesize
7428     \interlinepenalty\interfootnotelinepenalty
7429     \splittopskip\footnotesep
7430     \splitmaxdepth\dp\strutbox
7431     \floatingpenalty \@MM
```

```

7432 \hsize\columnwidth
7433 \@parboxrestore
7434 \def\@currentcounter{footnote}%
7435 \protected@edef\@currentlabel{\csname p@footnote\endcsname\@thefn-
mark}%
7436 \@makefnmark{}%
7437 \rule{\z@}{\footnotesep}%
7438 \bgroup
7439 \aftergroup\V@@@footnotetext
7440 \Hy@raisedlink{%
7441 \expandafter\hyper@@anchor\expandafter{%
7442 \Hy@footnote@currentHref
7443 }{\relax}%
7444 }%
7445 \let\@currentHref\Hy@footnote@currentHref
7446 \let\@currentlabelname\@empty
7447 \ignorespaces
7448 }%
7449 }{}%

```

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

```

7450 \def\Hy@temp#1{%
7451 \begingroup
7452 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7453 \endgroup
7454 \@footnotemark
7455 }%
7456 \ifx\Hy@temp\footref
7457 \def\footref#1{%
7458 \begingroup
7459 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7460 \endgroup
7461 \H@@@footnotemark
7462 }%
7463 \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.

```

7464 \let\HyOrg@maketitle\maketitle
7465 \def\maketitle{%
7466 \let\Hy@saved@footnotemark\@footnotemark
7467 \let\Hy@saved@footnotetext\@footnotetext
7468 \let\@footnotemark\H@@@footnotemark
7469 \let\@footnotetext\H@@@footnotetext
7470 \@ifnextchar[\Hy@maketitle@optarg{% ]
7471 \HyOrg@maketitle
7472 \Hy@maketitle@end
7473 }%
7474 }%
7475 \def\Hy@maketitle@optarg[#1]{%
7476 \HyOrg@maketitle[{#1}]%
7477 \Hy@maketitle@end
7478 }%

```



```

7479 \def\Hy@maketitle@end{%
7480 \ifx\@footnotemark\H@@footnotemark
7481 \let\@footnotemark\Hy@saved@footnotemark
7482 \fi
7483 \ifx\@footnotetext\H@@footnotetext
7484 \let\@footnotetext\Hy@saved@footnotetext
7485 \fi
7486 }%

```

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

```

7487 \def\realfootnote{%
7488 \@ifnextchar[\@xfootnote%]
7489 {\stepcounter{\@mpfn}%
7490 \protected@xdef\@thefnmark{\thempfn}%
7491 \H@@footnotemark\H@@footnotetext
7492 }%
7493 }%

7494 \fi
7495 }{}
7496 \Hy@DisableOption{hyperfootnotes}

7497 \</packageEnd>
7498 \< *check>
7499 \checklatex
7500 \checkcommand\def\@xfootnotenext[#1]{%
7501 \begingroup
7502 \csname c@\@mpfn\endcsname #1\relax
7503 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7504 \endgroup
7505 \@footnotetext
7506 }
7507 \checkcommand\def\@xfootnotemark[#1]{%
7508 \begingroup
7509 \c@footnote #1\relax
7510 \unrestored@protected@xdef\@thefnmark{\thefnmark}%
7511 \endgroup
7512 \@footnotemark
7513 }
7514 \checkcommand\def\@footnotemark{%
7515 \leavevmode
7516 \ifhmode\edef\x@sf{\the\spacefactor}\nobreak\fi
7517 \@makefnmark
7518 \ifhmode\spacefactor\x@sf\fi
7519 \relax
7520 }
7521 \</check>
7522 \< *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.

```

7523 \@ifundefined{hyper@nopatch@caption}{%
7524 \def\caption{%
7525   \ifx\@cuptype\@undefined
7526     \@latex@error{\noexpand\caption outside float}\@ehd
7527     \expandafter\@gobble
7528   \else
7529     \H@refstepcounter\@cuptype
7530     \let\Hy@tempa\@caption
7531     \@ifundefined{float@caption}{%
7532     }{%
7533       \expandafter\ifx\csname @float@c@\@cuptype\endcsname
7534         \float@caption
7535       \let\Hy@tempa\Hy@float@caption
7536     \fi
7537   }%
7538   \expandafter\@firstofone
7539 \fi
7540 {\@dblarg{\Hy@tempa\@cuptype}}}%
7541 }
7542 \long\def\@caption#1[#2]#3{%
7543   \expandafter\ifx\csname if@capstart\expandafter\endcsname
7544     \csname iftrue\endcsname
7545     \global\let\@currentHref\hc@currentHref
7546   \else
7547     \hyper@makecurrent{\@cuptype}%
7548   \fi
7549   \@ifundefined{NR@getttitle}{%
7550   \def\@currentlabelname{#2}%
7551   }{%
7552   \NR@getttitle{#2}%
7553   }%
7554   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7555     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7556   }%
7557   \begingroup
7558     \@parboxrestore
7559     \if@minipage
7560       \setminipage
7561     \fi
7562     \normalsize
7563     \expandafter\ifx\csname if@capstart\expandafter\endcsname
7564       \csname iftrue\endcsname
7565       \global\@capstartfalse
7566       \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7567     \else
7568       \@makecaption{\csname fnum@#1\endcsname}{%
7569       \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7570     \ifHy@nesting
7571       \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7572     \else
7573       \Hy@raisedlink{%
7574       \expandafter\hyper@@anchor\expandafter{%
7575       \@currentHref

```

```

7576         }{\relax}%
7577     }%
7578     #3%
7579 \fi

```

as the anchor are set manually here, we have to update the tagging info.

```

7580     \UseTaggingSocket{recordtarget}%
7581 }%
7582 \fi
7583 \par
7584 \endgroup
7585 }}{}}%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’.

```

7586 \let\Hy@float@caption\@caption
7587 \newcommand{\HyNew@float@makebox}[1]{%
7588   \HyOrg@float@makebox{%
7589     #1\relax
7590     \ifx\Hy@float@currentHref\@undefined
7591     \else
7592       \expandafter\hyper@@anchor\expandafter{%
7593         \Hy@float@currentHref
7594       }{\relax}%
7595       \global\let\Hy@float@currentHref\@undefined
7596     \fi
7597   }%
7598 }%
7599 \@ifpackageloaded{float}{%
7600   \def\Hy@float@caption{%
7601     \ifx\Hy@float@currentHref\@undefined
7602       \hyper@makecurrent{\@cuptype}%
7603       \global\let\Hy@float@currentHref\@currentHref
7604     \else
7605       \let\@currentHref\Hy@float@currentHref
7606     \fi
7607     \float@caption
7608   }%
7609   \let\HyOrg@float@makebox\float@makebox
7610   \let\float@makebox\HyNew@float@makebox
7611 }{}

7612 \</packageEnd>
7613 \< *check>
7614 \checklatex[1999/06/01 - 2000/06/01]
7615 \checkcommand\def\caption{%
7616   \ifx\@cuptype\@undefined
7617     \@latex@error{\noexpand\caption outside float}\@ehd
7618     \expandafter\@gobble
7619   \else
7620     \refstepcounter{\@cuptype}
7621     \expandafter\@firstofone

```

```

7622 \fi
7623 {\@dblarg{\@caption\@cptype}}%
7624 }
7625 \checkcommand\long\def\@caption#1[#2]#3{%
7626 \par
7627 \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7628 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7629 }%
7630 \begingroup
7631 \@parboxrestore
7632 \if@minipage
7633 \@setminipage
7634 \fi
7635 \normalsize
7636 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7637 \endgroup
7638 }
7639 \</check>
7640 \<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 `\bibtex`; 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.

Change 2026-02-06: use a generic hook to allow the tagging code to add its code without patching `hyperref`.

```

7641 \AddToHookWithArguments{cmd/hyper@natlinkstart/before}
7642 {%
7643 \Hy@backout{#1}%

```

`natbib` passes the `\@extra@b@citeb` in the argument, and `biblatex` the `refsection`, so we only need to add the prefix `cite..`

```

7644 \hyper@linkstart{cite}{cite.#1}%
7645 \def\hyper@nat@current{#1}%
7646 }

7647 \AddToHook{cmd/hyper@natlinkend/after}
7648 {\hyper@linkend}

7649 \def\hyper@natlinkbreak#1#2{%
7650 \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7651 }
7652 \def\hyper@natanchorstart#1{%
7653 \Hy@raisedlink{\hyper@anchorstart{cite.#1}\relax}%
7654 }
7655 \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.

```

7656 \@ifundefined{hyper@nopatch@bib}
7657 {%
7658   \@ifundefined{NAT@parse}{%
7659     \providecommand*\@extra@binfo{}%
7660     \providecommand*\@extra@b@citeb{}%
7661     \def\bibcite#1#2{%
7662       \@newl@bel{b}{#1\@extra@binfo}{%
7663         \hyper@link[cite]{#1\@extra@b@citeb}{#2}%
7664       }%
7665     }%
7666     \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.”.

```

7667   \let\Hy@bibcite\bibcite
7668   \begingroup
7669   \@ifundefined{bbl@cite@choice}{}{%
7670     \g@addto@macro\bbl@cite@choice{%
7671       \let\bibcite\Hy@bibcite
7672     }%
7673   }%
7674   \endgroup

```

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

```

7675   \providecommand*\@BIBLABEL{\@biblabel}%
7676   \def\@bibitem[#1]#2{%
7677     \@skiphyperreftrue
7678     \H@item[%
7679       \ifx\Hy@raisedlink\@empty
7680         \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7681         \@BIBLABEL{#1}%
7682         \hyper@anchorend
7683       \else
7684         \Hy@raisedlink{%
7685           \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7686         }%
7687       \@BIBLABEL{#1}%
7688     \fi
7689     \hfill
7690   ]%
7691   \@skiphyperreffalse
7692   \if@filesw
7693     \begingroup
7694     \let\protect\noexpand
7695     \immediate\write\@auxout{%
7696       \string\bibcite{#2}{#1}%
7697     }%
7698     \endgroup
7699   \fi
7700   \ignorespaces

```

```
7701 }%
```

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

```
7702 \def\@bibitem#1{%
7703   \@skiphyperreftrue\H@item\@skiphyperreffalse
7704   \Hy@raisedlink{%
7705     \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7706   }%
7707   \if@filesw
7708     \begingroup
7709     \let\protect\noexpand
7710     \immediate\write\@auxout{%
7711       \string\bibcite{#1}{\the\value{\@listctr}}}%
7712     }%
7713   \endgroup
7714   \fi
7715   \ignorespaces
7716 }%
7717 }{}%
7718 }
```

If `\DocumentMetadata` is used `hyperref` can use the `bibcite` hooks.

```
7719 \IfDocumentMetadataT
7720 {
7721   \AddToHook{package/hyperref/after}[latex-lab-testphase-bib]{}
7722   \RemoveFromHook{package/hyperref/after}[latex-lab-testphase-bib]
7723   \AddToHookWithArguments{bibcite/before}
7724   {%
7725     \hyper@linkstart{cite}{cite.#1\@extra@b@citeb}%
7726   }
7727   \AddToHookWithArguments{bibcite/after}{\hyper@linkend}
7728 }

7729 \</packageEnd>
7730 \<*check>
7731 \checklatex
7732 \checkcommand\def\@lbibitem[#1]#2{%
7733   \item[\@biblabel{#1}\hfill]%
7734   \if@filesw
7735     {%
7736       \let\protect\noexpand
7737       \immediate\write\@auxout{%
7738         \string\bibcite{#2}{#1}%
7739       }%
7740     }%
7741   \fi
7742   \ignorespaces
7743 }
7744 \checkcommand\def\@bibitem#1{%
7745   \item
7746   \if@filesw
7747     \immediate\write\@auxout{%
7748       \string\bibcite{#1}{\the\value{\@listctr}}}%
7749   }%
```

```

7750 \fi
7751 \ignorespaces
7752 }
7753 </check>
7754 <*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.

```

7755 \ifpackageloaded{harvard}{%
7756   \Hy@AtBeginDocument{%
7757     \Hy@Info{*** compatibility with harvard **** }%
7758     \Hy@raiselinksfalse
7759     \def\harvardcite#1#2#3#4{%
7760       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{#1}{#2}}%
7761       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{#1}{#3}}%
7762       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{#1}{#4}}%
7763       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7764     }%
7765     \def\HAR@citetoaux#1{%
7766       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7767       \ifHy@backref
7768         \ifx\@empty\@currentlabel
7769           \else
7770             \@bsphack
7771             \if@filesw
7772               \protected@write\@auxout{}{%
7773                 \string\writefile{brf}{%
7774                   \string\backcite{#1}{%
7775                     {thepage}{\@currentlabel}{\@currentHref}%
7776                   }%
7777                 }%
7778               }%
7779             \fi
7780             \@esphack
7781           \fi
7782         \fi
7783       }%
7784       \def\harvarditem{%
7785         \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
7786       }%
7787       \def\@harvarditem[#1]#2#3#4#5\par{%
7788         \item[]%
7789         \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7790         \if@filesw
7791           \begingroup
7792           \def\protect##1{\string ##1\space}%

```

```

7793     \ifthenelse{\equal{#1}{\null}}{%
7794       {\def\next{{#4}{#2}{#2}{#3}}}%
7795       {\def\next{{#4}{#2}{#1}{#3}}}%
7796       \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7797     \endgroup
7798   \fi
7799   \protect\hspace*{-\labelwidth}%
7800   \protect\hspace*{-\labelsep}%
7801   \ignorespaces
7802   #5%
7803   \ifHy@backref
7804     \newblock
7805     \backref{\csname br@#4\endcsname}%
7806   \fi
7807   \par
7808 }%

```

\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:

```

7809   \long\def\HAR@checkcitations#1#2#3#4{%
7810     \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
7811     \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7812       \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
7813       \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7814         \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
7815         \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7816           \else
7817             \@tempswatrue
7818           \fi
7819         \else
7820           \@tempswatrue
7821         \fi
7822       \else
7823         \@tempswatrue
7824       \fi
7825     }%
7826   }%

7827 }{}

```

37.2 Package chicago

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

```

7828 \ifpackageloaded{chicago}{%

```

\citeN

```

7829   \def\citeN{%
7830     \def\@citesep{-1000}%
7831     \def\@cite##1##2{##1}%
7832     \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
7833     \@citedata@opt
7834   }%

```


\shortciteN

```

7835 \def\shortciteN{%
7836   \def\@citesep{-1000}%
7837   \def\@cite##1##2{##1}%
7838   \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
7839   \@citedata@opt
7840 }%

```

\@citedata@opt

```

7841 \def\@citedata@opt{%
7842   \let\@cite@opt\@empty
7843   \@ifnextchar [{%
7844     \@tempswatrue
7845     \@citedatax@opt
7846   }{%
7847     \@tempswafalse
7848     \@citedatax[]%
7849   }%
7850 }%

```

\@citedatax@opt

```

7851 \def\@citedatax@opt[#1]{%
7852   \def\@cite@opt{, #1}%
7853   \@citedatax[{#1}]%
7854 }%
7855 }{}

```

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.

Experimental!

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.

```

7856 \def\@currentHpage{Doc-Start}
7857 \@ifclassloaded{slides}{%
7858   \def\Hy@SlidesFormatOptionalPage#1{(#1)}%
7859   \def\Hy@PageAnchorSlidesPlain{%
7860     \advance\c@page\@ne
7861     \xdef\@currentHpage{page.\the\c@slide.\the\c@overlay.\the\c@note%
7862       \ifnum\c@page=\@ne
7863         \else
7864         .\the\c@page
7865       \fi}%
7866   \edef\Hy@TempPageAnchor{%
7867     \noexpand\hyper@@anchor{%

```

```

7868     \@currentHpage
7869   }%
7870 }%
7871   \advance\c@page-\@ne
7872 }%
7873 \def\Hy@PageAnchorSlide{%
7874   \advance\c@page\@ne
7875   \ifnum\c@page>\@ne
7876     \@ifundefined{theHpage}{%
7877       \protected@edef\Hy@TheSlideOptionalPage{%
7878         \Hy@SlidesFormatOptionalPage{theHpage}%
7879       }%
7880     }{%
7881       \protected@edef\Hy@TheSlideOptionalPage{%
7882         \Hy@SlidesFormatOptionalPage{theHpage}%
7883       }%
7884     }%
7885   \else
7886     \def\Hy@TheSlideOptionalPage{}%
7887   \fi
7888   \advance\c@page-\@ne
7889   \pdfstringdef\@the@H@page{%
7890     \csname
7891       the%
7892       \@ifundefined{theH\Hy@SlidesPage}{H}%
7893       \Hy@SlidesPage
7894     \endcsname
7895     \Hy@TheSlideOptionalPage
7896   }%
7897   \@gobblethree
7898 }%
7899 \def\Hy@SlidesPage{slide}%
7900 \g@addto@macro\slide{%
7901   \def\Hy@SlidesPage{slide}%
7902 }%
7903 \g@addto@macro\overlay{%
7904   \def\Hy@SlidesPage{overlay}%
7905 }%
7906 \g@addto@macro\note{%
7907   \def\Hy@SlidesPage{note}%
7908 }%
7909 }{%
7910   \def\Hy@PageAnchorSlidesPlain{}%
7911   \def\Hy@PageAnchorSlide{}%
7912 }
7913 \def\Hy@EveryPageAnchor{%
7914   \Hy@DistillerDestFix
7915   \ifHy@pageanchor
7916     \ifHy@hypertextnames
7917       \ifHy@plainpages
7918         \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
7919         \xdef\@currentHpage{page.\the\c@page}%
7920         \Hy@PageAnchorSlidesPlain
7921       \else

```

```

7922 \begingroup
7923 \let\@number\@firstofone
7924 \Hy@unicodedefalse
7925 \Hy@PageAnchorSlide
7926 \pdfstringdef\@the@H@page{\thepage}%
7927 \endgroup
7928 \EdefUnescapeString\@the@H@page{\@the@H@page}%
7929 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
7930 \xdef\@currentHpage{page.\@the@H@page}%
7931 \fi
7932 \else
7933 \Hy@GlobalStepCount\Hy@pagecounter
7934 \def\Hy@TempPageAnchor{%
7935 \hyper@@anchor{page.\the\Hy@pagecounter}%
7936 }%
7937 \xdef\@currentHpage{page.\the\Hy@pagecounter}%
7938 \fi
7939 \vbox to 0pt{%
7940 \kern\voffset
7941 \kern\topmargin
7942 \kern-1bp\relax
7943 \hbox to 0pt{%
7944 \kern\hoffset
7945 \kern\ifodd\value{page}%
7946 \oddsidemargin
7947 \else
7948 \evensidemargin
7949 \fi
7950 \kern-1bp\relax
7951 \Hy@TempPageAnchor\relax
7952 \hss
7953 }%
7954 \vss
7955 }%
7956 \fi
7957 }
7958 \g@addto@macro\Hy@EveryPageBoxHook{%
7959 \Hy@EveryPageAnchor
7960 }

```

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 tocf file.

```
7961 \providecommand\protected@file@percent{}
```

Change 2026-02-06: Add support for \DocumentMetadata. We externalize the command to allow bookmark to be set without explicit toc-entry.

```
7962 \def\Hy@addcontentsline@addbookmark#1#2#3%#1 toc type, #2 level, #3 con-
tent
```

```

7963 {%
7964   \ifHy@bookmarks
7965     \ifx\@currentHref\@empty
7966       \Hy@Warning{%
7967         No destination for bookmark of \string\addcontentsline,%
7968         \MessageBreak destination is added%
7969       }%
7970     \phantomsection
7971   \fi
7972   \begingroup
7973     \let\label\@gobble@om
7974     \let\index\@gobble@som
7975     \let\glossary\@gobble@om
7976     \expandafter\ifx\csname toplevel@#2\endcsname\relax
7977       \begingroup
7978         \def\Hy@tempa{#1}%
7979         \ifx\Hy@tempa\Hy@bookmarkstype
7980           \Hy@WarningNoLine{%
7981             bookmark level for unknown #2 defaults to 0%
7982           }%
7983         \else
7984           \Hy@Info{bookmark level for unknown #2 defaults to 0}%
7985         \fi
7986       \endgroup
7987     \expandafter\gdef\csname toplevel@#2\endcsname{0}%
7988   \fi
7989   \edef\Hy@toplevel{\csname toplevel@#2\endcsname}%
7990   \Hy@writebookmark{\csname the#2\endcsname}%
7991     {#3}%
7992     {\@currentHref}%
7993     {\Hy@toplevel}%
7994     {#1}%
7995   \ifHy@verbose
7996     \begingroup
7997       \def\Hy@tempa{#3}%
7998       \@onelevel@sanitize\Hy@tempa
7999       \let\temp@online\on@line
8000       \let\on@line\@empty
8001       \Hy@Info{%
8002         bookmark\temp@online:\MessageBreak
8003         thecounter {\csname the#2\endcsname}\MessageBreak
8004         text {\Hy@tempa}\MessageBreak
8005         reference {\@currentHref}\MessageBreak
8006         toplevel {\Hy@toplevel}\MessageBreak
8007         type {#1}%
8008       }%
8009     \endgroup
8010   \fi
8011   \endgroup
8012 \fi
8013 }

```

If the new sec template code is used, we map the command to the new interface:

```

8014 \@ifundefined{addcontentslinebookmark}{-}{
8015 {

```

```

8016 \RenewCommandCopy\addcontentslinebookmark\Hy@addcontentsline@addbook-
      mark
8017 \renewcommand\addcontentslinebookmarkOff
8018 {%
8019 \ifHy@bookmarks
8020 \let\addcontentslinebookmarkReset\Hy@bookmarkstrue
8021 \else
8022 \let\addcontentslinebookmarkReset\relax
8023 \fi
8024 \Hy@bookmarksfalse
8025 }
8026 }

```

If `\DocumentMetadata` is not used, we must redefine `\addcontentsline` as in the latex-lab code to ensure that the target is written:

```

8027 \@ifundefined{hyper@nopatch@toc}{%
8028 \def\addcontentsline#1#2#3{% #1=toc extension, #2= heading type, tag
8029 \addtocontents{#1}{%
8030 \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}\protected@file@per-
      cent
8031 }}}{}

```

Then this addition works also if `\DocumentMetadata` is used.

```

8032 \AddToHookWithArguments{cmd/addcontentsline/before}[hyp]
8033 {%
8034 \Hy@addcontentsline@addbookmark
8035 {#1}
8036 {#2}
8037 {#3}%
8038 }

```

`\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:

```

8039 \protected\def\Hy@toclinkstart{\hyper@linkstart{link}{\Hy@tocdestname}}
8040 \protected\def\Hy@toclinkend{\hyper@linkend}
8041
8042 \@ifundefined{hyper@nopatch@toc}{%
8043 \def\contentsline#1#2#3#4{%
8044 \begingroup
8045 \Hy@safe@activetrue
8046 \edef\x{\endgroup
8047 \def\noexpand\Hy@tocdestname{#4}%
8048 }\x
8049 \ifx\Hy@tocdestname\@empty
8050 \csname l@#1\endcsname{#2}{#3}%
8051 \else
8052 \ifcase\Hy@linktoc % none
8053 \csname l@#1\endcsname{#2}{#3}%
8054 \or % section
8055 \csname l@#1\endcsname{%
8056 \Hy@toclinkstart{#2}\Hy@toclinkend
8057 }{#3}%

```

```

8058 \or % page
8059 \def\Hy@temp{#3}%
8060 \ifx\Hy@temp\@empty
8061 \csname l@#1\endcsname{#2}{#3}%
8062 \else
8063 \csname l@#1\endcsname{#2}{%
8064 \Hy@toclinkstart{#3}\Hy@toclinkend
8065 }%
8066 \fi
8067 \else % all
8068 \def\Hy@temp{#3}%
8069 \ifx\Hy@temp\@empty
8070 \csname l@#1\endcsname{%
8071 \Hy@toclinkstart{#2}\Hy@toclinkend
8072 }}%
8073 \else
8074 \csname l@#1\endcsname{%
8075 \Hy@toclinkstart{#2}\Hy@toclinkend
8076 }{%
8077 \Hy@toclinkstart{#3}\Hy@toclinkend
8078 }%
8079 \fi
8080 \fi
8081 \fi
8082 }
8083 }{}

```

If \DocumentMetadata is used we make use of the \contentsline-hooks to add links:

```

8084 \ExplSyntaxOn
8085 \IfDocumentMetadataT
8086 {
8087 \AddToHookWithArguments{contentsline/text/before}[hyp]
8088 {
8089 \tl_if_blank:nF {#2}%text
8090 {
8091 \tl_if_blank:nF {#4}%destination
8092 {
8093 \int_case:nnF {\Hy@linktoc}
8094 {
8095 {0}{ } %none
8096 {1}{\hyper@linkstart{link}{#4}} %section
8097 {2}{ } %page
8098 }
8099 {\hyper@linkstart{link}{#4}} %all
8100 }
8101 }
8102 }
8103 \AddToHookWithArguments{contentsline/text/after}[hyp]
8104 {
8105 \tl_if_blank:nF {#2}
8106 {
8107 \tl_if_blank:nF {#4}
8108 {

```

```

8109         \int_case:nnF {\Hy@linktoc}
8110         {
8111             {0}{ } %none
8112             {1}{\hyper@linkend} %section
8113             {2}{ } %page
8114         }
8115         {\hyper@linkend} %all
8116     } % none
8117 }
8118 }
8119
8120 \AddToHookWithArguments{contentsline/page/before}[hyp]
8121 {
8122     \tl_if_blank:nF {#3}
8123     {
8124         \tl_if_blank:nF {#4} %
8125         {
8126             \int_case:nnF {\Hy@linktoc}
8127             {
8128                 {0}{ } %none
8129                 {1}{ } %section
8130                 {2}{\hyper@linkstart{link}{#4}} %page
8131             }
8132             {\hyper@linkstart{link}{#4}} %all
8133         } % none
8134     }
8135 }
8136 \AddToHookWithArguments{contentsline/page/after}[hyp]
8137 {
8138     \tl_if_blank:nF {#3}
8139     {
8140         \tl_if_blank:nF {#4}
8141         {
8142             \int_case:nnF {\Hy@linktoc}
8143             {
8144                 {0}{ } %none
8145                 {1}{ } %section
8146                 {2}{\hyper@linkend} %page
8147             }
8148             {\hyper@linkend} %all
8149         } % none
8150     }
8151 }

```

Until the latex-lab file is cleaned up, we need to remove the hook code

```

8152 \AddToHook{package/hyperref/after}[latex-lab-testphase-toc]{}
8153 \RemoveFromHook{package/hyperref/after}[latex-lab-testphase-toc]
8154 }
8155 \ExplSyntaxOff
8156 </packageEnd>
8157 <*check>
8158 \checklatex
8159 \checkcommand\def\addcontentsline#1#2#3{%
8160 \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%

```

```

8161 }
8162 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
8163 \</check>
8164 \<*/packageEnd>

```

40 New counters

The whole theorem business makes up new counters on the fly; we are going to intercept this. Sigh. Do it at the level where new counters are defined. change 2024-02-14: use a csname to handle counter names with commands, see issue #330 change 2024-10-13: disable patches in new format 2024-11-01. change 2026-02-22: removed patches fully.

41 AMS $\text{\LaTeX}$ compatibility

Oh, no, they don't use anything as simple as `\refstepcounter` in the AMS! We need to intercept some low-level operations of theirs. Damned if we are going to try and work out what they get up to. Just stick a label of 'AMS' on the front, and use the label *they* worked out. If that produces something invalid, I give up. They'll change all the code again anyway, I expect (SR).

Version 6.77p uses a patch by Ross Moore.

If `\hyper@nopatch@amsmath@tag` is defined we don't patch but assume that kernel code adds anchors to equations. change 2023-06-14: use a hook to make it independent of loading order.

```

8165 \<@ifundefined{hyper@nopatch@amsmath@tag}>
8166 {%
8167   \AddToHook{package/amsmath/after}{%
8168     \def\Hy@make@anchor{%
8169       \Hy@MakeCurrentHrefAuto{AMS}%
8170       \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
8171     }%
8172     \def\Hy@make@df@tag@@#1{%
8173       \gdef\df@tag{%
8174         \maketag@@@{\Hy@make@anchor#1}%
8175         \def\@currentlabel{#1}%
8176       }%
8177     }%
8178     \def\Hy@make@df@tag@@@#1{%
8179       \gdef\df@tag{%
8180         \tagform@{\Hy@make@anchor#1}%
8181         \toks@{\xp{p@equation{#1}}}%
8182         \edef\@currentlabel{\the\toks@}%
8183       }%
8184     }%
8185     \let\HyOrg@make@df@tag@@\make@df@tag@@
8186     \let\HyOrg@make@df@tag@@@\make@df@tag@@@
8187     \let\make@df@tag@@\Hy@make@df@tag@@
8188     \let\make@df@tag@@@\Hy@make@df@tag@@@
8189   }{}
8190 }{}

```


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 compatibility with tagging code, see <https://github.com/latex3/tagging-project/issues/2>

```
8191 \def\HyOrg@addtoreset#1#2{\expandafter\@cons\csname cl@#2\endcsname {{#1}}}
8192 \@ifundefined{hyper@nopatch@counter}
8193 {
8194   \let\HyOrg@addtoreset\@addtoreset
8195   \def\@addtoreset#1#2{%
8196     \HyOrg@addtoreset{#1}{#2}%
8197     \expandafter\xdef\csname theH#1\endcsname{%
8198       \expandafter\noexpand
8199       \csname the\@ifundefined{theH#2}{H#2\endcsname
8200       .\noexpand\the\noexpand\value{#1}%
8201     }%
8202   }
8203   }{}
```

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

```
8204 </packageEnd>
8205 <*check>
8206 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
8207 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
8208   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8209     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8210       \@addtoreset{#2}{#3}%
8211       \@xp\xdef\csname the#2\endcsname{%
8212         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8213       }%
8214     }%
8215   }%
8216 }%
8217 </check>
```

change 2023-06-14: use hook to make independent of loading order

```
8218 <*packageEnd>
8219 \@ifundefined{hyper@nopatch@counter}
8220 {
8221   \AddToHook{package/amsmath/after}{%
```

```

8222 \renewcommand*{\numberwithin}[3][\arabic]{%
8223 \ifundefined{c@#2}{\@nocounterr{#2}}{%
8224 \ifundefined{c@#3}{\@nocnterr{#3}}{%
8225 \HyOrg@addtoreset{#2}{#3}%
8226 \@xp\xdef\csname the#2\endcsname{%
8227 \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8228 }%
8229 \@xp\xdef\csname theH#2\endcsname{%
8230 \@xp\@nx
8231 \csname the\ifundefined{theH#3}{H#3\endcsname
8232 .\@nx#1{#2}%
8233 }%
8234 }%
8235 }%
8236 }%
8237 }{}
8238 }{}

```

42 Included figures

Simply intercept the low level graphics package macro.

```

8239 \ifHy@hyperfigures
8240 \let\Hy@Gin@setfile\Gin@setfile
8241 \def\Gin@setfile#1#2#3{%
8242 \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
8243 }%
8244 \fi
8245 \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.

```

8246 \ifHy@hyperindex
8247 \def\HyInd@ParenLeft{({}%
8248 \def\HyInd@ParenRight{)}}%
8249 \def\hyperindexformat#1#2{%
8250 \let\HyOrg@hyperpage\hyperpage
8251 \let\hyperpage\@firstofone
8252 #1{\HyOrg@hyperpage{#2}}%
8253 \let\hyperpage\HyOrg@hyperpage
8254 }%

```

keep the old name for compatibility.

```

8255 \let\hyperindexformat\hyperxindexformat
8256 \Hy@nextfalse
8257 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
8258 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
8259 \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
8260 \begingroup
8261 \lccode`\|=\expandafter`\HyInd@EncapChar\relax
8262 \lccode`\/=``\relax
8263 \lowercase{\endgroup
8264 \ifHy@next
8265 \let\HyInd@org@wrindex\@wrindex
8266 \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2||\}%
8267 \def\HyInd@@wrindex#1#2|#3|#4\{\%
8268 \ifx\|#3\%
8269 \HyInd@org@wrindex{#1}{#2|hyperpage}%
8270 \else
8271 \HyInd@@@wrindex{#1}{#2}#3\%
8272 \fi
8273 }%
8274 \def\HyInd@@@wrindex#1#2#3#4\{\%
8275 \def\Hy@temp@A{#3}%
8276 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8277 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8278 \relax
8279 \HyInd@org@wrindex{#1}{\%
8280 #2|hyperindexformat{/#3#4}%
8281 }%
8282 \else
8283 \ifx\|#4\%
8284 \ifx\Hy@temp@A\HyInd@ParenRight
8285 \HyInd@org@wrindex{#1}{#2|#3}%
8286 \else
8287 \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
8288 \fi
8289 \else
8290 \HyInd@org@wrindex{#1}{\%
8291 #2|#3hyperindexformat{/#4}%
8292 }%
8293 \fi
8294 \fi
8295 }%
8296 \else
8297 \def\@wrindex#1{\@wrindex#1||\}%
8298 \def\@wrindex#1|#2|#3\{\%
8299 \if@filesw
8300 \ifx\|#2\%
8301 \protected@write\@indexfile{\%
8302 \string\indexentry{#1|hyperpage}{\thepage}%
8303 }%
8304 \else
8305 \HyInd@@@wrindex{#1}#2\%
8306 \fi
8307 \fi
8308 \endgroup

```

```

8309     \@esphack
8310 }%
8311 \def\HyInd@@@wrindex#1#2#3\{%
8312   \def\Hy@temp@A{#2}%
8313   \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8314     \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8315     \relax
8316   \protected@write\@indexfile{}\{%
8317     \string\indexentry{%
8318       #1|hyperindexformat{/#2#3}%
8319     }\the page}%
8320 }%
8321 \else
8322   \ifx\#3\%
8323     \ifx\Hy@temp@A\HyInd@ParenRight
8324       \HyInd@DefKey{#1}%
8325       \@ifundefined{HyInd@(\HyInd@key)}{%
8326         \let\Hy@temp@\empty
8327       }{%
8328         \expandafter\let\expandafter\Hy@temp
8329         \csname HyInd@(\HyInd@key)\endcsname
8330       }%
8331       \protected@write\@indexfile{}\{%
8332         \string\indexentry{#1|#2\Hy@temp}\the page}%
8333     }%
8334   \else
8335     \protected@write\@indexfile{}\{%
8336       \string\indexentry{#1|#2hyperpage}\the page}%
8337     }%
8338     \HyInd@DefKey{#1}%
8339     \expandafter
8340     \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8341       hyperpage%
8342     }%
8343   \fi
8344 \else
8345   \protected@write\@indexfile{}\{%
8346     \string\indexentry{%
8347       #1|#2hyperindexformat{/#3}%
8348     }\the page}%
8349   }%
8350   \ifx\Hy@temp@A\HyInd@ParenLeft
8351     \HyInd@DefKey{#1}%
8352     \expandafter
8353     \gdef\csname HyInd@(\HyInd@key)\endcsname{%
8354       hyperindexformat{/#3}%
8355     }%
8356   \fi
8357 \fi
8358 \fi
8359 }%
8360 \def\HyInd@DefKey#1{%
8361   \begingroup
8362   \let\protect\@unexpandable@protect

```

```

8363      \edef\Hy@temp{#1}%
8364      \@onelevel@sanitize\Hy@temp
8365      \global\let\HyInd@key\Hy@temp
8366      \endgroup
8367    }%
8368  \fi
8369 }%
8370 \fi
8371 \Hy@DisableOption{hyperindex}
8372 \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.

```

8373 \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.

```

8374 \def\hyperpage#1{%
8375   \HyInd@hyperpage#1\nohyperpage{}\@nil
8376 }
8377 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
8378   \HyInd@@hyperpage{#1}%
8379   #2%
8380   \def\Hy@temp{#3}%
8381   \ifx\Hy@temp\@empty
8382     \else
8383       \Hy@ReturnAfterFi{%
8384         \HyInd@hyperpage#3\@nil
8385       }%
8386     \fi
8387 }
8388 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
8389 \def\@hyperpage#1--#2--#3\{\{%
8390   \ifx\#2\%
8391     \@commahyperpage{#1}%
8392   \else
8393     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
8394   \fi
8395 }
8396 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
8397 \def\@commahyperpage#1, #2,#3\{\{%
8398   \ifx\#2\%
8399     \HyInd@pagelink{#1}%
8400   \else
8401     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
8402   \fi
8403 }

```

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

```

8404 \def\HyInd@pagelink#1{%
8405   \begingroup
8406   \toks@={}%
8407   \HyInd@removespaces#1 \@nil

```

```

8408 \endgroup
8409 }
8410 \def\HyInd@removespaces#1 #2\@nil{%
8411 \toks@=\expandafter{\the\toks@#1}%
8412 \ifx\#2\%
8413 \edef\x{\the\toks@}%
8414 \ifx\x\@empty
8415 \else
8416 \hyperlink{page.\the\toks@}{\the\toks@}%
8417 \fi
8418 \else
8419 \Hy@ReturnAfterFi{%
8420 \HyInd@removespaces#2\@nil
8421 }%
8422 \fi
8423 }

```

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.

```

8424 \ifHy@texht
8425 \expandafter\endinput
8426 \fi
8427 \let\real@setref\@setref
8428 \def\@setref#1#2#3{% csname, extract group, refname
8429 \ifx#1\relax
8430 \protect\G@refundefinedtrue
8431 \nfss@text{\reset@font\bfseries ??}%
8432 \@latex@warning{%
8433 Reference `#3' on page \thepage \space undefined%
8434 }%
8435 \else
8436 \expandafter\Hy@setref@link#1\@empty\@empty\@empty\@nil{#2}%
8437 \fi
8438 }

```

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

```

8439 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8440 \begingroup
8441 \toks0={\hyper@@link{#5}{#4}}%
8442 \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8443 \edef\x{\endgroup
8444 \the\toks0 {\the\toks1 }%
8445 }%
8446 \x
8447 }
8448 \def\@pagesetref#1#2#3{% csname, extract macro, ref
8449 \ifx#1\relax
8450 \protect\G@refundefinedtrue
8451 \nfss@text{\reset@font\bfseries ??}%
8452 \@latex@warning{%
8453 Reference `#3' on page \thepage \space undefined%
8454 }%

```

```

8455 \else
8456 \protect\hyper@@link
8457 {\expandafter\@fifthoffive#1}%
8458 {page.\expandafter\@secondoffive#1}%
8459 {\expandafter\@secondoffive#1}%
8460 \fi
8461 }

8462 </packageEnd>
8463 <*check>
8464 \checklatex
8465 \checkcommand\def\@setref#1#2#3{%
8466 \ifx#1\relax
8467 \protect\G@refundefinedtrue
8468 \nfss@text{\reset@font\bfseries ??}%
8469 \@latex@warning{%
8470 Reference `#3' on page \thepage\space undefined%
8471 }%
8472 \else
8473 \expandafter#2#1\null
8474 \fi
8475 }
8476 </check>
8477 <*packageEnd>

```

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

```

8478 \def\HyRef@StarSetRef#1{%
8479 \begingroup
8480 \Hy@safe@activetrue
8481 \let\protect\@unexpandable@protect
8482 \edef\x{#1}%
8483 \@onelevel@sanitize\x
8484 \edef\x{\endgroup
8485 \noexpand\HyRef@@StarSetRef
8486 \expandafter\noexpand\csname r@\x\endcsname{\x}%
8487 }%
8488 \x
8489 }
8490 \def\HyRef@@StarSetRef#1#2#3{%
8491 \ifx#1\@undefined
8492 \let#1\relax
8493 \fi
8494 \real@setref#1#3{#2}%
8495 }
8496 \def\@refstar#1{%
8497 \HyRef@StarSetRef{#1}\@firstoffive
8498 }
8499 \def\@pagerefstar#1{%
8500 \HyRef@StarSetRef{#1}\@secondoffive
8501 }
8502 \def\@namerefstar#1{%
8503 \HyRef@StarSetRef{#1}\@thirdoffive
8504 }
8505 \def\@Refstar#1{%

```

```

8506 \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8507 }%
8508 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8509 \MakeUppercase#1%
8510 }%
8511 \def\HyRef@Ref#1{%
8512 \hyperref[{#1}]{\Ref*{#1}}%
8513 }%
8514 \Hy@AtBeginDocument{%
8515 \@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.

```

8516 \@ifundefined{hyper@nopatch@varioref}
8517 {
8518 \renewcommand\Vref@star[2][]{%
8519 \begingroup
8520 \let\T@pageref\@pagerefstar
8521 \Ref*{#2}
8522 \vpageref[#1]{#2}%
8523 \endgroup
8524 }%
8525 \renewcommand\Vr@f[2][]{%
8526 \begingroup
8527 \let\T@pageref\@pagerefstar
8528 \hyperref[{#2}]{%
8529 \Ref*{#2}
8530 \vpageref[#1]{#2}%
8531 }%
8532 \endgroup
8533 }%
8534 \renewcommand\vr@f[2][]{%
8535 \begingroup
8536 \let\T@pageref\@pagerefstar
8537 \hyperref[{#2}]{%
8538 \ref*{#2}
8539 \vpageref[#1]{#2}%
8540 }%
8541 \endgroup
8542 }%
8543 \renewcommand\vref@star[2][]{%
8544 \begingroup
8545 \let\T@pageref\@pagerefstar
8546 \ref*{#2}
8547 \vpageref[#1]{#2}%
8548 \endgroup
8549 }%
8550 }{}%
8551 }{}%
8552 }
8553 \DeclareRobustCommand*\autopageref{%
8554 \@ifstar{%
8555 \HyRef@autopagerefname\pageref*%

```



```

8556 } \HyRef@autopageref
8557 }
8558 \def \HyRef@autopageref#1{%
8559   \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
8560 }
8561 \def \HyRef@autopagerefname{%
8562   \ifundefined{pageautorefname}{%
8563     \ifundefined{pagename}{%
8564       \Hy@Warning{No autoref name for `page'}%
8565     }{%
8566       \pagename\nobreakspace
8567     }%
8568   }{%
8569     \pageautorefname\nobreakspace
8570   }%
8571 }

```

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

```

8572 \NewDocumentCommand\autoref{s}
8573   {\leavevmode
8574     \IfBooleanTF{#1}{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@@link}}
8575 \def \HyRef@autoref#1#2{%
8576   \begingroup
8577     \Hy@safe@activestrue
8578     \expandafter \HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
8579   \endgroup
8580 }
8581 \def \HyRef@autosetref#1#2#3{% link command, csname, refname
8582   \HyRef@ShowKeysRef{#2}%
8583   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8584   \edef \HyRef@thisref{%
8585     \expandafter \@fourthoffive#1\@empty\@empty\@empty
8586   }%
8587   \expandafter \HyRef@testreftype \HyRef@thisref. \\\%
8588   \Hy@safe@activesfalse
8589   #3{%
8590     \expandafter \@fifthoffive#1\@empty\@empty\@empty
8591   }{%
8592     \expandafter \@fourthoffive#1\@empty\@empty\@empty
8593   }{%
8594     \HyRef@currentHtag
8595     \expandafter \@firstoffive#1\@empty\@empty\@empty
8596     \null
8597   }%
8598   \else
8599     \protect\G@refundefinedtrue
8600     \nfss@text{\reset@font\bfseries ??}%
8601     \@latex@warning{%
8602       Reference `#2' on page \thepage\space undefined%
8603     }%
8604   \fi
8605 }
8606 \def \HyRef@testreftype#1.#2\{\%

```

```

8607 \@ifundefined{#1autorefname}{%
8608   \@ifundefined{#1name}{%
8609     \HyRef@StripStar#1\\*\\@nil{#1}%
8610     \@ifundefined{\HyRef@name autorefname}{%
8611       \@ifundefined{\HyRef@name name}{%
8612         \def\HyRef@currentHtag{%
8613           \Hy@Warning{No autoref name for `#1'}%
8614         }%
8615         \edef\HyRef@currentHtag{%
8616           \expandafter\noexpand\csname\HyRef@name name\endcsname
8617           \noexpand~%
8618         }%
8619       }%
8620     }%
8621     \edef\HyRef@currentHtag{%
8622       \expandafter\noexpand
8623       \csname\HyRef@name autorefname\endcsname
8624       \noexpand~%
8625     }%
8626   }%
8627 }%
8628 \edef\HyRef@currentHtag{%
8629   \expandafter\noexpand\csname#1name\endcsname
8630   \noexpand~%
8631 }%
8632 }%
8633 }%
8634 \edef\HyRef@currentHtag{%
8635   \expandafter\noexpand\csname#1autorefname\endcsname
8636   \noexpand~%
8637 }%
8638 }%
8639 }
8640 \def\HyRef@StripStar#1*\\#2\@nil#3{%
8641   \def\HyRef@name{#2}%
8642   \ifx\HyRef@name\HyRef@CaseStar
8643     \def\HyRef@name{#1}%
8644   \else
8645     \def\HyRef@name{#3}%
8646   \fi
8647 }
8648 \def\HyRef@CaseStar{*\\}
8649 \def\HyRef@currentHtag{

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

8650 \let\HyRef@ShowKeysRef\@gobble
8651 \def\HyRef@ShowKeysInit{%
8652   \@ifundefined{SK@@label}{%
8653     {%
8654       \ifx\SK@ref\@empty
8655       \else
8656         \def\HyRef@ShowKeysRef{%
8657           \SK@\SK@@ref

```

```

8658     }%
8659     \fi
8660     }%
8661 }
8662 \AddToHook{package/showkeys/after}{\HyRef@ShowKeysInit}

```

Defaults for the names that `\autoref` uses.

```

8663 \providecommand*{\AMSautorefname}{\equationautorefname}
8664 \providecommand*{\Hfootnoteautorefname}{\footnoteautorefname}
8665 \providecommand*{\Itemautorefname}{\itemautorefname}
8666 \providecommand*{\itemautorefname}{item}
8667 \providecommand*{\equationautorefname}{Equation}
8668 \providecommand*{\footnoteautorefname}{footnote}
8669 \providecommand*{\itemautorefname}{item}
8670 \providecommand*{\figureautorefname}{Figure}
8671 \providecommand*{\tableautorefname}{Table}
8672 \providecommand*{\partautorefname}{Part}
8673 \providecommand*{\appendixautorefname}{Appendix}
8674 \providecommand*{\chapterautorefname}{chapter}
8675 \providecommand*{\sectionautorefname}{section}
8676 \providecommand*{\subsectionautorefname}{subsection}
8677 \providecommand*{\subsubsectionautorefname}{subsubsection}
8678 \providecommand*{\paragraphautorefname}{paragraph}
8679 \providecommand*{\subparagraphautorefname}{subparagraph}
8680 \providecommand*{\FancyVerbLineautorefname}{line}
8681 \providecommand*{\theoremautorefname}{Theorem}
8682 \providecommand*{\pageautorefname}{page}
8683 \</packageEnd>

```

44 Configuration files

44.1 PS/PDF strings

Some drivers write PS or PDF strings. These strings are delimited by parentheses, therefore a lonely unmatched parenthesis must be avoided to avoid PS or PDF syntax errors. Also the backslash character itself has to be protected.

`\Hy@pstringdef` Therefore such strings should be passed through `\Hy@pstringdef`. The first argument holds a macro for the result, the second argument is the string that needs protecting. Since version 1.30.0 pdf_T_EX offers `\pdfescapestring`.

```

8684 \<pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>
8685 \begingroup\expandafter\expandafter\expandafter\endgroup
8686 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8687   \begingroup
8688     \catcode`\| = 0 %
8689     \@makeother\| %
8690   |@firstofone{| \endgroup
8691   |def|Hy@pstringdef#1#2{%
8692     |begingroup
8693     |edef~{|string~}%
8694     |xdef|Hy@gtemp{#2}%
8695   |endgroup

```

```

8696 |let#1|Hy@gtemp
8697 |@onelevel@sanitize#1%
8698 |edef#1{|expandafter|Hy@ExchangeBackslash#1\|@nil}%
8699 |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
8700 |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
8701 }%
8702 |def|Hy@ExchangeBackslash#1\#2|@nil{%
8703 #1%
8704 |ifx|\#2|\%%
8705 |else
8706 \\\%
8707 |Hy@ReturnAfterFi{%
8708 |Hy@ExchangeBackslash#2|@nil
8709 }%
8710 |fi
8711 }%
8712 }%
8713 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8714 #1%
8715 \ifx\#2\%%
8716 \else
8717 \@backslashchar(%
8718 \Hy@ReturnAfterFi{%
8719 \Hy@ExchangeLeftParenthesis#2\@nil
8720 }%
8721 \fi
8722 }%
8723 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8724 #1%
8725 \ifx\#2\%%
8726 \else
8727 \@backslashchar)%
8728 \Hy@ReturnAfterFi{%
8729 \Hy@ExchangeRightParenthesis#2\@nil
8730 }%
8731 \fi
8732 }%
8733 \else
8734 \def\Hy@pstringdef#1#2{%
8735 \begingroup
8736 \edef~{\string~}%
8737 \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8738 \endgroup
8739 \let#1\Hy@gtemp
8740 }%
8741 \fi
8742 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

44.2 pdfTeX

```

8743 <*pdfTeX>
8744 \providecommand*\XR@ext}{pdf}
8745 \Hy@setbreaklinks{true}
8746 \def\HyPat@ObjRef{%

```

```

8747 [0-9]*[1-9][0-9]* 0 R%
8748 }

```

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

```

8749 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8750 \def\Hy@pdfminorversion{\pdfminorversion}%
8751 \ifHy@ocgcolorlinks
8752 \ifnum\Hy@pdfmajorminor@version<105 %
8753 \kvsetkeys{Hyp}{pdfversion=1.5}%
8754 \fi
8755 \fi
8756 \ifHy@setpdfversion
8757 \ifnum\Hy@pdf@majorminor@version<105 %
8758 \@ifundefined{pdfobjcompresslevel}{%
8759 }{%
8760 \ifHy@verbose
8761 \Hy@InfoNoLine{%
8762 PDF object streams are disabled, because they are%
8763 \MessageBreak
8764 not supported in requested PDF version %
8765 \Hy@pdf@majorversion.\Hy@pdf@minorversion
8766 }%
8767 \fi
8768 \pdfobjcompresslevel=\z@
8769 }%
8770 \fi
8771 \ifnum\Hy@pdfmajorminor@version=\Hy@pdf@majorminor@version\relax
8772 \else
8773 \let\Hy@temp\@empty
8774 \def\Hy@temp@A#1#2{%
8775 \ifnum#1>\z@
8776 \edef\Hy@temp{%
8777 \Hy@temp
8778 \space\space
8779 \the#1\space #2%
8780 \ifnum#1=\@ne\else s\fi
8781 \MessageBreak
8782 }%
8783 \fi
8784 }%
8785 \Hy@temp@A\pdflastobj{PDF object}%
8786 \Hy@temp@A\pdflastxform{formXObject}%
8787 \Hy@temp@A\pdflastximage{imageXObject}%
8788 \Hy@temp@A\pdflastannot{annotation}%
8789 \@ifundefined{pdfastlink}{%
8790 }{%
8791 \Hy@temp@A\pdfastlink{link}%
8792 }%

```

```

8793 \ifx\Hy@temp\@empty
8794 \Hy@pdfmajorversion=\Hy@pdf@majorversion\relax
8795 \Hy@pdfminorversion=\Hy@pdf@minorversion\relax
8796 \else
8797 \let\Hy@temp@A\@empty
8798 \ifnum\Hy@pdf@majorminor@version=104 %
8799 \IfFileExists{pdf14.sty}{%
8800 \def\Hy@temp@A{%
8801 \MessageBreak
8802 Or \string\RequirePackage{pdf14} can be used%
8803 \MessageBreak
8804 before \string\documentclass\space as shortcut%
8805 }%
8806 }{}%
8807 \fi
8808 \Hy@WarningNoLine{%
8809 The PDF version number could not be set,\MessageBreak
8810 because some PDF objects are already written:%
8811 \MessageBreak
8812 \Hy@temp
8813 The version should be set as early as possible:%
8814 \MessageBreak
8815 \space\space
8816 \expandafter\string\Hy@pdfmajorversion=\Hy@pdf@majorversion, %
8817 \expandafter\string\Hy@pdfminorversion=\Hy@pdf@minorversion
8818 \string\relax
8819 \ifnum\Hy@pdf@majorminor@version<105 %
8820 \@ifundefined{pdfobjcompresslevel}{%
8821 }{%
8822 \MessageBreak
8823 \space\space
8824 \string\pdfobjcompresslevel=0\string\relax
8825 }%
8826 \fi
8827 \Hy@temp@A
8828 }%
8829 \fi
8830 \fi
8831 \PackageInfo{hyperref}{%
8832 \expandafter\string\Hy@pdfmajorversion.%
8833 \expandafter\string\Hy@pdfminorversion
8834 :=\number\Hy@pdf@majorversion.\number\Hy@pdf@minorversion\space
8835 }%
8836 \fi
8837 \edef\Hy@pdf@majorversion{\number\Hy@pdfmajorversion}%
8838 \edef\Hy@pdf@minorversion{\number\Hy@pdfminorversion}%
8839 \Hy@DisableOption{pdfversion}%

8840 \ifHy@ocgcolorlinks
8841 \pdf@ifdraftmode{}{%
8842 \immediate\pdfobj{%
8843 <<%
8844 /Type/OCG%
8845 /Name(View)%
8846 /Usage<<%

```

```

8847      /Print<<%
8848      /PrintState/OFF%
8849      >>%
8850      /View<<%
8851      /ViewState/ON%
8852      >>%
8853      >>%
8854      >>%
8855      }%
8856      \edef\OBJ@OCG@view{\the\pdffastobj\space 0 R}%
8857      \immediate\pdfobj{%
8858      <<%
8859      /Type/OCG%
8860      /Name(Print)%
8861      /Usage<<%
8862      /Print<<%
8863      /PrintState/ON%
8864      >>%
8865      /View<<%
8866      /ViewState/OFF%
8867      >>%
8868      >>%
8869      >>%
8870      }%
8871      \edef\OBJ@OCG@print{\the\pdffastobj\space 0 R}%
8872      \immediate\pdfobj{%
8873      [%
8874      \OBJ@OCG@view\space\OBJ@OCG@print
8875      ]%
8876      }%
8877      \edef\OBJ@OCGs{\the\pdffastobj\space 0 R}%
8878      \pdfcatalog{%
8879      /OCProperties<<%
8880      /OCGs \OBJ@OCGs
8881      /D<<%
8882      /OFF[\OBJ@OCG@print]%
8883      /AS[%
8884      <<%
8885      /Event/View%
8886      /OCGs \OBJ@OCGs
8887      /Category[/View]%
8888      >>%
8889      <<%
8890      /Event/Print%
8891      /OCGs \OBJ@OCGs
8892      /Category[/Print]%
8893      >>%
8894      <<%
8895      /Event/Export%
8896      /OCGs \OBJ@OCGs
8897      /Category[/Print]%
8898      >>%
8899      ]%
8900      >>%

```

```

8901     >>%
8902   }%
8903   \begingroup
8904     \edef\x{\endgroup
8905       \pdfpageresources{%
8906         \the\pdfpageresources
8907         /Properties<<%
8908           /OCView \OBJ@OCG@view
8909           /OCPrint \OBJ@OCG@print
8910         >>%
8911       }%
8912     }%
8913   \x
8914 }%
8915 \Hy@AtBeginDocument{%
8916   \def\Hy@colorlink#1{%
8917     \begingroup
8918     \ifHy@ocgcolorlinks
8919       \def\Hy@ocgcolor{#1}%
8920       \setbox0=\hbox\bgroup\color@begingroup
8921     \else
8922       \HyColor@UseColor#1%
8923     \fi
8924   }%
8925   \def\Hy@endcolorlink{%
8926     \ifHy@ocgcolorlinks
8927       \color@endgroup\egroup
8928     \mbox{%
8929       \pdfliteral page{/OC/OCPrint BDC}%
8930       \rlap{\copy0}%
8931       \pdfliteral page{EMC/OC/OCView BDC}%
8932     \begingroup
8933       \expandafter\HyColor@UseColor\Hy@ocgcolor
8934       \box0 %
8935     \endgroup
8936     \pdfliteral page{EMC}%
8937   }%
8938   \fi
8939 \endgroup
8940 }%
8941 }%
8942 \else
8943   \Hy@DisableOption{ocgcolorlinks}%
8944 \fi

```

First, allow for some changes and additions to pdftex syntax:

```

8945 \def\setpdfinkmargin#1{%
8946   \begingroup
8947     \setlength{\dimen@}{#1}%
8948   \expandafter\endgroup
8949   \expandafter\pdfinkmargin\the\dimen@\relax
8950 }
8951 \pdfinkmargin1pt %

```

First set up the default linking


```
8952 \providecommand*\@pdfview{XYZ}
```

First define the anchors:

```
8953 \Hy@WrapperDef\new@pdfink#1{%
8954   \ifhmode
8955     \@savsf\spacefactor
8956   \fi
8957   \Hy@SaveLastskip
8958   \Hy@VerboseAnchor{#1}%
8959   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8960   \Hy@DestName\Hy@pstringDest\@pdfview
8961   \Hy@RestoreLastskip
8962   \ifhmode
8963     \spacefactor\@savsf
8964   \fi
8965 }
8966 \let\pdf@endanchor\@empty
```

`\Hy@DestName` Wrap the call of `\pdfdest` name in `\Hy@DestName`. Then it can easier be caught by package `hypdestopt`.

```
8967 \def\Hy@DestName#1#2{%
8968   \pdfdest name{#1}#2\relax
8969 }
```

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.

```
8970 \providecommand*\@pdfborder{0 0 1}
8971 \providecommand*\@pdfborderstyle{}
8972 \def\Hy@undefinedname{UNDEFINED}
8973 \def\find@pdfink#1#2{%
8974   \leavevmode
8975   \protected@edef\Hy@testname{#2}%
8976   \ifx\Hy@testname\@empty
8977     \Hy@Warning{%
8978       Empty destination name,\MessageBreak
8979       using '\Hy@undefinedname'%
8980     }%
8981     \let\Hy@testname\Hy@undefinedname
8982   \else
8983     \Hy@pstringdef\Hy@testname{%
8984       \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8985     }%
8986   \fi
8987   \Hy@StartlinkName{%
8988     \ifHy@pdfa /F 4\fi
8989     \Hy@setpdfborder
8990     \Hy@setpdfhighlight
8991     \ifx\CurrentBorderColor\relax
8992       \else
8993         /C[\CurrentBorderColor]%
8994       \fi
8995   }\Hy@testname
```

```

8996 \expandafter\Hy@colorlink\csname @#1color\endcsname
8997 }
8998 \def\Hy@StartlinkName#1#2{%
8999 \pdfstartlink attr{#1}goto name{#2}\relax
9000 }
9001 \def\close@pdfink{%
9002 \Hy@endcolorlink
9003 \Hy@VerboseLinkStop
9004 \pdfendlink
9005 }
9006 \def\hyper@anchor#1{%
9007 \new@pdfink{#1}\anchor@spot\pdf@endanchor
9008 }
9009 \def\hyper@anchorstart#1{%
9010 \new@pdfink{#1}%
9011 \Hy@activeanchortrue
9012 }
9013 \def\hyper@anchorend{%
9014 \pdf@endanchor
9015 \Hy@activeanchorfalse
9016 }
9017 \def\hyper@linkstart#1#2{%
9018 \Hy@VerboseLinkStart{#1}{#2}%
9019 \@ifundefined{@#1bordercolor}{%
9020 \let\CurrentBorderColor\relax
9021 }{%
9022 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
9023 }%
9024 \find@pdfink{#1}{#2}%
9025 }
9026 \def\hyper@linkend{\close@pdfink}
9027 \def\hyper@link#1#2#3{%
9028 \Hy@VerboseLinkStart{#1}{#2}%
9029 \@ifundefined{@#1bordercolor}{%
9030 \let\CurrentBorderColor\relax
9031 }{%
9032 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
9033 }%
9034 \find@pdfink{#1}{#2}#3\Hy@xspace@end
9035 \close@pdfink
9036 }
9037 \let\CurrentBorderColor\@linkbordercolor
9038 \def\hyper@linkurl#1#2{%
9039 \begingroup
9040 \Hy@pstringdef\Hy@pstringURI{#2}%
9041 \hyper@chars
9042 \leavevmode
9043 \pdfstartlink
9044 attr{%
9045 \Hy@setpdfborder
9046 \Hy@setpdfhighlight
9047 \ifx\@urlbordercolor\relax
9048 \else
9049 /C[\@urlbordercolor]%

```

```

9050     \fi
9051   }%
9052   user{%
9053     /Subtype/Link%
9054     \ifHy@pdfa /F 4\fi
9055     /A<<%
9056     /Type/Action%
9057     /S/URI%
9058     /URI(\Hy@pstringURI)%
9059     \ifHy@href@ismap
9060       /IsMap true%
9061     \fi
9062     \Hy@href@nextactionraw
9063     >>%
9064   }%
9065   \relax
9066   \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9067   \close@pdflink
9068 \endgroup
9069 }
9070 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
9071   \begingroup
9072   \def\Hy@pstringF{#2}%
9073   \Hy@CleanupFile\Hy@pstringF
9074   \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9075   \Hy@pstringdef\Hy@pstringD{#3}%
9076   \Hy@MakeRemoteAction
9077   \leavevmode
9078   \pdfstartlink
9079   attr{%
9080     \Hy@setpdfborder
9081     \Hy@setpdfhighlight
9082     \ifx\@filebordercolor\relax
9083     \else
9084       /C[\@filebordercolor]%
9085     \fi
9086   }%
9087   user {%
9088     /Subtype/Link%
9089     \ifHy@pdfa /F 4\fi
9090     /A<<%
9091     /F(\Hy@pstringF)%
9092     /S/GoToR%
9093     \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}

9094      \ifx\|#3\|%
9095      /D[\Hy@href@page\@pdfremotestartview]%
9096      \else
9097      /D(\Hy@pstringD)%
9098      \fi
9099      \Hy@href@nextactionraw
9100      >>%
9101      }%
9102      \relax
9103      \Hy@colorlink\@filecolor#1\Hy@xspace@end
9104      \close@pdflink
9105      \endgroup
9106      }
9107      \def\@hyper@launch run:#1\|#2#3{% filename, anchor text linkname
9108      \begingroup
9109      \Hy@pstringdef\Hy@pstringF{#1}%
9110      \Hy@pstringdef\Hy@pstringP{#3}%
9111      \leavevmode
9112      \pdfstartlink
9113      attr{%
9114      \Hy@setpdfborder
9115      \Hy@setpdfhighlight
9116      \ifx\@runbordercolor\relax
9117      \else
9118      /C[\@runbordercolor]%
9119      \fi
9120      }%
9121      user {%
9122      /Subtype/Link%
9123      \ifHy@pdfa /F 4\fi
9124      /A<<%
9125      /F(\Hy@pstringF)%
9126      /S/Launch%
9127      \Hy@SetNewWindow
9128      \ifx\|#3\|%
9129      \else
9130      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9131      \fi
9132      \Hy@href@nextactionraw
9133      >>%
9134      }%
9135      \relax
9136      \Hy@colorlink\@runcolor#2\Hy@xspace@end
9137      \close@pdflink
9138      \endgroup
9139      }

```

\PDF@SetupDox

```

9140 \def\PDF@SetupDoc{%
9141 \ifx\@pdfpagescrop\@empty
9142 \else
9143 \edef\process@me{%

```

```

9144 \pdfpagesattr={%
9145 /CropBox[\@pdfpagescrop]%
9146 \expandafter\ifx\expandafter\\the\pdfpagesattr\\%
9147 \else
9148 ^^J\the\pdfpagesattr
9149 \fi
9150 }%
9151 }%
9152 \process@me
9153 \fi
9154 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9155 \pdfcatalog{%
9156 /PageMode/\@pdfpagemode
9157 \ifx\@baseurl\@empty
9158 \else
9159 /URI<</Base(\Hy@pstringB)>>%
9160 \fi
9161 }%
9162 \ifx\@pdfstartpage\@empty
9163 \else
9164 \ifx\@pdfstartview\@empty
9165 \else
9166 openaction goto page\@pdfstartpage{\@pdfstartview}%
9167 \fi
9168 \fi
9169 \edef\Hy@temp{%
9170 \ifHy@pdftoolbar\else /HideToolbar true\fi
9171 \ifHy@pdfmenubar\else /HideMenubar true\fi
9172 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9173 \ifHy@pdffitwindow /FitWindow true\fi
9174 \ifHy@pdfcenterwindow /CenterWindow true\fi
9175 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9176 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9177 \Hy@UseNameKey{Direction}\@pdfdirection
9178 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9179 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9180 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9181 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9182 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9183 \Hy@UseNameKey{Duplex}\@pdfduplex
9184 \ifx\@pdfpicktraybypdfsize\@empty
9185 \else
9186 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9187 \fi
9188 \ifx\@pdfprintpagerange\@empty
9189 \else
9190 /PrintPageRange[\@pdfprintpagerange]%
9191 \fi
9192 \ifx\@pdfnumcopies\@empty
9193 \else
9194 /NumCopies \@pdfnumcopies
9195 \fi
9196 }%
9197 \pdfcatalog{%

```

```

9198 \ifx\Hy@temp\@empty
9199 \else
9200 /ViewerPreferences<<\Hy@temp>>%
9201 \fi
9202 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9203 \ifx\@pdflang\relax
9204 \else
9205 /Lang(\@pdflang)%
9206 \fi
9207 }%
9208 }

```

\PDF@FinishDoc

```

9209 \def\PDF@FinishDoc{%
9210 \pdf@ifdraftmode{ }{%
9211 \Hy@UseMaketitleInfos
9212 \HyInfo@GenerateAddons
9213 \pdfinfo{%
9214 /Author(\@pdfauthor)%
9215 /Title(\@pdftitle)%
9216 /Subject(\@pdfsubject)%
9217 /Creator(\@pdfcreator)%
9218 \ifx\@pdfcreationdate\@empty
9219 \else
9220 /CreationDate(\@pdfcreationdate)%
9221 \fi
9222 \ifx\@pdfmoddate\@empty
9223 \else
9224 /ModDate(\@pdfmoddate)%
9225 \fi
9226 \ifx\@pdfproducer\relax
9227 \else
9228 /Producer(\@pdfproducer)%
9229 \fi
9230 /Keywords(\@pdfkeywords)%
9231 \ifx\@pdftrapped\@empty
9232 \else
9233 /Trapped/\@pdftrapped
9234 \fi
9235 \HyInfo@Addons
9236 }%
9237 }%
9238 \Hy@DisableOption{pdfauthor}%
9239 \Hy@DisableOption{pdftitle}%
9240 \Hy@DisableOption{pdfsubject}%
9241 \Hy@DisableOption{pdfcreator}%
9242 \Hy@DisableOption{addtopdfcreator}%
9243 \Hy@DisableOption{pdfcreationdate}%
9244 \Hy@DisableOption{pdfmoddate}%
9245 \Hy@DisableOption{pdfproducer}%
9246 \Hy@DisableOption{pdfkeywords}%
9247 \Hy@DisableOption{pdftrapped}%
9248 \Hy@DisableOption{pdfinfo}%
9249 }

```

`\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`.

```

9250 \def\hyper@pagetransition{%
9251   \ifx\@pdfpagetransition\relax
9252   \else
9253     \expandafter\Hy@RemoveTransPageAttr
9254     \the\pdfpageattr^^J/Trans{}}>>\END
9255   \ifx\@pdfpagetransition\empty
9256   \else
9257     \edef\@processme{%
9258       \global\pdfpageattr{%
9259         \the\pdfpageattr
9260         ^^J/Trans << /S /\@pdfpagetransition\space >>%
9261       }%
9262     }%
9263     \@processme
9264   \fi
9265 \fi
9266 }
```

`\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.

```

9267 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
9268   \ifx\#2\%
9269     \global\pdfpageattr{#1}%
9270   \else
9271     \Hy@RemoveTransPageAttr#1#4\END
9272   \fi
9273 }
```

`\hyper@pageduration` `\@pdfpageduration` is initialized with `\relax`. So it indicates, if option `pdfpageduration` is used. First previous `/Dur` entries are removed. If a new `/Dur` key exists, it is appended to `\pdfpageattr`.

```

9274 \def\hyper@pageduration{%
9275   \ifx\@pdfpageduration\relax
9276   \else
9277     \expandafter
9278     \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{}} \END
9279   \ifx\@pdfpageduration\empty
9280   \else
9281     \edef\@processme{%
9282       \global\pdfpageattr{%
9283         \the\pdfpageattr
9284         ^^J/Dur \@pdfpageduration\space
9285       }%
9286     }%
9287     \@processme
9288   \fi
9289 \fi
```

9290 }

`\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.

```
9291 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
9292   \ifx\#2\%
9293     \global\pdfpageattr{#1}%
9294   \else
9295     \Hy@RemoveDurPageAttr#1#4\END
9296   \fi
9297 }
```

```
9298 \pdf@ifdraftmode{}{%
9299   \g@addto@macro\Hy@EveryPageHook{%
9300     \hyper@pagetransition
9301     \hyper@pageduration
9302   }%
9303 }
```

Also XeTeX support `\pdfpagewidth` and `\pdfpageheight`, but it does not provide `\pdfhorigin` and `\pdfvorigin`.

```
9304 \pdfifx{pdf}{}
9305 \ifx\pdfifx\pdfifx
9306 \Hy@AtBeginDocument{%
9307   \ifHy@setpagesize
9308     \expandafter\@firstofone
9309   \else
9310     \expandafter\@gobble
9311   \fi
9312 }%
9313 \ifclassloaded{seminar}{%
9314 \pdfifx{pdf}{}
9315   \setlength{\pdfhorigin}{1truein}%
9316   \setlength{\pdfvorigin}{1truein}%
9317 \pdfifx{pdf}{}
9318   \ifportrait
9319     \ifdim\paperwidth=\z@
9320     \else
9321       \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9322     \fi
9323     \ifdim\paperheight=\z@
9324     \else
9325       \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9326     \fi
9327   \else
9328     \ifdim\paperheight=\z@
9329     \else
9330       \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9331     \fi
9332     \ifdim\paperwidth=\z@
9333     \else
9334       \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9335     \fi
9336   \fi
9337 }
```



```

9335     \fi
9336   \fi
9337 }{%
9338   \ifnum\mag=\@m
9339     \ifdim\stockwidth>\z@
9340       \ifdim\stockheight>\z@
9341         \setlength{\pdfpagewidth}{\stockwidth}%
9342         \setlength{\pdfpageheight}{\stockheight}%
9343       \else
9344         \ifdim\paperwidth>\z@
9345           \ifdim\paperheight>\z@
9346             \setlength{\pdfpagewidth}{\paperwidth}%
9347             \setlength{\pdfpageheight}{\paperheight}%
9348         \fi
9349       \fi
9350     \fi
9351   \else
9352     \ifdim\stockwidth=\z@
9353       \ifdim\paperwidth>\z@
9354         \ifdim\paperheight>\z@
9355           \setlength{\pdfpagewidth}{\paperwidth}%
9356           \setlength{\pdfpageheight}{\paperheight}%
9357         \fi
9358       \fi
9359     \fi
9360   \fi
9361 \fi
9362 }%
9363 }%
9364 \Hy@DisableOption{setpagesize}%
9365 }
9366 </pdfTeX | xetex>
9367 < *pdfTeX>
9368 \def\Acrobatmenu#1#2{%
9369   \Hy@Acrobatmenu{#1}{#2}{%
9370     \leavevmode
9371     \EdefEscapeName\Hy@temp@menu{#1}%
9372     \pdfstartlink
9373     attr{%
9374       \Hy@setpdfborder
9375       \Hy@setpdfhighlight
9376       \ifx\@menubordercolor\relax
9377       \else
9378         /C[\@menubordercolor]%
9379       \fi
9380     }%
9381     user{%
9382       /Subtype/Link%
9383       \ifHy@pdfa /F 4\fi
9384       /A<<%
9385       /S/Named%
9386       /N/\Hy@temp@menu
9387       \Hy@href@nextactionraw
9388     >>%

```

```

9389 }%
9390 \relax
9391 \Hy@colorlink\@menucolor#2%
9392 \close@pdflink
9393 }%
9394 }
9395 </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 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.

```

9396 <*hypertex>
9397 \providecommand*\XR@ext{}\dvi
9398 \let\PDF@FinishDoc\@empty
9399 \def\PDF@SetupDoc{%
9400   \ifx\@baseurl\@empty
9401     \else
9402       \special{html:<base href="\@baseurl">}%
9403     \fi
9404 }
9405 \Hy@WrapperDef\hyper@anchor#1{%
9406   \Hy@SaveLastskip

```

```

9407 \Hy@VerboseAnchor{#1}%
9408 \begingroup
9409 \let\protect=\string
9410 \hyper@chars
9411 \special{html:<a name=%
9412     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9413 \endgroup
9414 \Hy@activeanchortrue
9415 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9416 \special{html:</a>}%
9417 \Hy@activeanchorfalse
9418 \Hy@RestoreLastskip
9419 }
9420 \Hy@WrapperDef\hyper@anchorstart#1{%
9421 \Hy@SaveLastskip
9422 \Hy@VerboseAnchor{#1}%
9423 \begingroup
9424 \hyper@chars
9425 \special{html:<a name=%
9426     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9427 \endgroup
9428 \Hy@activeanchortrue
9429 }
9430 \def\hyper@anchorend{%
9431 \special{html:</a>}%
9432 \Hy@activeanchorfalse
9433 \Hy@RestoreLastskip
9434 }
9435 \def\@urltype{url}
9436 \def\hyper@linkstart#1#2{%
9437 \Hy@VerboseLinkStart{#1}{#2}%
9438 \expandafter\Hy@colorlink\csname @#1color\endcsname
9439 \def\Hy@tempa{#1}%
9440 \ifx\Hy@tempa\@urltype
9441 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9442 \else
9443 \begingroup
9444 \hyper@chars
9445 \special{html:<a href=%
9446     \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
9447 \endgroup
9448 \fi
9449 }
9450 \def\hyper@linkend{%
9451 \special{html:</a>}%
9452 \Hy@endcolorlink
9453 }
9454 \def\hyper@linkfile#1#2#3{%
9455 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
9456 }
9457 \def\hyper@linkurl#1#2{%

```

If we want to raise up the final link `\special`, we need to get its height; ask me why $\text{\LaTeX}$ constructs make this totally foul up, and make us revert to basic $\text{\TeX}$.

I do not know.

```

9458 \leavevmode
9459 \ifHy@raiselinks
9460 \Hy@SaveSpaceFactor
9461 \Hy@SaveSavedSpaceFactor
9462 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9463 \Hy@RestoreSavedSpaceFactor
9464 \@linkdim\dp\@tempboxa
9465 \lower\@linkdim\hbox{%
9466   \hyper@chars
9467   \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9468 }%
9469 \Hy@colorlink\@urlcolor
9470 \Hy@RestoreSpaceFactor
9471 #1%
9472 \Hy@SaveSpaceFactor
9473 \@linkdim\ht\@tempboxa

```

Because of the interaction with the dvihps 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).

```

9474 \advance\@linkdim by -6.5\p@
9475 \raise\@linkdim\hbox{\special{html:</a>}}%
9476 \Hy@endcolorlink
9477 \Hy@RestoreSpaceFactor
9478 \else
9479 \begingroup
9480 \hyper@chars
9481 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9482 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9483 \special{html:</a>}}%
9484 \Hy@endcolorlink
9485 \endgroup
9486 \fi
9487 }

```

Very poor implementation of \hyper@link without considering #1.

```

9488 \def\hyper@link#1#2#3{%
9489 \Hy@VerboseLinkStart{#1}{#2}%
9490 \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}%
9491 }

9492 \def\hyper@image#1#2{%
9493 \begingroup
9494 \hyper@chars
9495 \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
9496 \endgroup
9497 }
9498 </hypertex>
9499 <*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 de-

fine this command before or after loading the hyperref package if the default `c:/netscape/netscape` is not suitable) Dviwindo could in fact handle external links to dvi files on the same machine without calling a web browser, but that would mean parsing the URL to recognise such, and this is currently not done.

This was more or less blindly copied from the hypertext cfg. For dviwindo, L^AT_EX 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.

```

9500 \providecommand*\XR@ext}{dvi}
9501 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9502 \Hy@WrapperDef\hyper@anchor#1{%
9503   \Hy@SaveLastskip
9504   \Hy@VerboseAnchor{#1}%
9505   \begingroup
9506     \let\protect=\string
9507     \special{mark: #1}%
9508   \endgroup
9509   \Hy@activeanchortrue
9510   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9511   \Hy@activeanchorfalse
9512   \Hy@RestoreLastskip
9513 }
9514 \Hy@WrapperDef\hyper@anchorstart#1{%
9515   \Hy@SaveLastskip
9516   \Hy@VerboseAnchor{#1}%
9517   \special{mark: #1}%
9518   \Hy@activeanchortrue
9519 }
9520 \def\hyper@anchorend{%
9521   \Hy@activeanchorfalse
9522   \Hy@RestoreLastskip
9523 }
9524 \def\hyper@linkstart#1#2{%
9525   \Hy@VerboseLinkStart{#1}{#2}%
9526   \expandafter\Hy@colorlink\csname @#1color\endcsname
9527   \special{button: %
9528     10000000 %
9529     \number\baselineskip\space
9530     #2%
9531   }%
9532 }
9533 \def\hyper@linkend{%
9534   \Hy@endcolorlink
9535 }
9536 \def\hyper@link#1#2#3{%
9537   \Hy@VerboseLinkStart{#1}{#2}%
9538   \leavevmode
9539   \ifHy@raiselinks
9540     \Hy@SaveSpaceFactor
9541     \Hy@SaveSavedSpaceFactor
9542     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9543     \Hy@RestoreSavedSpaceFactor

```

```

9544 \@linkdim\dp\@tempboxa
9545 \lower\@linkdim\hbox{%
9546 \special{button: %
9547 \number\wd\@tempboxa\space
9548 \number\ht\@tempboxa\space
9549 #2%
9550 }%
9551 \expandafter\Hy@colorlink\csname @#1color\endcsname
9552 \Hy@RestoreSpaceFactor
9553 #3\Hy@xspace@end
9554 \Hy@SaveSpaceFactor
9555 \Hy@endcolorlink
9556 }%
9557 \@linkdim\ht\@tempboxa
9558 \advance\@linkdim by -6.5\p@
9559 \raise\@linkdim\hbox{}%
9560 \Hy@RestoreSpaceFactor
9561 \else
9562 \special{button: %
9563 \number\wd\@tempboxa\space
9564 \number\ht\@tempboxa\space
9565 #2%
9566 }%
9567 \expandafter\Hy@colorlink\csname @#1color\endcsname
9568 #3\Hy@xspace@end
9569 \Hy@endcolorlink
9570 \fi
9571 }
9572 \def\hyper@linkurl#1#2{%
9573 \begingroup
9574 \hyper@chars
9575 \leavevmode
9576 \ifHy@raiselinks
9577 \Hy@SaveSpaceFactor
9578 \Hy@SaveSavedSpaceFactor
9579 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9580 \Hy@RestoreSavedSpaceFactor
9581 \@linkdim\dp\@tempboxa
9582 \lower\@linkdim\hbox{%
9583 \special{button: %
9584 \number\wd\@tempboxa\space
9585 \number\ht\@tempboxa\space
9586 launch: \wwwbrowser\space
9587 #2%
9588 }%
9589 \Hy@colorlink\@urlcolor
9590 \Hy@RestoreSpaceFactor
9591 #1\Hy@xspace@end
9592 \Hy@SaveSpaceFactor
9593 \Hy@endcolorlink
9594 }%
9595 \@linkdim\ht\@tempboxa
9596 \advance\@linkdim by -6.5\p@
9597 \raise\@linkdim\hbox{}%

```

```

9598     \Hy@RestoreSpaceFactor
9599   \else
9600     \special{button: %
9601       \number\wd\@tempboxa\space
9602       \number\ht\@tempboxa\space
9603       launch: \wwwbrowser\space
9604       #2%
9605     }%
9606     \Hy@colorlink\@urlcolor
9607     #1\Hy@xspace@end
9608     \Hy@endcolorlink
9609   \fi
9610 \endgroup
9611 }
9612 \def\hyper@linkfile#1#2#3{%
9613   \begingroup
9614     \hyper@chars
9615     \leavevmode
9616     \ifHy@raiselinks
9617       \Hy@SaveSpaceFactor
9618       \Hy@SaveSavedSpaceFactor
9619       \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9620       \Hy@RestoreSavedSpaceFactor
9621       \@linkdim\dp\@tempboxa
9622       \lower\@linkdim\hbox{%
9623         \special{button: %
9624           \number\wd\@tempboxa\space
9625           \number\ht\@tempboxa\space
9626           #3,%
9627           file: #2%
9628         }%
9629         \Hy@colorlink\@filecolor
9630         \Hy@RestoreSpaceFactor
9631         #1\Hy@xspace@end
9632         \Hy@SaveSpaceFactor
9633         \Hy@endcolorlink
9634       }%
9635       \@linkdim\ht\@tempboxa
9636       \advance\@linkdim by -6.5\p@
9637       \raise\@linkdim\hbox{}%
9638       \Hy@RestoreSpaceFactor
9639     \else
9640       \special{button: %
9641         \number\wd\@tempboxa\space
9642         \number\ht\@tempboxa\space
9643         #3,%
9644         file: #2%
9645       }%
9646       \Hy@colorlink\@filecolor
9647       #1\Hy@xspace@end
9648       \Hy@endcolorlink
9649     \fi
9650 \endgroup
9651 }

```

```

9652 \HyInfo@AddonUnsupportedtrue
9653 \def\PDF@FinishDoc{%
9654   \Hy@UseMaketitleInfos
9655   \HyInfo@TrappedUnsupported
9656   \special{PDF: Keywords \@pdfkeywords}%
9657   \special{PDF: Title \@pdftitle}%
9658   \special{PDF: Creator \@pdfcreator}%
9659   \ifx\@pdfcreationdate\@empty
9660   \else
9661     \special{PDF: CreationDate \@pdfcreationdate}%
9662   \fi
9663   \ifx\@pdfmoddate\@empty
9664   \else
9665     \special{PDF: ModDate \@pdfmoddate}%
9666   \fi
9667   \special{PDF: Author \@pdfauthor}%
9668   \ifx\@pdfproducer\relax
9669   \else
9670     \special{PDF: Producer \@pdfproducer}%
9671   \fi
9672   \special{PDF: Subject \@pdfsubject}%
9673   \Hy@DisableOption{pdfauthor}%
9674   \Hy@DisableOption{pdftitle}%
9675   \Hy@DisableOption{pdfsubject}%
9676   \Hy@DisableOption{pdfcreator}%
9677   \Hy@DisableOption{addtopdfcreator}%
9678   \Hy@DisableOption{pdfcreationdate}%
9679   \Hy@DisableOption{pdfcreationdate}%
9680   \Hy@DisableOption{pdfmoddate}%
9681   \Hy@DisableOption{pdfproducer}%
9682   \Hy@DisableOption{pdfkeywords}%
9683   \Hy@DisableOption{pdftrapped}%
9684   \Hy@DisableOption{pdfinfo}%
9685 }
9686 \def\PDF@SetupDoc{%
9687   \ifx\@baseurl\@empty
9688   \else
9689     \special{PDF: Base \@baseurl}%
9690   \fi
9691   \ifx\@pdfpagescrop\@empty\else
9692     \special{PDF: BBox \@pdfpagescrop}%
9693   \fi
9694   \def\Hy@temp{}%
9695   \ifx\@pdfstartpage\@empty
9696   \else
9697     \ifx\@pdfstartview\@empty
9698     \else
9699       \edef\Hy@temp{%
9700         ,Page=\@pdfstartpage
9701         ,View=\@pdfstartview
9702       }%
9703     \fi
9704   \fi
9705   \edef\Hy@temp{%

```



```

9706 \noexpand\pdfmark{%
9707 pdfmark=/DOCVIEW,%
9708 PageMode=/\@pdfpagemode
9709 \Hy@temp
9710 }%
9711 }%
9712 \Hy@temp
9713 \ifx\@pdfpagescrop\@empty
9714 \else
9715 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9716 \fi
9717 \edef\Hy@temp{%
9718 \ifHy@pdftoolbar\else /HideToolbar true\fi
9719 \ifHy@pdfmenubar\else /HideMenubar true\fi
9720 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9721 \ifHy@pdffitwindow /FitWindow true\fi
9722 \ifHy@pdfcenterwindow /CenterWindow true\fi
9723 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9724 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9725 \Hy@UseNameKey{Direction}\@pdfdirection
9726 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9727 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9728 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9729 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9730 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9731 \Hy@UseNameKey{Duplex}\@pdfduplex
9732 \ifx\@pdfpicktraybypdfsize\@empty
9733 \else
9734 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9735 \fi
9736 \ifx\@pdfprintpagerange\@empty
9737 \else
9738 /PrintPageRange[\@pdfprintpagerange]%
9739 \fi
9740 \ifx\@pdfnumcopies\@empty
9741 \else
9742 /NumCopies \@pdfnumcopies
9743 \fi
9744 }%
9745 \pdfmark{pdfmark=/PUT,%
9746 Raw={%
9747 \string{Catalog\string}<<%
9748 \ifx\Hy@temp\@empty
9749 \else
9750 /ViewerPreferences<<\Hy@temp>>%
9751 \fi
9752 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9753 \ifx\@pdflang\relax
9754 \else
9755 /Lang(\@pdflang)%
9756 \fi
9757 >>%
9758 }%
9759 }%

```

```

9760 }
9761 </dviwindo>
9762 < *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.

```

9763 \special{dvipdfmx:config C 0x0010}
9764 \providecommand*{\XR@ext}{pdf}
9765 \Hy@setbreaklinks{true}
9766 \def\HyPat@ObjRef{%
9767   @[\ ]+}%
9768 }
9769 \newsavebox{\pdfm@box}
9770 \def\@pdfm@mark#1{\special{pdf:#1}}
9771 \Hy@WrapperDef\@pdfm@dest#1{%
9772   \Hy@SaveLastskip
9773   \Hy@VerboseAnchor{#1}%
9774   \begingroup
9775     \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9776     \def\x{XYZ}%
9777     \ifx\x\@pdfview
9778       \def\x{XYZ @xpos @ypos null}%
9779     \else
9780       \def\x{FitH}%
9781       \ifx\x\@pdfview
9782         \def\x{FitH @ypos}%
9783       \else
9784         \def\x{FitBH}%
9785         \ifx\x\@pdfview
9786           \def\x{FitBH @ypos}%
9787         \else
9788           \def\x{FitV}%
9789           \ifx\x\@pdfview
9790             \def\x{FitV @xpos}%
9791           \else
9792             \def\x{FitBV}%
9793             \ifx\x\@pdfview
9794               \def\x{FitBV @xpos}%
9795             \else
9796               \def\x{Fit}%
9797               \ifx\x\@pdfview
9798                 \let\x\@pdfview
9799               \else
9800                 \def\x{FitB}%
9801                 \ifx\x\@pdfview
9802                   \let\x\@pdfview
9803                 \else
9804                   \def\x{FitR}%
9805                   \ifx\x\@pdfview

```

```

9806         \Hy@Warning{'pdfview=FitR' is not supported}%
9807         \def\x{XYZ @xpos @ypos null}%
9808     \else
9809         \@onelevel@sanitize\@pdfview
9810         \Hy@Warning{%
9811             Unknown value '\@pdfview' for pdfview%
9812         }%
9813         \def\x{XYZ @xpos @ypos null}%
9814     \fi
9815 \fi
9816 \fi
9817 \fi
9818 \fi
9819 \fi
9820 \fi
9821 \fi
9822 \@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
9823 \endgroup
9824 \Hy@RestoreLastskip
9825 }
9826 \providecommand*\@pdfview{XYZ}
9827 \providecommand*\@pdfborder{0 0 1}
9828 \providecommand*\@pdfborderstyle{}
9829 \def\hyper@anchor#1{%
9830     \@pdfm@dest{#1}%
9831 }
9832 \def\hyper@anchorstart#1{%
9833     \Hy@activeanchortrue
9834     \@pdfm@dest{#1}%
9835 }
9836 \def\hyper@anchorend{%
9837     \Hy@activeanchorfalse
9838 }
9839 \newcounter{Hy@AnnotLevel}
9840 \ifHy@ocgcolorlinks
9841     \def\OBJ@OCG@view{@OCG@view}%
9842     \@pdfm@mark{%
9843         obj \OBJ@OCG@view <<%
9844         /Type/OCG%
9845         /Name(View)%
9846         /Usage<<%
9847         /Print<<%
9848         /PrintState/OFF%
9849         >>%
9850         /View<<%
9851         /ViewState/ON%
9852         >>%
9853     >>%
9854     >>%
9855     }%
9856     \@pdfm@mark{close \OBJ@OCG@view}%
9857     \def\OBJ@OCG@print{@OCG@print}%
9858     \@pdfm@mark{%

```

```

9859  obj \OBJ@OCG@print <<%
9860      /Type/OCG%
9861      /Name(Print)%
9862      /Usage<<%
9863          /Print<<%
9864              /PrintState/ON%
9865          >>%
9866      /View<<%
9867          /ViewState/OFF%
9868      >>%
9869  >>%
9870  >>%
9871 }%
9872  \@pdfm@mark{close \OBJ@OCG@print}%
9873  \def\OBJ@OCGs{@OCGs}%
9874  \@pdfm@mark{%
9875      obj \OBJ@OCGs [%
9876          \OBJ@OCG@view\space\OBJ@OCG@print
9877      ]%
9878  }%
9879  \@pdfm@mark{close \OBJ@OCGs}%
9880  \@pdfm@mark{%
9881      put @catalog <<%
9882          /OCProperties<<%
9883              /OCGs \OBJ@OCGs
9884              /D<<%
9885                  /OFF[\OBJ@OCG@print]%
9886                  /AS[%
9887                      <<%
9888                          /Event/View%
9889                          /OCGs \OBJ@OCGs
9890                          /Category[/View]%
9891                      >>%
9892                      <<%
9893                          /Event/Print%
9894                          /OCGs \OBJ@OCGs
9895                          /Category[/Print]%
9896                      >>%
9897                      <<%
9898                          /Event/Export%
9899                          /OCGs \OBJ@OCGs
9900                          /Category[/Print]%
9901                      >>%
9902                  ]%
9903              >>%
9904          >>%
9905      >>%
9906  }%
9907  \AddToHook{shipout/before}{%
9908      \setbox\ShipoutBox=\hbox{%
9909          \copy\ShipoutBox
9910          \@pdfm@mark{%
9911              put @resources <<%
9912                  /Properties<<%

```

```

9913         /OCView \OBJ@OCG@view
9914         /OCPrint \OBJ@OCG@print
9915     >>%
9916 >>%
9917 }%
9918 }%
9919 }%
9920 \Hy@AtBeginDocument{%
9921   \def\Hy@colorlink#1{%
9922     \begingroup
9923     \ifHy@ocgcolorlinks
9924       \def\Hy@ocgcolor{#1}%
9925       \setbox0=\hbox\bgroup\color@begingroup
9926     \else
9927       \HyColor@UseColor#1%
9928     \fi
9929   }%
9930   \def\Hy@endcolorlink{%
9931     \ifHy@ocgcolorlinks
9932       \color@endgroup\egroup
9933     \mbox{%
9934       \@pdfm@mark{content /OC/OCPrint BDC}%
9935       \rlap{\copy0}%
9936       \@pdfm@mark{content EMC/OC/OCView BDC}%
9937     \begingroup
9938       \expandafter\HyColor@UseColor\Hy@ocgcolor
9939       \box0 %
9940     \endgroup
9941     \@pdfm@mark{content EMC}%
9942   }%
9943   \fi
9944   \endgroup
9945 }%
9946 }%
9947 \else
9948   \Hy@DisableOption{ocgcolorlinks}%
9949 \fi

```

Use primitive counter arithmetic here to avoid amsmath redefining `\stepcounter` (github issue/13)

```

9950 \def\Hy@BeginAnnot#1{%
9951   \global\advance\c@Hy@AnnotLevel\@ne
9952   \ifnum\c@Hy@AnnotLevel=\@ne
9953     #1%
9954   \fi
9955 }
9956 \def\Hy@endAnnot{%
9957   \ifnum\value{Hy@AnnotLevel}=\@ne
9958     \Hy@endcolorlink
9959     \@pdfm@mark{eann}%
9960   \fi
9961   \global\advance\c@Hy@AnnotLevel\m@ne
9962 }
9963 \def\Hy@undefinedname{UNDEFINED}

```

```

9964 \def\hyper@linkstart#1#2{%
9965   \Hy@VerboseLinkStart{#1}{#2}%
9966   \leavevmode
9967   \Hy@BeginAnnot{%
9968     \protected@edef\Hy@testname{#2}%
9969     \ifx\Hy@testname\@empty
9970       \Hy@Warning{%
9971         Empty destination name,\MessageBreak
9972         using ``\Hy@undefinedname'%
9973       }%
9974       \let\Hy@testname\Hy@undefinedname
9975     \else
9976       \Hy@pstringdef\Hy@testname{%
9977         \expandafter\HyperDestNameFilter\expandafter{%
9978           \Hy@testname
9979         }%
9980       }%
9981     \fi
9982     \@pdfm@mark{%
9983       bann<<%
9984       /Type/Annot%
9985       /Subtype/Link%
9986       \ifHy@pdfa /F 4\fi
9987       \Hy@setpdfborder
9988       \Hy@setpdfhighlight
9989       \expandafter\ifx\csname @#1bordercolor\endcsname\relax
9990       \else
9991         /C[\csname @#1bordercolor\endcsname]%
9992       \fi
9993       /A<<%
9994       /S/GoTo%
9995       /D(\Hy@testname)%
9996       \Hy@href@nextactionraw
9997       >>%
9998     >>%
9999   }%
10000   \expandafter\Hy@colorlink\csname @#1color\endcsname
10001 }%
10002 }
10003 \def\hyper@linkend{\Hy@EndAnnot}%
10004 \def\hyper@link#1#2#3{%
10005   \hyper@linkstart{#1}{#2}#3\Hy@xspace@end\hyper@linkend
10006 }

```

2025-05-20 added a group for issue #380

```

10007 \def\hyper@linkfile#1#2#3{%
10008   \leavevmode
10009   \begingroup
10010   \Hy@BeginAnnot{%
10011     \def\Hy@pstringF{#2}%
10012     \Hy@CleanupFile\Hy@pstringF
10013     \Hy@pstringdef\Hy@pstringF\Hy@pstringF
10014     \Hy@pstringdef\Hy@pstringD{#3}%
10015     \Hy@MakeRemoteAction

```

```

10016 \pdfmark{%
10017   bann<<%
10018     /Type/Annot%
10019     /Subtype/Link%
10020     \ifHy@pdfa /F 4\fi
10021     \Hy@setpdfborder
10022     \Hy@setpdfhighlight
10023     \ifx\@filebordercolor\relax
10024     \else
10025       /C[\@filebordercolor]%
10026     \fi
10027   /A<<%
10028     /S/GoToR%
10029     /F(\Hy@pstringF)%
10030     /D%
10031     \ifx\#3\%
10032       [\Hy@href@page\@pdfremotestartview]%
10033     \else
10034       (\Hy@pstringD)%
10035     \fi
10036     \Hy@SetNewWindow
10037     \Hy@href@nextactionraw
10038   >>%
10039 }>%
10040 }%
10041 \Hy@colorlink\@filecolor
10042 }%
10043 #1\Hy@xspace@end
10044 \Hy@endAnnot
10045 \endgroup
10046 }
10047 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
10048 \leavevmode
10049 \Hy@BeginAnnot{%
10050   \Hy@pstringdef\Hy@pstringF{#1}%
10051   \Hy@pstringdef\Hy@pstringP{#3}%
10052   \pdfmark{%
10053     bann<<%
10054       /Type/Annot%
10055       /Subtype/Link%
10056       \ifHy@pdfa /F 4\fi
10057       \Hy@setpdfborder
10058       \Hy@setpdfhighlight
10059       \ifx\@runbordercolor\relax
10060       \else
10061         /C[\@runbordercolor]%
10062       \fi
10063     /A<<%
10064       /F(\Hy@pstringF)%
10065       /S/Launch%
10066       \Hy@SetNewWindow
10067       \ifx\#3\%
10068       \else
10069         /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%

```

```

10070      \fi
10071      \Hy@href@nextactionraw
10072      >>%
10073      >>%
10074      }%
10075      \Hy@colorlink\@runcolor
10076      }%
10077      #2\Hy@xspace@end
10078      \Hy@EndAnnot
10079  }
10080  \def\hyper@linkurl#1#2{%
10081    \leavevmode
10082    \Hy@BeginAnnot{%
10083      \Hy@pstringdef\Hy@pstringURI{#2}%
10084      \@pdfm@mark{%
10085        bann<<%
10086        /Type/Annot%
10087        /Subtype/Link%
10088        \ifHy@pdfa /F 4\fi
10089        \Hy@setpdfborder
10090        \Hy@setpdfhighlight
10091        \ifx\@urlbordercolor\relax
10092          \else
10093            /C[\@urlbordercolor]%
10094          \fi
10095          /A<<%
10096          /S/URI%
10097          /URI(\Hy@pstringURI)%
10098          \ifHy@href@ismap
10099            /IsMap true%
10100          \fi
10101          \Hy@href@nextactionraw
10102          >>%
10103          >>%
10104          }%
10105          \Hy@colorlink\@urlcolor
10106          }%
10107          #1\Hy@xspace@end
10108          \Hy@EndAnnot
10109        }
10110        \def\Acrobatmenu#1#2{%
10111          \Hy@Acrobatmenu{#1}{#2}{%
10112            \Hy@BeginAnnot{%
10113              \EdefEscapeName\Hy@temp@menu{#1}%
10114              \@pdfm@mark{%
10115                bann<<%
10116                /Type/Annot%
10117                /Subtype/Link%
10118                \ifHy@pdfa /F 4\fi
10119                \Hy@setpdfborder
10120                \Hy@setpdfhighlight
10121                \ifx\@menubordercolor\relax
10122                  \else
10123                    /C[\@menubordercolor]%

```



```

10124      \fi
10125      /A<<%
10126      /S/Named%
10127      /N/\Hy@temp@menu
10128      \Hy@href@nextactionraw
10129      >>%
10130      >>%
10131      }%
10132      \Hy@colorlink\@menucolor
10133      }%
10134      #2\Hy@xspace@end
10135      \Hy@endannot
10136      }%
10137 }
10138
10139 \def\PDF@FinishDoc{%
10140 \Hy@UseMaketitleInfos
10141 \Hy@Info@GenerateAddons
10142 \@pdfm@mark{%
10143   docinfo<<%
10144     /Title(\@pdftitle)%
10145     /Subject(\@pdfsubject)%
10146     /Creator(\@pdfcreator)%
10147     \ifx\@pdfcreationdate\@empty
10148     \else
10149       /CreationDate(\@pdfcreationdate)%
10150     \fi
10151     \ifx\@pdfmoddate\@empty
10152     \else
10153       /ModDate(\@pdfmoddate)%
10154     \fi
10155     /Author(\@pdfauthor)%
10156     \ifx\@pdfproducer\relax
10157     \else
10158       /Producer(\@pdfproducer)%
10159     \fi
10160     /Keywords(\@pdfkeywords)%
10161     \ifx\@pdftrapped\@empty
10162     \else
10163       /Trapped/\@pdftrapped
10164     \fi
10165     \Hy@Info@Addons
10166   >>%
10167 }%
10168 \Hy@DisableOption{pdfauthor}%
10169 \Hy@DisableOption{pdftitle}%
10170 \Hy@DisableOption{pdfsubject}%
10171 \Hy@DisableOption{pdfcreator}%
10172 \Hy@DisableOption{addtopdfcreator}%
10173 \Hy@DisableOption{pdfcreationdate}%
10174 \Hy@DisableOption{pdfcreationdate}%
10175 \Hy@DisableOption{pdfmoddate}%
10176 \Hy@DisableOption{pdfproducer}%
10177 \Hy@DisableOption{pdfkeywords}%

```

```

10178 \Hy@DisableOption{pdftrapped}%
10179 \Hy@DisableOption{pdfinfo}%
10180 }

10181 \def\PDF@SetupDoc{%
10182 \edef\Hy@temp{%
10183 \ifHy@pdftoolbar\else /HideToolbar true\fi
10184 \ifHy@pdfmenubar\else /HideMenubar true\fi
10185 \ifHy@pdfwindowui\else /HideWindowUI true\fi
10186 \ifHy@pdfwindow /FitWindow true\fi
10187 \ifHy@pdfcenterwindow /CenterWindow true\fi
10188 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10189 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10190 \Hy@UseNameKey{Direction}\@pdfdirection
10191 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10192 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10193 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10194 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10195 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10196 \Hy@UseNameKey{Duplex}\@pdfduplex
10197 \ifx\@pdfpicktraybypdfsize\@empty
10198 \else
10199 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10200 \fi
10201 \ifx\@pdfprintpagerange\@empty
10202 \else
10203 /PrintPageRange[\@pdfprintpagerange]%
10204 \fi
10205 \ifx\@pdfnumcopies\@empty
10206 \else
10207 /NumCopies \@pdfnumcopies
10208 \fi
10209 }%
10210 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10211 \@pdfm@mark{%
10212 docview<<%
10213 \ifx\@pdfstartpage\@empty
10214 \else
10215 \ifx\@pdfstartview\@empty
10216 \else
10217 /OpenAction[<@page\@pdfstartpage\@pdfstartview]%
10218 \fi
10219 \fi
10220 \ifx\@baseurl\@empty
10221 \else
10222 /URI<</Base(\Hy@pstringB)>>%
10223 \fi
10224 /PageMode/\@pdfpagemode
10225 \ifx\Hy@temp\@empty
10226 \else
10227 /ViewerPreferences<<\Hy@temp>>%
10228 \fi
10229 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10230 \ifx\@pdflang\relax
10231 \else

```

```

10232      /Lang(\@pdflang)%
10233      \fi
10234      >>%
10235    }%
10236    \ifx\@pdfpagescrop\@empty
10237    \else
10238      \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}}%
10239    \fi
10240  }
10241  </dvipdfm | xetex>
10242  < *dvipdfm | xetex>

```

\hyper@pagetransition

```

10243 \def\hyper@pagetransition{%
10244   \ifx\@pdfpagetransition\relax
10245   \else
10246     \ifx\@pdfpagetransition\@empty
10247     \else
10248       \special{pdf:put @thispage %
10249         <</Trans<</S/\@pdfpagetransition>>>>%
10250       }%
10251     \fi
10252   \fi
10253 }

```

\hyper@pageduration

```

10254 \def\hyper@pageduration{%
10255   \ifx\@pdfpageduration\relax
10256   \else
10257     \ifx\@pdfpageduration\@empty
10258     \else
10259       \special{pdf:put @thispage %
10260         <</Dur \@pdfpageduration>>>%
10261       }%
10262     \fi
10263   \fi
10264 }

10265 \g@addto@macro\Hy@EveryPageBoxHook{%
10266   \hyper@pagetransition
10267   \hyper@pageduration
10268 }

10269 </dvipdfm | xetex>

```

XeTeX uses pdfTeX's method \pdfpagewidth and \pdfpageheight for setting the paper size.

```

10270 < *dvipdfm>
10271 \AddToHook{shipout/firstpage}{%
10272   \ifHy@setpagesize
10273   \begin{group}
10274     \ifnum\mag=\@m
10275     \ifdim\stockwidth>\z@
10276     \ifdim\stockheight>\z@

```

```

10277     \special{papersize=\the\stockwidth,\the\stockheight}%
10278     \else
10279         \ifdim\paperwidth>\z@
10280             \ifdim\paperheight>\z@
10281                 \special{papersize=\the\paperwidth,\the\paperheight}%
10282             \fi
10283         \fi
10284     \fi
10285     \else
10286         \ifdim\stockwidth=\z@
10287             \ifdim\paperwidth>\z@
10288                 \ifdim\paperheight>\z@
10289                     \special{papersize=\the\paperwidth,\the\paperheight}%
10290                 \fi
10291             \fi
10292         \fi
10293     \fi
10294     \fi
10295     \endgroup
10296 \fi
10297 \Hy@DisableOption{setpagesize}%
10298 }
10299 </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.

```

10300 <*vtexhtml>
10301 \providecommand*{\XR@ext}{htm}
10302 \RequirePackage{vtexhtml}
10303 \newif\if@Localurl
10304 \let\PDF@FinishDoc\@empty
10305 \def\PDF@SetupDoc{%
10306     \ifx\@baseurl\@empty
10307     \else
10308         \special{!direct <base href="\@baseurl">}%
10309     \fi
10310 }
10311 \def\@urltype{url}
10312 \def\hyper@link#1#2#3{%
10313     \Hy@VerboseLinkStart{#1}{#2}%
10314     \leavevmode
10315     \special{!direct <a href=%
10316         \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
10317     #3\Hy@xspace@end
10318     \special{!direct </a>}%
10319 }
10320 \def\hyper@linkurl#1#2{%
10321     \begingroup
10322     \hyper@chars
10323     \leavevmode
10324     \MathBSuppress=1\relax
10325     \special{!direct <a href=%

```

```

10326     \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}%
10327     #1\Hy@xspace@end
10328     \MathBSuppress=0\relax
10329     \special{!direct </a>}%
10330 \endgroup
10331 }
10332 \def\hyper@linkfile#1#2#3{%
10333   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
10334 }
10335 \def\hyper@linkstart#1#2{%
10336   \Hy@VerboseLinkStart{#1}{#2}%
10337   \def\Hy@tempa{#1}\ifx\Hy@tempa\@urlltype
10338     \@Localurltrue
10339     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
10340   \else
10341     \@Localurloffalse
10342     \begingroup
10343     \hyper@chars
10344     \special{!aref \HyperDestNameFilter{#2}}%
10345   \endgroup
10346   \fi
10347 }
10348 \def\hyper@linkend{%
10349   \if@Localurl
10350     \special{!endaref}%
10351   \else
10352     \special{!direct </a>}%
10353   \fi
10354 }
10355 \Hy@WrapperDef\hyper@anchorstart#1{%
10356   \Hy@SaveLastskip
10357   \Hy@VerboseAnchor{#1}%
10358   \begingroup
10359   \hyper@chars
10360   \special{!aname #1}%
10361   \special{!direct <a name=%
10362     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10363   \endgroup
10364   \Hy@activeanchortrue
10365 }
10366 \def\hyper@anchorend{%
10367   \special{!direct </a>}%
10368   \Hy@activeanchortrue
10369   \Hy@RestoreLastskip
10370 }
10371 \Hy@WrapperDef\hyper@anchor#1{%
10372   \Hy@SaveLastskip
10373   \Hy@VerboseAnchor{#1}%
10374   \begingroup
10375   \let\protect=\string
10376   \hyper@chars
10377   \leavevmode
10378   \special{!aname #1}%
10379   \special{!direct <a name=%

```

```

10380     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10381 \endgroup
10382 \Hy@activeanchortrue
10383 \bgroup\anchor@spot\egroup
10384 \special{!direct </a>}%
10385 \Hy@activeanchorfalse
10386 \Hy@RestoreLastskip
10387 }
10388 \def\@Form[#1]{%
10389 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10390 }
10391 \let\@endForm\@empty
10392 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10393 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10394 }
10395 \def\@TextField[#1]#2{% parameters, label
10396 \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10397 }
10398 \def\@CheckBox[#1]#2{% parameters, label
10399 \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10400 }
10401 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10402 \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10403 }
10404 \def\@PushButton[#1]#2{% parameters, label
10405 \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10406 }
10407 \def\@Reset[#1]#2{%
10408 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10409 }
10410 \def\@Submit[#1]#2{%
10411 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10412 }
10413 \</vtexhtml>
10414 \<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.

```

10415 \ifcsname mediaheight\endcsname
10416 \ifHy@setpagesize
10417   \providecommand*{\VTeXInitMediaSize}{%
10418     \ifnum\mag=\@m
10419       \ifdim\stockwidth>\z@
10420         \ifdim\stockheight>\z@
10421           \setlength\mediaheight\stockheight
10422           \setlength\mediawidth\stockwidth
10423         \else
10424           \ifdim\paperwidth>\z@
10425             \ifdim\paperheight>\z@
10426               \setlength\mediaheight\paperheight
10427               \setlength\mediawidth\paperwidth
10428             \fi
10429           \fi

```

```

10430     \fi
10431     \else
10432         \ifdim\stockwidth=\z@
10433             \ifdim\paperwidth>\z@
10434                 \ifdim\paperheight>\z@
10435                     \setlength\mediaheight\paperheight
10436                     \setlength\mediawidth\paperwidth
10437                 \fi
10438             \fi
10439         \fi
10440     \fi
10441 \fi
10442 }%
10443 \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10444 \fi
10445 \Hy@DisableOption{setpagesize}%
10446 \fi

```

Older versions of VTeX require xyz in lower case.

```

10447 \providecommand*\@pdfview{xyz}
10448 \providecommand*\@pdfborder{0 0 1}
10449 \providecommand*\@pdfborderstyle{}
10450 \let\CurrentBorderColor\@linkbordercolor
10451 \Hy@WrapperDef\hyper@anchor#1{%
10452     \Hy@SaveLastskip
10453     \Hy@VerboseAnchor{#1}%
10454     \begingroup
10455         \let\protect=\string
10456         \hyper@chars
10457         \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10458     \endgroup
10459     \Hy@activeanchortrue
10460     \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10461     \Hy@activeanchorfalse
10462     \Hy@RestoreLastskip
10463 }
10464 \Hy@WrapperDef\hyper@anchorstart#1{%
10465     \Hy@SaveLastskip
10466     \Hy@VerboseAnchor{#1}%
10467     \begingroup
10468         \hyper@chars
10469         \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10470     \endgroup
10471     \Hy@activeanchortrue
10472 }
10473 \def\hyper@anchorend{%
10474     \Hy@activeanchorfalse
10475     \Hy@RestoreLastskip
10476 }
10477 \def\@urltype{url}
10478 \def\Hy@undefinedname{UNDEFINED}
10479 \def\hyper@linkstart#1#2{%
10480     \Hy@VerboseLinkStart{#1}{#2}%
10481     \Hy@pstringdef\Hy@pstringURI{#2}%
10482     \expandafter\Hy@colorlink\csname @#1color\endcsname

```

```

10483 \@ifundefined{@#1bordercolor}{%
10484   \let\CurrentBorderColor\relax
10485 }{%
10486   \edef\CurrentBorderColor{%
10487     \csname @#1bordercolor\endcsname
10488   }%
10489 }%
10490 \def\Hy@tempa{#1}%
10491 \ifx\Hy@tempa\@urltype
10492   \special{!%
10493     aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10494     \ifHy@href@ismap
10495       /IsMap true%
10496     \fi
10497     \Hy@href@nextactionraw
10498     >;%
10499     a=<%
10500     \ifHy@pdfa /F 4\fi
10501     \Hy@setpdfborder
10502     \ifx\CurrentBorderColor\relax
10503       \else
10504         /C [\CurrentBorderColor]%
10505       \fi
10506     >%
10507   }%
10508 \else
10509   \protected@edef\Hy@testname{#2}%
10510   \ifx\Hy@testname\@empty
10511     \Hy@Warning{%
10512       Empty destination name,\MessageBreak
10513       using ``\Hy@undefinedname'%
10514     }%
10515     \let\Hy@testname\Hy@undefinedname
10516   \fi
10517   \special{!%
10518     aref \expandafter\HyperDestNameFilter
10519         \expandafter{\Hy@testname};%
10520     a=<%
10521     \ifHy@pdfa /F 4\fi
10522     \Hy@setpdfborder
10523     \ifx\CurrentBorderColor\relax
10524       \else
10525         /C [\CurrentBorderColor]%
10526       \fi
10527     >%
10528   }%
10529 \fi
10530 }
10531 \def\hyper@linkend{%
10532   \special{!endaref}%
10533   \Hy@endcolorlink
10534 }
10535 \def\hyper@linkfile#1#2#3{%
10536   \leavevmode

```



```

10537 \def\Hy@pstringF{#2}%
10538 \Hy@CleanupFile\Hy@pstringF
10539 \special{!%
10540   aref <%
10541     \ifnum\Hy@VTeXversion>753 \ifHy@pdfnewwindow n\fi\fi
10542     f=\Hy@pstringF>#3;%
10543     a=<%
10544       \ifHy@pdfa /F 4\fi
10545       \Hy@setpdfborder
10546       \ifx\@filebordercolor\relax
10547       \else
10548       /C [\@filebordercolor]%
10549       \fi
10550     >%
10551   }%
10552 \Hy@colorlink\@filecolor
10553   #1\Hy@xspace@end
10554 \Hy@endcolorlink
10555 \special{!endaref}%
10556 }
10557 \def\hyper@linkurl#1#2{%
10558   \begingroup
10559   \Hy@pstringdef\Hy@pstringURI{#2}%
10560   \hyper@chars
10561   \leavevmode
10562   \special{!%
10563     aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10564       \ifHy@href@ismap
10565       /IsMap true%
10566       \fi
10567       \Hy@href@nextactionraw
10568     >,%
10569     a=<%
10570       \ifHy@pdfa /F 4\fi
10571       \Hy@setpdfborder
10572       \ifx\@urlbordercolor\relax
10573       \else
10574       /C [\@urlbordercolor]%
10575       \fi
10576     >%
10577   }%
10578 \Hy@colorlink\@urlcolor
10579   #1\Hy@xspace@end
10580 \Hy@endcolorlink
10581 \special{!endaref}%
10582 \endgroup
10583 }
10584 \def\hyper@link#1#2#3{%
10585   \Hy@VerboseLinkStart{#1}{#2}%
10586   \@ifundefined{#@#1bordercolor}{%
10587     \let\CurrentBorderColor\relax
10588   }{%
10589     \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10590   }%

```

```

10591 \leavevmode
10592 \protected@edef\Hy@testname{#2}%
10593 \ifx\Hy@testname\@empty
10594   \Hy@Warning{%
10595     Empty destination name,\MessageBreak
10596     using `\'Hy@undefinedname'%
10597   }%
10598   \let\Hy@testname\Hy@undefinedname
10599 \fi
10600 \special{!%
10601   aref \expandafter\HyperDestNameFilter
10602     \expandafter{\Hy@testname};%
10603   a=<%
10604     \ifHy@pdfa /F 4\fi
10605     \Hy@setpdfborder
10606     \ifx\CurrentBorderColor\relax
10607     \else
10608       /C [\CurrentBorderColor]%
10609     \fi
10610   >%
10611 }%
10612 \expandafter
10613 \Hy@colorlink\csname @#1color\endcsname
10614   #3\Hy@xspace@end
10615 \Hy@endcolorlink
10616 \special{!endaref}%
10617 }
10618 \def\hyper@image#1#2{%
10619   \hyper@linkurl{#2}{#1}%
10620 }
10621 \def\@hyper@launch run:#1\#2#3{%
10622   \Hy@pstringdef\Hy@pstringF{#1}%
10623   \Hy@pstringdef\Hy@pstringP{#3}%
10624   \leavevmode
10625   \special{!aref %
10626     <u=%
10627       /Type/Action%
10628       /S/Launch%
10629       /F(\Hy@pstringF)%
10630       \Hy@SetNewWindow
10631       \ifx\#3\%
10632       \else
10633         /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10634       \fi
10635       \Hy@href@nextactionraw
10636     >,%
10637     a=<%
10638       \ifHy@pdfa /F 4\fi
10639       \Hy@setpdfborder
10640       \ifx\@runbordercolor\relax
10641       \else
10642         /C[\@runbordercolor]%
10643       \fi
10644     >%

```

```

10645 }%
10646 \Hy@colorlink\@runcolor
10647 #2\Hy@xspace@end
10648 \Hy@endcolorlink
10649 \special{!endaref}%
10650 }
10651 \def\Acrobatmenu#1#2{%
10652 \EdefEscapeName\Hy@temp@menu{#1}%
10653 \Hy@Acrobatmenu{#1}{#2}{%
10654 \special{!%
10655 aref <u=/S /Named /N /\Hy@temp@menu>;%
10656 a=<%
10657 \ifHy@pdfa /F 4\fi
10658 \Hy@setpdfborder
10659 \ifx\@menubordercolor\relax
10660 \else
10661 /C[\@menubordercolor]%
10662 \fi
10663 >%
10664 }%
10665 \Hy@colorlink\@menucolor
10666 #2\Hy@xspace@end
10667 \Hy@endcolorlink
10668 \special{!endaref}%
10669 }%
10670 }

```

The following code (transition effects) is made by Alex Kostin.

The code below makes sense for VTeX 7.02 or later.

Please never use `\ifundefined{VTeXversion}{...}{...}` *globally*.

```

10671 \ifnum\Hy@VTeXversion<702 %
10672 \else
10673 \def\hyper@pagetransition{%
10674 \ifx\@pdfpagetransition\relax
10675 \else
10676 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

1. Does an old entry have to be deleted? 2. If 1=yes, how to delete?

```

10677 \else
10678 \hvtex@parse@trans\@pdfpagetransition
10679 \fi
10680 \fi
10681 }%

```

I have to write an “honest” parser to convert raw PDF code into VTeX `\special`.
(AVK)

Syntax of VTeX `\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:

```

10682 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10683 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10684 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10685 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10686 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10687 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10688 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

10689 \def\hvtex@param@dimension{/Dm}%
10690 \def\hvtex@param@direction{/Di}%
10691 \def\hvtex@param@duration{/D}%
10692 \def\hvtex@param@motion{/M}%

```

Tokenizer:

```

10693 \def\hvtex@gettoken{%
10694   \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10695 }%

```

Notice that tokens in the input buffer must be space delimited.

```

10696 \def\hvtex@gettoken@#1 #2\@nil{%
10697   \edef\hvtex@token{#1}%
10698   \edef\hvtex@buffer{#2}%
10699 }%
10700 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

10701 \let\hvtex@trans@code\@empty
10702 \let\hvtex@param@dimension\@empty
10703 \let\hvtex@param@direction\@empty
10704 \let\hvtex@param@duration\@empty
10705 \let\hvtex@param@motion\@empty
10706 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

10707 \hvtex@gettoken
10708 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

10709   \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

10710   \else
10711     \hvtex@gettoken
10712   \fi
10713 \fi
10714 \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```
10715 \hvtex@trans@params
10716 }%
```

Reentrant macro to parse optional parameters.

```
10717 \def\hvtex@trans@params{%
10718 \ifx\hvtex@buffer\@empty
10719 \else
10720 \hvtex@gettoken
10721 \let\hvtex@trans@par\hvtex@token
10722 \ifx\hvtex@buffer\@empty
10723 \else
10724 \hvtex@gettoken
10725 \ifx\hvtex@trans@par\hvtex@par@duration
```

/D is the effect duration in seconds. V_{TeX} special takes it in milliseconds.

```
10726 \let\hvtex@param@duration\hvtex@token
10727 \else \ifx\hvtex@trans@par\hvtex@par@motion
```

/M can be either /I or /O

```
10728 \expandafter\edef\expandafter\hvtex@param@motion
10729 \expandafter{\expandafter\@gobble\hvtex@token}%
10730 \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
10731 \expandafter\edef\expandafter\hvtex@param@dimension
10732 \expandafter{\expandafter\@gobble\hvtex@token}%
10733 \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).

```
10734 \let\hvtex@param@direction\hvtex@token
10735 \fi\fi\fi\fi
10736 \fi
10737 \fi
10738 \ifx\hvtex@buffer\@empty
10739 \let\next\hvtex@produce@trans
10740 \else
10741 \let\next\hvtex@trans@params
10742 \fi
10743 \next
10744 }%
```

Merge <transition_effect> and issue the special when possible. Too lazy to validate optional parameters.

```
10745 \def\hvtex@produce@trans{%
10746 \let\vtex@trans@special\@empty
10747 \if S\hvtex@trans@code
10748 \edef\vtex@trans@special{\hvtex@trans@code
10749 \hvtex@param@dimension\hvtex@param@motion}%
10750 \else\if B\hvtex@trans@code
10751 \edef\vtex@trans@special{%
10752 \hvtex@trans@code\hvtex@param@dimension
10753 }%
10754 \else\if X\hvtex@trans@code
10755 \edef\vtex@trans@special{%
```

```

10756     \hvtex@trans@code\hvtex@param@motion
10757 }%
10758 \else\if W\hvtex@trans@code
10759   \edef\vtex@trans@special{%
10760     \hvtex@trans@code\hvtex@param@direction
10761   }%
10762 \else\if D\hvtex@trans@code
10763   \let\vtex@trans@special\hvtex@trans@code
10764 \else\if R\hvtex@trans@code
10765   \let\vtex@trans@special\hvtex@trans@code
10766 \else\if G\hvtex@trans@code
10767   \edef\vtex@trans@special{%
10768     \hvtex@trans@code\hvtex@param@direction
10769   }%
10770 \fi\fi\fi\fi\fi\fi
10771 \ifx\vtex@trans@special\@empty
10772 \else
10773   \ifx\hvtex@param@duration\@empty
10774   \else
10775     \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

10776   \multiply\dimen@\@m
10777   \edef\vtex@trans@special{%
10778     \vtex@trans@special,\strip@pt\dimen@
10779   }%
10780 \fi

```

And all the mess is just for this.

```

10781   \special{!trans \vtex@trans@special}%
10782 \fi
10783 }%
10784 \def\hyper@pageduration{%
10785   \ifx\@pdfpageduration\relax
10786   \else
10787     \ifx\@pdfpageduration\@empty
10788       \special{!duration-}%
10789     \else
10790       \special{!duration \@pdfpageduration}%
10791     \fi
10792   \fi
10793 }%
10794 \g@addto@macro\Hy@EveryPageBoxHook{%
10795   \hyper@pagetransition
10796   \hyper@pageduration
10797 }%
10798 \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
10799 \ifx\@pdfproducer\relax
10800 \def\@pdfproducer{VTeX}%
10801 \ifnum\Hy@VTeXversion>\z@
10802 \count@\VTeXversion
10803 \divide\count@ 100 %
10804 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10805 \multiply\count@ -100 %
10806 \advance\count@\VTeXversion
10807 \edef\@pdfproducer{%
10808 \@pdfproducer
10809 .\ifnum\count@<10 0\fi\the\count@
10810 \ifx\VTeXOS\@undefined\else
10811 \ifnum\VTeXOS>0 %
10812 \ifnum\VTeXOS<6 %
10813 \space%
10814 \ifcase\VTeXOS
10815 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10816 \fi
10817 )%
10818 \fi
10819 \fi
10820 \fi
10821 ,\space
10822 \ifnum\OpMode=\@ne PDF\else PS\fi
10823 \space backend%
10824 \ifx\gexmode\@undefined\else
10825 \ifnum\gexmode>\z@\space with GeX\fi
10826 \fi
10827 }%
10828 \fi
10829 \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).

```

10830 \def\PDF@SetupDoc{%
10831 \ifx\@pdfpagescrop\@empty

```

```

10832 \else
10833 \special{!pdfinfo b=<\@pdfpagescrop>}%
10834 \fi
10835 \ifx\@pdfstartpage\@empty
10836 \else
10837 \ifx\@pdfstartview\@empty
10838 \else
10839 \special{!onopen Page\@pdfstartpage}%
10840 \fi
10841 \fi
10842 \special{!pdfinfo p=<\/\@pdfpagemode>}%
10843 \ifx\@baseurl\@empty
10844 \else
10845 \special{!pdfinfo u=<<<\/Base (\@baseurl)>>>}%
10846 \fi
10847 \special{!pdfinfo v=<<<%
10848 \ifHy@pdftoolbar\else /HideToolbar true\fi
10849 \ifHy@pdfmenubar\else /HideMenubar true\fi
10850 \ifHy@pdfwindowui\else /HideWindowUI true\fi
10851 \ifHy@pdfwindow /FitWindow true\fi
10852 \ifHy@pdfcenterwindow /CenterWindow true\fi
10853 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10854 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10855 \Hy@UseNameKey{Direction}\@pdfdirection
10856 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10857 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10858 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10859 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10860 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10861 \Hy@UseNameKey{Duplex}\@pdfduplex
10862 \ifx\@pdfpicktraybypdfsize\@empty
10863 \else
10864 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10865 \fi
10866 \ifx\@pdfprintpagerange\@empty
10867 \else
10868 /PrintPageRange[\@pdfprintpagerange]%
10869 \fi
10870 \ifx\@pdfnumcopies\@empty
10871 \else
10872 /NumCopies \@pdfnumcopies
10873 \fi
10874 >>>}%
10875 \ifx\@pdfpagelayout\@empty
10876 \else
10877 \special{!pdfinfo l=<\/\@pdfpagelayout\space>}%
10878 \fi
10879 }%
10880 \HyInfo@AddonUnsupportedtrue
10881 \define@key{Hyp}{pdfcreationdate}{%
10882 \Hy@Warning{%
10883 VTeX does not support pdfcreationdate.\MessageBreak
10884 Therefore its setting is ignored%
10885 }%

```



```

10886 }
10887 \define@key{Hyp}{pdfmoddate}{%
10888   \Hy@Warning{%
10889     VTeX does not support pdfmoddate.\MessageBreak
10890     Therefore its setting is ignored%
10891   }%
10892 }
10893 \def\PDF@FinishDoc{%
10894   \Hy@UseMaketitleInfos
10895   \HyInfo@TrappedUnsupported
10896   \special{!pdfinfo a=<\@pdfauthor>}%
10897   \special{!pdfinfo t=<\@pdftitle>}%
10898   \special{!pdfinfo s=<\@pdfsubject>}%
10899   \special{!pdfinfo c=<\@pdfcreator>}%
10900   \ifx\@pdfproducer\relax
10901   \else
10902     \special{!pdfinfo r=<\@pdfproducer>}%
10903   \fi
10904   \special{!pdfinfo k=<\@pdfkeywords>}%
10905   \Hy@DisableOption{pdfauthor}%
10906   \Hy@DisableOption{pdftitle}%
10907   \Hy@DisableOption{pdfsubject}%
10908   \Hy@DisableOption{pdfcreator}%
10909   \Hy@DisableOption{addtopdfcreator}%
10910   \Hy@DisableOption{pdfcreationdate}%
10911   \Hy@DisableOption{pdfcreationdate}%
10912   \Hy@DisableOption{pdfmoddate}%
10913   \Hy@DisableOption{pdfproducer}%
10914   \Hy@DisableOption{pdfkeywords}%
10915   \Hy@DisableOption{pdftrapped}%
10916   \Hy@DisableOption{pdfinfo}%
10917 }
10918 </vtex>

```

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.

```

10919 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
10920 <packageEnd>\providecommand*{\Hy@DistillerDestFix}{%
10921 *pdfmark | dviwindo)
10922 \def\Hy@DistillerDestFix{%
10923   \begingroup
10924   \let\x\literalps@out

```

The fix has to be passed unchanged through GeX, if VTeX in PostScript mode with GeX is used.

```

10925 \ifnum \@ifundefined{OpMode}{0}{%
10926     \@ifundefined{gexmode}{0}{%
10927         \ifnum\gexmode>0 \OpMode\else 0\fi
10928     }>1 %
10929     \def\x##1{%
10930         \immediate\special{!=##1}%
10931     }%
10932 \fi
10933 \x{%
10934     /product where{%
10935         pop %
10936         product(Distiller)search{%
10937             pop pop pop %
10938             version(.)search{%
10939                 exch pop exch pop%
10940                 (3011)eq{%
10941                     gsave %
10942                     newpath 0 0 moveto closepath clip%
10943                     /Courier findfont 10 scalefont setfont %
10944                     72 72 moveto(.show %
10945                     grestore%
10946                 }if%
10947             }{pop}ifelse%
10948         }{pop}ifelse%
10949     }if%
10950 }%
10951 \endgroup
10952 }
10953 </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

```

```

10954 <*pdfmark>
10955 \Hy@breaklinks@unsupported
10956 \def\HyPat@ObjRef{%
10957     \[~{}]+\}%
10958 }
10959 \Hy@WrapperDef\hyper@anchor#1{%
10960     \Hy@SaveLastskip
10961     \Hy@VerboseAnchor{#1}%
10962     \begingroup

```

```

10963 \pdfmark[\anchor@spot]{%
10964 pdfmark=/DEST,%
10965 linktype=anchor,%
10966 View=/\@pdfview \@pdfviewparams,%
10967 DestAnchor={#1}%
10968 }%
10969 \endgroup
10970 \Hy@RestoreLastskip
10971 }
10972 \@ifundefined{hyper@anchorstart}{\endinput}
10973 \Hy@WrapperDef\hyper@anchorstart#1{%
10974 \Hy@SaveLastskip
10975 \Hy@VerboseAnchor{#1}%
10976 \literalps@out{H.S}%
10977 \Hy@AllowHyphens
10978 \xdef\hyper@currentanchor{#1}%
10979 \Hy@activeanchortrue
10980 }
10981 \def\hyper@anchorend{%
10982 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10983 \pdfmark{%
10984 pdfmark=/DEST,%
10985 linktype=anchor,%
10986 View=/\@pdfview \@pdfviewparams,%
10987 DestAnchor=\hyper@currentanchor,%
10988 }%
10989 \Hy@activeanchorfalse
10990 \Hy@RestoreLastskip
10991 }
10992 \def\hyper@linkstart#1#2{%
10993 \Hy@VerboseLinkStart{#1}{#2}%
10994 \ifHy@breaklinks
10995 \else
10996 \leavevmode
10997 \ifmmode
10998 \def\Hy@LinkMath{$}%
10999 \else
11000 \let\Hy@LinkMath\@empty
11001 \fi
11002 \Hy@SaveSpaceFactor
11003 \hbox\bgroup
11004 \Hy@RestoreSpaceFactor
11005 \Hy@LinkMath
11006 \fi
11007 \expandafter\Hy@colorlink\csname @#1color\endcsname
11008 \literalps@out{H.S}%
11009 \Hy@AllowHyphens
11010 \xdef\hyper@currentanchor{#2}%
11011 \gdef\hyper@currentlinktype{#1}%
11012 }
11013 \def\hyper@linkend{%
11014 \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
11015 \@ifundefined{@\hyper@currentlinktype bordercolor}{%
11016 \let\Hy@tempcolor\relax

```

```

11017 }{%
11018   \edef\Hy@tempcolor{%
11019     \csname @\hyper@currentlinktype bordercolor\endcsname
11020   }%
11021 }%
11022 \pdfmark{%
11023   pdfmark=/ANN,%
11024   linktype=link,%
11025   Subtype=/Link,%
11026   PDFAFlags=4,%
11027   Dest=\hyper@currentanchor,%
11028   AcroHighlight=\@pdfhighlight,%
11029   Border=\@pdfborder,%
11030   BorderStyle=\@pdfborderstyle,%
11031   Color=\Hy@tempcolor,%
11032   Raw=H.B%
11033 }%
11034 \Hy@endcolorlink
11035 \ifHy@breaklinks
11036 \else
11037   \Hy@LinkMath
11038   \Hy@SaveSpaceFactor
11039 \egroup
11040 \Hy@RestoreSpaceFactor
11041 \fi
11042 }

```

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.

```

11043 \begingroup
11044 \catcode`P=12 %
11045 \catcode`T=12 %
11046 \lowercase{\endgroup
11047 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
11048 }
11049 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

`\hyper@pagetransition`

```

11050 \def\hyper@pagetransition{%
11051   \ifx\@pdfpagetransition\relax
11052   \else
11053     \ifx\@pdfpagetransition\@empty
11054       % 1. Does an old entry have to be deleted?
11055       % 2. If 1=yes, how to delete?
11056     \else
11057       \pdfmark{%
11058         pdfmark=/PUT,%
11059         Raw={%
11060           \string{ThisPage\string}%
11061           <</Trans << /S /\@pdfpagetransition\space >> >>%
11062         }%
11063       }%
11064     \fi

```

```

11065 \fi
11066 }

```

\hyper@pageduration

```

11067 \def\hyper@pageduration{%
11068 \ifx\@pdfpageduration\relax
11069 \else
11070 \ifx\@pdfpageduration\@empty
11071 % 1. Does an old entry have to be deleted?
11072 % 2. If 1=yes, how to delete?
11073 \else
11074 \pdfmark{%
11075 pdfmark=/PUT,%
11076 Raw={%
11077 \string{ThisPage\string}%
11078 <</Dur \@pdfpageduration>>%
11079 }%
11080 }%
11081 \fi
11082 \fi
11083 }

11084 \g@addto@macro\Hy@EveryPageBoxHook{%
11085 \hyper@pagetransition
11086 \hyper@pageduration
11087 }

11088 \def\hyper@image#1#2{%
11089 \hyper@linkurl{#2}{#1}%
11090 }
11091 \def\Hy@undefinedname{UNDEFINED}
11092 \def\hyper@link#1#2#3{%
11093 \Hy@VerboseLinkStart{#1}{#2}%
11094 \@ifundefined{@#1bordercolor}{%
11095 \let\Hy@tempcolor\relax
11096 }{%
11097 \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
11098 }%
11099 \begingroup
11100 \protected@edef\Hy@testname{#2}%
11101 \ifx\Hy@testname\@empty
11102 \Hy@Warning{%
11103 Empty destination name,\MessageBreak
11104 using ``\Hy@undefinedname'%
11105 }%
11106 \let\Hy@testname\Hy@undefinedname
11107 \fi
11108 \pdfmark[{#3}]{%
11109 Color=\Hy@tempcolor,%
11110 linktype={#1},%
11111 AcroHighlight=\@pdfhighlight,%
11112 Border=\@pdfborder,%
11113 BorderStyle=\@pdfborderstyle,%
11114 pdfmark=/ANN,%
11115 Subtype=/Link,%

```

```

11116     PDFAFlags=4,%
11117     Dest=\Hy@testname
11118 }%
11119 \endgroup
11120 }
11121 \newtoks\pdf@docset
11122 \def\PDF@FinishDoc{%
11123   \Hy@UseMaketitleInfos
11124   \HyInfo@GenerateAddons
11125   \let\Hy@temp\@empty
11126   \ifx\@pdfcreationdate\@empty
11127   \else
11128     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
11129   \fi
11130   \ifx\@pdfmoddate\@empty
11131   \else
11132     \expandafter\def\expandafter\Hy@temp\expandafter{%
11133       \Hy@temp
11134       ModDate=\@pdfmoddate,%
11135     }%
11136   \fi
11137   \ifx\@pdfproducer\relax
11138   \else
11139     \expandafter\def\expandafter\Hy@temp\expandafter{%
11140       \Hy@temp
11141       Producer=\@pdfproducer,%
11142     }%
11143   \fi
11144   \expandafter
11145   \pdfmark\expandafter{%
11146     \Hy@temp
11147     pdfmark=/DOCINFO,%
11148     Title=\@pdftitle,%
11149     Subject=\@pdfsubject,%
11150     Creator=\@pdfcreator,%
11151     Author=\@pdfauthor,%
11152     Keywords=\@pdfkeywords,%
11153     Trapped=\@pdftrapped
11154   }%
11155   \ifx\HyInfo@Addons\@empty
11156   \else
11157     \pdfmark{%
11158       pdfmark=/DOCINFO,%
11159       Raw={\HyInfo@Addons}%
11160     }%
11161   \fi
11162   \Hy@DisableOption{pdfauthor}%
11163   \Hy@DisableOption{pdftitle}%
11164   \Hy@DisableOption{pdfsubject}%
11165   \Hy@DisableOption{pdfcreator}%
11166   \Hy@DisableOption{addtopdfcreator}%
11167   \Hy@DisableOption{pdfcreationdate}%
11168   \Hy@DisableOption{pdfcreationdate}%
11169   \Hy@DisableOption{pdfmoddate}%

```

```

11170 \Hy@DisableOption{pdfproducer}%
11171 \Hy@DisableOption{pdfkeywords}%
11172 \Hy@DisableOption{pdftrapped}%
11173 \Hy@DisableOption{pdfinfo}%
11174 }
11175 \def\PDF@SetupDoc{%
11176 \def\Hy@temp{}%
11177 \ifx\@pdfstartpage\@empty
11178 \else
11179 \ifx\@pdfstartview\@empty
11180 \else
11181 \edef\Hy@temp{%
11182 ,Page=\@pdfstartpage
11183 ,View=\@pdfstartview
11184 }%
11185 \fi
11186 \fi
11187 \edef\Hy@temp{%
11188 \noexpand\pdfmark{%
11189 pdfmark=/DOCVIEW,%
11190 PageMode=/\@pdfpagemode
11191 \Hy@temp
11192 }%
11193 }%
11194 \Hy@temp
11195 \ifx\@pdfpagescrop\@empty
11196 \else
11197 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11198 \fi
11199 \edef\Hy@temp{%
11200 \ifHy@pdftoolbar\else /HideToolbar true\fi
11201 \ifHy@pdfmenubar\else /HideMenubar true\fi
11202 \ifHy@pdfwindowui\else /HideWindowUI true\fi
11203 \ifHy@pdffitwindow /FitWindow true\fi
11204 \ifHy@pdfcenterwindow /CenterWindow true\fi
11205 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
11206 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11207 \Hy@UseNameKey{Direction}\@pdfdirection
11208 \Hy@UseNameKey{ViewArea}\@pdfviewarea
11209 \Hy@UseNameKey{ViewClip}\@pdfviewclip
11210 \Hy@UseNameKey{PrintArea}\@pdfprintarea
11211 \Hy@UseNameKey{PrintClip}\@pdfprintclip
11212 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11213 \Hy@UseNameKey{Duplex}\@pdfduplex
11214 \ifx\@pdfpicktraybypdfsize\@empty
11215 \else
11216 /PickTrayByPDFSize \@pdfpicktraybypdfsize
11217 \fi
11218 \ifx\@pdfprintpagerange\@empty
11219 \else
11220 /PrintPageRange[\@pdfprintpagerange]%
11221 \fi
11222 \ifx\@pdfnumcopies\@empty
11223 \else

```

```

11224     /NumCopies \@pdfnumcopies
11225     \fi
11226 }%
11227 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11228 \pdfmark{%
11229     pdfmark=/PUT,%
11230     Raw={%
11231         \string{Catalog\string}<<%
11232         \ifx\Hy@temp\@empty
11233         \else
11234             /ViewerPreferences<<\Hy@temp>>%
11235         \fi
11236         \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11237         \ifx\@pdflang\relax
11238         \else
11239             /Lang(\@pdflang)%
11240         \fi
11241         \ifx\@baseurl\@empty
11242         \else
11243             /URI<</Base(\Hy@pstringB)>>%
11244         \fi
11245     >>%
11246 }%
11247 }%
11248 }
11249 </pdfmark>
11250 <*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.

```

11251 \newif\ifHy@pdfmarkerror
11252 \def\pdfmark{\@ifnextchar{\pdfmark@}{\pdfmark@[]}}
11253 \def\pdfmark@[#1]#2{%
11254     \Hy@pdfmarkerrorfalse
11255     \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
11256     \@processme
11257     \let\pdf@type\relax
11258     \let\pdf@objdef\@empty
11259     \kvsetkeys{PDF}{#2}%
11260     \ifHy@pdfmarkerror
11261     \else
11262         \ifx\pdf@type\relax
11263             \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
11264             \ifx\#1\%
11265             \else
11266                 \pdf@rect{#1}%
11267             \fi
11268         \else
11269             \ifx\#1\%
11270                 \literalps@out{%

```



```

11271 [%
11272 \ifx\pdf@objdef\@empty
11273 \else
11274 /_objdef\string{\pdf@objdef\string}%
11275 \fi
11276 \the\pdf@toks\space\pdf@type\space pdfmark%
11277 }%
11278 \else
11279 \@ifundefined{@\pdf@linktype color}{%
11280 \Hy@colorlink\@linkcolor
11281 }{%
11282 \expandafter\Hy@colorlink
11283 \csname @\pdf@linktype color\endcsname
11284 }%
11285 \pdf@rect{#1}%
11286 \literalps@out{%
11287 [%
11288 \ifx\pdf@objdef\@empty
11289 \else
11290 /_objdef\string{\pdf@objdef\string}%
11291 \fi
11292 \the\pdf@toks\space\pdf@type\space pdfmark%
11293 }%
11294 \Hy@endcolorlink
11295 \fi
11296 \fi
11297 \fi
11298 }

```

The complicated bit is working out the right enclosing rectangle of some piece of T_EX 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}

```

```

11299 \newsavebox{\pdf@box}
11300 \providecommand*{\Hy@setouterhbox}{\sbox}
11301 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
11302 \def\Hy@DEST{/DEST}
11303 \def\pdf@rect#1{%
11304 \begingroup
11305 \chardef\x=1 %
11306 \def\Hy@temp{#1}%
11307 \ifx\Hy@temp\@empty
11308 \chardef\x=0 %
11309 \else
11310 \def\y{\anchor@spot}%

```

```

11311 \ifx\Hy@temp\y
11312 \def\y{\relax}%
11313 \ifx\anchor@spot\y
11314 \chardef\x=0 %
11315 \fi
11316 \fi
11317 \fi
11318 \expandafter\endgroup
11319 \ifcase\x
11320 \literalps@out{H.S}%
11321 \literalps@out{H.R}%
11322 \else
11323 \leavevmode
11324 \Hy@SaveSpaceFactor
11325 \ifmmode
11326 \def\Hy@LinkMath{$}%
11327 \else
11328 \let\Hy@LinkMath\@empty
11329 \fi
11330 \ifHy@breaklinks
11331 \Hy@setouterhbox\pdf@box{%
11332 \Hy@RestoreSpaceFactor
11333 \Hy@LinkMath
11334 \Hy@AllowHyphens#1\Hy@xspace@end
11335 \Hy@LinkMath
11336 \Hy@SaveSpaceFactor
11337 }%
11338 \else
11339 \sbox\pdf@box{%
11340 \Hy@RestoreSpaceFactor
11341 \Hy@LinkMath
11342 #1\Hy@xspace@end
11343 \Hy@LinkMath
11344 \Hy@SaveSpaceFactor
11345 }%
11346 \fi
11347 \dimen@ht\pdf@box
11348 \ifdim\dp\pdf@box=\z@
11349 \literalps@out{H.S}%
11350 \else
11351 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
11352 \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...).

```

11353 \ifHy@breaklinks
11354 \ifhmode
11355 \Hy@breaklinksunhbox\pdf@box
11356 \else
11357 \box\pdf@box
11358 \fi
11359 \else
11360 \expandafter\box\pdf@box
11361 \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

11362 \ifdim\dimen@=\z@
11363 \literalps@out{H.R}%
11364 \else
11365 \raise\dimen@\hbox{\literalps@out{H.R}}%
11366 \fi
11367 \Hy@RestoreSpaceFactor
11368 \fi
11369 \ifx\pdf@type\Hy@DEST
11370 \else
11371 \pdf@addtoksx{H.B}%
11372 \fi
11373 }

```

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.

```

11374 \newtoks\pdf@toks
11375 \newtoks\pdf@defaulttoks
11376 \pdf@defaulttoks={}%
11377 \def\pdf@addtoks#1#2{%
11378 \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
11379 \@processme
11380 }
11381 \def\pdf@addtoksx#1{%
11382 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
11383 \@processme
11384 }
11385 \def\PDFdefaults#1{%
11386 \pdf@defaulttoks={#1}%
11387 }

```

This is the list of allowed keys. See the Acrobat manual for an explanation.

```

11388 % what is the type of pdfmark?
11389 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11390 % what is the link type?
11391 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11392 \def\pdf@linktype{link}
11393 % named object?
11394 \define@key{PDF}{objdef}{\edef\pdf@objdef{#1}}
11395 \let\pdf@objdef\@empty
11396 % parameter is a stream of PDF
11397 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
11398 % parameter is a name
11399 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11400 % parameter is a array
11401 \define@key{PDF}{Border}{%
11402 \edef\Hy@temp{#1}%
11403 \ifx\Hy@temp\@empty
11404 \else

```

```

11405 \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11406 \fi
11407 }
11408 \let\Hy@BorderArrayPatch\@empty
11409 % parameter is a dictionary
11410 \define@key{PDF}{BorderStyle}{%
11411 \edef\Hy@temp{#1}%
11412 \ifx\Hy@temp\@empty
11413 \else
11414 \pdf@addtoks{<<#1>>}{BS}%
11415 \fi
11416 }
11417 % parameter is a array
11418 \define@key{PDF}{Color}{%
11419 \ifx\relax#1\relax
11420 \else
11421 \pdf@addtoks{[#1]}{Color}% hash-ok
11422 \fi
11423 }
11424 % parameter is a string
11425 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11426 % parameter is a integer
11427 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11428 % parameter is a array
11429 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11430 % parameter is a string
11431 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11432 % parameter is a string or file
11433 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11434 % parameter is a destination
11435 \define@key{PDF}{Dest}{%
11436 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11437 \ifx\Hy@pstringDest\@empty
11438 \Hy@pdfmarkerrortrue
11439 \Hy@Warning{Destination with empty name ignored}%
11440 \else
11441 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11442 \fi
11443 }
11444 \define@key{PDF}{DestAnchor}{%
11445 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11446 \ifx\Hy@pstringDest\@empty
11447 \Hy@pdfmarkerrortrue
11448 \Hy@Warning{Destination with empty name ignored}%
11449 \else
11450 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11451 \fi
11452 }
11453 % parameter is a string
11454 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11455 % parameter is a string
11456 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11457 % parameter is a int
11458 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}

```

```

11459 \define@key{PDF}{PDFAFlags}{%
11460   \ifHy@pdfa
11461     \pdf@addtoks{#1}{F}%
11462   \fi
11463 }
11464 % parameter is a name
11465 \define@key{PDF}{AcroHighlight}{%
11466   \begingroup
11467     \edef\x{#1}%
11468     \expandafter\endgroup\ifx\x\@empty
11469     \else
11470       \pdf@addtoks{#1}{H}%
11471     \fi
11472 }
11473 % parameter is a string
11474 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11475 % parameter is a string
11476 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11477 % parameter is a string
11478 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11479 % parameter is a string
11480 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11481 % parameter is a Boolean
11482 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11483 % parameter is a integer or name
11484 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11485 % parameter is a name
11486 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11487 % parameter is a string
11488 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11489 % parameter is a array
11490 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11491 % parameter is a integer
11492 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
11493 % parameter is a name
11494 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11495 % parameter is a string
11496 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11497 % parameter is a string
11498 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11499 % parameter is a string
11500 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11501 % parameter is an array
11502 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11503 % parameter is a string
11504 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

11505 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11506 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11507 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
11508 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11509 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11510 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11511 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}

```

```

11512 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11513 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11514 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
11515 \define@key{PDF}{Trapped}{%
11516   \edef\Hy@temp{#1}%
11517   \ifx\Hy@temp\@empty
11518   \else
11519     \pdf@addtoks{/#1}{Trapped}%
11520   \fi
11521 }
11522
11523 </pdfmarkbase>
11524 <*pdfmark>
11525 \def\Acrobatmenu#1#2{%
11526   \EdefEscapeName\Hy@temp@menu{#1}%
11527   \Hy@Acrobatmenu{#1}{#2}{%
11528     \pdfmark[{#2}] {%
11529       linktype=menu,%
11530       pdfmark=/ANN,%
11531       AcroHighlight=\@pdfhighlight,%
11532       Border=\@pdfborder,%
11533       BorderStyle=\@pdfborderstyle,%
11534       Color=\@menubordercolor,%
11535       Action={<</Subtype/Named/N/\Hy@temp@menu>>},%
11536       Subtype=/Link,%
11537       PDFAFlags=4%
11538     }%
11539   }%
11540 }

```

And now for some useful examples:

```

11541 \def\PDFNextPage{\@ifnextchar{\PDFNextPage@}{\PDFNextPage@[]}}
11542 \def\PDFNextPage@[#1]#2{%
11543   \pdfmark[{#2}] {%
11544     #1,%
11545     Border=\@pdfborder,%
11546     BorderStyle=\@pdfborderstyle,%
11547     Color=.2 .1 .5,%
11548     pdfmark=/ANN,%
11549     Subtype=/Link,%
11550     PDFAFlags=4,%
11551     Page=/Next%
11552   }%
11553 }
11554 \def\PDFPreviousPage{%
11555   \@ifnextchar{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11556 }
11557 \def\PDFPreviousPage@[#1]#2{%
11558   \pdfmark[{#2}] {%
11559     #1,%
11560     Border=\@pdfborder,%
11561     BorderStyle=\@pdfborderstyle,%
11562     Color=.4 .4 .1,%
11563     pdfmark=/ANN,%
11564     Subtype=/Link,%

```

```

11565   PDFAFlags=4,%
11566   Page=/Prev%
11567 }%
11568 }
11569 \def\PDFOpen#1{%
11570   \pdfmark{#1,pdfmark=/DOCVIEW}%
11571 }

```

This will only work if you use Distiller 2.1 or higher.

```

11572 \def\hyper@linkurl#1#2{%
11573   \begingroup
11574   \Hy@pstringdef\Hy@pstringURI{#2}%
11575   \hyper@chars
11576   \leavevmode
11577   \pdfmark[{#1}]{%
11578     pdfmark=/ANN,%
11579     linktype=url,%
11580     AcroHighlight=\@pdfhighlight,%
11581     Border=\@pdfborder,%
11582     BorderStyle=\@pdfborderstyle,%
11583     Color=\@urlbordercolor,%
11584     Action={<<%
11585       /Subtype/URI%
11586       /URI(\Hy@pstringURI)%
11587       \ifHy@href@ismap
11588       /IsMap true%
11589       \fi
11590     >>},%
11591     Subtype=/Link,%
11592     PDFAFlags=4%
11593   }%
11594   \endgroup
11595 }
11596 \def\hyper@linkfile#1#2#3{%
11597   \begingroup
11598   \def\Hy@pstringF{#2}%
11599   \Hy@CleanupFile\Hy@pstringF
11600   \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11601   \Hy@pstringdef\Hy@pstringD{#3}%
11602   \Hy@MakeRemoteAction
11603   \leavevmode
11604   \pdfmark[{#1}]{%
11605     pdfmark=/ANN,%
11606     Subtype=/Link,%
11607     PDFAFlags=4,%
11608     AcroHighlight=\@pdfhighlight,%
11609     Border=\@pdfborder,%
11610     BorderStyle=\@pdfborderstyle,%
11611     linktype=file,%
11612     Color=\@filebordercolor,%
11613     Action={%
11614       <<%
11615       /S/GoToR%
11616       \Hy@SetNewWindow
11617       /F(\Hy@pstringF)%

```

```

11618      /D%
11619      \ifx\\#3\\%
11620        [\Hy@href@page\@pdfremotestartview]%
11621      \else
11622        (\Hy@pstringD)cvn%
11623      \fi
11624      \Hy@href@nextactionraw
11625      >>%
11626    }%
11627  }%
11628  \endgroup
11629 }
11630 \def\@hyper@launch run:#1\\#2#3{%
11631   \begingroup
11632     \Hy@pstringdef\Hy@pstringF{#1}%
11633     \Hy@pstringdef\Hy@pstringP{#3}%
11634     \leavevmode
11635     \pdfmark[{#2}]{%
11636       pdfmark=/ANN,%
11637       Subtype=/Link,%
11638       PDFAFlags=4,%
11639       AcroHighlight=\@pdfhighlight,%
11640       Border=\@pdfborder,%
11641       BorderStyle=\@pdfborderstyle,%
11642       linktype=run,%
11643       Color=\@runbordercolor,%
11644       Action={%
11645         <<%
11646         /S/Launch%
11647         \Hy@SetNewWindow
11648         /F(\Hy@pstringF)%
11649         \ifx\\#3\\%
11650         \else
11651           /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11652         \fi
11653         \Hy@href@nextactionraw
11654         >>%
11655       }%
11656     }%
11657   \endgroup
11658 }
11659 \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.

```

11660 \<dvips>
11661 \providecommand*\XR@ext\{pdf}

```



```

11662 \let\Hy@raisedlink\@empty
11663 \def\literalps@out#1{\special{ps:SDict begin #1 end}}}%
11664 \def\headerps@out#1{\special{! #1}}}%
11665 \input{pdfmark.def}%
11666 \ifx\@pdfproducer\relax
11667   \def\@pdfproducer{dvips + Distiller}%
11668 \fi
11669 \providecommand*\@pdfborder{0 0 1}
11670 \providecommand*\@pdfborderstyle{}
11671 \providecommand*\@pdfview{XYZ}
11672 \providecommand*\@pdfviewparams{ H.V}
11673 \def\Hy@BorderArrayPatch{BorderArrayPatch}
11674 \g@addto@macro\Hy@FirstPageHook{%
11675   \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.

```

11676   /DvipsToPDF{72.27 mul Resolution div} def%
11677   /PDFToDvips{72.27 div Resolution mul} def%
11678   /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.

```

11679   product (Ghostscript) search {pop pop pop revision 927 gt}%
11680   {pop false} ifelse%
11681   {%
11682     /BorderArrayPatch{} def%
11683   }%
11684   {%
11685     /BorderArrayPatch{%
11686       [exch{%
11687         dup dup type/integertype eq exch type/realtype eq or%
11688         {BPToDvips}if%
11689       }forall]%
11690     }def%
11691   } 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.

```

11692 /HyperBorder {1 PDFToDvips} def%
11693 /H.V {pdf@hoff pdf@voff null} def%
11694 /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

```

11695 /H.S {%
11696   currentpoint %
11697   HyperBorder add /pdf@lly exch def %
11698   dup DvipsToPDF 72 add /pdf@hoff exch def %
11699   HyperBorder sub /pdf@llx exch def%
11700 } def%

```

The calculation of upper left y is done without raising the point in $\text{\TeX}$, by simply adding on the current `\baselineskip` to the current y . This is usually too much, so we remove a notional 2 points.

We have to see what the current `baselineskip` is, and convert it to the dvips coordinate system.

Argument: `baselineskip` in pt. The x and y coordinates of the current point, minus the `baselineskip`

```

11701 /H.L {%
11702   2 sub dup%
11703   /HyperBasePt exch def %
11704   PDFToDvips /HyperBaseDvips exch def %
11705   currentpoint %
11706   HyperBaseDvips sub /pdf@ury exch def%
11707   /pdf@urx exch def%
11708 } def%
11709 /H.A {%
11710   H.L %
11711 % |pdf@voff| = the distance from the top of the page to a point
11712 % |baselineskip| above the current point in PDF coordinates
11713   currentpoint exch pop %
11714   vsize 72 sub exch DvipsToPDF %
11715   HyperBasePt sub % baseline skip
11716   sub /pdf@voff exch def%
11717 } def%
11718 /H.R {%
11719   currentpoint %
11720   HyperBorder sub /pdf@ury exch def %
11721   HyperBorder add /pdf@urx exch def %
11722 % |pdf@voff| = the distance from the top of the page to the current point, in
11723 % PDF coordinates
11724   currentpoint exch pop vsize 72 sub %
11725   exch DvipsToPDF sub /pdf@voff exch def%
11726 } def%
11727 }%
11728 }
11729 \AddToHook{shipout/firstpage}{%
11730   \ifHy@setpagesize
11731     \begingroup
11732     \ifnum\mag=\@m
11733       \ifdim\stockwidth>\z@
11734         \ifdim\stockheight>\z@

```

```

11735     \special{papersize=\the\stockwidth,\the\stockheight}%
11736   \else
11737     \ifdim\paperwidth>\z@
11738       \ifdim\paperheight>\z@
11739         \special{papersize=\the\paperwidth,\the\paperheight}%
11740       \fi
11741     \fi
11742   \fi
11743 \else
11744   \ifdim\stockwidth=\z@
11745     \ifdim\paperwidth>\z@
11746       \ifdim\paperheight>\z@
11747         \special{papersize=\the\paperwidth,\the\paperheight}%
11748       \fi
11749     \fi
11750   \fi
11751 \fi
11752 \fi
11753 \endgroup
11754 \fi
11755 \Hy@DisableOption{setpagesize}%
11756 }

11757 \def\setpdfinkmargin#1{%
11758   \begingroup
11759     \setlength{\dimen@}{#1}%
11760     \literalps@out{%
11761       /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11762     }%
11763   \endgroup
11764 }

11765 </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.

```

11766 (*vtexpdfmark)
11767 \providecommand*\XR@ext}{pdf}
11768 \let\Hy@raisedlink\@empty
11769 \def\literalps@out#1{\special{pS:#1}}%
11770 \def\headerps@out#1{\immediate\special{pS:#1}}%
11771 \input{pdfmark.def}%
11772 \ifx\@pdfproducer\relax
11773   \ifnum\OpMode=\@ne
11774     \def\@pdfproducer{VTeX}%
11775   \else
11776     \def\@pdfproducer{VTeX + Distiller}%
11777   \fi
11778 \fi
11779 \providecommand*\@pdfborder{0 0 1}

```

```

11780 \providecommand*\@pdfborderstyle{}
11781 \providecommand*\@pdfview{XYZ}
11782 \providecommand*\@pdfviewparams{ H.V}

11783 \g@addto@macro\Hy@FirstPageHook{%
11784   \headerps@out{%
11785     /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.

```

11786   /HyperBorder {1} def%
11787   /H.V {pdf@hoff pdf@voff null} def%
11788   /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: $\text{pdf@lly} = Y_c - \text{HyperBorder}$, $\text{pdf@hoff} = X_c + 72$, $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

11789   /H.S {%
11790     currentpoint %
11791     HyperBorder sub%
11792     /pdf@lly exch def %
11793     dup 72 add /pdf@hoff exch def %
11794     HyperBorder sub%
11795     /pdf@llx exch def%
11796   } def%

```

The x and y coordinates of the current point, minus the `\baselineskip`: $\text{pdf@ury} = Y_c + \text{HyperBasePt} + \text{HyperBorder}$, $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11797   /H.L {%
11798     2 sub%
11799     /HyperBasePt exch def %
11800     currentpoint %
11801     HyperBasePt add HyperBorder add%
11802     /pdf@ury exch def %
11803     HyperBorder add%
11804     /pdf@urx exch def%
11805   } def%
11806   /H.A {%
11807     H.L %
11808     currentpoint exch pop %
11809     vsize 72 sub exch %
11810     HyperBasePt add add%
11811     /pdf@voff exch def%
11812   } def%

```

$\text{pdf@ury} = Y_c + \text{HyperBorder}$, $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11813   /H.R {%
11814     currentpoint %
11815     HyperBorder add%
11816     /pdf@ury exch def %
11817     HyperBorder add%
11818     /pdf@urx exch def %
11819     currentpoint exch pop vsize 72 sub add%
11820     /pdf@voff exch def%
11821   } def%
11822 }%

```

```

11823 }
11824 \def\setpdfinkmargin#1{%
11825   \begingroup
11826     \setlength{\dimen@}{#1}%
11827     \literalps@out{%
11828       /HyperBorder{\strip@pt\dimen@}def%
11829     }%
11830   \endgroup
11831 }
11832 \</vtxpdfmark>

```

44.11 Textures

```

11833 <*textures>
11834 \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.

```

11835 \begingroup
11836   \obeylines %
11837   \gdef\Hy@ps@CR{\noexpand
11838     }%
11839 \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`.

```

11840 \def\literalps@out#1{%
11841   \special{postscript 0 0 transform}%
11842   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11843 }%
11844 %

```

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.

```

11845 \def\headerps@out#1{%
11846   \special{%

```

```

11847   prepostscript TeXdict begin\Hy@ps@CR
11848     #1\Hy@ps@CR
11849   end%
11850 }%
11851 }%
11852 %

```

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.

```

11853 \g@addto@macro\Hy@FirstPageHook{%
11854   \headerps@out{%
11855     /betterpdfmark {%
11856       systemdict begin %
11857         dup /BP eq%
11858         {cleartomark gsave nulldevice []%
11859          {dup /EP eq%
11860           {cleartomark cleartomark grestore}%
11861           {cleartomark}%
11862           ifelse%
11863         }ifelse %
11864       end%
11865     }def\Hy@ps@CR
11866     ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11867   }% end of \headerps@out
11868 }% end of \AddToHook{shipout/firstpage}
11869 %
11870 \input{pdfmark.def}%
11871 %
11872 \ifx\@pdfproducer\relax
11873   \def\@pdfproducer{Textures + Distiller}%
11874 \fi
11875 \providecommand*\@pdfborder{0 0 1}
11876 \providecommand*\@pdfborderstyle{}
11877 \providecommand*\@pdfview{XYZ}
11878 \providecommand*\@pdfviewparams{ H.V}
11879 %

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called `pdf@llx pdf@lly pdf@urx pdf@ury`, which are the coordinates of the bounding rectangle of the link, and `pdf@hoff pdf@voff` which are the PDF page offsets. The Rect pair are called at the LL and UR corners of a box known to $\text{\TeX}$.

```

11880 \Hy@AtBeginDocument{%
11881   \headerps@out{%

```

Textures lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```

11882     /vsize {\Hy@pageheight} def%
11883     /DvipsToPDF {} def%
11884     /PDFToDvips {} def%
11885     /BPToDvips {} def%
11886     /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11887     /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR

```

```

11888 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11889 /H.S {%
11890     currentpoint %
11891     HyperBorder add /pdf@lly exch def %
11892     dup DvipsToPDF 72 add /pdf@hoff exch def %
11893     HyperBorder sub /pdf@llx exch def%
11894 } def\Hy@ps@CR
11895 /H.L {%
11896     2 sub %
11897     PDFToDvips /HyperBase exch def %
11898     currentpoint %
11899     HyperBase sub /pdf@ury exch def%
11900     /pdf@urx exch def%
11901 } def\Hy@ps@CR
11902 /H.A {%
11903     H.L %
11904     currentpoint exch pop %
11905     vsize 72 sub exch DvipsToPDF %
11906     HyperBase sub % baseline skip
11907     sub /pdf@voff exch def%
11908 } def\Hy@ps@CR
11909 /H.R {%
11910     currentpoint %
11911     HyperBorder sub /pdf@ury exch def %
11912     HyperBorder add /pdf@urx exch def %
11913     currentpoint exch pop vsize 72 sub %
11914     exch DvipsToPDF sub /pdf@voff exch def%
11915 } def\Hy@ps@CR
11916 }%
11917 }

11918 \def\setpdfinkmargin#1{%
11919     \begingroup
11920     \setlength{\dimen@}{#1}%
11921     \literalps@out{%
11922         /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
11923     }%
11924     \endgroup
11925 }

11926 \Hy@AtBeginDocument{%
11927     \ifHy@colorlinks
11928         \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11929     \fi
11930 }

11931 \expandafter\let\expandafter\keepPDF@SetupDoc
11932     \csname PDF@SetupDoc\endcsname
11933 \def\PDF@SetupDoc{%
11934     \ifx\@baseurl\@empty
11935     \else
11936         \special{html:<base href="\@baseurl">}%

```

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.

```

11937 \fi
11938 \keepPDF@SetupDoc
11939 }
11940 \Hy@WrapperDef\hyper@anchor#1{%
11941 \Hy@SaveLastskip
11942 \Hy@VerboseAnchor{#1}%
11943 \begingroup
11944 \let\protect=\string
11945 \special{html:<a name=%
11946 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11947 \endgroup
11948 \Hy@activeanchortrue
11949 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11950 \special{html:</a>}%
11951 \Hy@activeanchorfalse
11952 \Hy@RestoreLastskip
11953 }
11954 \Hy@WrapperDef\hyper@anchorstart#1{%
11955 \Hy@SaveLastskip
11956 \Hy@VerboseAnchor{#1}%
11957 \begingroup
11958 \hyper@chars
11959 \special{html:<a name=%
11960 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11961 \endgroup
11962 \Hy@activeanchortrue
11963 }
11964 \def\hyper@anchorend{%
11965 \special{html:</a>}%
11966 \Hy@activeanchorfalse
11967 \Hy@RestoreLastskip
11968 }
11969 \def\@urlltype{url}
11970 \def\hyper@linkstart#1#2{%
11971 \Hy@VerboseLinkStart{#1}{#2}%
11972 \expandafter\Hy@colorlink\csname @#1color\endcsname
11973 \def\Hy@tempa{#1}%
11974 \ifx\Hy@tempa\@urlltype
11975 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11976 \else
11977 \begingroup
11978 \hyper@chars
11979 \special{%
11980 html:<a href=%
11981 \hyper@quote\# \HyperDestNameFilter{#2}\hyper@quote>%
11982 }%
11983 \endgroup
11984 \fi
11985 }
11986 \def\hyper@linkend{%
11987 \special{html:</a>}%
11988 \Hy@endcolorlink
11989 }
11990 \def\hyper@linkfile#1#2#3{%

```



```

11991 \hyper@linkurl{#1}{%
11992   \Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi
11993 }%
11994 }
11995 \def\hyper@linkurl#1#2{%
11996   \leavevmode
11997   \ifHy@raiselinks
11998     \Hy@SaveSpaceFactor
11999     \Hy@SaveSavedSpaceFactor
12000     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12001     \Hy@RestoreSavedSpaceFactor
12002     \@linkdim\dp\@tempboxa
12003     \lower\@linkdim\hbox{%
12004       \hyper@chars
12005       \special{html:<a href=\hyper@quote#2\hyper@quote>}%
12006     }%
12007     \Hy@colorlink\@urlcolor
12008     \Hy@RestoreSpaceFactor
12009     #1\Hy@xspace@end
12010     \Hy@SaveSpaceFactor
12011     \@linkdim\ht\@tempboxa
12012     \advance\@linkdim by -6.5\p@
12013     \raise\@linkdim\hbox{\special{html:</a>}}%
12014     \Hy@endcolorlink
12015     \Hy@RestoreSpaceFactor
12016   \else
12017     \begingroup
12018     \hyper@chars
12019     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
12020     \Hy@colorlink\@urlcolor#1\Hy@xspace@end
12021     \special{html:</a>}%
12022     \Hy@endcolorlink
12023   \endgroup
12024   \fi
12025 }

```

Very poor implementation of \hyper@link without considering #1.

```

12026 \def\hyper@link#1#2#3{%
12027   \Hy@VerboseLinkStart{#1}{#2}%
12028   \hyper@linkurl{#3}{\#\Hy@HyperDestNameFilter{#2}}%
12029 }
12030 \def\hyper@image#1#2{%
12031   \begingroup
12032   \hyper@chars
12033   \special{html:<img src=\hyper@quote#1\hyper@quote>}%
12034   \endgroup
12035 }
12036 </textures>

```

44.12 dvipsone

```

12037 % \subsection{dvipsone driver}
12038 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
12039 % |\special| commands.

```

```

12040 (*dvipsone)
12041 \providecommand*\XR@ext\{pdf}
12042 \let\Hy@raisedlink\@empty
12043 \providecommand*\@pdfborder{0 0 1}
12044 \providecommand*\@pdfborderstyle{}
12045 \def\literalps@out#1{\special{ps:#1}}%
12046 \def\headerps@out#1{\special{headertext=#1}}%
12047 \input{pdfmark.def}%
12048 \HyInfo@AddonUnsupportedtrue
12049 \def\PDF@FinishDoc{%
12050   \Hy@UseMaketitleInfos
12051   \HyInfo@TrappedUnsupported
12052   \special{PDF: Keywords \@pdfkeywords}%
12053   \special{PDF: Title \@pdftitle}%
12054   \special{PDF: Creator \@pdfcreator}%
12055   \ifx\@pdfcreationdate\@empty
12056   \else
12057     \special{PDF: CreationDate \@pdfcreationdate}%
12058   \fi
12059   \ifx\@pdfmoddate\@empty
12060   \else
12061     \special{PDF: ModDate \@pdfmoddate}%
12062   \fi
12063   \special{PDF: Author \@pdfauthor}%
12064   \ifx\@pdfproducer\relax
12065   \else
12066     \special{PDF: Producer \@pdfproducer}%
12067   \fi
12068   \special{PDF: Subject \@pdfsubject}%
12069   \Hy@DisableOption{pdfauthor}%
12070   \Hy@DisableOption{pdftitle}%
12071   \Hy@DisableOption{pdfsubject}%
12072   \Hy@DisableOption{pdfcreator}%
12073   \Hy@DisableOption{addtopdfcreator}%
12074   \Hy@DisableOption{pdfcreationdate}%
12075   \Hy@DisableOption{pdfcreationdate}%
12076   \Hy@DisableOption{pdfmoddate}%
12077   \Hy@DisableOption{pdfproducer}%
12078   \Hy@DisableOption{pdfkeywords}%
12079   \Hy@DisableOption{pdftrapped}%
12080   \Hy@DisableOption{pdfinfo}%
12081 }
12082 \def\PDF@SetupDoc{%
12083   \def\Hy@temp{}%
12084   \ifx\@pdfstartpage\@empty
12085   \else
12086     \ifx\@pdfstartview\@empty
12087     \else
12088       \edef\Hy@temp{%
12089         ,Page=\@pdfstartpage
12090         ,View=\@pdfstartview
12091       }%
12092     \fi
12093   \fi

```

```

12094 \edef\Hy@temp{%
12095   \noexpand\pdfmark{%
12096     pdfmark=/DOCVIEW,%
12097     PageMode=/\@pdfpagemode
12098     \Hy@temp
12099   }%
12100 }%
12101 \Hy@temp
12102 \ifx\@pdfpagescrop\@empty
12103 \else
12104   \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
12105 \fi
12106 \edef\Hy@temp{%
12107   \ifHy@pdftoolbar\else /HideToolbar true\fi
12108   \ifHy@pdfmenubar\else /HideMenubar true\fi
12109   \ifHy@pdfwindowui\else /HideWindowUI true\fi
12110   \ifHy@pdffitwindow /FitWindow true\fi
12111   \ifHy@pdfcenterwindow /CenterWindow true\fi
12112   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
12113   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
12114   \Hy@UseNameKey{Direction}\@pdfdirection
12115   \Hy@UseNameKey{ViewArea}\@pdfviewarea
12116   \Hy@UseNameKey{ViewClip}\@pdfviewclip
12117   \Hy@UseNameKey{PrintArea}\@pdfprintarea
12118   \Hy@UseNameKey{PrintClip}\@pdfprintclip
12119   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
12120   \Hy@UseNameKey{Duplex}\@pdfduplex
12121   \ifx\@pdfpicktraybypdfsize\@empty
12122   \else
12123     /PickTrayByPDFSize \@pdfpicktraybypdfsize
12124   \fi
12125   \ifx\@pdfprintpagerange\@empty
12126   \else
12127     /PrintPageRange[\@pdfprintpagerange]%
12128   \fi
12129   \ifx\@pdfnumcopies\@empty
12130   \else
12131     /NumCopies \@pdfnumcopies
12132   \fi
12133 }%
12134 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
12135 \pdfmark{%
12136   pdfmark=/PUT,%
12137   Raw={%
12138     \string{Catalog\string}<<%
12139     \ifx\Hy@temp\@empty
12140     \else
12141       /ViewerPreferences<<\Hy@temp>>%
12142     \fi
12143     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
12144     \ifx\@pdflang\relax
12145     \else
12146       /Lang(\@pdflang)%
12147     \fi

```

```

12148     \ifx\@baseurl\@empty
12149     \else
12150         /URI<</Base(\Hy@pstringB)>>%
12151     \fi
12152     >>%
12153 }%
12154 }%
12155 }
12156 \providecommand*\@pdfview{XYZ}
12157 \providecommand*\@pdfviewparams{ %
12158     gsave revscl currentpoint grestore %
12159     72 add exch pop null exch null%
12160 }
12161 \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 $\TeX$.

```

12162 \g@addto@macro\Hy@FirstPageHook{%
12163     \headerps@out{%

```

dvipsone lives in scaled points; does this mean 65536 or 65781?

```

12164     /DvipsToPDF { 65781 div } def%
12165     /PDFToDvips { 65781 mul } def%
12166     /BPToDvips{65781 mul}def%
12167     /HyperBorder { 1 PDFToDvips } def%
12168     /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.

```

12169     /BorderArrayPatch{%
12170         [exch{%
12171             dup dup type/integertype eq exch type/realtype eq or%
12172             {BPToDvips}if%
12173         }forall]%
12174     }def%
12175     /H.S {%
12176         currentpoint %
12177         HyperBorder add /pdf@lly exch def %
12178         dup DvipsToPDF 72 add /pdf@hoff exch def %
12179         HyperBorder sub /pdf@llx exch def%
12180     } def%
12181     /H.L {%
12182         2 sub %
12183         PDFToDvips /HyperBase exch def %
12184         currentpoint %
12185         HyperBase sub /pdf@ury exch def%
12186         /pdf@urx exch def%
12187     } def%
12188     /H.A {%
12189         H.L %
12190         currentpoint exch pop %

```

```

12191     HyperBase sub % baseline skip
12192     DvipsToPDF /pdf@voff exch def%
12193   } def%
12194   /H.R {%
12195     currentpoint %
12196     HyperBorder sub /pdf@ury exch def %
12197     HyperBorder add /pdf@urx exch def %
12198     currentpoint exch pop DvipsToPDF /pdf@voff exch def%
12199   } def%
12200 }%
12201 }

12202 \def\setpdfinkmargin#1{%
12203   \begingroup
12204     \setlength{\dimen@}{#1}%
12205     \literalps@out{%
12206       /HyperBorder{\strip@pt\dimen@\space PDFToDvips}def%
12207     }%
12208   \endgroup
12209 }

12210 </dvipsone>

```

44.13 TeX4ht

```

12211 (*tex4ht)
12212 \providecommand*\XR@ext>{html}
12213 \let\Hy@raisedlink\@empty
12214 \@ifpackageloaded{tex4ht}{%
12215   \Hy@InfoNoLine{tex4ht is already loaded}%
12216 }{%
12217   \RequirePackage[hTeX4ht]{tex4ht}%
12218 }
12219 \hyperlinkfileprefix{}
12220 \let\PDF@FinishDoc\@empty
12221 \def\PDF@SetupDoc{%
12222   \ifx\@baseurl\@empty
12223     \else
12224       \special{t4ht=<base href="\@baseurl">}%
12225     \fi
12226 }
12227 \Hy@WrapperDef\hyper@anchor#1{%
12228   \Hy@SaveLastskip
12229   \Hy@VerboseAnchor{#1}%
12230   \begingroup
12231     \let\protect=\string
12232     \special{t4ht=<a name=%
12233       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12234   \endgroup
12235   \Hy@activeanchortrue
12236   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
12237   \special{t4ht=</a>}%
12238   \Hy@activeanchorfalse
12239   \Hy@RestoreLastskip
12240 }
12241 \Hy@WrapperDef\hyper@anchorstart#1{%

```

```

12242 \Hy@SaveLastskip
12243 \Hy@VerboseAnchor{#1}%
12244 \begingroup
12245   \hyper@chars\special{t4ht=<a name=%
12246     \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}}%
12247 \endgroup
12248 \Hy@activeanchortrue
12249 }
12250 \def\hyper@anchorend{%
12251   \special{t4ht=</a>}}%
12252 \Hy@activeanchorfalse
12253 \Hy@RestoreLastskip
12254 }
12255 \def\@urltype{url}
12256 \def\hyper@linkstart#1#2{%
12257   \Hy@VerboseLinkStart{#1}{#2}%
12258   \expandafter\Hy@colorlink\csname @#1color\endcsname
12259   \def\Hy@tempa{#1}%
12260   \ifx\Hy@tempa\@urltype
12261     \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
12262   \else
12263     \begingroup
12264       \hyper@chars
12265       \special{t4ht=<a href=%
12266         \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}}%
12267     \endgroup
12268   \fi
12269 }
12270 \def\hyper@linkend{%
12271   \special{t4ht=</a>}}%
12272 \Hy@endcolorlink
12273 }
12274 \def\hyper@linkfile#1#2#3{%
12275   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
12276 }
12277 \def\hyper@linkurl#1#2{%
12278   \leavevmode
12279   \ifHy@raiselinks
12280     \Hy@SaveSpaceFactor
12281     \Hy@SaveSavedSpaceFactor
12282     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12283     \Hy@RestoreSavedSpaceFactor
12284     \@linkdim\dp\@tempboxa
12285     \lower\@linkdim\hbox{%
12286       \begingroup
12287         \hyper@chars
12288         \special{%
12289           t4ht=<a href=\hyper@quote#2\hyper@quote>%
12290         }%
12291       \endgroup
12292     }%
12293     \Hy@colorlink\@urlcolor
12294     \Hy@RestoreSpaceFactor
12295     #1\Hy@xspace@end

```

```

12296 \Hy@SaveSpaceFactor
12297 \Hy@endcolorlink
12298 \@linkdim\ht\@tempboxa
12299 \advance\@linkdim by -6.5\p@
12300 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
12301 \Hy@RestoreSpaceFactor
12302 \else
12303 \begingroup
12304 \hyper@chars
12305 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12306 \Hy@colorlink\@urlcolor
12307 #1\Hy@xspace@end
12308 \Hy@endcolorlink
12309 \special{t4ht=</a>}%
12310 \endgroup
12311 \fi
12312 }

```

Poor implementation of \hyper@link without considering #1.

```

12313 \def\hyper@link#1#2#3{%
12314 \Hy@VerboseLinkStart{#1}{#2}%
12315 \hyper@linkurl{#3}{\#\Hy@DestNameFilter{#2}}%
12316 }
12317 \def\hyper@image#1#2{%
12318 \begingroup
12319 \hyper@chars
12320 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
12321 \endgroup
12322 }
12323 \let\autoref\ref
12324 \ifx \rEFLiNK \UnDef
12325 \def\rEFLiNK #1#2{#2}%
12326 \fi
12327 \let\backref\@gobble

```

Fix for tex4ht.

```

12328 \AtBeginDocument{%
12329 \expandafter
12330 \let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endcsname
12331 \expandafter\def\csname Make:Label\endcsname#1#2{%
12332 \ifhmode
12333 \Hy@SaveSpaceFactor
12334 \else
12335 \global\Hy@SavedSpaceFactor=1000 %
12336 \fi
12337 \Hy@OrgMakeLabel{#1}{%
12338 \Hy@RestoreSpaceFactor
12339 #2\Hy@xspace@end%
12340 \Hy@SaveSpaceFactor
12341 }%
12342 \Hy@RestoreSpaceFactor
12343 }%
12344 }
12345 </tex4ht>
12346 <*tex4htcfg>

```

```

12347 \IfFileExists{\jobname.cfg}{\endinput}{}
12348 \Preamble{html}
12349 \begin{document}%
12350 \EndPreamble
12351 \def\TeX{\TeX}
12352 \def\OMEGA{\Omega}
12353 \def\LaTeX{\LaTeX}
12354 \def\LaTeXe{\LaTeX2e}
12355 \def\eTeX{e-TeX}
12356 \def\MF{Metafont}
12357 \def\MP{MetaPost}
12358 \</tex4htcfg>

```

45 Driver-specific form support

45.1 pdfmarks

change 2020-06-20: added /Euro to encoding

```

12359 (*pdfmark)
12360 \long\def\@Form[#1]{%
12361 \g@addto@macro\Hy@FirstPageHook{%
12362 \headerps@out{%
12363 [%
12364 /_objdef{pdfDocEncoding}%
12365 /type/dict%
12366 /OBJ pdfmark%
12367 [%
12368 {pdfDocEncoding}%
12369 <<%
12370 /Type/Encoding%
12371 /Differences[%
12372 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
12373 /tilde %
12374 39/quotesingle %
12375 96/grave %
12376 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12377 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
12378 /quotedblbase/quotedblleft/quotedblright/quoteleft%
12379 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
12380 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12381 160/Euro %
12382 164/currency %
12383 166/brokenbar %
12384 168/dieresis/copyright/ordfeminine %
12385 172/logicalnot/.notdef/registered/macron/degree/plusminus%
12386 /twosuperior/threesuperior/acute/mu %
12387 183/periodcentered/cedilla/onesuperior/ordmasculine %
12388 188/onequarter/onehalf/threequarters %
12389 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
12390 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
12391 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
12392 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
12393 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
12394 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%

```



```

12395      /cedilla/egrave/eacute/ecircumflex/edieresis/igrave%
12396      /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
12397      /ocircumflex/otilde/odieresis/divide/oshlash/ugrave/uacute%
12398      /ucircumflex/udieresis/yacute/thorn/ydieresis%
12399  ]%
12400  >>%
12401 /PUT pdfmark%
12402 [%
12403   /_objdef{ZaDb}%
12404   /type/dict%
12405 /OBJ pdfmark%
12406 [%
12407   {ZaDb}%
12408   <<%
12409     /Type/Font%
12410     /Subtype/Type1%
12411     /Name/ZaDb%
12412     /BaseFont/ZapfDingbats%
12413   >>%
12414 /PUT pdfmark%
12415 [%
12416   /_objdef{Helv}%
12417   /type/dict%
12418 /OBJ pdfmark%
12419 [%
12420   {Helv}%
12421   <<%
12422     /Type/Font%
12423     /Subtype/Type1%
12424     /Name/Helv%
12425     /BaseFont/Helvetica%
12426     /Encoding{pdfDocEncoding}%
12427   >>%
12428 /PUT pdfmark%
12429 [%
12430   /_objdef{aform}%
12431   /type/dict%
12432 /OBJ pdfmark%
12433 [%
12434   /_objdef{afields}%
12435   /type/array%
12436 /OBJ pdfmark%
12437 [%
12438   /_objdef{corder}%
12439   /type/array%
12440 /OBJ pdfmark%
12441 {%
12442 [%
12443   /BBox[0 0 100 100]%
12444   /_objdef{Check}%
12445 /BP pdfmark %
12446 1 0 0 setrgbcolor%
12447 /ZapfDingbats 80 selectfont %
12448 20 20 moveto%

```

```

12449 (4)show%
12450 [/EP pdfmark%
12451 [%
12452   /BBox[0 0 100 100]%
12453   /__objdef{Cross}%
12454 /BP pdfmark %
12455 1 0 0 setrgbcolor%
12456 /ZapfDingbats 80 selectfont %
12457 20 20 moveto%
12458 (8)show%
12459 [/EP pdfmark%
12460 [%
12461   /BBox[0 0 250 100]%
12462   /__objdef{Submit}%
12463 /BP pdfmark %
12464 0.6 setgray %
12465 0 0 250 100 rectfill %
12466 1 setgray %
12467 2 2 moveto %
12468 2 98 lineto %
12469 248 98 lineto %
12470 246 96 lineto %
12471 4 96 lineto %
12472 4 4 lineto %
12473 fill %
12474 0.34 setgray %
12475 248 98 moveto %
12476 248 2 lineto %
12477 2 2 lineto %
12478 4 4 lineto %
12479 246 4 lineto %
12480 246 96 lineto %
12481 fill%
12482 /Helvetica 76 selectfont %
12483 0 setgray %
12484 8 22.5 moveto%
12485 (Submit)show%
12486 [/EP pdfmark%
12487 [%
12488   /BBox[0 0 250 100]%
12489   /__objdef{SubmitP}%
12490 /BP pdfmark %
12491 0.6 setgray %
12492 0 0 250 100 rectfill %
12493 0.34 setgray %
12494 2 2 moveto %
12495 2 98 lineto %
12496 248 98 lineto %
12497 246 96 lineto %
12498 4 96 lineto %
12499 4 4 lineto %
12500 fill %
12501 1 setgray %
12502 248 98 moveto %

```

```

12503 248 2 lineto %
12504 2 2 lineto %
12505 4 4 lineto %
12506 246 4 lineto %
12507 246 96 lineto %
12508 fill%
12509 /Helvetica 76 selectfont %
12510 0 setgray %
12511 10 20.5 moveto%
12512 (Submit)show%
12513 [/EP pdfmark%
12514 } ?pdfmark%
12515 [%
12516 {aform}%
12517 <<%
12518 /Fields{afields}%
12519 /DR<<%
12520 /Font<<%
12521 /ZaDb{ZaDb}%
12522 /Helv{Helv}%
12523 >>%
12524 >>%
12525 /DA(/Helv 10 Tf 0 g)%
12526 /CO{corder}%
12527 \ifHy@pdfa
12528 \else
12529 \ifHyField@NeedAppearances
12530 /NeedAppearances true%
12531 \fi
12532 \fi
12533 >>%
12534 /PUT pdfmark%
12535 [%
12536 {Catalog}%
12537 <<%
12538 /AcroForm{aform}%
12539 >>%
12540 /PUT pdfmark%
12541 }}%
12542 \kvsetkeys{Form}{#1}%
12543 }
12544 \let\@endForm\@empty
12545 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12546 \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
12547 }

12548 \newcount\HyField@AnnotCount
12549 \HyField@AnnotCount=\z@
12550 \def\HyField@AdvanceAnnotCount{%
12551 \global\advance\HyField@AnnotCount\@ne
12552 }
12553 \def\HyField@TheAnnotCount{%
12554 \the\HyField@AnnotCount
12555 }

```

```

12556 \edef\Fld@pageobjref{/P\string{ThisPage\string}}
12557 \def\HyField@AddToFields#1{%
12558   \pdfmark{%
12559     pdfmark=/APPEND,%
12560     Raw={%
12561       \string{afields\string}%
12562       \string{#1\HyField@TheAnnotCount\string}%
12563     }%
12564   }%
12565   \ifx\Fld@calculate@code\@empty
12566   \else
12567     \pdfmark{%
12568       pdfmark=/APPEND,%
12569       Raw={%
12570         \string{corder\string}%
12571         \string{#1\HyField@TheAnnotCount\string}%
12572       }%
12573     }%
12574   \fi
12575 }

12576 \def\@TextField[#1]#2{% parameters, label
12577   \def\Fld@name{#2}%
12578   \let\Fld@default\@empty
12579   \let\Fld@value\@empty
12580   \def\Fld@width{\DefaultWidthofText}%
12581   \def\Fld@height{%
12582     \ifFld@multiline
12583       \DefaultHeightofTextMultiline
12584     \else
12585       \DefaultHeightofText
12586     \fi
12587   }%
12588   \begingroup
12589     \expandafter\HyField@SetKeys\expandafter{%
12590       \DefaultOptionsofText,#1%
12591     }%
12592     \HyField@FlagsText
12593     \ifFld@hidden\def\Fld@width{1sp}\fi
12594     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12595     \HyField@AdvanceAnnotCount
12596     \LayoutTextField{#2}{%
12597       \leavevmode
12598       \Hy@escapeform\PDFForm@Text
12599       \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
12600         pdfmark=/ANN,%
12601         objdef=text\HyField@TheAnnotCount,%
12602         Raw={\PDFForm@Text}%
12603       }%
12604     }%
12605     \HyField@AddToFields{text}%
12606   \endgroup
12607 }
12608 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices

```

```

12609 \def\Fld@name{#2}%
12610 \let\Fld@default\relax
12611 \let\Fld@value\relax
12612 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12613 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12614 \begingroup
12615   \Fld@menulength=0 %
12616   \@tempdima\z@
12617   \@for\@curropt:=#3\do{%
12618     \expandafter\Fld@checkequals\@curropt==\\%
12619     \Hy@StepCount\Fld@menulength
12620     \settowidth{\@tempdimb}{\@currDisplay}%
12621     \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12622   }%
12623   \advance\@tempdima by 15\p@
12624   \begingroup
12625     \HyField@SetKeys{#1}%
12626   \edef\x{\endgroup
12627     \noexpand\expandafter
12628     \noexpand\HyField@SetKeys
12629     \noexpand\expandafter{%
12630       \expandafter\noexpand\csname DefaultOptionsof%
12631         \ifFld@radio
12632           Radio%
12633         \else
12634           \ifFld@combo
12635             \ifFld@popdown
12636               PopdownBox%
12637             \else
12638               ComboBox%
12639             \fi
12640           \else
12641             ListBox%
12642           \fi
12643         \fi
12644       \endcsname
12645     }%
12646   }\x
12647   \HyField@SetKeys{#1}%
12648   \ifFld@hidden\def\Fld@width{1sp}\fi
12649   \ifx\Fld@value\relax
12650     \let\Fld@value\Fld@default
12651   \fi
12652   \LayoutChoiceField{#2}{%
12653     \ifFld@radio
12654       \HyField@FlagsRadioButton
12655       \@@Radio{#3}%
12656     \else
12657       \begingroup
12658         \HyField@FlagsChoice
12659         \ifdim\Fld@width<\@tempdima
12660           \ifdim\@tempdima<1cm\@tempdima1cm\fi
12661         \edef\Fld@width{\the\@tempdima}%
12662       \fi

```

```

12663     \ifFld@combo
12664     \else
12665         \@tempdima=\the\Fld@menulength\Fld@charsize
12666         \advance\@tempdima by \Fld@borderwidth bp %
12667         \advance\@tempdima by \Fld@borderwidth bp %
12668         \edef\Fld@height{\the\@tempdima}%
12669     \fi
12670     \@@ListBox{#3}%
12671 \endgroup
12672 \fi
12673 }%
12674 \endgroup
12675 }
12676 \def\@@Radio#1{%
12677     \Fld@listcount=0 %
12678     \EdefEscapeName\Fld@default{\Fld@default}%
12679     \@for\@curropt:=#1\do{%
12680         \expandafter\Fld@checkequals\@curropt==\%
12681         \EdefEscapeName\@currValue{\@currValue}%
12682         \Hy@StepCount\Fld@listcount
12683         \@currDisplay\space
12684         \Hy@escapeform\PDFForm@Radio
12685         \ifnum\Fld@listcount=1 %
12686             \HyField@AdvanceAnnotCount
12687         \fi
12688         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12689             pdfmark=/ANN,%
12690             objdef=\ifnum\Fld@listcount=1 radio\HyField@TheAnnotCount\fi,%
12691             Raw={%
12692                 \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12693             }%
12694         } % deliberate space between radio buttons
12695         \ifnum\Fld@listcount=1 %
12696             \HyField@AddToFields{radio}%
12697         \fi
12698     }%
12699 }
12700 \newcount\Fld@listcount
12701 \def\@@ListBox#1{%
12702     \HyField@PDFChoices{#1}%
12703     \Hy@escapeform\PDFForm@List
12704     \HyField@AdvanceAnnotCount
12705     \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
12706         pdfmark=/ANN,%
12707         objdef=list\HyField@TheAnnotCount,%
12708         Raw={\PDFForm@List}%
12709     }%
12710     \HyField@AddToFields{list}%
12711 }
12712 \def\@PushButton[#1]#2{% parameters, label
12713     \def\Fld@name{#2}%
12714     \begingroup
12715         \expandafter\HyField@SetKeys\expandafter{%
12716             \DefaultOptionsofPushButton,#1%

```

```

12717 }%
12718 \ifHy@pdfa
12719   \Hy@Error{%
12720     PDF/A: Push button with JavaScript is prohibited%
12721   }\@ehc
12722   \LayoutPushButtonField{%
12723     \leavevmode
12724     \MakeButtonField{#2}%
12725   }%
12726 \else
12727   \HyField@FlagsPushButton
12728   \ifFld@hidden\def\Fld@width{1sp}\fi
12729   \HyField@AdvanceAnnotCount
12730   \LayoutPushButtonField{%
12731     \leavevmode
12732     \Hy@escapeform\PDFForm@Push
12733     \pdfmark[\MakeButtonField{#2}]{%
12734       pdfmark=/ANN,%
12735       objdef=push\HyField@TheAnnotCount,%
12736       Raw={\PDFForm@Push}%
12737     }%
12738   }%
12739   \HyField@AddToFields{push}%
12740 \fi
12741 \endgroup
12742 }
12743 \def\@Submit[#1]#2{%
12744   \def\Fld@width{\DefaultWidthofSubmit}%
12745   \def\Fld@height{\DefaultHeightofSubmit}%
12746   \begingroup
12747     \expandafter\HyField@SetKeys\expandafter{%
12748       \DefaultOptionsofSubmit,#1%
12749     }%
12750     \HyField@FlagsPushButton
12751     \HyField@FlagsSubmit
12752     \ifFld@hidden\def\Fld@width{1sp}\fi
12753     \Hy@escapeform\PDFForm@Submit
12754     \HyField@AdvanceAnnotCount
12755     \pdfmark[\MakeButtonField{#2}]{%
12756       pdfmark=/ANN,%
12757       objdef=submit\HyField@TheAnnotCount,%
12758       Raw={\PDFForm@Submit /AP<</N{Submit}/D{SubmitP}>>}%
12759     }%
12760     \HyField@AddToFields{submit}%
12761   \endgroup
12762 }
12763 \def\@Reset[#1]#2{%
12764   \def\Fld@width{\DefaultWidthofReset}%
12765   \def\Fld@height{\DefaultHeightofReset}%
12766   \begingroup
12767     \expandafter\HyField@SetKeys\expandafter{%
12768       \DefaultOptionsofReset,#1%
12769     }%
12770   \leavevmode

```

```

12771 \ifHy@pdfa
12772 \Hy@Error{%
12773     PDF/A: Reset action is prohibited%
12774 } \@ehc
12775 \MakeButtonField{#2}%
12776 \else
12777 \HyField@FlagsPushButton
12778 \ifFld@hidden\def\Fld@width{1sp}\fi
12779 \Hy@escapeform\PDFForm@Reset
12780 \HyField@AdvanceAnnotCount
12781 \pdfmark[\MakeButtonField{#2}]{%
12782     pdfmark=/ANN,%
12783     objdef=reset\HyField@TheAnnotCount,%
12784     Raw={\PDFForm@Reset}%
12785 }%
12786 \HyField@AddToFields{reset}%
12787 \fi
12788 \endgroup
12789 }%
12790 \def\@CheckBox[#1]#2{% parameters, label
12791 \def\Fld@name{#2}%
12792 \def\Fld@default{0}%
12793 \begingroup
12794 \def\Fld@width{\DefaultWidthofCheckBox}%
12795 \def\Fld@height{\DefaultHeightofCheckBox}%
12796 \expandafter\HyField@SetKeys\expandafter{%
12797     \DefaultOptionsofCheckBox,#1%
12798 }%
12799 \HyField@FlagsCheckBox
12800 \ifFld@hidden\def\Fld@width{1sp}\fi
12801 \HyField@AdvanceAnnotCount
12802 \LayoutCheckField{#2}{%
12803     \leavevmode
12804     \Hy@escapeform\PDFForm@Check
12805     \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
12806         pdfmark=/ANN,%
12807         objdef=check\HyField@TheAnnotCount,%
12808         Raw={\PDFForm@Check}%
12809     }%
12810 }%
12811 \HyField@AddToFields{check}%
12812 \endgroup
12813 }
12814 \pdfmark

```

45.2 HyperTeX

```

12815 \hypertex
12816 \def\@Form[#1]{%
12817 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12818 }
12819 \let\@endForm\@empty
12820 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12821 \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%

```



```

12822 }
12823 \def\@TextField[#1]#2{% parameters, label
12824 \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12825 }
12826 \def\@CheckBox[#1]#2{% parameters, label
12827 \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12828 }
12829 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12830 \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12831 }
12832 \def\@PushButton[#1]#2{% parameters, label
12833 \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12834 }
12835 \def\@Reset[#1]#2{%
12836 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12837 }
12838 \def\@Submit[#1]#2{%
12839 \Hy@Message{Sorry, HyperTeX does not support FORMs}%
12840 }
12841 \</hypertex>

```

45.3 TeX4ht

```

12842 (*tex4ht)
12843 \def\@Form[#1]{%
12844 \kvsetkeys{Form}{#1}%
12845 \HCode{<form action="\Form@action" method="\Form@method">}%
12846 }
12847 \def\@endForm{\HCode{</form>}}
12848 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12849 \Hy@Message{Sorry, TeX4ht does not support gauges}%
12850 }
12851 \def\@TextField[#1]#2{% parameters, label
12852 \let\Hy@reserved@a\@empty
12853 \def\Fld@name{#2}%
12854 \let\Fld@default\@empty
12855 \bgroup
12856 \Field@toks={ }%
12857 \kvsetkeys{Field}{#1}%
12858 \HCode{<label for="\Fld@name">#2</label>}%
12859 \ifFld@password
12860 \@@PasswordField
12861 \else
12862 \@@TextField
12863 \fi
12864 \egroup
12865 }
12866 \def\@@PasswordField{%
12867 \HCode{%
12868 <input type="password" %
12869 id="\Fld@name" %
12870 name="\Fld@name" %
12871 \ifFld@hidden type="hidden" \fi
12872 value="\Fld@default" %
12873 \the\Field@toks

```

```

12874     >%
12875   }%
12876 }
12877 \def\@@TextField{%
12878   \ifFld@multiline
12879     \HCode{<textarea %
12880       \ifFld@readonly readonly \fi
12881       id="\Fld@name" %
12882       name="\Fld@name" %
12883       \ifFld@hidden type="hidden" \fi
12884       \the\Field@toks>%
12885   }%
12886   \Fld@default
12887   \HCode{</textarea>}%
12888 \else
12889   \HCode{<input type="text" %
12890     \ifFld@readonly readonly \fi
12891     id="\Fld@name" %
12892     name="\Fld@name" %
12893     \ifFld@hidden type="hidden" \fi
12894     value="\Fld@default" %
12895     \the\Field@toks>%
12896   }%
12897 \fi
12898 }
12899 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12900   \def\Fld@name{#2}%
12901   \let\Fld@default\@empty
12902   \let\Hy@reserved@a\relax
12903   \begingroup
12904     \expandafter\Fld@findlength#3\\%
12905     \Field@toks={ }%
12906     \kvsetkeys{Field}{#1}%
12907     #2%
12908     \ifFld@radio
12909       \expandafter\@@Radio#3\\%
12910     \else
12911       \expandafter\@@Menu#3\\%
12912     \fi
12913   \endgroup
12914 }
12915 \def\Fld@findlength#1\\{%
12916   \Fld@menulength=0 %
12917   \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
12918 }
12919 \def\@@Menu#1\\{%
12920   \HCode{<select size="\the\Fld@menulength" %
12921     name="\Fld@name" %
12922     \the\Field@toks>%
12923   }%
12924   \@for\@curropt:=#1\do{%
12925     \expandafter\Fld@checkequals\@curropt==\\%
12926     \HCode{<option %
12927       \ifx\@curropt\Fld@default selected \fi

```

```

12928     value="\@currValue">\@currDisplay</option>%
12929 }%
12930 }%
12931 \HCode{</select>}%
12932 }
12933 \def\@@Radio#1\{;%
12934 \@for\@curropt:=#1\do{%
12935 \expandafter\Fld@checkequals\@curropt==\;%
12936 \HCode{<input type="radio" %
12937 \ifx\@curropt\Fld@default checked \fi
12938 name="\Fld@name" %
12939 value="\@currValue" %
12940 \the\Fld@toks>%
12941 }%
12942 \@currDisplay
12943 }%
12944 }
12945 \def\@PushButton[#1]#2{% parameters, label
12946 \def\Fld@name{#2}%
12947 \bgroup
12948 \Field@toks={ }%
12949 \kvsetkeys{Field}{#1}%
12950 \HCode{<input type="button" %
12951 name="\Fld@name" %
12952 value="#2" %
12953 \the\Fld@toks>%
12954 }%
12955 \HCode{</button>}%
12956 \egroup
12957 }
12958 \def\@Submit[#1]#2{%
12959 \HCode{<button type="submit">#2</button>}%
12960 }
12961 \def\@Reset[#1]#2{%
12962 \HCode{<button type="reset">#2</button>}%
12963 }
12964 \def\@CheckBox[#1]#2{% parameters, label
12965 \let\Hy@reserved@a\@empty
12966 \def\Fld@name{#2}%
12967 \def\Fld@default{0}%
12968 \bgroup
12969 \Field@toks={ }%
12970 \kvsetkeys{Field}{#1}%
12971 \HCode{<input type="checkbox" %
12972 \ifFld@checked checked \fi
12973 \ifFld@disabled disabled \fi
12974 \ifFld@readonly readonly \fi
12975 name="\Fld@name" %
12976 \ifFld@hidden type="hidden" \fi
12977 value="\Fld@default" %
12978 \the\Fld@toks>%
12979 #2%
12980 }%
12981 \egroup

```

```

12982 }
12983 </tex4ht>

```

45.4 pdfTeX

```

12984 (*pdfTeX)
12985 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12986   \Hy@Message{Sorry, pdfTeX does not support FORM gauges}%
12987 }
12988 \def\MakeFieldObject#1#2{\sbox0{#1}%
12989   \immediate\pdfxform0 %
12990   \expandafter\edef\csname #2Object\endcsname{%
12991     \the\pdfastxform\space 0 R%
12992   }%
12993 % \hbox to 0pt{\hskip-\maxdimen{\pdfrefxform \the\pdfastxform}}%
12994 }%
12995 \let\HyField@afields\@empty
12996 \let\HyField@cofields\@empty
12997 \@ifundefined{pdfastlink}
12998 {%
12999   \let\HyField@AddToFields\relax
13000   \PackageInfo{hyperref}{%
13001     You need pdfTeX 1.40.0 for setting the /Fields entry.%
13002     \MessageBreak
13003     Adobe Reader/Acrobat accepts an empty /Field array,%
13004     \MessageBreak
13005     but other PDF viewers might complain%
13006   }}%
13007 {%
13008   \let\HyField@AuxAddToFields\@gobble
13009   \let\HyField@AuxAddToCoFields\@gobbletwo
13010   \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.

```

13011 \def\HyField@ABD@AuxAddToCoFields#1#2{%
13012   \begingroup
13013   \Hy@safe@activestrue
13014   \let\@secondoftwo\relax
13015   \ifx\HyField@cofields\@empty
13016     \xdef\HyField@cofields{%
13017       \@secondoftwo{#1}{ #2 0 R}%
13018     }%
13019   \else
13020     \let\@secondoftwo\relax
13021     \def\HyField@AddCoField##1##2##3{%
13022       \ifx##1\@empty
13023         \@secondoftwo{#1}{ #2 0 R}%
13024         \expandafter\@gobble
13025       \else
13026         \ifnum\pdfstrcmp{##2}{#1}>\z@
13027           \@secondoftwo{#1}{ #2 0 R}%
13028           \@secondoftwo{##2}{##3}%
13029           \expandafter\expandafter\expandafter\@gobble
13030         \else

```

```

13031         \@secondoftwo{##2}{##3}%
13032     \fi
13033 \fi
13034 \HyField@AddCoField
13035 }%
13036 \xdef\HyField@cofields{%
13037     \expandafter\HyField@AddCoField
13038     \HyField@cofields\@empty\@empty\@empty
13039 }%
13040 \fi
13041 \endgroup
13042 }%
13043 \Hy@AtBeginDocument{%
13044     \if@filesw
13045         \immediate\write\@mainaux{%
13046             \string\providecommand\string\HyField@AuxAddToFields[1]{}%
13047         }%
13048         \immediate\write\@mainaux{%
13049             \string\providecommand\string\HyField@AuxAddToCoFields[2]{}%
13050         }%
13051     \fi
13052     \let\HyField@AfterAuxOpen\@firstofone
13053     \def\HyField@AuxAddToFields#1{%
13054         \xdef\HyField@afields{%
13055             \ifx\HyField@afields\@empty
13056                 \else
13057                     \HyField@afields
13058                 \space
13059             \fi
13060             #1 0 R%
13061         }%
13062     }%
13063     \let\HyField@AuxAddToCoFields\HyField@ABD@AuxAddToCoFields
13064 }%
13065 \def\HyField@AddToFields{%
13066     \expandafter\HyField@@AddToFields\expandafter{%
13067         \the\pdfastlink
13068     }%
13069     \ifx\Fld@calculate@code\@empty
13070     \else
13071         \begingroup
13072         \Hy@safe@activetrue
13073         \edef\Hy@temp{%
13074             \endgroup
13075             \if@filesw
13076                 \write\@mainaux{%
13077                     \string\HyField@AuxAddToCoFields{%
13078                         \Fld@calculate@sortkey
13079                     }{%
13080                         \the\pdfastlink
13081                     }%
13082                 }%
13083             \fi
13084         }%

```

```

13085 \Hy@temp
13086 \fi
13087 }%
13088 \def\HyField@@AddToFields#1{%
13089 \HyField@AfterAuxOpen{%
13090 \if@filesw
13091 \write\@mainaux{%
13092 \string\HyField@AuxAddToFields{#1}%
13093 }%
13094 \fi
13095 }%
13096 }%
13097 }
13098 \def\@Form[#1]{%
13099 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13100 \kvsetkeys{Form}{#1}%
13101 \pdf@ifdraftmode{}{%
13102 \Hy@FormObjects
13103 \ifnum\pdfTeXversion>13 %
13104 \pdfrefobj\OBJ@pdfdocencoding
13105 \pdfrefobj\OBJ@ZaDb
13106 \pdfrefobj\OBJ@Helv
13107 \fi
13108 \AddToHook{enddocument/afteraux}{%
13109 \immediate\pdfobj{%
13110 <<%
13111 /Fields[\HyField@afields]%
13112 \ifx\HyField@cofields\@empty
13113 \else
13114 /CO[\romannumeral-`\Q\HyField@cofields]%
13115 \fi
13116 /DR<<%
13117 /Font<<%
13118 /ZaDb \OBJ@ZaDb\space 0 R%
13119 /Helv \OBJ@Helv\space 0 R%
13120 >>%
13121 >>%
13122 /DA(/Helv 10 Tf 0 g)%
13123 \ifHy@pdfa
13124 \else
13125 \ifHyField@NeedAppearances
13126 /NeedAppearances true%
13127 \fi
13128 \fi
13129 >>%
13130 }%
13131 \edef\OBJ@acroform{\the\pdflastobj}%
13132 \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
13133 }%
13134 }%
13135 \MakeFieldObject{%
Same as \ding{123} of package pifont.
13136 \begingroup
13137 \fontfamily{pzd}%

```

```

13138 \fontencoding{U}%
13139 \fontseries{m}%
13140 \fontshape{n}%
13141 \selectfont
13142 \char123 %
13143 \endgroup
13144 }{Ding}%
13145 \MakeFieldObject{%
13146 \fbox{\textcolor{yellow}{\textsf{Submit}}}%
13147 }{Submit}%
13148 \MakeFieldObject{%
13149 \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
13150 }{SubmitP}%
13151 }
13152 \let\@endForm\@empty
13153 \let\HyAnn@AbsPageLabel\@empty
13154 \let\Fld@pageobjref\@empty
13155 \@ifundefined{pdfpageref}{%
13156 }{%
13157 \@ifpackageloaded{zref-abspage}{%
13158 \newcount\HyAnn@Count
13159 \HyAnn@Count=\z@
13160 \def\HyAnn@AbsPageLabel{%
13161 \global\advance\HyAnn@Count by\@ne
13162 \zref@labelbyprops{HyAnn@\the\HyAnn@Count}{abspage}%
13163 \zref@refused{HyAnn@\the\HyAnn@Count}%
13164 }%
13165 \def\Fld@pageobjref{%
13166 \zref@ifrefundefined{HyAnn@\the\HyAnn@Count}{%
13167 }{%
13168 \zref@ifrefcontainsprop{HyAnn@\the\HyAnn@Count}{abspage}{%
13169 /P \pdfpageref
13170 \zref@extractdefault{HyAnn@\the\HyAnn@Count}{abspage}{1} %
13171 \space 0 R%
13172 }{%
13173 }%
13174 }%
13175 }%
13176 }{%
13177 }%
13178 }
13179 \def\@TextField[#1]#2{% parameters, label
13180 \def\Fld@name{#2}%
13181 \let\Fld@default\@empty
13182 \let\Fld@value\@empty
13183 \def\Fld@width{\DefaultWidthofText}%
13184 \def\Fld@height{%
13185 \iffld@multiline
13186 \DefaultHeightofTextMultiline
13187 \else
13188 \DefaultHeightofText
13189 \fi
13190 }%
13191 \begingroup

```

```

13192 \expandafter\HyField@SetKeys\expandafter{%
13193 \DefaultOptionsofText,#1%
13194 }%
13195 \PDFForm@Name
13196 \HyField@FlagsText
13197 \ifFld@hidden\def\Fld@width{1sp}\fi
13198 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13199 \LayoutTextField{#2}{%
13200 \leavevmode
13201 \HyAnn@AbsPageLabel
13202 \Hy@escapeform\PDFForm@Text
13203 \pdfstartlink user {\PDFForm@Text}\relax
13204 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
13205 \HyField@AddToFields
13206 }%
13207 \endgroup
13208 }
13209 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13210 \def\Fld@name{#2}%
13211 \let\Fld@default\relax
13212 \let\Fld@value\relax
13213 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13214 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13215 \begingroup
13216 \Fld@menulength=0 %
13217 \@tempdima\z@
13218 \@for\@curropt:=#3\do{%
13219 \expandafter\Fld@checkequals\@curropt==\%
13220 \Hy@StepCount\Fld@menulength
13221 \settowidth{\@tempdimb}{\@currDisplay}%
13222 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13223 }%
13224 \advance\@tempdima by 15\p@
13225 \begingroup
13226 \HyField@SetKeys{#1}%
13227 \edef\x{\endgroup
13228 \noexpand\expandafter
13229 \noexpand\HyField@SetKeys
13230 \noexpand\expandafter{%
13231 \expandafter\noexpand\cname DefaultOptionsof%
13232 \ifFld@radio
13233 Radio%
13234 \else
13235 \ifFld@combo
13236 \ifFld@popdown
13237 PopdownBox%
13238 \else
13239 ComboBox%
13240 \fi
13241 \else
13242 ListBox%
13243 \fi
13244 \fi
13245 \endcname

```



```

13246 }%
13247 }\x
13248 \HyField@SetKeys{#1}%
13249 \PDFForm@Name
13250 \ifFld@hidden\def\Fld@width{1sp}\fi
13251 \ifx\Fld@value\relax
13252 \let\Fld@value\Fld@default
13253 \fi
13254 \LayoutChoiceField{#2}{%
13255 \ifFld@radio
13256 \HyField@FlagsRadioButton
13257 \@@Radio{#3}%
13258 \else
13259 \begingroup
13260 \HyField@FlagsChoice
13261 \ifdim\Fld@width<\@tempdima
13262 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13263 \edef\Fld@width{\the\@tempdima}%
13264 \fi
13265 \ifFld@combo
13266 \else
13267 \@tempdima=\the\Fld@menulength\Fld@charsize
13268 \advance\@tempdima by \Fld@borderwidth bp %
13269 \advance\@tempdima by \Fld@borderwidth bp %
13270 \edef\Fld@height{\the\@tempdima}%
13271 \fi
13272 \@@ListBox{#3}%
13273 \endgroup
13274 \fi
13275 }%
13276 \endgroup
13277 }
13278 \def\@@Radio#1{%
13279 \Fld@listcount=0 %
13280 \EdefEscapeName\Fld@default{\Fld@default}%
13281 \@for\@curropt:=#1\do{%
13282 \expandafter\Fld@checkequals\@curropt==\%
13283 \EdefEscapeName\@currValue{\@currValue}%
13284 \Hy@StepCount\Fld@listcount
13285 \@currDisplay\space
13286 \leavevmode
13287 \HyAnn@AbsPageLabel
13288 \Hy@escapeform\PDFForm@Radio
13289 \pdfstartlink user {%
13290 \PDFForm@Radio
13291 /AP<<%
13292 /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.

```

13293 \/\@currValue\space \DingObject
13294 >>%
13295 >>%

```

```

13296 }%
13297 \relax
13298 \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
13299 \ifnum\Fld@listcount=1 %
13300   \HyField@AddToFields
13301 \fi
13302 \space % deliberate space between radio buttons
13303 }%
13304 }
13305 \newcount\Fld@listcount
13306 \def\@@ListBox#1{%
13307   \HyField@PDFChoices{#1}%
13308   \leavevmode
13309   \HyAnn@AbsPageLabel
13310   \Hy@escapeform\PDFForm@List
13311   \pdfstartlink user {\PDFForm@List}\relax
13312   \MakeChoiceField{\Fld@width}{\Fld@height}%
13313   \pdfendlink
13314   \HyField@AddToFields
13315 }
13316 \def\@PushButton[#1]#2{% parameters, label
13317   \def\Fld@name{#2}%
13318   \begingroup
13319     \expandafter\HyField@SetKeys\expandafter{%
13320       \DefaultOptionsofPushButton,#1%
13321     }%
13322     \PDFForm@Name
13323     \ifHy@pdfa
13324       \Hy@Error{%
13325         PDF/A: Push button with JavaScript is prohibited%
13326       }\@ehc
13327       \LayoutPushButtonField{%
13328         \leavevmode
13329         \MakeButtonField{#2}%
13330       }%
13331     \else
13332       \HyField@FlagsPushButton
13333       \ifFld@hidden\def\Fld@width{1sp}\fi
13334       \LayoutPushButtonField{%
13335         \leavevmode
13336         \HyAnn@AbsPageLabel
13337         \Hy@escapeform\PDFForm@Push
13338         \pdfstartlink user {\PDFForm@Push}\relax
13339         \MakeButtonField{#2}%
13340         \pdfendlink
13341         \HyField@AddToFields
13342       }%
13343     \fi
13344   \endgroup
13345 }
13346 \def\@Submit[#1]#2{%
13347   \def\Fld@width{\DefaultWidthofSubmit}%
13348   \def\Fld@height{\DefaultHeightofSubmit}%
13349   \begingroup

```

```

13350 \expandafter\HyField@SetKeys\expandafter{%
13351 \DefaultOptionsofSubmit,#1%
13352 }%
13353 \HyField@FlagsPushButton
13354 \HyField@FlagsSubmit
13355 \ifFld@hidden\def\Fld@width{1sp}\fi
13356 \leavevmode
13357 \HyAnn@AbsPageLabel
13358 \Hy@escapeform\PDFForm@Submit
13359 \pdfstartlink user {%
13360 \PDFForm@Submit
13361 /AP<</N \SubmitObject/D \SubmitPObject>>%
13362 }%
13363 \relax
13364 \MakeButtonField{#2}%
13365 \pdfendlink
13366 \HyField@AddToFields
13367 \endgroup
13368 }
13369 \def\@Reset[#1]#2{%
13370 \def\Fld@width{\DefaultWidthofReset}%
13371 \def\Fld@height{\DefaultHeightofReset}%
13372 \begingroup
13373 \expandafter\HyField@SetKeys\expandafter{%
13374 \DefaultOptionsofReset,#1%
13375 }%
13376 \leavevmode
13377 \ifHy@pdfa
13378 \Hy@Error{%
13379 PDF/A: Reset action is prohibited%
13380 }\@ehc
13381 \MakeButtonField{#2}%
13382 \else
13383 \HyField@FlagsPushButton
13384 \ifFld@hidden\def\Fld@width{1sp}\fi
13385 \HyAnn@AbsPageLabel
13386 \Hy@escapeform\PDFForm@Reset
13387 \pdfstartlink user {\PDFForm@Reset}\relax
13388 \MakeButtonField{#2}%
13389 \pdfendlink
13390 \HyField@AddToFields
13391 \fi
13392 \endgroup
13393 }
13394 \def\@CheckBox[#1]#2{% parameters, label
13395 \def\Fld@name{#2}%
13396 \def\Fld@default{0}%
13397 \begingroup
13398 \def\Fld@width{\DefaultWidthofCheckBox}%
13399 \def\Fld@height{\DefaultHeightofCheckBox}%
13400 \expandafter\HyField@SetKeys\expandafter{%
13401 \DefaultOptionsofCheckBox,#1%
13402 }%
13403 \PDFForm@Name

```

```

13404 \HyField@FlagsCheckBox
13405 \ifFld@hidden\def\Fld@width{1sp}\fi
13406 \LayoutCheckField{#2}{%
13407 \leavevmode
13408 \HyAnn@AbsPageLabel
13409 \Hy@escapeform\PDFForm@Check
13410 \pdfstartlink user {\PDFForm@Check}\relax
13411 \MakeCheckField{\Fld@width}{\Fld@height}%
13412 \pdfendlink
13413 \HyField@AddToFields
13414 }%
13415 \endgroup
13416 }
13417 \def\Hy@FormObjects{%
13418 \pdfobj {%
13419 <<%
13420 /Type/Encoding%
13421 /Differences[%
13422 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
13423 /ring/tilde %
13424 39/quotesingle %
13425 96/grave %
13426 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13427 /fraction/guilsinglleft/guilsingright/minus/perthousand%
13428 /quotedblbase/quotedblleft/quotedblright/quoteleft%
13429 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
13430 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13431 160/Euro %
13432 164/currency %
13433 166/brokenbar %
13434 168/dieresis/copyright/ordfeminine %
13435 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13436 /twosuperior/threesuperior/acute/mu %
13437 183/periodcentered/cedilla/onesuperior/ordmasculine %
13438 188/onequarter/onehalf/threequarters %
13439 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13440 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
13441 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
13442 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
13443 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
13444 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
13445 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
13446 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
13447 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
13448 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
13449 ]%
13450 >>%
13451 }%
13452 \xdef\OBJ@pdfdocencoding{\the\pdflastobj}%
13453 \pdfobj{%
13454 <<%
13455 /Type/Font%
13456 /Subtype/Type1%
13457 /Name/ZaDb%

```

```

13458 /BaseFont/ZapfDingbats%
13459 >>%
13460 }%
13461 \xdef\OBJ@ZaDb{\the\pdflastobj}%
13462 \pdfobj{%
13463 <<%
13464 /Type/Font%
13465 /Subtype/Type1%
13466 /Name/Helv%
13467 /BaseFont/Helvetica%
13468 /Encoding \OBJ@pdfdocencoding\space 0 R%
13469 >>%
13470 }%
13471 \xdef\OBJ@Helv{\the\pdflastobj}%
13472 \global\let\Hy@FormObjects\relax
13473 }
13474 \pdfTeX

```

45.5 dvipdfm, xetex

D. P. Story adapted the pdfTeX forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```

13475 \*dvipdfm | xetex

```

\@Gauge

```

13476 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13477 \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
13478 }

```

\@Form

```

13479 \def\@Form[#1]{%
13480 \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13481 \kvsetkeys{Form}{#1}%
13482 \Hy@FormObjects
13483 \@pdfm@mark{obj @afields []}%
13484 \@pdfm@mark{obj @corder []}%
13485 \@pdfm@mark{%
13486 obj @aform <<%
13487 /Fields @afields%
13488 /DR<<%
13489 /Font<<%
13490 /ZaDb @OBJZaDb%
13491 /Helv @OBJHelv%
13492 >>%
13493 >>%
13494 /DA(/Helv 10 Tf 0 g)%
13495 /CO @corder%
13496 \ifHy@pdfa
13497 \else
13498 \ifHyField@NeedAppearances
13499 /NeedAppearances true%
13500 \fi
13501 \fi
13502 >>%

```

```

13503 }%
13504 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
13505 }

\@endForm
13506 \let\@endForm\@empty

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.
13507 \def\dvipdfm@setdim{%
13508   height \the\ht\pdfm@box\space
13509   width \the\wd\pdfm@box\space
13510   depth \the\dp\pdfm@box\space
13511 }

\HyField@AnnotCount
13512 \newcount\HyField@AnnotCount
13513 \HyField@AnnotCount=\z@

\HyField@AdvanceAnnotCount
13514 \def\HyField@AdvanceAnnotCount{%
13515   \global\advance\HyField@AnnotCount\@ne
13516 }

\HyField@TheAnnotCount
13517 \def\HyField@TheAnnotCount{%
13518   \the\HyField@AnnotCount
13519 }

\Fld@pageobjref
13520 \def\Fld@pageobjref{/P @thispage}%

\HyField@AddToFields
13521 \def\HyField@AddToFields#1{%
13522   \@pdfm@mark{put @afields @#1\HyField@TheAnnotCount}%
13523   \ifx\Fld@calculate@code\@empty
13524   \else
13525     \@pdfm@mark{put @corder @#1\HyField@TheAnnotCount}%
13526   \fi
13527 }

\@TextField
13528 \def\@TextField[#1]#2{% parameters, label
13529   \def\Fld@name{#2}%
13530   \let\Fld@default\@empty
13531   \let\Fld@value\@empty
13532   \def\Fld@width{\DefaultWidthofText}%
13533   \def\Fld@height{%
13534     \ifFld@multiline
13535       \DefaultHeightofTextMultiline
13536     \else
13537       \DefaultHeightofText
13538     \fi
13539   }%

```

```

13540 \beginpgroup
13541 \expandafter\HyField@SetKeys\expandafter{%
13542 \DefaultOptionsofText,#1%
13543 }%
13544 \PDFForm@Name
13545 \HyField@FlagsText
13546 \ifFld@hidden\def\Fld@width{1sp}\fi
13547 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13548 \setbox\pdfm@box=\hbox{%
13549 \MakeTextField{\Fld@width}{\Fld@height}%
13550 }%
13551 \HyField@AdvanceAnnotCount
13552 \LayoutTextField{#2}%
13553 \leavevmode
13554 \Hy@escapeform\PDFForm@Text
13555 \@pdfm@mark{%
13556 ann @text\HyField@TheAnnotCount\space
13557 \dvipdfm@setdim << \PDFForm@Text >>%
13558 }%
13559 }%
13560 \unhbox\pdfm@box
13561 \HyField@AddToFields{text}%
13562 % record in @afields array
13563 \endpgroup
13564 }

```

\@ChoiceMenu

```

13565 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13566 \def\Fld@name{#2}%
13567 \let\Fld@default\relax
13568 \let\Fld@value\relax
13569 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13570 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13571 \beginpgroup
13572 \Fld@menulength=0 %
13573 \@tempdima\z@
13574 \@for\@curropt:=#3\do{%
13575 \expandafter\Fld@checkequals\@curropt==\%
13576 \Hy@StepCount\Fld@menulength
13577 \settowidth{\@tempdimb}{\@currDisplay}%
13578 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13579 }%
13580 \advance\@tempdima by 15\p@
13581 \beginpgroup
13582 \HyField@SetKeys{#1}%
13583 \edef\x{\endpgroup
13584 \noexpand\expandafter
13585 \noexpand\HyField@SetKeys
13586 \noexpand\expandafter{%
13587 \expandafter\noexpand\curname DefaultOptionsof%
13588 \ifFld@radio
13589 Radio%
13590 \else
13591 \ifFld@combo

```

```

13592         \ifFld@popdown
13593         PopdownBox%
13594     \else
13595         ComboBox%
13596     \fi
13597 \else
13598     ListBox%
13599 \fi
13600 \fi
13601 \endcsname
13602 }%
13603 }\x
13604 \HyField@SetKeys{#1}%
13605 \PDFForm@Name
13606 \ifFld@hidden\def\Fld@width{1sp}\fi
13607 \ifx\Fld@value\relax
13608     \let\Fld@value\Fld@default
13609 \fi
13610 \LayoutChoiceField{#2}{%
13611     \ifFld@radio
13612         \HyField@FlagsRadioButton
13613         \@@Radio{#3}%
13614     \else
13615         \begingroup
13616         \HyField@FlagsChoice
13617         \ifdim\Fld@width<\@tempdima
13618             \ifdim\@tempdima<1cm\@tempdima1cm\fi
13619             \edef\Fld@width{\the\@tempdima}%
13620         \fi
13621         \ifFld@combo
13622         \else
13623             \@tempdima=\the\Fld@menulength\Fld@charsize
13624             \advance\@tempdima by \Fld@borderwidth bp %
13625             \advance\@tempdima by \Fld@borderwidth bp %
13626             \edef\Fld@height{\the\@tempdima}%
13627         \fi
13628         \@@ListBox{#3}%
13629     \endgroup
13630 \fi
13631 }%
13632 \endgroup
13633 }

```

\@@Radio

```

13634 \def\@@Radio#1{%
13635     \Fld@listcount=0 %
13636     \EdefEscapeName\Fld@default{\Fld@default}%
13637     \setbox\pdfm@box=\hbox{%
13638         \MakeRadioField{\Fld@width}{\Fld@height}%
13639     }%
13640     \@for\@curropt:=#1\do{%
13641         \expandafter\Fld@checkequals\@curropt==\%
13642         \EdefEscapeName\@currValue{\@currValue}%
13643         \Hy@StepCount\Fld@listcount

```



```

13644 \currDisplay\space
13645 \leavevmode
13646 \Hy@escapeform\PDFForm@Radio
13647 \ifnum\Fld@listcount=1 %
13648 \HyField@AdvanceAnnotCount
13649 \fi
13650 \@pdfm@mark{%
13651 ann %
13652 \ifnum\Fld@listcount=1 %
13653 @radio\HyField@TheAnnotCount%
13654 \space
13655 \fi
13656 \dvi pdfm@setdim
13657 <<%
13658 \PDFForm@Radio
13659 /AP<</N<</\@currValue /null>>>>%
13660 >>%
13661 }%
13662 \unhcopy\pdfm@box\space% deliberate space between radio buttons
13663 \ifnum\Fld@listcount=1 %
13664 \HyField@AddToFields{radio}%
13665 \fi
13666 }%
13667 }

\Fld@listcount
13668 \newcount\Fld@listcount

\@@ListBox
13669 \def\@@ListBox#1{%
13670 \HyField@PDFChoices{#1}%
13671 \setbox\pdfm@box=\hbox{%
13672 \MakeChoiceField{\Fld@width}{\Fld@height}%
13673 }%
13674 \leavevmode
13675 \Hy@escapeform\PDFForm@List
13676 \HyField@AdvanceAnnotCount
13677 \@pdfm@mark{%
13678 ann @list\HyField@TheAnnotCount\space
13679 \dvi pdfm@setdim
13680 <<\PDFForm@List>>%
13681 }%
13682 \unhbox\pdfm@box
13683 \HyField@AddToFields{list}%
13684 }

\@PushButton
13685 \def\@PushButton[#1]#2{% parameters, label
13686 \def\Fld@name{#2}%
13687 \begingroup
13688 \expandafter\HyField@SetKeys\expandafter{%
13689 \DefaultOptionsofPushButton,#1%
13690 }%
13691 \PDFForm@Name

```

```

13692 \ifHy@pdfa
13693 \Hy@Error{%
13694   PDF/A: Push button with JavaScript is prohibited%
13695 }%\@ehc
13696 \LayoutPushButtonField{%
13697   \leavevmode
13698   \MakeButtonField{#2}%
13699 }%
13700 \else
13701 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13702 \HyField@FlagsPushButton
13703 \ifFld@hidden\def\Fld@width{1sp}\fi
13704 \HyField@AdvanceAnnotCount
13705 \LayoutPushButtonField{%
13706   \leavevmode
13707   \Hy@escapeform\PDFForm@Push
13708   \@pdfm@mark{%
13709     ann @push\HyField@TheAnnotCount\space
13710     \dvi pdfm@setdim
13711     <<\PDFForm@Push>>%
13712   }%
13713 }%
13714 \unhbox\pdfm@box
13715 \HyField@AddToFields{push}%
13716 \fi
13717 \endgroup
13718 }

\@Submit
13719 \def\@Submit[#1]#2{%
13720 \def\Fld@width{\DefaultWidthofSubmit}%
13721 \def\Fld@height{\DefaultHeightofSubmit}%
13722 \begingroup
13723 \expandafter\HyField@SetKeys\expandafter{%
13724   \DefaultOptionsofSubmit,#1%
13725 }%
13726 \HyField@FlagsPushButton
13727 \HyField@FlagsSubmit
13728 \ifFld@hidden\def\Fld@width{1sp}\fi
13729 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13730 \leavevmode
13731 \Hy@escapeform\PDFForm@Submit
13732 \HyField@AdvanceAnnotCount
13733 \@pdfm@mark{%
13734   ann @submit\HyField@TheAnnotCount\space
13735   \dvi pdfm@setdim
13736   <<\PDFForm@Submit>>%
13737 }%
13738 \unhbox\pdfm@box%
13739 \HyField@AddToFields{submit}%
13740 \endgroup
13741 }

\@Reset

```

```

13742 \def\@Reset[#1]#2{%
13743   \def\Fld@width{\DefaultWidthofReset}%
13744   \def\Fld@height{\DefaultHeightofReset}%
13745   \begingroup
13746     \expandafter\HyField@SetKeys\expandafter{%
13747       \DefaultOptionsofReset,#1%
13748     }%
13749     \leavevmode
13750     \ifHy@pdfa
13751       \Hy@Error{%
13752         PDF/A: Reset action is prohibited%
13753       }\@ehc
13754       \MakeButtonField{#2}%
13755     \else
13756       \HyField@FlagsPushButton
13757       \ifFld@hidden\def\Fld@width{1sp}\fi
13758       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13759       \Hy@escapeform\PDFForm@Reset
13760       \HyField@AdvanceAnnotCount
13761       \@pdfm@mark{%
13762         ann @reset\HyField@TheAnnotCount\space
13763         \dvi pdfm@setdim
13764         <<\PDFForm@Reset>>%
13765       }%
13766       \unhbox\pdfm@box
13767       \HyField@AddToFields{reset}%
13768     \fi
13769   \endgroup
13770 }

```

\@CheckBox

```

13771 \def\@CheckBox[#1]#2{% parameters, label
13772   \def\Fld@name{#2}%
13773   \def\Fld@default{0}%
13774   \begingroup
13775     \def\Fld@width{\DefaultWidthofCheckBox}%
13776     \def\Fld@height{\DefaultHeightofCheckBox}%
13777     \expandafter\HyField@SetKeys\expandafter{%
13778       \DefaultOptionsofCheckBox,#1%
13779     }%
13780     \PDFForm@Name
13781     \HyField@FlagsCheckBox
13782     \ifFld@hidden\def\Fld@width{1sp}\fi
13783     \setbox\pdfm@box=\hbox{%
13784       \MakeCheckField{\Fld@width}{\Fld@height}%
13785     }%
13786     \HyField@AdvanceAnnotCount
13787     \LayoutCheckField{#2}%
13788     \leavevmode
13789     \Hy@escapeform\PDFForm@Check
13790     \@pdfm@mark{%
13791       ann @check\HyField@TheAnnotCount\space
13792       \dvi pdfm@setdim
13793       <<\PDFForm@Check>>%

```

```

13794    }%
13795    \unhbox\pdfm@box
13796    \HyField@AddToFields{check}%
13797    }%
13798    \endgroup
13799 }

13800 \def\Hy@FormObjects{%
13801   \@pdfm@mark{obj @OBJpdfdocencoding%
13802     <<%
13803     /Type/Encoding%
13804     /Differences[
13805       24/breve/carón/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13806       39/quotesingle %
13807       96/grave %
13808       128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13809       /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13810       /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
13811       /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
13812       /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13813       160/Euro %
13814       164/currency %
13815       166/brokenbar %
13816       168/dieresis/copyright/ordfeminine %
13817       172/logicalnot/.notdef/registered/macron/degree/plusminus%
13818       /twosuperior/threesuperior/acute/mu %
13819       183/periodcentered/cedilla/onesuperior/ordmasculine %
13820       188/onequarter/onehalf/threequarters %
13821       192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13822       /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
13823       /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
13824       /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
13825       /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
13826       /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
13827       /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
13828       /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%
13829       /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
13830       /thorn/ydieresis%
13831     ]%
13832     >>%
13833   }%
13834   \@pdfm@mark{obj @OBJZaDb%
13835     <<%
13836     /Type/Font%
13837     /Subtype/Type1%
13838     /Name/ZaDb%
13839     /BaseFont/ZapfDingbats%
13840     >>%
13841   }%
13842   \@pdfm@mark{obj @OBJHelv%
13843     <<%
13844     /Type/Font%
13845     /Subtype/Type1%
13846     /Name/Helv%

```

```

13847 /BaseFont/Helvetica%
13848 /Encoding @OBJpdfdocencoding%
13849 >>%
13850 }%
13851 \global\let\Hy@FormObjects\relax
13852 }
13853 </dvipdfm | xetex>

```

45.6 Common forms part

```

13854 (*pdfform)

\Fld@pageobjref
13855 \providecommand*{\Fld@pageobjref}{}

\Hy@escapestring
13856 \@ifundefined{pdf@escapestring}
13857 {%
13858 \let\Hy@escapestring\@firstofone
13859 \def\Hy@escapeform#1{%
13860 \ifHy@pdfescapeform
13861 \def\Hy@escapestring##1{%
13862 \noexpand\Hy@escapestring{\noexpand##1}%
13863 }%
13864 \edef\Hy@temp{#1}%
13865 \expandafter\Hy@@@escapeform\Hy@temp\Hy@escapestring{}\@nil
13866 \def\Hy@escapestring##1{%
13867 \@ifundefined{Hy@esc@\string##1}{%
13868 ##1%
13869 \ThisShouldNotHappen
13870 }{%
13871 \csname Hy@esc@\string##1\endcsname
13872 }%
13873 }%
13874 \else
13875 \let\Hy@escapestring\@firstofone
13876 \fi
13877 }%
13878 \def\Hy@@@escapeform#1\Hy@escapestring#2#3\@nil{%
13879 \ifx\\#3\\%
13880 \else
13881 \expandafter
13882 \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13883 \Hy@ReturnAfterFi{%
13884 \Hy@@@escapeform#3\@nil
13885 }%
13886 \fi
13887 }%
13888 }{%
13889 \def\Hy@escapeform#1{%
13890 \ifHy@pdfescapeform
13891 \let\Hy@escapestring\pdfescapestring
13892 \else
13893 \let\Hy@escapestring\@firstofone

```

```

13894   \fi
13895 }%
13896 \Hy@escapeform{}%
13897 }

```

\PDFForm@Name

```

13898 \def\PDFForm@Name{%
13899   \PDFForm@@Name\Fld@name
13900   \ifx\Fld@altname\relax
13901   \else
13902     \PDFForm@@Name\Fld@altname
13903   \fi
13904   \ifx\Fld@mappingname\relax
13905   \else
13906     \PDFForm@@Name\Fld@mappingname
13907   \fi
13908 }

```

\PDFForm@@Name

```

13909 \def\PDFForm@@Name#1{%
13910   \begingroup
13911   \ifnum\Hy@pdf@major@minor@version<105 % implementation note 117, PDF spec 1.7
13912     \ifHy@unicode
13913       \Hy@unicodedefalse
13914     \fi
13915   \fi
13916   \pdfstringdef\Hy@gtemp#1%
13917   \endgroup
13918   \let#1\Hy@gtemp
13919 }

```

\Fld@additionalactions

```

13920 \def\Fld@@additionalactions{%
K input (keystroke) format
13921   \ifx\Fld@keystroke@code\@empty
13922   \else
13923     /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13924   \fi

F display format
13925   \ifx\Fld@format@code\@empty
13926   \else
13927     /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13928   \fi

V validation
13929   \ifx\Fld@validate@code\@empty
13930   \else
13931     /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13932   \fi

C calculation
13933   \ifx\Fld@calculate@code\@empty
13934   \else

```

```

13935    /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13936    \fi

Fo receiving the input focus
13937    \ifx\Fld@onfocus@code\@empty
13938    \else
13939        /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13940    \fi

Bl losing the input focus (blurred)
13941    \ifx\Fld@onblur@code\@empty
13942    \else
13943        /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13944    \fi

D pressing the mouse button (down)
13945    \ifx\Fld@onmousedown@code\@empty
13946    \else
13947        /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13948    \fi

U releasing the mouse button (up)
13949    \ifx\Fld@onmouseup@code\@empty
13950    \else
13951        /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13952    \fi

E cursor enters the annotation's active area.
13953    \ifx\Fld@onenter@code\@empty
13954    \else
13955        /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13956    \fi

X cursor exits the annotation's active area.
13957    \ifx\Fld@onexit@code\@empty
13958    \else
13959        /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13960    \fi
13961 }
13962 \def\Fld@additionalactions{%
13963     \if-\Fld@@additionalactions-%
13964     \else
13965         \ifHy@pdfa
13966         \else
13967             /AA<<\Fld@@additionalactions>>%
13968         \fi
13969     \fi
13970 }

\Fld@annotnames
13971 \def\Fld@annotnames{%
13972     /T(\Fld@name)%
13973     \ifx\Fld@altname\relax
13974     \else
13975         /TU(\Fld@altname)%
13976     \fi

```

```

13977 \ifx\Fld@mappingname\relax
13978 \else
13979 /TM(\Fld@mappingname)%
13980 \fi
13981 }

```

\PDFForm@Check

```

13982 \def\PDFForm@Check{%
13983 /Subtype/Widget%
13984 \Fld@annotflags
13985 \Fld@pageobjref
13986 \Fld@annotnames
13987 /FT/Btn%
13988 \Fld@flags
13989 /Q \Fld@align
13990 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13991 /AP<< /N <</Yes<<>>>> >> %new string /Yes is from below
13992 /MK<<%
13993 \ifnum\Fld@rotation=z@
13994 \else
13995 /R \Fld@rotation
13996 \fi
13997 \ifx\Fld@bordercolor\relax
13998 \else
13999 /BC[\Fld@bordercolor]%
14000 \fi
14001 \ifx\Fld@bcolor\relax
14002 \else
14003 /BG[\Fld@bcolor]%
14004 \fi
14005 /CA(\Hy@escapestring{\Fld@cbsymbol})%
14006 >>%
14007 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
14008 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14009 /H/P%
14010 \ifFld@checked /V/Yes/AS/Yes\else /V/Off/AS/Off\fi
14011 \Fld@additionalactions
14012 }

```

\PDFForm@Push

```

14013 \ifHy@pdfa
14014 \else
14015 \def\PDFForm@Push{%
14016 /Subtype/Widget%
14017 \Fld@annotflags
14018 \Fld@pageobjref
14019 \Fld@annotnames
14020 /FT/Btn%
14021 \Fld@flags
14022 /H/P%
14023 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14024 \ifcase0\ifnum\Fld@rotation=z@ \else 1\fi
14025 \ifx\Fld@bordercolor\relax\else 1\fi
14026 \space

```



```

14027 \else
14028 /MK<<%
14029 \ifnum\Fld@rotation=\z@
14030 \else
14031 /R \Fld@rotation
14032 \fi
14033 \ifx\Fld@bordercolor\relax
14034 \else
14035 /BC[\Fld@bordercolor]%
14036 \fi
14037 >>%
14038 \fi
14039 /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
14040 \Fld@additionalactions
14041 }%
14042 \fi

```

\PDFForm@List

```

14043 \def\PDFForm@List{%
14044 /Subtype/Widget%
14045 \Fld@annotflags
14046 \Fld@pageobjref
14047 \Fld@annotnames
14048 /FT/Ch%
14049 \Fld@flags
14050 /Q \Fld@align
14051 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14052 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14053 \ifx\Fld@bordercolor\relax\else 1\fi
14054 \ifx\Fld@bcolor\relax \else 1\fi
14055 \space
14056 \else
14057 /MK<<%
14058 \ifnum\Fld@rotation=\z@
14059 \else
14060 /R \Fld@rotation
14061 \fi
14062 \ifx\Fld@bordercolor\relax
14063 \else
14064 /BC[\Fld@bordercolor]%
14065 \fi
14066 \ifx\Fld@bcolor\relax
14067 \else
14068 /BG[\Fld@bcolor]%
14069 \fi
14070 >>%
14071 \fi
14072 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14073 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14074 \Fld@choices
14075 \Fld@additionalactions
14076 }

```

\PDFForm@Radio

```

14077 \def\PDFForm@Radio{%
14078   /Subtype/Widget%
14079   \Fld@annotflags
14080   \Fld@pageobjref
14081   \Fld@annotnames
14082   /FT/Btn%
14083   \Fld@flags
14084   /H/P%
14085   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14086   /MK<<%
14087     \ifnum\Fld@rotation=\z@
14088     \else
14089       /R \Fld@rotation
14090     \fi
14091     \ifx\Fld@bordercolor\relax
14092     \else
14093       /BC[\Fld@bordercolor]%
14094     \fi
14095     \ifx\Fld@bcolor\relax
14096     \else
14097       /BG[\Fld@bcolor]%
14098     \fi
14099     /CA(\Hy@escapestring{\Fld@radiosymbol})%
14100   >>%
14101   /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
14102     \ifx\Fld@color\@empty\else\space\Fld@color\fi)%

```

New code, the default value is used for all buttons

```

14103   \ifx\Fld@default\@empty
14104     /V/Off%
14105     /DV/Off%
14106   \else
14107     /V/\Fld@default
14108     /DV/\Fld@default
14109   \fi
14110   \Fld@additionalactions
14111 }

```

\PDFForm@Text

```

14112 \def\PDFForm@Text{%
14113   /Subtype/Widget%
14114   \Fld@annotflags
14115   \Fld@pageobjref
14116   \Fld@annotnames
14117   /FT/Tx%
14118   \Fld@flags
14119   /Q \Fld@align
14120   /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
14121   \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14122     \ifx\Fld@bordercolor\relax\else 1\fi
14123     \ifx\Fld@bcolor\relax \else 1\fi
14124     \space
14125   \else
14126     /MK<<%

```

```

14127 \ifnum\Fld@rotation=\z@
14128 \else
14129 /R \Fld@rotation
14130 \fi
14131 \ifx\Fld@bordercolor\relax
14132 \else
14133 /BC[\Fld@bordercolor]%
14134 \fi
14135 \ifx\Fld@bcolor\relax
14136 \else
14137 /BG[\Fld@bcolor]%
14138 \fi
14139 >>%
14140 \fi
14141 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
14142 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
14143 /DV(\Hy@escapestring{\Fld@default})%
14144 /V(\Hy@escapestring{\Fld@value})%
14145 \Fld@additionalactions
14146 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
14147 }

```

\PDFForm@Submit

```

14148 \def\PDFForm@Submit{%
14149 /Subtype/Widget%
14150 \Fld@annotflags
14151 \Fld@pageobjref
14152 \Fld@annotnames
14153 /FT/Btn%
14154 \Fld@flags
14155 /H/P%
14156 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14157 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14158 \ifx\Fld@bordercolor\relax\else 1\fi
14159 \space
14160 \else
14161 /MK<<%
14162 \ifnum\Fld@rotation=\z@
14163 \else
14164 /R \Fld@rotation
14165 \fi
14166 \ifx\Fld@bordercolor\relax
14167 \else
14168 /BC[\Fld@bordercolor]%
14169 \fi
14170 >>%
14171 \fi
14172 /A<<%
14173 /S/SubmitForm%
14174 /F<<%
14175 /FS/URL%
14176 /F(\Hy@escapestring{\Form@action})%
14177 >>%
14178 \Fld@submitflags

```

```

14179 >>%
14180 \Fld@additionalactions
14181 }

\PDFForm@Reset

14182 \ifHy@pdfa
14183 \else
14184 \def\PDFForm@Reset{%
14185 /Subtype/Widget%
14186 \Fld@annotflags
14187 \Fld@pageobjref
14188 \Fld@annotnames
14189 /FT/Btn%
14190 \Fld@flags
14191 /H/P%
14192 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
14193 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
14194 \ifx\Fld@bordercolor\relax\else 1\fi
14195 \space
14196 \else
14197 /MK<<%
14198 \ifnum\Fld@rotation=\z@
14199 \else
14200 /R \Fld@rotation
14201 \fi
14202 \ifx\Fld@bordercolor\relax
14203 \else
14204 /BC[\Fld@bordercolor]%
14205 \fi
14206 % /CA (Clear)
14207 % /AC (Done)
14208 >>%
14209 \fi
14210 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
14211 /A<</S/ResetForm>>%
14212 \Fld@additionalactions
14213 }%
14214 \fi

14215 </pdfform>
14216 <*packageEnd>

```

46 Bookmarks in the PDF file

This was originally developed by Yannis Haralambous (it was the separate `repere.sty`); it needed the `repere` or `makebook.pl` post-processor to work properly. Now redundant, as it is done entirely in $\text{\LaTeX}$ macros.

To write out the current section title, and its rationalized number, we have to intercept the `\@sect` command, which is rather dangerous. But how else to see the information we need? We do the *same* for `\@ssect`, giving anchors to unnumbered sections. This allows things like bibliographies to get bookmarks when used with a manual `\addcontentsline`

```

change 2026-02-22: Use \MakeLinkTarget
14217 \def\phantomsection{\MakeLinkTarget[section]{} }
14218 \endpackage

```

46.1 Bookmarks

```
14219 \begin{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 a misfeature 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.

```

14220 \def\Hy@writebookmark#1#2#3#4#5{%
14221   % section number, text, label, level, file
14222   \ifx\WriteBookmarks\relax%
14223     \else
14224       \ifnum#4>\Hy@bookmarksdepth\relax
14225       \else
14226         \@writetorep{#1}{#2}{#3}{#4}{#5}%
14227       \fi
14228     \fi
14229 }
14230 \def\Hy@currentbookmarklevel{0}
14231 \def\Hy@numberline#1{#1 }
14232 \def\@@writetorep#1#2#3#4#5{%
14233   \begingroup
14234     \edef\Hy@tempa{#5}%
14235     \ifx\Hy@tempa\Hy@bookmarkstype
14236       \edef\Hy@level{#4}%
14237       \ifx\Hy@levelcheck Y%
14238         \@tempcnta\Hy@level\relax
14239         \advance\@tempcnta by -1 %
14240         \ifnum\Hy@currentbookmarklevel<\@tempcnta
14241           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
14242           \advance\@tempcnta by 1 %
14243           \Hy@Warning{%
14244             Difference (\the\@tempcnta) between bookmark levels is %
14245             greater \MessageBreak than one, level fixed%
14246           }%
14247           \@tempcnta\Hy@currentbookmarklevel
14248         \advance\@tempcnta by 1 %

```

```

14249     \edef\Hy@level{\the\@tempcnta}%
14250     \fi
14251     \else
14252     \global\let\Hy@levelcheck Y%
14253     \fi
14254     \global\let\Hy@currentbookmarklevel\Hy@level
14255     \@tempcnta\Hy@level\relax
14256     \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
14257     \advance\@tempcnta by -1 %
14258     \edef\Hy@tempa{#3}%
14259     \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
14260     \ifx\Hy@tempa\Hy@tempb
14261     \Hy@Warning{%
14262     The anchor of a bookmark and its parent's must not%
14263     \MessageBreak be the same. Added a new anchor%
14264     }%
14265     \phantomsection
14266     \fi
14267     \ifHy@bookmarksnumbered
14268     \let\numberline\Hy@numberline
14269     \let\booknumberline\Hy@numberline
14270     \let\partnumberline\Hy@numberline
14271     \let\chapternumberline\Hy@numberline
14272     \else
14273     \let\numberline\@gobble
14274     \let\booknumberline\@gobble
14275     \let\partnumberline\@gobble
14276     \let\chapternumberline\@gobble
14277     \fi
14278     \pdfstringdef\Hy@tempa{#2}%
14279     \HyPsd@SanitizeForOutFile\Hy@tempa
14280     \if@filesw
14281     \stepcounter{bookmark@seq@number}%
14282     \@ifundefined{@outlinefile}{%
14283     }{%
14284     \protected@write\@outlinefile{%
14285     \protect\BOOKMARK
14286     [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
14287     {\Hy@tempa}{\Hy@tempb}%
14288     \@percentchar\space\thebookmark@seq@number
14289     }%
14290     }%
14291     \fi
14292     \fi
14293     \endgroup
14294 }
14295 \newcounter{bookmark@seq@number}

14296 \begingroup
14297 \lccode`=(`{%
14298 \lccode`=``}%
14299 \lccode`1=\z@
14300 \lccode`2=\z@
14301 \lccode`3=\z@
14302 \lccode`5=\z@

```

```

14303 \lccode`7=\z@
14304 \lccode`\#=\z@
14305 \lccode``=\z@
14306 \lccode`\{=\z@
14307 \lccode`\}= \z@
14308 \lowercase{%
14309 \endgroup
14310 \def\HyPsd@SanitizeForOutFile#1{%
14311   \@onelevel@sanitize\Hy@tempa
14312   \escapechar`\\%
14313   \edef\Hy@tempa{%
14314     \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa(\@nil
14315   }%
14316   \edef\Hy@tempa{%
14317     \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa)\@nil
14318   }%
14319 }%
14320 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
14321   #1%
14322   \ifx\\#2\\%
14323     \expandafter\@gobble
14324   \else
14325     \expandafter\@firstofone
14326   \fi
14327   {%
14328     \string\173%
14329     \HyPsd@SanitizeOut@BraceLeft#2\@nil
14330   }%
14331 }%
14332 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
14333   #1%
14334   \ifx\\#2\\%
14335     \expandafter\@gobble
14336   \else
14337     \expandafter\@firstofone
14338   \fi
14339   {%
14340     \string\175%
14341     \HyPsd@SanitizeOut@BraceRight#2\@nil
14342   }%
14343 }%
14344 }

```

In the call of \BOOKMARK the braces around #4 are omitted, because it is not likely, that the level number contains].

```

14345 \newcommand{\currentpdfbookmark}{%
14346   \pdfbookmark[\Hy@currentbookmarklevel]%
14347 }
14348 \newcommand{\subpdfbookmark}{%
14349   \@tempcnta\Hy@currentbookmarklevel
14350   \Hy@StepCount\@tempcnta
14351   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
14352 }
14353 \newcommand{\belowpdfbookmark}[2]{%
14354   \@tempcnta\Hy@currentbookmarklevel

```

```

14355 \Hy@StepCount\@tempcnta
14356 \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
14357 \advance\@tempcnta by -1 %
14358 \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
14359 }

```

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.

```

14360 \renewcommand\pdfbookmark[3][0]{%
14361 \Hy@writebookmark{#2}{#3.#1}{#1}{toc}%
14362 \hyper@anchorstart{#3.#1}\hyper@anchorend
14363 }
14364 \def\BOOKMARK{%
14365 \ifnextchar{\@BOOKMARK}{\@@BOOKMARK[1][-]}%
14366 }
14367 \def\@BOOKMARK[#1]{%
14368 \ifnextchar{\@@BOOKMARK[{#1}]}{\@@BOOKMARK[{#1}][-]}%
14369 }

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the `texinfo` macros.

46.1.1 Rerun warning

`\Hy@OutlineRerunCheck`

```

14370 \RequirePackage{rerunfilecheck}[2009/12/10]
14371 \def\Hy@OutlineRerunCheck{%
14372 \RerunFileCheck{\jobname.out}{%
14373 \immediate\closeout\@outlinefile
14374 }{%
14375 Rerun to get outlines right\MessageBreak
14376 or use package `bookmark'%
14377 }%
14378 }

```

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 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.

```

14379 <*vtex>
14380 \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.

```

14381 \begingroup
14382 \catcode`\'=12 %
14383 \ifnum\Hy@VTexVersion<650 %
14384 \catcode`\="=12 %
14385 \gdef\hv@pdf@char#1#2#3{%
14386 \char

```



```

14387 \ifcase'#1#2#3 %
14388 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
14389 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
14390 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
14391 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
14392 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
14393 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
14394 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
14395 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
14396 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
14397 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
14398 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
14399 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
14400 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
14401 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
14402 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
14403 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
14404 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%
14405 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
14406 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
14407 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
14408 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
14409 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
14410 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
14411 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
14412 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
14413 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
14414 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
14415 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
14416 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
14417 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
14418 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
14419 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
14420 \fi
14421 }%
14422 \else
14423 \gdef\hv@pdf@char{\char'}%
14424 \fi
14425 \endgroup

```

\@@BOOKMARK

```

14426 \def\@@BOOKMARK[#1][#2]#3#4#5{%
14427 \expandafter\edef\csname @count@#3\endcsname{%
14428 \the\@serial@counter
14429 }%
14430 \edef\@mycount{\the\@serial@counter}%
14431 \Hy@StepCount\@serial@counter
14432 \edef\@parcount{%
14433 \expandafter\ifx\csname @count@#5\endcsname\relax
14434 0%
14435 \else
14436 \csname @count@#5\endcsname
14437 \fi
14438 }%

```

```

14439 \immediate\special{%
14440   !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
14441   s=\ifx#2-c\else o\fi,t=#4%
14442 }%
14443 }%

```

\ReadBookmarks

```

14444 \def\ReadBookmarks{%
14445   \begingroup
14446   \def\0{\hv@pdf@char 0}%
14447   \def\1{\hv@pdf@char 1}%
14448   \def\2{\hv@pdf@char 2}%
14449   \def\3{\hv@pdf@char 3}%
14450   \def\({}%
14451   \def\)}%
14452   \def\do##1{%
14453     \ifnum\catcode`##1=\active
14454       \@makeother##1%
14455     \else
14456       \ifnum\catcode`##1=6 %
14457         \@makeother##1%
14458       \fi
14459     \fi
14460   }%
14461   \dospecials
14462   \Hy@safe@activetrue
14463   \InputIfFileExists{\jobname.out}{\}{\}%
14464 \endgroup
14465 \ifx\WriteBookmarks\relax
14466 \else
14467   \if@filesw
14468     \newwrite\@outlinefile
14469     \Hy@OutlineRerunCheck
14470     \immediate\openout\@outlinefile=\jobname.out\relax
14471   \fi
14472   \fi
14473 }

14474 </vtex>

14475 <*\vtex>
14476 \def\ReadBookmarks{%
14477   \pdf@ifdraftmode{\}%
14478   \begingroup
14479   \def\do##1{%
14480     \ifnum\catcode`##1=\active
14481       \@makeother##1%
14482     \else
14483       \ifnum\catcode`##1=6 %
14484         \@makeother##1%
14485       \fi
14486     \fi
14487   }%
14488   \dospecials
14489   \Hy@safe@activetrue

```

```

14490 \escapechar=`\%
14491 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14492 \calc@bm@number{##5}%
14493 }%
14494 \InputIfFileExists{\jobname.out}{-}{-}%
14495 \ifx\WriteBookmarks\relax
14496 \global\let\WriteBookmarks\relax
14497 \fi
14498 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14499 \def\Hy@temp{##4}%
14500 (*pdfTeX)
14501 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14502 \Hy@OutlineName{}\Hy@pstringName{%
14503 ##2\check@bm@number{##3}%
14504 }{%
14505 \expandafter\strip@prefix\meaning\Hy@temp
14506 }%
14507 \pdfTeX)
14508 (*pdfmark)
14509 \pdfmark{%
14510 pdfmark=/OUT,%
14511 Count={##2\check@bm@number{##3}},%
14512 Dest={##3},%
14513 Title=\expandafter\strip@prefix\meaning\Hy@temp
14514 }%
14515 \pdfmark)
14516 (*dvipdfm|xetex)
14517 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14518 \@pdfm@mark{%
14519 outline \ifHy@DvipdfmxOutlineOpen
14520 [%
14521 \ifnum##21>\z@
14522 \else
14523 -%
14524 \fi
14525 ] %
14526 \fi
14527 ##1<<%
14528 /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
14529 /A<<%
14530 /S/GoTo%
14531 /D(\Hy@pstringName)%
14532 >>%
14533 >>%
14534 }%
14535 \dvipdfm|xetex)
14536 }%
14537 \begingroup
14538 \def\WriteBookmarks{0}%
14539 \InputIfFileExists{\jobname.out}{-}{-}%
14540 \endgroup
14541 %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{-}{-}}%
14542 \endgroup
14543 }%

```

```

14544 \ifx\WriteBookmarks\relax
14545 \else
14546 \if@filesw
14547 \newwrite\@outlinefile
14548 \Hy@OutlineRerunCheck
14549 \immediate\openout\@outlinefile=\jobname.out\relax
14550 \fi
14551 \fi
14552 }
14553 <*pdfTeX>
14554 \def\Hy@OutlineName#1#2#3#4{%
14555 \pdfoutline goto name{#2}count#3{#4}%
14556 }
14557 </pdfTeX>
14558 \def\check@bm@number#1{%
14559 \expandafter\ifx\csname B_#1\endcsname\relax
14560 0%
14561 \else
14562 \csname B_#1\endcsname
14563 \fi
14564 }
14565 \def\calc@bm@number#1{%
14566 \@tempcnta=\check@bm@number{#1}\relax
14567 \advance\@tempcnta by 1 %
14568 \expandafter\xdef\csname B_#1\endcsname{the\@tempcnta}%
14569 }
14570 </!vTeX>

14571 \ifHy@implicit
14572 \else
14573 \expandafter\endinput
14574 \fi

14575 </outlines>
14576 <*outlines | hypertex>

14577 \newlength\Hy@SectionHShift
14578 \def\Hy@SectionAnchorHref#1{%
14579 \ifx\protect\@typeset@protect
14580 \Hy@@@SectionAnchor{#1}%
14581 \fi
14582 }
14583 \DeclareRobustCommand*{\Hy@@@SectionAnchor}[1]{%
14584 \leavevmode
14585 \hbox to 0pt{%
14586 \kern-\Hy@SectionHShift
14587 \Hy@raisedlink{%
14588 \hyper@anchorstart{#1}\hyper@anchorend
14589 }%
14590 \hss
14591 }%
14592 }
14593 \AddToNoCaseChangeList{\Hy@@@SectionAnchor}
14594 \@ifundefined{hyper@nopatch@sectioning}
14595 {
14596 \let\H@old@ssect\@ssect

```

```

14597 \def\@ssect#1#2#3#4#5{%
14598   \Hy@MakeCurrentHrefAuto{section*}%
14599   \setlength{\Hy@SectionHShift}{#1}%
14600   \begingroup
14601     \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
14602     \toks\tw@\expandafter{%
14603       \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14604       #5%
14605     }%
14606   \edef\x{\endgroup
14607     \the\toks@\the\toks\tw@}%
14608   }\x
14609 }
14610 \let\H@old@schapter\@schapter
14611 \def\@schapter#1{%
14612   \begingroup
14613     \let\@mkboth\@gobbletwo
14614     \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14615     \Hy@raisedlink{%
14616       \hyper@anchorstart{\@currentHref}\hyper@anchorend
14617     }%
14618   \endgroup
14619   \H@old@schapter{#1}%
14620 }

```

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:

```

14621 \@ifundefined{@chapter}{%
14622   \let\Hy@org@chapter\@chapter
14623   \def\@chapter{%
14624     \def\Hy@next{%
14625       \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14626       \Hy@raisedlink{%
14627         \hyper@anchorstart{\@currentHref}\hyper@anchorend
14628       }%
14629     }%
14630     \ifnum\c@secnumdepth>\m@ne
14631       \@ifundefined{if@mainmatter}%
14632       \iftrue{\csname if@mainmatter\endcsname}%
14633       \let\Hy@next\relax
14634     \fi
14635     \fi
14636     \Hy@next
14637     \Hy@org@chapter
14638   }%
14639 }

14640 \let\H@old@part\@part
14641 \@ifundefined{chapter}
14642   {\let\Hy@secnum@part\z@}
14643   {\let\Hy@secnum@part\m@ne}
14644 \def\@part{%
14645   \ifnum\Hy@secnum@part>\c@secnumdepth
14646     \phantomsection

```

```

14647 \fi
14648 \H@old@part
14649 }

14650 \let\H@old@spart\@spart
14651 \def\@spart#1{%
14652   \Hy@MakeCurrentHrefAuto{part*}%
14653   \Hy@raisedlink{%
14654     \hyper@anchorstart{\@currentHref}\hyper@anchorend
14655   }%
14656   \H@old@spart{#1}%
14657 }

14658 \let\H@old@sect\@sect
14659 \def\@sect#1#2#3#4#5#6[#7]#8{%
14660   \ifnum #2>\c@secnumdepth
14661     \expandafter\@firstoftwo
14662   \else
14663     \expandafter\@secondoftwo
14664   \fi
14665   {%
14666     \Hy@MakeCurrentHrefAuto{section*}%
14667     \setlength{\Hy@SectionHShift}{#3}%
14668     \begingroup
14669       \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}}%
14670       \toks\tw@\expandafter{%
14671         \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14672         #8%
14673       }%
14674       \edef\x{\endgroup
14675         \the\toks@{\the\toks\tw@}}%
14676       }\x
14677   }{%
14678     \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
14679   }%
14680 }
14681 }{}

14682 </outlines | hypertex>
14683 <*outlines>

14684 \expandafter\def\csname Parent-4\endcsname{}
14685 \expandafter\def\csname Parent-3\endcsname{}
14686 \expandafter\def\csname Parent-2\endcsname{}
14687 \expandafter\def\csname Parent-1\endcsname{}
14688 \expandafter\def\csname Parent0\endcsname{}
14689 \expandafter\def\csname Parent1\endcsname{}
14690 \expandafter\def\csname Parent2\endcsname{}
14691 \expandafter\def\csname Parent3\endcsname{}
14692 \expandafter\def\csname Parent4\endcsname{}

14693 </outlines>

```

47 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

47.1 PD1 encoding

```
14694 <*pd1enc>
14695 \DeclareFontEncoding{PD1}{}{}

Accents
14696 \DeclareTextAccent{\`}{PD1}{\textasciigrave}
14697 \DeclareTextAccent{\'}{PD1}{\textacute}
14698 \DeclareTextAccent{\~}{PD1}{\textasciicircum}
14699 \DeclareTextAccent{\~}{PD1}{\texttilde}
14700 \DeclareTextAccent{\"}{PD1}{\textasciidieresis}
14701 \DeclareTextAccent{\r}{PD1}{\textring}
14702 \DeclareTextAccent{\v}{PD1}{\textasciicaron}
14703 \DeclareTextAccent{\.}{PD1}{\textdotaccent}
14704 \DeclareTextAccent{\c}{PD1}{\textcedilla}
14705 \DeclareTextAccent{\=}{PD1}{\textasciimacron}
14706 \DeclareTextAccent{\b}{PD1}{\textmacronbelow}
14707 \DeclareTextAccent{\d}{PD1}{\textdotbelow}
14708 \DeclareTextCompositeCommand{\`}{PD1}{\@empty}{\textasciigrave}
14709 \DeclareTextCompositeCommand{\'}{PD1}{\@empty}{\textacute}
14710 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\textasciicircum}
14711 \DeclareTextCompositeCommand{\~}{PD1}{\@empty}{\texttilde}
14712 \DeclareTextCompositeCommand{\"}{PD1}{\@empty}{\textasciidieresis}
14713 \DeclareTextCompositeCommand{\r}{PD1}{\@empty}{\textring}
14714 \DeclareTextCompositeCommand{\v}{PD1}{\@empty}{\textasciicaron}
14715 \DeclareTextCompositeCommand{\.}{PD1}{\@empty}{\textdotaccent}
14716 \DeclareTextCompositeCommand{\c}{PD1}{\@empty}{\textcedilla}
14717 \DeclareTextCompositeCommand{\=}{PD1}{\@empty}{\textasciimacron}
14718 \DeclareTextCompositeCommand{\b}{PD1}{\@empty}{\textmacronbelow}
14719 \DeclareTextCompositeCommand{\d}{PD1}{\@empty}{\textdotbelow}
14720 \DeclareTextCompositeCommand{\`}{PD1}{\ }{\textasciigrave}
14721 \DeclareTextCompositeCommand{\'}{PD1}{\ }{\textacute}
14722 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\textasciicircum}
14723 \DeclareTextCompositeCommand{\~}{PD1}{\ }{\texttilde}
14724 \DeclareTextCompositeCommand{\"}{PD1}{\ }{\textasciidieresis}
14725 \DeclareTextCompositeCommand{\r}{PD1}{\ }{\textring}
14726 \DeclareTextCompositeCommand{\v}{PD1}{\ }{\textasciicaron}
14727 \DeclareTextCompositeCommand{\.}{PD1}{\ }{\textdotaccent}
14728 \DeclareTextCompositeCommand{\c}{PD1}{\ }{\textcedilla}
14729 \DeclareTextCompositeCommand{\=}{PD1}{\ }{\textasciimacron}
14730 \DeclareTextCompositeCommand{\b}{PD1}{\ }{\textmacronbelow}
14731 \DeclareTextCompositeCommand{\d}{PD1}{\ }{\textdotbelow}
14732 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
14733 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
14734 \DeclareTextCommand{\newtie}{PD1}[1]{%
14735   \TextSymbolUnavailable{\newtie{#1}}#1%
14736 }
```

Special white space escape characters not for use in bookmarks but for other PDF strings.

14737 % U+0009 (CHARACTER TABULATION)
 14738 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
 14739 % U+000A (LINE FEED)
 14740 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
 14741 % U+000D (CARRIAGE RETURN)
 14742 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D
 Accent glyph names
 14743 % U+02D8 BREVE; breve
 14744 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
 14745 % U+02C7 CARON; caron
 14746 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
 14747 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
 14748 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6
 14749 % U+02D9 DOT ABOVE; dotaccent
 14750 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9
 14751 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
 14752 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD
 14753 % U+02DB OGONEK; ogonek
 14754 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB
 14755 % U+02DA RING ABOVE; ring
 14756 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA
 14757 % U+02DC SMALL TILDE; ilde, *tilde
 14758 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC
 \040: U+0020 SPACE; *space, spacehackarabic
 \041: U+0021 EXCLAMATION MARK; exclam
 14759 % U+0022 QUOTATION MARK; quotedbl
 14760 \DeclareTextCommand{\textquotedbl}{PD1}{"}% \042 U+0022
 14761 % U+0023 NUMBER SIGN; numbersign
 14762 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023
 14763 % U+0024 DOLLAR SIGN; dollar
 14764 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024
 14765 % U+0025 PERCENT SIGN; percent
 14766 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025
 14767 % U+0026 AMPERSAND; ampersand
 14768 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026
 \047: U+0027 APOSTROPHE; quotesingle

 14769 % U+0028 LEFT PARENTHESIS; parenleft
 14770 \DeclareTextCommand{\textparenleft}{PD1}{\string\(% \050 U+0028
 14771 % U+0029 RIGHT PARENTHESIS; parenright
 14772 \DeclareTextCommand{\textparenright}{PD1}{\string\)% \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
 14773 % U+002E FULL STOP; period
 14774 \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
 14775 % U+003C LESS-THAN SIGN; less
 14776 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C
 \075: U+003D EQUALS SIGN; equal
 14777 % U+003E GREATER-THAN SIGN; greater
 14778 \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
 14779 % U+005C REVERSE SOLIDUS; backslash
 14780 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C
 14781 % "U+2216 SET MINUS" simulated by "U+005C REVERSE SOLIDUS"
 14782 \DeclareTextCommand{\textsetminus}{PD1}{\textbackslash}
 \135: U+005D RIGHT SQUARE BRACKET; bracketright
 14783 % U+005E CIRCUMFLEX ACCENT; asciicircum
 14784 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E
 14785 % U+005F LOW LINE; underscore
 14786 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F
 14787 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F
 14788 % U+0060 GRAVE ACCENT; grave
 14789 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060
 \141: U+0061 LATIN SMALL LETTER A; a
 ...
 \150: U+0068 LATIN SMALL LETTER H; h
 14790 % U+0069 LATIN SMALL LETTER I; i
 14791 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069
 \152: U+006A LATIN SMALL LETTER J; j
 ...
 \172: U+007A LATIN SMALL LETTER Z; z
 14792 % U+007B LEFT CURLY BRACKET; braceleft
 14793 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B
 14794 % U+007C VERTICAL LINE; *bar, verticalbar
 14795 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C
 14796 % U+007D RIGHT CURLY BRACKET; braceright
 14797 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D
 14798 % U+007E TILDE; asciitilde
 14799 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E
 Slot \177 (0x7F) is undefined in PDFDocEncoding.
 14800 % U+2022 BULLET; bullet
 14801 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022
 14802 % U+2020 DAGGER; dagger
 14803 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020
 14804 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)
 14805 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021
 14806 \DeclareTextCommand{\textddagger}{PD1}{\textdaggerdbl}
 14807 % U+2026 HORIZONTAL ELLIPSIS; ellipsis
 14808 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026

14809 % U+2014 EM DASH; emdash
 14810 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014
 14811 % U+2013 EN DASH; endash
 14812 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013
 14813 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin
 14814 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192
 14815 % U+2044 FRACTION SLASH; fraction
 14816 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044
 14817 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-
 ingleft
 14818 \DeclareTextCommand{\guilsgingleft}{PD1}{\210}% U+2039
 14819 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-
 singright
 14820 \DeclareTextCommand{\guilsingright}{PD1}{\211}% U+203A
 14821 % U+2212 MINUS SIGN; minus
 14822 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212
 14823 % U+2030 PER MILLE SIGN; perthousand
 14824 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030
 14825 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase
 14826 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E
 14827 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft
 14828 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C
 14829 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright
 14830 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D
 14831 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft
 14832 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018
 14833 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright
 14834 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019
 14835 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase
 14836 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A
 14837 % U+2122 TRADE MARK SIGN; trademark
 14838 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122
 14839 % U+FB01 LATIN SMALL LIGATURE FI; fi
 14840 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01
 14841 % U+FB02 LATIN SMALL LIGATURE FL; fl
 14842 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02
 14843 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash
 14844 \DeclareTextCommand{\L}{PD1}{\225}% U+0141
 14845 % U+0152 LATIN CAPITAL LIGATURE OE; OE
 14846 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152
 14847 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron
 14848 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160
 14849 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis
 14850 \DeclareTextCompositeCommand{"}{PD1}{Y}{\230}% U+0178
 14851 \DeclareTextCommand{\IJ}{PD1}{IJ}% ligature U+0049 U+004A
 14852 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron
 14853 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D
 14854 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi
 14855 \DeclareTextCommand{\i}{PD1}{\232}% U+0131
 14856 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash
 14857 \DeclareTextCommand{\l}{PD1}{\233}% U+0142
 14858 % U+0153 LATIN SMALL LIGATURE OE; oe
 14859 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153
 14860 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron

14861 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161
14862 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron
14863 \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.

14864 % U+20AC EURO SIGN; *Euro, euro
14865 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC
14866 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown
14867 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1
14868 % U+00A2 CENT SIGN; cent
14869 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2
14870 % U+00A3 POUND SIGN; sterling
14871 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3
14872 % U+00A4 CURRENCY SIGN; currency
14873 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4
14874 % U+00A5 YEN SIGN; yen
14875 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5
14876 % U+00A6 BROKEN BAR; brokenbar
14877 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6
14878 % U+00A7 SECTION SIGN; section
14879 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7
14880 % U+00A8 DIAERESIS; dieresis
14881 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8
14882 % U+00A9 COPYRIGHT SIGN; copyright
14883 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9
14884 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine
14885 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA
14886 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetleft
14887 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB
14888 \DeclareTextCommand{\guillemetleft}{PD1}{\253}% U+00AB
14889 % U+00AC NOT SIGN; logicalnot
14890 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC
14891 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not

No glyph \255 in PDFDocEncoding.

14892 % U+00AE REGISTERED SIGN; registered
14893 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE
14894 % U+00AF MACRON; *macron, overscore
14895 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF
14896 % U+00B0 DEGREE SIGN; degree
14897 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0
14898 % U+00B1 PLUS-MINUS SIGN; plusminus
14899 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1
14900 % U+00B2 SUPERSCRIPT TWO; twosuperior
14901 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}%* U+00B2
14902 % U+00B3 SUPERSCRIPT THREE; threesuperior
14903 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}%* U+00B3
14904 % U+00B4 ACUTE ACCENT; acute
14905 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4
14906 % U+00B5 MICRO SIGN; mu, mu1
14907 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5
14908 % U+00B6 PILCROW SIGN; paragraph
14909 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6
14910 % U+00B7 MIDDLE DOT; middot, *periodcentered

14911 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7
14912 % U+00B8 CEDILLA; cedilla
14913 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8
14914 % U+00B9 SUPERScript ONE; onesuperior
14915 \DeclareTextCommand{\textonesuperior}{PD1}{\271}%* U+00B9
14916 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine
14917 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA
14918 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetright
14919 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB
14920 \DeclareTextCommand{\guillemetright}{PD1}{\273}% U+00BB
14921 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter
14922 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC
14923 % U+00BD VULGAR FRACTION ONE HALF; onehalf
14924 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD
14925 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters
14926 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE
14927 % U+00BF INVERTED QUESTION MARK; questiondown
14928 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF
14929 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave
14930 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0
14931 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute
14932 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1
14933 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex
14934 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2
14935 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde
14936 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3
14937 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis
14938 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4
14939 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring
14940 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5
14941 % U+00C6 LATIN CAPITAL LETTER AE; AE
14942 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6
14943 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla
14944 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7
14945 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave
14946 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8
14947 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute
14948 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9
14949 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex
14950 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA
14951 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis
14952 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB
14953 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave
14954 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC
14955 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute
14956 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD
14957 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex
14958 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE
14959 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis
14960 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF
14961 % U+00D0 LATIN CAPITAL LETTER ETH; Eth
14962 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0
14963 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0
14964 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde

14965 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1
14966 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve
14967 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2
14968 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute
14969 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3
14970 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex
14971 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4
14972 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde
14973 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5
14974 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis
14975 \DeclareTextCompositeCommand{\\"}{PD1}{O}{\326}% U+00D6
14976 % U+00D7 MULTIPLICATION SIGN; multiply
14977 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7
14978 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash
14979 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8
14980 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave
14981 \DeclareTextCompositeCommand{\`}{PD1}{U}{\331}% U+00D9
14982 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute
14983 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA
14984 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex
14985 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB
14986 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis
14987 \DeclareTextCompositeCommand{\\"}{PD1}{U}{\334}% U+00DC
14988 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute
14989 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD
14990 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)
14991 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE
14992 \DeclareTextCommand{\textThorn}{PD1}{\336}%* U+00DE
14993 % U+00DF LATIN SMALL LETTER SHARP S; germandbls
14994 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF
14995 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave
14996 \DeclareTextCompositeCommand{\`}{PD1}{a}{\340}% U+00E0
14997 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute
14998 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1
14999 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex
15000 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2
15001 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde
15002 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3
15003 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis
15004 \DeclareTextCompositeCommand{\\"}{PD1}{a}{\344}% U+00E4
15005 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring
15006 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5
15007 % U+00E6 LATIN SMALL LETTER AE; ae
15008 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6
15009 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla
15010 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7
15011 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave
15012 \DeclareTextCompositeCommand{\`}{PD1}{e}{\350}% U+00E8
15013 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute
15014 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351}% U+00E9
15015 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex
15016 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352}% U+00EA
15017 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis
15018 \DeclareTextCompositeCommand{\\"}{PD1}{e}{\353}% U+00EB

15019 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave
15020 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354}% U+00EC
15021 \DeclareTextCompositeCommand{\`}{PD1}{i}{\354}% U+00EC
15022 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute
15023 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED
15024 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED
15025 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex
15026 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE
15027 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE
15028 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis
15029 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF
15030 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF
15031 % U+00F0 LATIN SMALL LETTER ETH; eth
15032 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0
15033 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde
15034 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1
15035 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve
15036 \DeclareTextCompositeCommand{\`}{PD1}{o}{\362}% U+00F2
15037 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute
15038 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363}% U+00F3
15039 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex
15040 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364}% U+00F4
15041 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde
15042 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365}% U+00F5
15043 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis
15044 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366}% U+00F6
15045 % U+00F7 DIVISION SIGN; divide
15046 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7
15047 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash
15048 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8
15049 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave
15050 \DeclareTextCompositeCommand{\`}{PD1}{u}{\371}% U+00F9
15051 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute
15052 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372}% U+00FA
15053 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex
15054 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373}% U+00FB
15055 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis
15056 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374}% U+00FC
15057 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute
15058 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375}% U+00FD
15059 % U+00FE LATIN SMALL LETTER THORN; thorn; \th, \thorn (wasysym)
15060 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE
15061 \DeclareTextCommand{\textthorn}{PD1}{\376}%* U+00FE
15062 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis
15063 \DeclareTextCompositeCommand{\"}{PD1}{y}{\377}% U+00FF
15064 \DeclareTextCommand{\ij}{PD1}{ij}% ligature U+0069 U+006A

Glyphs that consist of several characters.
15065 \DeclareTextCommand{\SS}{PD1}{SS}%
15066 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}%

Aliases (german.sty)
15067 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}%
15068 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}%
15069 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}%

```

15070 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}%
15071 \DeclareTextCommand{\textflqq}{PD1}{\guillemetleft}%
15072 \DeclareTextCommand{\textfrqq}{PD1}{\guillemetright}%
15073 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}%
15074 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}%
Aliases (math names)
15075 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}%
15076 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}%
15077 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}%
15078 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}%
15079 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}%
15080 \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).
15081 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
15082 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute
15083 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
15084 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute
15085 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute
15086 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
15087 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
15088 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
15089 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
15090 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
15091 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
15092 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
15093 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
15094 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot
15095 (/pd1enc)

```

47.2 PU encoding

```

15096 (*puenc)
15097 \DeclareFontEncoding{PU}{-}{-}

```

47.2.1 NFSS2 accents

```

15098 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
15099 \DeclareTextCommand{\`}{PU}[1]{\#1\83\000}% U+0300
15100 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
15101 \DeclareTextCommand{\'}{PU}[1]{\#1\83\001}% U+0301
15102 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
15103 \DeclareTextCommand{\^}{PU}[1]{\#1\83\002}% U+0302
15104 % U+0303 COMBINING TILDE; tildecmb, *tildecomb
15105 \DeclareTextCommand{\~}{PU}[1]{\#1\83\003}% U+0303
15106 % U+0304 COMBINING MACRON; macroncmb
15107 \DeclareTextCommand{\=}{PU}[1]{\#1\83\004}% U+0304
15108 % U+0306 COMBINING BREVE; brevecmb
15109 \DeclareTextCommand{\u}{PU}[1]{\#1\83\006}% U+0306
15110 \ifx\CYRDZE\undefined \else
15111 \DeclareTextCommand{\U}{PU}[1]{\#1\83\006}% U+0306
15112 \fi
15113 % U+0307 COMBINING DOT ABOVE; dotaccentcmb

```

```

15114 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307
15115 % U+0308 COMBINING DIAERESIS; dieresiscmb
15116 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308
15117 % U+030A COMBINING RING ABOVE; ringcmb
15118 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A
15119 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb
15120 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B
15121 % U+030C COMBINING CARON; caroncmb
15122 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C
15123 \puenc)
15124 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravescmb
15125 \puextra)\DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F
15126 (*puenc)
15127 \ifx\CYRDZE\@undefined \else
15128 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F
15129 \fi
15130 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
15131 \DeclareTextCommand{\textinvbreve}{PU}[1]{#1\83\021}% U+0311
15132 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311
15133 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcmb
15134 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323
15135 % U+0324 COMBINING DIAERESIS BELOW; dieresisbelowcmb; \textsubum-
    laut (tipa)
15136 \DeclareTextCommand{\textsubumlaut}{PU}[1]{#1\83\044}% U+0324
15137 % U+0325 COMBINING RING BELOW; ringbelowcmb; \textsubring (tipa)
15138 \DeclareTextCommand{\textsubring}{PU}[1]{#1\83\045}% U+0325
15139 % U+0327 COMBINING CEDILLA; cedillacmb
15140 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327
15141 % U+0328 COMBINING OGONEK; ogonekcmb
15142 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328
15143 % U+032D COMBINING CIRCUMFLEX ACCENT BELOW;
15144 % \textsubcircum (tipa)
15145 \DeclareTextCommand{\textsubcircum}{PU}[1]{#1\83\055}% U+032D
15146 % U+032E COMBINING BREVE BELOW; brevebelowcmb
15147 \DeclareTextCommand{\textsubbreve}{PU}[1]{#1\83\056}% U+032E
15148 % U+0330 COMBINING TILDE BELOW; tildebelowcmb; \textsubtilde (tipa)
15149 \DeclareTextCommand{\textsubtilde}{PU}[1]{#1\83\060}% U+0330
15150 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
15151 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331
15152 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-
    blecmb
15153 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361
15154 % U+20DD COMBINING ENCLOSING CIRCLE
15155 \DeclareTextCommand{\textcircled}{PU}[1]{#1\9040\335}% U+20DD

```

Double accents.

```

15156 \DeclareTextCommand{\textacutemacron}{PU}[1]{#1\83\001\83\004}% U+0301 U+0304
15157 \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.

```

15158 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textasciigrave}%
15159 \DeclareTextCompositeCommand{\' }{PU}{\@empty}{\textacute}%
15160 \DeclareTextCompositeCommand{\^ }{PU}{\@empty}{\textasciicircum}%
15161 \DeclareTextCompositeCommand{\~ }{PU}{\@empty}{\texttilde}%

```



```

15162 \DeclareTextCompositeCommand{"}{PU}{\@empty}{\textasciidieresis}%
15163 \DeclareTextCompositeCommand{r}{PU}{\@empty}{\textring}%
15164 \DeclareTextCompositeCommand{v}{PU}{\@empty}{\textasciicaron}%
15165 \DeclareTextCompositeCommand{.}{PU}{\@empty}{\textdotaccent}%
15166 \DeclareTextCompositeCommand{c}{PU}{\@empty}{\textcedilla}%
15167 \DeclareTextCompositeCommand{u}{PU}{\@empty}{\textasciibreve}%
15168 (/puenc)
15169 (puextra)\DeclareTextCompositeCommand{G}{PU}{\@empty}{\textdoublegrave}%
15170 (*puenc)
15171 \DeclareTextCompositeCommand{=}{PU}{\@empty}{\textasciimacron}%
15172 \DeclareTextCompositeCommand{H}{PU}{\@empty}{\texthungarumlaut}%
15173 \DeclareTextCompositeCommand{k}{PU}{\@empty}{\textogonek}%
15174 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\@empty}{\{\ \83\021\}}% U+0311
15175 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\@empty}{\{\ \83\044\}}% U+0324
15176 \DeclareTextCompositeCommand{\textsubring}{PU}{\@empty}{\textringlow}%
15177 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\@empty}{\textcirc-
low}%
15178 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\@empty}{\{\ \83\056\}}% U+032E
15179 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\@empty}{\texttildelow}%
15180 \DeclareTextCompositeCommand{b}{PU}{\@empty}{\textmacronbelow}%
15181 \DeclareTextCompositeCommand{d}{PU}{\@empty}{\textdotbelow}%
15182 \DeclareTextCompositeCommand{t}{PU}{\@empty}{\texttie}%
15183 \DeclareTextCompositeCommand{newtie}{PU}{\@empty}{\textnewtie}%
15184 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}%
15185 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\@empty}{\{\ \83\001\83\004\}}% U+0301 U+0304
15186 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\@empty}{\{\ \83\000\83\004\}}% U+0300 U+0304
15187 \DeclareTextCompositeCommand{`}{PU}{\ }{\textasciigrave}%
15188 \DeclareTextCompositeCommand{'}{PU}{\ }{\textacute}%
15189 \DeclareTextCompositeCommand{~}{PU}{\ }{\textasciicircum}%
15190 \DeclareTextCompositeCommand{~}{PU}{\ }{\texttilde}%
15191 \DeclareTextCompositeCommand{"}{PU}{\ }{\textasciidieresis}%
15192 \DeclareTextCompositeCommand{r}{PU}{\ }{\textring}%
15193 \DeclareTextCompositeCommand{v}{PU}{\ }{\textasciicaron}%
15194 \DeclareTextCompositeCommand{.}{PU}{\ }{\textdotaccent}%
15195 \DeclareTextCompositeCommand{c}{PU}{\ }{\textcedilla}%
15196 \DeclareTextCompositeCommand{u}{PU}{\ }{\textasciibreve}%
15197 (/puenc)
15198 (puextra)\DeclareTextCompositeCommand{G}{PU}{\ }{\textdoublegrave}%
15199 (*puenc)
15200 \DeclareTextCompositeCommand{=}{PU}{\ }{\textasciimacron}%
15201 \DeclareTextCompositeCommand{H}{PU}{\ }{\texthungarumlaut}%
15202 \DeclareTextCompositeCommand{k}{PU}{\ }{\textogonek}%
15203 \DeclareTextCompositeCommand{\textinvbreve}{PU}{\ }{\{\ \83\021\}}% U+0311
15204 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{\ }{\{\ \83\044\}}% U+0324
15205 \DeclareTextCompositeCommand{\textsubring}{PU}{\ }{\textringlow}%
15206 \DeclareTextCompositeCommand{\textsubcircum}{PU}{\ }{\textcirc-
low}%
15207 \DeclareTextCompositeCommand{\textsubbreve}{PU}{\ }{\{\ \83\056\}}% U+032E
15208 \DeclareTextCompositeCommand{\textsubtilde}{PU}{\ }{\texttildelow}%
15209 \DeclareTextCompositeCommand{b}{PU}{\ }{\textmacronbelow}%
15210 \DeclareTextCompositeCommand{d}{PU}{\ }{\textdotbelow}%
15211 \DeclareTextCompositeCommand{t}{PU}{\ }{\texttie}%
15212 \DeclareTextCompositeCommand{newtie}{PU}{\ }{\textnewtie}%
15213 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}%
15214 \DeclareTextCompositeCommand{\textacutemacron}{PU}{\ }{\{\ \83\001\83\004\}}% U+0301 U+0304

```

15215 \DeclareTextCompositeCommand{\textgravemacron}{PU}{\ }{\ \83\000\83\004}}% U+0300 U+0304

Accents for capitals (see encoding TS1)

15216 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}%
 15217 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}%
 15218 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}%
 15219 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}%
 15220 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}%
 15221 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}%
 15222 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\"{#1}}%
 15223 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}%
 15224 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}%
 15225 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}%
 15226 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}%
 15227 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}%
 15228 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.{#1}}%
 15229 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}%
 15230 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}%

47.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

15231 % U+0009 (CHARACTER TABULATION)
 15232 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
 15233 % U+000A (LINE FEED)
 15234 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A
 15235 % U+000D (CARRIAGE RETURN)
 15236 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D
 \80\040: U+0020 SPACE; space, spacehackarabic
 \80\041: U+0021 EXCLAMATION MARK; exclam
 15237 % U+0022 QUOTATION MARK; quotedbl
 15238 \DeclareTextCommand{\textquotedbl}{PU}{"}% \80\042 U+0022
 15239 % U+0023 NUMBER SIGN; numbersign
 15240 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023
 15241 % U+0024 DOLLAR SIGN; dollar
 15242 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024
 15243 %* \textdollar -> \mathdollar
 15244 %* \textdollar -> \EyesDollar (marvosym)
 15245 % U+0025 PERCENT SIGN; percent
 15246 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025
 15247 % U+0026 AMPERSAND; ampersand
 15248 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026
 15249 %* \textampersand -> \binampersand (stmaryrd)
 15250 %* \textampersand -> \with (cml)
 15251 % U+0027 APOSTROPHE; quotesingle
 15252 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027
 15253 % U+0028 LEFT PARENTHESIS; parenleft
 15254 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028
 15255 % U+0029 RIGHT PARENTHESIS; parenright
 15256 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029
 15257 % U+002A ASTERISK; asterisk; (?)
 15258 \DeclareTextCommand{\textasteriskcentered}{PU}{\80\052}% U+002A
 15259 % U+002B PLUS SIGN; plus; \MVPlus (marvosym)
 15260 \DeclareTextCommand{\textMVPlus}{PU}{\80\053}%* U+002B
 15261 % U+002C COMMA; comma; \MVComma (marvosym)

15262 \DeclareTextCommand{\textMVComma}{PU}{\80\054}%* U+002C
15263 % U+002D HYPHEN-MINUS; hyphen; \MVMinus (marvosym)
15264 \DeclareTextCommand{\textMVMinus}{PU}{\80\055}%* U+002D
15265 % U+002E FULL STOP; period; \MVPeriod (marvosym)
15266 \DeclareTextCommand{\textMVPeriod}{PU}{\80\056}%* U+002E
15267 % U+002F SOLIDUS; slash; \MVDivision (marvosym)
15268 \DeclareTextCommand{\textMVDivision}{PU}{\80\057}%* U+002F
15269 % U+0030 DIGIT ZERO; zero; \MVZero (marvosym)
15270 \DeclareTextCommand{\textMVZero}{PU}{\80\060}%* U+0030
15271 % U+0031 DIGIT ONE; one; \MVOne (marvosym)
15272 \DeclareTextCommand{\textMVOne}{PU}{\80\061}%* U+0031
15273 % U+0032 DIGIT TWO; two; \MVTwo (marvosym)
15274 \DeclareTextCommand{\textMVTwo}{PU}{\80\062}%* U+0032
15275 % U+0033 DIGIT THREE; three; \MVThree (marvosym)
15276 \DeclareTextCommand{\textMVThree}{PU}{\80\063}%* U+0033
15277 % U+0034 DIGIT FOUR; four; \MVFour (marvosym)
15278 \DeclareTextCommand{\textMVFour}{PU}{\80\064}%* U+0034
15279 % U+0035 DIGIT FIVE; five; \MVFive (marvosym)
15280 \DeclareTextCommand{\textMVFive}{PU}{\80\065}%* U+0035
15281 % U+0036 DIGIT SIX; six; \MVSix (marvosym)
15282 \DeclareTextCommand{\textMVSix}{PU}{\80\066}%* U+0036
15283 % U+0037 DIGIT SEVEN; seven; \MVSeven (marvosym)
15284 \DeclareTextCommand{\textMVSeven}{PU}{\80\067}%* U+0037
15285 % U+0038 DIGIT EIGHT; eight; \MVEight (marvosym)
15286 \DeclareTextCommand{\textMVEight}{PU}{\80\070}%* U+0038
15287 % U+0039 DIGIT NINE; nine; \MVNine (marvosym)
15288 \DeclareTextCommand{\textMVNine}{PU}{\80\071}%* U+0039

\80\072: U+003A COLON; colon
\80\073: U+003B SEMICOLON; semicolon

15289 % U+003C LESS-THAN SIGN; less
15290 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C

\80\075: U+003D EQUALS SIGN; equal

15291 % U+003E GREATER-THAN SIGN; greater
15292 \DeclareTextCommand{\textgreater}{PU}{>}% \80\076 U+003E

\80\077: U+003F QUESTION MARK; question

15293 % U+0040 COMMERCIAL AT; at; \MVAt (marvosym)
15294 \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

15295 % U+005C REVERSE SOLIDUS; backslash
15296 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C

\80\135: U+005D RIGHT SQUARE BRACKET; bracketright

15297 % U+005E CIRCUMFLEX ACCENT; asciicircum
15298 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E
15299 % U+005F LOW LINE; underscore
15300 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F
15301 %* \textunderscore -> \mathunderscore (LaTeX)
15302 % U+0060 GRAVE ACCENT; grave
15303 \DeclareTextCommand{\textasciigrave}{PU}{\80\140}% U+0060

$\backslash 80\backslash 141$: U+0061 LATIN SMALL LETTER A; a
 ...
 $\backslash 80\backslash 150$: U+0068 LATIN SMALL LETTER H; h
 15304 % U+0069 LATIN SMALL LETTER I; i
 15305 $\backslash \text{DeclareTextCompositeCommand}\{\backslash .\}\{\text{PU}\}\{\text{i}\}\{\text{i}\}\%$ $\backslash 80\backslash 151$ U+0069
 15306 $\backslash \text{DeclareTextCompositeCommand}\{\backslash .\}\{\text{PU}\}\{\text{i}\}\{\text{i}\}\%$ $\backslash 80\backslash 151$ U+0069
 $\backslash 80\backslash 152$: U+006A LATIN SMALL LETTER J; j
 ...
 $\backslash 80\backslash 172$: U+007A LATIN SMALL LETTER Z; z
 15307 % U+007B LEFT CURLY BRACKET; braceleft
 15308 $\backslash \text{DeclareTextCommand}\{\backslash \text{textbraceleft}\}\{\text{PU}\}\{\backslash 80\backslash 173\}\%$ U+007B
 15309 % U+007C VERTICAL LINE; *bar, verticalbar
 15310 $\backslash \text{DeclareTextCommand}\{\backslash \text{textbar}\}\{\text{PU}\}\{\text{I}\}\%$ $\backslash 80\backslash 174$ U+007C
 15311 %* $\backslash \text{textbar} \rightarrow \backslash \text{textvertline}$ (tipa)
 15312 % U+007D RIGHT CURLY BRACKET; braceright
 15313 $\backslash \text{DeclareTextCommand}\{\backslash \text{textbraceright}\}\{\text{PU}\}\{\backslash 80\backslash 175\}\%$ U+007D
 15314 % U+007E TILDE; asciitilde
 15315 $\backslash \text{DeclareTextCommand}\{\backslash \text{textasciitilde}\}\{\text{PU}\}\{\backslash 80\backslash 176\}\%$ U+007E

47.2.3 Latin-1 Supplement: U+0080 to U+00FF

$\backslash 80\backslash 240$: U+00A0 NO-BREAK SPACE; nbspace, nonbreakingspace
 15316 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown
 15317 $\backslash \text{DeclareTextCommand}\{\backslash \text{textexclamdown}\}\{\text{PU}\}\{\backslash 80\backslash 241\}\%$ U+00A1
 15318 % U+00A2 CENT SIGN; cent
 15319 $\backslash \text{DeclareTextCommand}\{\backslash \text{textcent}\}\{\text{PU}\}\{\backslash 80\backslash 242\}\%$ U+00A2
 15320 % U+00A3 POUND SIGN; sterling
 15321 $\backslash \text{DeclareTextCommand}\{\backslash \text{textsterling}\}\{\text{PU}\}\{\backslash 80\backslash 243\}\%$ U+00A3
 15322 %* $\backslash \text{textsterling} \rightarrow \backslash \text{mathsterling}$ (LaTeX)
 15323 %* $\backslash \text{textsterling} \rightarrow \backslash \text{pounds}$ (LaTeX)
 15324 % U+00A4 CURRENCY SIGN; currency
 15325 $\backslash \text{DeclareTextCommand}\{\backslash \text{textcurrency}\}\{\text{PU}\}\{\backslash 80\backslash 244\}\%$ U+00A4
 15326 % U+00A5 YEN SIGN; yen
 15327 $\backslash \text{DeclareTextCommand}\{\backslash \text{textyen}\}\{\text{PU}\}\{\backslash 80\backslash 245\}\%$ U+00A5
 15328 % U+00A6 BROKEN BAR; brokenbar
 15329 $\backslash \text{DeclareTextCommand}\{\backslash \text{textbrokenbar}\}\{\text{PU}\}\{\backslash 80\backslash 246\}\%$ U+00A6
 15330 %* $\backslash \text{textbrokenbar} \rightarrow \backslash \text{brokenvert}$ (wasysym)
 15331 % U+00A7 SECTION SIGN; section
 15332 $\backslash \text{DeclareTextCommand}\{\backslash \text{textsection}\}\{\text{PU}\}\{\backslash 80\backslash 247\}\%$ U+00A7
 15333 %* $\backslash \text{textsection} \rightarrow \backslash \text{mathsection}$ (LaTeX)
 15334 %* $\backslash \text{textsection} \rightarrow \backslash \text{S}$ (LaTeX)
 15335 % U+00A8 DIAERESIS; diaeresis
 15336 $\backslash \text{DeclareTextCommand}\{\backslash \text{textasciidieresis}\}\{\text{PU}\}\{\backslash 80\backslash 250\}\%$ U+00A8
 15337 % U+00A9 COPYRIGHT SIGN; copyright
 15338 $\backslash \text{DeclareTextCommand}\{\backslash \text{textcopyright}\}\{\text{PU}\}\{\backslash 80\backslash 251\}\%$ * U+00A9
 15339 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine
 15340 $\backslash \text{DeclareTextCommand}\{\backslash \text{textordfeminine}\}\{\text{PU}\}\{\backslash 80\backslash 252\}\%$ U+00AA
 15341 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetleft
 15342 $\backslash \text{DeclareTextCommand}\{\backslash \text{guillemotleft}\}\{\text{PU}\}\{\backslash 80\backslash 253\}\%$ U+00AB
 15343 $\backslash \text{DeclareTextCommand}\{\backslash \text{guillemotleft}\}\{\text{PU}\}\{\backslash 80\backslash 253\}\%$ U+00AB
 15344 % U+00AC NOT SIGN; logicalnot
 15345 $\backslash \text{DeclareTextCommand}\{\backslash \text{textlogicalnot}\}\{\text{PU}\}\{\backslash 80\backslash 254\}\%$ U+00AC
 15346 $\backslash \text{DeclareTextCommand}\{\backslash \text{textlnot}\}\{\text{PU}\}\{\backslash 80\backslash 254\}\%$ U+00AC

$\backslash 80\backslash 255$: U+00AD SOFT HYPHEN; sftthyphen, softthyphen
15347 % U+00AE REGISTERED SIGN; registered
15348 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE
15349 % U+00AF MACRON; *macron, overscore
15350 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF
15351 % U+00B0 DEGREE SIGN; degree
15352 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0
15353 % U+00B1 PLUS-MINUS SIGN; plusminus
15354 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1
15355 % U+00B2 SUPERSCRIPT TWO; twosuperior
15356 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}% * U+00B2
15357 % U+00B3 SUPERSCRIPT THREE; threesuperior
15358 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}% * U+00B3
15359 % U+00B4 ACUTE ACCENT; acute
15360 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4
15361 \DeclareTextCommand{\textasciacute}{PU}{\80\264}% U+00B4
15362 % U+00B5 MICRO SIGN; mu, mul
15363 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5
15364 % U+00B6 PILCROW SIGN; paragraph
15365 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6
15366 %* \textparagraph -> \mathparagraph (LaTeX)
15367 % U+00B7 MIDDLE DOT; middot, *periodcentered
15368 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7
15369 %* \textperiodcentered -> \MultiplicationDot (marvosym)
15370 %* \textperiodcentered -> \Squaredot (marvosym)
15371 % U+00B8 CEDILLA; cedilla
15372 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8
15373 % U+00B9 SUPERSCRIPT ONE; onesuperior
15374 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}% * U+00B9
15375 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine
15376 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA
15377 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemetright
15378 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB
15379 \DeclareTextCommand{\guillemetright}{PU}{\80\273}% U+00BB
15380 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter
15381 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC
15382 % U+00BD VULGAR FRACTION ONE HALF; onehalf
15383 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD
15384 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters
15385 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE
15386 % U+00BF INVERTED QUESTION MARK; questiondown
15387 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF
15388 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave
15389 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0
15390 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute
15391 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1
15392 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex
15393 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2
15394 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde
15395 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3
15396 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis
15397 \DeclareTextCompositeCommand{\"}{PU}{A}{\80\304}% U+00C4
15398 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring
15399 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5

15400 % U+00C6 LATIN CAPITAL LETTER AE; AE
 15401 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6
 15402 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla
 15403 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7
 15404 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave
 15405 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8
 15406 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute
 15407 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9
 15408 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex
 15409 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA
 15410 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis
 15411 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB
 15412 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave
 15413 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC
 15414 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute
 15415 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD
 15416 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex
 15417 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE
 15418 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis
 15419 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF
 15420 % U+00D0 LATIN CAPITAL LETTER ETH; Eth
 15421 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0
 15422 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde
 15423 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1
 15424 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve
 15425 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2
 15426 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute
 15427 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3
 15428 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex
 15429 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4
 15430 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde
 15431 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5
 15432 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis
 15433 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6
 15434 % U+00D7 MULTIPLICATION SIGN; multiply
 15435 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7
 15436 %* \textmultiply -> \vartimes (stmaryrd)
 15437 %* \textmultiply -> \MVMultiplication (marvosym)
 15438 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash
 15439 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8
 15440 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave
 15441 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9
 15442 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute
 15443 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA
 15444 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex
 15445 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB
 15446 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis
 15447 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC
 15448 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute
 15449 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD
 15450 % U+00DE LATIN CAPITAL LETTER THORN; Thorn; \TH, \Thorn (wasysym)
 15451 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE
 15452 \DeclareTextCommand{\textThorn}{PU}{\80\336}%* U+00DE
 15453 % U+00DF LATIN SMALL LETTER SHARP S; germandbls

15454 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF
15455 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave
15456 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0
15457 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute
15458 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1
15459 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex
15460 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2
15461 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde
15462 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3
15463 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis
15464 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4
15465 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring
15466 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5
15467 % U+00E6 LATIN SMALL LETTER AE; ae
15468 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6
15469 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla
15470 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7
15471 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave
15472 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8
15473 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute
15474 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9
15475 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex
15476 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA
15477 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis
15478 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB
15479 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave
15480 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC
15481 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC
15482 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute
15483 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED
15484 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED
15485 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex
15486 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE
15487 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE
15488 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis
15489 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF
15490 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF
15491 % U+00F0 LATIN SMALL LETTER ETH; eth
15492 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0
15493 %* \dh -> \eth (wsuipa, phonetic)
15494 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde
15495 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1
15496 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve
15497 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2
15498 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute
15499 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3
15500 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex
15501 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4
15502 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde
15503 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5
15504 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis
15505 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6
15506 % U+00F7 DIVISION SIGN; divide
15507 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7

15508 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash
 15509 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8
 15510 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave
 15511 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9
 15512 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute
 15513 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA
 15514 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex
 15515 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB
 15516 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis
 15517 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC
 15518 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute
 15519 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD
 15520 % U+00FE LATIN SMALL LETTER THORN; thorn;
 15521 % \th, \thorn (wasysym), \textthorn (tipa)
 15522 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE
 15523 \DeclareTextCommand{\textthorn}{PU}{\80\376}%* U+00FE
 15524 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis
 15525 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

47.2.4 Latin Extended-A: U+0080 to U+017F

15526 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron
 15527 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100
 15528 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron
 15529 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101
 15530 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve
 15531 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102
 15532 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve
 15533 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103
 15534 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek
 15535 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104
 15536 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek
 15537 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105
 15538 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute
 15539 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106
 15540 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute
 15541 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107
 15542 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex
 15543 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108
 15544 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex
 15545 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109
 15546 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotac-
 cent
 15547 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A
 15548 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent
 15549 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B
 15550 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron
 15551 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C
 15552 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron
 15553 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D
 15554 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron
 15555 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E
 15556 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron
 15557 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F

15558 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash
 15559 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110
 15560 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron;
 15561 % \textcrd (tipa)
 15562 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111
 15563 \DeclareTextCommand{\textcrd}{PU}{\81\021}% U+0111
 15564 %* \textcrd -> \crossd (wsuipa)
 15565 % An alternate glyph with the stroke through the bowl:
 15566 %* \textcrd -> \textbard (tipa)
 15567 %* \textcrd -> \bard (wsuipa)
 15568 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron
 15569 \DeclareTextCompositeCommand{=} {PU}{E}{\81\022}% U+0112
 15570 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron
 15571 \DeclareTextCompositeCommand{=} {PU}{e}{\81\023}% U+0113
 15572 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve
 15573 \DeclareTextCompositeCommand{\u} {PU}{E}{\81\024}% U+0114
 15574 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve
 15575 \DeclareTextCompositeCommand{\u} {PU}{e}{\81\025}% U+0115
 15576 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent
 15577 \DeclareTextCompositeCommand{\.} {PU}{E}{\81\026}% U+0116
 15578 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent
 15579 \DeclareTextCompositeCommand{\.} {PU}{e}{\81\027}% U+0117
 15580 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek
 15581 \DeclareTextCompositeCommand{\k} {PU}{E}{\81\030}% U+0118
 15582 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek
 15583 \DeclareTextCompositeCommand{\k} {PU}{e}{\81\031}% U+0119
 15584 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron
 15585 \DeclareTextCompositeCommand{\v} {PU}{E}{\81\032}% U+011A
 15586 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron
 15587 \DeclareTextCompositeCommand{\v} {PU}{e}{\81\033}% U+011B
 15588 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex
 15589 \DeclareTextCompositeCommand{\^} {PU}{G}{\81\034}% U+011C
 15590 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex
 15591 \DeclareTextCompositeCommand{\^} {PU}{g}{\81\035}% U+011D
 15592 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve
 15593 \DeclareTextCompositeCommand{\u} {PU}{G}{\81\036}% U+011E
 15594 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve
 15595 \DeclareTextCompositeCommand{\u} {PU}{g}{\81\037}% U+011F
 15596 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotac-
 cent
 15597 \DeclareTextCompositeCommand{\.} {PU}{G}{\81\040}% U+0120
 15598 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent
 15599 \DeclareTextCompositeCommand{\.} {PU}{g}{\81\041}% U+0121
 15600 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcom-
 maaccent
 15601 \DeclareTextCompositeCommand{\c} {PU}{G}{\81\042}% U+0122
 15602 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent
 15603 \DeclareTextCompositeCommand{\c} {PU}{g}{\81\043}% U+0123
 15604 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex
 15605 \DeclareTextCompositeCommand{\^} {PU}{H}{\81\044}% U+0124
 15606 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex
 15607 \DeclareTextCompositeCommand{\^} {PU}{h}{\81\045}% U+0125
 15608 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar
 15609 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126

```

15610 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar; \hbar (AmS)
15611 \DeclareTextCommand{\texthbar}{PU}{\81\047}%* U+0127
15612 %* \texthbar -> \textcrh (tipa)
15613 %* \texthbar -> \crossh (wsuipa)
15614 %* \texthbar -> \planck (phonetic)
15615 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde
15616 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128
15617 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde
15618 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129
15619 \DeclareTextCompositeCommand{\~}{PU}{\i}{\81\051}% U+0129
15620 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron
15621 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A
15622 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron
15623 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B
15624 \DeclareTextCompositeCommand{\=}{PU}{\i}{\81\053}% U+012B
15625 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve
15626 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C
15627 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve
15628 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D
15629 \DeclareTextCompositeCommand{\u}{PU}{\i}{\81\055}% U+012D
15630 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek
15631 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E
15632 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek
15633 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F
15634 \DeclareTextCompositeCommand{\k}{PU}{\i}{\81\057}% U+012F
15635 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent
15636 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130
15637 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi
15638 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131
15639 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ
15640 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132
15641 % U+0133 LATIN SMALL LIGATURE IJ; ij
15642 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133
15643 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex
15644 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134
15645 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex
15646 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135
15647 \DeclareTextCompositeCommand{\^}{PU}{\j}{\81\065}% U+0135
15648 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaac-
cent
15649 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136
15650 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent
15651 \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`.

```

15652 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic
15653 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138
15654 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute
15655 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139
15656 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute
15657 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A
15658 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaac-
cent

```

cent

15659 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B

15660 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent

15661 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C

15662 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron

15663 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D

15664 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron

15665 \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.

15666 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotaccent

cent

15667 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F

15668 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent

15669 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140

15670 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash

15671 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141

15672 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash

15673 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142

15674 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute

15675 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143

15676 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute

15677 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144

15678 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaaccent

cent

15679 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145

15680 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent

15681 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146

15682 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron

15683 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147

15684 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron

15685 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148

15686 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napostrophe, quoterightn

15687 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149

15688 % U+014A LATIN CAPITAL LETTER ENG; Eng

15689 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A

15690 % U+014B LATIN SMALL LETTER ENG; eng

15691 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B

15692 %* \ng -> \eng (wsuipa)

15693 %* \ng -> \engma (phonetic)

15694 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron

15695 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C

15696 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron

15697 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D

15698 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve

15699 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E

15700 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve

15701 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F

15702 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblacute, Ohungarumlaut

15703 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150

15704 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odblac-

cute, ohungarumlaut

15705 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151

15706 % U+0152 LATIN CAPITAL LIGATURE OE; OE

15707 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152

15708 % U+0153 LATIN SMALL LIGATURE OE; oe

15709 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153

15710 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute

15711 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124}% U+0154

15712 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute

15713 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125}% U+0155

15714 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaaccent

15715 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156

15716 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent

15717 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157

15718 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron

15719 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158

15720 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron

15721 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159

15722 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute

15723 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A

15724 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute

15725 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B

15726 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex

15727 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C

15728 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex

15729 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D

15730 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla

15731 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E

15732 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla

15733 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F

15734 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron

15735 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160

15736 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron

15737 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161

15738 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaaccent

15739 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162

15740 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent

15741 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163

15742 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron

15743 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164

15744 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron

15745 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165

15746 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar

15747 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166

15748 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar

15749 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167

15750 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde

15751 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168

15752 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde

15753 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169

15754 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron

15755 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A

15756 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron
 15757 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B
 15758 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve
 15759 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C
 15760 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve
 15761 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D
 15762 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring
 15763 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E
 15764 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring
 15765 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F
 15766 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udblacute, Uhungarumlaut
 15767 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170
 15768 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhungarumlaut
 15769 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171
 15770 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek
 15771 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172
 15772 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek
 15773 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173
 15774 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex
 15775 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174
 15776 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex
 15777 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175
 15778 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex
 15779 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176
 15780 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex
 15781 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177
 15782 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis
 15783 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178
 15784 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute
 15785 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179
 15786 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute
 15787 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A
 15788 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent
 15789 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B
 15790 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent
 15791 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C
 15792 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron
 15793 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D
 15794 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron
 15795 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E
 15796 % U+017F LATIN SMALL LETTER LONG S; longs, slong
 15797 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

47.2.5 Latin Extended-B: U+0180 to U+024F

15798 % U+0180 LATIN SMALL LETTER B WITH STROKE; bstroke; \textcrb (tipa)
 15799 \DeclareTextCommand{\textcrb}{PU}{\81\200}% U+0180
 15800 %* \textcrb -> \crossb (wsuipa)
 15801 % An alternate glyph with the stroke through the bowl:
 15802 %* \textcrb -> \textbarb (tipa)
 15803 %* \textcrb -> \barb (wsuipa)
 15804 % U+0181 LATIN CAPITAL LETTER B WITH HOOK; Bhook; \hausab (phonetic)

15805 \DeclareTextCommand{\texthausaB}{PU}{\81\201}%* U+0181
15806 % U+0188 LATIN SMALL LETTER C WITH HOOK; chook; \texthtc (tipa)
15807 \DeclareTextCommand{\texthtc}{PU}{\81\210}% U+0188
15808 % U+018A LATIN CAPITAL LETTER D WITH HOOK; Dhook; \hausaD (pho-
netic)
15809 \DeclareTextCommand{\texthausaD}{PU}{\81\212}%* U+018A
15810 % U+018E LATIN CAPITAL LETTER REVERSED E; Eversed
15811 \DeclareTextCommand{\textEversed}{PU}{\81\216}% U+018E
15812 \DeclareTextCommand{\textrevE}{PU}{\81\216}% U+018E
15813 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin
15814 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192
15815 %* \textflorin -> \Florin (marvosym)
15816 % U+0195 LATIN SMALL LETTER HV; hv; \texthvlig (tipa)
15817 \DeclareTextCommand{\texthvlig}{PU}{\81\225}% U+0195
15818 %* \texthvlig -> \hv (wsuipa)
15819 % U+0198 LATIN CAPITAL LETTER K WITH HOOK; Khook; \hausaK (pho-
netic)
15820 \DeclareTextCommand{\texthausaK}{PU}{\81\230}%* U+0198
15821 % U+0199 LATIN SMALL LETTER K WITH HOOK; khook; \texthtk (tipa)
15822 \DeclareTextCommand{\texthtk}{PU}{\81\231}% U+0199
15823 %* \texthtk -> \hausak (phonetic)
15824 % U+019A LATIN SMALL LETTER L WITH BAR; lbar;
15825 % \textbarl (tipa), \barl (wsuipa)
15826 \DeclareTextCommand{\textbarl}{PU}{\81\232}%* U+019A
15827 % U+019B LATIN SMALL LETTER LAMBDA WITH STROKE/
15828 % LATIN SMALL LETTER BARRED LAMBDA; lambdastroke;
15829 % \textcrlambda (tipa)
15830 \DeclareTextCommand{\textcrlambda}{PU}{\81\233}% U+019B
15831 %* \textcrlambda -> \crossnilambda (wsuipa)
15832 %* \textcrlambda -> \barlambda (phonetic)
15833 %* \textcrlambda -> \lambdabar (txfonts/pxfonts)
15834 %* \textcrlambda -> \lambdash (txfonts/pxfonts)
15835 % U+019E LATIN SMALL LETTER N WITH LONG RIGHT LEG; nlegright-
long;
15836 % \textnrleg (tipx)
15837 \DeclareTextCommand{\textPUnrleg}{PU}{\81\236}% U+019E
15838 %* \textPUnrleg -> \textnrleg (tipx)
15839 % U+01A5 LATIN SMALL LETTER P WITH HOOK; phook; \texthtp (tipa)
15840 \DeclareTextCommand{\texthtp}{PU}{\81\245}% U+01A5
15841 % U+01AB LATIN SMALL LETTER T WITH PALATAL HOOK; tpalatalhook;
15842 % \textlhookt (tipa)
15843 \DeclareTextCommand{\textlhookt}{PU}{\81\253}% U+01AB
15844 % U+01AD LATIN SMALL LETTER T WITH HOOK; thook; \texthtt (tipa)
15845 \DeclareTextCommand{\texthtt}{PU}{\81\255}% U+01AD
15846 % U+01B9 LATIN SMALL LETTER EZH REVERSED/
15847 % LATIN SMALL LETTER REVERSED YOGH; \textrevyogh (tipa)
15848 \DeclareTextCommand{\textrevyogh}{PU}{\81\271}% U+01B9
15849 % U+01BB LATIN LETTER TWO WITH STROKE; twostroke; \textcrtwo (tipa)
15850 \DeclareTextCommand{\textcrtwo}{PU}{\81\273}% U+01BB
15851 % U+01BE LATIN LETTER INVERTED GLOTTAL STOP WITH STROKE;
15852 % glottalinvertedstroke; \textcrinvglotstop (tipa)
15853 \DeclareTextCommand{\textcrinvglotstop}{PU}{\81\276}% U+01BE
15854 % U+01BF LATIN LETTER WYNN; wynn; \textwynn (tipa)
15855 \DeclareTextCommand{\textwynn}{PU}{\81\277}% U+01BF

15856 % U+01C0 LATIN LETTER DENTAL CLICK/LATIN LETTER PIPE; clickden-
 tal;
 15857 % \textpipe (tipa)
 15858 \DeclareTextCommand{\textpipe}{PU}{\81\300}% U+01C0
 15859 %* \textpipe -> \textpipevar (tipx)
 15860 % U+01C1 LATIN LETTER LATERAL CLICK/LATIN LETTER
 15861 % DOUBLE PIPE; clicklateral; \textdoublepipe (tipa)
 15862 \DeclareTextCommand{\textdoublepipe}{PU}{\81\301}% U+01C1
 15863 %* \textdoublepipe -> \textdoublepipevar (tipx)
 15864 % U+01C2 LATIN LETTER ALVEOLAR CLICK/LATIN LETTER PIPE DOU-
 BLE BAR;
 15865 % clickalveolar; \textdoublebarpipe (tipa)
 15866 \DeclareTextCommand{\textdoublebarpipe}{PU}{\81\302}% U+01C2
 15867 %* \textdoublebarpipe -> \textdoublebarpipevar (tipx)
 15868 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron
 15869 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD
 15870 % U+01CE LATIN SMALL LETTER A WITH CARON; acarón
 15871 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE
 15872 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron
 15873 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF
 15874 % U+01D0 LATIN SMALL LETTER I WITH CARON; icarón
 15875 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0
 15876 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0
 15877 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron
 15878 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1
 15879 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocarón
 15880 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2
 15881 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron
 15882 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3
 15883 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucarón
 15884 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4
 15885 % U+01DD LATIN SMALL LETTER TURNED E; eturned; \inve (wasysym)
 15886 \DeclareTextCommand{\textinve}{PU}{\81\335}%* U+01DD
 15887 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke
 15888 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4
 15889 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke
 15890 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5
 15891 %* \textgslash -> \textcrg (tipa)
 15892 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron
 15893 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6
 15894 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron
 15895 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7
 15896 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron
 15897 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8
 15898 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron
 15899 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9
 15900 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek
 15901 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA
 15902 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek
 15903 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB
 15904 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron
 15905 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0
 15906 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0
 15907 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute

15908 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4
15909 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute
15910 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5
15911 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE
15912 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\370}% U+01F8
15913 % U+01F9 LATIN SMALL LETTER N WITH GRAVE
15914 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\371}% U+01F9
15915 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute
15916 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC
15917 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute
15918 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD
15919 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE;
15920 % *Oslashacute, Ostrokeacut
15921 \DeclareTextCompositeCommand{\'}{PU}{\O}{\81\376}% U+01FE
15922 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE;
15923 % *oslashacute, ostrokeacute
15924 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF
15925 </puenc>
15926 <*puextra>
15927 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave
15928 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200
15929 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave
15930 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201
15931 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave
15932 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204
15933 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave
15934 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205
15935 </puextra>
15936 <*puenc>
15937 % U+0206 LATIN CAPITAL LETTER E WITH INVERTED BREVE; Einvert-
edbreve
15938 \DeclareTextCompositeCommand{\textinvbreve}{PU}{E}{\82\006}% U+0206
15939 % U+0207 LATIN SMALL LETTER E WITH INVERTED BREVE; einverted-
breve
15940 \DeclareTextCompositeCommand{\textinvbreve}{PU}{e}{\82\007}% U+0207
15941 </puenc>
15942 <*puextra>
15943 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave
15944 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208
15945 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave
15946 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209
15947 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209
15948 </puextra>
15949 <*puenc>
15950 % U+020A LATIN CAPITAL LETTER I WITH INVERTED BREVE; Iinverted-
breve
15951 \DeclareTextCompositeCommand{\textinvbreve}{PU}{I}{\82\012}% U+020A
15952 % U+020B LATIN SMALL LETTER I WITH INVERTED BREVE; iinverted-
breve
15953 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B
15954 \DeclareTextCompositeCommand{\textinvbreve}{PU}{i}{\82\013}% U+020B
15955 </puenc>
15956 <*puextra>
15957 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave

15958 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C
15959 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave
15960 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D
15961 \puextra
15962 *puenc
15963 % U+020E LATIN CAPITAL LETTER O WITH INVERTED BREVE; Oinvert-
edbreve
15964 \DeclareTextCompositeCommand{\textinvbreve}{PU}{O}{\82\016}% U+020E
15965 % U+020F LATIN SMALL LETTER O WITH INVERTED BREVE; oinverted-
breve
15966 \DeclareTextCompositeCommand{\textinvbreve}{PU}{o}{\82\017}% U+020F
15967 \puenc
15968 *puextra
15969 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave
15970 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210
15971 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave
15972 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211
15973 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave
15974 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214
15975 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave
15976 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215
15977 \puextra
15978 *puenc
15979 % U+0216 LATIN CAPITAL LETTER U WITH INVERTED BREVE; Uinvert-
edbreve
15980 \DeclareTextCompositeCommand{\textinvbreve}{PU}{U}{\82\026}% U+0216
15981 % U+0217 LATIN SMALL LETTER U WITH INVERTED BREVE; uinverted-
breve
15982 \DeclareTextCompositeCommand{\textinvbreve}{PU}{u}{\82\027}% U+0217
15983 % U+021E LATIN CAPITAL LETTER H WITH CARON
15984 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E
15985 % U+021F LATIN SMALL LETTER H WITH CARON
15986 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F
15987 % U+0221 LATIN SMALL LETTER D WITH CURL; \textctd (tipa)
15988 \DeclareTextCommand{\textctd}{PU}{\82\041}% U+0221
15989 % U+0225 LATIN SMALL LETTER Z WITH HOOK; \textcommatailz (tipa)
15990 \DeclareTextCommand{\textcommatailz}{PU}{\82\045}% U+0225
15991 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE
15992 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226
15993 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE
15994 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227
15995 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA
15996 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228
15997 % U+0229 LATIN SMALL LETTER E WITH CEDILLA
15998 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229
15999 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE
16000 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E
16001 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE
16002 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F
16003 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON
16004 \DeclareTextCompositeCommand{\=}{PU}{Y}{\82\062}% U+0232
16005 % U+0233 LATIN SMALL LETTER Y WITH MACRON
16006 \DeclareTextCompositeCommand{\=}{PU}{y}{\82\063}% U+0233
16007 % U+0235 LATIN SMALL LETTER N WITH CURL; \textctn (tipa)

```

16008 \DeclareTextCommand{\textctn}{PU}{\82\065}% U+0235
16009 % U+0236 LATIN SMALL LETTER T WITH CURL; \textctt (tipa)
16010 \DeclareTextCommand{\textctt}{PU}{\82\066}% U+0236
16011 % U+0237 LATIN SMALL LETTER DOTLESS J
16012 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237
16013 % U+0238 LATIN SMALL LETTER DB DIGRAPH; \textdblig (tipx)
16014 \DeclareTextCommand{\textPUdblig}{PU}{\82\070}% U+0238
16015 %* \textPUdblig -> \textdblig (tipx)
16016 % U+0239 LATIN SMALL LETTER QP DIGRAPH; \textqplig (tipx)
16017 \DeclareTextCommand{\textPUqplig}{PU}{\82\071}% U+0239
16018 %* \textPUqplig -> \textqplig (tipx)
16019 % U+023C LATIN SMALL LETTER C WITH STROKE; \slashc (wsuipa)
16020 \DeclareTextCommand{\textslashc}{PU}{\82\074}%* U+023C
16021 %* \textslashc -> \textcentoldstyle (textcomp)
16022 % With bar instead of stroke:
16023 %* \textslashc -> \textbarc (tipa)

```

47.2.6 IPA Extensions: U+0250 to U+02AF

```

16024 % U+0250 LATIN SMALL LETTER TURNED A; aturned; \textturna (tipa)
16025 \DeclareTextCommand{\textturna}{PU}{\82\120}% U+0250
16026 %* \textturna -> \inva (wasysym)
16027 % U+0251 LATIN SMALL LETTER ALPHA/LATIN SMALL LETTER
16028 % SCRIPT A; ascript; \textscripta (tipa), \scripta (wsuipa)
16029 \DeclareTextCommand{\textscripta}{PU}{\82\121}%* U+0251
16030 %* \textscripta -> \vara (phonetic)
16031 % U+0252 LATIN SMALL LETTER TURNED ALPHA; ascriptturned;
16032 % \textturnscripta (tipa)
16033 \DeclareTextCommand{\textturnscripta}{PU}{\82\122}% U+0252
16034 %* \textturnscripta -> \invscripta (wsuipa)
16035 %* \textturnscripta -> \rotvara (phonetic)
16036 % U+0253 LATIN CAPITAL LETTER B WITH HOOK; bhook; \texthtb (tipa)
16037 \DeclareTextCommand{\texthtb}{PU}{\82\123}% U+0253
16038 %* \texthtb -> \hookb (wsuipa)
16039 %* \texthtb -> \hausab (phonetic)
16040 % U+0254 LATIN SMALL LETTER OPEN O; oopen;
16041 % \textopeno (tipa), \openo (wasysym)
16042 \DeclareTextCommand{\textopeno}{PU}{\82\124}%* U+0254
16043 %* \textopeno -> \varopeno (phonetic)
16044 % U+0255 LATIN SMALL LETTER C WITH CURL; ccurl; \textctc (tipa)
16045 \DeclareTextCommand{\textctc}{PU}{\82\125}% U+0255
16046 %* \textctc -> \curlyc (wsuipa)
16047 % U+0256 LATIN SMALL LETTER D WITH TAIL; dtail; \textrtaild (tipa)
16048 \DeclareTextCommand{\textrtaild}{PU}{\82\126}%* U+0256
16049 %* \textrtaild -> \taild (wsuipa)
16050 % U+0257 LATIN SMALL LETTER D WITH HOOK; dhook; \texthtd (tipa)
16051 \DeclareTextCommand{\texthtd}{PU}{\82\127}% U+0257
16052 %* \texthtd -> \hookd (wsuipa)
16053 %* \texthtd -> \hausad (phonetic)
16054 % U+0258 LATIN SMALL LETTER REVERSED E; ereversed;
16055 % \textreve (tipa), \reve (wsuipa)
16056 \DeclareTextCommand{\textreve}{PU}{\82\130}%* U+0258
16057 % U+0259 LATIN SMALL LETTER SCHWA; schwa;
16058 % \textschwa (tipa), \schwa (wsuipa, phonetic)
16059 \DeclareTextCommand{\textschwa}{PU}{\82\131}%* U+0259

```

16060 % U+025A LATIN SMALL LETTER SCHWA WITH HOOK; schwahook;
 16061 % \textrhookschwa (tipa)
 16062 \DeclareTextCommand{\textrhookschwa}{PU}{\82\132}% U+025A
 16063 %* \textrhookschwa -> \er (wsuipa)
 16064 % U+025B LATIN SMALL LETTER OPEN E/LATIN SMALL LETTER EP-
 SILON; eopen;
 16065 % \niepsilon (wsuipa)
 16066 \DeclareTextCommand{\textniepsilon}{PU}{\82\133}%* U+025B
 16067 %* \textniepsilon -> \epsi (phonetic)
 16068 % U+025C LATIN SMALL LETTER REVERSED OPEN E; eopenreversed;
 16069 % \textrepsilon (tipa), \revepsilon (wsuipa)
 16070 \DeclareTextCommand{\textrepsilon}{PU}{\82\134}%* U+025C
 16071 % U+025D LATIN SMALL LETTER REVERSED OPEN E WITH HOOK; eopen-
 reversedhook;
 16072 % \textrhookrepsilon (tipa)
 16073 \DeclareTextCommand{\textrhookrepsilon}{PU}{\82\135}%* U+025D
 16074 %* \textrhookrepsilon -> \hookrepsilon (wsuipa)
 16075 % U+025E LATIN SMALL LETTER CLOSED REVERSED OPEN E; eopenre-
 versedclosed;
 16076 % \textcloseriepsilon (tipa)
 16077 \DeclareTextCommand{\textcloseriepsilon}{PU}{\82\136}% U+025E
 16078 %* \textcloseriepsilon -> \closedrepsilon (wsuipa)
 16079 % U+025F LATIN SMALL LETTER DOTLESS J WITH STROKE; jdot-
 lessstroke;
 16080 % \textbardotlessj (tipa)
 16081 \DeclareTextCommand{\textbardotlessj}{PU}{\82\137}% U+025F
 16082 %* \textbardotlessj -> \barj (phonetic)
 16083 % U+0260 LATIN SMALL LETTER G WITH HOOK; ghook; \texthtg (tipa)
 16084 \DeclareTextCommand{\texthtg}{PU}{\82\140}% U+0260
 16085 %* \texthtg -> \hookg (wsuipa)
 16086 % U+0261 LATIN SMALL LETTER SCRIPT G; gscript;
 16087 % \textscriptg (tipa), \scriptg (wsuipa)
 16088 \DeclareTextCommand{\textscriptg}{PU}{\82\141}%* U+0261
 16089 %* \textscriptg -> \varg (phonetic)
 16090 % U+0262 LATIN LETTER SMALL CAPITAL G; \textscg (tipa), \scg (wsuipa)
 16091 \DeclareTextCommand{\textscg}{PU}{\82\142}%* U+0262
 16092 % U+0263 LATIN SMALL LETTER GAMMA; gammalatinsmall;
 16093 % \ipagamma (wsuipa), \vod (phonetic)
 16094 \DeclareTextCommand{\textipagamma}{PU}{\82\143}%* U+0263
 16095 %* \textipagamma -> \vod (pnonetic)
 16096 % U+0264 LATIN SMALL LETTER RAMS HORN; ramshorn;
 16097 % \babygamma (wsuipa)
 16098 \DeclareTextCommand{\textbabygamma}{PU}{\82\144}%* U+0264
 16099 % U+0265 LATIN SMALL LETTER TURNED H; hturned; \textturnh (tipa)
 16100 \DeclareTextCommand{\textturnh}{PU}{\82\145}% U+0265
 16101 %* \textturnh -> \invh (wsuipa)
 16102 %* \textturnh -> \udesc (phonetic)
 16103 % U+0266 LATIN SMALL LETTER H WITH HOOK; hhook; \texthth (tipa)
 16104 \DeclareTextCommand{\texthth}{PU}{\82\146}% U+0266
 16105 %* \texthth -> \hookh (wsuipa)
 16106 %* \texthth -> \voicedh (phonetic)
 16107 % U+0267 LATIN SMALL LETTER HENG WITH HOOK; henghook; \tex-
 ththeng (tipa)
 16108 \DeclareTextCommand{\texththeng}{PU}{\82\147}% U+0267

16109 %* \texthheng -> \hookheng (wsuipa)
16110 % U+0268 LATIN SMALL LETTER I WITH STROKE;
16111 % \textbari (tipa), \bari (wsuipa)
16112 \DeclareTextCommand{\textbari}{PU}{\82\150}%* U+0268
16113 %* \textbari -> \ibar (phonetic)
16114 % U+0269 LATIN SMALL LETTER IOTA; iotalatin; \niiota (wsuipa)
16115 \DeclareTextCommand{\textniiota}{PU}{\82\151}%* U+0269
16116 %* \textniiota -> \vari (phonetic)
16117 % U+026A LATIN LETTER SMALL CAPITAL I; \textsci (tipa), \sci (wsuipa)
16118 \DeclareTextCommand{\textsci}{PU}{\82\152}%* U+026A
16119 % U+026B LATIN SMALL LETTER L WITH MIDDLE TILDE; lmiddletilde;
16120 % \textltilde (tipa)
16121 \DeclareTextCommand{\textltilde}{PU}{\82\153}% U+026B
16122 %* \textltilde -> \tildel (wsuipa)
16123 % U+026C LATIN SMALL LETTER L WITH BELT; lbelt; \textbeltl (tipa)
16124 \DeclareTextCommand{\textbeltl}{PU}{\82\154}% U+026C
16125 %* \textbeltl -> \latfric (wsuipa)
16126 % U+026D LATIN SMALL LETTER L WITH RETROFLEX HOOK;
16127 % \hookretroflex; \textrtaill (tipa)
16128 \DeclareTextCommand{\textrtaill}{PU}{\82\155}% U+026D
16129 %* \textrtaill -> \taill (wsuipa)
16130 % U+026E LATIN SMALL LETTER LEZH; lezh; \textlyoghlig (tipa)
16131 \DeclareTextCommand{\textlyoghlig}{PU}{\82\156}% U+026E
16132 %* \textlyoghlig -> \lz (wsuipa)
16133 % U+026F LATIN SMALL LETTER TURNED M; mturned; \textturnm (tipa)
16134 \DeclareTextCommand{\textturnm}{PU}{\82\157}% U+026F
16135 %* \textturnm -> \invmm (wsuipa)
16136 %* \textturnm -> \rotm (phonetic)
16137 % U+0270 LATIN SMALL LETTER TURNED M WITH LONG LEG; mlongleg-
turned;
16138 % \textturnmrleg (tipa)
16139 \DeclareTextCommand{\textturnmrleg}{PU}{\82\160}% U+0270
16140 %* \textturnmrleg -> \legm (wsuipa)
16141 % U+0271 LATIN SMALL LETTER M WITH HOOK; mhook; \textltailm (tipa)
16142 \DeclareTextCommand{\textltailm}{PU}{\82\161}% U+0271
16143 %* \textltailm -> \labdentainas (wsuipa)
16144 %* \textltailm -> \emgma (phonetic)
16145 % U+0272 LATIN SMALL LETTER N WITH LEFT HOOK; nhookleft; \textl-
tailn (tipa)
16146 \DeclareTextCommand{\textltailn}{PU}{\82\162}% U+0272
16147 %* \textltailn -> \nj (wsuipa)
16148 %* \textltailn -> \enya (phonetic)
16149 % U+0273 LATIN SMALL LETTER N WITH RETROFLEX HOOK;
16150 % \nhookretroflex; \textrtailn (tipa)
16151 \DeclareTextCommand{\textrtailn}{PU}{\82\163}% U+0273
16152 %* \textrtailn -> \tailn (wsuipa)
16153 % U+0274 LATIN LETTER SMALL CAPITAL N; \textscn (tipa), \scn (wsuipa)
16154 \DeclareTextCommand{\textscn}{PU}{\82\164}%* U+0274
16155 % U+0275 LATIN CAPITAL LETTER O WITH MIDDLE TILDE/
16156 % LATIN CAPITAL LETTER BARRED O; obarred;
16157 % \textbaro (tipa), \baro (wsuipa)
16158 % But \baro from stmaryrd is different!
16159 \DeclareTextCommand{\textbaro}{PU}{\82\165}% U+0275
16160 % U+0276 LATIN LETTER SMALL CAPITAL OE; \textscoelig (tipa)

16161 \DeclareTextCommand{\textscelig}{PU}{\82\166}% U+0276
16162 % U+0277 LATIN SMALL LETTER CLOSED OMEGA; omegalatinclosed;
16163 % \textcloseomega (tipa)
16164 \DeclareTextCommand{\textcloseomega}{PU}{\82\167}% U+0277
16165 %* \textcloseomega -> \closedniomega (wsuipa)
16166 %* \textcloseomega -> \varomega (phonetic)
16167 % U+0278 LATIN SMALL LETTER PHI; philatin; \nphi (wsuipa)
16168 \DeclareTextCommand{\textnphi}{PU}{\82\170}%* U+0278
16169 % U+0279 LATIN SMALL LETTER TURNED R; rturned; \textturnr (tipa)
16170 \DeclareTextCommand{\textturnr}{PU}{\82\171}% U+0279
16171 %* \textturnr -> \invr (wsuipa)
16172 %* \textturnr -> \rotr (phonetic)
16173 % U+027A LATIN SMALL LETTER TURNED R WITH LONG LEG;
16174 % rlonglegturned; \textturnlongleg (tipa)
16175 \DeclareTextCommand{\textturnlongleg}{PU}{\82\172}% U+027A
16176 %* \textturnlongleg -> \invleg (wsuipa)
16177 % U+027B LATIN SMALL LETTER TURNED R WITH HOOK; rhookturned;
16178 % \textturnrrtail (tipa)
16179 \DeclareTextCommand{\textturnrrtail}{PU}{\82\173}% U+027B
16180 %* \textturnrrtail -> \tailinvr (wsuipa)
16181 % U+027C LATIN SMALL LETTER R WITH LONG LEG; rlongleg; \textlongleg (tipa)
16182 \DeclareTextCommand{\textlongleg}{PU}{\82\174}%* U+027C
16183 %* \textlongleg -> \leg (wsuipa)
16184 % U+027D LATIN SMALL LETTER R WITH TAIL; rhook; \textrtailr (tipa)
16185 \DeclareTextCommand{\textrtailr}{PU}{\82\175}% U+027D
16186 %* \textrtailr -> \tailr (wsuipa)
16187 % U+027E LATIN SMALL LETTER R WITH FISHHOOK; rfishhook;
16188 % \textfishhookr (tipa)
16189 \DeclareTextCommand{\textfishhookr}{PU}{\82\176}% U+027E
16190 %* \textfishhookr -> \flapr (wsuipa)
16191 %* \textfishhookr -> \flap (phonetic)
16192 % U+027F LATIN SMALL LETTER REVERSED R WITH FISHHOOK; rfishhookreversed;
16193 % \textlhtlongi (tipa)
16194 \DeclareTextCommand{\textlhtlongi}{PU}{\82\177}% U+027F
16195 % U+0280 LATIN LETTER SMALL CAPITAL R; \textscr (tipa), \scr (wsuipa)
16196 \DeclareTextCommand{\textscr}{PU}{\82\200}%* U+0280
16197 % U+0281 LATIN LETTER SMALL CAPITAL INVERTED R; Rsmallinverted;
16198 % \textinvscr (tipa), \invscr (wsuipa)
16199 \DeclareTextCommand{\textinvscr}{PU}{\82\201}%* U+0281
16200 % U+0282 LATIN SMALL LETTER S WITH HOOK; shook; \textrtails (tipa)
16201 \DeclareTextCommand{\textrtails}{PU}{\82\202}% U+0282
16202 %* \textrtails -> \tails (wsuipa)
16203 % U+0283 LATIN SMALL LETTER ESH; esh; \textesh (tipa), \esh (wsuipa)
16204 \DeclareTextCommand{\textesh}{PU}{\82\203}%* U+0283
16205 % U+0284 LATIN SMALL LETTER DOTLESS J WITH STROKE AND HOOK;
16206 % dotlessjstrokehook; \texthtbardotlessj (tipa)
16207 \DeclareTextCommand{\texthtbardotlessj}{PU}{\82\204}% U+0284
16208 % U+0285 LATIN SMALL LETTER SQUAT REVERSED ESH; eshsquatreversed;
16209 % \textvibyi (tipa)
16210 \DeclareTextCommand{\textvibyi}{PU}{\82\205}% U+0285
16211 % U+0286 LATIN SMALL LETTER ESH WITH CURL; eshcurl; \textctesh (tipa)

```

16212 \DeclareTextCommand{\textctesh}{PU}{\82\206}% U+0286
16213 %* \textctesh -> \curlyesh (wsuipa)
16214 % U+0287 LATIN SMALL LETTER TURNED T; tturned; \textturnt (tipa)
16215 \DeclareTextCommand{\textturnt}{PU}{\82\207}% U+0287
16216 %* \textturnt -> \clickt (wsuipa)
16217 % U+0288 LATIN SMALL LETTER T WITH RETROFLEX HOOK; treflex-
hook;
16218 % \textrtailt (tipa)
16219 \DeclareTextCommand{\textrtailt}{PU}{\82\210}% U+0288
16220 %* \textrtailt -> \tailt (wsuipa)
16221 % U+0289 LATIN SMALL LETTER U BAR; ubar;
16222 % \textbaru (tipa), \baru (wsuipa)
16223 \DeclareTextCommand{\textbaru}{PU}{\82\211}%* U+0289
16224 %* \textbaru -> \ubar (phonetic)
16225 % U+028A LATIN SMALL LETTER UPSILON; \niupsilon (wsuipa)
16226 \DeclareTextCommand{\textniupsilon}{PU}{\82\212}%* U+028A
16227 %* \textniupsilon -> \rotOmega (phonetic)
16228 % U+028B LATIN SMALL LETTER V WITH HOOK/LATIN SMALL LET-
TER SCRIPT V;
16229 % vhook; \textscriptv (tipa), \scriptv (wsuipa)
16230 \DeclareTextCommand{\textscriptv}{PU}{\82\213}%* U+028B
16231 % U+028C LATIN SMALL LETTER TURNED V; vturned; \textturnv (tipa)
16232 \DeclareTextCommand{\textturnv}{PU}{\82\214}%* U+028C
16233 %* \textturnv -> \invv (wsuipa)
16234 %* \textturnv -> \pwedge (phonetic)
16235 % U+028D LATIN SMALL LETTER TURNED W; wturned; \textturnw (tipa)
16236 \DeclareTextCommand{\textturnw}{PU}{\82\215}%* U+028D
16237 %* \textturnw -> \invw (wsuipa)
16238 %* \textturnw -> \rotw (phonetic)
16239 % U+028E LATIN SMALL LETTER TURNED Y; yturned; \textturny (tipa)
16240 \DeclareTextCommand{\textturny}{PU}{\82\216}%* U+028E
16241 %* \textturny -> \invy (wsuipa)
16242 %* \textturny -> \roty (phonetic)
16243 % U+028F LATIN LETTER SMALL CAPITAL Y; \textscy (tipa), \scy (wsuipa)
16244 \DeclareTextCommand{\textscy}{PU}{\82\217}%* U+028F
16245 % U+0290 LATIN SMALL LETTER Z WITH RETROFLEX HOOK; zretroflex-
hook;
16246 % \textrtailz (tipa)
16247 \DeclareTextCommand{\textrtailz}{PU}{\82\220}% U+0290
16248 %* \textrtailz -> \tailz (wsuipa)
16249 % U+0291 LATIN SMALL LETTER Z WITH CURL; zcurl; \textctz (tipa)
16250 \DeclareTextCommand{\textctz}{PU}{\82\221}% U+0291
16251 %* \textctz -> \curlyz (wsuipa)
16252 % U+0292 LATIN SMALL LETTER EZH/LATIN SMALL LETTER YOGH; ezh;
16253 % \textyogh (tipa), \yogh (wsuipa)
16254 \DeclareTextCommand{\textyogh}{PU}{\82\222}%* U+0292
16255 % U+0293 LATIN SMALL LETTER EZH WITH CURL/LATIN SMALL LET-
TER YOGH CURL;
16256 % ezhcurl; \textctyogh (tipa)
16257 \DeclareTextCommand{\textctyogh}{PU}{\82\223}% U+0293
16258 %* \textctyogh -> \curlyyogh (wsuipa)
16259 % U+0294 LATIN LETTER GLOTTAL STOP; glottalstop;
16260 % \textglotstop (tipa), \glotstop (wsuipa)
16261 \DeclareTextCommand{\textglotstop}{PU}{\82\224}%* U+0294

```

16262 %* \textglotstop -> \ejective (wsuipa)
16263 %* \textglotstop -> \glottal (phonetic)
16264 % U+0295 LATIN LETTER PHARYNGEAL VOICED FRICATIVE/
16265 % LATIN LETTER REVERSED GLOTTAL STOP; glottalstopreversed;
16266 % \textrevglotstop (tipa), \revglotstop (wsuipa)
16267 \DeclareTextCommand{\textrevglotstop}{PU}{\82\225}%* U+0295
16268 %* \textrevglotstop -> \reveject (wsuipa)
16269 % U+0296 LATIN LETTER INVERTED GLOTTAL STOP; glottalstopinverted;
16270 % \textinvglotstop (tipa), \invglotstop (wsuipa)
16271 \DeclareTextCommand{\textinvglotstop}{PU}{\82\226}%* U+0296
16272 % U+0297 LATIN LETTER STRETCHED C; cstretched; \textstretchc (tipa)
16273 \DeclareTextCommand{\textstretchc}{PU}{\82\227}% U+0297
16274 %* \textstretchc -> \clickc (wsuipa)
16275 %* \textstretchc -> \textstretchcvar (tipx)
16276 % U+0298 LATIN LETTER BILABIAL CLICK; bilabialclick;
16277 % \textbullseye (tipa)
16278 \DeclareTextCommand{\textbullseye}{PU}{\82\230}% U+0298
16279 %* \textbullseye -> \clickb (wsuipa)
16280 %* \textbullseye -> \textObullseye (tipx)
16281 % U+0299 LATIN LETTER SMALL CAPITAL B; \textscb (tipa)
16282 \DeclareTextCommand{\textscb}{PU}{\82\231}% U+0299
16283 % U+029A LATIN SMALL LETTER CLOSED OPEN E; eopenclosed;
16284 % \textcloseepsilon (tipa)
16285 \DeclareTextCommand{\textcloseepsilon}{PU}{\82\232}% U+029A
16286 % U+029B LATIN LETTER SMALL CAPITAL G WITH HOOK; Gsmallhook;
16287 % \texthtscg (tipa)
16288 \DeclareTextCommand{\texthtscg}{PU}{\82\233}% U+029B
16289 % U+029C LATIN LETTER SMALL CAPITAL H; \textsch (tipa)
16290 \DeclareTextCommand{\textsch}{PU}{\82\234}% U+029C
16291 % U+029D LATIN SMALL LETTER J WITH CROSSED-TAIL; jcros-
tail; \textcdj (tipa)
16292 \DeclareTextCommand{\textctj}{PU}{\82\235}% U+029D
16293 %* \textctj -> \textctjvar (tipx)
16294 % U+029E LATIN SMALL LETTER TURNED K; kturned; \textturnk (tipa)
16295 \DeclareTextCommand{\textturnk}{PU}{\82\236}% U+029E
16296 %* \textturnk -> \textturnsck (tipx)
16297 % U+029F LATIN LETTER SMALL CAPITAL L; \textsl (tipa)
16298 \DeclareTextCommand{\textsl}{PU}{\82\237}% U+029F
16299 % U+02A0 LATIN SMALL LETTER Q WITH HOOK; qhook; \texthtq (tipa)
16300 \DeclareTextCommand{\texthtq}{PU}{\82\240}% U+02A0
16301 % U+02A1 LATIN LETTER GLOTTAL STOP WITH STROKE; glottalstop-
stroke;
16302 % \textbarglotstop (tipa)
16303 \DeclareTextCommand{\textbarglotstop}{PU}{\82\241}% U+02A1
16304 % U+02A2 LATIN LETTER REVERSED GLOTTAL STOP WITH STROKE/
16305 % LATIN LETTER REVERSED GLOTTAL STOP BAR; glottalstopstrokere-
versed;
16306 % \textbarrevglotstop (tipa)
16307 \DeclareTextCommand{\textbarrevglotstop}{PU}{\82\242}% U+02A2
16308 % U+02A3 LATIN SMALL LETTER DZ DIGRAPH; dzaltone; \textdzlig (tipa)
16309 \DeclareTextCommand{\textdzlig}{PU}{\82\243}% U+02A3
16310 %* \textdzlig -> \dz (wsupipa)
16311 % U+02A4 LATIN SMALL LETTER DEZH DIGRAPH; dezh; \textdyogh-
lig (tipa)

16312 \DeclareTextCommand{\textdyoghlig}{PU}{\82\244}% U+02A4
 16313 % U+02A5 LATIN SMALL LETTER DZ DIGRAPH WITH CURL; dzcurl;
 16314 % \textdctzlig (tipa)
 16315 \DeclareTextCommand{\textdctzlig}{PU}{\82\245}% U+02A5
 16316 % U+02A6 LATIN SMALL LETTER TS DIGRAPH; ts; \texttslig (tipa)
 16317 \DeclareTextCommand{\texttslig}{PU}{\82\246}% U+02A6
 16318 % U+02A7 LATIN SMALL LETTER TESH DIGRAPH; tesh; \textteshlig (tipa)
 16319 \DeclareTextCommand{\textteshlig}{PU}{\82\247}% U+02A7
 16320 %* \textteshlig -> \tesh (wsuipa)
 16321 % U+02A8 LATIN SMALL LETTER TC DIGRAPH WITH CURL; tccurl;
 16322 % \texttctclig (tipa)
 16323 \DeclareTextCommand{\texttctclig}{PU}{\82\250}% U+02A8
 16324 % U+02AE LATIN SMALL LETTER TURNED H WITH FISHHOOK;
 16325 % \textlhtlongy (tipa)
 16326 \DeclareTextCommand{\textlhtlongy}{PU}{\82\256}% U+02AE
 16327 % U+02AF LATIN SMALL LETTER TURNED H WITH FISHHOOK AND TAIL;
 16328 % \textvibyy (tipa)
 16329 \DeclareTextCommand{\textvibyy}{PU}{\82\257}% U+02AF

47.2.7 Spacing Modifier Letters: U+02B0 to U+02FF

16330 % U+02BD MODIFIER LETTER REVERSED COMMA;
 16331 % commareversedmod, afi64937; \textrevapostrophe (tipa)
 16332 \DeclareTextCommand{\textrevapostrophe}{PU}{\82\275}% U+02BD
 16333 % U+02C0 MODIFIER LETTER GLOTTAL STOP; glottalstopmod;
 16334 % \textrai seglotstop (tipa)
 16335 \DeclareTextCommand{\textrai seglotstop}{PU}{\82\300}% U+02C0
 16336 % U+02C2 MODIFIER LETTER LEFT ARROWHEAD; arrowheadleftmod;
 16337 % \textlptr (tipa)
 16338 \DeclareTextCommand{\textlptr}{PU}{\82\302}% U+02C2
 16339 % U+02C3 MODIFIER LETTER RIGHT ARROWHEAD; arrowheadrightmod;
 16340 % \textrptr (tipa)
 16341 \DeclareTextCommand{\textrptr}{PU}{\82\303}% U+02C3
 16342 % U+02C7 CARON; caron
 16343 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7
 16344 % U+02C8 MODIFIER LETTER VERTICAL LINE; verticallinemod;
 16345 % \textprimstress (tipa)
 16346 \DeclareTextCommand{\textprimstress}{PU}{\82\310}% U+02C8
 16347 % U+02CC MODIFIER LETTER LOW VERTICAL LINE; verticallinelowmod;
 16348 % \textsecstress (tipa)
 16349 \DeclareTextCommand{\textsecstress}{PU}{\82\314}% U+02CC
 16350 % U+02D0 MODIFIER LETTER TRIANGULAR COLON; colontriangularmod;
 16351 % \textlengthmark (tipa)
 16352 \DeclareTextCommand{\textlengthmark}{PU}{\82\320}% U+02D0
 16353 % U+02D1 MODIFIER LETTER HALF TRIANGULAR COLON; colontriangu-
 16354 % larhalfmod;
 16354 % \texthalflength (tipa)
 16355 \DeclareTextCommand{\texthalflength}{PU}{\82\321}% U+02D1
 16356 % U+02D8 BREVE; breve
 16357 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8
 16358 % U+02D9 DOT ABOVE; dotaccent
 16359 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9
 16360 % U+02DA RING ABOVE; ring
 16361 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA
 16362 % U+02DB OGONEK; ogonek


```

16363 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB
16364 % U+02DC SMALL TILDE; ilde, *tilde
16365 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC
16366 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
16367 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD
16368 \DeclareTextCommand{\textacutedbl}{PU}{\82\335}% U+02DD
16369 % U+02F3 MODIFIER LETTER LOW RING
16370 \DeclareTextCommand{\textringlow}{PU}{\82\363}% U+02F3
16371 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT
16372 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5
16373 % U+02F7 MODIFIER LETTER LOW TILDE
16374 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7
16375 % U+02F9 MODIFIER LETTER BEGIN HIGH TONE; \textopencorner (tipa)
16376 \DeclareTextCommand{\textopencorner}{PU}{\82\371}% U+02F9
16377 % U+02FA MODIFIER LETTER END HIGH TONE; \textcorner (tipa)
16378 \DeclareTextCommand{\textcorner}{PU}{\82\372}% U+02FA

```

47.2.8 Combining Diacritical Marks: U+0300 to U+036F

```

16379 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
16380 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F
16381 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
16382 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311
16383 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcomb
16384 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323
16385 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
16386 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331
16387 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-
    blecmb
16388 \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.

```

16389 \ifx\textBeta\@undefined \else
16390 \input{puenc-greek.def}
16391 \fi
16392 \</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.

```

16393 <*puenc>
16394 \ifx\CYRDZE\@undefined \else
16395 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE
16396 \DeclareTextCompositeCommand{\`}{PU}{\CYRE}{\84\000}% U+0400
16397 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, *afi10023
16398 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401
16399 \DeclareTextCompositeCommand{\"}{PU}{\CYRE}{\84\001}% U+0401
16400 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, *afi10051
16401 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402
16402 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, *afi10052
16403 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403
16404 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, *afi10053

```

16405 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404
16406 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzeyrillic, *afii10054
16407 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405
16408 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I;
16409 % Icyrillic, *afii10055
16410 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406
16411 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, *afii10056
16412 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407
16413 \DeclareTextCompositeCommand{"}{PU}{\CYRII}{\84\007}% U+0407
16414 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, *afii10057
16415 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408
16416 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, *afii10058
16417 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409
16418 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, *afii10059
16419 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A
16420 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, *afii10060
16421 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B
16422 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, *afii10061
16423 \DeclareTextCompositeCommand{'}{PU}{\CYRK}{\84\014}% U+040C
16424 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE
16425 \DeclareTextCompositeCommand{\`}{PU}{\CYRI}{\84\015}% U+040D
16426 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, *afii10062
16427 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E
16428 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E
16429 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, *afii10145
16430 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F
16431 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, *afii10017
16432 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410
16433 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, *afii10018
16434 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411
16435 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, *afii10019
16436 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412
16437 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, *afii10020
16438 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413
16439 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, *afii10021
16440 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414
16441 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, *afii10022
16442 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415
16443 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, *afii10024
16444 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416
16445 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, *afii10025
16446 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417
16447 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, *afii10026
16448 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418
16449 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, *afii10027
16450 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419
16451 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419
16452 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, *afii10028
16453 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A
16454 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, *afii10029
16455 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B
16456 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, *afii10030
16457 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C
16458 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, *afii10031

16459 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D
16460 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, *afii10032
16461 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E
16462 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, *afii10033
16463 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F
16464 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, *afii10034
16465 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420
16466 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, *afii10035
16467 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421
16468 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, *afii10036
16469 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422
16470 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, *afii10037
16471 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423
16472 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, *afii10038
16473 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424
16474 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, *afii10039
16475 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425
16476 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, *afii10040
16477 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426
16478 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, *afii10041
16479 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427
16480 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, *afii10042
16481 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428
16482 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, *afii10043
16483 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429
16484 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN;
16485 % Hardsigncyrillic, *afii10044
16486 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A
16487 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, *afii10045
16488 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B
16489 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN;
16490 % Softsigncyrillic, *afii10046
16491 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C
16492 % U+042D CYRILLIC CAPITAL LETTER E; Eversedcyrillic, *afii10047
16493 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D
16494 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, *afii10048
16495 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E
16496 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, *afii10049
16497 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F
16498 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, *afii10065
16499 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430
16500 % U+0431 CYRILLIC SMALL LETTER BE; *afii10066, becyrillic
16501 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431
16502 % U+0432 CYRILLIC SMALL LETTER VE; *afii10067, vecyrillic
16503 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432
16504 % U+0433 CYRILLIC SMALL LETTER GHE; *afii10068, gecyrillic
16505 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433
16506 % U+0434 CYRILLIC SMALL LETTER DE; *afii10069, decyrillic
16507 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434
16508 % U+0435 CYRILLIC SMALL LETTER IE; *afii10070, iecyrillic
16509 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435
16510 % U+0436 CYRILLIC SMALL LETTER ZHE; *afii10072, zhacyrillic
16511 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% U+0436
16512 % U+0437 CYRILLIC SMALL LETTER ZE; *afii10073, zecyrillic

16513 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437
16514 % U+0438 CYRILLIC SMALL LETTER I; *afii10074, iicyrillic
16515 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438
16516 % U+0439 CYRILLIC SMALL LETTER SHORT I; *afii10075, iishortcyrillic
16517 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439
16518 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439
16519 % U+043A CYRILLIC SMALL LETTER KA; *afii10076, kacyrillic
16520 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A
16521 % U+043B CYRILLIC SMALL LETTER EL; *afii10077, elcyrillic
16522 \DeclareTextCommand{\cyl}{PU}{\84\073}% U+043B
16523 % U+043C CYRILLIC SMALL LETTER EM; *afii10078, emcyrillic
16524 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C
16525 % U+043D CYRILLIC SMALL LETTER EN; *afii10079, encyrillic
16526 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D
16527 % U+043E CYRILLIC SMALL LETTER O; *afii10080, ocyrillic
16528 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E
16529 % U+043F CYRILLIC SMALL LETTER PE; *afii10081, pecyrillic
16530 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F
16531 % U+0440 CYRILLIC SMALL LETTER ER; *afii10082, ercyrillic
16532 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440
16533 % U+0441 CYRILLIC SMALL LETTER ES; *afii10083, escyrillic
16534 \DeclareTextCommand{\cyrs}{PU}{\84\101}% U+0441
16535 % U+0442 CYRILLIC SMALL LETTER TE; *afii10084, tecyrillic
16536 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442
16537 % U+0443 CYRILLIC SMALL LETTER U; *afii10085, ucyrillic
16538 \DeclareTextCommand{\cyru}{PU}{\84\103}% U+0443
16539 % U+0444 CYRILLIC SMALL LETTER EF; *afii10086, efcyrillic
16540 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444
16541 % U+0445 CYRILLIC SMALL LETTER HA; *afii10087, khacyrillic
16542 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445
16543 % U+0446 CYRILLIC SMALL LETTER TSE; *afii10088, tsecyrillic
16544 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446
16545 % U+0447 CYRILLIC SMALL LETTER CHE; *afii10089, checyrillic
16546 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447
16547 % U+0448 CYRILLIC SMALL LETTER SHA; *afii10090, shacyrillic
16548 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448
16549 % U+0449 CYRILLIC SMALL LETTER SHCHA; *afii10091, shchacyrillic
16550 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449
16551 % U+044A CYRILLIC SMALL LETTER HARD SIGN; *afii10092, hardsigncyrillic
16552 \DeclareTextCommand{\cyrhdsn}{PU}{\84\112}% U+044A
16553 %* \cyrhdsn -> \hardsign (tipa)
16554 % U+044B CYRILLIC SMALL LETTER YERU; *afii10093, yericyrillic
16555 \DeclareTextCommand{\cyry}{PU}{\84\113}% U+044B
16556 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; *afii10094, softsigncyrillic
16557 \DeclareTextCommand{\cyrsftsn}{PU}{\84\114}% U+044C
16558 %* \cyrsftsn -> \softsign (tipa)
16559 % U+044D CYRILLIC SMALL LETTER E; *afii10095, ereversedcyrillic
16560 \DeclareTextCommand{\cyrev}{PU}{\84\115}% U+044D
16561 % U+044E CYRILLIC SMALL LETTER YU; *afii10096, iucyrillic
16562 \DeclareTextCommand{\cyry}{PU}{\84\116}% U+044E
16563 % U+044F CYRILLIC SMALL LETTER YA; *afii10097, iacyrillic
16564 \DeclareTextCommand{\cyrya}{PU}{\84\117}% U+044F
16565 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE

16566 \DeclareTextCompositeCommand{\`}{PU}{\cyre}{\84\120}% U+0450
16567 % U+0451 CYRILLIC SMALL LETTER IO; *afii10071, iocyrillic
16568 \DeclareTextCommand{\cyryo}{PU}{\84\121}% U+0451
16569 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451
16570 % U+0452 CYRILLIC SMALL LETTER DJE; *afii10099, djecyrillic
16571 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452
16572 % U+0453 CYRILLIC SMALL LETTER GJE; *afii10100, gjecyrillic
16573 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% U+0453
16574 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; *afii10101, ecyrillic
16575 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454
16576 % U+0455 CYRILLIC SMALL LETTER DZE; *afii10102, dzecyrillic
16577 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455
16578 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I;
16579 % *afii10103, icyrillic
16580 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456
16581 % U+0457 CYRILLIC SMALL LETTER YI; *afii10104, yicyrillic
16582 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457
16583 \DeclareTextCompositeCommand{\"}{PU}{\cyrii}{\84\127}% U+0457
16584 % U+0458 CYRILLIC SMALL LETTER JE; *afii10105, jecyrillic
16585 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458
16586 % U+0459 CYRILLIC SMALL LETTER LJE; *afii10106, ljecyrillic
16587 \DeclareTextCommand{\cyrkje}{PU}{\84\131}% U+0459
16588 % U+045A CYRILLIC SMALL LETTER NJE; *afii10107, njecyrillic
16589 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A
16590 % U+045B CYRILLIC SMALL LETTER TSHE; *afii10108, tshecyrillic
16591 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B
16592 % U+045C CYRILLIC SMALL LETTER KJE; *afii10109, kjecyrillic
16593 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C
16594 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE
16595 \DeclareTextCompositeCommand{\`}{PU}{\cyri}{\84\135}% U+045D
16596 % U+045E CYRILLIC SMALL LETTER SHORT U; *afii10110, ushortcyrillic
16597 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E
16598 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E
16599 % U+045F CYRILLIC SMALL LETTER DZHE; *afii10193, dzhecyrillic
16600 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F
16601 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic
16602 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460
16603 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic
16604 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461
16605 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, *afii10146
16606 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462
16607 % U+0463 CYRILLIC SMALL LETTER YAT; *afii10194, yatcyrillic
16608 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463
16609 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic
16610 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464
16611 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic
16612 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465
16613 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslitlecyrillic
16614 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466
16615 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslitlecyrillic
16616 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467
16617 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslitlei-
otifiedcyrillic
16618 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468

16619 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslittleioti-
 fiedcyrillic
 16620 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469
 16621 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic
 16622 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A
 16623 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic
 16624 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B
 16625 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-
 cyrillic
 16626 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C
 16627 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotified-
 cyrillic
 16628 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D
 16629 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic
 16630 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E
 16631 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic
 16632 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F
 16633 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic
 16634 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470
 16635 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic
 16636 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471
 16637 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, *afii10147
 16638 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472
 16639 % U+0473 CYRILLIC SMALL LETTER FITA; *afii10195, fitacyrillic
 16640 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473
 16641 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, *afii10148
 16642 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474
 16643 % U+0475 CYRILLIC SMALL LETTER IZHITSA; *afii10196, izhitsacyrillic
 16644 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475
 16645 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE
 16646 % GRAVE ACCENT; Izhitsadblgravecyrillic
 16647 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476
 16648 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE
 16649 % GRAVE ACCENT; izhitsadblgravecyrillic
 16650 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477
 16651 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic
 16652 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478
 16653 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic
 16654 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479
 16655 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyril-
 lic
 16656 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A
 16657 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic
 16658 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B
 16659 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatit-
 locyrillic
 16660 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C
 16661 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlo-
 cyrillic
 16662 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D
 16663 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic
 16664 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E
 16665 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic
 16666 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F

16667 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic
 16668 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480
 16669 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic
 16670 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481
 16671 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic
 16672 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482
 \84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrilliccmb
 \84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalization-
 cyrilliccmb
 \84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneu-
 matacyrilliccmb
 \84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumat-
 acyrilliccmb
 \84\207: U+0487 COMBINING CYRILLIC POKRYTIE
 \84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN
 \84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN
 16673 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL
 16674 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A
 16675 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL
 16676 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B
 16677 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN
 16678 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C
 16679 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN
 16680 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D
 16681 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK
 16682 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E
 16683 % U+048F CYRILLIC SMALL LETTER ER WITH TICK
 16684 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F
 16685 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturn-
 cyrillic, *afii10050
 16686 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490
 16687 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; *afii10098, ghe-
 upturncyrillic
 16688 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491
 16689 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestroke-
 cyrillic
 16690 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492
 16691 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic
 16692 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493
 16693 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK;
 16694 % Ghemiddlehookcyrillic
 16695 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494
 16696 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK;
 16697 % ghemiddlehookcyrillic
 16698 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495
 16699 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER;
 16700 % Zhedescendercyrillic
 16701 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496
 16702 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER;
 16703 % zhedescendercyrillic
 16704 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497
 16705 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescen-
 dercyrillic

16706 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498
 16707 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498
 16708 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescender-cyrillic
 16709 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499
 16710 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499
 16711 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescendercyrillic
 16712 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A
 16713 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescendercyrillic
 16714 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B
 16715 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE;
 16716 % Kavertikalstrokecyrillic
 16717 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C
 16718 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE;
 16719 % kavertikalstrokecyrillic
 16720 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D
 16721 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic
 16722 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E
 16723 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic
 16724 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F
 16725 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic
 16726 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0
 16727 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic
 16728 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1
 16729 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescendercyrillic
 16730 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2
 16731 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescendercyrillic
 16732 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3
 16733 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic
 16734 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4
 16735 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic
 16736 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5
 16737 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemiddlehookcyrillic
 16738 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6
 16739 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic
 16740 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7
 16741 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic
 16742 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8
 16743 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic
 16744 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9
 16745 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic
 16746 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA
 16747 \DeclareTextCompositeCommand{\k}{PU}{\CYRS}{\84\252}% U+04AA
 16748 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic
 16749 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB

16750 \DeclareTextCompositeCommand{\k}{PU}{\cyr}{\84\253}% U+04AB
16751 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic
16752 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC
16753 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic
16754 \DeclareTextCommand{\cyrtldsc}{PU}{\84\255}% U+04AD
16755 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic
16756 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE
16757 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic
16758 \DeclareTextCommand{\cyry}{PU}{\84\257}% U+04AF
16759 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic
16760 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0
16761 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; usstraightstrokecyrillic
16762 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% U+04B1
16763 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadescendercyrillic
16764 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2
16765 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic
16766 \DeclareTextCommand{\cyrhds}{PU}{\84\263}% U+04B3
16767 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic
16768 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4
16769 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic
16770 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5
16771 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER;
16772 % Chedescendercyrillic
16773 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6
16774 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic
16775 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7
16776 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE;
16777 % Cheverticalstrokecyrillic
16778 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8
16779 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE;
16780 % cheverticalstrokecyrillic
16781 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9
16782 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic
16783 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA
16784 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic
16785 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB
16786 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasiancyrillic
16787 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC
16788 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyrillic
16789 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD
16790 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCENDER; Chedescenderabkhasiancyrillic
16791 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE
16792 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE
16793 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCEN-

DER; chedescenderabkhasiancyrillic

16794 \DeclareTextCommand{\cyrahchdsc}{PU}{\84\277}% U+04BF

16795 \DeclareTextCompositeCommand{\k}{PU}{\cyrahch}{\84\277}% U+04BF

16796 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic

16797 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0

16798 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic

16799 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1

16800 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic

16801 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2

16802 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic

16803 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3

16804 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic

16805 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4

16806 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL

16807 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5

16808 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL

16809 \DeclareTextCommand{\cyrldsc}{PU}{\84\306}% U+04C6

16810 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic

16811 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7

16812 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic

16813 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8

16814 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakas-
siancyrillic

16815 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB

16816 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-
cyrillic

16817 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC

16818 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL

16819 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD

16820 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL

16821 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE

\84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA

16822 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevecyrillic

16823 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0

16824 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevecyrillic

16825 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1

16826 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyri-
lic

16827 \DeclareTextCompositeCommand{\"}{PU}{\CYRA}{\84\322}% U+04D2

16828 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic

16829 \DeclareTextCompositeCommand{\"}{PU}{\cyra}{\84\323}% U+04D3

16830 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic

16831 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4

16832 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic

16833 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5

16834 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevecyrillic

16835 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6

16836 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevecyrillic

16837 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7

16838 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic

16839 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8

16840 % U+04D9 CYRILLIC SMALL LETTER SCHWA; *afi10846, schwacyrillic

16841 \DeclareTextCommand{\cyrswa}{PU}{\84\331}% U+04D9

16842 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS;

16843 % Schwadieresiscyrillic
 16844 \DeclareTextCompositeCommand{"}{PU}{\CYRSCHWA}{\84\332}% U+04DA
 16845 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS;
 16846 % schwadieresiscyrillic
 16847 \DeclareTextCompositeCommand{"}{PU}{\cyrschwa}{\84\333}% U+04DB
 16848 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhedieresiscyrillic
 16849 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% U+04DC
 16850 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieresiscyrillic
 16851 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% U+04DD
 16852 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieresiscyrillic
 16853 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% U+04DE
 16854 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresiscyrillic
 16855 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% U+04DF
 16856 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasiancyrillic
 16857 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0
 16858 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyrillic
 16859 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1
 16860 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic
 16861 \DeclareTextCompositeCommand{=}{PU}{\CYRI}{\84\342}% U+04E2
 16862 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic
 16863 \DeclareTextCompositeCommand{=}{PU}{\cyri}{\84\343}% U+04E3
 16864 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic
 16865 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% U+04E4
 16866 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic
 16867 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% U+04E5
 16868 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyrillic
 16869 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6
 16870 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic
 16871 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7
 16872 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic
 16873 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8
 16874 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic
 16875 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9
 16876 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS;
 16877 % Obarreddieresiscyrillic
 16878 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA
 16879 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS;
 16880 % obarreddieresiscyrillic
 16881 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB
 16882 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS
 16883 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC
 16884 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS
 16885 \DeclareTextCompositeCommand{"}{PU}{\cyrerev}{\84\355}% U+04ED
 16886 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic
 16887 \DeclareTextCompositeCommand{=}{PU}{\CYRU}{\84\356}% U+04EE
 16888 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic
 16889 \DeclareTextCompositeCommand{=}{PU}{\cyru}{\84\357}% U+04EF

16890 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udiereiscyrillic
 16891 \DeclareTextCompositeCommand{"}{PU}{\CYRU}{\84\360}% U+04F0
 16892 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udiereiscyrillic
 16893 \DeclareTextCompositeCommand{"}{PU}{\cyru}{\84\361}% U+04F1
 16894 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhun-
 garumlautcyrillic
 16895 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U+04F2
 16896 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhun-
 garumlautcyrillic
 16897 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% U+04F3
 16898 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chediere-
 siscyrillic
 16899 \DeclareTextCompositeCommand{"}{PU}{\CYRCH}{\84\364}% U+04F4
 16900 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieres-
 iscyrillic
 16901 \DeclareTextCompositeCommand{"}{PU}{\cyrch}{\84\365}% U+04F5
 16902 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER
 16903 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6
 16904 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER
 16905 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7
 16906 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudiere-
 siscyrillic
 16907 \DeclareTextCompositeCommand{"}{PU}{\CYRERY}{\84\370}% U+04F8
 16908 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudiere-
 siscyrillic
 16909 \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
 16910 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK
 16911 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC
 16912 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK
 16913 \DeclareTextCommand{\cyrhkh}{PU}{\84\375}% U+04FD
 16914 \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

16915 \ifx\hebdalet\@undefined\else
 16916 % U+05C3 HEBREW PUNCTUATION SOF PASUQ
 16917 \DeclareTextCommand{\sofpasuq}{PU}{\85\303}% U+05C3
 16918 % U+05D0 HEBREW LETTER ALEF
 16919 \DeclareTextCommand{\hebalef}{PU}{\85\320}% U+05D0
 16920 % U+05D1 HEBREW LETTER BET
 16921 \DeclareTextCommand{\hebbet}{PU}{\85\321}% U+05D1
 16922 % U+05D2 HEBREW LETTER GIMEL
 16923 \DeclareTextCommand{\hebgimel}{PU}{\85\322}% U+05D2

16924 % U+05D3 HEBREW LETTER DALET
16925 \DeclareTextCommand{\hebdalet}{PU}{\85\323}% U+05D3
16926 % U+05D4 HEBREW LETTER HE
16927 \DeclareTextCommand{\hebhe}{PU}{\85\324}% U+05D4
16928 % U+05D5 HEBREW LETTER VAV
16929 \DeclareTextCommand{\hebvav}{PU}{\85\325}% U+05D5
16930 % U+05D6 HEBREW LETTER ZAYIN
16931 \DeclareTextCommand{\hebzayin}{PU}{\85\326}% U+05D6
16932 % U+05D7 HEBREW LETTER HET
16933 \DeclareTextCommand{\hebhhet}{PU}{\85\327}% U+05D7
16934 % U+05D8 HEBREW LETTER TET
16935 \DeclareTextCommand{\hebtet}{PU}{\85\330}% U+05D8
16936 % U+05D9 HEBREW LETTER YOD
16937 \DeclareTextCommand{\hebyod}{PU}{\85\331}% U+05D9
16938 % U+05DA HEBREW LETTER FINAL KAF
16939 \DeclareTextCommand{\hebfinalkaf}{PU}{\85\332}% U+05DA
16940 % U+05DB HEBREW LETTER KAF
16941 \DeclareTextCommand{\hebkaf}{PU}{\85\333}% U+05DB
16942 % U+05DC HEBREW LETTER LAMED
16943 \DeclareTextCommand{\heblamed}{PU}{\85\334}% U+05DC
16944 % U+05DD HEBREW LETTER FINAL MEM
16945 \DeclareTextCommand{\hebfinalmem}{PU}{\85\335}% U+05DD
16946 % U+05DE HEBREW LETTER MEM
16947 \DeclareTextCommand{\hebmeme}{PU}{\85\336}% U+05DE
16948 % U+05DF HEBREW LETTER FINAL NUN
16949 \DeclareTextCommand{\hebfinalnun}{PU}{\85\337}% U+05DF
16950 % U+05E0 HEBREW LETTER NUN
16951 \DeclareTextCommand{\hebnun}{PU}{\85\340}% U+05E0
16952 % U+05E1 HEBREW LETTER SAMEKH
16953 \DeclareTextCommand{\hebsamekh}{PU}{\85\341}% U+05E1
16954 % U+05E2 HEBREW LETTER AYIN
16955 \DeclareTextCommand{\hebayin}{PU}{\85\342}% U+05E2
16956 % U+05E3 HEBREW LETTER FINAL PE
16957 \DeclareTextCommand{\hebfinalpe}{PU}{\85\343}% U+05E3
16958 % U+05E4 HEBREW LETTER PE
16959 \DeclareTextCommand{\hebpe}{PU}{\85\344}% U+05E4
16960 % U+05E5 HEBREW LETTER FINAL TSADI
16961 \DeclareTextCommand{\hebfinaltsadi}{PU}{\85\345}% U+05E5
16962 % U+05E6 HEBREW LETTER TSADI
16963 \DeclareTextCommand{\hebtsadi}{PU}{\85\346}% U+05E6
16964 % U+05E7 HEBREW LETTER QOF
16965 \DeclareTextCommand{\hebqof}{PU}{\85\347}% U+05E7
16966 % U+05E8 HEBREW LETTER RESH
16967 \DeclareTextCommand{\hebresh}{PU}{\85\350}% U+05E8
16968 % U+05E9 HEBREW LETTER SHIN
16969 \DeclareTextCommand{\hebshin}{PU}{\85\351}% U+05E9
16970 %* \hebshin -> \hebsin (he8)
16971 % U+05EA HEBREW LETTER TAV
16972 \DeclareTextCommand{\hebtav}{PU}{\85\352}% U+05EA
16973 % U+05F0 HEBREW LIGATURE YIDDISH DOUBLE VAV
16974 \DeclareTextCommand{\doublevav}{PU}{\85\360}% U+05F0
16975 % U+05F1 HEBREW LIGATURE YIDDISH VAV YOD
16976 \DeclareTextCommand{\vavyod}{PU}{\85\361}% U+05F1
16977 % U+05F2 HEBREW LIGATURE YIDDISH DOUBLE YOD

16978 \DeclareTextCommand{\doubleyod}{PU}{\85\362}% U+05F2
 16979 \fi

47.2.12 Thai: U+0E00 to U+0E7F

16980 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai
 16981 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

47.2.13 Phonetic Extensions: U+1D00 to U+1D7F

16982 % U+1D00 LATIN LETTER SMALL CAPITAL A; \textscA (tipa)
 16983 \DeclareTextCommand{\textscA}{PU}{\9035\000}% U+1D00
 16984 % U+1D05 LATIN LETTER SMALL CAPITAL D; \scd (wsuipa)
 16985 \DeclareTextCommand{\textscd}{PU}{\9035\005}% U+1D05
 16986 % U+1D07 LATIN LETTER SMALL CAPITAL E; \textscE (tipa)
 16987 \DeclareTextCommand{\textscE}{PU}{\9035\007}% U+1D07
 16988 % U+1D0A LATIN LETTER SMALL CAPITAL J; \textscJ (tipa)
 16989 \DeclareTextCommand{\textscJ}{PU}{\9035\012}% U+1D0A
 16990 % U+1D0B LATIN LETTER SMALL CAPITAL K; \textscK (tipx)
 16991 \DeclareTextCommand{\textPUSck}{PU}{\9035\013}% U+1D0B
 16992 %* \textPUSck -> \textscK (tipx)
 16993 % U+1D0D LATIN LETTER SMALL CAPITAL M; \textscM (tipx)
 16994 \DeclareTextCommand{\textPUScm}{PU}{\9035\015}% U+1D0D
 16995 %* \textPUScm -> \textscM (tipx)
 16996 % U+1D18 LATIN LETTER SMALL CAPITAL P; \textscP (tipx)
 16997 \DeclareTextCommand{\textPUScp}{PU}{\9035\030}% U+1D18
 16998 %* \textPUScp -> \textscP (tipx)
 16999 % U+1D19 LATIN LETTER SMALL CAPITAL REVERSED R; \textrevscr (tipx)
 17000 \DeclareTextCommand{\textPUrevscr}{PU}{\9035\031}% U+1D19
 17001 %* \textPUrevscr -> \textrevscr (tipx)
 17002 % U+1D1C LATIN LETTER SMALL CAPITAL U; \textscU (tipa), \scu (wsuipa)
 17003 \DeclareTextCommand{\textscU}{PU}{\9035\034}% U+1D1C
 17004 % U+1D62 LATIN SUBSCRIPT SMALL LETTER I
 17005 \DeclareTextCommand{\textiinferior}{PU}{\9035\142}% U+1D62
 17006 % U+1D63 LATIN SUBSCRIPT SMALL LETTER R
 17007 \DeclareTextCommand{\textrinferior}{PU}{\9035\143}% U+1D63
 17008 % U+1D64 LATIN SUBSCRIPT SMALL LETTER U
 17009 \DeclareTextCommand{\textuinferior}{PU}{\9035\144}% U+1D64
 17010 % U+1D65 LATIN SUBSCRIPT SMALL LETTER V
 17011 \DeclareTextCommand{\textvinferior}{PU}{\9035\145}% U+1D65
 17012 % U+1D66 GREEK SUBSCRIPT SMALL LETTER BETA
 17013 \DeclareTextCommand{\textbetainferior}{PU}{\9035\146}% U+1D66
 17014 % U+1D67 GREEK SUBSCRIPT SMALL LETTER GAMMA
 17015 \DeclareTextCommand{\textgammainferior}{PU}{\9035\147}% U+1D67
 17016 % U+1D68 GREEK SUBSCRIPT SMALL LETTER RHO
 17017 \DeclareTextCommand{\textrhoinferior}{PU}{\9035\150}% U+1D68
 17018 % U+1D69 GREEK SUBSCRIPT SMALL LETTER PHI
 17019 \DeclareTextCommand{\textphiinferior}{PU}{\9035\151}% U+1D69
 17020 % U+1D6A GREEK SUBSCRIPT SMALL LETTER CHI
 17021 \DeclareTextCommand{\textchiinferior}{PU}{\9035\152}% U+1D6A
 17022 % U+1D7B LATIN SMALL CAPITAL LETTER I WITH STROKE;
 17023 % \barsci (wsuipa)
 17024 \DeclareTextCommand{\textbarsci}{PU}{\9035\173}% U+1D7B
 17025 % U+1D7D LATIN SMALL CAPITAL LETTER P WITH STROKE; \barp (wsuipa)
 17026 \DeclareTextCommand{\textbarp}{PU}{\9035\175}% U+1D7D

17027 % U+1D7E LATIN SMALL CAPITAL LETTER U WITH STROKE;
 17028 % \barscu (wsuipa)
 17029 \DeclareTextCommand{\textbarscu}{PU}{\9035\176}%* U+1D7E

47.2.14 Phonetic Extensions Supplement: U+1D80 to U+1DBF

17030 % U+1D8F LATIN SMALL LETTER A WITH RETROFLEX HOOK; \tex-
 trhooka (tipx)
 17031 \DeclareTextCommand{\textPurhooka}{PU}{\9035\217}% U+1D8F
 17032 %* \textPurhooka -> \textrhooka (tipx)
 17033 % U+1D91 LATIN SMALL LETTER D WITH HOOK AND TAIL; \texthtr-
 taild (tipa)
 17034 \DeclareTextCommand{\texthtrtaild}{PU}{\9035\221}%* U+1D91
 17035 % U+1D92 LATIN SMALL LETTER E WITH RETROFLEX HOOK; \tex-
 trhooke (tipx)
 17036 \DeclareTextCommand{\textPurhooke}{PU}{\9035\222}% U+1D92
 17037 %* \textPurhooke -> \textrhooke (tipx)
 17038 % U+1D93 LATIN SMALL LETTER OPEN E WITH RETROFLEX HOOK;
 17039 % \textrhookepsilon (tipx)
 17040 \DeclareTextCommand{\textPurhookepsilon}{PU}{\9035\223}% U+1D93
 17041 %* \textPurhookepsilon -> \textrhookepsilon (tipx)
 17042 % U+1D97 LATIN SMALL LETTER OPEN O WITH RETROFLEX HOOK;
 17043 % \textrhookopeno (tipx)
 17044 \DeclareTextCommand{\textPurhookopeno}{PU}{\9035\227}% U+1D97
 17045 %* \textPurhookopeno -> \textrhookopeno (tipx)

47.2.15 Latin Extended Additional: U+1E00 to U+1EFF

17046 % U+1E00 LATIN CAPITAL LETTER A WITH RING BELOW; Aringbelow
 17047 \DeclareTextCompositeCommand{\textsubring}{PU}{A}{\9036\000}% U+1E00
 17048 % U+1E01 LATIN SMALL LETTER A WITH RING BELOW; aringbelow
 17049 \DeclareTextCompositeCommand{\textsubring}{PU}{a}{\9036\001}% U+1E01
 17050 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent
 17051 \DeclareTextCompositeCommand{\.}{PU}{B}{\9036\002}% U+1E02
 17052 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent
 17053 \DeclareTextCompositeCommand{\.}{PU}{b}{\9036\003}% U+1E03
 17054 % U+1E04 LATIN CAPITAL LETTER B WITH DOT BELOW; Bdotbelow
 17055 \DeclareTextCompositeCommand{\d}{PU}{B}{\9036\004}% U+1E04
 17056 % U+1E05 LATIN SMALL LETTER B WITH DOT BELOW; bdotbelow
 17057 \DeclareTextCompositeCommand{\d}{PU}{b}{\9036\005}% U+1E05
 17058 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow
 17059 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06
 17060 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow
 17061 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07
 17062 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent
 17063 \DeclareTextCompositeCommand{\.}{PU}{D}{\9036\012}% U+1E0A
 17064 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent
 17065 \DeclareTextCompositeCommand{\.}{PU}{d}{\9036\013}% U+1E0B
 17066 % U+1E0C LATIN CAPITAL LETTER D WITH DOT BELOW; Ddotbelow
 17067 \DeclareTextCompositeCommand{\d}{PU}{D}{\9036\014}% U+1E0C
 17068 % U+1E0D LATIN SMALL LETTER D WITH DOT BELOW; ddotbelow
 17069 \DeclareTextCompositeCommand{\d}{PU}{d}{\9036\015}% U+1E0D
 17070 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow
 17071 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E
 17072 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow
 17073 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F

17074 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla
17075 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10
17076 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla
17077 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11
17078 % U+1E12 LATIN CAPITAL LETTER D WITH CIRCUMFLEX BELOW; Dcir-
cumflexbelow
17079 \DeclareTextCompositeCommand{\textsubcircum}{PU}{D}{\9036\022}% U+1E12
17080 % U+1E13 LATIN SMALL LETTER D WITH CIRCUMFLEX BELOW; dcir-
cumflexbelow
17081 \DeclareTextCompositeCommand{\textsubcircum}{PU}{d}{\9036\023}% U+1E13
17082 % U+1E14 LATIN CAPITAL LETTER E WITH MACRON AND GRAVE;
17083 % Emacrongrave
17084 \DeclareTextCompositeCommand{\textgravemacron}{PU}{E}{\9036\024}% U+1E14
17085 % U+1E15 LATIN SMALL LETTER E WITH MACRON AND GRAVE;
17086 % emacrongrave
17087 \DeclareTextCompositeCommand{\textgravemacron}{PU}{e}{\9036\025}% U+1E15
17088 % U+1E16 LATIN CAPITAL LETTER E WITH MACRON AND ACUTE;
17089 % Emacronacute
17090 \DeclareTextCompositeCommand{\textacutemacron}{PU}{E}{\9036\026}% U+1E16
17091 % U+1E17 LATIN SMALL LETTER E WITH MACRON AND ACUTE;
17092 % emacronacute
17093 \DeclareTextCompositeCommand{\textacutemacron}{PU}{e}{\9036\027}% U+1E17
17094 % U+1E18 LATIN CAPITAL LETTER E WITH CIRCUMFLEX BELOW; Ecir-
cumflexbelow
17095 \DeclareTextCompositeCommand{\textsubcircum}{PU}{E}{\9036\030}% U+1E18
17096 % U+1E19 LATIN SMALL LETTER E WITH CIRCUMFLEX BELOW; ecir-
cumflexbelow
17097 \DeclareTextCompositeCommand{\textsubcircum}{PU}{e}{\9036\031}% U+1E19
17098 % U+1E1A LATIN CAPITAL LETTER E WITH TILDE BELOW; Etildebelow
17099 \DeclareTextCompositeCommand{\textsubtilde}{PU}{E}{\9036\032}% U+1E1A
17100 % U+1E1B LATIN SMALL LETTER E WITH TILDE BELOW; etildebelow
17101 \DeclareTextCompositeCommand{\textsubtilde}{PU}{e}{\9036\033}% U+1E1B
17102 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent
17103 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E
17104 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent
17105 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F
17106 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron
17107 \DeclareTextCompositeCommand{=} {PU}{G}{\9036\040}% U+1E20
17108 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron
17109 \DeclareTextCompositeCommand{=} {PU}{g}{\9036\041}% U+1E21
17110 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent
17111 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22
17112 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent
17113 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23
17114 % U+1E24 LATIN CAPITAL LETTER H WITH DOT BELOW; Hdotbelow
17115 \DeclareTextCompositeCommand{\d}{PU}{H}{\9036\044}% U+1E24
17116 % U+1E25 LATIN SMALL LETTER H WITH DOT BELOW; hdotbelow
17117 \DeclareTextCompositeCommand{\d}{PU}{h}{\9036\045}% U+1E25
17118 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis
17119 \DeclareTextCompositeCommand{"}{PU}{H}{\9036\046}% U+1E26
17120 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis
17121 \DeclareTextCompositeCommand{"}{PU}{h}{\9036\047}% U+1E27
17122 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla
17123 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28

17124 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla
17125 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29
17126 % U+1E2A LATIN CAPITAL LETTER H WITH BREVE BELOW; Hbrevebelow
17127 \DeclareTextCompositeCommand{\textsubbreve}{PU}{H}{\9036\052}% U+1E2A
17128 % U+1E2B LATIN SMALL LETTER H WITH BREVE BELOW; hbrevebelow
17129 \DeclareTextCompositeCommand{\textsubbreve}{PU}{h}{\9036\053}% U+1E2B
17130 % U+1E2C LATIN CAPITAL LETTER I WITH TILDE BELOW; Itildebelow
17131 \DeclareTextCompositeCommand{\textsubtilde}{PU}{I}{\9036\054}% U+1E2C
17132 % U+1E2D LATIN SMALL LETTER I WITH TILDE BELOW; itildebelow
17133 \DeclareTextCompositeCommand{\textsubtilde}{PU}{i}{\9036\055}% U+1E2D
17134 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute
17135 \DeclareTextCompositeCommand{\'}{PU}{K}{\9036\060}% U+1E30
17136 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute
17137 \DeclareTextCompositeCommand{\'}{PU}{k}{\9036\061}% U+1E31
17138 % U+1E32 LATIN CAPITAL LETTER K WITH DOT BELOW; Kdotbelow
17139 \DeclareTextCompositeCommand{\d}{PU}{K}{\9036\062}% U+1E32
17140 % U+1E33 LATIN SMALL LETTER K WITH DOT BELOW; kdotbelow
17141 \DeclareTextCompositeCommand{\d}{PU}{k}{\9036\063}% U+1E33
17142 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow
17143 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34
17144 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow
17145 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35
17146 % U+1E36 LATIN CAPITAL LETTER L WITH DOT BELOW; Ldotbelow
17147 \DeclareTextCompositeCommand{\d}{PU}{L}{\9036\066}% U+1E36
17148 % U+1E37 LATIN SMALL LETTER L WITH DOT BELOW; ldotbelow
17149 \DeclareTextCompositeCommand{\d}{PU}{l}{\9036\067}% U+1E37
17150 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow
17151 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A
17152 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow
17153 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B
17154 % U+1E3C LATIN CAPITAL LETTER L WITH CIRCUMFLEX BELOW; Lcir-
cumflexbelow
17155 \DeclareTextCompositeCommand{\textsubcircum}{PU}{L}{\9036\074}% U+1E3C
17156 % U+1E3D LATIN SMALL LETTER L WITH CIRCUMFLEX BELOW; lcir-
cumflexbelow
17157 \DeclareTextCompositeCommand{\textsubcircum}{PU}{l}{\9036\075}% U+1E3D
17158 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute
17159 \DeclareTextCompositeCommand{\'}{PU}{M}{\9036\076}% U+1E3E
17160 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute
17161 \DeclareTextCompositeCommand{\'}{PU}{m}{\9036\077}% U+1E3F
17162 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent
17163 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40
17164 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent
17165 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41
17166 % U+1E42 LATIN CAPITAL LETTER M WITH DOT BELOW; Mdotbelow
17167 \DeclareTextCompositeCommand{\d}{PU}{M}{\9036\102}% U+1E42
17168 % U+1E43 LATIN SMALL LETTER M WITH DOT BELOW; mdotbelow
17169 \DeclareTextCompositeCommand{\d}{PU}{m}{\9036\103}% U+1E43
17170 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent
17171 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44
17172 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent
17173 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45
17174 % U+1E46 LATIN CAPITAL LETTER N WITH DOT BELOW; Ndotbelow
17175 \DeclareTextCompositeCommand{\d}{PU}{N}{\9036\106}% U+1E46

17176 % U+1E47 LATIN SMALL LETTER N WITH DOT BELOW; ndotbelow
17177 \DeclareTextCompositeCommand{\d}{PU}{n}{\9036\107}% U+1E47
17178 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow
17179 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48
17180 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow
17181 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49
17182 % U+1E4A LATIN CAPITAL LETTER N WITH CIRCUMFLEX BELOW; Ncir-
cumflexbelow
17183 \DeclareTextCompositeCommand{\textsubcircum}{PU}{N}{\9036\112}% U+1E4A
17184 % U+1E4B LATIN SMALL LETTER N WITH CIRCUMFLEX BELOW; ncir-
cumflexbelow
17185 \DeclareTextCompositeCommand{\textsubcircum}{PU}{n}{\9036\113}% U+1E4B
17186 % U+1E50 LATIN CAPITAL LETTER O WITH MACRON AND GRAVE;
17187 % Omacrongrave
17188 \DeclareTextCompositeCommand{\textgravemacron}{PU}{O}{\9036\120}% U+1E50
17189 % U+1E51 LATIN SMALL LETTER O WITH MACRON AND GRAVE;
17190 % omacrongrave
17191 \DeclareTextCompositeCommand{\textgravemacron}{PU}{o}{\9036\121}% U+1E51
17192 % U+1E52 LATIN CAPITAL LETTER O WITH MACRON AND ACUTE;
17193 % Omacronacute
17194 \DeclareTextCompositeCommand{\textacutemacron}{PU}{O}{\9036\122}% U+1E52
17195 % U+1E53 LATIN SMALL LETTER O WITH MACRON AND ACUTE;
17196 % omacronacute
17197 \DeclareTextCompositeCommand{\textacutemacron}{PU}{o}{\9036\123}% U+1E53
17198 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute
17199 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54
17200 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute
17201 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55
17202 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent
17203 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56
17204 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent
17205 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57
17206 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent
17207 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58
17208 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent
17209 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59
17210 % U+1E5A LATIN CAPITAL LETTER R WITH DOT BELOW; Rdotbelow
17211 \DeclareTextCompositeCommand{\d}{PU}{R}{\9036\132}% U+1E5A
17212 % U+1E5B LATIN SMALL LETTER R WITH DOT BELOW; rdotbelow
17213 \DeclareTextCompositeCommand{\d}{PU}{r}{\9036\133}% U+1E5B
17214 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow
17215 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E
17216 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow
17217 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F
17218 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent
17219 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60
17220 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent
17221 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61
17222 % U+1E62 LATIN CAPITAL LETTER S WITH DOT BELOW; Sdotbelow
17223 \DeclareTextCompositeCommand{\d}{PU}{S}{\9036\142}% U+1E62
17224 % U+1E63 LATIN SMALL LETTER S WITH DOT BELOW; sdotbelow
17225 \DeclareTextCompositeCommand{\d}{PU}{s}{\9036\143}% U+1E63
17226 % U+1E6A LATIN CAPITAL LETTER T WITH DOT ABOVE; Tdotaccent
17227 \DeclareTextCompositeCommand{\.}{PU}{T}{\9036\152}% U+1E6A

17228 % U+1E6B LATIN SMALL LETTER T WITH DOT ABOVE; tdotaccent
17229 \DeclareTextCompositeCommand{\.}{PU}{t}{\9036\153}% U+1E6B
17230 % U+1E6C LATIN CAPITAL LETTER T WITH DOT BELOW; Tdotbelow
17231 \DeclareTextCompositeCommand{\d}{PU}{T}{\9036\154}% U+1E6C
17232 % U+1E6D LATIN SMALL LETTER T WITH DOT BELOW; tdotbelow
17233 \DeclareTextCompositeCommand{\d}{PU}{t}{\9036\155}% U+1E6D
17234 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow
17235 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E
17236 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow
17237 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F
17238 % U+1E70 LATIN CAPITAL LETTER T WITH CIRCUMFLEX BELOW; Tcir-
cumflexbelow
17239 \DeclareTextCompositeCommand{\textsubcircum}{PU}{T}{\9036\160}% U+1E70
17240 % U+1E71 LATIN SMALL LETTER T WITH CIRCUMFLEX BELOW; tcir-
cumflexbelow
17241 \DeclareTextCompositeCommand{\textsubcircum}{PU}{t}{\9036\161}% U+1E71
17242 % U+1E72 LATIN CAPITAL LETTER U WITH DIAERESIS BELOW; Udiere-
sisbelow
17243 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{U}{\9036\162}% U+1E72
17244 % U+1E73 LATIN SMALL LETTER U WITH DIAERESIS BELOW; udiere-
sisbelow
17245 \DeclareTextCompositeCommand{\textsubumlaut}{PU}{u}{\9036\163}% U+1E73
17246 % U+1E74 LATIN CAPITAL LETTER U WITH TILDE BELOW; Utildebelow
17247 \DeclareTextCompositeCommand{\textsubtilde}{PU}{U}{\9036\164}% U+1E74
17248 % U+1E75 LATIN SMALL LETTER U WITH TILDE BELOW; utildebelow
17249 \DeclareTextCompositeCommand{\textsubtilde}{PU}{u}{\9036\165}% U+1E75
17250 % U+1E76 LATIN CAPITAL LETTER U WITH CIRCUMFLEX BELOW; Ucir-
cumflexbelow
17251 \DeclareTextCompositeCommand{\textsubcircum}{PU}{U}{\9036\166}% U+1E76
17252 % U+1E77 LATIN SMALL LETTER U WITH CIRCUMFLEX BELOW; ucir-
cumflexbelow
17253 \DeclareTextCompositeCommand{\textsubcircum}{PU}{u}{\9036\167}% U+1E77
17254 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde
17255 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C
17256 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde
17257 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D
17258 % U+1E7E LATIN CAPITAL LETTER V WITH DOT BELOW; Vdotbelow
17259 \DeclareTextCompositeCommand{\d}{PU}{V}{\9036\176}% U+1E7E
17260 % U+1E7F LATIN SMALL LETTER V WITH DOT BELOW; vdotbelow
17261 \DeclareTextCompositeCommand{\d}{PU}{v}{\9036\177}% U+1E7F
17262 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave
17263 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80
17264 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave
17265 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81
17266 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute
17267 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82
17268 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute
17269 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83
17270 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis
17271 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84
17272 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis
17273 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85
17274 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent
17275 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86

17276 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent
17277 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87
17278 % U+1E88 LATIN CAPITAL LETTER W WITH DOT BELOW; wdotbelow
17279 \DeclareTextCompositeCommand{\d}{PU}{W}{\9036\210}% U+1E88
17280 % U+1E89 LATIN SMALL LETTER W WITH DOT BELOW; wdotbelow
17281 \DeclareTextCompositeCommand{\d}{PU}{w}{\9036\211}% U+1E89
17282 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent
17283 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A
17284 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent
17285 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B
17286 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis
17287 \DeclareTextCompositeCommand{\"}{PU}{X}{\9036\214}% U+1E8C
17288 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis
17289 \DeclareTextCompositeCommand{\"}{PU}{x}{\9036\215}% U+1E8D
17290 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent
17291 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E
17292 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent
17293 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F
17294 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex
17295 \DeclareTextCompositeCommand{\^}{PU}{Z}{\9036\220}% U+1E90
17296 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex
17297 \DeclareTextCompositeCommand{\^}{PU}{z}{\9036\221}% U+1E91
17298 % U+1E92 LATIN CAPITAL LETTER Z WITH DOT BELOW; Zdotbelow
17299 \DeclareTextCompositeCommand{\d}{PU}{Z}{\9036\222}% U+1E92
17300 % U+1E93 LATIN SMALL LETTER Z WITH DOT BELOW; zdotbelow
17301 \DeclareTextCompositeCommand{\d}{PU}{z}{\9036\223}% U+1E93
17302 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow
17303 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94
17304 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow
17305 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95
17306 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow
17307 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96
17308 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis
17309 \DeclareTextCompositeCommand{\"}{PU}{t}{\9036\227}% U+1E97
17310 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring
17311 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98
17312 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring
17313 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99
17314 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdo-
taccent
17315 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B
17316 % U+1EA0 LATIN CAPITAL LETTER A WITH DOT BELOW; Adotbelow
17317 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0
17318 % U+1EA1 LATIN SMALL LETTER A WITH DOT BELOW; adotbelow
17319 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1
17320 % U+1EB8 LATIN CAPITAL LETTER E WITH DOT BELOW; Edotbelow
17321 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8
17322 % U+1EB9 LATIN SMALL LETTER E WITH DOT BELOW; edotbelow
17323 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9
17324 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde
17325 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC
17326 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde
17327 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD
17328 % U+1ECA LATIN CAPITAL LETTER I WITH DOT BELOW; Idotbelow

17329 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\312}% U+1ECA
 17330 % U+1ECB LATIN SMALL LETTER I WITH DOT BELOW; idotbelow
 17331 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB
 17332 % U+1ECC LATIN CAPITAL LETTER O WITH DOT BELOW; Odotbelow
 17333 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC
 17334 % U+1ECD LATIN SMALL LETTER O WITH DOT BELOW; odotbelow
 17335 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD
 17336 % U+1EE4 LATIN CAPITAL LETTER U WITH DOT BELOW; Udotbelow
 17337 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4
 17338 % U+1EE5 LATIN SMALL LETTER U WITH DOT BELOW; udotbelow
 17339 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5
 17340 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave
 17341 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2
 17342 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave
 17343 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3
 17344 % U+1EF4 LATIN CAPITAL LETTER Y WITH DOT BELOW; Ydotbelow
 17345 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4
 17346 % U+1EF5 LATIN SMALL LETTER Y WITH DOT BELOW; ydotbelow
 17347 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5
 17348 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde
 17349 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8
 17350 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde
 17351 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

47.2.16 General Punctuation: U+2000 to U+206F

17352 % U+200C ZERO WIDTH NON-JOINER; *afii61664, zerowidthnonjoiner
 17353 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C
 17354 % U+2013 EN DASH; endash
 17355 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013
 17356 % U+2014 EM DASH; emdash
 17357 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014
 17358 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar
 17359 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016
 17360 %* \textbardbl -> \textdoublevertline (tipa)
 17361 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft
 17362 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018
 17363 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright
 17364 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019
 17365 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase
 17366 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A
 17367 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft
 17368 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C
 17369 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright
 17370 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D
 17371 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase
 17372 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E
 17373 % U+2020 DAGGER; dagger
 17374 \DeclareTextCommand{\textdagger}{PU}{\9040\040}%* U+2020
 17375 %* \textdagger -> \dag (LaTeX)
 17376 % U+2021 DOUBLE DAGGER; daggerdbl; \ddagger (LaTeX)
 17377 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021
 17378 %* \textdaggerdbl -> \ddagger (LaTeX)
 17379 %* \textdaggerdbl -> \ddag (LaTeX)
 17380 % U+2022 BULLET; bullet

17381 \DeclareTextCommand{\textbullet}{PU}{\9040\042}%* U+2022
 17382 % U+2025 TWO DOT LEADER; \hdotfor (MnSymbol)
 17383 \DeclareTextCommand{\texthdotfor}{PU}{\9040\045}%* U+2025
 17384 % U+2026 HORIZONTAL ELLIPSIS; ellipsis
 17385 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026
 17386 %* \textellipsis -> \mathellipsis
 17387 % U+2030 PER MILLE SIGN; perthousand
 17388 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030
 17389 % U+2031 PER TEN THOUSAND SIGN
 17390 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031
 17391 % U+2032 PRIME; minute; \prime (MnSymbol)
 17392 \DeclareTextCommand{\textprime}{PU}{\9040\062}%* U+2032
 17393 % U+2033 DOUBLE PRIME; \second (mathabx)
 17394 \DeclareTextCommand{\textsecond}{PU}{\9040\063}%* U+2033
 17395 % U+2034 TRIPLE PRIME; \third (mathabx)
 17396 \DeclareTextCommand{\textthird}{PU}{\9040\064}%* U+2034
 17397 % U+2035 REVERSED PRIME; \backprime (AmS)
 17398 \DeclareTextCommand{\textbackprime}{PU}{\9040\065}%* U+2035
 17399 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-
 ingleft
 17400 \DeclareTextCommand{\guilsingleft}{PU}{\9040\071}% U+2039
 17401 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-
 ingright
 17402 \DeclareTextCommand{\guilsingright}{PU}{\9040\072}% U+203A
 17403 % U+203B REFERENCE MARK; referencemark
 17404 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B
 17405 % U+203D INTERROBANG
 17406 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D
 17407 % U+2044 FRACTION SLASH; fraction
 17408 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044
 17409 % U+2045 LEFT SQUARE BRACKET WITH QUILL
 17410 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045
 17411 % U+2046 RIGHT SQUARE BRACKET WITH QUILL
 17412 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046
 17413 % U+2052 COMMERCIAL MINUS SIGN
 17414 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052
 17415 % U+2056 THREE DOT PUNCTUATION; \lefttherefore (MnSymbol)
 17416 \DeclareTextCommand{\textlefttherefore}{PU}{\9040\126}%* U+2056
 17417 % U+2057 QUADRUPLE PRIME; \fourth (mathabx)
 17418 \DeclareTextCommand{\textfourth}{PU}{\9040\127}%* U+2057
 17419 % U+2058 FOUR DOT PUNCTUATION; \diamonddots (MnSymbol)
 17420 \DeclareTextCommand{\textdiamonddots}{PU}{\9040\130}%* U+2058

47.2.17 Superscripts and Subscripts: U+2070 to U+209F

17421 % U+2070 SUPERSCRIPT ZERO; zerosuperior
 17422 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}%* U+2070
 17423 % U+2071 SUPERSCRIPT LATIN SMALL LETTER I
 17424 \DeclareTextCommand{\textisuperior}{PU}{\9040\161}%* U+2071
 17425 % U+2074 SUPERSCRIPT FOUR; foursuperior
 17426 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}%* U+2074
 17427 % U+2075 SUPERSCRIPT FIVE; fivesuperior
 17428 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}%* U+2075
 17429 % U+2076 SUPERSCRIPT SIX; sixsuperior
 17430 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}%* U+2076

17431 % U+2077 SUPERSCRIPT SEVEN; sevensuperior
17432 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}%* U+2077
17433 % U+2078 SUPERSCRIPT EIGHT; eightsuperior
17434 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}%* U+2078
17435 % U+2079 SUPERSCRIPT NINE; ninesuperior
17436 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}%* U+2079
17437 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior
17438 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}%* U+207A
17439 % U+207B SUPERSCRIPT MINUS
17440 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}%* U+207B
17441 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior
17442 \DeclareTextCommand{\textequalssuperior}{PU}{\9040\174}%* U+207C
17443 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior
17444 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}%* U+207D
17445 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior
17446 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}%* U+207E
17447 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior
17448 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}%* U+207F
17449 % U+2080 SUBSCRIPT ZERO; zeroinferior
17450 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}%* U+2080
17451 % U+2081 SUBSCRIPT ONE; oneinferior
17452 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}%* U+2081
17453 % U+2082 SUBSCRIPT TWO; twoinferior
17454 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}%* U+2082
17455 % U+2083 SUBSCRIPT THREE; threeinferior
17456 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}%* U+2083
17457 % U+2084 SUBSCRIPT FOUR; fourinferior
17458 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}%* U+2084
17459 % U+2085 SUBSCRIPT FIVE; fiveinferior
17460 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}%* U+2085
17461 % U+2086 SUBSCRIPT SIX; sixinferior
17462 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}%* U+2086
17463 % U+2087 SUBSCRIPT SEVEN; seveninferior
17464 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}%* U+2087
17465 % U+2088 SUBSCRIPT EIGHT; eightinferior
17466 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}%* U+2088
17467 % U+2089 SUBSCRIPT NINE; nineinferior
17468 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}%* U+2089
17469 % U+208A SUBSCRIPT PLUS SIGN
17470 \DeclareTextCommand{\textplusinferior}{PU}{\9040\212}%* U+208A
17471 % U+208B SUBSCRIPT MINUS
17472 \DeclareTextCommand{\textminusinferior}{PU}{\9040\213}%* U+208B
17473 % U+208C SUBSCRIPT EQUALS SIGN
17474 \DeclareTextCommand{\textequalsinferior}{PU}{\9040\214}%* U+208C
17475 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior
17476 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}%* U+208D
17477 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior
17478 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}%* U+208E
17479 % U+2090 LATIN SUBSCRIPT SMALL LETTER A
17480 \DeclareTextCommand{\textainferior}{PU}{\9040\220}%* U+2090
17481 % U+2091 LATIN SUBSCRIPT SMALL LETTER E
17482 \DeclareTextCommand{\texteinferior}{PU}{\9040\221}%* U+2091
17483 % U+2092 LATIN SUBSCRIPT SMALL LETTER O
17484 \DeclareTextCommand{\textoinferior}{PU}{\9040\222}%* U+2092

17485 % U+2093 LATIN SUBSCRIPT SMALL LETTER X
 17486 \DeclareTextCommand{\textxinferior}{PU}{\9040\223}%* U+2093
 17487 % U+2094 LATIN SUBSCRIPT SMALL LETTER SCHWA
 17488 \DeclareTextCommand{\textschwainferior}{PU}{\9040\224}%* U+2094
 17489 % U+2095 LATIN SUBSCRIPT SMALL LETTER H
 17490 \DeclareTextCommand{\texthinferior}{PU}{\9040\225}%* U+2095
 17491 % U+2096 LATIN SUBSCRIPT SMALL LETTER K
 17492 \DeclareTextCommand{\textkinferior}{PU}{\9040\226}%* U+2096
 17493 % U+2097 LATIN SUBSCRIPT SMALL LETTER L
 17494 \DeclareTextCommand{\textlinferior}{PU}{\9040\227}%* U+2097
 17495 % U+2098 LATIN SUBSCRIPT SMALL LETTER M
 17496 \DeclareTextCommand{\textminferior}{PU}{\9040\230}%* U+2098
 17497 % U+2099 LATIN SUBSCRIPT SMALL LETTER N
 17498 \DeclareTextCommand{\textninferior}{PU}{\9040\231}%* U+2099
 17499 % U+209A LATIN SUBSCRIPT SMALL LETTER P
 17500 \DeclareTextCommand{\textpinferior}{PU}{\9040\232}%* U+209A
 17501 % U+209B LATIN SUBSCRIPT SMALL LETTER S
 17502 \DeclareTextCommand{\textsinferior}{PU}{\9040\233}%* U+209B
 17503 % U+209C LATIN SUBSCRIPT SMALL LETTER T
 17504 \DeclareTextCommand{\texttinferior}{PU}{\9040\234}%* U+209C

47.2.18 Currency Symbols: U+20A0 to U+20CF

17505 % U+20A1 COLON SIGN; *colonmonetary, colonsign
 17506 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1
 17507 % U+20A4 LIRA SIGN; afi08941, *lira
 17508 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4
 17509 % U+20A6 NAIRA SIGN
 17510 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6
 17511 % U+20A7 PESETA SIGN; peseta
 17512 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7
 17513 % U+20A9 WON SIGN; won
 17514 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9
 17515 % U+20AB DONG SIGN; dong
 17516 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB
 17517 % U+20AC EURO SIGN; *Euro, euro
 17518 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC
 17519 %* \texteuro -> \EurDig (marvosym)
 17520 %* \texteuro -> \EURdig (marvosym)
 17521 %* \texteuro -> \EurHv (marvosym)
 17522 %* \texteuro -> \EURhv (marvosym)
 17523 %* \texteuro -> \EurCr (marvosym)
 17524 %* \texteuro -> \EURcr (marvosym)
 17525 %* \texteuro -> \EurTm (marvosym)
 17526 %* \texteuro -> \EURtm (marvosym)
 17527 %* \texteuro -> \Eur (marvosym)
 17528 % U+20B0 GERMAN PENNY SIGN; \Deleatur (marvosym)
 17529 \DeclareTextCommand{\textDeleatur}{PU}{\9040\260}%* U+20B0
 17530 %* \textDeleatur -> \Denarius (marvosym)
 17531 % U+20B1 PESO SIGN
 17532 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1
 17533 % U+20B2 GUARANI SIGN
 17534 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

47.2.19 Letterlike Symbols: U+2100 to U+214F

17535 % U+2103 DEGREE CELSIUS; centigrade
17536 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103
17537 % U+210F PLANCK CONSTANT OVER TWO PI; \hslash (AmS)
17538 \DeclareTextCommand{\texthslash}{PU}{\9041\017}%* U+210F
17539 % U+2111 BLACK-LETTER CAPITAL I (=imaginary part); Ifraktur; \Im (LaTeX)
17540 \DeclareTextCommand{\textIm}{PU}{\9041\021}%* U+2111
17541 % U+2113 SCRIPT SMALL L (=ell, liter); afi61289, lsquare; \ell (LaTeX)
17542 \DeclareTextCommand{\textell}{PU}{\9041\023}%* U+2113
17543 % U+2116 NUMERO SIGN; *afi61352, numero
17544 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116
17545 % U+2117 SOUND RECORDING COPYRIGHT
17546 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117
17547 % U+2118 SCRIPT CAPITAL P (=Weierstrass elliptic function);
17548 % weierstrass; \wp (LaTeX)
17549 \DeclareTextCommand{\textwp}{PU}{\9041\030}%* U+2118
17550 % U+211C BLACK-LETTER CAPITAL R (=real part); Rfraktur; \Re (LaTeX)
17551 \DeclareTextCommand{\textRe}{PU}{\9041\034}%* U+211C
17552 % U+211E PRESCRIPTION TAKE; prescription
17553 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E
17554 % U+2120 SERVICE MARK
17555 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120
17556 % U+2122 TRADE MARK SIGN; trademark
17557 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122
17558 % U+2126 OHM SIGN; Ohm, Omega
17559 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126
17560 % U+2127 INVERTED OHM SIGN
17561 \DeclareTextCommand{\textmho}{PU}{\9041\047}%* U+2127
17562 %* \textmho -> \agemO (wasysym)
17563 % U+2129 TURNED GREEK SMALL LETTER IOTA; \riota (phonetic)
17564 \DeclareTextCommand{\textriota}{PU}{\9041\051}%* U+2129
17565 % U+212B ANGSTROM SIGN; angstrom
17566 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B
17567 % U+212E ESTIMATED SYMBOL; estimated
17568 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E
17569 %* \textestimated -> \EstimatedSign (marvosym)
17570 %* \textestimated -> \Ecommerce (marvosym)
17571 % U+2132 TURNED CAPITAL F; \Finv (AmS)
17572 \DeclareTextCommand{\textFinv}{PU}{\9041\062}%* U+2132
17573 % U+2135 ALEF SYMBOL; aleph; \aleph (LaTeX)
17574 \DeclareTextCommand{\textaleph}{PU}{\9041\065}%* U+2135
17575 % U+2136 BET SYMBOL; \beth (AmS, MnSymbol)
17576 \DeclareTextCommand{\textbeth}{PU}{\9041\066}%* U+2136
17577 % U+2137 GIMEL SYMBOL; \gimel (AmS, MnSymbol)
17578 \DeclareTextCommand{\textgimel}{PU}{\9041\067}%* U+2137
17579 % U+2138 DALET SYMBOL; \daleth (AmS, MnSymbol)
17580 \DeclareTextCommand{\textdaleth}{PU}{\9041\070}%* U+2138
17581 % U+213B FACSIMILE SIGN; \fax (marvosym)
17582 \DeclareTextCommand{\textfax}{PU}{\9041\073}%* U+213B
17583 % U+2141 TURNED SANS-SERIF CAPITAL G (=game); \Game
17584 \DeclareTextCommand{\textGame}{PU}{\9041\101}%* U+2141
17585 % U+214B TURNED AMPERSAND; \invamp (txfonts/pxfonts)
17586 \DeclareTextCommand{\textinvamp}{PU}{\9041\113}% U+214B
17587 %* \textinvamp -> \bindnasrepma (stmaryrd)

17588 %* \textinvamp -> \parr (cml)

47.2.20 Number Forms: U+2150 to U+218F

17589 % U+2150 VULGAR FRACTION ONE SEVENTH
17590 \DeclareTextCommand{\textoneseventh}{PU}{\9041\120}% U+2150
17591 % U+2151 VULGAR FRACTION ONE NINTH
17592 \DeclareTextCommand{\textoneninth}{PU}{\9041\121}% U+2151
17593 % U+2152 VULGAR FRACTION ONE TENTH
17594 \DeclareTextCommand{\textonetenth}{PU}{\9041\122}% U+2152
17595 % U+2153 VULGAR FRACTION ONE THIRD; onethird
17596 \DeclareTextCommand{\textonethird}{PU}{\9041\123}% U+2153
17597 % U+2154 VULGAR FRACTION TWO THIRDS; twothirds
17598 \DeclareTextCommand{\texttwothirds}{PU}{\9041\124}% U+2154
17599 % U+2155 VULGAR FRACTION ONE FIFTH
17600 \DeclareTextCommand{\textonefifth}{PU}{\9041\125}% U+2155
17601 % U+2156 VULGAR FRACTION TWO FIFTHS
17602 \DeclareTextCommand{\texttwofifths}{PU}{\9041\126}% U+2156
17603 % U+2157 VULGAR FRACTION THREE FIFTHS
17604 \DeclareTextCommand{\textthreelfths}{PU}{\9041\127}% U+2157
17605 % U+2158 VULGAR FRACTION FOUR FIFTHS
17606 \DeclareTextCommand{\textfourfifths}{PU}{\9041\130}% U+2158
17607 % U+2159 VULGAR FRACTION ONE SIXTH
17608 \DeclareTextCommand{\textonesixth}{PU}{\9041\131}% U+2159
17609 % U+215A VULGAR FRACTION FIVE SIXTHS
17610 \DeclareTextCommand{\textfivesixths}{PU}{\9041\132}% U+215A
17611 % U+215B VULGAR FRACTION ONE EIGHTH; oneeighth
17612 \DeclareTextCommand{\textoneeighth}{PU}{\9041\133}% U+215B
17613 % U+215C VULGAR FRACTION THREE EIGHTHS; threeeighths
17614 \DeclareTextCommand{\textthreeeighths}{PU}{\9041\134}% U+215C
17615 % U+215D VULGAR FRACTION FIVE EIGHTHS; fiveeighths
17616 \DeclareTextCommand{\textfiveeighths}{PU}{\9041\135}% U+215D
17617 % U+215E VULGAR FRACTION SEVEN EIGHTHS; seveneighths
17618 \DeclareTextCommand{\textseveneighths}{PU}{\9041\136}% U+215E
17619 % U+2184 LATIN SMALL LETTER REVERSED C
17620 \DeclareTextCommand{\textrevc}{PU}{\9041\204}% U+2184
17621 % U+2189 VULGAR FRACTION ZERO THIRDS
17622 \DeclareTextCommand{\textzerthirds}{PU}{\9041\211}% U+2189

47.2.21 Arrows: U+2190 to U+21FF

17623 % U+2190 LEFTWARDS ARROW; arrowleft
17624 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}%* U+2190
17625 % U+2191 UPWARDS ARROW; arrowup
17626 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}%* U+2191
17627 % U+2192 RIGHTWARDS ARROW; arrowright
17628 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}%* U+2192
17629 %* \textrightarrow -> \MVRightArrow (marvosym)
17630 %* \textrightarrow -> \MVRightarrow (marvosym)
17631 % U+2193 DOWNWARDS ARROW; arrowdown
17632 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}%* U+2193
17633 %* \textdownarrow -> \MVAarrowDown (marvosym)
17634 %* \textdownarrow -> \Force (marvosym)
17635 % U+2194 LEFT RIGHT ARROW; arrowboth; \leftrightarrow (LaTeX)
17636 \DeclareTextCommand{\textleftrightarrow}{PU}{\9041\224}%* U+2194
17637 % U+2195 UP DOWN ARROW; arrowupdn; \updownarrow (LaTeX)

```

17638 \DeclareTextCommand{\textupdownarrow}{PU}{\9041\225}%* U+2195
17639 % U+2196 NORTH WEST ARROW; arrowupleft; \nwarrow (LaTeX)
17640 \DeclareTextCommand{\textnwarrow}{PU}{\9041\226}%* U+2196
17641 % U+2197 NORTH EAST ARROW; arrowupright; \nearrow (LaTeX)
17642 \DeclareTextCommand{\textnearrow}{PU}{\9041\227}%* U+2197
17643 %* \textnearrow -> \textglobrise (tipa)
17644 % U+2198 SOUTH EAST ARROW; arrowdownright; \searrow (LaTeX)
17645 \DeclareTextCommand{\textsearrow}{PU}{\9041\230}%* U+2198
17646 %* \textsearrow -> \textglobfall (tipa)
17647 % U+2199 SOUTH WEST ARROW; arrowdownleft; \swarrow (LaTeX)
17648 \DeclareTextCommand{\textswarrow}{PU}{\9041\231}%* U+2199
17649 % U+219A LEFTWARDS ARROW WITH STROKE; \leftarrow (AmS)
17650 \DeclareTextCommand{\textnleftarrow}{PU}{\9041\232}%* U+219A
17651 % U+219B RIGHTWARDS ARROW WITH STROKE; \rightarrow (AmS)
17652 \DeclareTextCommand{\textnrightrightarrow}{PU}{\9041\233}%* U+219B
17653 % U+219E LEFTWARDS TWO HEADED ARROW; \twoheadleftarrow (AmS)
17654 \DeclareTextCommand{\texttwoheadleftarrow}{PU}{\9041\236}%* U+219E
17655 % \ntwoheadleftarrow (txfonts/pxfonts)
17656 \DeclareTextCommand{\textntwoheadleftarrow}{PU}{\9041\236\83\070}%* U+219E U+0338
17657 % U+219F UPWARDS TWO HEADED ARROW; \twoheaduparrow (MnSymbol)
17658 \DeclareTextCommand{\texttwoheaduparrow}{PU}{\9041\237}%* U+219F
17659 % U+21A0 RIGHTWARDS TWO HEADED ARROW;
17660 % \twoheadrightarrow (AmS)
17661 \DeclareTextCommand{\texttwoheadrightarrow}{PU}{\9041\240}%* U+21A0
17662 % \ntwoheadrightarrow (txfonts/pxfonts)
17663 \DeclareTextCommand{\textntwoheadrightarrow}{PU}{\9041\240\83\070}%* U+21A0 U+0338
17664 % U+21A1 DOWNWARDS TWO HEADED ARROW; \twoheaddownarrow (Mn-
Symbol)
17665 \DeclareTextCommand{\texttwoheaddownarrow}{PU}{\9041\241}%* U+21A1
17666 % U+21A2 LEFTWARDS ARROW WITH TAIL; \leftarrowtail (AmS)
17667 \DeclareTextCommand{\textleftarrowtail}{PU}{\9041\242}%* U+21A2
17668 % U+21A3 RIGHTWARDS ARROW WITH TAIL; \rightarrowtail (AmS)
17669 \DeclareTextCommand{\textrightarrowtail}{PU}{\9041\243}%* U+21A3
17670 % U+21A6 RIGHTWARDS ARROW FROM BAR; \mapsto (LaTeX)
17671 \DeclareTextCommand{\textmapsto}{PU}{\9041\246}%* U+21A6
17672 % U+21A9 LEFTWARDS ARROW WITH HOOK; \hookleftarrow (LaTeX)
17673 \DeclareTextCommand{\texthookleftarrow}{PU}{\9041\251}%* U+21A9
17674 % U+21AA RIGHTWARDS ARROW WITH HOOK; \hookrightarrow (LaTeX)
17675 \DeclareTextCommand{\texthookrightarrow}{PU}{\9041\252}%* U+21AA
17676 % U+21AB LEFTWARDS ARROW WITH LOOP; \looparrowleft (AmS)
17677 \DeclareTextCommand{\textlooparrowleft}{PU}{\9041\253}%* U+21AB
17678 % U+21AC RIGHTWARDS ARROW WITH LOOP; \looparrowright (AmS)
17679 \DeclareTextCommand{\textlooparrowright}{PU}{\9041\254}%* U+21AC
17680 % U+21AE LEFT RIGHT ARROW WITH STROKE; \leftrightarrow (AmS)
17681 \DeclareTextCommand{\textnleftrightarrow}{PU}{\9041\256}%* U+21AE
17682 % U+21AF DOWNWARDS ZIGZAG ARROW; \lightning (stmaryrd)
17683 \DeclareTextCommand{\textlightning}{PU}{\9041\257}%* U+21AF
17684 %* \textlightning -> \Lightning (marvosym)
17685 % U+21B5 DOWNWARDS ARROW WITH CORNER LEFTWARDS;
17686 % \dls (mathabx)
17687 \DeclareTextCommand{\textdls}{PU}{\9041\265}%* U+21B5
17688 % U+21B6 ANTICLOCKWISE TOP SEMICIRCLE ARROW;
17689 % \curvearrowleft (AmS)
17690 \DeclareTextCommand{\textcurvearrowleft}{PU}{\9041\266}%* U+21B6

```

```

17691 % U+21B7 CLOCKWISE TOP SEMICIRCLE ARROW; \curvearrowright (AmS)
17692 \DeclareTextCommand{\textcurvearrowright}{PU}{\9041\267}%* U+21B7
17693 % U+21BC LEFTWARDS HARPOON WITH BARB UPWARDS; harpoonleft-
      barbup;
17694 % \leftharpoonup (LaTeX)
17695 \DeclareTextCommand{\textleftharpoonup}{PU}{\9041\274}%* U+21BC
17696 % U+21BD LEFTWARDS HARPOON WITH BARB DOWNWARDS;
17697 % \leftharpoondown (LaTeX)
17698 \DeclareTextCommand{\textleftharpoondown}{PU}{\9041\275}%* U+21BD
17699 % U+21BE UPWARDS HARPOON WITH BARB RIGHTWARDS;
17700 % \upharpoonright (AmS)
17701 \DeclareTextCommand{\textupharpoonright}{PU}{\9041\276}%* U+21BE
17702 % U+21BF UPWARDS HARPOON WITH BARB LEFTWARDS;
17703 % \upharpoonleft (AmS)
17704 \DeclareTextCommand{\textupharpoonleft}{PU}{\9041\277}%* U+21BF
17705 % U+21C0 RIGHTWARDS HARPOON WITH BARB UPWARDS; harpoonright-
      barbup
17706 % \rightharpoonup (LaTeX)
17707 \DeclareTextCommand{\textrightharpoonup}{PU}{\9041\300}%* U+21C0
17708 % U+21C1 RIGHTWARDS HARPOON WITH BARB DOWNWARDS;
17709 % \rightharpoondown (LaTeX)
17710 \DeclareTextCommand{\textrightharpoondown}{PU}{\9041\301}%* U+21C1
17711 % U+21C2 DOWNWARDS HARPOON WITH BARB RIGHTWARDS;
17712 % \downharpoonright (AmS)
17713 \DeclareTextCommand{\textdownharpoonright}{PU}{\9041\302}%* U+21C2
17714 % U+21C3 DOWNWARDS HARPOON WITH BARB LEFTWARDS;
17715 % \downharpoonleft (AmS)
17716 \DeclareTextCommand{\textdownharpoonleft}{PU}{\9041\303}%* U+21C3
17717 % U+21C4 RIGHTWARDS ARROW OVER LEFTWARDS ARROW;
17718 % arrowrightoverleft; \leftrightarrows (MnSymbol)
17719 \DeclareTextCommand{\textrightarrows}{PU}{\9041\304}%* U+21C4
17720 % U+21C5 UPWARDS ARROW LEFTWARDS OF DOWNWARDS ARROW; ar-
      rowupleftofdown;
17721 % \updownarrows (MnSymbol)
17722 \DeclareTextCommand{\textupdownarrows}{PU}{\9041\305}%* U+21C5
17723 % U+21C6 LEFTWARDS ARROW OVER RIGHTWARDS ARROW; arrowleft-
      overright;
17724 % \leftrightharpoons (AmS)
17725 \DeclareTextCommand{\textleftrightharpoons}{PU}{\9041\306}%* U+21C6
17726 % U+21C7 LEFTWARDS PAIRED ARROWS; \leftleftarrows (AmS)
17727 \DeclareTextCommand{\textleftleftarrows}{PU}{\9041\307}%* U+21C7
17728 % U+21C8 UPWARDS PAIRED ARROWS; \upuparrows (AmS)
17729 \DeclareTextCommand{\textupuparrows}{PU}{\9041\310}%* U+21C8
17730 % U+21C9 RIGHTWARDS PAIRED ARROWS; \rightrightarrows (AmS)
17731 \DeclareTextCommand{\textrightrightarrows}{PU}{\9041\311}%* U+21C9
17732 % U+21CA DOWNWARDS PAIRED ARROWS; \downdownarrows (AmS)
17733 \DeclareTextCommand{\textdowndownarrows}{PU}{\9041\312}%* U+21CA
17734 % U+21CB LEFTWARDS HARPOON OVER RIGHTWARDS HARPOON;
17735 % \leftrightharpoons (AmS);
17736 \DeclareTextCommand{\textleftrightharpoons}{PU}{\9041\313}%* U+21CB
17737 % U+21CC RIGHTWARDS HARPOON OVER LEFTWARDS HARPOON;
17738 % \rightleftharpoons (LaTeX, AmS)
17739 \DeclareTextCommand{\textrightleftharpoons}{PU}{\9041\314}%* U+21CC
17740 % U+21CD LEFTWARDS DOUBLE ARROW WITH STROKE; arrowleft-

```

```

        blstroke;
17741 % \nLeftarrow (AmS)
17742 \DeclareTextCommand{\textnLeftarrow}{PU}{\9041\315}%* U+21CD
17743 % U+21CE LEFT RIGHT DOUBLE ARROW WITH STROKE; \nLeftrightarrow (AmS)
17744 \DeclareTextCommand{\textnLeftrightarrow}{PU}{\9041\316}%* U+21CE
17745 % U+21CF RIGHTWARDS DOUBLE ARROW WITH STROKE; arrowrightdblstroke;
17746 % \nRightarrow (AmS)
17747 \DeclareTextCommand{\textnRightarrow}{PU}{\9041\317}%* U+21CF
17748 % U+21D0 LEFTWARDS DOUBLE ARROW; arrowdblleft, arrowleftdbl;
17749 % \Leftarrow (LaTeX)
17750 \DeclareTextCommand{\textLeftarrow}{PU}{\9041\320}%* U+21D0
17751 % U+21D1 UPWARDS DOUBLE ARROW; arrowdblup; \Uparrow (LaTeX)
17752 \DeclareTextCommand{\textUparrow}{PU}{\9041\321}%* U+21D1
17753 % U+21D2 RIGHTWARDS DOUBLE ARROW; arrowdblright, dblarrowright;
17754 % \Rightarrow (LaTeX)
17755 \DeclareTextCommand{\textRightarrow}{PU}{\9041\322}%* U+21D2
17756 %* \textRightarrow -> \Conclusion (marvosym)
17757 % U+21D3 DOWNWARDS DOUBLE ARROW; arrowdbl down; \Downarrow (LaTeX)
17758 \DeclareTextCommand{\textDownarrow}{PU}{\9041\323}%* U+21D3
17759 % U+21D4 LEFT RIGHT DOUBLE ARROW; arrowdbl both;
17760 % \Leftrightarrow (LaTeX)
17761 \DeclareTextCommand{\textLeftrightarrow}{PU}{\9041\324}%* U+21D4
17762 %* \textLeftrightarrow -> \Equivalence (marvosym)
17763 % U+21D5 UP DOWN DOUBLE ARROW; \Updownarrow (LaTeX)
17764 \DeclareTextCommand{\textUpdownarrow}{PU}{\9041\325}%* U+21D5
17765 % U+21D6 NORTH WEST DOUBLE ARROW; \Nwarrow (MnSymbol)
17766 \DeclareTextCommand{\textNwarrow}{PU}{\9041\326}%* U+21D6
17767 % U+21D7 NORTH EAST DOUBLE ARROW; \Nearrow (MnSymbol)
17768 \DeclareTextCommand{\textNearrow}{PU}{\9041\327}%* U+21D7
17769 % U+21D8 SOUTH EAST DOUBLE ARROW; \Searrow (MnSymbol)
17770 \DeclareTextCommand{\textSearrow}{PU}{\9041\330}%* U+21D8
17771 % U+21D9 SOUTH WEST DOUBLE ARROW; \Swarrow (MnSymbol)
17772 \DeclareTextCommand{\textSwarrow}{PU}{\9041\331}%* U+21D9
17773 % U+21DA LEFTWARDS TRIPLE ARROW; \Leftarrow (AmS)
17774 \DeclareTextCommand{\textLeftarrow}{PU}{\9041\332}%* U+21DA
17775 % U+21DB RIGHTWARDS TRIPLE ARROW; \Rrightarrow (MnSymbol)
17776 \DeclareTextCommand{\textRrightarrow}{PU}{\9041\333}%* U+21DB
17777 % U+21DC LEFTWARDS SQUIGGLE ARROW; \leftsquigarrow (mathabx)
17778 \DeclareTextCommand{\textleftsquigarrow}{PU}{\9041\334}%* U+21DC
17779 % U+21DD RIGHTWARDS SQUIGGLE ARROW; \rightsquigarrow (mathabx)
17780 \DeclareTextCommand{\textright squigarrow}{PU}{\9041\335}%* U+21DD
17781 % U+21E0 LEFTWARDS DASHED ARROW; arrowdashleft;
17782 % \dashleftarrow (AmS)
17783 \DeclareTextCommand{\texdashleftarrow}{PU}{\9041\340}%* U+21E0
17784 %* \texdashleftarrow -> \dashedleftarrow (MnSymbol)
17785 % U+21E1 UPWARDS DASHED ARROW; arrowdashup; \dasheduparrow (MnSymbol)
17786 \DeclareTextCommand{\texdasheduparrow}{PU}{\9041\341}%* U+21E1
17787 % U+21E2 RIGHTWARDS DASHED ARROW; arrowdashright; \dashrightarrow (AmS)
17788 \DeclareTextCommand{\texdashrightarrow}{PU}{\9041\342}%* U+21E2

```

```

17789 %* \textdashrightarrow -> \dashedrightarrow (MnSymbol)
17790 % U+21E3 DOWNWARDS DASHED ARROW; arrowdashdown; \dasheddownarrow (MnSymbol)
17791 \DeclareTextCommand{\textdasheddownarrow}{PU}{\9041\343}%* U+21E3
17792 % U+21E8 RIGHTWARDS WHITE ARROW; \pointer (wasysym)
17793 \DeclareTextCommand{\textpointer}{PU}{\9041\350}%* U+21E8
17794 % U+21F5 DOWNWARDS ARROW LEFTWARDS OF UPWARDS ARROW;
17795 % \downuparrows (MnSymbol)
17796 \DeclareTextCommand{\textdownuparrows}{PU}{\9041\365}%* U+21F5
17797 % U+21FD LEFTWARDS OPEN-HEADED ARROW; \leftarrowtriangle (stmaryrd)
17798 \DeclareTextCommand{\textleftarrowtriangle}{PU}{\9041\375}%* U+21FD
17799 % U+21FE RIGHTWARDS OPEN-HEADED ARROW; \rightarrowtriangle (stmaryrd)
17800 \DeclareTextCommand{\textrightarrowtriangle}{PU}{\9041\376}%* U+21FE
17801 % U+21FF LEFT RIGHT OPEN-HEADED ARROW; \leftrightarrowtriangle (stmaryrd)
17802 \DeclareTextCommand{\textleftrightarrowtriangle}{PU}{\9041\377}%* U+21FF

```

47.2.22 Mathematical Operators: U+2200 to U+22FF

```

17803 % U+2200 FOR ALL; forall; \forall (LaTeX)
17804 \DeclareTextCommand{\textforall}{PU}{\9042\000}%* U+2200
17805 % U+2201 COMPLEMENT; \complement (AmS)
17806 \DeclareTextCommand{\textcomplement}{PU}{\9042\001}%* U+2201
17807 % U+2202 PARTIAL DIFFERENTIAL; partialdiff; \partial (LaTeX)
17808 \DeclareTextCommand{\textpartial}{PU}{\9042\002}%* U+2202
17809 % U+2203 THERE EXISTS; existential; \exists (LaTeX)
17810 \DeclareTextCommand{\textexists}{PU}{\9042\003}%* U+2203
17811 % U+2204 THERE DOES NOT EXIST; \nexists (AmS)
17812 \DeclareTextCommand{\textnexists}{PU}{\9042\004}%* U+2204
17813 % U+2205 EMPTY SET; emptyset; \emptyset (LaTeX), \varnothing (AmS)
17814 \DeclareTextCommand{\textemptyset}{PU}{\9042\005}%* U+2205
17815 %* \textemptyset -> \varnothing (AmS)
17816 % U+2206 INCREMENT; increment, Delta; \triangle (LaTeX)
17817 \DeclareTextCommand{\texttriangle}{PU}{\9042\006}%* U+2206
17818 % U+2207 NABLA; nabla, gradient; \nabla (LaTeX)
17819 \DeclareTextCommand{\textnabla}{PU}{\9042\007}%* U+2207
17820 % U+2208 ELEMENT OF; element; \in (LaTeX)
17821 \DeclareTextCommand{\textinsymbol}{PU}{\9042\010}%* U+2208
17822 % U+2209 NOT AN ELEMENT OF; notelement, notelementof; \notin (LaTeX)
17823 \DeclareTextCommand{\textnotin}{PU}{\9042\011}%* U+2209
17824 % U+220A SMALL ELEMENT OF; \smallin (mathdesign)
17825 \DeclareTextCommand{\textsmallin}{PU}{\9042\012}%* U+220A
17826 % U+220B CONTAINS AS MEMBER; suchthat; \ni (LaTeX)
17827 \DeclareTextCommand{\textni}{PU}{\9042\013}%* U+220B
17828 %* \textni -> \owns (mathabx)
17829 % U+220C DOES NOT CONTAIN AS MEMBER; \notowner (mathabx)
17830 \DeclareTextCommand{\textnotowner}{PU}{\9042\014}%* U+220C
17831 %* \textnotowner -> \notni (txfonts/pxfonts)
17832 % U+220D SMALL CONTAINS AS MEMBER; \smallowns (mathdesign)
17833 \DeclareTextCommand{\textsmallowns}{PU}{\9042\015}%* U+220D
17834 % U+220F N-ARY PRODUCT; \prod (LaTeX)
17835 \DeclareTextCommand{\textprod}{PU}{\9042\017}%* U+220F
17836 % U+2210 N-ARY COPRODUCT; \amalg (LaTeX)
17837 \DeclareTextCommand{\textamalg}{PU}{\9042\020}%* U+2210
17838 % U+2211 N-ARY SUMMATION; summation; \sum (LaTeX)

```

```

17839 \DeclareTextCommand{\textsum}{PU}{\9042\021}%* U+2211
17840 % U+2212 MINUS SIGN; minus
17841 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212
17842 % U+2213 MINUS-OR-PLUS SIGN; minusplus; \mp (LaTeX)
17843 \DeclareTextCommand{\textmp}{PU}{\9042\023}%* U+2213
17844 % U+2214 DOT PLUS; \dotplus (AmS)
17845 \DeclareTextCommand{\textdotplus}{PU}{\9042\024}%* U+2214
17846 % U+2215 DIVISION SLASH; divisionslash; \Divides (marvosym)
17847 \DeclareTextCommand{\textDivides}{PU}{\9042\025}%* U+2215
17848 % \DividesNot (marvosym)
17849 \DeclareTextCommand{\textDividesNot}{PU}{\9042\025\9040\322}%* U+2215 U+20D2
17850 % U+2216 SET MINUS; \setminus (LaTeX)
17851 \DeclareTextCommand{\textsetminus}{PU}{\9042\026}%* U+2216
17852 % U+2217 ASTERISK OPERATOR; asteriskmath; \ast (LaTeX)
17853 \DeclareTextCommand{\textast}{PU}{\9042\027}%* U+2217
17854 % U+2218 RING OPERATOR; \circ (LaTeX)
17855 \DeclareTextCommand{\textcirc}{PU}{\9042\030}%* U+2218
17856 % U+2219 BULLET OPERATOR; bulletoperator; \bullet (LaTeX)
17857 \DeclareTextCommand{\textbulletoperator}{PU}{\9042\031}% U+2219
17858 % U+221A SQUARE ROOT; radical
17859 \DeclareTextCommand{\textsqrt}{PU}{\9042\032}%* U+221A
17860 % U+221D PROPORTIONAL TO; proportional; \propto (LaTeX)
17861 \DeclareTextCommand{\textpropto}{PU}{\9042\035}%* U+221D
17862 %* \textpropto -> \varproport (wasysym)
17863 % U+221E INFINITY; infinity; \infty (LaTeX)
17864 \DeclareTextCommand{\textinfty}{PU}{\9042\036}%* U+221E
17865 % U+2220 ANGLE; angle; \angle (LaTeX)
17866 \DeclareTextCommand{\textangle}{PU}{\9042\040}%* U+2220
17867 % U+2221 MEASURED ANGLE; \measuredangle (mathabx, MnSymbol)
17868 \DeclareTextCommand{\textmeasuredangle}{PU}{\9042\041}%* U+2221
17869 % U+2222 SPHERICAL ANGLE; \sphericalangle (AmS)
17870 \DeclareTextCommand{\textsphericalangle}{PU}{\9042\042}%* U+2222
17871 %* \textsphericalangle -> \varangle (wasysym)
17872 %* \textsphericalangle -> \Anglesign (marvosym)
17873 %* \textsphericalangle -> \AngleSign (marvosym)
17874 % U+2223 DIVIDES; divides; \mid (LaTeX)
17875 \DeclareTextCommand{\textmid}{PU}{\9042\043}%* U+2223
17876 % U+2224 DOES NOT DIVIDE; \nmid (AmS)
17877 \DeclareTextCommand{\textnmid}{PU}{\9042\044}%* U+2224
17878 %* \textnmid -> \notdivides (mathabx)
17879 % U+2225 PARALLEL TO; parallel; \parallel (LaTeX)
17880 \DeclareTextCommand{\textparallel}{PU}{\9042\045}%* U+2225
17881 % U+2226 NOT PARALLEL TO; notparallel; \nparallel (AmS)
17882 \DeclareTextCommand{\textnparallel}{PU}{\9042\046}%* U+2226
17883 %* \textnparallel -> nUpdownline (MnSymbol)
17884 % U+2227 LOGICAL AND; logicaland; \wedge (LaTeX)
17885 \DeclareTextCommand{\textwedge}{PU}{\9042\047}%* U+2227
17886 % \owedge (stmaryrd)
17887 \DeclareTextCommand{\textowedge}{PU}{\9042\047\9040\335}%* U+2227 U+20DD
17888 %* \textowedge -> \varowedge (stmaryrd)
17889 % U+2228 LOGICAL OR; logicalor; \vee (LaTeX)
17890 \DeclareTextCommand{\textvee}{PU}{\9042\050}%* U+2228
17891 % \ovee (stmaryrd)
17892 \DeclareTextCommand{\textovee}{PU}{\9042\050\9040\335}%* U+2228 U+20DD

```

```

17893 %* \textovee -> \varovee (stmaryrd)
17894 % U+2229 INTERSECTION; intersection; \cap (LaTeX)
17895 \DeclareTextCommand{\textcap}{PU}{\9042\051}%* U+2229
17896 % U+222A UNION; union; \cup (LaTeX)
17897 \DeclareTextCommand{\textcup}{PU}{\9042\052}%* U+222A
17898 % U+222B INTEGRAL; integral; \int (LaTeX)
17899 \DeclareTextCommand{\textint}{PU}{\9042\053}%* U+222B
17900 %* \textint -> \varint (wasysym)
17901 % U+222C DOUBLE INTEGRAL; dblintegral; \iint (AmS)
17902 \DeclareTextCommand{\textiint}{PU}{\9042\054}%* U+222C
17903 % U+222D TRIPLE INTEGRAL; \iiint (AmS)
17904 \DeclareTextCommand{\textiiint}{PU}{\9042\055}%* U+222D
17905 % U+222E CONTOUR INTEGRAL; contourintegral; \oint (LaTeX)
17906 \DeclareTextCommand{\textoint}{PU}{\9042\056}%* U+222E
17907 %* \textoint -> \varoint (wasysym)
17908 % U+222F SURFACE INTEGRAL; \oiint (wasysym)
17909 \DeclareTextCommand{\textoiint}{PU}{\9042\057}%* U+222F
17910 % U+2232 CLOCKWISE CONTOUR INTEGRAL;
17911 % \ointclockwise (txfonts/pxfonts)
17912 \DeclareTextCommand{\textointclockwise}{PU}{\9042\062}%* U+2232
17913 % U+2233 ANTICLOCKWISE CONTOUR INTEGRAL; \ointctrclockwise (tx-
    fonts/pxfonts)
17914 \DeclareTextCommand{\textointctrclockwise}{PU}{\9042\063}%* U+2233
17915 % U+2234 THEREFORE; therefore; \therefore (AmS)
17916 \DeclareTextCommand{\texttherefore}{PU}{\9042\064}%* U+2234
17917 %* \texttherefore -> uptherefore (MnSymbol)
17918 % U+2235 BECAUSE; because; \because (AmS)
17919 \DeclareTextCommand{\textbecause}{PU}{\9042\065}%* U+2235
17920 %* \textbecause -> \downtherefore (MnSymbol)
17921 % U+2236 RATIO; \vdotdot (MnSymbol)
17922 \DeclareTextCommand{\textvdotdot}{PU}{\9042\066}%* U+2236
17923 % U+2237 PROPORTION; \squaredots (MnSymbol)
17924 \DeclareTextCommand{\textsquaredots}{PU}{\9042\067}%* U+2237
17925 % U+2238 DOT MINUS; \dotminus (MnSymbol)
17926 \DeclareTextCommand{\textdotminus}{PU}{\9042\070}%* U+2238
17927 %* \textdotminus -> \textdotdiv (mathabx)
17928 % U+2239 EXCESS; \eqcolon (txfonts/pxfonts)
17929 \DeclareTextCommand{\texteqcolon}{PU}{\9042\071}%* U+2239
17930 % U+223C TILDE OPERATOR; similar; \sim (LaTeX)
17931 \DeclareTextCommand{\textsim}{PU}{\9042\074}%* U+223C
17932 %* \textsim -> \AC (wasysym)
17933 % U+223D REVERSED TILDE; reversedtilde; \backsim (AmS)
17934 \DeclareTextCommand{\textbacksim}{PU}{\9042\075}%* U+223D
17935 % \nbacksim (txfonts/pxfonts)
17936 \DeclareTextCommand{\textnbacksim}{PU}{\9042\075\83\070}%* U+223D U+0338
17937 % U+2240 WREATH PRODUCT; \wr (LaTeX)
17938 \DeclareTextCommand{\textwr}{PU}{\9042\100}%* U+2240
17939 %* \textwr -> \wreath (MnSymbol)
17940 % U+2241 NOT TILDE; \nsim (AmS)
17941 \DeclareTextCommand{\textnsim}{PU}{\9042\101}%* U+2241
17942 % U+2242 MINUS TILDE; \eqsim (MnSymbol)
17943 \DeclareTextCommand{\texteqsim}{PU}{\9042\102}%* U+2242
17944 % \neqsim (MnSymbol)
17945 \DeclareTextCommand{\textneqsim}{PU}{\9042\102\83\070}%* U+2242 U+0338

```


17946 % U+2243 ASYMPTOTICALLY EQUAL TO; asymptoticallyequal; \simeq (LaTeX)
17947 \DeclareTextCommand{\textsimeq}{PU}{\9042\103}%* U+2243
17948 % U+2244 NOT ASYMPTOTICALLY EQUAL TO; \nsimeq (txfonts/pxfonts)
17949 \DeclareTextCommand{\textnsimeq}{PU}{\9042\104}%* U+2244
17950 % U+2245 APPROXIMATELY EQUAL TO; approximatelyequal; \cong (LaTeX)
17951 \DeclareTextCommand{\textcong}{PU}{\9042\105}%* U+2245
17952 % U+2247 NEITHER APPROXIMATELY NOR ACTUALLY EQUAL TO;
17953 % \ncong (AmS)
17954 \DeclareTextCommand{\textncong}{PU}{\9042\107}%* U+2247
17955 % U+2248 ALMOST EQUAL TO; approxequal; \approx (LaTeX)
17956 \DeclareTextCommand{\textapprox}{PU}{\9042\110}%* U+2248
17957 % U+2249 NOT ALMOST EQUAL TO; \napprox (txfonts/pxfonts)
17958 \DeclareTextCommand{\textnapprox}{PU}{\9042\111}%* U+2249
17959 %* \textnapprox -> \nthickapprox (txfonts/pxfonts)
17960 % U+224A ALMOST EQUAL OR EQUAL TO; \approxeq (AmS)
17961 \DeclareTextCommand{\textapproxeq}{PU}{\9042\112}%* U+224A
17962 % \napproxeq (txfonts/pxfonts)
17963 \DeclareTextCommand{\textnapproxeq}{PU}{\9042\112\83\070}%* U+224A U+0338
17964 % U+224B TRIPLE TILDE; \triplesim (MnSymbol)
17965 \DeclareTextCommand{\texttriplesim}{PU}{\9042\113}%* U+224B
17966 %* \texttriplesim -> \VHF (wasysym)
17967 % \ntriplesim (MnSymbol)
17968 \DeclareTextCommand{\textntriplesim}{PU}{\9042\113\83\070}%* U+224B U+0338
17969 % U+224C ALL EQUAL TO; allequal; \backcong (MnSymbol)
17970 \DeclareTextCommand{\textbackcong}{PU}{\9042\114}%* U+224C
17971 % \nbackcong (MnSymbol)
17972 \DeclareTextCommand{\textnbackcong}{PU}{\9042\114\83\070}%* U+224C U+0338
17973 % U+224D EQUIVALENT TO; \asymp (LaTeX)
17974 \DeclareTextCommand{\textasymp}{PU}{\9042\115}%* U+224D
17975 % \nasymp (txfonts/pxfonts)
17976 \DeclareTextCommand{\textnasymp}{PU}{\9042\115\83\070}%* U+224D U+0338
17977 %* \textnasymp -> \notasym (mathabx)
17978 % U+224E GEOMETRICALLY EQUIVALENT TO; \Bumpeq (AmS)
17979 \DeclareTextCommand{\textBumpeq}{PU}{\9042\116}%* U+224E
17980 % \nBumpeq (txfonts/pxfonts)
17981 \DeclareTextCommand{\textnBumpeq}{PU}{\9042\116\83\070}%* U+224E U+0338
17982 % U+224F DIFFERENCE BETWEEN; \bumpeq (AmS)
17983 \DeclareTextCommand{\textbumpeq}{PU}{\9042\117}%* U+224F
17984 % \nbumpeq (txfonts/pxfonts)
17985 \DeclareTextCommand{\textnbumpeq}{PU}{\9042\117\83\070}%* U+224F U+0338
17986 % U+2250 APPROACHES THE LIMIT; approaches; \doteq (LaTeX)
17987 \DeclareTextCommand{\textdoteq}{PU}{\9042\120}%* U+2250
17988 % \ndoteq (MnSymbol)
17989 \DeclareTextCommand{\textndoteq}{PU}{\9042\120\83\070}%* U+2250 U+0338
17990 % U+2251 GEOMETRICALLY EQUAL TO; geometricallyequal;
17991 % \doteqdot (AmS)
17992 \DeclareTextCommand{\textdoteqdot}{PU}{\9042\121}%* U+2251
17993 %* \textdoteqdot -> \Doteq (MnSymbol)
17994 % \nDoteq (MnSymbol)
17995 \DeclareTextCommand{\textnDoteq}{PU}{\9042\121\83\070}%* U+2251 U+0338
17996 % U+2252 APPROXIMATELY EQUAL TO OR THE IMAGE OF; approx-
qualorimage;
17997 % \fallingdotseq (AmS)

17998 \DeclareTextCommand{\textfallingdotseq}{PU}{\9042\122}%* U+2252
17999 % \nfallingdotseq (MnSymbol)
18000 \DeclareTextCommand{\textnfallingdotseq}{PU}{\9042\122\83\070}%* U+2252 U+0338
18001 % U+2253 IMAGE OF OR APPROXIMATELY EQUAL TO; imageorapproximatelyequal;
18002 % \risingdotseq (AmS)
18003 \DeclareTextCommand{\textrisingdotseq}{PU}{\9042\123}%* U+2253
18004 % \nrisingdotseq (MnSymbol)
18005 \DeclareTextCommand{\textnrisingdotseq}{PU}{\9042\123\83\070}%* U+2253 U+0338
18006 % U+2254 COLON EQUALS; \colonequals (colonequals)
18007 \DeclareTextCommand{\textcolonequals}{PU}{\9042\124}%* U+2254
18008 % U+2255 EQUALS COLON; \equalscolon (colonequals)
18009 \DeclareTextCommand{\textequalscolon}{PU}{\9042\125}%* U+2255
18010 % U+2256 RING IN EQUAL TO; \eqcirc (AmS)
18011 \DeclareTextCommand{\texteqcirc}{PU}{\9042\126}%* U+2256
18012 % \neqcirc (MnSymbol)
18013 \DeclareTextCommand{\textneqcirc}{PU}{\9042\126\83\070}%* U+2256 U+0338
18014 % U+2257 RING EQUAL TO; \circeq (AmS)
18015 \DeclareTextCommand{\textcirceq}{PU}{\9042\127}%* U+2257
18016 % \ncirceq (MnSymbol)
18017 \DeclareTextCommand{\textncirceq}{PU}{\9042\127\83\070}%* U+2257 U+0338
18018 % U+2259 ESTIMATES; \hateq (MnSymbol)
18019 \DeclareTextCommand{\texthateq}{PU}{\9042\131}%* U+2259
18020 %* \texthateq -> \corresponds (mathabx)
18021 %* \texthateq -> \Corresponds (marvosym)
18022 % \nhateq (MnSymbol)
18023 \DeclareTextCommand{\textnhateq}{PU}{\9042\131\83\070}%* U+2259 U+0338
18024 % U+225C DELTA EQUAL TO; \triangleeq (AmS)
18025 \DeclareTextCommand{\texttriangleeq}{PU}{\9042\134}%* U+225C
18026 % U+2260 NOT EQUAL TO; notequal; \ne (LaTeX), \neq (LaTeX)
18027 \DeclareTextCommand{\textneq}{PU}{\9042\140}%* U+2260
18028 \DeclareTextCommand{\textne}{PU}{\9042\140}%* U+2260
18029 %* \textneq -> \nequal (MnSymbol)
18030 % U+2261 IDENTICAL TO; equivalence; \equiv (LaTeX)
18031 \DeclareTextCommand{\textequiv}{PU}{\9042\141}%* U+2261
18032 %* \textequiv -> \Congruent (marvosym)
18033 % U+2262 NOT IDENTICAL TO; notidentical; \notequiv (txfonts/pxfonts)
18034 \DeclareTextCommand{\textnequiv}{PU}{\9042\142}%* U+2262
18035 %* \textnequiv -> \NotCongruent (marvosym)
18036 %* \textnequiv -> \notequiv (mathabx)
18037 % U+2264 LESS-THAN OR EQUAL TO; lessequal; \le (LaTeX), \leq (LaTeX)
18038 \DeclareTextCommand{\textleq}{PU}{\9042\144}%* U+2264
18039 \DeclareTextCommand{\textle}{PU}{\9042\144}%* U+2264
18040 %* \textleq -> \LessOrEqual (marvosym)
18041 % U+2265 GREATER-THAN OR EQUAL TO; greaterorequal;
18042 % \ge (LaTeX), \geq (LaTeX)
18043 \DeclareTextCommand{\textgeq}{PU}{\9042\145}%* U+2265
18044 \DeclareTextCommand{\textge}{PU}{\9042\145}%* U+2265
18045 %* \textgeq -> \LargerOrEqual (marvosym)
18046 % U+2266 LESS-THAN OVER EQUAL TO; lessoverequal; \leqq (AmS)
18047 \DeclareTextCommand{\textleqq}{PU}{\9042\146}%* U+2266
18048 % \nleqq (txfonts/pxfonts)
18049 \DeclareTextCommand{\textnleqq}{PU}{\9042\146\83\070}%* U+2266 U+0338
18050 % U+2267 GREATER-THAN OVER EQUAL TO; greateroverequal; \geqq (AmS)

```

18051 \DeclareTextCommand{\textgeqq}{PU}{\9042\147}%* U+2267
18052 % \ngeqq (txfonts/pxfonts)
18053 \DeclareTextCommand{\textngeqq}{PU}{\9042\147\83\070}%* U+2267 U+0338
18054 % U+2268 LESS-THAN BUT NOT EQUAL TO; \lneqq (AmS)
18055 \DeclareTextCommand{\textlneqq}{PU}{\9042\150}%* U+2268
18056 % U+2269 GREATER-THAN BUT NOT EQUAL TO; \gneqq (AmS)
18057 \DeclareTextCommand{\textgneqq}{PU}{\9042\151}%* U+2269
18058 % U+226A MUCH LESS-THAN; muchless; \ll (LaTeX)
18059 \DeclareTextCommand{\textll}{PU}{\9042\152}%* U+226A
18060 % \nll (txfonts/pxfonts)
18061 \DeclareTextCommand{\textnll}{PU}{\9042\152\83\070}%* U+226A U+0338
18062 % U+226B MUCH GREATER-THAN; muchgreater; \gg (LaTeX)
18063 \DeclareTextCommand{\textgg}{PU}{\9042\153}%* U+226B
18064 % \ngg (txfonts/pxfonts)
18065 \DeclareTextCommand{\textngg}{PU}{\9042\153\83\070}%* U+226B U+0338
18066 % U+226C BETWEEN; \between (AmS)
18067 \DeclareTextCommand{\textbetween}{PU}{\9042\154}%* U+226C
18068 % U+226E NOT LESS-THAN; notless; \nless (AmS)
18069 \DeclareTextCommand{\textnless}{PU}{\9042\156}%* U+226E
18070 % U+226F NOT GREATER-THAN; notgreater; \ngtr (AmS)
18071 \DeclareTextCommand{\textngtr}{PU}{\9042\157}%* U+226F
18072 % U+2270 NEITHER LESS-THAN NOR EQUAL TO; notlessnorequal;
18073 % \nleq (AmS)
18074 \DeclareTextCommand{\textnleq}{PU}{\9042\160}%* U+2270
18075 % U+2271 NEITHER GREATER-THAN NOR EQUAL TO; notgreaternore-
    qual; \ngeq (AmS)
18076 \DeclareTextCommand{\textngeq}{PU}{\9042\161}%* U+2271
18077 % U+2272 LESS-THAN OR EQUIVALENT TO; lessorequivalent; \lessim (AmS)
18078 \DeclareTextCommand{\textlessim}{PU}{\9042\162}%* U+2272
18079 %* \textlessim -> \apprle (wasysym)
18080 % U+2273 GREATER-THAN OR EQUIVALENT TO; greaterorequivalent; \gtr-
    sim (AmS)
18081 \DeclareTextCommand{\textgtrsim}{PU}{\9042\163}%* U+2273
18082 %* \textgtrsim -> \apprge (wasysym)
18083 % U+2274 NEITHER LESS-THAN NOR EQUIVALENT TO; \nlessim (tx-
    fonts/pxfonts)
18084 \DeclareTextCommand{\textnlessim}{PU}{\9042\164}%* U+2274
18085 % U+2275 NEITHER GREATER-THAN NOR EQUIVALENT TO; \ngtrsim (tx-
    fonts/pxfonts)
18086 \DeclareTextCommand{\textngtrsim}{PU}{\9042\165}%* U+2275
18087 % U+2276 LESS-THAN OR GREATER-THAN; lessorgreater; \lessgtr (AmS)
18088 \DeclareTextCommand{\textlessgtr}{PU}{\9042\166}%* U+2276
18089 % U+2277 GREATER-THAN OR LESS-THAN; greaterorless; \gtrless (AmS)
18090 \DeclareTextCommand{\textgtrless}{PU}{\9042\167}%* U+2277
18091 % U+2278 NEITHER LESS-THAN NOR GREATER-THAN; \ngtrless (tx-
    fonts/pxfonts)
18092 \DeclareTextCommand{\textngtrless}{PU}{\9042\170}%* U+2278
18093 % U+2279 NEITHER GREATER-THAN NOR LESS-THAN; \nlessgtr (tx-
    fonts/pxfonts)
18094 \DeclareTextCommand{\textnlessgtr}{PU}{\9042\171}%* U+2279
18095 % U+227A PRECEDES; precedes; \prec (LaTeX)
18096 \DeclareTextCommand{\textprec}{PU}{\9042\172}%* U+227A
18097 % U+227B SUCCEEDS; succeeds; \succ (LaTeX)
18098 \DeclareTextCommand{\textsucc}{PU}{\9042\173}%* U+227B

```

18099 % U+227C PRECEDES OR EQUAL TO; \preccurlyeq (AmS)
18100 \DeclareTextCommand{\textpreccurlyeq}{PU}{\9042\174}%* U+227C
18101 % U+227D SUCCEEDS OR EQUAL TO; \succcurlyeq (AmS)
18102 \DeclareTextCommand{\textsucccurlyeq}{PU}{\9042\175}%* U+227D
18103 % U+227E PRECEDES OR EQUIVALENT TO; \precsim (AmS)
18104 \DeclareTextCommand{\textprecsim}{PU}{\9042\176}%* U+227E
18105 % \nprecsim (txfonts/pxfonts)
18106 \DeclareTextCommand{\textnprecsim}{PU}{\9042\176\83\070}%* U+227E U+0338
18107 % U+227F SUCCEEDS OR EQUIVALENT TO; \succsim (AmS)
18108 \DeclareTextCommand{\textsuccsim}{PU}{\9042\177}%* U+227F
18109 % \nsuccsim (txfonts/pxfonts)
18110 \DeclareTextCommand{\textnsuccsim}{PU}{\9042\177\83\070}%* U+227F U+0338
18111 % U+2280 DOES NOT PRECEDE; notprecedes; \nprec (AmS)
18112 \DeclareTextCommand{\textnprec}{PU}{\9042\200}%* U+2280
18113 % U+2281 DOES NOT SUCCEED; notsucceds; \nsucc (AmS)
18114 \DeclareTextCommand{\textnsucc}{PU}{\9042\201}%* U+2281
18115 % U+2282 SUBSET OF; propersubset; \subset (LaTeX)
18116 \DeclareTextCommand{\textsubset}{PU}{\9042\202}%* U+2282
18117 % U+2283 SUPERSET OF; propersuperset; \supset (LaTeX)
18118 \DeclareTextCommand{\textsupset}{PU}{\9042\203}%* U+2283
18119 % U+2284 NOT A SUBSET OF; notsubset; \nsubset (mathabx)
18120 \DeclareTextCommand{\textnsubset}{PU}{\9042\204}%* U+2284
18121 % U+2285 NOT A SUPERSET OF; notsuperset; \nsupset (mathabx)
18122 \DeclareTextCommand{\textnsupset}{PU}{\9042\205}%* U+2285
18123 % U+2286 SUBSET OF OR EQUAL TO; reflexsubset; \subteq (LaTeX)
18124 \DeclareTextCommand{\textsubteq}{PU}{\9042\206}%* U+2286
18125 % U+2287 SUPERSET OF OR EQUAL TO; reflexsuperset; \supseteq (LaTeX)
18126 \DeclareTextCommand{\textsupseteq}{PU}{\9042\207}%* U+2287
18127 % U+2288 NEITHER A SUBSET OF NOR EQUAL TO; \nsubteq (AmS)
18128 \DeclareTextCommand{\textnsubteq}{PU}{\9042\210}%* U+2288
18129 % U+2289 NEITHER A SUPERSET OF NOR EQUAL TO; \nsupseteq (AmS)
18130 \DeclareTextCommand{\textnsupseteq}{PU}{\9042\211}%* U+2289
18131 % U+228A SUBSET OF WITH NOT EQUAL TO; subsetnotequal; \subsetneq (AmS)
18132 \DeclareTextCommand{\textsubsetneq}{PU}{\9042\212}%* U+228A
18133 % U+228B SUPERSET OF WITH NOT EQUAL TO; supersetnotequal; \supsetneq (AmS)
18134 \DeclareTextCommand{\textsupsetneq}{PU}{\9042\213}%* U+228B
18135 % U+228D MULTISSET MULTIPLICATION; \cupdot (MnSymbol)
18136 \DeclareTextCommand{\textcupdot}{PU}{\9042\215}%* U+228D
18137 % U+228E MULTISSET UNION; \cupplus (MnSymbol)
18138 \DeclareTextCommand{\textcupplus}{PU}{\9042\216}%* U+228E
18139 % U+228F SQUARE IMAGE OF; \sqsubset (latexsym, ...)
18140 \DeclareTextCommand{\textsqsubset}{PU}{\9042\217}%* U+228F
18141 % \nsqsubset (txfonts/pxfonts)
18142 \DeclareTextCommand{\textnsqsubset}{PU}{\9042\217\83\070}%* U+228F U+0338
18143 % U+2290 SQUARE ORIGINAL OF; \sqsupset (latexsym, ...)
18144 \DeclareTextCommand{\textsqsupset}{PU}{\9042\220}%* U+2290
18145 % \nsqsupset (txfonts/pxfonts)
18146 \DeclareTextCommand{\textnsqsupset}{PU}{\9042\220\83\070}%* U+2290 U+0338
18147 % U+2291 SQUARE IMAGE OF OR EQUAL TO; \sqsubteq (LaTeX)
18148 \DeclareTextCommand{\textsqsubteq}{PU}{\9042\221}%* U+2291
18149 % \nsqsubteq (txfonts/pxfonts)
18150 \DeclareTextCommand{\textnsqsubteq}{PU}{\9042\221\83\070}%* U+2291 U+0338

```

18151 % U+2292 SQUARE ORIGINAL OF OR EQUAL TO; \sqsupseteq (LaTeX)
18152 \DeclareTextCommand{\textsqsupseteq}{PU}{\9042\222}%* U+2292
18153 % \nsqsupseteq (txfonts/pxfonts)
18154 \DeclareTextCommand{\textnsqsupseteq}{PU}{\9042\222\83\070}%* U+2292 U+0338
18155 % U+2293 SQUARE CAP; \sqcap (LaTeX)
18156 \DeclareTextCommand{\textsqcap}{PU}{\9042\223}%* U+2293
18157 % U+2294 SQUARE CUP; \sqcup (LaTeX)
18158 \DeclareTextCommand{\textsqcup}{PU}{\9042\224}%* U+2294
18159 % U+2295 CIRCLED PLUS; circleplus; \oplus (LaTeX)
18160 \DeclareTextCommand{\textoplus}{PU}{\9042\225}%* U+2295
18161 %* \textoplus -> \varoplus (stmaryrd)
18162 % U+2296 CIRCLED MINUS; minuscircle; \ominus (LaTeX)
18163 \DeclareTextCommand{\textominus}{PU}{\9042\226}%* U+2296
18164 %* \textominus -> \varominus (stmaryrd)
18165 % U+2297 CIRCLED TIMES; circlemultiply; \otimes (LaTeX)
18166 \DeclareTextCommand{\textotimes}{PU}{\9042\227}%* U+2297
18167 %* \textotimes -> \varotimes (stmaryrd)
18168 % U+2298 CIRCLED DIVISION SLASH; \oslash (LaTeX)
18169 \DeclareTextCommand{\textoslash}{PU}{\9042\230}%* U+2298
18170 %* \textoslash -> \varoslash (stmaryrd)
18171 % U+2299 CIRCLED DOT OPERATOR; circle(d?)ot; \odot (LaTeX)
18172 \DeclareTextCommand{\textodot}{PU}{\9042\231}%* U+2299
18173 %* \textodot -> \varodot (stmaryrd)
18174 % U+229A CIRCLED RING OPERATOR; \circledcirc (AmS)
18175 \DeclareTextCommand{\textcircledcirc}{PU}{\9042\232}%* U+229A
18176 %* \textcircledcirc -> \ocirc (mathabx)
18177 %* \textcircledcirc -> \varocircle (stmaryrd)
18178 % U+229B CIRCLED ASTERISK OPERATOR; \circledast (AmS)
18179 \DeclareTextCommand{\textcircledast}{PU}{\9042\233}%* U+229B
18180 %* \textcircledast -> \varoast (stmaryrd)
18181 %* \textcircledast -> \oasterisk (mathabx)
18182 % U+229D CIRCLED DASH; \circleddash (AmS)
18183 \DeclareTextCommand{\textcircleddash}{PU}{\9042\235}%* U+229D
18184 % U+229E SQUARED PLUS; \boxplus (AmS)
18185 \DeclareTextCommand{\textboxplus}{PU}{\9042\236}%* U+229E
18186 % U+229F SQUARED MINUS; \boxminus (AmS)
18187 \DeclareTextCommand{\textboxminus}{PU}{\9042\237}%* U+229F
18188 % U+22A0 SQUARED TIMES; \boxtimes (AmS)
18189 \DeclareTextCommand{\textboxtimes}{PU}{\9042\240}%* U+22A0
18190 % U+22A1 SQUARED DOT OPERATOR; \boxdot (AmS)
18191 \DeclareTextCommand{\textboxdot}{PU}{\9042\241}%* U+22A1
18192 % U+22A2 RIGHT TACK; \vdash (LaTeX)
18193 \DeclareTextCommand{\textvdash}{PU}{\9042\242}%* U+22A2
18194 %* \textvdash -> \rightvdash (MnSymbol)
18195 % U+22A3 LEFT TACK; tackleft; \dashv (LaTeX)
18196 \DeclareTextCommand{\textdashv}{PU}{\9042\243}%* U+22A3
18197 %* \textdashv -> \leftvdash (MnSymbol)
18198 % \ndashv (mathabx)
18199 \DeclareTextCommand{\textndashv}{PU}{\9042\243\83\070}%* U+22A3 U+0338
18200 %* \textndashv -> \nleftvdash (MnSymbol)
18201 % U+22A4 DOWN TACK (=top); tackdown; \top (LaTeX)
18202 \DeclareTextCommand{\textttop}{PU}{\9042\244}%* U+22A4
18203 %* \textttop -> \downvdash (MnSymbol)
18204 % \ndownvdash (MnSymbol)

```

```

18205 \DeclareTextCommand{\textndownvdash}{PU}{\9042\244\83\070}%* U+22A4 U+0338
18206 % U+22A5 UP TACK (=base, bottom); \bot (LaTeX)
18207 \DeclareTextCommand{\textbot}{PU}{\9042\245}%* U+22A5
18208 %* \textbot -> \upvdash (MnSymbol)
18209 % \nupvdash (MnSymbol)
18210 \DeclareTextCommand{\textnupvdash}{PU}{\9042\245\83\070}%* U+22A5 U+0338
18211 %* \textnupvdash -> \nperp (MnSymbol)
18212 % U+22A8 TRUE; \vDash (AmS)
18213 \DeclareTextCommand{\textvDash}{PU}{\9042\250}%* U+22A8
18214 %* \textvDash -> \models (LaTeX)
18215 %* \textvDash -> \rightmodels (MnSymbol)
18216 % U+22A9 FORCES; \Vdash (AmS)
18217 \DeclareTextCommand{\textVdash}{PU}{\9042\251}%* U+22A9
18218 %* \textVdash -> \rightVdash (MnSymbol)
18219 % U+22AA TRIPLE VERTICAL BAR RIGHT TURNSTILE; \Vvdash (AmS)
18220 \DeclareTextCommand{\textVvdash}{PU}{\9042\252}%* U+22AA
18221 % \nVvdash (mathabx)
18222 \DeclareTextCommand{\textnVvdash}{PU}{\9042\252\83\070}%* U+22AA U+0338
18223 % U+22AB DOUBLE VERTICAL BAR DOUBLE RIGHT TURNSTILE;
18224 % \VDash (mathabx)
18225 \DeclareTextCommand{\textVDash}{PU}{\9042\253}%* U+22AB
18226 %* \textVDash -> \rightModels (MnSymbol)
18227 % U+22AC DOES NOT PROVE; \nvdash (AmS)
18228 \DeclareTextCommand{\textnvdash}{PU}{\9042\254}%* U+22AC
18229 %* \textnvdash -> \nrighvdash (MnSymbol)
18230 % U+22AD NOT TRUE; \nvDash (AmS)
18231 \DeclareTextCommand{\textnvDash}{PU}{\9042\255}%* U+22AD
18232 %* \textnvDash -> \nrighmodels (MnSymbol)
18233 %* \textnvDash -> \nmodels (MnSymbol)
18234 % U+22AE DOES NOT FORCE; \nVdash (txfonts/pxfonts)
18235 \DeclareTextCommand{\textnVdash}{PU}{\9042\256}%* U+22AE
18236 %* \textnVdash -> \nrighVdash (MnSymbol)
18237 % U+22AF NEGATED DOUBLE VERTICAL BAR DOUBLE RIGHT TURN-
      STILE; \nVDash (AmS)
18238 \DeclareTextCommand{\textnVDash}{PU}{\9042\257}%* U+22AF
18239 %* \textnVDash -> \nrighModels (MnSymbol)
18240 % U+22B2 NORMAL SUBGROUP OF; \lhd (latexsym, ...)
18241 \DeclareTextCommand{\textlhd}{PU}{\9042\262}%* U+22B2
18242 %* \textlhd -> \lessclosed (MnSymbol)
18243 % U+22B3 CONTAINS AS NORMAL SUBGROUP; \rhd (latexsym, ...)
18244 \DeclareTextCommand{\textrhd}{PU}{\9042\263}%* U+22B3
18245 %* \textrhd -> \gtrclosed (MnSymbol)
18246 % U+22B4 NORMAL SUBGROUP OF OR EQUAL TO; \unlhd (latexsym, ...)
18247 \DeclareTextCommand{\textunlhd}{PU}{\9042\264}%* U+22B4
18248 %* \textunlhd -> \leqclosed (MnSymbol)
18249 %* \textunlhd -> \trianglelefteq (MnSymbol)
18250 % U+22B5 CONTAINS AS NORMAL SUBGROUP OR EQUAL TO; \unrhd (la-
      texsym, ...)
18251 \DeclareTextCommand{\textunrhd}{PU}{\9042\265}%* U+22B5
18252 %* \textunrhd -> \geqclosed (MnSymbol)
18253 %* \textunrhd -> \trianglerighteq (MnSymbol)
18254 % U+22B6 ORIGINAL OF; \multimapdotbothA (txfonts/pxfonts)
18255 \DeclareTextCommand{\textmultimapdotbothA}{PU}{\9042\266}%* U+22B6
18256 % U+22B7 IMAGE OF; \multimapdotbothB (txfonts/pxfonts)

```

```

18257 \DeclareTextCommand{\textmultimapdotbothB}{PU}{\9042\267}%* U+22B7
18258 % U+22B8 MULTIMAP; \multimap (AmS, txfonts/pxfonts)
18259 \DeclareTextCommand{\textmultimap}{PU}{\9042\270}%* U+22B8
18260 % U+22BB XOR; \veebar (AmS)
18261 \DeclareTextCommand{\textveebar}{PU}{\9042\273}%* U+22BB
18262 % U+22BC NAND; \barwedge (mathabx)
18263 \DeclareTextCommand{\textbarwedge}{PU}{\9042\274}%* U+22BC
18264 % U+22C6 STAR OPERATOR; \star (LaTeX)
18265 \DeclareTextCommand{\textstar}{PU}{\9042\306}%* U+22C6
18266 % U+22C7 DIVISION TIMES; \divideontimes (AmS)
18267 \DeclareTextCommand{\textdivideontimes}{PU}{\9042\307}%* U+22C7
18268 % U+22C8 BOWTIE; \bowtie (LaTeX)
18269 \DeclareTextCommand{\textbowtie}{PU}{\9042\310}%* U+22C8
18270 %* \textbowtie -> \Bowtie (wasysym)
18271 % U+22C9 LEFT NORMAL FACTOR SEMIDIRECT PRODUCT; \ltimes (AmS)
18272 \DeclareTextCommand{\textltimes}{PU}{\9042\311}%* U+22C9
18273 % U+22CA RIGHT NORMAL FACTOR SEMIDIRECT PRODUCT;
18274 % \rtimes (AmS)
18275 \DeclareTextCommand{\textrtimes}{PU}{\9042\312}%* U+22CA
18276 % U+22CB LEFT SEMIDIRECT PRODUCT; \leftthreetimes (AmS)
18277 \DeclareTextCommand{\textleftthreetimes}{PU}{\9042\313}%* U+22CB
18278 % U+22CC RIGHT SEMIDIRECT PRODUCT; \rightthreetimes (AmS)
18279 \DeclareTextCommand{\textrightthreetimes}{PU}{\9042\314}%* U+22CC
18280 % U+22CD REVERSED TILDE EQUALS; \backsimeq (AmS)
18281 \DeclareTextCommand{\textbacksimeq}{PU}{\9042\315}%* U+22CD
18282 % \nbacksimeq (txfonts/pxfonts)
18283 \DeclareTextCommand{\textnbacksimeq}{PU}{\9042\315\83\070}%* U+22CD U+0338
18284 % U+22CE CURLY LOGICAL OR; curlyor; \curlyvee (AmS)
18285 \DeclareTextCommand{\textcurlyvee}{PU}{\9042\316}%* U+22CE
18286 %* \textcurlyvee -> \varcurlyvee (stmaryrd)
18287 % U+22CF CURLY LOGICAL AND; curlyand; \curlywedge (AmS)
18288 \DeclareTextCommand{\textcurlywedge}{PU}{\9042\317}%* U+22CF
18289 %* \textcurlywedge -> \varcurlywedge (stmaryrd)
18290 % U+22D0 DOUBLE SUBSET; \Subset (AmS)
18291 \DeclareTextCommand{\textSubset}{PU}{\9042\320}%* U+22D0
18292 % \nSubset (txfonts/pxfonts)
18293 \DeclareTextCommand{\textnSubset}{PU}{\9042\320\83\070}%* U+22D0 U+0338
18294 % U+22D1 DOUBLE SUPERSET; \Supset (AmS)
18295 \DeclareTextCommand{\textSupset}{PU}{\9042\321}%* U+22D1
18296 % \nSupset (txfonts/pxfonts)
18297 \DeclareTextCommand{\textnSupset}{PU}{\9042\321\83\070}%* U+22D1 U+0338
18298 % U+22D2 DOUBLE INTERSECTION; \Cap (AmS)
18299 \DeclareTextCommand{\textCap}{PU}{\9042\322}%* U+22D2
18300 %* \textCap -> \doublecap (mathabx)
18301 % U+22D3 DOUBLE UNION; \Cup (AmS)
18302 \DeclareTextCommand{\textCup}{PU}{\9042\323}%* U+22D3
18303 %* \textCup -> \doublecup (mathabx)
18304 % U+22D4 PITCHFORK; \pitchfork (mathabx)
18305 \DeclareTextCommand{\textpitchfork}{PU}{\9042\324}%* U+22D4
18306 % U+22D6 LESS-THAN WITH DOT; \lessdot (AmS)
18307 \DeclareTextCommand{\textlessdot}{PU}{\9042\326}%* U+22D6
18308 % U+22D7 GREATER-THAN WITH DOT; \gtrdot (AmS)
18309 \DeclareTextCommand{\textgtrdot}{PU}{\9042\327}%* U+22D7
18310 % U+22D8 VERY MUCH LESS-THAN; \lll (AmS)

```

```

18311 \DeclareTextCommand{\textlll}{PU}{\9042\330}%* U+22D8
18312 % U+22D9 VERY MUCH GREATER-THAN; \ggg (AmS)
18313 \DeclareTextCommand{\textggg}{PU}{\9042\331}%* U+22D9
18314 % U+22DA LESS-THAN EQUAL TO OR GREATER-THAN; lessequalorgreater;
18315 % \lesseqgtr (AmS)
18316 \DeclareTextCommand{\textlesseqgtr}{PU}{\9042\332}%* U+22DA
18317 % U+22DB GREATER-THAN EQUAL TO OR LESS-THAN; greaterequalorless;
18318 % \gtreqless (AmS)
18319 \DeclareTextCommand{\textgtreqless}{PU}{\9042\333}%* U+22DB
18320 % U+22DE EQUAL TO OR PRECEDES; \curlyeqprec (MnSymbol)
18321 \DeclareTextCommand{\textcurlyeqprec}{PU}{\9042\336}%* U+22DE
18322 % \ncurlyeqprec (mathabx)
18323 \DeclareTextCommand{\textncurlyeqprec}{PU}{\9042\336\83\070}%* U+22DE U+0338
18324 % U+22DF EQUAL TO OR SUCCEEDS; \curlyeqsucc (MnSymbol)
18325 \DeclareTextCommand{\textcurlyeqsucc}{PU}{\9042\337}%* U+22DF
18326 % \ncurlyeqsucc (mathabx)
18327 \DeclareTextCommand{\textncurlyeqsucc}{PU}{\9042\337\83\070}%* U+22DF U+0338
18328 % U+22E0 DOES NOT PRECEDE OR EQUAL; \npreccurlyeq (txfonts/pxfonts)
18329 \DeclareTextCommand{\textnpreccurlyeq}{PU}{\9042\340}%* U+22E0
18330 % U+22E1 DOES NOT SUCCEED OR EQUAL; \nsucccurlyeq (txfonts/pxfonts)
18331 \DeclareTextCommand{\textnsucccurlyeq}{PU}{\9042\341}%* U+22E1
18332 % U+22E2 NOT SQUARE IMAGE OF OR EQUAL TO; \nsqsubseteq (tx-
      fonts/pxfonts)
18333 \DeclareTextCommand{\textnqsubseteq}{PU}{\9042\342}%* U+22E2
18334 % U+22E3 NOT SQUARE ORIGINAL OF OR EQUAL TO; \nsqsupseteq (tx-
      fonts/pxfonts)
18335 \DeclareTextCommand{\textnqsupseteq}{PU}{\9042\343}%* U+22E3
18336 % U+22E4 SQUARE IMAGE OF OR NOT EQUAL TO; \sqsubsetneq (mathabx)
18337 \DeclareTextCommand{\textsqsubsetneq}{PU}{\9042\344}%* U+22E4
18338 %* \textsqsubsetneq -> \varsqsubsetneq (mathabx)
18339 % U+22E5 SQUARE ORIGINAL OF OR NOT EQUAL TO; \sqsupsetneq (math-
      abx)
18340 \DeclareTextCommand{\textsqsupsetneq}{PU}{\9042\345}%* U+22E5
18341 %* \textsqsupsetneq -> \varsqsupsetneq (mathabx)
18342 % U+22E6 LESS-THAN BUT NOT EQUIVALENT TO; \lnsim (AmS)
18343 \DeclareTextCommand{\textlnsim}{PU}{\9042\346}%* U+22E6
18344 % U+22E7 GREATER-THAN BUT NOT EQUIVALENT TO; \gnsim (AmS)
18345 \DeclareTextCommand{\textgnsim}{PU}{\9042\347}%* U+22E7
18346 % U+22E8 PRECEDES BUT NOT EQUIVALENT TO; \precnsim (AmS)
18347 \DeclareTextCommand{\textprecnsim}{PU}{\9042\350}%* U+22E8
18348 % U+22E9 SUCCEEDS BUT NOT EQUIVALENT TO; \succnsim (AmS)
18349 \DeclareTextCommand{\textsuccnsim}{PU}{\9042\351}%* U+22E9
18350 % U+22EA NOT NORMAL SUBGROUP OF; \ntriangleleft (AmS)
18351 \DeclareTextCommand{\textntriangleleft}{PU}{\9042\352}%* U+22EA
18352 %* \textntriangleleft -> \nlessclosed (MnSymbol)
18353 % U+22EB DOES NOT CONTAIN AS NORMAL SUBGROUP; \ntriang-
      leright (AmS)
18354 \DeclareTextCommand{\textntriangleright}{PU}{\9042\353}%* U+22EB
18355 %* \textntriangleright -> \ngtrclosed (MnSymbol)
18356 % U+22EC NOT NORMAL SUBGROUP OF OR EQUAL TO;
18357 % \ntrianglelefteq (AmS)
18358 \DeclareTextCommand{\textntrianglelefteq}{PU}{\9042\354}%* U+22EC
18359 % U+22ED DOES NOT CONTAIN AS NORMAL SUBGROUP OR EQUAL;
18360 % \ntrianglerighteq (AmS)

```



```

18361 \DeclareTextCommand{\textntrianglerighteq}{PU}{\9042\355}%* U+22ED
18362 %* \textntrianglerighteq -> textngeqclosed
18363 % U+22EE VERTICAL ELLIPSIS; ellipsisvertical; \vdots (LaTeX)
18364 \DeclareTextCommand{\textvdots}{PU}{\9042\356}%* U+22EE
18365 % U+22EF MIDLINE HORIZONTAL ELLIPSIS; \cdots (LaTeX)
18366 \DeclareTextCommand{\textcdots}{PU}{\9042\357}%* U+22EF
18367 % U+22F0 UP RIGHT DIAGONAL ELLIPSIS; \udots (MnSymbol)
18368 \DeclareTextCommand{\textudots}{PU}{\9042\360}%* U+22F0
18369 % U+22F1 DOWN RIGHT DIAGONAL ELLIPSIS; \ddots (LaTeX)
18370 \DeclareTextCommand{\textddots}{PU}{\9042\361}%* U+22F1
18371 % U+22F6 ELEMENT OF WITH OVERBAR; \barin (mathabx)
18372 \DeclareTextCommand{\textbarin}{PU}{\9042\366}%* U+22F6

```

47.2.23 Miscellaneous Technical: U+2300 to U+23FF

```

18373 % U+2300 DIAMETER SIGN; \diameter (mathabx,wasysym)
18374 \DeclareTextCommand{\textdiameter}{PU}{\9043\000}%* U+2300
18375 % U+2310 REVERSED NOT SIGN; \backneg (MnSymbol)
18376 \DeclareTextCommand{\textbackneg}{PU}{\9043\020}%* U+2310
18377 % U+2311 SQUARE LOZENGE; \wasylozenge (wasysym)
18378 \DeclareTextCommand{\textwasylozenge}{PU}{\9043\021}%* U+2311
18379 % U+2319 TURNED NOT SIGN; \invbackneg (MnSymbol)
18380 \DeclareTextCommand{\textinvbackneg}{PU}{\9043\031}%* U+2319
18381 % U+231A WATCH; \clock (wasysym)
18382 \DeclareTextCommand{\textclock}{PU}{\9043\032}%* U+231A
18383 %* \textclock -> \Clocklogo (marvosym)
18384 %* \textclock -> \ClockLogo (marvosym)
18385 % U+231C TOP LEFT CORNER; \ulcorner (AmS)
18386 \DeclareTextCommand{\textulcorner}{PU}{\9043\034}%* U+231C
18387 % U+231D TOP RIGHT CORNER; \urcorner (AmS)
18388 \DeclareTextCommand{\texturcorner}{PU}{\9043\035}%* U+231D
18389 % U+231E BOTTOM LEFT CORNER; \llcorner (AmS)
18390 \DeclareTextCommand{\textllcorner}{PU}{\9043\036}%* U+231E
18391 % U+231F BOTTOM RIGHT CORNER; \lrcorner (AmS)
18392 \DeclareTextCommand{\textlrcorner}{PU}{\9043\037}%* U+231F
18393 % U+2322 FROWN; \frown (LaTeX)
18394 \DeclareTextCommand{\textfrown}{PU}{\9043\042}%* U+2322
18395 % U+2323 SMILE; \smile (LaTeX)
18396 \DeclareTextCommand{\textsmile}{PU}{\9043\043}%* U+2323
18397 % U+2328 KEYBOARD; \Keyboard (marvosym)
18398 \DeclareTextCommand{\textKeyboard}{PU}{\9043\050}%* U+2328
18399 % U+2329 LEFT-POINTING ANGLE BRACKET; \angleleft; \langle (LaTeX)
18400 \DeclareTextCommand{\textlangle}{PU}{\9043\051}%* U+2329
18401 % U+232A RIGHT-POINTING ANGLE BRACKET; \angleright; \rangle (LaTeX)
18402 \DeclareTextCommand{\textrangle}{PU}{\9043\052}%* U+232A
18403 % U+2339 APL FUNCTIONAL SYMBOL QUAD DIVIDE; \APLinv (wasysym)
18404 \DeclareTextCommand{\textAPLinv}{PU}{\9043\071}%* U+2339
18405 % U+233C APL FUNCTIONAL SYMBOL QUAD CIRCLE; \Tumbler (marvosym)
18406 \DeclareTextCommand{\textTumbler}{PU}{\9043\074}%* U+233C
18407 % U+233D APL FUNCTIONAL SYMBOL CIRCLE STILE; \baro (stmaryrd)
18408 \DeclareTextCommand{\textstmaryrdbaro}{PU}{\9043\075}%* U+233D
18409 %* \textstmaryrdbaro -> \baro (stmaryrd)
18410 % U+233F APL FUNCTIONAL SYMBOL SLASH BAR; \notslash (wasysym)
18411 \DeclareTextCommand{\textnotslash}{PU}{\9043\077}%* U+233F

```

18412 % U+2340 APL FUNCTIONAL SYMBOL BACKSLASH BAR;
 18413 % \notbackslash (wasysym)
 18414 \DeclareTextCommand{\textnotbackslash}{PU}{\9043\100}%* U+2340
 18415 % U+2342 APL FUNCTIONAL SYMBOL QUAD BACKSLASH; \boxback-
 slash (mathabx)
 18416 \DeclareTextCommand{\textboxbackslash}{PU}{\9043\102}%* U+2342
 18417 % U+2347 APL FUNCTIONAL SYMBOL QUAD LEFTWARDS ARROW;
 18418 % \APLleftarrowbox (wasysym)
 18419 \DeclareTextCommand{\textAPLleftarrowbox}{PU}{\9043\107}%* U+2347
 18420 % U+2348 APL FUNCTIONAL SYMBOL QUAD RIGHTWARDS ARROW;
 18421 % \APLrightarrowbox (wasysym)
 18422 \DeclareTextCommand{\textAPLrightarrowbox}{PU}{\9043\110}%* U+2348
 18423 % U+2350 APL FUNCTIONAL SYMBOL QUAD UPWARDS ARROW; \APLu-
 parrowbox (wasysym)
 18424 \DeclareTextCommand{\textAPLuparrowbox}{PU}{\9043\120}%* U+2350
 18425 % U+2357 APL FUNCTIONAL SYMBOL QUAD DOWNWARDS ARROW;
 18426 % \APLdownarrowbox (wasysym)
 18427 \DeclareTextCommand{\textAPLdownarrowbox}{PU}{\9043\127}%* U+2357
 18428 % U+235E APL FUNCTIONAL SYMBOL QUOTE QUAD;
 18429 % \APLinput (wasysym)
 18430 \DeclareTextCommand{\textAPLinput}{PU}{\9043\136}%* U+235E
 18431 % U+2370 APL FUNCTIONAL SYMBOL QUAD QUESTION; \Request (china2e)
 18432 \DeclareTextCommand{\textRequest}{PU}{\9043\160}%* U+2370
 18433 % U+2393 DIRECT CURRENT SYMBOL FORM TWO; \Beam (marvosym)
 18434 \DeclareTextCommand{\textBeam}{PU}{\9043\223}%* U+2393
 18435 % U+2394 SOFTWARE-FUNCTION SYMBOL; \hexagon (wasysym)
 18436 \DeclareTextCommand{\texthexagon}{PU}{\9043\224}%* U+2394
 18437 % U+2395 APL FUNCTIONAL SYMBOL QUAD; \APLbox (wasysym)
 18438 \DeclareTextCommand{\textAPLbox}{PU}{\9043\225}%* U+2395
 18439 % U+23ED BLACK RIGHT-POINTING DOUBLE TRIANGLE WITH VERTI-
 CAL BAR;
 18440 % \ForwardToIndex (marvosym)
 18441 \DeclareTextCommand{\textForwardToIndex}{PU}{\9043\355}%* U+23ED
 18442 % U+23EE BLACK LEFT-POINTING DOUBLE TRIANGLE WITH VERTI-
 CAL BAR;
 18443 % \RewindToIndex (marvosym)
 18444 \DeclareTextCommand{\textRewindToIndex}{PU}{\9043\356}%* U+23EE

47.2.24 Control Pictures: U+2400 to U+243F

18445 % U+2422 BLANK SYMBOL
 18446 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422
 18447 % U+2423 OPEN BOX; blank
 18448 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

47.2.25 Optical Character Recognition: U+2440 to U+245F

18449 % U+244A OCR DOUBLE BACKSLASH; \bbslash (stmaryrd)
 18450 \DeclareTextCommand{\textbbslash}{PU}{\9044\112}%* U+244A
 18451 %* \textbbslash -> \varparalelinv (txfonts/pxfonts)

47.2.26 Enclosed Alphanumerics: U+2460 to U+24FF

18452 % U+2460 CIRCLED DIGIT ONE; onecircle
 18453 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460
 18454 % U+2461 CIRCLED DIGIT TWO; twocircle
 18455 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461

18456 % U+2462 CIRCLED DIGIT THREE; threecircle
 18457 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462
 18458 % U+2463 CIRCLED DIGIT FOUR; fourcircle
 18459 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463
 18460 % U+2464 CIRCLED DIGIT FIVE; fivecircle
 18461 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464
 18462 % U+2465 CIRCLED DIGIT SIX; sixcircle
 18463 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465
 18464 % U+2466 CIRCLED DIGIT SEVEN; sevendigit
 18465 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466
 18466 % U+2467 CIRCLED DIGIT EIGHT; eightcircle
 18467 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467
 18468 % U+2468 CIRCLED DIGIT NINE; ninecircle
 18469 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468
 18470 % U+2469 CIRCLED NUMBER TEN; tencircle
 18471 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469
 18472 % U+246A CIRCLED NUMBER ELEVEN; elevencircle
 18473 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A
 18474 % U+246B CIRCLED NUMBER TWELVE; twelvecircle
 18475 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B
 18476 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle
 18477 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C
 18478 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle
 18479 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D
 18480 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle
 18481 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E
 18482 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle
 18483 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F
 18484 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle
 18485 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470
 18486 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle
 18487 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471
 18488 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle
 18489 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472
 18490 % U+2473 CIRCLED NUMBER TWENTY; twentycircle
 18491 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473
 18492 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle
 18493 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6
 18494 % \CircledA (marvosym)
 18495 \DeclareTextCommand{\textCircledA}{PU}{\9044\266}%* U+24B6
 18496 %* \textCircledA -> \CleaningA
 18497 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle
 18498 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7
 18499 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle
 18500 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8
 18501 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle
 18502 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9
 18503 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle
 18504 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA
 18505 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle
 18506 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB
 18507 % \CleaningF (marvosym)
 18508 \DeclareTextCommand{\textCleaningF}{PU}{\9044\273}%* U+24BB
 18509 % \CleaningFF (marvosym)

18510 \DeclareTextCommand{\textCleaningFF}{PU}{\9044\273\83\062}%* U+24BB U+0332
18511 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle
18512 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC
18513 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle
18514 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD
18515 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle
18516 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE
18517 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle
18518 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF
18519 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle
18520 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0
18521 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle
18522 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1
18523 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle
18524 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2
18525 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle
18526 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3
18527 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle
18528 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4
18529 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle
18530 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5
18531 % \CleaningP (marvosym)
18532 \DeclareTextCommand{\textCleaningP}{PU}{\9044\305}%* U+24C5
18533 % \CleaningPP (marvosym)
18534 \DeclareTextCommand{\textCleaningPP}{PU}{\9044\305\83\062}%* U+24C5 U+0332
18535 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle
18536 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6
18537 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle
18538 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7
18539 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle
18540 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8
18541 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle
18542 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9
18543 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle
18544 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA
18545 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle
18546 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB
18547 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle
18548 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC
18549 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle
18550 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD
18551 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle
18552 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE
18553 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle
18554 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF
18555 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle
18556 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0
18557 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle
18558 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1
18559 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle
18560 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2
18561 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle
18562 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3
18563 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle

18564 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4
18565 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle
18566 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5
18567 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle
18568 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6
18569 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle
18570 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7
18571 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle
18572 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8
18573 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle
18574 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9
18575 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle
18576 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA
18577 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle
18578 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB
18579 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle
18580 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC
18581 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle
18582 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD
18583 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle
18584 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE
18585 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle
18586 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF
18587 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle
18588 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0
18589 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle
18590 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1
18591 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle
18592 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2
18593 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle
18594 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3
18595 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle
18596 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4
18597 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle
18598 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5
18599 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle
18600 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6
18601 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle
18602 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7
18603 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle
18604 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8
18605 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle
18606 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9
18607 % U+24EA CIRCLED DIGIT ZERO
18608 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

47.2.27 Box Drawing: U+2500 to 257F

18609 % U+2504 BOX DRAWINGS LIGHT TRIPLE DASH HORIZONTAL; \Cutting-
Line (marvosym)
18610 \DeclareTextCommand{\textCuttingLine}{PU}{\9045\004}%* U+2504
18611 %* \textCuttingLine -> \Kutline (marvosym)
18612 %* \textCuttingLine -> \CutLine (marvosym)
18613 %* \textCuttingLine -> \Cutline (marvosym)

47.2.28 Geometric Shapes: U+25A0 to U+25FF

```

18614 % U+25B2 BLACK UP-POINTING TRIANGLE; \UParrow (wasysym)
18615 \DeclareTextCommand{\textUParrow}{PU}{\9045\262}%* U+25B2
18616 %* \textUParrow -> \MoveUp (marvosym)
18617 % U+25B3 WHITE UP-POINTING TRIANGLE; whiteuppointingtriangle;
18618 % \bigtriangleup (LaTeX)
18619 \DeclareTextCommand{\textbigtriangleup}{PU}{\9045\263}%* U+25B3
18620 %* \textbigtriangleup -> \APLup (wasysym)
18621 %* \textbigtriangleup -> \Bleech (marvosym)
18622 % U+25B6 BLACK RIGHT-POINTING TRIANGLE; \Forward (marvosym)
18623 \DeclareTextCommand{\textForward}{PU}{\9045\266}%* U+25B6
18624 % U+25B7 WHITE RIGHT-POINTING TRIANGLE (= z notation range restric-
tion);
18625 % whiterightpointingtriangle; \triangleright (LaTeX)
18626 \DeclareTextCommand{\texttriangleright}{PU}{\9045\267}%* U+25B7
18627 % U+25BA BLACK RIGHT-POINTING POINTER; \RHD (wasysym)
18628 \DeclareTextCommand{\textRHD}{PU}{\9045\272}%* U+25BA
18629 % U+25BC BLACK DOWN-POINTING TRIANGLE; \DOWNarrow (wasysym)
18630 \DeclareTextCommand{\textDOWNarrow}{PU}{\9045\274}%* U+25BC
18631 %* \textDOWNarrow -> \MoveDown (marvosym)
18632 % U+25BD WHITE DOWN-POINTING TRIANGLE; whitedownpointingtri-
angle;
18633 % \bigtriangledown (LaTeX)
18634 \DeclareTextCommand{\textbigtriangledown}{PU}{\9045\275}%* U+25BD
18635 %* \textbigtriangledown -> \APLdown (wasysym)
18636 % U+25C0 BLACK LEFT-POINTING TRIANGLE; \Rewind (marvosym)
18637 \DeclareTextCommand{\textRewind}{PU}{\9045\300}%* U+25C0
18638 % U+25C1 WHITE RIGHT-POINTING TRIANGLE (= z notation domain re-
striction);
18639 % whiteleftpointingtriangle; \triangleleft (LaTeX)
18640 \DeclareTextCommand{\texttriangleleft}{PU}{\9045\301}%* U+25C1
18641 % U+25C4 BLACK LEFT-POINTING POINTER; \LHD (wasysym)
18642 \DeclareTextCommand{\textLHD}{PU}{\9045\304}%* U+25C4
18643 % U+25C7 WHITE DIAMOND; whitediamond; \diamond (LaTeX)
18644 \DeclareTextCommand{\textdiamond}{PU}{\9045\307}%* U+25C7
18645 %* \textdiamond -> \Diamond (wasysym)
18646 % U+25CA LOZENGE; lozenge; \lozenge (AmS)
18647 \DeclareTextCommand{\textlozenge}{PU}{\9045\312}%* U+25CA
18648 % U+25D6 LEFT HALF BLACK CIRCLE; \LEFTCIRCLE (wasysym)
18649 \DeclareTextCommand{\textLEFTCIRCLE}{PU}{\9045\326}%* U+25D6
18650 % U+25D7 RIGHT HALF BLACK CIRCLE; \RIGHTCIRCLE (wasysym)
18651 \DeclareTextCommand{\textRIGHTCIRCLE}{PU}{\9045\327}%* U+25D7
18652 % U+25E6 WHITE BULLET; *openbullet, whitebullet
18653 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}%* U+25E6
18654 % U+25EB WHITE SQUARE WITH VERTICAL BISECTING LINE;
18655 % \boxbar (stmaryrd)
18656 \DeclareTextCommand{\textboxbar}{PU}{\9045\353}%* U+25EB
18657 % U+25EF LARGE CIRCLE; largecircle
18658 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}%* U+25EF
18659 %* \textbigcircle -> \varbigcirc (stmaryrd)
18660 %

```

47.2.29 Miscellaneous Symbols: U+2600 to U+26FF

18661 % U+2601 CLOUD; \Cloud (ifsym)
18662 \DeclareTextCommand{\textCloud}{PU}{\9046\001}%* U+2601
18663 % U+2605 BLACK STAR; \FiveStar (bding)
18664 \DeclareTextCommand{\textFiveStar}{PU}{\9046\005}%* U+2605
18665 % U+2606 WHITE STAR; \FiveStarOpen (bding)
18666 \DeclareTextCommand{\textFiveStarOpen}{PU}{\9046\006}%* U+2606
18667 % U+260E BLACK TELEPHONE; telephoneblack; \Phone (bding)
18668 \DeclareTextCommand{\textPhone}{PU}{\9046\016}%* U+260E
18669 %* \textPhone -> \Telefon (marvosym)
18670 % U+2610 BALLOT BOX; \boxempty (stmaryrd)
18671 \DeclareTextCommand{\textboxempty}{PU}{\9046\020}%* U+2610
18672 %* \textboxempty -> \Box (wasysym)
18673 % U+2611 BALLOT BOX WITH CHECK; \Checkedbox (marvosym)
18674 \DeclareTextCommand{\textCheckedbox}{PU}{\9046\021}%* U+2611
18675 %* \textCheckedbox -> \CheckedBox (marvosym)
18676 % U+2612 BALLOT BOX WITH X; \Crossedbox (marvosym)
18677 \DeclareTextCommand{\textCrossedbox}{PU}{\9046\022}%* U+2612
18678 %* \textCrossedbox -> \XBox (wasysym)
18679 %* \textCrossedbox -> \CrossedBox (marvosym)
18680 % U+2615 HOT BEVERAGE; \Coffeecup (marvosym)
18681 \DeclareTextCommand{\textCoffeecup}{PU}{\9046\025}%* U+2615
18682 % U+261A BLACK LEFT POINTING INDEX; \HandCuffLeft (bding)
18683 \DeclareTextCommand{\textHandCuffLeft}{PU}{\9046\032}%* U+261A
18684 % U+261B BLACK RIGHT POINTING INDEX; \HandCuffRight (bding)
18685 \DeclareTextCommand{\textHandCuffRight}{PU}{\9046\033}%* U+261B
18686 % U+261C WHITE LEFT POINTING INDEX; \HandLeft (bding)
18687 \DeclareTextCommand{\textHandLeft}{PU}{\9046\034}%* U+261C
18688 %* \textHandLeft -> \rightpointleft (fourier)
18689 % U+261E WHITE RIGHT POINTING INDEX; \HandRight (bding)
18690 \DeclareTextCommand{\textHandRight}{PU}{\9046\036}%* U+261E
18691 %* \textHandRight -> \leftpointright (fourier)
18692 %* \textHandRight -> \PointingHand (marvosym)
18693 %* \textHandRight -> \Pointinghand (marvosym)
18694 % U+2622 RADIOACTIVE SIGN; \Radioactivity (marvosym)
18695 \DeclareTextCommand{\textRadioactivity}{PU}{\9046\042}%* U+2622
18696 %* \textRadioactivity -> \Radiation (ifsym)
18697 % U+2623 BIOHAZARD SIGN; \Biohazard (marvosym)
18698 \DeclareTextCommand{\textBiohazard}{PU}{\9046\043}%* U+2623
18699 % U+2625 ANKH; \Ankh (marvosym)
18700 \DeclareTextCommand{\textAnkh}{PU}{\9046\045}%* U+2625
18701 % U+262F YIN YANG; \YinYang (marvosym)
18702 \DeclareTextCommand{\textYinYang}{PU}{\9046\057}%* U+262F
18703 %* \textYinYang -> \Yinyang (marvosym)
18704 %* \textYinYang -> \YingYang (marvosym)
18705 %* \textYinYang -> \Yingyang (marvosym)
18706 % U+2639 WHITE FROWNING FACE; \frownie (wasysym)
18707 \DeclareTextCommand{\textfrownie}{PU}{\9046\071}%* U+2639
18708 %* \textfrownie -> \Frowny (marvosym)
18709 % U+263A WHITE SMILING FACE; \smiley (wasysym)
18710 \DeclareTextCommand{\textsmiley}{PU}{\9046\072}%* U+263A
18711 %* \textsmiley -> \Smiley (marvosym)
18712 % U+263B BLACK SMILING FACE; \blacksmiley (wasysym)
18713 \DeclareTextCommand{\textblacksmiley}{PU}{\9046\073}%* U+263B
18714 % U+263C WHITE SUN WITH RAYS; \sun (wasysym)

```

18715 \DeclareTextCommand{\textsun}{PU}{\9046\074}%* U+263C
18716 %* \textsun -> \Sun (marvosym)
18717 % U+263D FIRST QUARTER MOON; \leftmoon (wasysym, mathabx)
18718 \DeclareTextCommand{\textleftmoon}{PU}{\9046\075}%* U+263D
18719 % U+263E LAST QUARTER MOON; \rightmoon (wasysym, mathabx)
18720 \DeclareTextCommand{\textrightmoon}{PU}{\9046\076}%* U+263E
18721 % U+263F MERCURY; \mercury (wasysym)
18722 \DeclareTextCommand{\textmercury}{PU}{\9046\077}%* U+263F
18723 %* \textmercury -> \Mercury (marvosym)
18724 % U+2640 FEMALE SIGN; female; \female (wasysym)
18725 \DeclareTextCommand{\textPUfemale}{PU}{\9046\100}% U+2640
18726 %* \textPUfemale -> \textfemale (tipx)
18727 %* \textPUfemale -> \female (wasysym)
18728 %* \textPUfemale -> \venus (wasysym)
18729 %* \textPUfemale -> \Venus (marvosym)
18730 %* \textPUfemale -> \Female (marvosym)
18731 % U+2641 EARTH; \earth (wasysym)
18732 \DeclareTextCommand{\textearth}{PU}{\9046\101}%* U+2641
18733 %* \textearth -> \Earth (marvosym)
18734 % U+2642 MALE SIGN; male, mars; \male (wasysym)
18735 \DeclareTextCommand{\textmale}{PU}{\9046\102}%* U+2642
18736 %* \textmale -> \mars (wasysym)
18737 %* \textmale -> \Mars (marvosym)
18738 %* \textmale -> \Male (marvosym)
18739 % U+2643 JUPITER; \jupiter (wasysym)
18740 \DeclareTextCommand{\textjupiter}{PU}{\9046\103}%* U+2643
18741 %* \textjupiter -> \Jupiter (marvosym)
18742 % U+2644 SATURN; \saturn (wasysym)
18743 \DeclareTextCommand{\textsaturn}{PU}{\9046\104}%* U+2644
18744 %* \textsaturn -> \Saturn (marvosym)
18745 % U+2645 URANUS; \uranus (wasysym)
18746 \DeclareTextCommand{\texturanus}{PU}{\9046\105}%* U+2645
18747 %* \texturanus -> \Uranus (marvosym)
18748 % U+2646 NEPTUNE; \neptune (wasysym)
18749 \DeclareTextCommand{\textneptune}{PU}{\9046\106}%* U+2646
18750 %* \textneptune -> \Neptune (marvosym)
18751 % U+2647 PLUTO; \pluto (wasysym)
18752 \DeclareTextCommand{\textpluto}{PU}{\9046\107}%* U+2647
18753 %* \textpluto -> \Pluto (marvosym)
18754 % U+2648 ARIES; \aries (wasysym)
18755 \DeclareTextCommand{\textaries}{PU}{\9046\110}%* U+2648
18756 %* \textaries -> \Aries (marvosym)
18757 % U+2649 TAURUS; \taurus (wasysym)
18758 \DeclareTextCommand{\texttaurus}{PU}{\9046\111}%* U+2649
18759 %* \texttaurus -> \Taurus (marvosym)
18760 % U+264A GEMINI; \gemini (wasysym)
18761 \DeclareTextCommand{\textgemini}{PU}{\9046\112}%* U+264A
18762 %* \textgemini -> \Gemini (marvosym)
18763 % U+264B CANCER; \cancer (wasysym)
18764 \DeclareTextCommand{\textcancer}{PU}{\9046\113}%* U+264B
18765 %* \textcancer -> \Cancer (marvosym)
18766 % U+264C LEO; \leo (wasysym)
18767 \DeclareTextCommand{\textleo}{PU}{\9046\114}%* U+264C
18768 %* \textleo -> \Leo (marvosym)

```



```

18769 % U+264D VIRGO; \virgo (wasysym)
18770 \DeclareTextCommand{\textvirgo}{PU}{\9046\115}%* U+264D
18771 %* \textvirgo -> \Virgo (marvosym)
18772 % U+264E LIBRA; \libra (wasysym)
18773 \DeclareTextCommand{\textlibra}{PU}{\9046\116}%* U+264E
18774 %* \textlibra -> \Libra (marvosym)
18775 % U+264F SCORPIO; \scorpio (wasysym)
18776 \DeclareTextCommand{\textscorpio}{PU}{\9046\117}%* U+264F
18777 %* \textscorpio -> \Scorpio (marvosym)
18778 % U+2650 SAGITTARIUS; \sagittarius (wasysym)
18779 \DeclareTextCommand{\textsagittarius}{PU}{\9046\120}%* U+2650
18780 %* \textsagittarius -> \Sagittarius (marvosym)
18781 % U+2651 CAPRICORN; \capricornus (wasysym)
18782 \DeclareTextCommand{\textcapricornus}{PU}{\9046\121}%* U+2651
18783 %* \textcapricornus -> \Capricorn (marvosym)
18784 % U+2652 AQUARIUS; \aquarius (wasysym)
18785 \DeclareTextCommand{\textaquarius}{PU}{\9046\122}%* U+2652
18786 %* \textaquarius -> \Aquarius (marvosym)
18787 % U+2653 PISCES; \pisces (wasysym)
18788 \DeclareTextCommand{\textpisces}{PU}{\9046\123}%* U+2653
18789 %* \textpisces -> \Pisces (marvosym)
18790 % U+2660 BLACK SPADE SUIT; spade, spadesuitblack; \spadesuit (LaTeX)
18791 \DeclareTextCommand{\textspadesuitblack}{PU}{\9046\140}% U+2660
18792 %* \textspadesuitblack -> \spadesuit (MnSymbol)
18793 % U+2661 WHITE HEART SUIT; heartsuitwhite; \heartsuit (LaTeX)
18794 \DeclareTextCommand{\textheartsuitwhite}{PU}{\9046\141}% U+2661
18795 %* \textheartsuitwhite -> \Heart (marvosym)
18796 %* \textheartsuitwhite -> \heartsuit (MnSymbol)
18797 % U+2662 WHITE DIAMOND SUIT; diamondsuitwhite; \diamondsuit (LaTeX)
18798 \DeclareTextCommand{\textdiamondsuitwhite}{PU}{\9046\142}% U+2662
18799 %* \textdiamondsuitwhite -> \diamondsuit (MnSymbol)
18800 % U+2663 BLACK CLUB SUIT; club, clubsuitblack; \clubsuit (LaTeX)
18801 \DeclareTextCommand{\textclubsuitblack}{PU}{\9046\143}% U+2663
18802 %* \textclubsuitblack -> \clubsuit (MnSymbol)
18803 % U+2664 WHITE SPADE SUIT; spadesuitwhite
18804 \DeclareTextCommand{\textspadesuitwhite}{PU}{\9046\144}% U+2664
18805 % U+2665 BLACK HEART SUIT; heartsuitblack, heart
18806 \DeclareTextCommand{\textheartsuitblack}{PU}{\9046\145}% U+2665
18807 % U+2666 BLACK DIAMOND SUIT; diamond
18808 \DeclareTextCommand{\textdiamondsuitblack}{PU}{\9046\146}% U+2666
18809 % U+2667 WHITE CLUB SUIT; clubsuitwhite
18810 \DeclareTextCommand{\textclubsuitwhite}{PU}{\9046\147}% U+2667
18811 % U+2669 QUARTER NOTE; quarternote; \quarternote (wasysym, arev)
18812 \DeclareTextCommand{\textquarternote}{PU}{\9046\151}%* U+2669
18813 % U+266A EIGHTH NOTE; musicalnote; \textmusicalnote (textcomp)
18814 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A
18815 %* \textmusicalnote -> \eighthnote (wasysym, arev)
18816 % U+266B BEAMED EIGHTH NOTES; eighthnotebeamed; \twonotes (wasysym)
18817 \DeclareTextCommand{\texttwonotes}{PU}{\9046\153}%* U+266B
18818 % U+266C BEAMED SIXTEENTH NOTES; beamedsixteenthnotes; \sixteenth-
note (arev)
18819 \DeclareTextCommand{\textsixteenthnote}{PU}{\9046\154}%* U+266C
18820 % U+266D MUSIC FLAT SIGN; musicflatsign; \flat (LaTeX)
18821 \DeclareTextCommand{\textflat}{PU}{\9046\155}%* U+266D

```

18822 % U+266E MUSIC NATURAL SIGN; \natural (LaTeX)
18823 \DeclareTextCommand{\textnatural}{PU}{\9046\156}%* U+266E
18824 % U+266F MUSIC SHARP SIGN; musicsharpsign; \sharp (LaTeX)
18825 \DeclareTextCommand{\textsharp}{PU}{\9046\157}%* U+266F
18826 % U+2672 UNIVERSAL RECYCLING SYMBOL; \recycle (recycle)
18827 \DeclareTextCommand{\textrecycle}{PU}{\9046\162}%* U+2672
18828 %* \textrecycle -> \Recycling (marvosym)
18829 % U+267F WHEELCHAIR SYMBOL; \Wheelchair (marvosym)
18830 \DeclareTextCommand{\textWheelchair}{PU}{\9046\177}%* U+267F
18831 % U+2691 BLACK FLAG; \Flag (ifsym)
18832 \DeclareTextCommand{\textFlag}{PU}{\9046\221}%* U+2691
18833 %* \textFlag -> \VarFlag (ifsym)
18834 % U+2692 HAMMER AND PICK; \MineSign (marvosym)
18835 \DeclareTextCommand{\textMineSign}{PU}{\9046\222}%* U+2692
18836 % U+2694 CROSSED SWORDS; \dsmilitary (dictsym)
18837 \DeclareTextCommand{\textdsmilitary}{PU}{\9046\224}%* U+2694
18838 %* \textdsmilitary -> \textxswup (fourier)
18839 % U+2695 STAFF OF AESCULAPIUS; \dsmedical (dictsym)
18840 \DeclareTextCommand{\textdsmedical}{PU}{\9046\225}%* U+2695
18841 % U+2696 SCALES; \dsjuridical (dictsym)
18842 \DeclareTextCommand{\textdsjuridical}{PU}{\9046\226}%* U+2696
18843 % U+2697 ALEMBIC; \dschemical (dictsym)
18844 \DeclareTextCommand{\textdschemical}{PU}{\9046\227}%* U+2697
18845 % U+2698 FLOWER; \dsbiological (dictsym)
18846 \DeclareTextCommand{\textdsbiological}{PU}{\9046\230}%* U+2698
18847 % U+269A STAFF OF HERMES; \dscommercial (dictsym)
18848 \DeclareTextCommand{\textdscommercial}{PU}{\9046\232}%* U+269A
18849 % U+269D OUTLINED WHITE STAR; \manstar (manfnt)
18850 \DeclareTextCommand{\textmanstar}{PU}{\9046\235}%* U+269D
18851 % U+26A0 WARNING SIGN; \danger (fourier)
18852 \DeclareTextCommand{\textdanger}{PU}{\9046\240}%* U+26A0
18853 % U+26A2 DOUBLED FEMALE SIGN; \FemaleFemale (marvosym)
18854 \DeclareTextCommand{\textFemaleFemale}{PU}{\9046\242}%* U+26A2
18855 % U+26A3 DOUBLED MALE SIGN; \MaleMale (marvosym)
18856 \DeclareTextCommand{\textMaleMale}{PU}{\9046\243}%* U+26A3
18857 % U+26A4 INTERLOCKED FEMALE AND MALE SIGN; \FemaleMale (marvosym)
18858 \DeclareTextCommand{\textFemaleMale}{PU}{\9046\244}%* U+26A4
18859 % U+26A5 MALE AND FEMALE SIGN; \Hermaphrodite (marvosym)
18860 \DeclareTextCommand{\textHermaphrodite}{PU}{\9046\245}%* U+26A5
18861 % U+26AA MEDIUM WHITE CIRCLE; \Neural (marvosym)
18862 \DeclareTextCommand{\textNeutral}{PU}{\9046\252}%* U+26AA
18863 % U+26AD MARRIAGE SYMBOL
18864 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD
18865 % U+26AE DIVORCE SYMBOL
18866 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE
18867 % U+26B2 NEUTER; \textuncrfemale (tipx)
18868 \DeclareTextCommand{\textPUuncrfemale}{PU}{\9046\262}% U+26B2
18869 %* \textPUuncrfemale -> \textuncrfemale (tipx)
18870 % U+26B9 SEXTILE; \hexstar (wasysym)
18871 \DeclareTextCommand{\texthexstar}{PU}{\9046\271}%* U+26B9
18872 % U+26BD SOCCER BALL; \Football (marvosym)
18873 \DeclareTextCommand{\textSoccerBall}{PU}{\9046\275}% U+26BD
18874 %* \textSoccerBall -> \Football (marvosym)

18875 % U+26C5 SUN BEHIND CLOUD; \SunCloud (ifsym)
 18876 \DeclareTextCommand{\textSunCloud}{PU}{\9046\305}%* U+26C5
 18877 % U+26C6 RAIN; \Rain (ifsym)
 18878 \DeclareTextCommand{\textRain}{PU}{\9046\306}%* U+26C6
 18879 % U+26D4 NO ENTRY; \noway (fourier)
 18880 \DeclareTextCommand{\textnoway}{PU}{\9046\324}%* U+26D4
 18881 % U+26F0 MOUNTAIN; \Mountain (ifsym)
 18882 \DeclareTextCommand{\textMountain}{PU}{\9046\360}%* U+26F0
 18883 % U+26FA TENT; \Tent (ifsym)
 18884 \DeclareTextCommand{\textTent}{PU}{\9046\372}%* U+26FA

47.2.30 Dingbats: U+2700 to U+27BF

18885 % U+2701 UPPER BLADE SCISSORS; \ScissorRightBrokenBottom (bding)
 18886 \DeclareTextCommand{\textScissorRightBrokenBottom}{PU}{\9047\001}% U+2701
 18887 %* \textScissorRightBrokenBottom -> \CutLeft (marvosym)
 18888 %* \textScissorRightBrokenBottom -> \Cutright (marvosym)
 18889 % U+2702 BLACK SCISSORS; \ScissorRight (bding)
 18890 \DeclareTextCommand{\textScissorRight}{PU}{\9047\002}%* U+2702
 18891 %* \textScissorRight -> \RightScissors (marvosym)
 18892 %* \textScissorRight -> \Leftscissors (marvosym)
 18893 % U+2703 LOWER BLADE SCISSORS; \ScissorRightBrokenTop (bding)
 18894 \DeclareTextCommand{\textScissorRightBrokenTop}{PU}{\9047\003}%* U+2703
 18895 % U+2704 WHITE SCISSORS; \ScissorHollowRight (bding)
 18896 \DeclareTextCommand{\textScissorHollowRight}{PU}{\9047\004}%* U+2704
 18897 % U+2706 TELEPHONE LOCATION SIGN; \PhoneHandset (bding)
 18898 \DeclareTextCommand{\textPhoneHandset}{PU}{\9047\006}%* U+2706
 18899 % U+2707 TAPE DRIVE; \Tape (bding)
 18900 \DeclareTextCommand{\textTape}{PU}{\9047\007}%* U+2707
 18901 % U+2708 AIRPLANE; \Plane (bding)
 18902 \DeclareTextCommand{\textPlane}{PU}{\9047\010}%* U+2708
 18903 % U+2709 ENVELOPE; \Envelope (bding),
 18904 \DeclareTextCommand{\textEnvelope}{PU}{\9047\011}%* U+2709
 18905 %* \textEnvelope -> \Letter (marvosym)
 18906 % U+270C VICTORY HAND; \Peace (bding)
 18907 \DeclareTextCommand{\textPeace}{PU}{\9047\014}%* U+270C
 18908 % U+270D WRITING HAND; \WritingHand (marvosym)
 18909 \DeclareTextCommand{\textWritingHand}{PU}{\9047\015}%* U+270D
 18910 %* \textWritingHand -> \Writinghand (marvosym)
 18911 % U+270E LOWER RIGHT PENCIL; \PencilRightDown (bding)
 18912 \DeclareTextCommand{\textPencilRightDown}{PU}{\9047\016}%* U+270E
 18913 % U+270F PENCIL; \PencilRight (bding)
 18914 \DeclareTextCommand{\textPencilRight}{PU}{\9047\017}%* U+270F
 18915 % U+2710 UPPER RIGHT PENCIL; \PencilRightUp (bding)
 18916 \DeclareTextCommand{\textPencilRightUp}{PU}{\9047\020}%* U+2710
 18917 % U+2711 WHITE NIB; \NibRight (bding)
 18918 \DeclareTextCommand{\textNibRight}{PU}{\9047\021}%* U+2711
 18919 % U+2712 BLACK NIB; \NibSolidRight (bding)
 18920 \DeclareTextCommand{\textNibSolidRight}{PU}{\9047\022}%* U+2712
 18921 % U+2713 CHECK MARK; checkmark; \Checkmark (bding)
 18922 \DeclareTextCommand{\textCheckmark}{PU}{\9047\023}%* U+2713
 18923 %* \textCheckmark -> \checkmark (MnSymbol)
 18924 % U+2714 HEAVY CHECK MARK; \CheckmarkBold (bding)
 18925 \DeclareTextCommand{\textCheckmarkBold}{PU}{\9047\024}%* U+2714
 18926 % U+2715 MULTIPLICATION X; \XSolid (bding)

18927 \DeclareTextCommand{\textXSolid}{PU}{\9047\025}%* U+2715
18928 % U+2716 HEAVY MULTIPLICATION X; \XSolidBold (bding)
18929 \DeclareTextCommand{\textXSolidBold}{PU}{\9047\026}%* U+2716
18930 % U+2717 BALLOT X; \XSolidBrush (bding)
18931 \DeclareTextCommand{\textXSolidBrush}{PU}{\9047\027}%* U+2717
18932 % U+2719 OUTLINED GREEK CROSS; \PlusOutline (bding)
18933 \DeclareTextCommand{\textPlusOutline}{PU}{\9047\031}%* U+2719
18934 % U+271A HEAVY GREEK CROSS; \Plus (bding)
18935 \DeclareTextCommand{\textPlus}{PU}{\9047\032}%* U+271A
18936 % U+271B OPEN CENTRE CROSS; \PlusThinCenterOpen (bding)
18937 \DeclareTextCommand{\textPlusThinCenterOpen}{PU}{\9047\033}%* U+271B
18938 % U+271C HEAVY OPEN CENTRE CROSS; \PlusCenterOpen (bding)
18939 \DeclareTextCommand{\textPlusCenterOpen}{PU}{\9047\034}%* U+271C
18940 % U+271D LATIN CROSS; \Cross (bding)
18941 \DeclareTextCommand{\textCross}{PU}{\9047\035}%* U+271D
18942 % U+271E SHADOWED WHITE LATIN CROSS; \CrossOpenShadow (bding)
18943 \DeclareTextCommand{\textCrossOpenShadow}{PU}{\9047\036}%* U+271E
18944 % U+271F OUTLINED LATIN CROSS; \CrossOutline (bding)
18945 \DeclareTextCommand{\textCrossOutline}{PU}{\9047\037}%* U+271F
18946 % U+2720 MALTESE CROSS; \CrossMaltese (bding)
18947 \DeclareTextCommand{\textCrossMaltese}{PU}{\9047\040}%* U+2720
18948 % U+2721 STAR OF DAVID; \DavidStar (bding)
18949 \DeclareTextCommand{\textDavidStar}{PU}{\9047\041}%* U+2721
18950 %* \textDavidStar -> \davidstar (wasysym)
18951 % U+2722 FOUR TEARDROP-SPOKED ASTERISK; \FourAsterisk (bding)
18952 \DeclareTextCommand{\textFourAsterisk}{PU}{\9047\042}%* U+2722
18953 % U+2723 FOUR BALLOON-SPOKED ASTERISK; \JackStar (bding)
18954 \DeclareTextCommand{\textJackStar}{PU}{\9047\043}%* U+2723
18955 % U+2724 HEAVY FOUR BALLOON-SPOKED ASTERISK; \JackStarBold (bding)
18956 \DeclareTextCommand{\textJackStarBold}{PU}{\9047\044}%* U+2724
18957 % U+2725 FOUR CLUB-SPOKED ASTERISK; \CrossClowerTips (bding)
18958 \DeclareTextCommand{\textClowerTips}{PU}{\9047\045}%* U+2725
18959 % U+2726 BLACK FOUR POINTED STAR; \FourStar (bding)
18960 \DeclareTextCommand{\textFourStar}{PU}{\9047\046}%* U+2726
18961 % U+2727 WHITE FOUR POINTED STAR; \FourStarOpen (bding)
18962 \DeclareTextCommand{\textFourStarOpen}{PU}{\9047\047}%* U+2727
18963 % U+272A CIRCLED WHITE STAR; \FiveStarOpenCircled (bding)
18964 \DeclareTextCommand{\textFiveStarOpenCircled}{PU}{\9047\052}%* U+272A
18965 % U+272B OPEN CENTRE BLACK STAR; \FiveStarCenterOpen (bding)
18966 \DeclareTextCommand{\textFiveStarCenterOpen}{PU}{\9047\053}%* U+272B
18967 % U+272C BLACK CENTRE WHITE STAR; \FiveStarOpenDotted (bding)
18968 \DeclareTextCommand{\textFiveStarOpenDotted}{PU}{\9047\054}%* U+272C
18969 % U+272D OUTLINED BLACK STAR; \FiveStarOutline (bding)
18970 \DeclareTextCommand{\textFiveStarOutline}{PU}{\9047\055}%* U+272D
18971 % U+272E HEAVY OUTLINED BLACK STAR; \FiveStarOutlineHeavy (bding)
18972 \DeclareTextCommand{\textFiveStarOutlineHeavy}{PU}{\9047\056}%* U+272E
18973 % U+272F PINWHEEL STAR; \FiveStarConvex (bding)
18974 \DeclareTextCommand{\textFiveStarConvex}{PU}{\9047\057}%* U+272F
18975 % U+2730 SHADOWED WHITE STAR; \FiveStarShadow (bding)
18976 \DeclareTextCommand{\textFiveStarShadow}{PU}{\9047\060}%* U+2730
18977 % U+2731 HEAVY ASTERISK; \AsteriskBold (bding)
18978 \DeclareTextCommand{\textAsteriskBold}{PU}{\9047\061}%* U+2731
18979 % U+2732 OPEN CENTRE ASTERISK; \AsteriskCenterOpen (bding)

18980 \DeclareTextCommand{\textAsteriskCenterOpen}{PU}{\9047\062}%* U+2732
18981 % U+2734 EIGHT POINTED BLACK STAR; \EightStarTaper (bding)
18982 \DeclareTextCommand{\textEightStarTaper}{PU}{\9047\064}%* U+2734
18983 % U+2735 EIGHT POINTED PINWHEEL STAR; \EightStarConvex (bding)
18984 \DeclareTextCommand{\textEightStarConvex}{PU}{\9047\065}%* U+2735
18985 % U+2736 SIX POINTED BLACK STAR; \SixStar (bding)
18986 \DeclareTextCommand{\textSixStar}{PU}{\9047\066}%* U+2736
18987 % U+2737 EIGHT POINTED RECTILINEAR BLACK STAR; \EightStar (bding)
18988 \DeclareTextCommand{\textEightStar}{PU}{\9047\067}%* U+2737
18989 % U+2738 HEAVY EIGHT POINTED RECTILINEAR BLACK STAR; \EightStarBold (bding)
18990 \DeclareTextCommand{\textEightStarBold}{PU}{\9047\070}%* U+2738
18991 % U+2739 TWELVE POINTED BLACK STAR; \TwelveStar (bding)
18992 \DeclareTextCommand{\textTwelveStar}{PU}{\9047\071}%* U+2739
18993 % U+273A SIXTEEN POINTED ASTERISK; \SixteenStarLight (bding)
18994 \DeclareTextCommand{\textSixteenStarLight}{PU}{\9047\072}%* U+273A
18995 % U+273B TEARDROP-SPOKED ASTERISK; \SixFlowerPetalRemoved (bding)
18996 \DeclareTextCommand{\textSixFlowerPetalRemoved}{PU}{\9047\073}%* U+273B
18997 % U+273C OPEN CENTRE TEARDROP-SPOKED ASTERISK;
18998 % \SixFlowerOpenCenter (bding)
18999 \DeclareTextCommand{\textSixFlowerOpenCenter}{PU}{\9047\074}%* U+273C
19000 % U+273D HEAVY TEARDROP-SPOKED ASTERISK; \Asterisk (bding)
19001 \DeclareTextCommand{\textAsterisk}{PU}{\9047\075}%* U+273D
19002 % U+273E SIX PETALLED BLACK AND WHITE FLORETTE; \SixFlowerAlternate (bding)
19003 \DeclareTextCommand{\textSixFlowerAlternate}{PU}{\9047\076}%* U+273E
19004 % U+273F BLACK FLORETTE; \FiveFlowerPetal (bding)
19005 \DeclareTextCommand{\textFiveFlowerPetal}{PU}{\9047\077}%* U+273F
19006 % U+2740 WHITE FLORETTE; \FiveFlowerOpen (bding)
19007 \DeclareTextCommand{\textFiveFlowerOpen}{PU}{\9047\100}%* U+2740
19008 % U+2741 EIGHT PETALLED OUTLINED BLACK FLORETTE; \EightFlowerPetal (bding)
19009 \DeclareTextCommand{\textEightFlowerPetal}{PU}{\9047\101}%* U+2741
19010 % U+2742 CIRCLED OPEN CENTRE EIGHT POINTED STAR; \SunshineOpenCircled (bding)
19011 \DeclareTextCommand{\textSunshineOpenCircled}{PU}{\9047\102}%* U+2742
19012 % U+2743 HEAVY TEARDROP-SPOKED PINWHEEL ASTERISK; \SixFlowerAltPetal (bding)
19013 \DeclareTextCommand{\textSixFlowerAltPetal}{PU}{\9047\103}%* U+2743
19014 % U+2744 SNOWFLAKE; \SnowflakeChevron (bding)
19015 \DeclareTextCommand{\textSnowflakeChevron}{PU}{\9047\104}%* U+2744
19016 % U+2745 TIGHT TRIFOLIATE SNOWFLAKE; \Snowflake (bding)
19017 \DeclareTextCommand{\textSnowflake}{PU}{\9047\105}%* U+2745
19018 % U+2746 HEAVY CHEVRON SNOWFLAKE; \SnowflakeChevronBold (bding)
19019 \DeclareTextCommand{\textSnowflakeChevronBold}{PU}{\9047\106}%* U+2746
19020 % U+2747 SPARKLE; \Sparkle (bding)
19021 \DeclareTextCommand{\textSparkle}{PU}{\9047\107}%* U+2747
19022 % U+2748 HEAVY SPARKLE; \SparkleBold (bding)
19023 \DeclareTextCommand{\textSparkleBold}{PU}{\9047\110}%* U+2748
19024 % U+2749 BALLOON-SPOKED ASTERISK; \AsteriskRoundedEnds (bding)
19025 \DeclareTextCommand{\textAsteriskRoundedEnds}{PU}{\9047\111}%* U+2749
19026 % U+274A EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;

19027 % \EightFlowerPetalRemoved (bding)
 19028 \DeclareTextCommand{\textEightFlowerPetalRemoved}{PU}{\9047\112}%* U+274A
 19029 % U+274B HEAVY EIGHT TEARDROP-SPOKED PROPELLER ASTERISK;
 19030 % \EightAsterisk (bding)
 19031 \DeclareTextCommand{\textEightAsterisk}{PU}{\9047\113}%* U+274B
 19032 % U+274D SHADOWED WHITE CIRCLE; \CircleShadow (bding)
 19033 \DeclareTextCommand{\textCircleShadow}{PU}{\9047\115}%* U+274D
 19034 % U+274F LOWER RIGHT DROP-SHADOWED WHITE SQUARE;
 19035 % \SquareShadowBottomRight (bding)
 19036 \DeclareTextCommand{\textSquareShadowBottomRight}{PU}{\9047\117}%* U+274F
 19037 % U+2750 UPPER RIGHT DROP-SHADOWED WHITE SQUARE;
 19038 % \SquareShadowTopRight (bding)
 19039 \DeclareTextCommand{\textSquareTopRight}{PU}{\9047\120}%* U+2750
 19040 % U+2751 LOWER RIGHT SHADOWED WHITE SQUARE;
 19041 % \SquareCastShadowBottomRight (bding)
 19042 \DeclareTextCommand{\textSquareCastShadowBottomRight}{PU}{\9047\121}%* U+2751
 19043 % U+2752 UPPER RIGHT SHADOWED WHITE SQUARE;
 19044 % \SquareCastShadowTopRight (bding)
 19045 \DeclareTextCommand{\textSquareCastShadowTopRight}{PU}{\9047\122}%* U+2752
 19046 % U+2756 BLACK DIAMOND MINUS WHITE X; \OrnamentDiamondSolid (bding)
 19047 \DeclareTextCommand{\textDiamondSolid}{PU}{\9047\126}%* U+2756
 19048 % U+2758 LIGHT VERTICAL BAR; \RectangleThin (bding)
 19049 \DeclareTextCommand{\textRectangleThin}{PU}{\9047\130}%* U+2758
 19050 % U+2759 MEDIUM VERTICAL BAR; \Rectangle (bding)
 19051 \DeclareTextCommand{\textRectangle}{PU}{\9047\131}%* U+2759
 19052 % U+275A HEAVY VERTICAL BAR; \RectangleBold (bding)
 19053 \DeclareTextCommand{\textRectangleBold}{PU}{\9047\132}%* U+275A

47.2.31 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

19054 % U+27C2 PERPENDICULAR; perpendicular; \perp (LaTeX)
 19055 \DeclareTextCommand{\textperp}{PU}{\9047\302}%* U+27C2
 19056 % \notperp (mathabx)
 19057 \DeclareTextCommand{\textnotperp}{PU}{\9047\302\83\070}%* U+27C2 U+0338
 19058 % U+27C7 OR WITH DOT INSIDE; \veedot (MnSymbol)
 19059 \DeclareTextCommand{\textveedot}{PU}{\9047\307}%* U+27C7
 19060 % U+27D1 AND WITH DOT; \wedgedot (MnSymbol)
 19061 \DeclareTextCommand{\textwedgedot}{PU}{\9047\321}%* U+27D1
 19062 % U+27DC LEFT MULTIMAP; \leftspoon (MnSymbol)
 19063 \DeclareTextCommand{\textleftspoon}{PU}{\9047\334}%* U+27DC
 19064 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET
 19065 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}%* U+27E6
 19066 %* \textlbrackdbl -> \llbracket (stmaryrd)
 19067 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET
 19068 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}%* U+27E7
 19069 %* \textrbrackdbl -> \rrbracket (stmaryrd)

47.2.32 Supplemental Arrows-A: U+27F0 to U+27FF

19070 % U+27F2 ANTICLOCKWISE GAPPED CIRCLE ARROW;
 19071 % \circlearrowleft (AmS)
 19072 \DeclareTextCommand{\textcirclearrowleft}{PU}{\9047\362}%* U+27F2
 19073 % U+27F3 CLOCKWISE GAPPED CIRCLE ARROW; \circlearrowright (AmS)
 19074 \DeclareTextCommand{\textcirclearrowright}{PU}{\9047\363}%* U+27F3
 19075 % U+27F5 LONG LEFTWARDS ARROW; \longleftarrow (AmS)

19076 \DeclareTextCommand{\textlongleftarrow}{PU}{\9047\365}%* U+27F5
 19077 % U+27F6 LONG RIGHTWARDS ARROW; \longrightarrow (AmS)
 19078 \DeclareTextCommand{\textlongrightarrow}{PU}{\9047\366}%* U+27F6
 19079 % U+27F7 LONG LEFT RIGHT ARROW; \longlefttrightarrow (AmS)
 19080 \DeclareTextCommand{\textlonglefttrightarrow}{PU}{\9047\367}%* U+27F7
 19081 % U+27F8 LONG LEFTWARDS DOUBLE ARROW; \Longleftarrow (AmS)
 19082 \DeclareTextCommand{\textLongleftarrow}{PU}{\9047\370}%* U+27F8
 19083 % U+27F9 LONG RIGHTWARDS DOUBLE ARROW; \Longrightarrow (AmS)
 19084 \DeclareTextCommand{\textLongrightarrow}{PU}{\9047\371}%* U+27F9
 19085 % U+27FA LONG LEFT RIGHT DOUBLE ARROW; \Longlefttrightarrow (AmS)
 19086 \DeclareTextCommand{\textLonglefttrightarrow}{PU}{\9047\372}%* U+27FA
 19087 % U+27FC LONG RIGHTWARDS ARROW FROM BAR; \longmapsto (AmS)
 19088 \DeclareTextCommand{\textlongmapsto}{PU}{\9047\374}%* U+27FC
 19089 % U+27FD LONG LEFTWARDS DOUBLE ARROW FROM BAR; \Longmaps-
 from (stmaryrd)
 19090 \DeclareTextCommand{\textLongmapsfrom}{PU}{\9047\375}%* U+27FD
 19091 % U+27FE LONG RIGHTWARDS DOUBLE ARROW FROM BAR; \Longmap-
 sto (stmaryrd)
 19092 \DeclareTextCommand{\textLongmapsto}{PU}{\9047\376}%* U+27FE

47.2.33 Supplemental Arrows-B: U+2900 to U+297F

19093 % U+2921 NORTH WEST AND SOUTH EAST ARROW; \nwsearrow (MnSym-
 bol)
 19094 \DeclareTextCommand{\textnwsearrow}{PU}{\9051\041}%* U+2921
 19095 % U+2922 NORTH EAST AND SOUTH WEST ARROW; \neswarrow (MnSym-
 bol)
 19096 \DeclareTextCommand{\textneswarrow}{PU}{\9051\042}%* U+2922
 19097 % U+2923 NORTH WEST ARROW WITH HOOK; \lhooknwarrow (MnSymbol)
 19098 \DeclareTextCommand{\textlhooknwarrow}{PU}{\9051\043}%* U+2923
 19099 % U+2924 NORTH EAST ARROW WITH HOOK; \rhooknearrow (MnSymbol)
 19100 \DeclareTextCommand{\textrhooknearrow}{PU}{\9051\044}%* U+2924
 19101 % U+2925 SOUTH EAST ARROW WITH HOOK; \lhooksearrow (MnSymbol)
 19102 \DeclareTextCommand{\textlhooksearrow}{PU}{\9051\045}%* U+2925
 19103 % U+2926 SOUTH WEST ARROW WITH HOOK; \rhookswarrow (MnSymbol)
 19104 \DeclareTextCommand{\textrhookswarrow}{PU}{\9051\046}%* U+2926
 19105 % U+2933 WAVE ARROW POINTING DIRECTLY RIGHT; \leadsto (wasysym)
 19106 \DeclareTextCommand{\textleadsto}{PU}{\9051\063}%* U+2933
 19107 % U+2934 ARROW POINTING RIGHTWARDS THEN CURVING UPWARDS;
 19108 % \rcurvearrowne (MnSymbol)
 19109 \DeclareTextCommand{\textrcurvearrowne}{PU}{\9051\064}%* U+2934
 19110 % U+2935 ARROW POINTING RIGHTWARDS THEN CURVING DOWN-
 WARDS;
 19111 % \lcurvearrowse (MnSymbol)
 19112 \DeclareTextCommand{\textlcurvearrowse}{PU}{\9051\065}%* U+2935
 19113 % U+2936 ARROW POINTING DOWNWARDS THEN CURVING LEFT-
 WARDS;
 19114 % \lcurvearrowsw (MnSymbol)
 19115 \DeclareTextCommand{\textlcurvearrowsw}{PU}{\9051\066}%* U+2936
 19116 % U+2937 ARROW POINTING DOWNWARDS THEN CURVING RIGHT-
 WARDS;
 19117 % \rcurvearrowse (MnSymbol)
 19118 \DeclareTextCommand{\textrcurvearrowse}{PU}{\9051\067}%* U+2937
 19119 % U+2938 RIGHT-SIDE ARC CLOCKWISE ARROW; \lcurvearrowdown (Mn-
 Symbol)

```

19120 \DeclareTextCommand{\textlcurvearrowdown}{PU}{\9051\070}%* U+2938
19121 %* \textlcurvearrowdown -> \RightTorque (marvosym)
19122 %* \textlcurvearrowdown -> \Righttorque (marvosym)
19123 % U+2939 LEFT-SIDE ARC ANTICLOCKWISE ARROW;
19124 % \rcurvearrowdown (MnSymbol)
19125 \DeclareTextCommand{\textrcurvearrowdown}{PU}{\9051\071}%* U+2939
19126 %* \textrcurvearrowdown -> \LeftTorque (marvosym)
19127 %* \textrcurvearrowdown -> \Lefttorque (marvosym)
19128 % U+293A TOP ARC ANTICLOCKWISE ARROW; \rcurvearrowleft (MnSymbol)
19129 \DeclareTextCommand{\textrcurvearrowleft}{PU}{\9051\072}%* U+293A
19130 % U+293B BOTTOM ARC ANTICLOCKWISE ARROW;
19131 % \rcurvearrowright (MnSymbol)
19132 \DeclareTextCommand{\textrcurvearrowright}{PU}{\9051\073}%* U+293B
19133 % U+294A LEFT BARB UP RIGHT BARB DOWN HARPOON; \leftrightharpoon (mathabx)
19134 \DeclareTextCommand{\textleftrightharpoon}{PU}{\9051\112}%* U+294A
19135 % U+294B LEFT BARB DOWN RIGHT BARB UP HARPOON; \rightleftharpoon (mathabx)
19136 \DeclareTextCommand{\textrightleftharpoon}{PU}{\9051\113}%* U+294B
19137 % U+294C UP BARB RIGHT DOWN BARB LEFT HARPOON;
19138 % \updownharpoonrightleft (MnSymbol)
19139 \DeclareTextCommand{\textupdownharpoonrightleft}{PU}{\9051\114}%* U+294C
19140 % U+294D UP BARB LEFT DOWN BARB RIGHT HARPOON;
19141 % \updownharpoonleftright (MnSymbol)
19142 \DeclareTextCommand{\textupdownharpoonleftright}{PU}{\9051\115}%* U+294D
19143 % U+2962 LEFTWARDS HARPOON WITH BARB UP ABOVE LEFTWARDS
19144 % HARPOON WITH BARB DOWN; \leftleftharpoons (mathabx)
19145 \DeclareTextCommand{\textleftleftharpoons}{PU}{\9051\142}%* U+2962
19146 % U+2963 UPWARDS HARPOON WITH BARB LEFT BESIDE UPWARDS
19147 % HARPOON WITH BARB RIGHT; \upupharpoons (mathabx)
19148 \DeclareTextCommand{\textupupharpoons}{PU}{\9051\143}%* U+2963
19149 % U+2964 RIGHTWARDS HARPOON WITH BARB UP ABOVE RIGHTWARDS HARPOON
19150 % WITH BARB DOWN; \rightrightarpoons (mathabx)
19151 \DeclareTextCommand{\textrightarpoons}{PU}{\9051\144}%* U+2964
19152 % U+2965 DOWNWARDS HARPOON WITH BARB LEFT BESIDE DOWNWARDS HARPOON
19153 % WITH BARB RIGHT; \downdownharpoons (mathabx)
19154 \DeclareTextCommand{\textdowndownharpoons}{PU}{\9051\145}%* U+2965
19155 % U+296A LEFTWARDS HARPOON WITH BARB UP ABOVE LONG DASH;
19156 % \leftbarharpoon (mathabx)
19157 \DeclareTextCommand{\textleftbarharpoon}{PU}{\9051\152}%* U+296A
19158 % U+296B LEFTWARDS HARPOON WITH BARB DOWN BELOW
19159 % LONG DASH; \barleftharpoon (mathabx)
19160 \DeclareTextCommand{\textbarleftharpoon}{PU}{\9051\153}%* U+296B
19161 % U+296C RIGHTWARDS HARPOON WITH BARB UP ABOVE
19162 % LONG DASH; \rightbarharpoon (mathabx)
19163 \DeclareTextCommand{\textrightbarharpoon}{PU}{\9051\154}%* U+296C
19164 % U+296D RIGHTWARDS HARPOON WITH BARB DOWN BELOW
19165 % LONG DASH; \barrightharpoon (mathabx)
19166 \DeclareTextCommand{\textbarrightharpoon}{PU}{\9051\155}%* U+296D
19167 % U+296E UPWARDS HARPOON WITH BARB LEFT BESIDE DOWNWARDS HARPOON

```


19168 % WITH BARB RIGHT; \updownharpoons (mathabx)
 19169 \DeclareTextCommand{\textupdownharpoons}{PU}{\9051\156}%* U+296E
 19170 % U+296F DOWNWARDS HARPOON WITH BARB LEFT BESIDE UP-
 WARDS HARPOON
 19171 % WITH BARB RIGHT; \downupharpoons (mathabx)
 19172 \DeclareTextCommand{\textdownupharpoons}{PU}{\9051\157}%* U+296F
 19173 % U+297F DOWN FISH TAIL
 19174 \DeclareTextCommand{\textmoo}{PU}{\9051\177\83\066}%* U+297F U+0336

47.2.34 Miscellaneous Mathematical Symbols-B: U+2980 to U+29FF

19175 % U+2987 Z NOTATION LEFT IMAGE BRACKET; \lparenthesis (stmaryrd)
 19176 \DeclareTextCommand{\textllparenthesis}{PU}{\9051\207}%* U+2987
 19177 % U+2988 Z NOTATION RIGHT IMAGE BRACKET; \rrparenthesis (stmaryrd)
 19178 \DeclareTextCommand{\textrrparenthesis}{PU}{\9051\210}%* U+2988
 19179 % U+29B0 REVERSED EMPTY SET; \invdiameter (wasysym)
 19180 \DeclareTextCommand{\textinvdiameter}{PU}{\9051\260}%* U+29B0
 19181 % U+29B6 CIRCLED VERTICAL BAR; \obar (stmaryrd)
 19182 \DeclareTextCommand{\textobar}{PU}{\9051\266}%* U+29B6
 19183 %* \textobar -> \textvarobar (stmaryrd)
 19184 % U+29B8 CIRCLED REVERSE SOLIDUS; \obslash (stmaryrd)
 19185 \DeclareTextCommand{\textobslash}{PU}{\9051\270}%* U+29B8
 19186 %* \textobslash -> \circledbslash (txfonts/pxfonts)
 19187 %* \textobslash -> \obackslash (mathabx)
 19188 %* \textobslash -> \varobslash (stmaryrd)
 19189 % U+29BA CIRCLE DIVIDED BY HORIZONTAL BAR AND TOP HALF
 DIVIDED BY VERTICAL BAR; \obot (mathabx)
 19191 \DeclareTextCommand{\textobot}{PU}{\9051\272}%* U+29BA
 19192 %* \textobot -> \odplus (ulsy)
 19193 % U+29BB CIRCLE WITH SUPERIMPOSED X; \NoChemicalCleaning (mar-
 vosym)
 19194 \DeclareTextCommand{\textNoChemicalCleaning}{PU}{\9051\273}%* U+29BB
 19195 % U+29C0 CIRCLED LESS-THAN; \olessthan (stmaryrd)
 19196 \DeclareTextCommand{\textolessthan}{PU}{\9051\300}%* U+29C0
 19197 %* \textolessthan -> \varolessthan (stmaryrd)
 19198 % U+29C1 CIRCLED GREATER-THAN; \ogreaterthan (stmaryrd)
 19199 \DeclareTextCommand{\textogreaterthan}{PU}{\9051\301}%* U+29C1
 19200 %* \textogreaterthan -> \varogreaterthan (stmaryrd)
 19201 % U+29C4 SQUARED RISING DIAGONAL SLASH; \boxslash (mathabx, stmaryrd)
 19202 \DeclareTextCommand{\textboxslash}{PU}{\9051\304}%* U+29C4
 19203 % U+29C5 SQUARED FALLING DIAGONAL SLASH; \boxbslash (stmaryrd)
 19204 \DeclareTextCommand{\textboxbslash}{PU}{\9051\305}%* U+29C5
 19205 % U+29C6 SQUARED ASTERISK; \boxast (stmaryrd)
 19206 \DeclareTextCommand{\textboxast}{PU}{\9051\306}%* U+29C6
 19207 % U+29C7 SQUARED SMALL CIRCLE; \boxcircle (stmaryrd)
 19208 \DeclareTextCommand{\textboxcircle}{PU}{\9051\307}%* U+29C7
 19209 % U+29C8 SQUARED SQUARE; \boxbox (stmaryrd)
 19210 \DeclareTextCommand{\textboxbox}{PU}{\9051\310}%* U+29C8
 19211 % U+29D3 BLACK BOWTIE; \Valve (marvosym)
 19212 \DeclareTextCommand{\textValve}{PU}{\9051\323}%* U+29D3
 19213 % U+29DF DOUBLE-ENDED MULTIMAP; \multimapboth (txfonts/pxfonts)
 19214 \DeclareTextCommand{\textmultimapboth}{PU}{\9051\337}%* U+29DF
 19215 % U+29E2 SHUFFLE PRODUCT; \shuffle (shuffle)
 19216 \DeclareTextCommand{\textshuffle}{PU}{\9051\342}%* U+29E2

47.2.35 Supplemental Mathematical Operators: U+2A00 to U+2AFF

```

19217 % U+2A04 N-ARY UNION OPERATOR WITH PLUS; \uplus (LaTeX)
19218 \DeclareTextCommand{\textuplus}{PU}{\9052\004}%* U+2A04
19219 % U+2A07 TWO LOGICAL AND OPERATOR; \bigdoublewedge (MnSymbol)
19220 \DeclareTextCommand{\textbigdoublewedge}{PU}{\9052\007}%* U+2A07
19221 % U+2A08 TWO LOGICAL OR OPERATOR; \bigdoublevee (MnSymbol)
19222 \DeclareTextCommand{\textbigdoublevee}{PU}{\9052\010}%* U+2A08
19223 % U+2A1D JOIN; \Join (latexsym, amsfonts, amssymb, mathabx, txfonts,
19224 %   pxfonts, wasysym)
19225 \DeclareTextCommand{\textJoin}{PU}{\9052\035}%* U+2A1D
19226 % U+2A1F Z NOTATION SCHEMA COMPOSITION; \fatsemi (stmaryrd)
19227 \DeclareTextCommand{\textfatsemi}{PU}{\9052\037}%* U+2A1F
19228 % U+2A22 PLUS SIGN WITH SMALL CIRCLE ABOVE; \circplus (mathabx)
19229 \DeclareTextCommand{\textcircplus}{PU}{\9052\042}%* U+2A22
19230 % U+2A2A MINUS SIGN WITH DOT BELOW; \minusdot (MnSymbol)
19231 \DeclareTextCommand{\textminusdot}{PU}{\9052\052}%* U+2A2A
19232 %* \textminusdot -> \divdot (mathabx)
19233 % U+2A30 MULTIPLICATION SIGN WITH DOT ABOVE; \dottimes (mathabx)
19234 \DeclareTextCommand{\textdottimes}{PU}{\9052\060}%* U+2A30
19235 % U+2A32 SEMIDIRECT PRODUCT WITH BOTTOM CLOSED;
19236 %   \dtimes (mathdesign)
19237 \DeclareTextCommand{\textdtimes}{PU}{\9052\062}%* U+2A32
19238 % U+2A38 CIRCLED DIVISION SIGN; \odiv (mathabx)
19239 \DeclareTextCommand{\textodiv}{PU}{\9052\070}%* U+2A38
19240 % U+2A3C INTERIOR PRODUCT; \invneg (MnSymbol)
19241 \DeclareTextCommand{\textinvneg}{PU}{\9052\074}%* U+2A3C
19242 % U+2A4E DOUBLE SQUARE INTERSECTION; \sqdoublecap (mathabx)
19243 \DeclareTextCommand{\textsqdoublecap}{PU}{\9052\116}%* U+2A4E
19244 %* \textsqdoublecap -> \doublesqcap (MnSymbol)
19245 % U+2A40 INTERSECTION WITH DOT; \capdot (MnSymbol)
19246 \DeclareTextCommand{\textcapdot}{PU}{\9052\100}%* U+2A40
19247 % U+2A4F DOUBLE SQUARE UNION; \sqdoublecup (mathabx)
19248 \DeclareTextCommand{\textsqdoublecup}{PU}{\9052\117}%* U+2A4F
19249 %* \textsqdoublecup -> \doublesqcup (MnSymbol)
19250 % U+2A55 TWO INTERSECTING LOGICAL AND; \doublewedge (MnSymbol)
19251 \DeclareTextCommand{\textdoublewedge}{PU}{\9052\125}%* U+2A55
19252 % U+2A56 TWO INTERSECTING LOGICAL OR; \doublevee (MnSymbol)
19253 \DeclareTextCommand{\textdoublevee}{PU}{\9052\126}%* U+2A56
19254 %* \textdoublevee -> \merge (stmaryrd)
19255 % U+2A5E LOGICAL AND WITH DOUBLE OVERBAR;
19256 %   \doublebarwedge (AmS)
19257 \DeclareTextCommand{\textdoublebarwedge}{PU}{\9052\136}%* U+2A5E
19258 % U+2A63 LOGICAL OR WITH DOUBLE UNDERBAR;
19259 %   \veedoublebar (mahtabx)
19260 \DeclareTextCommand{\textveedoublebar}{PU}{\9052\143}%* U+2A63
19261 % U+2A66 EQUALS SIGN WITH DOT BELOW; \eqdot (MnSymbol)
19262 \DeclareTextCommand{\texteqdot}{PU}{\9052\146}%* U+2A66
19263 % \neqdot (MnSymbol)
19264 \DeclareTextCommand{\textneqdot}{PU}{\9052\146\83\070}%* U+2A66 U+0338
19265 % U+2A74 DOUBLE COLON EQUAL; \coloncolonequals (colonequals)
19266 \DeclareTextCommand{\textcoloncolonequals}{PU}{\9052\164}%* U+2A74
19267 % U+2A7D LESS-THAN OR SLANTED EQUAL TO; \leqslant (AmS)
19268 \DeclareTextCommand{\textleqslant}{PU}{\9052\175}%* U+2A7D

```

19269 % \nleqslant (txfonts/pxfonts)
 19270 \DeclareTextCommand{\textnleqslant}{PU}{\9052\175\83\070}%* U+2A7D U+0338
 19271 % U+2A7E GREATER-THAN OR SLANTED EQUAL TO; \geqslant (AmS)
 19272 \DeclareTextCommand{\textgeqslant}{PU}{\9052\176}%* U+2A7E
 19273 % \ngeqslant (txfonts/pxfonts)
 19274 \DeclareTextCommand{\textngeqslant}{PU}{\9052\176\83\070}%* U+2A7E U+0338
 19275 % U+2A85 LESS-THAN OR APPROXIMATE; \lessapprox (AmS)
 19276 \DeclareTextCommand{\textlessapprox}{PU}{\9052\205}%* U+2A85
 19277 % \nlessapprox (txfonts/pxfonts)
 19278 \DeclareTextCommand{\textnlessapprox}{PU}{\9052\205\83\070}%* U+2A85 U+0338
 19279 % U+2A86 GREATER-THAN OR APPROXIMATE; \gtrapprox (AmS)
 19280 \DeclareTextCommand{\textgtrapprox}{PU}{\9052\206}%* U+2A86
 19281 % \ngtrapprox (txfonts/pxfonts)
 19282 \DeclareTextCommand{\textngtrapprox}{PU}{\9052\206\83\070}%* U+2A86 U+0338
 19283 % U+2A87 LESS-THAN AND SINGLE-LINE NOT EQUAL TO; \lneq (AmS)
 19284 \DeclareTextCommand{\textlneq}{PU}{\9052\207}%* U+2A87
 19285 % U+2A88 GREATER-THAN AND SINGLE-LINE NOT EQUAL TO;
 19286 % \gneq (AmS)
 19287 \DeclareTextCommand{\textgneq}{PU}{\9052\210}%* U+2A88
 19288 % U+2A89 LESS-THAN AND NOT APPROXIMATE; \lnapprox (AmS)
 19289 \DeclareTextCommand{\textlnapprox}{PU}{\9052\211}%* U+2A89
 19290 % U+2A8A GREATER-THAN AND NOT APPROXIMATE; \gnapprox (AmS)
 19291 \DeclareTextCommand{\textgnapprox}{PU}{\9052\212}%* U+2A8A
 19292 % U+2A8B LESS-THAN ABOVE DOUBLE-LINE EQUAL ABOVE GREATER-
 THAN;
 19293 % \lesseqgtr (AmS)
 19294 \DeclareTextCommand{\textlesseqgtr}{PU}{\9052\213}%* U+2A8B
 19295 % U+2A8C GREATER-THAN ABOVE DOUBLE-LINE EQUAL ABOVE LESS-
 THAN;
 19296 % \gtreqless (AmS)
 19297 \DeclareTextCommand{\textgtreqless}{PU}{\9052\214}%* U+2A8C
 19298 % U+2A95 SLANTED EQUAL TO OR LESS-THAN; \eqslantless (AmS)
 19299 \DeclareTextCommand{\texteqslantless}{PU}{\9052\225}%* U+2A95
 19300 % U+2A96 SLANTED EQUAL TO OR GREATER-THAN; \eqslantgtr (AmS)
 19301 \DeclareTextCommand{\texteqslantgtr}{PU}{\9052\226}%* U+2A96
 19302 % U+2AA6 LESS-THAN CLOSED BY CURVE; \leftslice (stmaryrd)
 19303 \DeclareTextCommand{\textleftslice}{PU}{\9052\246}%* U+2AA6
 19304 % U+2AA7 GREATER-THAN CLOSED BY CURVE; \rightslice (stmaryrd)
 19305 \DeclareTextCommand{\textright slice}{PU}{\9052\247}%* U+2AA7
 19306 % U+2AAF PRECEDES ABOVE SINGLE-LINE EQUALS SIGN; \preceq (Mn-
 Symbol)
 19307 \DeclareTextCommand{\textpreceq}{PU}{\9052\257}%* U+2AAF
 19308 % \npreceq (txfonts/pxfonts)
 19309 \DeclareTextCommand{\textnpreceq}{PU}{\9052\257\83\070}%* U+2AAF U+0338
 19310 % U+2AB0 SUCCEEDS ABOVE SINGLE-LINE EQUALS SIGN; \succeq (Mn-
 Symbol)
 19311 \DeclareTextCommand{\textsucceq}{PU}{\9052\260}%* U+2AB0
 19312 % \nsucceq (txfonts/pxfonts)
 19313 \DeclareTextCommand{\textnsucceq}{PU}{\9052\260\83\070}%* U+2AB0 U+0338
 19314 % U+2AB1 PRECEDES ABOVE SINGLE-LINE NOT EQUAL TO; \prec-
 neq (mathabx)
 19315 \DeclareTextCommand{\textprecneq}{PU}{\9052\261}%* U+2AB1
 19316 % U+2AB2 SUCCEEDS ABOVE SINGLE-LINE NOT EQUAL TO; \succ-
 neq (mathabx)

```

19317 \DeclareTextCommand{\textsuccneq}{PU}{\9052\262}%* U+2AB2
19318 % U+2AB3 PRECEDES ABOVE EQUALS SIGN; \preceqq (txfonts/pxfonts)
19319 \DeclareTextCommand{\textpreceqq}{PU}{\9052\263}%* U+2AB3
19320 % \npreceqq (txfonts/pxfonts)
19321 \DeclareTextCommand{\textnpreceqq}{PU}{\9052\263\83\070}%* U+2AB3 U+0338
19322 % U+2AB4 SUCCEEDS ABOVE EQUALS SIGN; \succeqq (txfonts/pxfonts)
19323 \DeclareTextCommand{\textsuccneqq}{PU}{\9052\264}%* U+2AB4
19324 % \nsucceqq (txfonts/pxfonts)
19325 \DeclareTextCommand{\textnsucceqq}{PU}{\9052\264\83\070}%* U+2AB4 U+0338
19326 % U+2AB5 PRECEDES ABOVE NOT EQUAL TO; \precneqq (txfonts/pxfonts)
19327 \DeclareTextCommand{\textprecneqq}{PU}{\9052\265}%* U+2AB5
19328 % U+2AB6 SUCCEEDS ABOVE NOT EQUAL TO; \succneqq (txfonts/pxfonts)
19329 \DeclareTextCommand{\textsuccneqq}{PU}{\9052\266}%* U+2AB6
19330 % U+2AB7 PRECEDES ABOVE ALMOST EQUAL TO; \precapprox (AmS)
19331 \DeclareTextCommand{\textprecapprox}{PU}{\9052\267}%* U+2AB7
19332 % \nprecapprox (txfonts/pxfonts)
19333 \DeclareTextCommand{\textnprecapprox}{PU}{\9052\267\83\070}%* U+2AB7 U+0338
19334 % U+2AB8 SUCCEEDS ABOVE ALMOST EQUAL TO; \succapprox (AmS)
19335 \DeclareTextCommand{\textsuccapprox}{PU}{\9052\270}%* U+2AB8
19336 % \nsuccapprox (txfonts/pxfonts)
19337 \DeclareTextCommand{\textnsuccapprox}{PU}{\9052\270\83\070}%* U+2AB8 U+0338
19338 % U+2AB9 PRECEDES ABOVE NOT ALMOST EQUAL TO; \precnapprox (AmS)
19339 \DeclareTextCommand{\textprecnapprox}{PU}{\9052\271}%* U+2AB9
19340 % U+2ABA SUCCEEDS ABOVE NOT ALMOST EQUAL TO; \succnapprox (AmS)
19341 \DeclareTextCommand{\textsuccnapprox}{PU}{\9052\272}%* U+2ABA
19342 % U+2AC5 SUBSET OF ABOVE EQUALS SIGN; \subseteqq (AmS)
19343 \DeclareTextCommand{\textsubseteqq}{PU}{\9052\305}%* U+2AC5
19344 % \nsubseteqq (txfonts/pxfonts, mathabx)
19345 \DeclareTextCommand{\textnsubseteqq}{PU}{\9052\305\83\070}%* U+2AC5 U+0338
19346 % U+2AC6 SUPERSET OF ABOVE EQUALS SIGN; \supseteqq (AmS)
19347 \DeclareTextCommand{\textsupseteqq}{PU}{\9052\306}%* U+2AC6
19348 % \nsupseteqq (mathabx)
19349 \DeclareTextCommand{\textnsupseteqq}{PU}{\9052\306\83\070}%* U+2AC6 U+0338
19350 % U+2AE3 DOUBLE VERTICAL BAR LEFT TURNSTILE
19351 \DeclareTextCommand{\textdashV}{PU}{\9052\343}%* U+2AE3
19352 %* \textdashV -> \leftVdash (MnSymbol)
19353 % \ndashV (mathabx)
19354 \DeclareTextCommand{\textndashV}{PU}{\9052\343\83\070}%* U+2AE3 U+0338
19355 %* \textndashV -> \nleftVdash (MnSymbol)
19356 % U+2AE4 VERTICAL BAR DOUBLE LEFT TURNSTILE; \Dashv (mathabx)
19357 \DeclareTextCommand{\textDashv}{PU}{\9052\344}%* U+2AE4
19358 %* \textDashv -> \leftmodels (MnSymbol)
19359 % \nDashv (mathabx)
19360 \DeclareTextCommand{\textnDashv}{PU}{\9052\344\83\070}%* U+2AE4 U+0338
19361 %* \textnDashv -> \nleftmodels (MnSymbol)
19362 % U+2AE5 DOUBLE VERTICAL BAR DOUBLE LEFT TURNSTILE;
19363 % \DashV (mathabx)
19364 \DeclareTextCommand{\textDashV}{PU}{\9052\345}%* U+2AE5
19365 %* \textDashV -> \leftModels (MnSymbol)
19366 % \nDashV (mathabx)
19367 \DeclareTextCommand{\textnDashV}{PU}{\9052\345\83\070}%* U+2AE5 U+0338
19368 %* \textnDashV -> \nleftModels (MnSymbol)

```

19369 % U+2AEA DOUBLE DOWN TACK; \downmodels (MnSymbol)
 19370 \DeclareTextCommand{\textdownmodels}{PU}{\9052\352}%* U+2AEA
 19371 % \ndownmodels (MnSymbol)
 19372 \DeclareTextCommand{\textndownmodels}{PU}{\9052\352\83\070}%* U+2AEA U+0338
 19373 % U+2AEB DOUBLE UP TACK; \upmodels (MnSymbol)
 19374 \DeclareTextCommand{\textupmodels}{PU}{\9052\353}%* U+2AEB
 19375 % \nupmodels (MnSymbol)
 19376 \DeclareTextCommand{\textnupmodels}{PU}{\9052\353\83\070}%* U+2AEB U+0338
 19377 % U+2AEF VERTICAL LINE WITH CIRCLE ABOVE; \upspoon (MnSymbol)
 19378 \DeclareTextCommand{\textupspoon}{PU}{\9052\357}%* U+2AEF
 19379 % U+2AF4 TRIPLE VERTICAL BAR BINARY RELATION;
 19380 % \interleave (stmaryrd)
 19381 \DeclareTextCommand{\textinterleave}{PU}{\9052\364}%* U+2AF4
 19382 % U+2AFD DOUBLE SOLIDUS OPERATOR; \slash (stmaryrd)
 19383 \DeclareTextCommand{\textslash}{PU}{\9052\375}%* U+2AFD
 19384 %* \textslash -> \varparallel (txfonts\pxfonts)

47.2.36 Miscellaneous Symbols and Arrows: U+2B00 to U+2BFF

19385 % U+2B20 WHITE PENTAGON; \pentagon (wasysym)
 19386 \DeclareTextCommand{\textpentagon}{PU}{\9053\040}%* U+2B20
 19387 % U+2B21 WHITE HEXAGON; \varhexagon (wasysym)
 19388 \DeclareTextCommand{\textvarhexagon}{PU}{\9053\041}%* U+2B21

47.2.37 Latin Extended-C: U+2C60 to U+2C7F

19389 % U+2C7C LATIN SUBSCRIPT SMALL LETTER J
 19390 \DeclareTextCommand{\textjinferior}{PU}{\9054\174}%* U+2C7C

47.2.38 Supplemental Punctuation: U+2E00 to U+2E7F

19391 % U+2E13 DOTTED OBELOS; \slashdiv (MnSymbol)
 19392 \DeclareTextCommand{\textslashdiv}{PU}{\9056\023}%* U+2E13
 19393 % U+2E18 INVERTED INTERROBANG; \textinterrobangdown (textcomp)
 19394 \DeclareTextCommand{\textinterrobangdown}{PU}{\9056\030}% U+2E18
 19395 % U+2E2D FIVE DOT MARK; \fivedots (MnSymbol)
 19396 \DeclareTextCommand{\textfivedots}{PU}{\9056\055}%* U+2E2D

47.2.39 Modifier Tone Letters: U+A700 to U+A71F

19397 % U+A71B MODIFIER LETTER RAISED UP ARROW; \textupstep (tipa)
 19398 \DeclareTextCommand{\textupstep}{PU}{\9247\033}% U+A71B
 19399 % U+A71C MODIFIER LETTER RAISED DOWN ARROW;
 19400 % \textdownstep (tipa)
 19401 \DeclareTextCommand{\textdownstep}{PU}{\9247\034}% U+A71C

47.2.40 Latin Extended-D: U+A720 to U+A7FF

19402 % U+A727 LATIN SMALL LETTER HENG; \textheng (tipx)
 19403 \DeclareTextCommand{\textPUheng}{PU}{\9247\047}% U+A727
 19404 %* \textPUheng -> \textheng (tipx)
 19405 % U+A72C LATIN CAPITAL LETTER CUATRILLO; \textlhookfour (tipx)
 19406 \DeclareTextCommand{\textPULhookfour}{PU}{\9247\054}% U+A72C
 19407 %* \textPULhookfour -> \textlhookfour (tipx)
 19408 % U+A730 LATIN LETTER SMALL CAPITAL F; \textscf (tipx)
 19409 \DeclareTextCommand{\textPUscf}{PU}{\9247\060}% U+A730
 19410 %* \textPUscf -> \textscf (tipx)
 19411 % U+A735 LATIN SMALL LETTER AO; \textaoilig (tipx)
 19412 \DeclareTextCommand{\textPUaolig}{PU}{\9247\065}% U+A735

19413 %* \textPUaolig -> \textaoilig (tipx)
 19414 % U+A74F LATIN SMALL LETTER OO; \oo (wsuipa)
 19415 \DeclareTextCommand{\textoo}{PU}{\9247\117}%* U+A74F
 19416 % U+A788 MODIFIER LETTER LOW CIRCUMFLEX ACCENT
 19417 \DeclareTextCommand{\textcircumlow}{PU}{\9247\210}% U+A788

47.2.41 Alphabetic Presentation Forms: U+FB00 to U+FB4F

19418 % U+FB01 LATIN SMALL LIGATURE FI; fi
 19419 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01
 19420 % U+FB02 LATIN SMALL LIGATURE FL; fl
 19421 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

47.2.42 Musical Symbols: U+1D100 to U+1D1FF

19422 % U+1D13B MUSICAL SYMBOL WHOLE REST; \GaPa (harmony)
 19423 \DeclareTextCommand{\textGaPa}{PU}{\9330\064\9335\073}%* U+1D13B
 19424 % U+1D13C MUSICAL SYMBOL HALF REST; \HaPa (harmony)
 19425 \DeclareTextCommand{\textHaPa}{PU}{\9330\064\9335\074}%* U+1D13C
 19426 % U+1D13D MUSICAL SYMBOL QUARTER REST; \ViPa (harmony)
 19427 \DeclareTextCommand{\textViPa}{PU}{\9330\064\9335\075}%* U+1D13D
 19428 % U+1D13E MUSICAL SYMBOL EIGHTH REST; \AcPa (harmony)
 19429 \DeclareTextCommand{\textAcPa}{PU}{\9330\064\9335\076}%* U+1D13E
 19430 % U+1D13F MUSICAL SYMBOL SIXTEENTH REST; \SePa (harmony)
 19431 \DeclareTextCommand{\textSePa}{PU}{\9330\064\9335\077}%* U+1D13F
 19432 % U+1D140 MUSICAL SYMBOL THIRTY-SECOND REST; \ZwPa (harmony)
 19433 \DeclareTextCommand{\textZwPa}{PU}{\9330\064\9335\100}%* U+1D140
 19434 % U+1D15D MUSICAL SYMBOL WHOLE NOTE; \fullnote (wasysym)
 19435 \DeclareTextCommand{\textfullnote}{PU}{\9330\064\9335\135}%* U+1D15D
 19436 %* \textfullnote -> \Ganz (harmony)
 19437 % U+1D15E MUSICAL SYMBOL HALF NOTE; \halfnote (wasysym)
 19438 \DeclareTextCommand{\texthalfnote}{PU}{\9330\064\9335\136}%* U+1D15E
 19439 %* \texthalfnote -> \Halb (harmony)
 19440 % U+1D15F MUSICAL SYMBOL QUARTER NOTE; \Vier (harmony)
 19441 \DeclareTextCommand{\textVier}{PU}{\9330\064\9335\137}%* U+1D15F
 19442 % U+1D160 MUSICAL SYMBOL EIGHTH NOTE; \Acht (harmony)
 19443 \DeclareTextCommand{\textAcht}{PU}{\9330\064\9335\140}%* U+1D160
 19444 % U+1D161 MUSICAL SYMBOL SIXTEENTH NOTE; \Sech (harmony)
 19445 \DeclareTextCommand{\textSech}{PU}{\9330\064\9335\141}%* U+1D161
 19446 % U+1D162 MUSICAL SYMBOL THIRTY-SECOND NOTE; \Zwdr (harmony)
 19447 \DeclareTextCommand{\textZwdr}{PU}{\9330\064\9335\142}%* U+1D162

47.2.43 Miscellaneous Symbols and Pictographs: U+1F300 to U+1F5FF

19448 % U+1F30D EARTH GLOBE EUROPE-AFRICA; \Mundus (marvosym)
 19449 \DeclareTextCommand{\textMundus}{PU}{\9330\074\9337\015}%* U+1F30D
 19450 % U+1F319 CRESCENT MOON; \Moon (marvosym)
 19451 \DeclareTextCommand{\textMoon}{PU}{\9330\074\9337\031}%* U+1F319
 19452 % U+1F468 MAN; \ManFace (marvosym)
 19453 \DeclareTextCommand{\textManFace}{PU}{\9330\075\9334\150}%* U+1F468
 19454 % U+1F469 WOMAN; \WomanFace (marvosym)
 19455 \DeclareTextCommand{\textWomanFace}{PU}{\9330\075\9334\151}%* U+1F469
 19456 %* \textWomanFace -> \Womanface (marvosym)
 19457 % U+1F4E0 FAX MACHINE; \Fax (marvosym)
 19458 \DeclareTextCommand{\textFax}{PU}{\9330\075\9334\340}%* U+1F4E0
 19459 %* \textFax -> \Faxmachine (marvosym)
 19460 % U+1F525 FIRE; \Fire (ifsym)

19461 \DeclareTextCommand{\textFire}{PU}{\9330\075\9335\045}%* U+1F525

47.2.44 Transport and Map Symbols: U+1F680 to U+1F6FF

19462 % U+1F6B2 BICYCLE; \Bicycle (marvosym)
 19463 \DeclareTextCommand{\textBicycle}{PU}{\9330\075\9336\262}%* U+1F6B2
 19464 % U+1F6B9 MENS SYMBOL; \Gentsroom (marvosym)
 19465 \DeclareTextCommand{\textGentsroom}{PU}{\9330\075\9336\271}%* U+1F6B9
 19466 % U+1F6BA WOMENS SYMBOL; \Ladiesroom (marvosym)
 19467 \DeclareTextCommand{\textLadiesroom}{PU}{\9330\075\9336\272}%* U+1F6BA

47.2.45 Miscellaneous

19468 \DeclareTextCommand{\SS}{PU}{SS}%
 19469 % \textcopyleft (textcomp)
 19470 \DeclareTextCommand{\textcopyleft}{PU}{\9041\204\9040\335}% U+2184 U+20DD
 19471 % \ccnc (ccllicenses)
 19472 \DeclareTextCommand{\textccnc}{PU}{\80\044\9040\340}%* U+0024 U+20E0
 19473 % \ccnd (ccllicenses)
 19474 \DeclareTextCommand{\textccnd}{PU}{=\9040\335}%* U+003D U+20DD
 19475 % \ccsa (ccllicenses)
 19476 \DeclareTextCommand{\textccsa}{PU}{\9047\362\9040\335}%* U+27F2 U+20DD
 19477 % \Info (marvosym, china2e)
 19478 \DeclareTextCommand{\textInfo}{PU}{\9330\065\9334\042\9040\336}%* U+1D422 U+20DE
 19479 % \CESign (marvosym)
 19480 \DeclareTextCommand{\textCESign}{PU}{\80\103\80\105}%* U+0043 U+0045
 19481 %* \textCESign -> \CESign (marvosym)

47.2.46 Aliases

Aliases (german.sty)

19482 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}%
 19483 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}%
 19484 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}%
 19485 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}%
 19486 \DeclareTextCommand{\textflqq}{PU}{\guillemetleft}%
 19487 \DeclareTextCommand{\textfrqq}{PU}{\guillemetright}%
 19488 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}%
 19489 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}%

Aliases (math names)

19490 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}%*
 19491 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}%*
 19492 \DeclareTextCommand{\textdiv}{PU}{\textdivide}%*
 19493 \DeclareTextCommand{\textpm}{PU}{\textplusminus}%*
 19494 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}%*
 19495 \puenc)

47.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

19496 *puvnenc)
 19497 \DeclareTextCommand{\abreve}{PU}{\81\003}% U+0103
 19498 \DeclareTextCommand{\acircumflex}{PU}{\80\342}% U+00E2
 19499 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}% U+00EA

19500 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}% U+00F4
 19501 \DeclareTextCommand{\ohorn}{PU}{\81\241}% U+01A1
 19502 \DeclareTextCommand{\uhorn}{PU}{\81\260}% U+01B0
 19503 \DeclareTextCommand{\ABREVE}{PU}{\81\002}% U+0102
 19504 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}% U+00C2
 19505 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}% U+00CA
 19506 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}% U+00D4
 19507 \DeclareTextCommand{\OHORN}{PU}{\81\240}% U+01A0
 19508 \DeclareTextCommand{\UHORN}{PU}{\81\257}% U+01AF

 19509 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1
 19510 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}% U+1EA1
 19511 \DeclareTextCompositeCommand{\`}{PU}{a}{\80\340}% U+00E0
 19512 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}% U+1EA3
 19513 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3
 19514 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}% U+1EAF
 19515 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}% U+1EB7
 19516 \DeclareTextCompositeCommand{\`}{PU}{\abreve}{\9036\261}% U+1EB1
 19517 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}% U+1EB3
 19518 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}% U+1EB5
 19519 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}% U+1EA5
 19520 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}% U+1EAD
 19521 \DeclareTextCompositeCommand{\`}{PU}{\acircumflex}{\9036\247}% U+1EA7
 19522 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}% U+1EA9
 19523 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}% U+1EAB
 19524 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9
 19525 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}% U+1EB9
 19526 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8
 19527 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}% U+1EBB
 19528 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD
 19529 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}% U+1EBF
 19530 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}% U+1EC7
 19531 \DeclareTextCompositeCommand{\`}{PU}{\ecircumflex}{\9036\301}% U+1EC1
 19532 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}% U+1EC3
 19533 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}% U+1EC5
 19534 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED
 19535 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}% U+1ECB
 19536 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC
 19537 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}% U+1EC9
 19538 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129
 19539 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3
 19540 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}% U+1ECD
 19541 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2
 19542 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}% U+1ECF
 19543 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5
 19544 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}% U+1ED1
 19545 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}% U+1ED9
 19546 \DeclareTextCompositeCommand{\`}{PU}{\ocircumflex}{\9036\323}% U+1ED3
 19547 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}% U+1ED5
 19548 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}% U+1ED7
 19549 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}% U+1EDB
 19550 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}% U+1EE3
 19551 \DeclareTextCompositeCommand{\`}{PU}{\ohorn}{\9036\335}% U+1EDD
 19552 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}% U+1EDF
 19553 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}% U+1EE1

19554 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA
 19555 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}% U+1EE5
 19556 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9
 19557 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}% U+1EE7
 19558 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169
 19559 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}% U+1EE9
 19560 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}% U+1EF1
 19561 \DeclareTextCompositeCommand{\`}{PU}{\uhorn}{\9036\353}% U+1EEB
 19562 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}% U+1EED
 19563 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}% U+1EEF
 19564 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD
 19565 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}% U+1EF5
 19566 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3
 19567 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}% U+1EF7
 19568 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9
 19569 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1
 19570 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}% U+1EA0
 19571 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0
 19572 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}% U+1EA2
 19573 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3
 19574 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}% U+1EAE
 19575 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}% U+1EB6
 19576 \DeclareTextCompositeCommand{\`}{PU}{\ABREVE}{\9036\260}% U+1EB0
 19577 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}% U+1EB2
 19578 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}% U+1EB4
 19579 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}% U+1EA4
 19580 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}% U+1EAC
 19581 \DeclareTextCompositeCommand{\`}{PU}{\ACIRCUMFLEX}{\9036\246}% U+1EA6
 19582 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}% U+1EA8
 19583 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}% U+1EAA
 19584 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9
 19585 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}% U+1EB8
 19586 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8
 19587 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}% U+1EBA
 19588 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC
 19589 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}% U+1EBE
 19590 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}% U+1EC6
 19591 \DeclareTextCompositeCommand{\`}{PU}{\ECIRCUMFLEX}{\9036\300}% U+1EC0
 19592 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}% U+1EC2
 19593 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}% U+1EC4
 19594 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD
 19595 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}% U+1ECA
 19596 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC
 19597 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}% U+1EC8
 19598 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128
 19599 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3
 19600 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}% U+1ECC
 19601 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2
 19602 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}% U+1ECE
 19603 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5
 19604 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}% U+1ED0
 19605 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}% U+1ED8
 19606 \DeclareTextCompositeCommand{\`}{PU}{\OCIRCUMFLEX}{\9036\322}% U+1ED2
 19607 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}% U+1ED4

```

19608 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}% U+1ED6
19609 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}% U+1EDA
19610 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}% U+1EE2
19611 \DeclareTextCompositeCommand{\`}{PU}{\OHORN}{\9036\334}% U+1EDC
19612 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}% U+1EDE
19613 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}% U+1EE0
19614 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA
19615 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}% U+1EE4
19616 \DeclareTextCompositeCommand{\`}{PU}{U}{\80\331}% U+00D9
19617 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}% U+1EE6
19618 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168
19619 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}% U+1EE8
19620 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}% U+1EF0
19621 \DeclareTextCompositeCommand{\`}{PU}{\UHORN}{\9036\352}% U+1EEA
19622 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}% U+1EEC
19623 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}% U+1EEE
19624 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD
19625 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}% U+1EF4
19626 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2
19627 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}% U+1EF6
19628 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8
19629 </p>

```

47.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```

19630 < *puarenc >
19631 % U+0621;afii57409;ARABIC LETTER HAMZA
19632 \DeclareTextCommand{\hamza}{PU}{\86\041}% U+0621
19633 % U+0622;afii57410;ARABIC LETTER ALEF WITH MADD A ABOVE
19634 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% U+0622
19635 % U+0623;afii57411;ARABIC LETTER ALEF WITH HAMZA ABOVE
19636 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% U+0623
19637 % U+0624;afii57412;ARABIC LETTER WAW WITH HAMZA ABOVE
19638 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% U+0624
19639 % U+0625;afii57413;ARABIC LETTER ALEF WITH HAMZA BELOW
19640 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% U+0625
19641 % U+0626;afii57414;ARABIC LETTER YEH WITH HAMZA ABOVE
19642 \DeclareTextCommand{\yahamza}{PU}{\86\046}% U+0626
19643 % U+0627;afii57415;ARABIC LETTER ALEF
19644 \DeclareTextCommand{\alef}{PU}{\86\047}% U+0627
19645 % U+0628;afii57416;ARABIC LETTER BEH
19646 \DeclareTextCommand{\baa}{PU}{\86\050}% U+0628
19647 % U+0629;afii57417;ARABIC LETTER TEH MARBUTA
19648 \DeclareTextCommand{\T}{PU}{\86\051}% U+0629
19649 % U+062A;afii57418;ARABIC LETTER TEH
19650 \DeclareTextCommand{\taa}{PU}{\86\052}% U+062A
19651 % U+062B;afii57419;ARABIC LETTER THEH
19652 \DeclareTextCommand{\thaa}{PU}{\86\053}% U+062B
19653 % U+062C;afii57420;ARABIC LETTER JEEM
19654 \DeclareTextCommand{\jeem}{PU}{\86\054}% U+062C
19655 % U+062D;afii57421;ARABIC LETTER HAH
19656 \DeclareTextCommand{\Haa}{PU}{\86\055}% U+062D

```

19657 % U+062E;afii57422;ARABIC LETTER KHAH
 19658 \DeclareTextCommand{\kha}{PU}{\86\056}% U+062E
 19659 % U+062F;afii57423;ARABIC LETTER DAL
 19660 \DeclareTextCommand{\dal}{PU}{\86\057}% U+062F
 19661 % U+0630;afii57424;ARABIC LETTER THAL
 19662 \DeclareTextCommand{\dhal}{PU}{\86\060}% U+0630
 19663 % U+0631;afii57425;ARABIC LETTER REH
 19664 \DeclareTextCommand{\ra}{PU}{\86\061}% U+0631
 19665 % U+0632;afii57426;ARABIC LETTER ZAIN
 19666 \DeclareTextCommand{\zay}{PU}{\86\062}% U+0632
 19667 % U+0633;afii57427;ARABIC LETTER SEEN
 19668 \DeclareTextCommand{\seen}{PU}{\86\063}% U+0633
 19669 % U+0634;afii57428;ARABIC LETTER SHEEN
 19670 \DeclareTextCommand{\sheen}{PU}{\86\064}% U+0634
 19671 % U+0635;afii57429;ARABIC LETTER SAD
 19672 \DeclareTextCommand{\sad}{PU}{\86\065}% U+0635
 19673 % U+0636;afii57430;ARABIC LETTER DAD
 19674 \DeclareTextCommand{\dad}{PU}{\86\066}% U+0636
 19675 % U+0637;afii57431;ARABIC LETTER TAH
 19676 \DeclareTextCommand{\Ta}{PU}{\86\067}% U+0637
 19677 % U+0638;afii57432;ARABIC LETTER ZAH
 19678 \DeclareTextCommand{\za}{PU}{\86\070}% U+0638
 19679 % U+0639;afii57433;ARABIC LETTER AIN
 19680 \DeclareTextCommand{\ayn}{PU}{\86\071}% U+0639
 19681 % U+063A;afii57434;ARABIC LETTER GHAIN
 19682 \DeclareTextCommand{\ghayn}{PU}{\86\072}% U+063A
 19683 % U+0640;afii57440;ARABIC TATWEEL
 19684 \DeclareTextCommand{\tatweel}{PU}{\86\100}% U+0640
 19685 % U+0641;afii57441;ARABIC LETTER FEH
 19686 \DeclareTextCommand{\fa}{PU}{\86\101}% U+0641
 19687 % U+0642;afii57442;ARABIC LETTER QAF
 19688 \DeclareTextCommand{\qaf}{PU}{\86\102}% U+0642
 19689 % U+0643;afii57443;ARABIC LETTER KAF
 19690 \DeclareTextCommand{\kaf}{PU}{\86\103}% U+0643
 19691 % U+0644;afii57444;ARABIC LETTER LAM
 19692 \DeclareTextCommand{\lam}{PU}{\86\104}% U+0644
 19693 % U+0645;afii57445;ARABIC LETTER MEEM
 19694 \DeclareTextCommand{\meem}{PU}{\86\105}% U+0645
 19695 % U+0646;afii57446;ARABIC LETTER NOON
 19696 \DeclareTextCommand{\nun}{PU}{\86\106}% U+0646
 19697 % U+0647;afii57470;ARABIC LETTER HEH
 19698 \DeclareTextCommand{\ha}{PU}{\86\107}% U+0647
 19699 % U+0648;afii57448;ARABIC LETTER WAW
 19700 \DeclareTextCommand{\waw}{PU}{\86\110}% U+0648
 19701 % U+0649;afii57449;ARABIC LETTER ALEF MAKSURA
 19702 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% U+0649
 19703 % U+064A;afii57450;ARABIC LETTER YEH
 19704 \DeclareTextCommand{\ya}{PU}{\86\112}% U+064A
 19705 % U+064B;afii57451;ARABIC FATHATAN
 19706 \DeclareTextCommand{\nasb}{PU}{\86\113}% U+064B
 19707 % U+064C;afii57452;ARABIC DAMMATAN
 19708 \DeclareTextCommand{\raff}{PU}{\86\114}% U+064C
 19709 % U+064D;afii57453;ARABIC KASRATAN
 19710 \DeclareTextCommand{\jarr}{PU}{\86\115}% U+064D

19711 % U+064E;afii57454;ARABIC FATHA
 19712 \DeclareTextCommand{\fatha}{PU}{\86\116}% U+064E
 19713 % U+064F;afii57455;ARABIC DAMMA
 19714 \DeclareTextCommand{\damma}{PU}{\86\117}% U+064F
 19715 % U+0650;afii57456;ARABIC KASRA
 19716 \DeclareTextCommand{\kasra}{PU}{\86\120}% U+0650
 19717 % U+0651;afii57457;ARABIC SHADDA
 19718 \DeclareTextCommand{\shadda}{PU}{\86\121}% U+0651
 19719 % U+0652;afii57458;ARABIC SUKUN
 19720 \DeclareTextCommand{\sukun}{PU}{\86\122}% U+0652

 Farsi
 19721 % U+067E ARABIC LETTER PEH; afii57506
 19722 \DeclareTextCommand{\peh}{PU}{\86\176}% U+067E
 19723 % U+0686 ARABIC LETTER TCHEH; afii57507
 19724 \DeclareTextCommand{\tcheh}{PU}{\86\206}% U+0686
 19725 % U+0698 ARABIC LETTER JEH; afii57508
 19726 \DeclareTextCommand{\jeh}{PU}{\86\230}% U+0698
 19727 % U+06A9 ARABIC LETTER KEHEH
 19728 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% U+06A9
 19729 % U+06AF ARABIC LETTER GAF; afii57509
 19730 \DeclareTextCommand{\gaf}{PU}{\86\257}% U+06AF
 19731 % U+06CC ARABIC LETTER FARSI YEH
 19732 \DeclareTextCommand{\farsiya}{PU}{\86\314}% U+06CC

 19733 % U+200C ZERO WIDTH NON-JOINER; afii61664
 19734 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% U+200C
 19735 % U+200D ZERO WIDTH JOINER; afii301
 19736 \DeclareTextCommand{\textEncodingNoboundary}{PU}{\9040\015}% U+200D
 19737 \/\puarenc)

 19738 *psdextra)
 19739 \Hy@VersionCheck{psdextra.def}
 19740 \DeclareTextCommand{\textGamma}{PU}{\83\223}%* U+0393
 19741 \DeclareTextCommand{\textDelta}{PU}{\83\224}%* U+0394
 19742 \DeclareTextCommand{\textTheta}{PU}{\83\230}%* U+0398
 19743 \DeclareTextCommand{\textLambda}{PU}{\83\233}%* U+039B
 19744 \DeclareTextCommand{\textXi}{PU}{\83\236}%* U+039E
 19745 \DeclareTextCommand{\textPi}{PU}{\83\240}%* U+03A0
 19746 \DeclareTextCommand{\textSigma}{PU}{\83\243}%* U+03A3
 19747 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}%* U+03A5
 19748 \DeclareTextCommand{\textPhi}{PU}{\83\246}%* U+03A6
 19749 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7
 19750 \DeclareTextCommand{\textPsi}{PU}{\83\250}%* U+03A8
 19751 \DeclareTextCommand{\textOmega}{PU}{\83\251}%* U+03A9
 19752 \DeclareTextCommand{\textalpha}{PU}{\83\261}%* U+03B1
 19753 \DeclareTextCommand{\textbeta}{PU}{\83\262}%* U+03B2
 19754 \DeclareTextCommand{\textgamma}{PU}{\83\263}%* U+03B3
 19755 \DeclareTextCommand{\textdelta}{PU}{\83\264}%* U+03B4
 19756 \DeclareTextCommand{\textepsilon}{PU}{\83\265}%* U+03B5
 19757 \DeclareTextCommand{\textzeta}{PU}{\83\266}%* U+03B6
 19758 \DeclareTextCommand{\texteta}{PU}{\83\267}%* U+03B7
 19759 \DeclareTextCommand{\texttheta}{PU}{\83\270}%* U+03B8
 19760 \DeclareTextCommand{\textiota}{PU}{\83\271}%* U+03B9
 19761 \DeclareTextCommand{\textkappa}{PU}{\83\272}%* U+03BA

```

19762 \DeclareTextCommand{\textlambda}{PU}{\83\273}%* U+03BB
19763 \DeclareTextCommand{\textmugreek}{PU}{\83\274}%* U+03BC
19764 \DeclareTextCommand{\textnu}{PU}{\83\275}%* U+03BD
19765 \DeclareTextCommand{\textxi}{PU}{\83\276}%* U+03BE
19766 \DeclareTextCommand{\textpi}{PU}{\83\300}%* U+03C0
19767 \DeclareTextCommand{\textrho}{PU}{\83\301}%* U+03C1
19768 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}%* U+03C2
19769 \DeclareTextCommand{\textsigma}{PU}{\83\303}%* U+03C3
19770 \DeclareTextCommand{\texttau}{PU}{\83\304}%* U+03C4
19771 \DeclareTextCommand{\textupsilon}{PU}{\83\305}%* U+03C5
19772 \DeclareTextCommand{\textphi}{PU}{\83\306}%* U+03C6
19773 \DeclareTextCommand{\textchi}{PU}{\83\307}%* U+03C7
19774 \DeclareTextCommand{\textpsi}{PU}{\83\310}%* U+03C8
19775 \DeclareTextCommand{\textomega}{PU}{\83\311}%* U+03C9
19776 \newcommand*\psdmapshortnames{%
19777   \let\MVPlus\textMVPlus
19778   \let\MVComma\textMVComma
19779   \let\MVMinus\textMVMinus
19780   \let\MVPeriod\textMVPeriod
19781   \let\MVDivision\textMVDivision
19782   \let\MVZero\textMVZero
19783   \let\MVOne\textMVOne
19784   \let\MVTwo\textMVTwo
19785   \let\MVThree\textMVThree
19786   \let\MVFour\textMVFour
19787   \let\MVFive\textMVFive
19788   \let\MVSix\textMVSix
19789   \let\MVSeven\textMVSeven
19790   \let\MVEight\textMVEight
19791   \let\MVNine\textMVNine
19792   \let\MVAt\textMVAt
19793   \let\copyright\textcopyright
19794   \let\twosuperior\texttwosuperior
19795   \let\threesuperior\textthreesuperior
19796   \let\onesuperior\textonesuperior
19797   \let\Thorn\textThorn
19798   \let\thorn\textthorn
19799   \let\hbar\texthbar
19800   \let\hausaB\texthausaB
19801   \let\hausaD\texthausaD
19802   \let\hausaK\texthausaK
19803   \let\barl\textbarl
19804   \let\inve\textinve
19805   \let\slashc\textslashc
19806   \let\scripta\textscripta
19807   \let\openo\textopeno
19808   \let\rtaild\textrtaild
19809   \let\reve\textreve
19810   \let\schwa\textschwa
19811   \let\niepsilon\textniepsilon
19812   \let\revepsilon\textrevepsilon
19813   \let\rhookrevepsilon\texthookrevepsilon
19814   \let\scriptg\textscriptg
19815   \let\scg\textscg

```

19816 \let\ipagamma\textipagamma
 19817 \let\babygamma\textbabygamma
 19818 \let\bari\textbari
 19819 \let\niiota\textniiota
 19820 \let\sci\textsci
 19821 \let\scn\textscn
 19822 \let\niphi\textniphi
 19823 \let\longlegr\textlonglegr
 19824 \let\scr\textscr
 19825 \let\invscr\textinvscr
 19826 \let\esh\textesh
 19827 \let\baru\textbaru
 19828 \let\niupsilon\textniupsilon
 19829 \let\scriptv\textscriptv
 19830 \let\turnv\textturnv
 19831 \let\turnw\textturnw
 19832 \let\turny\textturny
 19833 \let\scy\textscy
 19834 \let\yogh\textyogh
 19835 \let\glotstop\textglotstop
 19836 \let\revglotstop\textrevglotstop
 19837 \let\invglotstop\textinvglotstop
 19838 \let\Gamma\textGamma
 19839 \let\Delta\textDelta
 19840 \let\Theta\textTheta
 19841 \let\Lambda\textLambda
 19842 \let\Xi\textXi
 19843 \let\Pi\textPi
 19844 \let\Sigma\textSigma
 19845 \let\Upsilon\textUpsilon
 19846 \let\Phi\textPhi
 19847 \let\Psi\textPsi
 19848 \let\Omega\textOmega
 19849 \let\alpha\textalpha
 19850 \let\beta\textbeta
 19851 \let\gamma\textgamma
 19852 \let\delta\textdelta
 19853 \let\epsilon\textepsilon
 19854 \let\zeta\textzeta
 19855 \let\eta\texteta
 19856 \let\theta\texttheta
 19857 \let\iota\textiota
 19858 \let\kappa\textkappa
 19859 \let\lambda\textlambda
 19860 \let\mu\textmu
 19861 \let\mugreek\textmugreek
 19862 \let\nu\textnu
 19863 \let\xi\textxi
 19864 \let\pi\textpi
 19865 \let\rho\textrho
 19866 \let\varsigma\textvarsigma
 19867 \let\sigma\textsigma
 19868 \let\tau\texttau
 19869 \let\upsilon\textupsilon

19870 `\let\phi\textphi`
 19871 `\let\chi\textchi`
 19872 `\let\psi\textpsi`
 19873 `\let\omega\textomega`
 19874 `\let\scd\textscd`
 19875 `\let\scu\textscu`
 19876 `\let\iinferior\textiinferior`
 19877 `\let\rinferior\textrinferior`
 19878 `\let\uinferior\textuinferior`
 19879 `\let\vinferior\textvinferior`
 19880 `\let\betainferior\textbetainferior`
 19881 `\let\gammainferior\textgammainferior`
 19882 `\let\rhoinferior\textrhoinferior`
 19883 `\let\phiinferior\textphiinferior`
 19884 `\let\chiinferior\textchiinferior`
 19885 `\let\barsci\textbarsci`
 19886 `\let\barp\textbarp`
 19887 `\let\barscu\textbarscu`
 19888 `\let\htrtaild\texthtrtaild`
 19889 `\let\dagger\textdagger`
 19890 `\let\bullet\textbullet`
 19891 `\let\hdotfor\texthdotfor`
 19892 `\let\prime\textprime`
 19893 `\let\second\textsecond`
 19894 `\let\third\textthird`
 19895 `\let\backprime\textbackprime`
 19896 `\let\lefttherefore\textlefttherefore`
 19897 `\let\fourth\textfourth`
 19898 `\let\diamonddots\textdiamonddots`
 19899 `\let\zerosuperior\textzerosuperior`
 19900 `\let\isuperior\textisuperior`
 19901 `\let\foursuperior\textfoursuperior`
 19902 `\let\fivesuperior\textfivesuperior`
 19903 `\let\sixsuperior\textsixsuperior`
 19904 `\let\sevensuperior\textsevensuperior`
 19905 `\let\eightsuperior\texteightsuperior`
 19906 `\let\ninesuperior\textninesuperior`
 19907 `\let\plussuperior\textplussuperior`
 19908 `\let\minussuperior\textminussuperior`
 19909 `\let>equalsuperior\textequalsuperior`
 19910 `\let\parenleftsuperior\textparenleftsuperior`
 19911 `\let\parenrightsuperior\textparenrightsuperior`
 19912 `\let\nsuperior\textnsuperior`
 19913 `\let\zeroinferior\textzeroinferior`
 19914 `\let\oneinferior\textoneinferior`
 19915 `\let\twoinferior\texttwoinferior`
 19916 `\let\threeinferior\textthreeinferior`
 19917 `\let\fourinferior\textfourinferior`
 19918 `\let\fiveinferior\textfiveinferior`
 19919 `\let\sixinferior\textsixinferior`
 19920 `\let\seveninferior\textseveninferior`
 19921 `\let\eightinferior\texteightinferior`
 19922 `\let\nineinferior\textnineinferior`
 19923 `\let\plusinferior\textplusinferior`

19924 `\let\minusinferior\textminusinferior`
 19925 `\let\equalsinferior\textequalsinferior`
 19926 `\let\parenleftinferior\textparenleftinferior`
 19927 `\let\parenrightinferior\textparenrightinferior`
 19928 `\let\ainferior\textainferior`
 19929 `\let\einferior\texteinferior`
 19930 `\let\oinferior\textoinferior`
 19931 `\let\xinferior\textxinferior`
 19932 `\let\schwainferior\textschwainferior`
 19933 `\let\hinferior\texthinferior`
 19934 `\let\kinferior\textkinferior`
 19935 `\let\linferior\textlinferior`
 19936 `\let\minferior\textminferior`
 19937 `\let\ninferior\textninferior`
 19938 `\let\pinferior\textpinferior`
 19939 `\let\sinferior\textsinferior`
 19940 `\let\tinferior\texttinferior`
 19941 `\let\Deleatur\textDeleatur`
 19942 `\let\hslash\texthslash`
 19943 `\let\Im\textIm`
 19944 `\let\ell\textell`
 19945 `\let\wp\textwp`
 19946 `\let\Re\textRe`
 19947 `\let\mho\textmho`
 19948 `\let\riota\textriota`
 19949 `\let\Finv\textFinv`
 19950 `\let\aleph\textaleph`
 19951 `\let\beth\textbeth`
 19952 `\let\gimel\textgimel`
 19953 `\let\daleth\textdaleth`
 19954 `\let\xfax\textfax`
 19955 `\let\Game\textGame`
 19956 `\let\leftarrow\textleftarrow`
 19957 `\let\uparrow\textuparrow`
 19958 `\let\rightarrow\textrightarrow`
 19959 `\let\downarrow\textdownarrow`
 19960 `\let\leftrightarrow\textleftrightarrow`
 19961 `\let\updownarrow\textupdownarrow`
 19962 `\let\nwarrow\textnwarrow`
 19963 `\let\nearrow\textnearrow`
 19964 `\let\searrow\textsearrow`
 19965 `\let\swarrow\textswarrow`
 19966 `\let\nleftarrow\textnleftarrow`
 19967 `\let\nrightarrow\textnrightarrow`
 19968 `\let\twoheadleftarrow\texttwoheadleftarrow`
 19969 `\let\ntwoheadleftarrow\textntwoheadleftarrow`
 19970 `\let\twoheaduparrow\texttwoheaduparrow`
 19971 `\let\twoheadrightarrow\texttwoheadrightarrow`
 19972 `\let\ntwoheadrightarrow\textntwoheadrightarrow`
 19973 `\let\twoheaddownarrow\texttwoheaddownarrow`
 19974 `\let\leftarrowtail\textleftarrowtail`
 19975 `\let\rightarrowtail\textrightarrowtail`
 19976 `\let\mapsto\textmapsto`
 19977 `\let\hookleftarrow\texthookleftarrow`

19978 `\let\hookrightarrow\texthookrightarrow`
 19979 `\let\looparrowleft\textlooparrowleft`
 19980 `\let\looparrowright\textlooparrowright`
 19981 `\let\leftrightharpoonrightarrow\textnleftrightharpoonrightarrow`
 19982 `\let\lightning\textlightning`
 19983 `\let\dlsh\textdlsh`
 19984 `\let\curvearrowleft\textcurvearrowleft`
 19985 `\let\curvearrowright\textcurvearrowright`
 19986 `\let\leftharpoonup\textleftharpoonup`
 19987 `\let\leftharpoondown\textleftharpoondown`
 19988 `\let\upharpoonright\textupharpoonright`
 19989 `\let\upharpoonleft\textupharpoonleft`
 19990 `\let\rightharpoonup\textrightharpoonup`
 19991 `\let\rightharpoondown\textrightharpoondown`
 19992 `\let\downharpoonright\textdownharpoonright`
 19993 `\let\downharpoonleft\textdownharpoonleft`
 19994 `\let\rightleftarrows\textrightleftarrows`
 19995 `\let\updownarrows\textupdownarrows`
 19996 `\let\leftrightarrows\textleftrightarrows`
 19997 `\let\leftleftarrows\textleftleftarrows`
 19998 `\let\upuparrows\textupuparrows`
 19999 `\let\righttrightarrows\textrighttrightarrows`
 20000 `\let\downdownarrows\textdowndownarrows`
 20001 `\let\leftrightharpoons\textleftrightharpoons`
 20002 `\let\rightleftharpoons\textrightleftharpoons`
 20003 `\let\rightarrow\textrightarrow`
 20004 `\let\rightarrowtail\textrightarrowtail`
 20005 `\let\rightarrowtail\textrightarrowtail`
 20006 `\let\Leftarrow\textLeftarrow`
 20007 `\let\Uparrow\textUparrow`
 20008 `\let\Rightarrow\textRightarrow`
 20009 `\let\Downarrow\textDownarrow`
 20010 `\let\Leftarrow\textLeftarrow`
 20011 `\let\Updownarrow\textUpdownarrow`
 20012 `\let\Nrightarrow\textNrightarrow`
 20013 `\let\Nearrow\textNearrow`
 20014 `\let\searrow\textsearrow`
 20015 `\let\swarrow\textswarrow`
 20016 `\let\Lleftarrow\textLleftarrow`
 20017 `\let\Rrightarrow\textRrightarrow`
 20018 `\let\leftsquigarrow\textleftsquigarrow`
 20019 `\let\rightsquigarrow\textright squigarrow`
 20020 `\let\dashleftarrow\textdashleftarrow`
 20021 `\let\dasheduparrow\textdasheduparrow`
 20022 `\let\dashrightarrow\textdashrightarrow`
 20023 `\let\dasheddownarrow\textdasheddownarrow`
 20024 `\let\pointer\textpointer`
 20025 `\let\downuparrows\textdownuparrows`
 20026 `\let\leftarrowtriangle\textleftarrowtriangle`
 20027 `\let\rightarrowtriangle\textrightarrowtriangle`
 20028 `\let\leftrightarrowtriangle\textleftrightarrowtriangle`
 20029 `\let\forall\textforall`
 20030 `\let\complement\textcomplement`
 20031 `\let\partial\textpartial`

20032 \let\exists\textexists
 20033 \let\nexists\textnexists
 20034 \let\emptyset\textemptyset
 20035 \let\triangle\texttriangle
 20036 \let\nabla\textnabla
 20037 \let\in\textinsymbol
 20038 \let\notin\textnotin
 20039 \let\smallin\textsmallin
 20040 \let\ni\textni
 20041 \let\notowner\textnotowner
 20042 \let\smallowns\textsmallowns
 20043 \let\prod\textprod
 20044 \let\amalg\textamalg
 20045 \let\sum\textsum
 20046 \let\mp\textmp
 20047 \let\dotplus\textdotplus
 20048 \let\Divides\textDivides
 20049 \let\DividesNot\textDividesNot
 20050 \let\setminus\textsetminus
 20051 \let\ast\textast
 20052 \let\circ\textcirc
 20053 \let\surd\textsurd
 20054 \let\propto\textpropto
 20055 \let\infty\textinfty
 20056 \let\angle\textangle
 20057 \let\measuredangle\textmeasuredangle
 20058 \let\sphericalangle\textsphericalangle
 20059 \let\mid\textmid
 20060 \let\nmid\textnmid
 20061 \let\parallel\textparallel
 20062 \let\nparallel\textnparallel
 20063 \let\wedge\textwedge
 20064 \let\owedge\textowedge
 20065 \let\vee\textvee
 20066 \let\ovee\textovee
 20067 \let\cap\textcap
 20068 \let\cup\textcup
 20069 \let\int\textint
 20070 \let\iint\textiint
 20071 \let\iiint\textiiint
 20072 \let\oint\textoint
 20073 \let\oiint\textoiint
 20074 \let\ointclockwise\textointclockwise
 20075 \let\ointctrlockwise\textointctrlockwise
 20076 \let\therefore\texttherefore
 20077 \let\because\textbecause
 20078 \let\vdots\textvdots
 20079 \let\squaredots\textsquaredots
 20080 \let\dotminus\textdotminus
 20081 \let\eqcolon\texteqcolon
 20082 \let\sim\textsim
 20083 \let\backsim\textbacksim
 20084 \let\nbacksim\textnbacksim
 20085 \let\wr\textwr

20086 \let\nsim\textnsim
 20087 \let\eqsim\texteqsim
 20088 \let\neqsim\textneqsim
 20089 \let\simeq\textsimeq
 20090 \let\nsimeq\textnsimeq
 20091 \let\cong\textcong
 20092 \let\ncong\textncong
 20093 \let\approx\textapprox
 20094 \let\napprox\textnapprox
 20095 \let\approxeq\textapproxeq
 20096 \let\napproxeq\textnapproxeq
 20097 \let\triplesim\texttriplesim
 20098 \let\ntriplesim\textntriplesim
 20099 \let\backcong\textbackcong
 20100 \let\backcong\textnbackcong
 20101 \let\asymp\textasymp
 20102 \let\nasymp\textnasymp
 20103 \let\Bumpeq\textBumpeq
 20104 \let\NBumpeq\textNBumpeq
 20105 \let\bumpeq\textbumpeq
 20106 \let\bumpeq\textnbumpeq
 20107 \let\doteq\textdoteq
 20108 \let\ndoteq\textndoteq
 20109 \let\doteqdot\textdoteqdot
 20110 \let\NDoteq\textNDoteq
 20111 \let\fallingdoteq\textfallingdoteq
 20112 \let\fallingdoteq\textnfallingdoteq
 20113 \let\risingdoteq\textrisingdoteq
 20114 \let\risingdoteq\textnrisingdoteq
 20115 \let\colonequals\textcolonequals
 20116 \let\equalscolon\textequalscolon
 20117 \let\eqcirc\texteqcirc
 20118 \let\neqcirc\textneqcirc
 20119 \let\circeq\textcirceq
 20120 \let\ncirceq\textncirceq
 20121 \let\hateq\texthateq
 20122 \let\nhateq\textnhateq
 20123 \let\triangleeq\texttriangleeq
 20124 \let\neq\textneq
 20125 \let\ne\textne
 20126 \let\equiv\textequiv
 20127 \let\nequiv\textnequiv
 20128 \let\leq\textleq
 20129 \let\le\textle
 20130 \let\geq\textgeq
 20131 \let\ge\textge
 20132 \let\leqq\textleqq
 20133 \let\lneqq\textlneqq
 20134 \let\geqq\textgeqq
 20135 \let\gneqq\textgneqq
 20136 \let\lneqq\textlneqq
 20137 \let\gneqq\textgneqq
 20138 \let\ll\textll
 20139 \let\nll\textnll

20140 \let\gg\textgg
 20141 \let\ngg\textngg
 20142 \let\between\textbetween
 20143 \let\nless\textnless
 20144 \let\ngtr\textngtr
 20145 \let\nleq\textnleq
 20146 \let\ngeq\textngeq
 20147 \let\lesssim\textlesssim
 20148 \let\gtrsim\textgtrsim
 20149 \let\nlesssim\textnlesssim
 20150 \let\ngtrsim\textngtrsim
 20151 \let\lessgtr\textlessgtr
 20152 \let\gtrless\textgtrless
 20153 \let\ngtrless\textngtrless
 20154 \let\nlessgtr\textnlessgtr
 20155 \let\prec\textprec
 20156 \let\succ\textsucc
 20157 \let\preccurlyeq\textpreccurlyeq
 20158 \let\succcurlyeq\textsucccurlyeq
 20159 \let\precsim\textprecsim
 20160 \let\nprecsim\textnprecsim
 20161 \let\succsim\textsuccsim
 20162 \let\nsuccsim\textnsuccsim
 20163 \let\nprec\textnprec
 20164 \let\nsucc\textnsucc
 20165 \let\subset\textsubset
 20166 \let\supset\textsupset
 20167 \let\nsubset\textnssubset
 20168 \let\nsupset\textnsupset
 20169 \let\subseteq\textsubseteq
 20170 \let\supseteq\textsupseteq
 20171 \let\nsubsubseteq\textnssubseteq
 20172 \let\nsupseteq\textnsupseteq
 20173 \let\subsetneq\textsubsetneq
 20174 \let\supsetneq\textsupsetneq
 20175 \let\cupdot\textcupdot
 20176 \let\cupplus\textcupplus
 20177 \let\sqsubset\textsqsubset
 20178 \let\nsqsubset\textnsqsubset
 20179 \let\sqsupset\textsqsupset
 20180 \let\nsqsupset\textnsqsupset
 20181 \let\sqsubseteq\textsqsubseteq
 20182 \let\nsqsubseteq\textnsqsubseteq
 20183 \let\sqsupseteq\textsqsupseteq
 20184 \let\nsqsupseteq\textnsqsupseteq
 20185 \let\sqcap\textsqcap
 20186 \let\sqcup\textsqcup
 20187 \let\oplus\textoplus
 20188 \let\ominus\textominus
 20189 \let\otimes\textotimes
 20190 \let\oslash\textoslash
 20191 \let\odot\textodot
 20192 \let\circledcirc\textcircledcirc
 20193 \let\circledast\textcircledast

20194 \let\circleddash\textcircleddash
 20195 \let\boxplus\textboxplus
 20196 \let\boxminus\textboxminus
 20197 \let\boxtimes\textboxtimes
 20198 \let\boxdot\textboxdot
 20199 \let\vdash\textvdash
 20200 \let\dashv\textdashv
 20201 \let\ndashv\textndashv
 20202 \let\top\texttop
 20203 \let\ndownvdash\textndownvdash
 20204 \let\bot\textbot
 20205 \let\nupvdash\textnupvdash
 20206 \let\vDash\textvDash
 20207 \let\VDash\textVDash
 20208 \let\Vdash\textVdash
 20209 \let\NVdash\textNVdash
 20210 \let\VDash\textVDash
 20211 \let\NVdash\textNVdash
 20212 \let\NVdash\textNVdash
 20213 \let\NVdash\textNVdash
 20214 \let\NVdash\textNVdash
 20215 \let\lhd\textlhd
 20216 \let\rhd\textrhd
 20217 \let\unlhd\textunlhd
 20218 \let\unrhd\textunrhd
 20219 \let\multimapdotbothA\textmultimapdotbothA
 20220 \let\multimapdotbothB\textmultimapdotbothB
 20221 \let\multimap\textmultimap
 20222 \let\veebar\textveebar
 20223 \let\barwedge\textbarwedge
 20224 \let\star\textstar
 20225 \let\divideontimes\textdivideontimes
 20226 \let\bowtie\textbowtie
 20227 \let\ltimes\textltimes
 20228 \let\rtimes\textrtimes
 20229 \let\leftthreetimes\textleftthreetimes
 20230 \let\rightthreetimes\textrightthreetimes
 20231 \let\backsimeq\textbacksimeq
 20232 \let\Nbacksimeq\textNbacksimeq
 20233 \let\curlyvee\textcurlyvee
 20234 \let\curlywedge\textcurlywedge
 20235 \let\Subset\textSubset
 20236 \let\NSubset\textNSubset
 20237 \let\Supset\textSupset
 20238 \let\NSupset\textNSupset
 20239 \let\Cap\textCap
 20240 \let\Cup\textCup
 20241 \let\pitchfork\textpitchfork
 20242 \let\lessdot\textlessdot
 20243 \let\gtrdot\textgtrdot
 20244 \let\lll\textlll
 20245 \let\ggg\textggg
 20246 \let\lesseqgtr\textlesseqgtr
 20247 \let\gtreqless\textgtreqless

20248 \let\curlyeqprec\textcurlyeqprec
 20249 \let\ncurlyeqprec\textncurlyeqprec
 20250 \let\curlyeqsucc\textcurlyeqsucc
 20251 \let\ncurlyeqsucc\textncurlyeqsucc
 20252 \let\preccurlyeq\textnpreccurlyeq
 20253 \let\nsucccurlyeq\textnsucccurlyeq
 20254 \let\subset\textsubset
 20255 \let\supset\textsupset
 20256 \let\subsetneq\textsubsetneq
 20257 \let\supsetneq\textsupsetneq
 20258 \let\sim\textsim
 20259 \let\gtrsim\textgtrsim
 20260 \let\lesssim\textlesssim
 20261 \let\succsim\textsuccsim
 20262 \let\triangleleft\texttriangleleft
 20263 \let\triangleright\texttriangleright
 20264 \let\trianglelefteq\texttrianglelefteq
 20265 \let\trianglerighteq\texttrianglerighteq
 20266 \let\vdots\textvdots
 20267 \let\cdots\textcdots
 20268 \let\udots\textudots
 20269 \let\ddots\textddots
 20270 \let\bar\textbar
 20271 \let\diameter\textdiameter
 20272 \let\backneg\textbackneg
 20273 \let\asylozenge\textasylozenge
 20274 \let\invbackneg\textinvbackneg
 20275 \let\clock\textclock
 20276 \let\ulcorner\textulcorner
 20277 \let\urcorner\texturcorner
 20278 \let\llcorner\textllcorner
 20279 \let\lrcorner\textlrcorner
 20280 \let\frown\textfrown
 20281 \let\smile\textsmile
 20282 \let\Keyboard\textKeyboard
 20283 \let\angle\textangle
 20284 \let\rangle\textrangle
 20285 \let\APLinv\textAPLinv
 20286 \let\Tumbler\textTumbler
 20287 \let\notslash\textnotslash
 20288 \let\notbackslash\textnotbackslash
 20289 \let\boxbackslash\textboxbackslash
 20290 \let\APLleftarrowbox\textAPLleftarrowbox
 20291 \let\APLrightarrowbox\textAPLrightarrowbox
 20292 \let\APLuparrowbox\textAPLuparrowbox
 20293 \let\APLdownarrowbox\textAPLdownarrowbox
 20294 \let\APLinput\textAPLinput
 20295 \let\Request\textRequest
 20296 \let\Beam\textBeam
 20297 \let\hexagon\texthexagon
 20298 \let\APLbox\textAPLbox
 20299 \let\ForwardToIndex\textForwardToIndex
 20300 \let\RewindToIndex\textRewindToIndex
 20301 \let\bbslash\textbbslash

20302 \let\CircledA\textCircledA
 20303 \let\CleaningF\textCleaningF
 20304 \let\CleaningFF\textCleaningFF
 20305 \let\CleaningP\textCleaningP
 20306 \let\CleaningPP\textCleaningPP
 20307 \let\CuttingLine\textCuttingLine
 20308 \let\UParrow\textUParrow
 20309 \let\bigtriangleup\textbigtriangleup
 20310 \let\Forward\textForward
 20311 \let\triangleright\texttriangleright
 20312 \let\RHD\textRHD
 20313 \let\DOWNarrow\textDOWNarrow
 20314 \let\bigtriangledown\textbigtriangledown
 20315 \let\Rewind\textRewind
 20316 \let\triangleleft\texttriangleleft
 20317 \let\LHD\textLHD
 20318 \let\diamond\textdiamond
 20319 \let\lozenge\textlozenge
 20320 \let\LEFTCIRCLE\textLEFTCIRCLE
 20321 \let\RIGHTCIRCLE\textRIGHTCIRCLE
 20322 \let\openbullet\textopenbullet
 20323 \let\boxbar\textboxbar
 20324 \let\bigcircle\textbigcircle
 20325 \let\Cloud\textCloud
 20326 \let\FiveStar\textFiveStar
 20327 \let\FiveStarOpen\textFiveStarOpen
 20328 \let\Phone\textPhone
 20329 \let\boxempty\textboxempty
 20330 \let\Checkedbox\textCheckedbox
 20331 \let\Crossedbox\textCrossedbox
 20332 \let\Coffeecup\textCoffeecup
 20333 \let\HandCuffLeft\textHandCuffLeft
 20334 \let\HandCuffRight\textHandCuffRight
 20335 \let\HandLeft\textHandLeft
 20336 \let\HandRight\textHandRight
 20337 \let\Radioactivity\textRadioactivity
 20338 \let\Biohazard\textBiohazard
 20339 \let\Ankh\textAnkh
 20340 \let\YinYang\textYinYang
 20341 \let\frownie\textfrownie
 20342 \let\smiley\textsmiley
 20343 \let\blacksmiley\textblacksmiley
 20344 \let\sun\textsun
 20345 \let\leftmoon\textleftmoon
 20346 \let\rightmoon\textrightmoon
 20347 \let\mercury\textmercury
 20348 \let\earth\textearth
 20349 \let\male\textmale
 20350 \let\jupiter\textjupiter
 20351 \let\saturn\textsaturn
 20352 \let\uranus\texturanus
 20353 \let\neptune\textneptune
 20354 \let\pluto\textpluto
 20355 \let\aries\textaries

20356 \let\taurus\texttaurus
 20357 \let\gemini\textgemini
 20358 \let\cancer\textcancer
 20359 \let\leo\textleo
 20360 \let\virgo\textvirgo
 20361 \let\libra\textlibra
 20362 \let\scorpio\textscorpio
 20363 \let\sagittarius\textsagittarius
 20364 \let\capricornus\textcapricornus
 20365 \let\aquarius\textaquarius
 20366 \let\pisces\textpisces
 20367 \let\quaternote\textquaternote
 20368 \let\twonotes\texttwonotes
 20369 \let\sixteenthnote\textsixteenthnote
 20370 \let\flat\textflat
 20371 \let\natural\textnatural
 20372 \let\sharp\textsharp
 20373 \let\recycle\textrecycle
 20374 \let\Wheelchair\textWheelchair
 20375 \let\Flag\textFlag
 20376 \let\MineSign\textMineSign
 20377 \let\ds\military\textds\military
 20378 \let\ds\medical\textds\medical
 20379 \let\ds\juridical\textds\juridical
 20380 \let\ds\chemical\textds\chemical
 20381 \let\ds\biological\textds\biological
 20382 \let\ds\commercial\textds\commercial
 20383 \let\manstar\textmanstar
 20384 \let\danger\textdanger
 20385 \let\FemaleFemale\textFemaleFemale
 20386 \let\MaleMale\textMaleMale
 20387 \let\FemaleMale\textFemaleMale
 20388 \let\Hermaphrodite\textHermaphrodite
 20389 \let\Neutral\textNeutral
 20390 \let\hexstar\texthexstar
 20391 \let\SunCloud\textSunCloud
 20392 \let\Rain\textRain
 20393 \let\noway\textnoway
 20394 \let\Mountain\textMountain
 20395 \let\Tent\textTent
 20396 \let\ScissorRight\textScissorRight
 20397 \let\ScissorRightBrokenTop\textScissorRightBrokenTop
 20398 \let\ScissorHollowRight\textScissorHollowRight
 20399 \let\PhoneHandset\textPhoneHandset
 20400 \let\Tape\textTape
 20401 \let\Plane\textPlane
 20402 \let\Envelope\textEnvelope
 20403 \let\Peace\textPeace
 20404 \let\WritingHand\textWritingHand
 20405 \let\PencilRightDown\textPencilRightDown
 20406 \let\PencilRight\textPencilRight
 20407 \let\PencilRightUp\textPencilRightUp
 20408 \let\NibRight\textNibRight
 20409 \let\NibSolidRight\textNibSolidRight

20410 \let\Checkmark\textCheckmark
 20411 \let\CheckmarkBold\textCheckmarkBold
 20412 \let\XSolid\textXSolid
 20413 \let\XSolidBold\textXSolidBold
 20414 \let\XSolidBrush\textXSolidBrush
 20415 \let\PlusOutline\textPlusOutline
 20416 \let\Plus\textPlus
 20417 \let\PlusThinCenterOpen\textPlusThinCenterOpen
 20418 \let\PlusCenterOpen\textPlusCenterOpen
 20419 \let\Cross\textCross
 20420 \let\CrossOpenShadow\textCrossOpenShadow
 20421 \let\CrossOutline\textCrossOutline
 20422 \let\CrossMaltese\textCrossMaltese
 20423 \let\DavidStar\textDavidStar
 20424 \let\FourAsterisk\textFourAsterisk
 20425 \let\JackStar\textJackStar
 20426 \let\JackStarBold\textJackStarBold
 20427 \let\ClowerTips\textClowerTips
 20428 \let\FourStar\textFourStar
 20429 \let\FourStarOpen\textFourStarOpen
 20430 \let\FiveStarOpenCircled\textFiveStarOpenCircled
 20431 \let\FiveStarCenterOpen\textFiveStarCenterOpen
 20432 \let\FiveStarOpenDotted\textFiveStarOpenDotted
 20433 \let\FiveStarOutline\textFiveStarOutline
 20434 \let\FiveStarOutlineHeavy\textFiveStarOutlineHeavy
 20435 \let\FiveStarConvex\textFiveStarConvex
 20436 \let\FiveStarShadow\textFiveStarShadow
 20437 \let\AsteriskBold\textAsteriskBold
 20438 \let\AsteriskCenterOpen\textAsteriskCenterOpen
 20439 \let\EightStarTaper\textEightStarTaper
 20440 \let\EightStarConvex\textEightStarConvex
 20441 \let\SixStar\textSixStar
 20442 \let\EightStar\textEightStar
 20443 \let\EightStarBold\textEightStarBold
 20444 \let\TwelveStar\textTwelveStar
 20445 \let\SixteenStarLight\textSixteenStarLight
 20446 \let\SixFlowerPetalRemoved\textSixFlowerPetalRemoved
 20447 \let\SixFlowerOpenCenter\textSixFlowerOpenCenter
 20448 \let\Asterisk\textAsterisk
 20449 \let\SixFlowerAlternate\textSixFlowerAlternate
 20450 \let\FiveFlowerPetal\textFiveFlowerPetal
 20451 \let\FiveFlowerOpen\textFiveFlowerOpen
 20452 \let\EightFlowerPetal\textEightFlowerPetal
 20453 \let\SunshineOpenCircled\textSunshineOpenCircled
 20454 \let\SixFlowerAltPetal\textSixFlowerAltPetal
 20455 \let\SnowflakeChevron\textSnowflakeChevron
 20456 \let\Snowflake\textSnowflake
 20457 \let\SnowflakeChevronBold\textSnowflakeChevronBold
 20458 \let\Sparkle\textSparkle
 20459 \let\SparkleBold\textSparkleBold
 20460 \let\AsteriskRoundedEnds\textAsteriskRoundedEnds
 20461 \let\EightFlowerPetalRemoved\textEightFlowerPetalRemoved
 20462 \let\EightAsterisk\textEightAsterisk
 20463 \let\CircleShadow\textCircleShadow

20464 \let\SquareShadowBottomRight\textSquareShadowBottomRight
 20465 \let\SquareTopRight\textSquareTopRight
 20466 \let\SquareCastShadowBottomRight\textSquareCastShadowBottomRight
 20467 \let\SquareCastShadowTopRight\textSquareCastShadowTopRight
 20468 \let\DiamondSolid\textDiamondSolid
 20469 \let\RectangleThin\textRectangleThin
 20470 \let\Rectangle\textRectangle
 20471 \let\RectangleBold\textRectangleBold
 20472 \let\perp\textperp
 20473 \let\notperp\textnotperp
 20474 \let\veedot\textveedot
 20475 \let\wedgedot\textwedgedot
 20476 \let\leftspoon\textleftspoon
 20477 \let\lbrackdbl\textlbrackdbl
 20478 \let\rbrackdbl\textrbrackdbl
 20479 \let\circlearrowleft\textcirclearrowleft
 20480 \let\circlearrowright\textcirclearrowright
 20481 \let\longleftarrow\textlongleftarrow
 20482 \let\longrightarrow\textlongrightarrow
 20483 \let\longleftarrow\textlongleftarrow
 20484 \let\Longleftarrow\textLongleftarrow
 20485 \let\Longrightarrow\textLongrightarrow
 20486 \let\Longleftarrow\textLongleftarrow
 20487 \let\longmapsto\textlongmapsto
 20488 \let\Longmapsfrom\textLongmapsfrom
 20489 \let\Longmapsto\textLongmapsto
 20490 \let\nwsearrow\textnwsearrow
 20491 \let\neswarrow\textneswarrow
 20492 \let\hookrightarrow\texthookrightarrow
 20493 \let\rhookrightarrow\texthookrightarrow
 20494 \let\hookrightarrow\texthookrightarrow
 20495 \let\rhookrightarrow\texthookrightarrow
 20496 \let\leadsto\textleadsto
 20497 \let\curvearrowright\textcurvearrowright
 20498 \let\curvearrowleft\textcurvearrowleft
 20499 \let\curvearrowright\textcurvearrowright
 20500 \let\curvearrowright\textcurvearrowright
 20501 \let\curvearrowdown\textcurvearrowdown
 20502 \let\curvearrowdown\textcurvearrowdown
 20503 \let\curvearrowleft\textcurvearrowleft
 20504 \let\curvearrowright\textcurvearrowright
 20505 \let\leftrightharpoon\textleftrightharpoon
 20506 \let\rightharpoon\textleftrightharpoon
 20507 \let\updownharpoonright\textupdownharpoonright
 20508 \let\updownharpoonleft\textupdownharpoonleft
 20509 \let\leftleftharpoons\textleftleftharpoons
 20510 \let\upupharpoons\textupupharpoons
 20511 \let\rightrightarpoons\textrighttrightarpoons
 20512 \let\downharpoons\textdownharpoons
 20513 \let\leftbarharpoon\textleftbarharpoon
 20514 \let\barleftharpoon\textbarleftharpoon
 20515 \let\rightbarharpoon\textrightbarharpoon
 20516 \let\barrightharpoon\textbarrightharpoon
 20517 \let\updownharpoons\textupdownharpoons

20518 $\backslash\text{let}\downarrow\text{nupharpoons}\text{downupharpoons}$
 20519 $\backslash\text{let}\text{moo}\text{textmoo}$
 20520 $\backslash\text{let}\llparenthesis\text{textllparenthesis}$
 20521 $\backslash\text{let}\rrparenthesis\text{textrrparenthesis}$
 20522 $\backslash\text{let}\text{invdiameter}\text{textinvdiameter}$
 20523 $\backslash\text{let}\text{obar}\text{textobar}$
 20524 $\backslash\text{let}\text{obslash}\text{textobslash}$
 20525 $\backslash\text{let}\text{obot}\text{textobot}$
 20526 $\backslash\text{let}\text{NoChemicalCleaning}\text{textNoChemicalCleaning}$
 20527 $\backslash\text{let}\text{olessthan}\text{textolessthan}$
 20528 $\backslash\text{let}\text{ogreaterthan}\text{textogreaterthan}$
 20529 $\backslash\text{let}\text{boxslash}\text{textboxslash}$
 20530 $\backslash\text{let}\text{boxbslash}\text{textboxbslash}$
 20531 $\backslash\text{let}\text{boxast}\text{textboxast}$
 20532 $\backslash\text{let}\text{boxcircle}\text{textboxcircle}$
 20533 $\backslash\text{let}\text{boxbox}\text{textboxbox}$
 20534 $\backslash\text{let}\text{Valve}\text{textValve}$
 20535 $\backslash\text{let}\text{multimapboth}\text{textmultimapboth}$
 20536 $\backslash\text{let}\text{shuffle}\text{textshuffle}$
 20537 $\backslash\text{let}\text{uplus}\text{textuplus}$
 20538 $\backslash\text{let}\text{bigdoublewedge}\text{textbigdoublewedge}$
 20539 $\backslash\text{let}\text{bigdoublevee}\text{textbigdoublevee}$
 20540 $\backslash\text{let}\text{Join}\text{textJoin}$
 20541 $\backslash\text{let}\text{fatsemi}\text{textfatsemi}$
 20542 $\backslash\text{let}\text{circplus}\text{textcircplus}$
 20543 $\backslash\text{let}\text{minusdot}\text{textminusdot}$
 20544 $\backslash\text{let}\text{dotimes}\text{textdotimes}$
 20545 $\backslash\text{let}\text{dtimes}\text{textdtimes}$
 20546 $\backslash\text{let}\text{odiv}\text{textodiv}$
 20547 $\backslash\text{let}\text{invneg}\text{textinvneg}$
 20548 $\backslash\text{let}\text{sqdoublecap}\text{textsquaddoublecap}$
 20549 $\backslash\text{let}\text{capdot}\text{textcapdot}$
 20550 $\backslash\text{let}\text{sqdoublecup}\text{textsquaddoublecup}$
 20551 $\backslash\text{let}\text{doublewedge}\text{textdoublewedge}$
 20552 $\backslash\text{let}\text{doublevee}\text{textdoublevee}$
 20553 $\backslash\text{let}\text{doublebarwedge}\text{textdoublebarwedge}$
 20554 $\backslash\text{let}\text{veedoublebar}\text{textveedoublebar}$
 20555 $\backslash\text{let}\text{eqdot}\text{texteqdot}$
 20556 $\backslash\text{let}\text{neqdot}\text{textneqdot}$
 20557 $\backslash\text{let}\text{coloncolonequals}\text{textcoloncolonequals}$
 20558 $\backslash\text{let}\text{leqslant}\text{textleqslant}$
 20559 $\backslash\text{let}\text{nleqslant}\text{textnleqslant}$
 20560 $\backslash\text{let}\text{geqslant}\text{textgeqslant}$
 20561 $\backslash\text{let}\text{ngeqslant}\text{textngeqslant}$
 20562 $\backslash\text{let}\text{lessapprox}\text{textlessapprox}$
 20563 $\backslash\text{let}\text{nlessapprox}\text{textnlessapprox}$
 20564 $\backslash\text{let}\text{gtrapprox}\text{textgtrapprox}$
 20565 $\backslash\text{let}\text{ngtrapprox}\text{textngtrapprox}$
 20566 $\backslash\text{let}\text{lneq}\text{textlneq}$
 20567 $\backslash\text{let}\text{gneq}\text{textgneq}$
 20568 $\backslash\text{let}\text{lnapprox}\text{textlnapprox}$
 20569 $\backslash\text{let}\text{gnapprox}\text{textgnapprox}$
 20570 $\backslash\text{let}\text{lesseqqgtr}\text{textlesseqqgtr}$
 20571 $\backslash\text{let}\text{gtreqqlless}\text{textgtreqqlless}$

20572 `\let\eqslantless\texteqslantless`
 20573 `\let\eqslantgtr\texteqslantgtr`
 20574 `\let\leftslice\textleftslice`
 20575 `\let\rightslice\textrightslice`
 20576 `\let\preceq\textpreceq`
 20577 `\let\npreceq\textnpreceq`
 20578 `\let\succeq\textsucceq`
 20579 `\let\nsucceq\textnsucceq`
 20580 `\let\precneq\textprecneq`
 20581 `\let\succneq\textsuccneq`
 20582 `\let\preceqq\textpreceqq`
 20583 `\let\npreceqq\textnpreceqq`
 20584 `\let\succeqq\textsucceqq`
 20585 `\let\nsucceqq\textnsucceqq`
 20586 `\let\precneqq\textprecneqq`
 20587 `\let\succneqq\textsuccneqq`
 20588 `\let\precapprox\textprecapprox`
 20589 `\let\nprecapprox\textnprecapprox`
 20590 `\let\succapprox\textsuccapprox`
 20591 `\let\nsuccapprox\textnsuccapprox`
 20592 `\let\precnapprox\textprecnapprox`
 20593 `\let\succnapprox\textsuccnapprox`
 20594 `\let\subseteqq\textsubseteqq`
 20595 `\let\nsubseteqq\textnsubseteqq`
 20596 `\let\supseteqq\textsupseteqq`
 20597 `\let\nsupseteqq\textnsupseteqq`
 20598 `\let\dashV\textdashV`
 20599 `\let\ndashV\textndashV`
 20600 `\let\Dashv\textDashv`
 20601 `\let\ndashv\textndashv`
 20602 `\let\DashV\textDashV`
 20603 `\let\ndashV\textndashV`
 20604 `\let\downmodels\textdownmodels`
 20605 `\let\ndownmodels\textndownmodels`
 20606 `\let\upmodels\textupmodels`
 20607 `\let\nupmodels\textnupmodels`
 20608 `\let\upspoon\textupspoon`
 20609 `\let\interleave\textinterleave`
 20610 `\let\slash\textslash`
 20611 `\let\pentagon\textpentagon`
 20612 `\let\varhexagon\textvarhexagon`
 20613 `\let\jinferior\textjinferior`
 20614 `\let\slashdiv\textslashdiv`
 20615 `\let\fivedots\textfivedots`
 20616 `\let\oo\textoo`
 20617 `\let\GaPa\textGaPa`
 20618 `\let\HaPa\textHaPa`
 20619 `\let\ViPa\textViPa`
 20620 `\let\AcPa\textAcPa`
 20621 `\let\SePa\textSePa`
 20622 `\let\ZwPa\textZwPa`
 20623 `\let\fullnote\textfullnote`
 20624 `\let\halfnote\texthalfnote`
 20625 `\let\Vier\textVier`

20626 \let\Acht\textAcht
 20627 \let\Sech\textSech
 20628 \let\Zwdr\textZwdr
 20629 \let\Mundus\textMundus
 20630 \let\Moon\textMoon
 20631 \let\ManFace\textManFace
 20632 \let\WomanFace\textWomanFace
 20633 \let\Fax\textFax
 20634 \let\Fire\textFire
 20635 \let\Bicycle\textBicycle
 20636 \let\Gentsroom\textGentsroom
 20637 \let\Ladiesroom\textLadiesroom
 20638 \let\ccnc\textccnc
 20639 \let\ccsa\textccsa
 20640 \let\Info\textInfo
 20641 \let\CESign\textCESign
 20642 \let\neg\textneg
 20643 \let\times\texttimes
 20644 \let\div\textdiv
 20645 \let\pm\textpm
 20646 \let\cdot\textcdot
 20647 }% \psdmapshortnames
 20648 \newcommand*{\psdaliasnames}{%
 20649 \let\epsdice\HyPsd@DieFace
 20650 \let\fcdice\HyPsd@DieFace
 20651 \let\MoonPha\HyPsd@MoonPha
 20652 \let\mathdollar\textdollar
 20653 \let\EyesDollar\textdollar
 20654 \let\binampersand\textampersand
 20655 \let\with\textampersand
 20656 \let\mathunderscore\textunderscore
 20657 \let\textvertline\textbar
 20658 \let\mathsterling\textsterling
 20659 \let\pounds\textsterling
 20660 \let\brokenvert\textbrokenbar
 20661 \let\mathsection\textsection
 20662 \let\S\textsection
 20663 \let\mathparagraph\textparagraph
 20664 \let\MultiplicationDot\textperiodcentered
 20665 \let\Squaredot\textperiodcentered
 20666 \let\vartimes\textmultiply
 20667 \let\MVMultiplication\textmultiply
 20668 \let\eth\dh
 20669 \let\crossd\textcrd
 20670 \let\textbard\textcrd
 20671 \let\bard\textcrd
 20672 \let\textcrh\texthbar
 20673 \let\crossh\texthbar
 20674 \let\planck\texthbar
 20675 \let\eng\ng
 20676 \let\engma\ng
 20677 \let\crossb\textcrb
 20678 \let\textbarb\textcrb
 20679 \let\barb\textcrb

20680 \let\Florin\textflorin
 20681 \let\hv\texthvlig
 20682 \let\hausak\texthtk
 20683 \let\crossnilambda\textcrlambda
 20684 \let\barlambda\textcrlambda
 20685 \let\lambdabar\textcrlambda
 20686 \let\lambdaslash\textcrlambda
 20687 \let\textnrleg\textPUnrleg
 20688 \let\textpipevar\textpipe
 20689 \let\textdoublepipevar\textdoublepipe
 20690 \let\textdoublebarpipevar\textdoublebarpipe
 20691 \let\textcrg\textgslash
 20692 \let\textdblig\textPUdblig
 20693 \let\textqplig\textPUqplig
 20694 \let\textcentoldstyle\textslashc
 20695 \let\textbarc\textslashc
 20696 \let\inva\textturna
 20697 \let\vara\textscripta
 20698 \let\invscripta\textturnscripta
 20699 \let\rotvara\textturnscripta
 20700 \let\hookb\texthtb
 20701 \let\hausab\texthtb
 20702 \let\varopeno\textopeno
 20703 \let\curlyc\textctc
 20704 \let\taild\textrtaild
 20705 \let\hookd\texthtd
 20706 \let\hausad\texthtd
 20707 \let\er\textrhookschwa
 20708 \let\epsi\textniepsilon
 20709 \let\hookrepsilon\texthookrepsilon
 20710 \let\closedrepsilon\textcloserepsilon
 20711 \let\barj\textbardotlessj
 20712 \let\hookg\texthtg
 20713 \let\varg\textscriptg
 20714 \let\vod\textipagamma
 20715 \let\invh\textturnh
 20716 \let\udesc\textturnh
 20717 \let\hookh\texthth
 20718 \let\voicedh\texthth
 20719 \let\hookheng\texththeng
 20720 \let\ibar\textbari
 20721 \let\vari\textniiota
 20722 \let\tildel\textltilde
 20723 \let\latfric\textbeltl
 20724 \let\taill\textrtail
 20725 \let\lz\textlyoghlig
 20726 \let\invm\textturnm
 20727 \let\rotm\textturnm
 20728 \let\legm\textturnmrleg
 20729 \let\labdentalnas\textltailm
 20730 \let\emgma\textltailm
 20731 \let\nj\textltailn
 20732 \let\enya\textltailn
 20733 \let\tailn\textrtailn

20734 \let\closedniomega\textcloseomega
 20735 \let\varomega\textcloseomega
 20736 \let\invr\textturnr
 20737 \let\rotr\textturnr
 20738 \let\invlegr\textturnlonglegr
 20739 \let\tailinvr\textturnrrtail
 20740 \let\legr\textlonglegr
 20741 \let\tailr\textrtailr
 20742 \let\flapr\textfishhookr
 20743 \let\flap\textfishhookr
 20744 \let\tails\textrtails
 20745 \let\curlyesh\textctesh
 20746 \let\clickt\textturnt
 20747 \let\tailt\textrtailt
 20748 \let\ubar\textbaru
 20749 \let\rotOmega\textniupsilon
 20750 \let\invv\textturnv
 20751 \let\pwedge\textturnv
 20752 \let\invw\textturnw
 20753 \let\rotw\textturnw
 20754 \let\invy\textturny
 20755 \let\roty\textturny
 20756 \let\tailz\textrtailz
 20757 \let\curlyz\textctz
 20758 \let\curlyyogh\textctyogh
 20759 \let\ejective\textglotstop
 20760 \let\glottal\textglotstop
 20761 \let\reveject\textrevglotstop
 20762 \let\clickc\textstretchc
 20763 \let\textstretchcvar\textstretchc
 20764 \let\clickb\textbullseye
 20765 \let\textObullseye\textbullseye
 20766 \let\textctjvar\textctj
 20767 \let\textturnsk\textturnk
 20768 \let\dz\textdzlig
 20769 \let\tesh\textteshlig
 20770 \let\digamma\textdigammagreek
 20771 \let\hardsign\cyrrhdsn
 20772 \let\softsign\cyrsftsn
 20773 \let\hebsin\hebshin
 20774 \let\textsck\textPUscck
 20775 \let\textscm\textPUscm
 20776 \let\textscp\textPUscp
 20777 \let\textrevscr\textPUrevscr
 20778 \let\textrhoocka\textPUrhoocka
 20779 \let\textrhoocke\textPUrhoocke
 20780 \let\textrhoockepsilon\textPUrhoockepsilon
 20781 \let\textrhoockopeno\textPUrhoockopeno
 20782 \let\textdoublevertline\textbardbl
 20783 \let\dag\textdagger
 20784 \let\ddagger\textdaggerdbl
 20785 \let\ddag\textdaggerdbl
 20786 \let\mathellipsis\textellipsis
 20787 \let\EurDig\texteuro

20788 \let\EURdig\texteuro
 20789 \let\EurHv\texteuro
 20790 \let\EURhv\texteuro
 20791 \let\EurCr\texteuro
 20792 \let\EURcr\texteuro
 20793 \let\EurTm\texteuro
 20794 \let\EURtm\texteuro
 20795 \let\Eur\texteuro
 20796 \let\Denarius\textDeleatur
 20797 \let\agemO\textmho
 20798 \let\EstimatedSign\textestimated
 20799 \let\Ecommerce\textestimated
 20800 \let\bindnasrepma\textinvamp
 20801 \let\parr\textinvamp
 20802 \let\MVRightArrow\textrightarrow
 20803 \let\MVRightarrow\textrightarrow
 20804 \let\MVArrowDown\textdownarrow
 20805 \let\Force\textdownarrow
 20806 \let\textglobrise\textnearrow
 20807 \let\textglobfall\textsearrow
 20808 \let\Lightning\textlightning
 20809 \let\Conclusion\textrightarrow
 20810 \let\dashedleftarrow\textdashleftarrow
 20811 \let\dashedrightarrow\textdashrightarrow
 20812 \let\varnothing\textemptyset
 20813 \let\owns\textni
 20814 \let\notni\textnotowner
 20815 \let\varprop\textpropto
 20816 \let\varangle\textsphericalangle
 20817 \let\Anglesign\textsphericalangle
 20818 \let\AngleSign\textsphericalangle
 20819 \let\notdivides\textnmid
 20820 \let\varowedge\textowedge
 20821 \let\varovee\textovee
 20822 \let\varint\textint
 20823 \let\varoint\textoint
 20824 \let\downtherefore\textbecause
 20825 \let\textdotdiv\textdotminus
 20826 \let\AC\textsim
 20827 \let\wreath\textwr
 20828 \let\nthickapprox\textnapprox
 20829 \let\VHF\texttriplesim
 20830 \let\notasymp\textnasympt
 20831 \let\Doteq\textdoteqdot
 20832 \let\corresponds\texthateq
 20833 \let\Corresponds\texthateq
 20834 \let\nequal\textneq
 20835 \let\Congruent\textequiv
 20836 \let\NotCongruent\textnequiv
 20837 \let\notequiv\textnequiv
 20838 \let\LessOrEqual\textleq
 20839 \let\LargerOrEqual\textgeq
 20840 \let\apprle\textlesssim
 20841 \let\apprge\textgtrsim

20842 `\let\varoplus\textoplus`
 20843 `\let\varominus\textominus`
 20844 `\let\varotimes\textotimes`
 20845 `\let\varoslash\textoslash`
 20846 `\let\varodot\textodot`
 20847 `\let\ocirc\textcircledcirc`
 20848 `\let\varocircle\textcircledcirc`
 20849 `\let\varoast\textcircledast`
 20850 `\let\oasterisk\textcircledast`
 20851 `\let\rightvdash\textvdash`
 20852 `\let\leftvdash\textdashv`
 20853 `\let\leftvdash\textndashv`
 20854 `\let\downvdash\texttop`
 20855 `\let\upvdash\textbot`
 20856 `\let\leftvdash\textnupvdash`
 20857 `\let\models\textvDash`
 20858 `\let\models\textvDash`
 20859 `\let\models\textVdash`
 20860 `\let\models\textVDash`
 20861 `\let\models\textnvdash`
 20862 `\let\models\textnvDash`
 20863 `\let\models\textnvDash`
 20864 `\let\models\textnVdash`
 20865 `\let\models\textnVDash`
 20866 `\let\lessclosed\textlhd`
 20867 `\let\lessclosed\textrhd`
 20868 `\let\lessclosed\textunlhd`
 20869 `\let\lessclosed\textunlhd`
 20870 `\let\lessclosed\textunrhd`
 20871 `\let\lessclosed\textunrhd`
 20872 `\let\Bowtie\textbowtie`
 20873 `\let\varcurlyvee\textcurlyvee`
 20874 `\let\varcurlywedge\textcurlywedge`
 20875 `\let\doublecap\textCap`
 20876 `\let\doublecup\textCup`
 20877 `\let\varsubsetneq\textsubsetneq`
 20878 `\let\varsubsetneq\textsubsetneq`
 20879 `\let\lessclosed\texttriangleleft`
 20880 `\let\lessclosed\texttriangleleft`
 20881 `\let\Clocklogo\textclock`
 20882 `\let\ClockLogo\textclock`
 20883 `\let\baro\textstmaryrdbaro`
 20884 `\let\varparallel\textbbslash`
 20885 `\let\CleaningA\textCircledA`
 20886 `\let\Kutline\textCuttingLine`
 20887 `\let\CutLine\textCuttingLine`
 20888 `\let\Cutline\textCuttingLine`
 20889 `\let\MoveUp\textUParrow`
 20890 `\let\APLup\textbigtriangleup`
 20891 `\let\Bleech\textbigtriangleup`
 20892 `\let\MoveDown\textDOWNarrow`
 20893 `\let\APLdown\textbigtriangledown`
 20894 `\let\Diamond\textdiamond`
 20895 `\let\varbigcirc\textbigcircle`

20896 \let\Telefon\textPhone
 20897 \let\Box\textboxempty
 20898 \let\CheckedBox\textCheckedbox
 20899 \let\XBox\textCrossedbox
 20900 \let\CrossedBox\textCrossedbox
 20901 \let\rightpointleft\textHandLeft
 20902 \let\leftpointright\textHandRight
 20903 \let\PointingHand\textHandRight
 20904 \let\Pointinghand\textHandRight
 20905 \let\Radiation\textRadioactivity
 20906 \let\Yinyang\textYinYang
 20907 \let\YingYang\textYinYang
 20908 \let\Yingyang\textYinYang
 20909 \let\Frowny\textfrownie
 20910 \let\Smiley\textsmiley
 20911 \let\Sun\textsun
 20912 \let\Mercury\textmercury
 20913 \let\textfemale\textPUfemale
 20914 \let\female\textPUfemale
 20915 \let\venus\textPUfemale
 20916 \let\Venus\textPUfemale
 20917 \let\Female\textPUfemale
 20918 \let\Earth\textearth
 20919 \let\mars\textmale
 20920 \let\Mars\textmale
 20921 \let\Male\textmale
 20922 \let\Jupiter\textjupiter
 20923 \let\Saturn\textsaturn
 20924 \let\Uranus\texturanus
 20925 \let\Neptune\textneptune
 20926 \let\Pluto\textpluto
 20927 \let\Aries\textaries
 20928 \let\Taurus\texttaurus
 20929 \let\Gemini\textgemini
 20930 \let\Cancer\textcancer
 20931 \let\Leo\textleo
 20932 \let\Virgo\textvirgo
 20933 \let\Libra\textlibra
 20934 \let\Scorpio\textscorpio
 20935 \let\Sagittarius\textsagittarius
 20936 \let\Capricorn\textcapricornus
 20937 \let\Aquarius\textaquarius
 20938 \let\Pisces\textpisces
 20939 \let\spadesuit\textspadesuitblack
 20940 \let\Heart\textheartsuitwhite
 20941 \let\heartsuit\textheartsuitwhite
 20942 \let\diamondsuit\textdiamondsuitwhite
 20943 \let\clubsuit\textclubsuitblack
 20944 \let\eighthnote\textmusicalnote
 20945 \let\Recycling\textrecycle
 20946 \let\VarFlag\textFlag
 20947 \let\textxswup\textdsmilitary
 20948 \let\textuncrfemale\textPUuncrfemale
 20949 \let\Football\textSoccerBall

```

20950 \let\CutLeft\textScissorRightBrokenBottom
20951 \let\Cutright\textScissorRightBrokenBottom
20952 \let\RightScissors\textScissorRight
20953 \let\Leftscissors\textScissorRight
20954 \let\Letter\textEnvelope
20955 \let\Writinghand\textWritingHand
20956 \let\checkmark\textCheckmark
20957 \let\davidstar\textDavidStar
20958 \let\llbracket\textlbrackdbl
20959 \let\rrbracket\textrrackdbl
20960 \let\RightTorque\textlcurvearrowdown
20961 \let\Righttorque\textlcurvearrowdown
20962 \let\LeftTorque\textrcurvearrowdown
20963 \let\Lefttorque\textrcurvearrowdown
20964 \let\textvarobar\textobar
20965 \let\circledbslash\textobslash
20966 \let\obackslash\textobslash
20967 \let\varobslash\textobslash
20968 \let\odplus\textobot
20969 \let\varolessthan\textolessthan
20970 \let\varogreaterthan\textogreaterthan
20971 \let\divdot\textminusdot
20972 \let\doublesqcap\textsquaddoublecap
20973 \let\doublesqcup\textsquaddoublecup
20974 \let\merge\textdoublevee
20975 \let\leftVdash\textdashV
20976 \let\nleftVdash\textndashV
20977 \let\leftmodels\textDashv
20978 \let\nleftmodels\textnDashv
20979 \let\leftModels\textDashV
20980 \let\nleftModels\textnDashV
20981 \let\varparallel\textsslash
20982 \let\texttheng\textPUheng
20983 \let\textlhookfour\textPUlhookfour
20984 \let\textscf\textPUscf
20985 \let\texttaolig\textPUaolig
20986 \let\Ganz\textfullnote
20987 \let\Halb\texthalfnote
20988 \let\Womanface\textWomanFace
20989 \let\Faxmachine\textFax
20990 \let\CEsign\textCESign
20991 }% \psdaliasnames
20992 </psdextra>

```

48 End of file hyccheck.tex

```

20993 <*check>
20994 \typeout{}
20995 \begin{document}
20996 \end{document}
20997 </check>

```

49 Index

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

Symbols				
\!	195, 220, 1766	15449, 15458, 15474, 15483, 15484, 15499, 15513, 15519, 15539, 15541, 15655, 15657, 15675, 15677, 15711, 15713, 15723, 15725, 15785, 15787, 15908, 15910, 15916, 15918, 15921, 15924, 16403, 16423, 16573, 16593, 17135, 17137, 17159, 17161, 17199, 17201, 17267, 17269, 19509, 19514, 19519, 19524, 19529, 19534, 19539, 19544, 19549, 19554, 19559, 19564, 19569, 19574, 19579, 19584, 19589, 19594, 19599, 19604, 19609, 19614, 19619, 19624	16863, 16887, 16889, 17107, 17109	\> 197, 222
\"	202, 227, 3061, 14384, 14700, 14712, 14724, 14850, 14938, 14952, 14960, 14975, 14987, 15004, 15018, 15029, 15030, 15044, 15056, 15063, 15116, 15162, 15191, 15222, 15397, 15411, 15419, 15433, 15447, 15464, 15478, 15489, 15490, 15505, 15517, 15525, 15783, 16399, 16413, 16569, 16583, 16827, 16829, 16844, 16847, 16849, 16851, 16853, 16855, 16865, 16867, 16869, 16871, 16878, 16881, 16883, 16885, 16891, 16893, 16899, 16901, 16907, 16909, 17119, 17121, 17271, 17273, 17287, 17289, 17309	\(. . . 190, 215, 326, 760, 763, 765, 1768, 14450, 14770	\? 331	
\#	540, 1851, 1852, 4769, 4781, 4783, 4799, 4831, 4891, 8702, 8704, 9446, 9455, 9490, 10333, 11981, 11992, 12028, 12266, 12275, 12315, 14304	\) . . . 191, 216, 327, 732, 738, 741, 1769, 14451, 14772	\@ 3052	
\\$	184, 209, 325, 541, 4771, 4890	* 329	\@@@ 2210	
\%	542, 1766, 1826, 1827, 4768, 4778, 4780, 4832, 8704	\+ 200, 225, 330	\@@BOOKMARK 14365, 14368, <u>14426</u> , 14491, 14498	
\&	185, 210, 543, 4772, 4784, 4786, 12038	\- 201, 226	\@@ListBox 12670, 12701, 13272, 13306, 13628, <u>13669</u>	
\'	203, 228, 3001, 3015, 3056, 3058, 3059, 3060, 3061, 3066, 3067, 3069, 3074, 3080, 3084, 3085, 3088, 3131, 3132, 3137, 3138, 3139, 3140, 3141, 3142, 3143, 3144, 3146, 3149, 3156, 3157, 3158, 3159, 3162, 3168, 3181, 14382, 14697, 14709, 14721, 14932, 14948, 14956, 14969, 14983, 14989, 14998, 15014, 15023, 15024, 15038, 15052, 15058, 15082, 15084, 15085, 15086, 15089, 15091, 15092, 15093, 15101, 15159, 15188, 15219, 15391, 15407, 15415, 15427, 15443,	\. 198, 223, 323, 3512, 3925, 14703, 14715, 14727, 14791, 15087, 15094, 15114, 15165, 15194, 15228, 15305, 15306, 15547, 15549, 15577, 15579, 15597, 15599, 15636, 15667, 15669, 15789, 15791, 15992, 15994, 16000, 16002, 17051, 17053, 17063, 17065, 17103, 17105, 17111, 17113, 17163, 17165, 17171, 17173, 17203, 17205, 17207, 17209, 17219, 17221, 17227, 17229, 17275, 17277, 17283, 17285, 17291, 17293, 17315	\@Menu 12911, 12919	
		\/ . . . 194, 219, 673, 674, 675, 743, 1535, 8262	\@@PasswordField 12860, 12866	
		\: 189, 214	\@@Radio 12655, 12676, 12909, 12933, 13257, 13278, 13613, <u>13634</u>	
		\; 199, 224	\@@TextField . . . 12862, 12877	
		\< 196, 221	\@@commahyperpage 8396, 8397	
		\= . . . 167, 173, 180, 183, 14705, 14717, 14729, 15107, 15171, 15200, 15227, 15527, 15529, 15569, 15571, 15621, 15623, 15624, 15695, 15697, 15755, 15757, 16004, 16006, 16861,	\@@chyper@creadexternallink 5194, 5196	
			\@hyperref 4994, 4995	
			\@windex 8297, 8298	
			\@writetorep . . . 14226, 14232	
			\@Alph 7009, 7011	
			\@BIBLABEL . . 7675, 7681, 7687	
			\@BOOKMARK . . 14365, 14367	
			\@CheckBox 6181, 10398, 12790, 12826, 12964, 13394, <u>13771</u>	
			\@ChoiceMenu . . . 6178, 10401, 12608, 12829, 12899, 13209, <u>13565</u>	
			\@Form . . . 5854, 10388, 12360, 12816, 12843, 13098, <u>13479</u>	
			\@Gauge . . 6187, 10392, 12545, 12820, 12848, 12985, <u>13476</u>	
			\@Localurlfalse 10341	
			\@Localurltrue 10338	
			\@M 2253, 4877	
			\@MM 7431	
			\@PushButton 6184, 10404, 12712, 12832, 12945, 13316, <u>13685</u>	
			\@Refstar 4742, 8505	
			\@Reset . . . 6193, 10407, 12763, 12835, 12961, 13369, <u>13742</u>	
			\@Submit . . 6190, 10410, 12743, 12838, 12958, 13346, <u>13719</u>	
			\@TextField 6175, 10395, 12576, 12823, 12851, 13179, <u>13528</u>	
			\@addtoreset . . 8194, 8195, 8210	

<code>\@alph</code>	7005, 7007	<code>\@currentHpage</code>	7856, 7861, 7868, 7919, 7930, 7937	<code>\@filecolor</code> . . .	3481, 3493, 9103, 9629, 9646, 10041, 10552
<code>\@anchorcolor</code>	3491, 9415, 9510, 10460, 11949, 12236	<code>\@currentHref</code>	2212, 5087, 5387, 6298, 7035, 7037, 7047, 7049, 7056, 7069, 7071, 7081, 7109, 7120, 7122, 7140, 7161, 7165, 7170, 7193, 7234, 7241, 7243, 7257, 7259, 7324, 7347, 7357, 7359, 7360, 7416, 7445, 7545, 7571, 7575, 7603, 7605, 7775, 7965, 7992, 8005, 8030, 8170, 14603, 14616, 14627, 14654, 14671	<code>\@firstoffive</code> . . .	4732, 8497, 8595
<code>\@arabic</code>	6910, 6926, 7004			<code>\@firstofone</code>	573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 627, 660, 1271, 2678, 4222, 4621, 5015, 5382, 5399, 5820, 5826, 6076, 6832, 7002, 7014, 7538, 7621, 7923, 8251, 9308, 13052, 13858, 13875, 13893, 14325, 14337
<code>\@auxout</code>	2204, 5042, 5358, 7695, 7710, 7737, 7747, 7766, 7772, 7796	<code>\@currentcounter</code> . . .	6859, 6877, 7434	<code>\@firstoftwo</code>	341, 349, 619, 643, 899, 915, 2086, 2340, 2347, 5274, 6377, 7310, 7333, 14661
<code>\@backslashchar</code>	322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 334, 1069, 1728, 1732, 1735, 1873, 1890, 1896, 1900, 1908, 4084, 4794, 8717, 8727	<code>\@currentlabel</code>	7435, 7768, 7775, 8175, 8182	<code>\@fnsymbol</code>	7003
<code>\@baseurl</code>	3498, 3500, 5252, 9154, 9157, 9400, 9402, 9687, 9689, 10210, 10220, 10306, 10308, 10843, 10845, 11227, 11241, 11934, 11936, 12134, 12148, 12222, 12224	<code>\@currentlabelname</code>	2202, 7325, 7348, 7417, 7446, 7550	<code>\@footnotemark</code>	7287, 7353, 7371, 7454, 7466, 7468, 7480, 7481, 7512, 7514
<code>\@bibitem</code>	7702, 7744	<code>\@currentlabstr</code>	2201, 2209	<code>\@footnotetext</code>	7286, 7293, 7330, 7370, 7467, 7469, 7483, 7484, 7505
<code>\@biblabel</code>	7675, 7733	<code>\@currname</code>	2323	<code>\@for</code>	3523, 5464, 12617, 12679, 12917, 12924, 12934, 13218, 13281, 13574, 13640
<code>\@bookmarkopenstatus</code>	4619, 4636, 14286	<code>\@curropt</code>	12617, 12618, 12679, 12680, 12917, 12924, 12925, 12927, 12934, 12935, 12937, 13218, 13219, 13281, 13282, 13574, 13575, 13640, 13641	<code>\@fourthoffive</code>	5030, 8585, 8592
<code>\@bookmarksopenlevel</code>	3452, 3454, 4622	<code>\@dblarg</code>	7540, 7623	<code>\@gobble</code>	49, 56, 117, 259, 264, 566, 567, 568, 569, 606, 607, 608, 609, 629, 646, 647, 648, 657, 659, 922, 1208, 1269, 1288, 1301, 1305, 1368, 1431, 1432, 1439, 1444, 1458, 1463, 2060, 2224, 2519, 2531, 2684, 3898, 4215, 4220, 4242, 4251, 4257, 4324, 4636, 4759, 5378, 5380, 5805, 6066, 6336, 6337, 6343, 6347, 6348, 6350, 6351, 6363, 6365, 6381, 6382, 6385, 6386, 6388, 6441, 6660, 6806, 6826, 6830, 7527, 7618, 8650, 9310, 10729, 10732, 12327, 13008, 13024, 13029, 13099, 13480, 14273, 14274, 14275, 14276, 14323, 14335
<code>\@bsphack</code>	2197, 5035, 7770	<code>\@documentclasshook</code>	4228	<code>\@gobble@om</code>	7973, 7975
<code>\@capstartfalse</code>	7565	<code>\@ehc</code>	2575, 2683, 2709, 2725, 2760, 2799, 2806, 2817, 2823, 2861, 4322, 4939, 5216, 5568, 5692, 5886, 5919, 6113, 6166, 12721, 12774, 13326, 13380, 13695, 13753	<code>\@gobble@som</code>	7974
<code>\@caption</code>	7530, 7542, 7586, 7623, 7625	<code>\@ehd</code>	63, 274, 280, 304, 7526, 7617	<code>\@gobblefour</code>	572, 683, 965, 966, 967, 3706
<code>\@capttype</code>	2206, 7525, 7529, 7533, 7540, 7547, 7602, 7616, 7620, 7623	<code>\@elt</code>	6898, 6900, 6901, 6906	<code>\@gobbleopt</code>	6388, 6390
<code>\@car</code>	1351, 1367, 1385, 1405, 3431, 5474	<code>\@endForm</code>	5855, 10391, 12544, 12819, 12847, 13152, 13506	<code>\@gobblethre</code>	7897
<code>\@chapter</code>	14622, 14623	<code>\@eqnocr</code>	7181		
<code>\@cite</code>	7831, 7837	<code>\@eqnstarfalse</code>	7155, 7184		
<code>\@cite@opt</code>	7832, 7838, 7842, 7852	<code>\@eqnstartrue</code>	7181		
<code>\@citebordercolor</code>	3546, 4147	<code>\@esphack</code>	2218, 5046, 7780, 8309		
<code>\@citecolor</code>	3492	<code>\@extra@b@citeb</code>	7660, 7663, 7680, 7685, 7705, 7725		
<code>\@citedata@opt</code>	7833, 7839, 7841	<code>\@extra@binfo</code>	7659, 7662, 7666		
<code>\@citedatax</code>	7848, 7853	<code>\@fifthoffive</code>	5029, 8457, 8590		
<code>\@citedatax@opt</code>	7845, 7851	<code>\@filebordercolor</code>	3547, 4145, 9082, 9084, 10023, 10025, 10546, 10548, 11612		
<code>\@citeseppen</code>	7830, 7836				
<code>\@commahyperpage</code>	8391, 8396				
<code>\@cons</code>	8191				
<code>\@ctrerr</code>	6977, 6986				
<code>\@currDisplay</code>	5942, 12620, 12683, 12928, 12942, 13221, 13285, 13577, 13644				
<code>\@currValue</code>	5944, 5946, 5948, 12681, 12692, 12928, 12939, 13283, 13293, 13642, 13659				
<code>\@currentHlabel</code>	7056				

<code>\@gobbletwo</code> 570, 650, 676, 684, 685, 964, 1386, 1463, 1467, 2407, 3704, 3705, 4261, 5398, 5400, 5753, 6339, 6353, 6367, 6376, 6384, 6388, 8574, 13009, 14613	7656, 7658, 7669, 7876, 7892, 8014, 8027, 8042, 8165, 8192, 8199, 8208, 8209, 8219, 8223, 8224, 8231, 8325, 8516, 8562, 8563, 8607, 8608, 8610, 8611, 8652, 8758, 8789, 8820, 9019, 9029, 10483, 10586, 10925, 10926, 10972, 11015, 11094, 11279, 12997, 13099, 13155, 13480, 13856, 13867, 14282, 14594, 14621, 14631, 14641	<code>\@mpfn</code> 7290, 7489, 7502 <code>\@mpfootnotetext</code> . . 7293, 7306, 7307, 7372 <code>\@mycount</code> 14430, 14440 <code>\@namedef</code> . . . 2163, 2165, 2167, 2169, 2171, 2173, 2175, 2177, 2179, 2181, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2343, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 3297, 3310, 5574, 5575, 5576, 5577, 5897, 5898, 7180, 7183, 7760, 7761, 7762, 7763 <code>\@namerefstar</code> 4738, 8502 <code>\@nameuse</code> . . 2206, 2634, 5580, 5889 <code>\@ne</code> 2594, 2748, 4533, 4607, 4909, 6515, 6516, 6523, 7860, 7862, 7871, 7874, 7875, 7888, 8780, 9951, 9952, 9957, 10822, 11773, 12551, 13161, 13515 <code>\@newl@bel</code> 5341, 7662 <code>\@nil</code> 285, 312, 1263, 1266, 1274, 1351, 1369, 1387, 1403, 1405, 1408, 1411, 1414, 1944, 1946, 1962, 1964, 3431, 4816, 4820, 4825, 5269, 5277, 5283, 5285, 5474, 6057, 6060, 6079, 6416, 6419, 6426, 6428, 6429, 6542, 6590, 6591, 6593, 6616, 6633, 6687, 6689, 7104, 7113, 7115, 7127, 8375, 8377, 8384, 8407, 8410, 8420, 8436, 8439, 8609, 8640, 8713, 8719, 8723, 8729, 10694, 10696, 13865, 13878, 13884, 14314, 14317, 14320, 14329, 14332, 14341 <code>\@nocnterr</code> 8209, 8224 <code>\@nocounterr</code> 8208, 8223 <code>\@number</code> 7002, 7923 <code>\@nx</code> . . . 8212, 8227, 8230, 8232 <code>\@onelevel@sanitize</code> . 2400, 2404, 2606, 3430, 4299, 4329, 4343, 4850, 5264, 5267, 5280, 5294, 5564, 5798, 5882, 6643, 6645, 6899, 6918, 7043, 7998, 8364,
<code>\@harvarditem</code> 7785, 7787 <code>\@hyper@@anchor</code> . . 5302, 5303 <code>\@hyper@itemfalse</code> . . 6839, 6847, 6874 <code>\@hyper@itemtrue</code> 6840 <code>\@hyper@launch</code> . . . 5222, 5231, 9107, 10047, 10621, 11630 <code>\@hyper@linkfile</code> . . . 5203, 5206, 5210, 5242 <code>\@hyper@readexternallink</code> 5197, 5201 <code>\@hyperdef</code> 5002, 5003 <code>\@hyperpage</code> 8388, 8389 <code>\@hyperref</code> 4982, 4994 <code>\@ifclassloaded</code> 6513, 7857, 9313 <code>\@ifnextchar</code> . . 12, 88, 103, 123, 677, 4884, 4982, 5002, 5150, 5854, 6175, 6178, 6181, 6184, 6187, 6190, 6193, 6388, 6397, 6406, 7470, 7488, 7785, 7843, 11252, 11541, 11555, 14365, 14368 <code>\@ifpackagelater</code> 6854 <code>\@ifpackageloaded</code> 809, 950, 2192, 4205, 4415, 7064, 7097, 7134, 7267, 7367, 7383, 7423, 7599, 7755, 7828, 8257, 8258, 8259, 8515, 12214, 13157 <code>\@ifpackagewith</code> 4203 <code>\@ifstar</code> 66, 8554 <code>\@ifundefined</code> 34, 270, 276, 317, 353, 494, 549, 628, 668, 744, 820, 821, 822, 876, 886, 899, 918, 921, 1320, 1415, 1416, 1540, 2143, 2193, 2320, 2339, 2340, 2383, 2496, 2627, 2648, 2649, 3306, 3352, 3360, 3367, 3389, 3429, 4208, 4237, 4239, 4412, 4413, 4934, 5347, 5378, 5390, 5563, 5881, 6434, 6759, 6896, 6916, 6923, 6946, 6961, 7098, 7101, 7102, 7133, 7158, 7186, 7249, 7265, 7274, 7276, 7283, 7523, 7531, 7549,	<code>\@indexfile</code> . . . 8301, 8316, 8331, 8335, 8345 <code>\@inmathwarn</code> 534, 535 <code>\@inpenc@undefined@</code> . . . 1935 <code>\@kernel@refstepcounter</code> . 6843 <code>\@latex@</code> 6428, 6429 <code>\@latex@error</code> 7526, 7617 <code>\@latex@warning</code> . . . 5022, 8432, 8452, 8469, 8601 <code>\@lbibitem</code> 7676, 7732 <code>\@linkbordercolor</code> . . 3548, 4142, 9037, 10450 <code>\@linkcolor</code> 3490, 11280 <code>\@linkdim</code> 473, 9464, 9465, 9473, 9474, 9475, 9544, 9545, 9557, 9558, 9559, 9581, 9582, 9595, 9596, 9597, 9621, 9622, 9635, 9636, 9637, 12002, 12003, 12011, 12012, 12013, 12284, 12285, 12298, 12299, 12300 <code>\@listctr</code> 7711, 7748 <code>\@m</code> 9338, 10274, 10418, 10776, 11732 <code>\@mainaux</code> . . 5406, 6789, 6797, 13045, 13048, 13076, 13091 <code>\@makecaption</code> 7566, 7568, 7636 <code>\@makefnmark</code> 7362, 7517 <code>\@makefnstext</code> 7436 <code>\@makeother</code> 166, 167, 179, 180, 182, 183, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 4775, 4784, 8689, 14454, 14457, 14481, 14484 <code>\@menubordercolor</code> . 3549, 4144, 9376, 9378, 10121, 10123, 10659, 10661, 11534 <code>\@menucolor</code> 3495, 9391, 10132, 10665 <code>\@mkboth</code> 650, 14613	

8483, 9809, 14311
 \@outlinefile 14284, 14373, 14468,
 14470, 14547, 14549
 \@pagerefstar . 4734, 8499, 8520,
 8527, 8536, 8545
 \@pagesetref 8448
 \@parboxrestore 7433, 7558, 7631
 \@parcount 14432, 14440
 \@part 14640, 14644
 \@partaux 5404
 \@pdfauthor . 3722, 4150, 9214,
 9667, 10155, 10896, 11151,
 12063
 \@pdfborder
 . . 3381, 3567, 3568, 3569,
 3576, 3580, 3603, 3605,
 4702, 8970, 9827, 10448,
 11029, 11112, 11532, 11545,
 11560, 11581, 11609, 11640,
 11669, 11779, 11875, 12043
 \@pdfborderstyle . . 3382, 3584,
 3585, 3586, 3595, 3599,
 3607, 3609, 4703, 6028,
 8971, 9828, 10449, 11030,
 11113, 11533, 11546, 11561,
 11582, 11610, 11641, 11670,
 11780, 11876, 12044
 \@pdfcreationdate
 . . 3744, 4153, 9218, 9220,
 9659, 9661, 10147, 10149,
 11126, 11128, 12055, 12057
 \@pdfcreator . 3734, 3739, 4152,
 9217, 9658, 10146, 10899,
 11150, 12054
 \@pdfdirection 9177, 9725,
 10190, 10855, 11207, 12114
 \@pdfduplex 9183, 9731, 10196,
 10861, 11213, 12120
 \@pdfhighlight 3553, 3561, 3563,
 4148, 11028, 11111, 11531,
 11580, 11608, 11639
 \@pdfkeywords 3763, 4156, 9230,
 9656, 10160, 10904, 11152,
 12052
 \@pdflang 4023, 4025, 4026, 4028,
 4030, 4032, 4038, 4068,
 4069, 4071, 4092, 4096,
 4098, 4115, 4124, 4131,
 4163, 9203, 9205, 9753,
 9755, 10230, 10232, 11237,
 11239, 12144, 12146
 \@pdfm@dest . . 9771, 9830, 9834
 \@pdfm@mark 6777, 9770, 9822,
 9842, 9856, 9858, 9872,
 9874, 9879, 9880, 9910,
 9934, 9936, 9941, 9959,
 9982, 10016, 10052, 10084,
 10114, 10142, 10211, 10238,
 13483, 13484, 13485, 13504,
 13522, 13525, 13555, 13650,
 13677, 13708, 13733, 13761,
 13790, 13801, 13834, 13842,
 14518
 \@pdfmoddate
 . . 3750, 4154, 9222, 9224,
 9663, 9665, 10151, 10153,
 11130, 11134, 12059, 12061
 \@pdfnonfullscreenpagemode . .
 9176, 9724, 10189, 10854,
 11206, 12113
 \@pdfnumcopies 9192, 9194, 9740,
 9742, 10205, 10207, 10870,
 10872, 11222, 11224, 12129,
 12131
 \@pdfpageduration . 3508, 9275,
 9279, 9284, 10255, 10257,
 10260, 10785, 10787, 10790,
 11068, 11070, 11078
 \@pdfpagelayout 9202,
 9752, 10229, 10875, 10877,
 11236, 12143
 \@pdfpagemode 4401, 4402, 4632,
 4633, 4642, 4643, 9156,
 9708, 10224, 10842, 11190,
 12097
 \@pdfpagescrop 3968, 4158, 9141,
 9145, 9691, 9692, 9713,
 9715, 10236, 10238, 10831,
 10833, 11195, 11197, 12102,
 12104
 \@pdfpagetransition . 3504, 9251,
 9255, 9260, 10244, 10246,
 10249, 10674, 10676, 10678,
 11051, 11053, 11061
 \@pdfpicktraybypdfsize
 . . 9184, 9186, 9732, 9734,
 10197, 10199, 10862, 10864,
 11214, 11216, 12121, 12123
 \@pdfprintarea 9180, 9728,
 10193, 10858, 11210, 12117
 \@pdfprintclip 9181, 9729, 10194,
 10859, 11211, 12118
 \@pdfprintpagerange
 . . 3674, 4162, 9188, 9190,
 9736, 9738, 10201, 10203,
 10866, 10868, 11218, 11220,
 12125, 12127
 \@pdfprintscaling . . 9182, 9730,
 10195, 10860, 11212, 12119
 \@pdfproducer
 . . 3728, 4151, 9226, 9228,
 9668, 9670, 10156, 10158,
 10799, 10800, 10804, 10807,
 10808, 10900, 10902, 11137,
 11141, 11666, 11667, 11772,
 11774, 11776, 11872, 11873,
 12064, 12066
 \@pdfremotestartview
 . . 3929, 3931, 3932, 3955,
 3959, 3961, 3962, 3964,
 4160, 9095, 10032, 11620
 \@pdfstartpage
 . . 3912, 3914, 4161, 9162,
 9166, 9695, 9700, 10213,
 10217, 10835, 10839, 11177,
 11182, 12084, 12089
 \@pdfstartview
 . . 3919, 3921, 4159, 9164,
 9166, 9697, 9701, 10215,
 10217, 10837, 11179, 11183,
 12086, 12090
 \@pdfsubject . 3757, 4155, 9216,
 9672, 10145, 10898, 11149,
 12068
 \@pdftempa . . . 5208, 5209, 5212
 \@pdftempwordfile . . 5199, 5209
 \@pdftempwordrun . 5200, 5212
 \@pdftitle 3716, 4149, 9215, 9657,
 10144, 10897, 11148, 12053
 \@pdftrapped 3768, 3771, 3774,
 3783, 3792, 4157, 9231,
 9233, 10161, 10163, 11153
 \@pdfview . . . 3900, 8952, 8960,
 9777, 9781, 9785, 9789,
 9793, 9797, 9798, 9801,
 9802, 9805, 9809, 9811,
 9826, 10447, 10457, 10469,
 10966, 10986, 11671, 11781,
 11877, 12156
 \@pdfviewarea 9178, 9726, 10191,
 10856, 11208, 12115
 \@pdfviewclip 9179, 9727, 10192,
 10857, 11209, 12116
 \@pdfviewparams 3902,
 3904, 10966, 10986, 11672,
 11782, 11878, 12157
 \@percentchar 4779, 4780, 4832,
 14288
 \@processme
 . . 5930, 5931, 9257, 9263,

9281, 9287, 11255, 11256,
 11378, 11379, 11382, 11383
 \@protected@testopt 680
 \@protected@testopt@xargs 681
 \@refstar 4730, 8496
 \@runbordercolor . . . 3550, 4146,
 9116, 9118, 10059, 10061,
 10640, 10642, 11643
 \@runcolor . . 3496, 9136, 10075,
 10646
 \@safe@activesfalse 633
 \@safe@activetrue 632
 \@savsf 8955, 8963
 \@schapter 14610, 14611
 \@secondoffive 4736, 8458, 8459,
 8500
 \@secondoftwo
 . . 338, 616, 619, 626, 899,
 913, 1337, 2088, 2339, 2340,
 2349, 2351, 5168, 5272,
 7312, 7335, 13014, 13017,
 13020, 13023, 13027, 13028,
 13031, 14663
 \@sect 14658, 14659
 \@seqncr 7181
 \@serial@counter . 14380, 14428,
 14430, 14431
 \@setminipage 7560, 7633
 \@setref 8427, 8428, 8465
 \@sharp 7104, 7110
 \@skiphyperreffalse . 6848, 7691,
 7703
 \@skiphyperreftrue . 7677, 7703
 \@spaces 262
 \@spart 14650, 14651
 \@ssect 14596, 14597
 \@tempa 7385, 7389, 7392, 7404
 \@tempb 7205, 7209
 \@tempboxa . 9462, 9464, 9473,
 9542, 9544, 9547, 9548,
 9557, 9563, 9564, 9579,
 9581, 9584, 9585, 9595,
 9601, 9602, 9619, 9621,
 9624, 9625, 9635, 9641,
 9642, 12000, 12002, 12011,
 12282, 12284, 12298
 \@tempcnta 1914, 14238, 14239,
 14240, 14241, 14242, 14244,
 14247, 14248, 14249, 14255,
 14257, 14259, 14349, 14350,
 14351, 14354, 14355, 14356,
 14357, 14358, 14566, 14567,
 14568
 \@tempdima . 2256, 6230, 6231,
 6232, 6233, 6234, 6235,
 6236, 6237, 12616, 12621,
 12623, 12659, 12660, 12661,
 12665, 12666, 12667, 12668,
 13217, 13222, 13224, 13261,
 13262, 13263, 13267, 13268,
 13269, 13270, 13573, 13578,
 13580, 13617, 13618, 13619,
 13623, 13624, 13625, 13626
 \@tempdimb 12620, 12621,
 13221, 13222, 13577, 13578
 \@tempswafalse 7847
 \@tempswatrue 7817, 7820, 7823,
 7844
 \@temptokena 3275, 3280, 3283,
 3285
 \@tfor 7206
 \@the@H@page 7889, 7926, 7928,
 7929, 7930
 \@thefnmark . 7291, 7302, 7396,
 7435, 7452, 7459, 7490,
 7503, 7510
 \@thirdoffive 4740, 8503
 \@thm 7270, 7271
 \@typeset@protect 14579
 \@undefined . 371, 374, 460, 462,
 686, 2654, 2714, 3279, 4421,
 4510, 6378, 6605, 6623,
 6668, 7525, 7590, 7595,
 7601, 7616, 8491, 10810,
 10824, 15110, 15127, 16389,
 16394, 16915
 \@unexpandable@protect . 4987,
 8362, 8481
 \@unprocessedoptions . . . 4580
 \@urlbordercolor . . . 3551, 4143,
 9047, 9049, 10091, 10093,
 10572, 10574, 11583
 \@urlcolor 3494, 9066, 9469, 9482,
 9589, 9606, 10105, 10578,
 12007, 12020, 12293, 12306
 \@urltype . . 9435, 9440, 10311,
 10337, 10477, 10491, 11969,
 11974, 12255, 12260
 \@vwid@setup 7062
 \@vwid@wrap 7061
 \@whilenum 981
 \@wrindex 8265, 8266, 8297
 \@writefile 7773
 \@x@sf . . 7355, 7364, 7516, 7518
 \@xfootnote 7488
 \@xfootnotemark . . . 7299, 7507
 \@xfootnotenext . . . 7288, 7500
 \@exp . . . 8181, 8211, 8212, 8226,
 8227, 8229, 8230
 \@xxxii 5100
 \[192, 217, 324, 3573, 3591, 4951
 \{ . 332, 537, 1768, 10957, 14306
 \} . 333, 538, 1769, 10957, 14307
 _ 335, 665, 3096, 3099,
 3925, 14720, 14721, 14722,
 14723, 14724, 14725, 14726,
 14727, 14728, 14729, 14730,
 14731, 15187, 15188, 15189,
 15190, 15191, 15192, 15193,
 15194, 15195, 15196, 15198,
 15200, 15201, 15202, 15203,
 15204, 15205, 15206, 15207,
 15208, 15209, 15210, 15211,
 15212, 15213, 15214, 15215
 \] 193, 218
 \^ 186, 211,
 322, 1866, 1867, 3079, 4766,
 4767, 4776, 14698, 14710,
 14722, 14934, 14950, 14958,
 14971, 14985, 15000, 15016,
 15026, 15027, 15040, 15054,
 15103, 15160, 15189, 15220,
 15393, 15409, 15417, 15429,
 15445, 15460, 15476, 15486,
 15487, 15501, 15515, 15543,
 15545, 15589, 15591, 15605,
 15607, 15644, 15646, 15647,
 15727, 15729, 15775, 15777,
 15779, 15781, 17295, 17297
 _ . . . 187, 212, 545, 4770, 4788,
 4789, 5059, 5072, 5085
 \` 166, 172, 179,
 182, 3015, 3150, 3155, 3160,
 3161, 3164, 3167, 3170,
 3172, 3180, 14305, 14696,
 14708, 14720, 14930, 14946,
 14954, 14967, 14981, 14996,
 15012, 15020, 15021, 15036,
 15050, 15099, 15158, 15187,
 15218, 15389, 15405, 15413,
 15425, 15441, 15456, 15472,
 15480, 15481, 15497, 15511,
 15912, 15914, 16396, 16425,
 16566, 16595, 17263, 17265,
 17341, 17343, 19511, 19516,
 19521, 19526, 19531, 19536,
 19541, 19546, 19551, 19556,
 19561, 19566, 19571, 19576,
 19581, 19586, 19591, 19596,
 19601, 19606, 19611, 19616,
 19621, 19626

\l 188, 213,
328, 1674, 1767, 1808, 2961,
4186, 8261, 8688, 8698

\~ 544,
983, 1922, 3073, 3081, 3082,
3083, 4792, 14699, 14711,
14723, 14936, 14965, 14973,
15002, 15034, 15042, 15105,
15161, 15190, 15221, 15395,
15423, 15431, 15462, 15495,
15503, 15616, 15618, 15619,
15751, 15753, 17255, 17257,
17325, 17327, 17349, 17351,
19513, 19518, 19523, 19528,
19533, 19538, 19543, 19548,
19553, 19558, 19563, 19568,
19573, 19578, 19583, 19588,
19593, 19598, 19603, 19608,
19613, 19618, 19623, 19628

Numbers

\3 521, 1027, 1028, 1029,
1030, 1031, 1032, 1033,
1034, 1143, 1144, 1145,
1146, 1147, 1148, 1149,
1150, 2037, 2173, 2181,
2183, 14449, 14930, 14932,
14934, 14936, 14938, 14940,
14942, 14944, 14946, 14948,
14950, 14952, 14954, 14956,
14958, 14960, 14962, 14963,
14965, 14967, 14969, 14971,
14973, 14975, 14977, 14979,
14981, 14983, 14985, 14987,
14989, 14991, 14992, 14994,
14996, 14998, 15000, 15002,
15004, 15006, 15008, 15010,
15012, 15014, 15016, 15018,
15020, 15021, 15023, 15024,
15026, 15027, 15029, 15030,
15032, 15034, 15036, 15038,
15040, 15042, 15044, 15046,
15048, 15050, 15052, 15054,
15056, 15058, 15060, 15061,
15063, 15155, 15389, 15391,
15393, 15395, 15397, 15399,
15401, 15403, 15405, 15407,
15409, 15411, 15413, 15415,
15417, 15419, 15421, 15423,
15425, 15427, 15429, 15431,
15433, 15435, 15439, 15441,
15443, 15445, 15447, 15449,
15451, 15452, 15454, 15456,
15458, 15460, 15462, 15464,

15466, 15468, 15470, 15472,
15474, 15476, 15478, 15480,
15481, 15483, 15484, 15486,
15487, 15489, 15490, 15492,
15495, 15497, 15499, 15501,
15503, 15505, 15507, 15509,
15511, 15513, 15515, 15517,
15519, 15522, 15523, 15525,
15858, 15862, 15866, 15869,
15871, 15873, 15875, 15876,
15878, 15880, 15882, 15884,
15886, 15888, 15890, 15893,
15895, 15897, 15899, 15901,
15903, 15905, 15906, 15908,
15910, 15912, 15914, 15916,
15918, 15921, 15924, 16335,
16338, 16341, 16343, 16346,
16349, 16352, 16355, 16357,
16359, 16361, 16363, 16365,
16367, 16368, 16370, 16372,
16374, 16376, 16378, 16797,
16799, 16801, 16803, 16805,
16807, 16809, 16811, 16813,
16815, 16817, 16819, 16821,
16823, 16825, 16827, 16829,
16831, 16833, 16835, 16837,
16839, 16841, 16844, 16847,
16849, 16851, 16853, 16855,
16857, 16859, 16861, 16863,
16865, 16867, 16869, 16871,
16873, 16875, 16878, 16881,
16883, 16885, 16887, 16889,
16891, 16893, 16895, 16897,
16899, 16901, 16903, 16905,
16907, 16909, 16911, 16913,
16917, 16919, 16921, 16923,
16925, 16927, 16929, 16931,
16933, 16935, 16937, 16939,
16941, 16943, 16945, 16947,
16949, 16951, 16953, 16955,
16957, 16959, 16961, 16963,
16965, 16967, 16969, 16972,
16974, 16976, 16978, 17329,
17331, 17333, 17335, 17337,
17339, 17341, 17343, 17345,
17347, 17349, 17351, 17707,
17710, 17713, 17716, 17719,
17722, 17725, 17727, 17729,
17731, 17733, 17736, 17739,
17742, 17744, 17747, 17750,
17752, 17755, 17758, 17761,
17764, 17766, 17768, 17770,
17772, 17774, 17776, 17778,
17780, 17783, 17786, 17788,

17791, 17793, 17796, 17798,
17800, 17802, 17849, 17887,
17892, 18265, 18267, 18269,
18272, 18275, 18277, 18279,
18281, 18283, 18285, 18288,
18291, 18293, 18295, 18297,
18299, 18302, 18305, 18307,
18309, 18311, 18313, 18316,
18319, 18321, 18323, 18325,
18327, 18329, 18331, 18333,
18335, 18337, 18340, 18343,
18345, 18347, 18349, 18351,
18354, 18358, 18361, 18364,
18366, 18368, 18370, 18372,
18441, 18444, 18520, 18522,
18524, 18526, 18528, 18530,
18532, 18534, 18536, 18538,
18540, 18542, 18544, 18546,
18548, 18550, 18552, 18554,
18556, 18558, 18560, 18562,
18564, 18566, 18568, 18570,
18572, 18574, 18576, 18578,
18580, 18582, 18584, 18586,
18588, 18590, 18592, 18594,
18596, 18598, 18600, 18602,
18604, 18606, 18608, 18637,
18640, 18642, 18644, 18647,
18649, 18651, 18653, 18656,
18658, 18876, 18878, 18880,
18882, 18884, 19055, 19057,
19059, 19061, 19063, 19065,
19068, 19072, 19074, 19076,
19078, 19080, 19082, 19084,
19086, 19088, 19090, 19092,
19196, 19199, 19202, 19204,
19206, 19208, 19210, 19212,
19214, 19216, 19343, 19345,
19347, 19349, 19351, 19354,
19357, 19360, 19364, 19367,
19370, 19372, 19374, 19376,
19378, 19381, 19383, 19458,
19470, 19472, 19474, 19476,
19478, 19498, 19499, 19500,
19504, 19505, 19506, 19509,
19511, 19513, 19524, 19526,
19530, 19531, 19532, 19533,
19534, 19535, 19536, 19537,
19539, 19540, 19541, 19542,
19543, 19544, 19545, 19546,
19547, 19548, 19549, 19550,
19551, 19552, 19553, 19554,
19555, 19556, 19557, 19559,
19560, 19561, 19562, 19563,
19564, 19565, 19566, 19567,

19568, 19569, 19571, 19573,
19584, 19586, 19590, 19591,
19592, 19593, 19594, 19595,
19596, 19597, 19599, 19600,
19601, 19602, 19603, 19604,
19605, 19606, 19607, 19608,
19609, 19610, 19611, 19612,
19613, 19614, 19615, 19616,
19617, 19619, 19620, 19621,
19622, 19623, 19624, 19625,
19626, 19627, 19628, 19732,
19766, 19767, 19768, 19769,
19770, 19771, 19772, 19773,
19774, 19775

\9 . 524, 1047, 1050, 1081, 1965,
1980, 1989, 2017, 2037,
2073, 2077, 2091, 2095,
2103, 2108, 2111, 2145,
2149, 2152, 2155, 2165,
2167, 2169, 2171, 2173,
2175, 2177, 2179, 2181,
2183, 15155, 16981, 16983,
16985, 16987, 16989, 16991,
16994, 16997, 17000, 17003,
17005, 17007, 17009, 17011,
17013, 17015, 17017, 17019,
17021, 17024, 17026, 17029,
17031, 17034, 17036, 17040,
17044, 17047, 17049, 17051,
17053, 17055, 17057, 17059,
17061, 17063, 17065, 17067,
17069, 17071, 17073, 17075,
17077, 17079, 17081, 17084,
17087, 17090, 17093, 17095,
17097, 17099, 17101, 17103,
17105, 17107, 17109, 17111,
17113, 17115, 17117, 17119,
17121, 17123, 17125, 17127,
17129, 17131, 17133, 17135,
17137, 17139, 17141, 17143,
17145, 17147, 17149, 17151,
17153, 17155, 17157, 17159,
17161, 17163, 17165, 17167,
17169, 17171, 17173, 17175,
17177, 17179, 17181, 17183,
17185, 17188, 17191, 17194,
17197, 17199, 17201, 17203,
17205, 17207, 17209, 17211,
17213, 17215, 17217, 17219,
17221, 17223, 17225, 17227,
17229, 17231, 17233, 17235,
17237, 17239, 17241, 17243,
17245, 17247, 17249, 17251,
17253, 17255, 17257, 17259,

17261, 17263, 17265, 17267,
17269, 17271, 17273, 17275,
17277, 17279, 17281, 17283,
17285, 17287, 17289, 17291,
17293, 17295, 17297, 17299,
17301, 17303, 17305, 17307,
17309, 17311, 17313, 17315,
17317, 17319, 17321, 17323,
17325, 17327, 17329, 17331,
17333, 17335, 17337, 17339,
17341, 17343, 17345, 17347,
17349, 17351, 17353, 17355,
17357, 17359, 17362, 17364,
17366, 17368, 17370, 17372,
17374, 17377, 17381, 17383,
17385, 17388, 17390, 17392,
17394, 17396, 17398, 17400,
17402, 17404, 17406, 17408,
17410, 17412, 17414, 17416,
17418, 17420, 17422, 17424,
17426, 17428, 17430, 17432,
17434, 17436, 17438, 17440,
17442, 17444, 17446, 17448,
17450, 17452, 17454, 17456,
17458, 17460, 17462, 17464,
17466, 17468, 17470, 17472,
17474, 17476, 17478, 17480,
17482, 17484, 17486, 17488,
17490, 17492, 17494, 17496,
17498, 17500, 17502, 17504,
17506, 17508, 17510, 17512,
17514, 17516, 17518, 17529,
17532, 17534, 17536, 17538,
17540, 17542, 17544, 17546,
17549, 17551, 17553, 17555,
17557, 17559, 17561, 17564,
17566, 17568, 17572, 17574,
17576, 17578, 17580, 17582,
17584, 17586, 17590, 17592,
17594, 17596, 17598, 17600,
17602, 17604, 17606, 17608,
17610, 17612, 17614, 17616,
17618, 17620, 17622, 17624,
17626, 17628, 17632, 17636,
17638, 17640, 17642, 17645,
17648, 17650, 17652, 17654,
17656, 17658, 17661, 17663,
17665, 17667, 17669, 17671,
17673, 17675, 17677, 17679,
17681, 17683, 17687, 17690,
17692, 17695, 17698, 17701,
17704, 17707, 17710, 17713,
17716, 17719, 17722, 17725,
17727, 17729, 17731, 17733,

17736, 17739, 17742, 17744,
17747, 17750, 17752, 17755,
17758, 17761, 17764, 17766,
17768, 17770, 17772, 17774,
17776, 17778, 17780, 17783,
17786, 17788, 17791, 17793,
17796, 17798, 17800, 17802,
17804, 17806, 17808, 17810,
17812, 17814, 17817, 17819,
17821, 17823, 17825, 17827,
17830, 17833, 17835, 17837,
17839, 17841, 17843, 17845,
17847, 17849, 17851, 17853,
17855, 17857, 17859, 17861,
17864, 17866, 17868, 17870,
17875, 17877, 17880, 17882,
17885, 17887, 17890, 17892,
17895, 17897, 17899, 17902,
17904, 17906, 17909, 17912,
17914, 17916, 17919, 17922,
17924, 17926, 17929, 17931,
17934, 17936, 17938, 17941,
17943, 17945, 17947, 17949,
17951, 17954, 17956, 17958,
17961, 17963, 17965, 17968,
17970, 17972, 17974, 17976,
17979, 17981, 17983, 17985,
17987, 17989, 17992, 17995,
17998, 18000, 18003, 18005,
18007, 18009, 18011, 18013,
18015, 18017, 18019, 18023,
18025, 18027, 18028, 18031,
18034, 18038, 18039, 18043,
18044, 18047, 18049, 18051,
18053, 18055, 18057, 18059,
18061, 18063, 18065, 18067,
18069, 18071, 18074, 18076,
18078, 18081, 18084, 18086,
18088, 18090, 18092, 18094,
18096, 18098, 18100, 18102,
18104, 18106, 18108, 18110,
18112, 18114, 18116, 18118,
18120, 18122, 18124, 18126,
18128, 18130, 18132, 18134,
18136, 18138, 18140, 18142,
18144, 18146, 18148, 18150,
18152, 18154, 18156, 18158,
18160, 18163, 18166, 18169,
18172, 18175, 18179, 18183,
18185, 18187, 18189, 18191,
18193, 18196, 18199, 18202,
18205, 18207, 18210, 18213,
18217, 18220, 18222, 18225,
18228, 18231, 18235, 18238,

18241, 18244, 18247, 18251,
 18255, 18257, 18259, 18261,
 18263, 18265, 18267, 18269,
 18272, 18275, 18277, 18279,
 18281, 18283, 18285, 18288,
 18291, 18293, 18295, 18297,
 18299, 18302, 18305, 18307,
 18309, 18311, 18313, 18316,
 18319, 18321, 18323, 18325,
 18327, 18329, 18331, 18333,
 18335, 18337, 18340, 18343,
 18345, 18347, 18349, 18351,
 18354, 18358, 18361, 18364,
 18366, 18368, 18370, 18372,
 18374, 18376, 18378, 18380,
 18382, 18386, 18388, 18390,
 18392, 18394, 18396, 18398,
 18400, 18402, 18404, 18406,
 18408, 18411, 18414, 18416,
 18419, 18422, 18424, 18427,
 18430, 18432, 18434, 18436,
 18438, 18441, 18444, 18446,
 18448, 18450, 18453, 18455,
 18457, 18459, 18461, 18463,
 18465, 18467, 18469, 18471,
 18473, 18475, 18477, 18479,
 18481, 18483, 18485, 18487,
 18489, 18491, 18493, 18495,
 18498, 18500, 18502, 18504,
 18506, 18508, 18510, 18512,
 18514, 18516, 18518, 18520,
 18522, 18524, 18526, 18528,
 18530, 18532, 18534, 18536,
 18538, 18540, 18542, 18544,
 18546, 18548, 18550, 18552,
 18554, 18556, 18558, 18560,
 18562, 18564, 18566, 18568,
 18570, 18572, 18574, 18576,
 18578, 18580, 18582, 18584,
 18586, 18588, 18590, 18592,
 18594, 18596, 18598, 18600,
 18602, 18604, 18606, 18608,
 18610, 18615, 18619, 18623,
 18626, 18628, 18630, 18634,
 18637, 18640, 18642, 18644,
 18647, 18649, 18651, 18653,
 18656, 18658, 18662, 18664,
 18666, 18668, 18671, 18674,
 18677, 18681, 18683, 18685,
 18687, 18690, 18695, 18698,
 18700, 18702, 18707, 18710,
 18713, 18715, 18718, 18720,
 18722, 18725, 18732, 18735,
 18740, 18743, 18746, 18749,

18752, 18755, 18758, 18761,
 18764, 18767, 18770, 18773,
 18776, 18779, 18782, 18785,
 18788, 18791, 18794, 18798,
 18801, 18804, 18806, 18808,
 18810, 18812, 18814, 18817,
 18819, 18821, 18823, 18825,
 18827, 18830, 18832, 18835,
 18837, 18840, 18842, 18844,
 18846, 18848, 18850, 18852,
 18854, 18856, 18858, 18860,
 18862, 18864, 18866, 18868,
 18871, 18873, 18876, 18878,
 18880, 18882, 18884, 18886,
 18890, 18894, 18896, 18898,
 18900, 18902, 18904, 18907,
 18909, 18912, 18914, 18916,
 18918, 18920, 18922, 18925,
 18927, 18929, 18931, 18933,
 18935, 18937, 18939, 18941,
 18943, 18945, 18947, 18949,
 18952, 18954, 18956, 18958,
 18960, 18962, 18964, 18966,
 18968, 18970, 18972, 18974,
 18976, 18978, 18980, 18982,
 18984, 18986, 18988, 18990,
 18992, 18994, 18996, 18999,
 19001, 19003, 19005, 19007,
 19009, 19011, 19013, 19015,
 19017, 19019, 19021, 19023,
 19025, 19028, 19031, 19033,
 19036, 19039, 19042, 19045,
 19047, 19049, 19051, 19053,
 19055, 19057, 19059, 19061,
 19063, 19065, 19068, 19072,
 19074, 19076, 19078, 19080,
 19082, 19084, 19086, 19088,
 19090, 19092, 19094, 19096,
 19098, 19100, 19102, 19104,
 19106, 19109, 19112, 19115,
 19118, 19120, 19125, 19129,
 19132, 19134, 19136, 19139,
 19142, 19145, 19148, 19151,
 19154, 19157, 19160, 19163,
 19166, 19169, 19172, 19174,
 19176, 19178, 19180, 19182,
 19185, 19191, 19194, 19196,
 19199, 19202, 19204, 19206,
 19208, 19210, 19212, 19214,
 19216, 19218, 19220, 19222,
 19225, 19227, 19229, 19231,
 19234, 19237, 19239, 19241,
 19243, 19246, 19248, 19251,
 19253, 19257, 19260, 19262,

19264, 19266, 19268, 19270,
 19272, 19274, 19276, 19278,
 19280, 19282, 19284, 19287,
 19289, 19291, 19294, 19297,
 19299, 19301, 19303, 19305,
 19307, 19309, 19311, 19313,
 19315, 19317, 19319, 19321,
 19323, 19325, 19327, 19329,
 19331, 19333, 19335, 19337,
 19339, 19341, 19343, 19345,
 19347, 19349, 19351, 19354,
 19357, 19360, 19364, 19367,
 19370, 19372, 19374, 19376,
 19378, 19381, 19383, 19386,
 19388, 19390, 19392, 19394,
 19396, 19398, 19401, 19403,
 19406, 19409, 19412, 19415,
 19417, 19419, 19421, 19423,
 19425, 19427, 19429, 19431,
 19433, 19435, 19438, 19441,
 19443, 19445, 19447, 19449,
 19451, 19453, 19455, 19458,
 19461, 19463, 19465, 19467,
 19470, 19472, 19474, 19476,
 19478, 19510, 19512, 19514,
 19515, 19516, 19517, 19518,
 19519, 19520, 19521, 19522,
 19523, 19525, 19527, 19528,
 19529, 19530, 19531, 19532,
 19533, 19535, 19537, 19540,
 19542, 19544, 19545, 19546,
 19547, 19548, 19549, 19550,
 19551, 19552, 19553, 19555,
 19557, 19559, 19560, 19561,
 19562, 19563, 19565, 19566,
 19567, 19568, 19570, 19572,
 19574, 19575, 19576, 19577,
 19578, 19579, 19580, 19581,
 19582, 19583, 19585, 19587,
 19588, 19589, 19590, 19591,
 19592, 19593, 19595, 19597,
 19600, 19602, 19604, 19605,
 19606, 19607, 19608, 19609,
 19610, 19611, 19612, 19613,
 19615, 19617, 19619, 19620,
 19621, 19622, 19623, 19625,
 19626, 19627, 19628, 19734,
 19736

A

\a 291, 293, 297, 303
 \ABREVE 19503, 19574, 19575,
 19576, 19577, 19578
 \abreve . . 19497, 19514, 19515,

19516, 19517, 19518
\AC 17932, 20826
\AccFancyVerbLineautorefname
..... 3123
\Accfootnoteautorefname . 3103
\Acctheoremautorefname . 3127
\acctonos 3185, 3186, 3187, 3188,
3189, 3190, 3191, 3192,
3193, 3194, 3195, 3196,
3197, 3198, 3199, 3200
\Acht 19442, 20626
\ACIRCUMFLEX 19504, 19579,
19580, 19581, 19582, 19583
\acircumflex 3172, 19498, 19519,
19520, 19521, 19522, 19523
\AcPa 19428, 20620
\Acrobatmenu 2226, 4266, 6375,
9368, 10110, 10651, 11525
\active 961,
968, 1545, 4767, 4768, 4769,
4770, 4771, 4772, 4776,
4778, 4781, 4789, 14453,
14480
\add@accent 536
\addcontentsline ... 7554, 7627,
7967, 8028, 8159
\addcontentslinebookmark 8016
\addcontentslinebookmarkOff .
..... 8017
\addcontentslinebookmarkReset
..... 8020, 8022
\addtocontents 8029, 8160
\addtocounter 7222
\AddToDocumentProperties ..
.. 2319, 3713, 3719, 3725,
3731, 3754, 3760
\AddToHook . 5144, 5403, 5405,
6461, 6473, 6478, 6707,
6852, 6889, 7059, 7218,
7225, 7247, 7268, 7647,
7721, 8152, 8167, 8221,
8662, 9907, 10271, 11729,
11868, 13108
\AddToHookNext .. 6991, 7239,
7240, 7255, 7256
\AddToHookWithArguments ..
.. 7641, 7723, 7727, 8032,
8087, 8103, 8120, 8136
\AddToNoCaseChangeList 14593
\adl@LT@array 7102
\advance 471, 472,
982, 4917, 5109, 5122, 5424,
5752, 5796, 6231, 6232,
6235, 6236, 6515, 6523,

6560, 7860, 7871, 7874,
7888, 9474, 9558, 9596,
9636, 9951, 9961, 10806,
12012, 12299, 12551, 12623,
12666, 12667, 13161, 13224,
13268, 13269, 13515, 13580,
13624, 13625, 14239, 14241,
14242, 14248, 14257, 14357,
14567
\AE 14942, 15401, 15916
\ae 15008, 15468, 15918
\afterassignment ... 1554, 1560,
1566, 6006
\AfterBeginDocument . 353, 372
\aftergroup 7439
\agemO 17562, 20797
\ainferior 19928
\alef 19644
\alefhamza 19636
\aleflowerhamza 19640
\alefnadda 19634
\alefmaqsurah 19702
\aleph 17573, 19950
\Alph 6609, 6956
\alph 6610, 7198, 7227
\alpha 19849
\amalg 17836, 20044
\AMSautorefname 8663
\anchor@spot . 5307, 5320, 5327,
5333, 5335, 9007, 9415,
9510, 10383, 10460, 10963,
11310, 11313, 11949, 12236
\and 6440
\angle 17865, 20056
\AngleSign 17873, 20818
\Anglesign 17872, 20817
\Ankh 18699, 20339
\APLbox 18437, 20298
\APLdown 18635, 20893
\APLdownarrowbox ... 18426,
20293
\APLinput 18429, 20294
\APLinv 18403, 20285
\APLleftarrowbox 18418, 20290
\APLrightarrowbox 18421, 20291
\APLup 18620, 20890
\APLuparrowbox . 18423, 20292
\appendix 6948, 6960
\appendixautorefname
.. 2971, 2989, 3007, 3025,
3043, 3061, 3079, 3111,
3112, 3137, 3155, 3173,
3191, 3209, 3227, 3245,
3263, 8673

\apprge 18082, 20841
\apprle 18079, 20840
\approx 17955, 20093
\approxeq 17960, 20095
\appto 7062
\Aquarius 18786, 20937
\aquarius 18784, 20365
\arabic 6606, 8207, 8222
\Aries 18756, 20927
\aries 18754, 20355
\AssignSocketPlug .. 6851, 6861,
6881, 7062
\ast 17852, 20051
\Asterisk 19000, 20448
\AsteriskBold ... 18977, 20437
\AsteriskCenterOpen ... 18979,
20438
\AsteriskRoundedEnds . 19024,
20460
\asympt 17973, 20101
\AtBeginDocument . 354, 5370,
5374, 7266, 12328
\AtEndOfPackage 369
\author 6396, 6406
\autopageref 4400, 8553
\autoref . 654, 4399, 8572, 12323
\ayn 19680

B

\b 292, 293, 810, 814, 820, 14706,
14718, 14730, 15151, 15180,
15209, 17059, 17061, 17071,
17073, 17143, 17145, 17151,
17153, 17179, 17181, 17215,
17217, 17235, 17237, 17303,
17305, 17307
\baa 19646
\babygamma 16097, 19817
\back@none ... 2906, 2916, 2929
\back@page 2908, 2921
\back@section 2907, 2913, 2919,
2925
\back@slide 2909, 2918
\backcite 7774
\backcong 17969, 20099
\backneg 18375, 20272
\backprime 17397, 19895
\backref 7805, 12327
\backsim 17933, 20083
\backsimeq 18280, 20231
\barb 15803, 20679
\bard 15567, 20671
\bari 16111, 19818
\barin 18371, 20270

<code>\barj</code>	16082, 20711	<code>\Bleech</code>	18621, 20891	<code>\c@secnumdepth</code> .	14630, 14645, 14660
<code>\barl</code>	15825, 19803	<code>\BOOKMARK</code> . .	14285, 14364	<code>\c@slide</code>	7861
<code>\barlambda</code>	15832, 20684	<code>\booknumberline</code> .	14269, 14274	<code>\c@tocdepth</code>	3422, 3427
<code>\barleftharpoon</code> . .	19159, 20514	<code>\bool</code>	5145, 6866	<code>\calc@bm@number</code>	14492, 14565
<code>\baro</code>	16157, 16158, 18407, 18409, 20883	<code>\bot</code>	18206, 20204	<code>\calculate@pdfview</code> .	3896, 3899
<code>\barp</code>	17025, 19886	<code>\Bowtie</code>	18270, 20872	<code>\Cancer</code>	18765, 20930
<code>\barrightharpoon</code> .	19165, 20516	<code>\bowtie</code>	18268, 20226	<code>\cancer</code>	18763, 20358
<code>\barsci</code>	17023, 19885	<code>\Box</code>	18672, 20897	<code>\Cap</code>	18298, 20239
<code>\barscu</code>	17028, 19887	<code>\box</code>	6238, 6468, 8934, 9939, 11357, 11360	<code>\cap</code>	17894, 20067
<code>\baru</code>	16222, 19827	<code>\boxast</code>	19205, 20531	<code>\capdot</code>	19245, 20549
<code>\barwedge</code>	18262, 20223	<code>\boxbackslash</code> . .	18415, 20289	<code>\capitalacute</code>	15219
<code>\baselineskip</code> . . .	2229, 9529, 10982, 11014, 11712	<code>\boxbar</code>	18655, 20323	<code>\capitalbreve</code>	15226
<code>\bbl@cite@choice</code>	7670	<code>\boxbox</code>	19209, 20533	<code>\capitalcaron</code>	15225
<code>\bbl@info</code>	629	<code>\boxbslash</code>	19203, 20530	<code>\capitalcedilla</code>	15216
<code>\bbslash</code>	18449, 20301	<code>\boxcircle</code>	19207, 20532	<code>\capitalcircumflex</code>	15220
<code>\BCPdata</code>	492, 499, 505	<code>\boxdot</code>	18190, 20198	<code>\capitaldieresis</code>	15222
<code>\Beam</code>	18433, 20296	<code>\boxempty</code>	18670, 20329	<code>\capitaldotaccent</code>	15228
<code>\because</code>	17918, 20077	<code>\boxminus</code>	18186, 20196	<code>\capitalgrave</code>	15218
<code>\BeforeTeXIVht</code>	2690	<code>\boxplus</code>	18184, 20195	<code>\capitalhungarumlaut</code> . . .	15223
<code>\begin</code>	614, 12349, 20995	<code>\boxslash</code>	19201, 20529	<code>\capitalmacron</code>	15227
<code>\belowpdfbookmark</code>	14353	<code>\boxtimes</code>	18188, 20197	<code>\capitalnewtie</code>	15230
<code>\beta</code>	19850	<code>\brokenvert</code>	15330, 20660	<code>\capitalogonek</code>	15217
<code>\betainferior</code>	19880	<code>\bullet</code>	17856, 19890	<code>\capitalring</code>	15224
<code>\beth</code>	17575, 19951	<code>\Bumpeq</code>	17978, 20103	<code>\capitaltie</code>	15229
<code>\between</code>	18066, 20142	<code>\bumpeq</code>	17982, 20105	<code>\capitaltilde</code>	15221
<code>\bfseries</code>	588, 8431, 8451, 8468, 8600			<code>\Capricorn</code>	18783, 20936
<code>\bgroup</code>	674, 4884, 7425, 7438, 8920, 9925, 10383, 11003, 12855, 12947, 12968			<code>\capricornus</code>	18781, 20364
<code>\bibcite</code>	7661, 7667, 7671, 7696, 7711, 7738, 7748			<code>\caption</code>	7524, 7526, 7615, 7617
<code>\Bicycle</code>	19462, 20635			<code>\catcode</code>	172, 173, 184, 185, 186, 187, 206, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 937, 961, 968, 1545, 1674, 1675, 1808, 1809, 1865, 1866, 1867, 4652, 4654, 4766, 4767, 4768, 4769, 4770, 4771, 4772, 4776, 4778, 4781, 4789, 4799, 4890, 4891, 8688, 11044, 11045, 14382, 14384, 14453, 14456, 14480, 14483
<code>\bigcircle</code>	20324			<code>\ccnc</code>	19471, 20638
<code>\bigdoublevee</code> . . .	19221, 20539			<code>\ccnd</code>	19473
<code>\bigdoublewedge</code> . .	19219, 20538			<code>\ccsa</code>	19475, 20639
<code>\bigtriangledown</code> . .	18633, 20314			<code>\cdot</code>	20646
<code>\bigtriangleup</code> . . .	18618, 20309			<code>\cdots</code>	18365, 20267
<code>\binampersand</code> . . .	15249, 20654			<code>\CESign</code>	19479, 20641
<code>\bindnasrepma</code> . . .	17587, 20800			<code>\CESign</code>	19481, 20990
<code>\Biohazard</code>	18697, 20338			<code>\cf@encoding</code>	1286
<code>\bitsetGetDec</code>	5476, 5609, 5627, 5641, 5654, 5670, 5702, 5727				
<code>\bitsetGetHex</code>	5477				
<code>\bitsetGetSetBitList</code>	5465				
<code>\bitsetIsEmpty</code>	5606, 5624, 5638, 5651, 5667, 5699, 5724				
<code>\bitsetReset</code>	5579, 5613, 5632, 5646, 5659, 5675, 5707				
<code>\bitsetSetValue</code>	5445, 5455				
<code>\blacksmiley</code>	18712, 20343				

<code>\chapterautorefname</code>	2972, 2990, 3008, 3026, 3044, 3062, 3080, 3109, 3138, 3156, 3174, 3192, 3210, 3228, 3246, 3264, 8674
<code>\chapternumberline</code>	14271, 14276
<code>\char</code>	13142, 14386, 14423
<code>\chardef</code>	267, 310, 2486, 2487, 2488, 2489, 2748, 2750, 4575, 4607, 11305, 11308, 11314
<code>\check@bm@number</code>	14503, 14511, 14558, 14566
<code>\CheckBox</code>	6180
<code>\CheckCommand</code>	7384
<code>\checkcommand</code>	42, 7500, 7507, 7514, 7615, 7625, 7732, 7744, 8159, 8162, 8207, 8465
<code>\CheckedBox</code>	18675, 20898
<code>\Checkedbox</code>	18673, 20330
<code>\checklatex</code>	4, 7499, 7614, 7731, 8158, 8464
<code>\Checkmark</code>	18921, 20410
<code>\checkmark</code>	18923, 20956
<code>\CheckmarkBold</code>	18924, 20411
<code>\checkpackage</code>	9, 8206
<code>\chi</code>	19871
<code>\chiinferior</code>	19884
<code>\ChoiceBox</code>	5800
<code>\ChoiceMenu</code>	6177
<code>\circ</code>	17854, 20052
<code>\circeq</code>	18014, 20119
<code>\circlearrowleft</code>	19071, 20479
<code>\circlearrowright</code>	19073, 20480
<code>\CircledA</code>	18494, 20302
<code>\circledast</code>	18178, 20193
<code>\circledbslash</code>	19186, 20965
<code>\circledcirc</code>	18174, 20192
<code>\circleddash</code>	18182, 20194
<code>\CircleShadow</code>	19032, 20463
<code>\circplus</code>	19228, 20542
<code>\citation</code>	7766
<code>\citeauthoryear</code>	7832, 7838
<code>\citeN</code>	7829
<code>\CJK@char</code>	964
<code>\CJK@charx</code>	965
<code>\CJK@CJK</code>	953
<code>\CJK@eight</code>	1164, 1167, 1281
<code>\CJK@five</code>	1164, 1166, 1281
<code>\CJK@four</code>	1163, 1166, 1280
<code>\CJK@hundred</code>	1230
<code>\CJK@hundredmillion</code>	1193
<code>\CJK@ignorespaces</code>	963
<code>\CJK@kern</code>	951
<code>\CJK@minus</code>	1155
<code>\CJK@nine</code>	1164, 1168, 1281
<code>\CJK@null</code>	1257
<code>\CJK@one</code>	1163, 1165, 1280
<code>\CJK@punctchar</code>	966
<code>\CJK@punctcharx</code>	967
<code>\CJK@seven</code>	1164, 1167, 1281
<code>\CJK@six</code>	1164, 1167, 1281
<code>\CJK@ten</code>	1165, 1166, 1167, 1168, 1245
<code>\CJK@tentousand</code>	1178, 1199
<code>\CJK@thousand</code>	1215
<code>\CJK@three</code>	1163, 1166, 1280
<code>\CJK@two</code>	1163, 1165, 1280
<code>\CJK@zero</code>	1163, 1181, 1198, 1202, 1218, 1233, 1255
<code>\CJKdigits</code>	1040
<code>\CJKkern</code>	952
<code>\CJKnumber</code>	1039
<code>\cl@ckpt</code>	6905
<code>\CleaningA</code>	18496, 20885
<code>\CleaningF</code>	18507, 20303
<code>\CleaningFF</code>	18509, 20304
<code>\CleaningP</code>	18531, 20305
<code>\CleaningPP</code>	18533, 20306
<code>\clickb</code>	16279, 20764
<code>\clickc</code>	16274, 20762
<code>\clickt</code>	16216, 20746
<code>\clock</code>	18381, 20275
<code>\ClockLogo</code>	18384, 20882
<code>\Clocklogo</code>	18383, 20881
<code>\close@pdfink</code>	9001, 9026, 9035, 9067, 9104, 9137, 9392
<code>\closedniomega</code>	16165, 20734
<code>\closedrepepsilon</code>	16078, 20710
<code>\closeout</code>	14373
<code>\Cloud</code>	18661, 20325
<code>\ClowerTips</code>	20427
<code>\clubsuit</code>	18800, 18802, 20943
<code>\codeof</code>	7796
<code>\Coffeecup</code>	18680, 20332
<code>\coloncolonequals</code>	19265, 20557
<code>\colonequals</code>	18006, 20115
<code>\color@begingroup</code>	8920, 9925
<code>\color@endgroup</code>	8927, 9932
<code>\columnwidth</code>	7432
<code>\comma@entry</code>	5791, 5798, 5800
<code>\comma@parse</code>	5790
<code>\complement</code>	17805, 20030
<code>\Conclusion</code>	17756, 20809
<code>\cong</code>	17950, 20091
<code>\Congruent</code>	18032, 20835
<code>\contentsline</code>	8030, 8039, 8160, 8162
<code>\copy</code>	5118, 5120, 5131, 5140, 8930, 9909, 9935
<code>\copyright</code>	19793
<code>\Corresponds</code>	18021, 20833
<code>\corresponds</code>	18020, 20832
<code>\count@</code>	980, 981, 982, 983, 1555, 1913, 3438, 3439, 3444, 3445, 5423, 5424, 5439, 5735, 5750, 5752, 5774, 5796, 5812, 10802, 10803, 10804, 10805, 10806, 10809
<code>\Cross</code>	18940, 20419
<code>\crossb</code>	15800, 20677
<code>\CrossClowerTips</code>	18957
<code>\crossd</code>	15564, 20669
<code>\CrossedBox</code>	18679, 20900
<code>\Crossedbox</code>	18676, 20331
<code>\crossh</code>	15613, 20673
<code>\CrossMaltese</code>	18946, 20422
<code>\crossnilambda</code>	15831, 20683
<code>\CrossOpenShadow</code>	18942, 20420
<code>\CrossOutline</code>	18944, 20421
<code>\cs</code>	5054, 5059, 5063, 5072, 5076, 5085
<code>\Cube</code>	611
<code>\Cup</code>	18301, 20240
<code>\cup</code>	17896, 20068
<code>\cupdot</code>	18135, 20175
<code>\cupplus</code>	18137, 20176
<code>\curlyc</code>	16046, 20703
<code>\curlyeqprec</code>	18320, 20248
<code>\curlyeqsucc</code>	18324, 20250
<code>\curlyesh</code>	16213, 20745
<code>\curlyvee</code>	18284, 20233
<code>\curlywedge</code>	18287, 20234
<code>\curlyyogh</code>	16258, 20758
<code>\curlyz</code>	16251, 20757
<code>\CurrentBorderColor</code>	8991, 8993, 9020, 9022, 9030, 9032, 9037, 10450, 10484, 10486, 10502, 10504, 10523, 10525, 10587, 10589, 10606, 10608
<code>\currentpdfbookmark</code>	14345
<code>\curu</code>	16598
<code>\curvearrowleft</code>	17689, 19984
<code>\curvearrowright</code>	17691, 19985
<code>\CutLeft</code>	18887, 20950
<code>\CutLine</code>	18612, 20887
<code>\Cutline</code>	18613, 20888
<code>\Cutright</code>	18888, 20951

\CuttingLine	18609, 20307	\cyrerev	16560, 16885	\CYRKDSC	16712
\cyr 634, 3091, 3093, 3096, 3099,		\CYRERY	16488, 16907	\cyrkdsc	16714
3102, 3103, 3104, 3105,		\cyrery 3091, 3093, 16555, 16909		\CYRKHCRS	16722
3106, 3107, 3108, 3109,		\CYRF	16473	\cyrkhcrs	16724
3110, 3111, 3113, 3115,		\cyrf	16540	\CYRKHK	16803
3116, 3117, 3118, 3119,		\CYRFITA	16638	\cyrkhk	16805
3120, 3121, 3122, 3123,		\cyrfita	16640	\CYRKOPPA	16668
3124, 3125, 3126, 3127,		\CYRG	16403, 16438	\cyrkoppa	16670
3128		\cyrg	3109, 16505, 16573	\CYRKSI	16630
\CYRA . . .	16432, 16823, 16827	\CYRGDSC	16903	\cyrksi	16632
\cyra . . .	3093, 3100, 3102, 3107,	\cyrgdsc	16905	\CYRKVCRS	16717
3110, 3115, 3116, 3122,		\CYRGHCRS	16690	\cyrkvcrs	16720
3126, 16499, 16825, 16829		\cyrghcrs	16692	\CYRL	16455
\CYRABHCH . . .	16787, 16792	\CYRGHK	16695	\cyr1 . . .	3107, 3109, 3111, 3113,
\cyrabhch	16789, 16795	\cyrghk	16698	16522	
\CYRABHCHDSC	16791	\CYRGUP	16686	\CYRLDSC	16807
\cyrabhchdsc	16794	\cyrgup	16688	\cyrldsc	16809
\CYRABHDZE	16857	\CYRH	16475	\CYRLJE	16417
\cyrabhdze	16859	\cyrh	16542	\cyr1je	16587
\CYRABHHA	16742	\CYRHDSC	16764	\CYRLYUS	16614
\cyrabhha	16744	\cyrhdsc	16766	\cyrlyus	16616
\CYRAE	16831	\CYRHHK	16911	\CYRM	16457
\cyrae	16833	\cyrhhk	16913	\cyrm . .	3096, 3100, 3126, 3127,
\CYRB	16434	\CYRHRDSN	16486	16524	
\cyrb	3107, 16501	\cyrhrdsn .	16552, 16553, 20771	\CYRMDSC	16819
\CYRBYUS	16622	\CYRI . . .	16425, 16448, 16451,	\cyrmdsc	16821
\cyrbyus	16624	16861, 16865		\CYRN	16459
\CYRC	16477	\cyri 3093, 3096, 3100, 3106, 3111,		\cyrn . . .	3093, 3099, 3100, 3102,
\cyrc	16544	3113, 16515, 16518, 16595,		3103, 3105, 3113, 3119,	
\CYRCH	16479, 16899	16863, 16867		3120, 16526	
\cyrch .	3099, 3100, 3108, 16546,	\CYRIE	16405	\CYRNDSC	16730
16901		\cyrie	16575	\cyrndsc	16732
\CYRCHLDSC	16815	\CYRII	16410, 16413	\CYRNG	16734
\cyrchldsc	16817	\cyrii	16580, 16583	\cyrng	16736
\CYRCHRDSC	16773	\CYRIOTBYUS	16626	\CYRNHK	16811
\cyrchrdsc	16775	\cyriotbyus	16628	\cyrnhk	16813
\CYRCHVCRS	16778	\CYRIOTE	16610	\CYRNJE	16419
\cyrchvcrs	16781	\cyriote	16612	\cyrnje	16589
\CYRD	16440	\CYRIOTLYUS	16618	\CYRO	16461, 16869
\cyrd . . .	3096, 3099, 3110, 3115,	\cyriotlyus	16620	\cyro . . .	3096, 3099, 3102, 3103,
3116, 16507		\CYRISHRT	16450	3113, 3122, 3123, 3125,	
\CYRDJE	16401	\cyrishrt	16517	3126, 3127, 16528, 16871	
\cyrdje	16571	\CYRISHRTDSC	16674	\CYROMEGA	16602
\CYRDZE 15110, 15127, 16394,		\cyrishrtdsc	16676	\cyromega	16604
16407		\CYRIZH	16642, 16647	\CYROMEGARND	16656
\cyrdze	16577	\cyrizh	16644, 16650	\cyromegarnd	16658
\CYRDZHE	16430	\CYRJE	16415	\CYROMEGATITLO . . .	16660
\cyrdzhe	16600	\cyrje	16585	\cyromegatitlo	16662
\CYRE . .	16396, 16399, 16442,	\CYRK	16423, 16453	\CYROT	16664
16835		\cyrk . . .	3102, 3103, 3105, 3119,	\cyrot	16666
\cyre . . .	3093, 3099, 3100, 3113,	3120, 3122, 3123, 3124,		\CYROTLD	16873, 16878
3125, 3126, 3127, 16509,		16520, 16593		\cyrotld	16875, 16881
16566, 16569, 16837		\CYRKBEAK	16726	\CYRP	16463
\CYREREV	16493, 16883	\cyrkbeak	16728		

\cyrp . . .	3096, 3099, 3100, 3104, 3105, 3111, 3113, 3117, 3118, 3119, 3120, 16530
\CYRpalochka	16797
\CYRPHK	16738
\cyrphk	16740
\CYRPSI	16634
\cyrpsi	16636
\CYRR	16465
\cyr . . .	3091, 3093, 3096, 3099, 3100, 3106, 3110, 3111, 3113, 3115, 3116, 3121, 3122, 3123, 3124, 3125, 3126, 3127, 16532
\CYRRTICK	16682
\cyrrtick	16684
\CYRS	16467, 16747
\cyr . . .	3096, 3099, 3102, 3103, 3106, 3121, 3122, 3123, 3124, 3128, 16534, 16750
\CYRSCHWA . . .	16839, 16844
\cyrschwa	16841, 16847
\CYRSDSC	16746
\cyrsdsc	16749
\CYRSEMISFTSN	16678
\cyrsemisftsn	16680
\CYRSFTSN	16491
\cyrstfn . .	16557, 16558, 20772
\CYRSH	16481
\cyrsh	16548
\CYRSHCH	16483
\cyrshch	16550
\CYRSHHA	16783
\cyrshha	16785
\CYRT	16469
\cyr . . .	3096, 3099, 3105, 3107, 3119, 3120, 3121, 3122, 3123, 3124, 3125, 3126, 3127, 16536
\CYRTDSC	16752
\cyrtdsc	16754
\CYRTETSE	16768
\cyrtetse	16770
\cyrthousands	16672
\CYRTSHE	16421
\cyrtshe	16591
\CYRU . .	16428, 16471, 16887, 16891, 16895
\cyr . . .	3103, 3105, 3119, 3120, 3123, 3127, 16538, 16889, 16893, 16897
\CYRUK	16652
\cyr	16654
\CYRUSHRT	16427
\cyrushrt	16597
\CYRV	16436
\cyr	3091, 3093, 16503
\CYRY	16756
\cyr	16758
\CYRYA	16497
\cyr	16564
\CYRYAT	16606
\cyr	16608
\CYRYHCRS	16760
\cyrhcrs	16762
\CYRYI	16412
\cyr	16582
\CYRYO	16398
\cyr	16568
\CYRYU	16495
\cyr	16562
\CYRZ . . .	16446, 16707, 16853
\cyr . .	3110, 3115, 3116, 16513, 16710, 16855
\CYRZDSC	16706
\cyrz	16709
\CYRZH . .	16444, 16799, 16849
\cyr . .	3093, 3113, 16511, 16801, 16851
\CYRZHDSC	16701
\cyrz	16704
D	
\d	812, 816, 822, 3169, 3173, 3175, 3176, 3177, 3178, 3179, 3181, 14707, 14719, 14731, 15134, 15181, 15210, 17055, 17057, 17067, 17069, 17115, 17117, 17139, 17141, 17147, 17149, 17167, 17169, 17175, 17177, 17211, 17213, 17223, 17225, 17231, 17233, 17259, 17261, 17279, 17281, 17299, 17301, 17317, 17319, 17321, 17323, 17329, 17331, 17333, 17335, 17337, 17339, 17345, 17347, 19510, 19515, 19520, 19525, 19530, 19535, 19540, 19545, 19550, 19555, 19560, 19565, 19570, 19575, 19580, 19585, 19590, 19595, 19600, 19605, 19610, 19615, 19620, 19625
\dad	19674
\dag	17375, 20783
\dagger	19889
\dal	19660
\daleth	17579, 19953
\damma	19714
\danger	18851, 20384
\dasheddownarrow	17790, 20023
\dashedleftarrow	17784, 20810
\dashedrightarrow	17789, 20811
\dasheduparrow	17785, 20021
\dashleftarrow	17782, 20020
\dashrightarrow	17787, 20022
\DashV	19363, 20602
\Dashv	19356, 20600
\dashv	20598
\dashv	18195, 20200
\DavidStar	18948, 20423
\davidstar	18950, 20957
\ddag	17379, 20785
\ddagger	14804, 17376, 17378, 20784
\ddots	18369, 20269
\DeclareFontEncoding	14695, 15097
\DeclareFontFamily	882, 892
\DeclareFontShape	883, 893
\DeclareFontSubstitution	884, 894
\DeclareLocalOptions	4200
\DeclareRobustCommand	. . . 4881, 4968, 4970, 4972, 4981, 6174, 6177, 6180, 6183, 6186, 6189, 6192, 8553, 14583
\DeclareTextAccent	14696, 14697, 14698, 14699, 14700, 14701, 14702, 14703, 14704, 14705, 14706, 14707
\DeclareVoidOption	2687, 2701, 2712, 2728, 2734, 2739, 2753, 2763, 2768, 2774, 2780, 2809, 2826, 2833, 2839, 2844, 2849, 2864, 3349, 3357, 3365, 3375
\DefaultHeightofCheckBox	6244, 12795, 13399, 13776
\DefaultHeightofChoiceMenu	6246, 12613, 13214, 13570
\DefaultHeightofReset	6242, 12765, 13371, 13744
\DefaultHeightofSubmit	6240, 12745, 13348, 13721
\DefaultHeightofText	6248, 12585, 13188, 13537
\DefaultHeightofTextMultiline	6249, 12583, 13186, 13535

\DefaultOptionsofCheckBox ..	5967, 5970, 5974, 5978,	2042, 2047, 2050, 2055,
6254, 12797, 13401, 13778	5982, 5985, 5989, 5992,	2056, 6016
\DefaultOptionsofComboBox ..	5995, 5998, 6001, 6021,	\ding 610, 6057, 6060
..... 6257	6037, 6040, 6043, 6046,	\DingObject 13293
\DefaultOptionsofListBox 6256	6049, 6052, 6082, 6085,	\discretionary 676
\DefaultOptionsofPopdownBox	6088, 6091, 6110, 6116,	\div 20644
..... 6258	6132, 6137, 6143, 6158,	\divdot 19232, 20971
\DefaultOptionsofPushButton .	6163, 6169, 6719, 6730,	\divide 10803
6253, 12716, 13320, 13689	6990, 10881, 10887, 11389,	\divideontimes ... 18266, 20225
\DefaultOptionsofRadio .. 6259	11391, 11394, 11397, 11399,	\Divides 17846, 20048
\DefaultOptionsofReset .. 6252,	11401, 11410, 11418, 11425,	\DividesNot 17848, 20049
12768, 13374, 13747	11427, 11429, 11431, 11433,	\DJ 3181, 14963, 15559
\DefaultOptionsofSubmit 6251,	11435, 11444, 11454, 11456,	\dj 3178, 3179, 15562
12748, 13351, 13724	11458, 11459, 11465, 11474,	\dlsh 17686, 19983
\DefaultOptionsofText .. 6255,	11476, 11478, 11480, 11482,	\do 981, 2402, 2407, 2412, 3523,
12590, 13193, 13542	11484, 11486, 11488, 11490,	3555, 3556, 3557, 3558,
\DefaultWidthofCheckBox 6245,	11492, 11494, 11496, 11498,	3613, 3614, 3615, 3616,
12794, 13398, 13775	11500, 11502, 11504, 11505,	3617, 3618, 3621, 3622,
\DefaultWidthofChoiceMenu ..	11506, 11507, 11508, 11509,	3623, 3624, 3625, 3626,
6247, 12612, 13213, 13569	11510, 11511, 11512, 11513,	3629, 3630, 3633, 3634,
\DefaultWidthofReset ... 6243,	11514, 11515	3635, 3636, 3637, 3640,
12764, 13370, 13743	\Deleatur 17528, 19941	3641, 3642, 3643, 3644,
\DefaultWidthofSubmit .. 6241,	\Delta 19839	3647, 3648, 3649, 3650,
12744, 13347, 13720	\delta 19852	3651, 3654, 3655, 3656,
\DefaultWidthofText 6250,	\Denarius 17530, 20796	3657, 3658, 3661, 3662,
12580, 13183, 13532	\dest@name 5350	3665, 3666, 3667, 3670,
\deferred@thm@head 7251, 7252	\df@tag 8173, 8179	3671, 3677, 3678, 3679,
\define@key .. 2384, 2386, 2430,	\DH 14962, 15421	3680, 4015, 4016, 4017,
2445, 2448, 2451, 2459,	\dh . 15032, 15492, 15493, 20668	4018, 4019, 4020, 5465,
2462, 2472, 2475, 2478,	\dhal 19662	7209, 12617, 12679, 12917,
2495, 2507, 2509, 2512,	\diameter 18373, 20271	12924, 12934, 13218, 13281,
2529, 2533, 2539, 2542,	\Diamond 18645, 20894	13574, 13640, 14452, 14479
2545, 2548, 2551, 2554,	\diamond 18643, 20318	\documentclass 2, 8804
2557, 2582, 2620, 2626,	\diamonddots ... 17419, 19898	\DocumentMetadata 3991, 3993
2745, 2871, 2890, 2900,	\DiamondSolid 20468	\dospecials 14461, 14488
2903, 2910, 2939, 2958,	\diamondsuit 18797, 18799,	\Doteq 17993, 20831
2961, 3305, 3372, 3384,	20942	\doteq 17986, 20107
3399, 3416, 3419, 3423,	\digamma 20770	\doteqdot 17991, 20109
3451, 3456, 3460, 3463,	\dimen@ 1561, 1638, 1639, 1642,	\dotminus 17925, 20080
3470, 3482, 3489, 3499,	1644, 4172, 4173, 4175,	\dotplus 17844, 20047
3502, 3505, 3509, 3525,	4182, 4183, 5108, 5109,	\dots 548
3535, 3542, 3553, 3566,	5112, 5121, 5122, 5126,	\dottimes 19233, 20544
3583, 3673, 3682, 3712,	6007, 6016, 6749, 6750,	\doublebarwedge . 19256, 20553
3718, 3724, 3730, 3736,	8947, 8949, 10775, 10776,	\doublecap 18300, 20875
3741, 3747, 3753, 3759,	10778, 11347, 11362, 11365,	\doublecup 18303, 20876
3765, 3798, 3805, 3896,	11759, 11761, 11826, 11828,	\doublesqcap 19244, 20972
3897, 3910, 3917, 3927,	11920, 11922, 12204, 12206	\doublesqcup 19249, 20973
3968, 3969, 3972, 3975,	\dimexpr 489, 1319, 1941, 1943,	\doublevav 16974
3978, 3981, 3984, 3987,	1951, 1956, 1959, 1961,	\doublevee 19252, 20552
3999, 4022, 4136, 4139,	1975, 1977, 1980, 1981,	\doublewedge ... 19250, 20551
4898, 4927, 4933, 4945,	1988, 1991, 1994, 1995,	\doubleyod 16978
5417, 5505, 5561, 5861,	1996, 1997, 2007, 2012,	\DOWNarrow ... 18629, 20313
5866, 5879, 5907, 5950,	2020, 2024, 2029, 2039,	\Downarrow 17757, 20009
5953, 5956, 5960, 5963,		\downarrow 19959

<code>\downdownarrows</code>	17732, 20000	<code>\einferior</code>	19929	<code>\Equivalence</code>	17762
<code>\downdownharpoons</code>	19153, 20512	<code>\ejective</code>	16262, 20759	<code>\er</code>	16063, 20707
<code>\downharpoonleft</code>	17715, 19993	<code>\ell</code>	17541, 19944	<code>\errmessage</code>	3302
<code>\downharpoonright</code>	17712, 19992	<code>\em</code>	594	<code>\escapechar</code>	517, 4350, 7202, 14312, 14490, 14541
<code>\downmodels</code>	19369, 20604	<code>\emgma</code>	16144, 20730	<code>\esh</code>	16203, 19826
<code>\downtherefore</code>	17920, 20824	<code>\emph</code>	573	<code>\EstimatedSign</code>	17569, 20798
<code>\downuparrows</code>	17795, 20025	<code>\empty</code>	963, 3426	<code>\eta</code>	19855
<code>\downupharpoons</code>	19171, 20518	<code>\emptyset</code>	17813, 20034	<code>\eTeX</code>	559, 12355
<code>\downvdash</code>	18203, 20854	<code>\enc@html</code>	5865, 5868	<code>\eth</code>	15493, 20668
<code>\dp</code>	5108, 5116, 5129, 6234, 6237, 7430, 9464, 9544, 9581, 9621, 11348, 11351, 12002, 12284, 13510	<code>\enc@update</code>	533	<code>\Eur</code>	17527, 20795
<code>\dsbiological</code>	18845, 20381	<code>\END</code>	1311, 1312, 1338, 1339, 1354, 1355, 1372, 1373, 1390, 1391, 1747, 1753, 1758, 1860, 1862, 9254, 9267, 9271, 9278, 9291, 9295	<code>\EURcr</code>	17524, 20792
<code>\dschemical</code>	18843, 20380	<code>\end</code>	615, 20996	<code>\EurCr</code>	17523, 20791
<code>\dscommercial</code>	18847, 20382	<code>\endeqnarray</code>	7157, 7176, 7184	<code>\EURdig</code>	17520, 20788
<code>\dsjuridical</code>	18841, 20379	<code>\endequation</code>	7132, 7144	<code>\EurDig</code>	17519, 20787
<code>\dsmedical</code>	18839, 20378	<code>\endForm</code>	5855	<code>\EURhV</code>	17522, 20790
<code>\dsmilitary</code>	18836, 20377	<code>\endinput</code>	64, 2698, 2793, 4396, 4527, 8425, 10972, 12347, 14573	<code>\EurHv</code>	17521, 20789
<code>\dtimes</code>	19236, 20545	<code>\endlinechar</code>	830, 851, 4765	<code>\EURtm</code>	17526, 20794
<code>\dvipdfm@setdim</code>	13507, 13557, 13656, 13679, 13710, 13735, 13763, 13792	<code>\endNoHyper</code>	6358	<code>\EurTm</code>	17525, 20793
<code>\dz</code>	16310, 20768	<code>\EndPreamble</code>	12350	<code>\evensidemargin</code>	7948
E					
<code>\Earth</code>	18733, 20918	<code>\endsubeqnarray</code>	7188, 7195	<code>\ExecuteOptions</code>	4187, 4188, 4192
<code>\earth</code>	18731, 20348	<code>\eng</code>	15692, 20675	<code>\exists</code>	17809, 20032
<code>\ECIRCUMFLEX</code>	19505, 19589, 19590, 19591, 19592, 19593	<code>\engma</code>	15693, 20676	<code>\exp</code>	498, 504, 2325
<code>\ecircumflex</code>	19499, 19529, 19530, 19531, 19532, 19533	<code>\ensuremath</code>	660	<code>\ExplSyntaxOff</code>	360, 509, 2337, 4288, 5089, 5148, 6882, 8155
<code>\Ecommerce</code>	17570, 20799	<code>\Envelope</code>	18903, 20402	<code>\ExplSyntaxOn</code>	356, 493, 2319, 4277, 5053, 5143, 6849, 8084
<code>\EdefEscapeName</code>	3829, 3879, 9371, 10113, 10652, 11526, 12678, 12681, 13280, 13283, 13636, 13642	<code>\enya</code>	16148, 20732	<code>\extravietnam</code>	3358
<code>\EdefEscapeString</code>	784, 794	<code>\epsdice</code>	612, 20649	<code>\extravietnamese</code>	3350
<code>\EdefUnescapeName</code>	3830	<code>\epsi</code>	16067, 20708	<code>\EyesDollar</code>	15244, 20653
<code>\EdefUnescapeString</code>	779, 7928	<code>\epsilon</code>	19853	F	
<code>\egroup</code>	675, 8927, 9932, 10383, 11039, 12864, 12956, 12981	<code>\eqcirc</code>	18010, 20117	<code>\fa</code>	19686
<code>\EightAsterisk</code>	19030, 20462	<code>\eqcolon</code>	17928, 20081	<code>\fallingdotseq</code>	20111
<code>\EightFlowerPetal</code>	19008, 20452	<code>\eqdot</code>	19261, 20555	<code>\fallingdotseq</code>	17997
<code>\EightFlowerPetalRemoved</code>	19027, 20461	<code>\eqnarray</code>	7156, 7159, 7181	<code>\FancyVerbLineautorefname</code>	2978, 2996, 3014, 3032, 3050, 3068, 3086, 3121, 3124, 3144, 3162, 3180, 3198, 3216, 3234, 3252, 3270, 8680
<code>\eighthnote</code>	18815, 20944	<code>\eqsim</code>	17942, 20087	<code>\farsikaf</code>	19728
<code>\eighthinferior</code>	19921	<code>\eqslantgtr</code>	19300, 20573	<code>\farsiya</code>	19732
<code>\EightStar</code>	18987, 20442	<code>\eqslantless</code>	19298, 20572	<code>\fatha</code>	19712
<code>\EightStarBold</code>	18989, 20443	<code>\equal</code>	7793	<code>\fatsemi</code>	19226, 20541
<code>\EightStarConvex</code>	18983, 20440	<code>\equalscolon</code>	18008, 20116	<code>\Fax</code>	19457, 20633
<code>\EightStarTaper</code>	18981, 20439	<code>\equalsinferior</code>	19925	<code>\fax</code>	17581, 19954
<code>\eightsuperior</code>	19905	<code>\equalsuperior</code>	19909	<code>\Faxmachine</code>	19459, 20989
		<code>\equation</code>	7131, 7135	<code>\fbox</code>	13146, 13149
		<code>\equationautorefname</code>	2965, 2983, 3001, 3019, 3037, 3055, 3073, 3091, 3092, 3131, 3149, 3167, 3185, 3203, 3221, 3239, 3257, 8663, 8667	<code>\fcdice</code>	613, 20650
		<code>\equiv</code>	18030, 20126	<code>\Female</code>	18730, 20917

\female . . .	18724, 18727, 20914	\Fld@additionalactions .	13920, 12650, 12678, 12792, 12854,
\FemaleFemale . .	18853, 20385	14011, 14040, 14075, 14110,	12872, 12886, 12894, 12901,
\FemaleMale	18857, 20387	14145, 14180, 14212	12927, 12937, 12967, 12977,
\Field@addtoks	5929, 5961, 5964,	\Fld@align . .	13181, 13198, 13211, 13252,
6138, 6159		14050, 14119	13280, 13396, 13530, 13547,
\Field@boolkey	5418, 5506, 5923,	\Fld@altname	13567, 13608, 13636, 13773,
5954, 5957		13902, 13973, 13975	14103, 14107, 14108, 14143
\Field@toks	5927, 5928,	\Fld@annotflags	\Fld@DingDef .
5930, 12856, 12873, 12884,		5625, 5627, 13984, 14017, 14045,	6050, 6053, 6055
12895, 12905, 12922, 12940,		14079, 14114, 14150, 14186	\Fld@disabledfalse
12948, 12953, 12969, 12978		\Fld@annotnames	5838
\Field@Width	5840, 5987	13971, 13986,	\Fld@export .
\figureautorefname .	2968, 2986,	14019, 14047, 14081, 14116,	5870
3004, 3022, 3040, 3058,		14152, 14188	\Fld@findlength . .
3076, 3106, 3134, 3152,		\Fld@bcolor .	12904, 12915
3170, 3188, 3206, 3224,		5846, 6086, 14001,	\Fld@flags
3242, 3260, 8670		14003, 14066, 14068, 14095,	5639, 5641, 5652, 5654,
\filename@area	5248	14097, 14123, 14135, 14137	5668, 5670, 5700, 5702,
\filename@base	5248	\fld@bcolor	5725, 5727, 13988, 14021,
\filename@ext	5245, 5246, 5248,	14054	14049, 14083, 14118, 14154,
5249		\Fld@bordercolor	14190
\filename@parse	5244	5847,	\Fld@format@code .
\find@pdfink . .	8973, 9024, 9034	6089, 13997, 13999, 14025,	6095, 13925,
\Finv	17571, 19949	14033, 14035, 14053, 14062,	13927
\Fire	19460, 20634	14064, 14091, 14093, 14122,	\Fld@getmethodfalse
\firstaid@cref@updatelabeldata		14131, 14133, 14158, 14166,	5890
.	6859	14168, 14194, 14202, 14204	\Fld@getmethodtrue
\fivedots	19395, 20615	\Fld@bordersep	5892
\FiveFlowerOpen .	19006, 20451	5848, 6038	\Fld@height
\FiveFlowerPetal .	19004, 20450	\Fld@borderstyle	5996, 12581, 12599,
\fiveinferior	19918	. .	12613, 12668, 12688, 12705,
\FiveStar	18663, 20326	5850, 6022, 6023, 6024,	12745, 12765, 12795, 12805,
\FiveStarCenterOpen . .	18965,	6034, 13990, 14023, 14051,	13184, 13204, 13214, 13270,
20431		14085, 14120, 14156, 14210	13298, 13312, 13348, 13371,
\FiveStarConvex .	18973, 20435	\Fld@borderwidth	13399, 13411, 13533, 13549,
\FiveStarOpen . .	18665, 20327	. .	13570, 13626, 13638, 13672,
\FiveStarOpenCircled . .	18963,	5849, 6002, 6228, 6231,	13721, 13744, 13776, 13784
20430		6232, 6235, 6236, 12666,	\Fld@hiddenfalse
\FiveStarOpenDotted . .	18967,	12667, 13268, 13269, 13624,	5528
20432		13625, 13990, 14023, 14051,	\Fld@hiddentrue
\FiveStarOutline .	18969, 20433	14085, 14120, 14156, 14210	5529
\FiveStarOutlineHeavy .	18971,	\Fld@calculate@code	\Fld@invisiblefalse
20434		6097, 12565,	5524
\FiveStarShadow .	18975, 20436	13069, 13523, 13933, 13935	\Fld@invisibletrue
\fivesuperior	19902	\Fld@calculate@sortkey . .	5525
\Flag	18831, 20375	6131, 6133, 13078	\Fld@keystroke@code
\flap	16191, 20743	\Fld@cbsymbol	6098,
\flapr	16190, 20742	5851, 6050, 14005	13921, 13923
\flat	18820, 20370	\Fld@charsize	\Fld@listcount . . .
\Fld@@additionalactions	13920,	5841, 5842, 5999,	12677, 12682,
13963, 13967		12665, 13267, 13623, 14007,	12685, 12690, 12695, 12700,
\Fld@@DingDef	6057, 6060, 6079	14072, 14101, 14141, 14192	13279, 13284, 13299, 13305,
		\Fld@checkedfalse	13635, 13643, 13647, 13652,
		5837	13663, 13668
		\Fld@ckekequals . .	\Fld@loc
		5941, 12618,	\Fld@mappingname .
		12680, 12925, 12935, 13219,	5981, 5983,
		13282, 13575, 13641	13904, 13906, 13977, 13979
		\Fld@choices	\Fld@maxlen .
		. .	5843, 5990, 14146
		5732, 5740, 5742, 5746,	\Fld@menulength . .
		5755, 5762, 5766, 5814,	5839, 5993,
		5816, 5824, 5825, 14074	12615, 12619, 12665, 12916,
		\Fld@color . .	12917, 12920, 13216, 13220,
		5845, 6092, 14008,	13267, 13572, 13576, 13623
		14073, 14102, 14142	\Fld@name
		\Fld@default .	5975, 12577, 12609,
		5757, 5760, 5762,	12713, 12791, 12853, 12858,
		6041, 12578, 12594, 12610,	12869, 12870, 12881, 12882,
			12891, 12892, 12900, 12921,
			12938, 12946, 12951, 12966,
			12975, 13180, 13210, 13317,

13395, 13529, 13566, 13686,
13772, 13899, 13972

\Fld@norotatefalse 5541

\Fld@norotatetrue 5540

\Fld@noviewfalse 5544

\Fld@noviewtrue 5545

\Fld@nozoomfalse 5537

\Fld@nozoomtrue 5536

\Fld@onblur@code . 6100, 13941,
13943

\Fld@onclick@code . 6094, 6170,
14039

\Fld@onenter@code 6103, 13953,
13955

\Fld@onexit@code . 6104, 13957,
13959

\Fld@onfocus@code 6099, 13937,
13939

\Fld@onmousedown@code 6101,
13945, 13947

\Fld@onmouseup@code . 6102,
13949, 13951

\Fld@pageobjref . 12556, 13154,
13165, 13520, 13855, 13985,
14018, 14046, 14080, 14115,
14151, 14187

\Fld@printfalse 5533

\Fld@printtrue 5532

\Fld@radiosymbol . . 5852, 6053,
14099

\Fld@rotation 5853,
6083, 13993, 13995, 14024,
14029, 14031, 14052, 14058,
14060, 14087, 14089, 14121,
14127, 14129, 14157, 14162,
14164, 14193, 14198, 14200

\Fld@submitflags . . 5607, 5609,
14178

\Fld@temp . . 6056, 6058, 6061,
6062, 6071, 6072

\Fld@validate@code 6096, 13929,
13931

\Fld@value . . 5758, 5764, 5766,
6047, 12579, 12594, 12611,
12649, 12650, 13182, 13198,
13212, 13251, 13252, 13531,
13547, 13568, 13607, 13608,
14144

\Fld@width 5986, 12580, 12593,
12599, 12612, 12648, 12659,
12661, 12688, 12705, 12728,
12744, 12752, 12764, 12778,
12794, 12800, 12805, 13183,
13197, 13204, 13213, 13250,

13261, 13263, 13298, 13312,
13333, 13347, 13355, 13370,
13384, 13398, 13405, 13411,
13532, 13546, 13549, 13569,
13606, 13617, 13619, 13638,
13672, 13703, 13720, 13728,
13743, 13757, 13775, 13782,
13784

\float@caption 7534, 7607

\float@makebox 7609, 7610

\floatingpenalty 7431

\Florin 15815, 20680

\flq 641

\flqq 639

\fntname 7

\fntversion 7

\font 5096

\fontencoding . . . 525, 529, 566,
13138

\fontfamily 567, 13137

\fontseries 568, 13139

\fontshape 569, 4715, 13140

\fontsize 570

\Football . . 18872, 18874, 20949

\footins 7425

\footnoteautorefname
. . 2966, 2984, 3002, 3020,
3038, 3056, 3074, 3095,
3098, 3132, 3150, 3168,
3186, 3204, 3222, 3240,
3258, 8664, 8668

\footnotesep 7429, 7437

\footnotesize 599, 7427

\footnotetext 7387

\footref 7456, 7457

\forall 17803, 20029

\Force 17634, 20805

\forcecjktoken 462

\foreignlanguage 626

\Form 5854

\Form@aaction 5864, 12845, 14176

\Form@boolkey 5858

\Form@htmlfalse . . . 5857, 5876

\Form@htmltrue 5869

\Form@method 5888, 5896, 12845

\Forward 18622, 20310

\ForwardToIndex . . 18440, 20299

\FourAsterisk . . . 18951, 20424

\fourinferior 19917

\FourStar 18959, 20428

\FourStarOpen . . 18961, 20429

\foursuperior 19901

\fourth 17417, 19897

\frown 18393, 20280

\frownie 18706, 20341

\Frowny 18708, 20909

\frq 642

\frqq 640

\fullnote 19434, 20623

\futurelet 695, 1305

G

\G . 15125, 15169, 15198, 15928,
15930, 15932, 15934, 15944,
15946, 15947, 15958, 15960,
15970, 15972, 15974, 15976

\g 2322, 2326, 2334

\g@addto@macro . . . 6482, 6654,
7670, 7900, 7903, 7906,
7958, 9299, 10265, 10794,
11084, 11674, 11783, 11853,
12162, 12361

\G@refundefinedtrue 5021, 8430,
8450, 8467, 8599

\gaf 19730

\Game 17583, 19955

\Gamma 19838

\gamma 19851

\gammainferior 19881

\Ganz 19436, 20986

\GaPa 19422, 20617

\Gauge 6186

\ge 18042, 20131

\Gemini 18762, 20929

\gemini 18760, 20357

\GenericError 683, 3706

\GenericInfo 685, 3704

\GenericWarning 261, 684, 3705

\Gentsroom 19464, 20636

\geq 18042, 20130

\geqclosed 18252, 20870

\geqq 18050, 20134

\geqslant 19271, 20560

\GetDocumentProperties . 2319,
4280

\getrefbykeydefault . 7057, 7058

\gexmode . 10824, 10825, 10927

\gg 18062, 20140

\ggg 18312, 20245

\ghayn 19682

\gimel 17577, 19952

\Gin@setfile 8240, 8241

\glossary 648, 7975

\glotstop 16260, 19835

\glottal 16263, 20760

\glq 637

\glqq 635

\gnapprox 19290, 20569

<code>\gneq</code>	19286, 20567	<code>\H@refstepcounter</code> . .	6843, 7107, 7136, 7232, 7529	<code>\hebalef</code>	16919
<code>\gneqq</code>	18056, 20137	<code>\H@subeqnarray</code> . . .	7187, 7191	<code>\hebayin</code>	16955
<code>\gnsim</code>	18344, 20259	<code>\ha</code>	19698	<code>\hebbet</code>	16921
<code>\grq</code>	638	<code>\Haa</code>	19656	<code>\hebdalet</code>	16915, 16925
<code>\grqq</code>	636	<code>\Halb</code>	19439, 20987	<code>\hebfinalkaf</code>	16939
<code>\gtrapprox</code>	19279, 20564	<code>\halfnote</code>	19437, 20624	<code>\hebfinalmem</code>	16945
<code>\gtrclosed</code>	18245, 20867	<code>\halign</code>	657	<code>\hebfinalnun</code>	16949
<code>\gtrdot</code>	18308, 20243	<code>\hamza</code>	19632	<code>\hebfinalpe</code>	16957
<code>\gtreqless</code>	18318, 20247	<code>\HandCuffLeft</code> . . .	18682, 20333	<code>\hebfinaltsadi</code>	16961
<code>\gtreqqlless</code>	19296, 20571	<code>\HandCuffRight</code> . .	18684, 20334	<code>\hebgimel</code>	16923
<code>\gtrless</code>	18089, 20152	<code>\HandLeft</code>	18686, 20335	<code>\hebhe</code>	16927
<code>\gtrsim</code>	18080, 20148	<code>\HandRight</code>	18689, 20336	<code>\hebheth</code>	16933
<code>\guillemetleft</code>	14888, 15071, 15343, 19486	<code>\HaPa</code>	19424, 20618	<code>\hebkaf</code>	16941
<code>\guillemetright</code> . . .	14920, 15072, 15379, 19487	<code>\HAR@checkcitations</code>	7809	<code>\heblamed</code>	16943
<code>\guillemotleft</code> . . .	14887, 15342	<code>\HAR@citetoaux</code>	7765	<code>\hebmam</code>	16947
<code>\guillemotright</code> . . .	14919, 15378	<code>\HAR@tempa</code>	7810, 7811, 7812, 7813, 7814, 7815	<code>\hebnun</code>	16951
<code>\guilsinglleft</code>	14818, 15073, 17400, 19488	<code>\hardsign</code>	16553, 20771	<code>\hebpe</code>	16959
<code>\guilsinglright</code> . . .	14820, 15074, 17402, 19489	<code>\harvardcite</code>	7759, 7796	<code>\hebpof</code>	16965
H		<code>\harvarditem</code>	7784	<code>\hebrech</code>	16967
<code>\H</code>	15120, 15172, 15201, 15223, 15703, 15705, 15767, 15769, 16895, 16897	<code>\hateq</code>	18018, 20121	<code>\hebsamekh</code>	16953
<code>\h</code>	3171, 19512, 19517, 19522, 19527, 19532, 19537, 19542, 19547, 19552, 19557, 19562, 19567, 19572, 19577, 19582, 19587, 19592, 19597, 19602, 19607, 19612, 19617, 19622, 19627	<code>\hausab</code>	15804, 19800	<code>\hebschin</code>	16969, 16970, 20773
<code>\H@@footnotemark</code>	7287, 7304, 7371, 7461, 7468, 7480, 7491	<code>\hausab</code>	16039, 20701	<code>\hebsin</code>	16970, 20773
<code>\H@@footnotetext</code>	7286, 7296, 7331, 7370, 7409, 7469, 7483, 7491	<code>\hausad</code>	15808, 19801	<code>\hebtav</code>	16972
<code>\H@@mpfootnotetext</code>	7294, 7306, 7308, 7372	<code>\hausad</code>	16053, 20706	<code>\hebtet</code>	16935
<code>\H@@theHfootnote</code> . . .	7278, 7281	<code>\hausak</code>	15819, 19802	<code>\hebtsadi</code>	16963
<code>\H@endeqnarray</code>	7157, 7177	<code>\hausak</code>	15823, 20682	<code>\hebvav</code>	16929
<code>\H@endequation</code>	7132, 7150	<code>\hb@xt@</code>	5111, 5124	<code>\hebyod</code>	16937
<code>\H@endsubeqnarray</code> . . .	7188, 7196	<code>\hbar</code>	15610, 19799	<code>\hebzayin</code>	16931
<code>\H@eqnarray</code>	7156, 7162	<code>\hbox</code>	1553, 1559, 1565, 2260, 3437, 3443, 5112, 5126, 5283, 5285, 5987, 6222, 6223, 6224, 6225, 7943, 8920, 9465, 9475, 9545, 9559, 9582, 9597, 9622, 9637, 9908, 9925, 11003, 11351, 11365, 12003, 12013, 12285, 12300, 12993, 13548, 13637, 13671, 13701, 13729, 13758, 13783, 14585	<code>\Hermaphrodite</code>	18859, 20388
<code>\H@equation</code>	7131, 7137	<code>\hc@currentHref</code>	7545	<code>\hexagon</code>	18435, 20297
<code>\H@item</code>	6836, 6841, 7678, 7703	<code>\HCode</code>	12845, 12847, 12858, 12867, 12879, 12887, 12889, 12920, 12926, 12931, 12936, 12950, 12955, 12959, 12962, 12971	<code>\hexstar</code>	18870, 20390
<code>\H@old@part</code>	14640, 14648	<code>\hdotfor</code>	17382, 19891	<code>\hfill</code>	6222, 6223, 6224, 6225, 7689, 7733
<code>\H@old@schapter</code> . . .	14610, 14619	<code>\headerps@out</code>	6762, 11664, 11675, 11770, 11784, 11845, 11854, 11867, 11881, 11928, 12046, 12163, 12362	<code>\Hfootnoteautorefname</code> . .	8664
<code>\H@old@ssect</code>	14658, 14669, 14678	<code>\Heart</code>	18795, 20940	<code>\hinferior</code>	19933
<code>\H@old@spart</code>	14650, 14656	<code>\heartsuit</code>	18793, 18796, 20941	<code>\hoffset</code>	7944
<code>\H@old@ssect</code>	14596, 14601			<code>\hookb</code>	16038, 20700
				<code>\hookd</code>	16052, 20705
				<code>\hookg</code>	16085, 20712
				<code>\hookh</code>	16105, 20717
				<code>\hookheng</code>	16109, 20719
				<code>\hookleftarrow</code>	17672, 19977
				<code>\hookrightarrow</code>	16074, 20709
				<code>\hphantom</code>	609
				<code>\href</code>	649, 4881, 6383
				<code>\href@</code>	4884, 4887, 4892
				<code>\href@split</code>	4892, 4893
				<code>\hsize</code>	7432
				<code>\hskip</code>	1564, 1651, 2305, 2306, 4878, 6228, 12993
				<code>\hslash</code>	17537, 19942
				<code>\hspace</code>	645, 7799, 7800
				<code>\hss</code>	5113, 5125, 7952, 14590

\ht	5117, 5121, 5130, 6230, 6233, 9473, 9548, 9557, 9564, 9585, 9595, 9602, 9625, 9635, 9642, 11347, 12011, 12298, 13508	\hvtex@trans@effect@Wipe	10687	\Hy@AtEndOfPackageHook	365, 368, 370, 371
\htrtaild	19888	\hvtex@trans@par	10721, 10725, 10727, 10730, 10733	\Hy@author	6408, 6412
\Huge	596	\hvtex@trans@params	10715, 10717, 10741	\Hy@babelnormalise	4982, 4984
\huge	600	\Hy@@CleanupFile	5283, 5285	\Hy@backout	4759, 6343, 6347, 7643
\Hurl	4967, 4969, 4971	\Hy@@DefNameKey	2427, 2429	\Hy@backreffalse	428, 2930, 2952, 4404
\hv	15818, 20681	\Hy@@escapeform	13865, 13878, 13884	\Hy@backreftrue	2923, 2927, 2949
\hv@pdf@char	14381, 14446, 14447, 14448, 14449	\Hy@@SectionAnchor	14580, 14583, 14593	\Hy@BeginAnnot	9950, 9967, 10010, 10049, 10082, 10112
\hvtex@buffer	10694, 10698, 10706, 10709, 10718, 10722, 10738	\Hy@@temp	3467, 3469, 6106, 6108	\Hy@bibcite	7667, 7671
\hvtex@gettoken	10693, 10707, 10711, 10720, 10724	\Hy@@VersionCheck	283, 312	\Hy@bookmarksdepth	3422, 3427, 3439, 3445, 14224
\hvtex@gettoken@	10694, 10696	\Hy@abspage	6502, 6588, 6704, 6788	\Hy@bookmarksfalse	8024
\hvtex@par@dimension	10689, 10730	\Hy@Acrobatmenu	4295, 4336, 9369, 10111, 10653, 11527	\Hy@bookmarksnumberedfalse	429
\hvtex@par@direction	10690, 10733	\Hy@Activeanchorfalse	4763, 9015, 9417, 9432, 9511, 9521, 9837, 10368, 10385, 10461, 10474, 10989, 11951, 11966, 12238, 12252	\Hy@bookmarksopenfalse	430
\hvtex@par@duration	10691, 10725	\Hy@Activeanchortrue	9011, 9414, 9428, 9509, 9518, 9833, 10364, 10382, 10459, 10471, 10979, 11948, 11962, 12235, 12248	\Hy@bookmarkstrue	431, 8020
\hvtex@par@motion	10692, 10727	\Hy@ActiveCarriageReturn	4800, 4803	\Hy@bookmarkstype	3457, 3459, 7979, 14235
\hvtex@param@dimension	10702, 10731, 10749, 10752	\Hy@addcontentsline@addbookmark	7962, 8016, 8034	\Hy@boolkey	2353, 2446, 2449, 2452, 2473, 2476, 2479, 2510, 2513, 2530, 2537, 2540, 2543, 2546, 2549, 2552, 2555, 2558, 2621, 2901, 2904, 2959, 3373, 3385, 3400, 3417, 3420, 3461, 3464, 3683, 3970, 3973, 3976, 3979, 3982, 3985, 3996, 4005, 4137, 4140, 6720
\hvtex@param@direction	10703, 10734, 10760, 10768	\Hy@AllowHyphens	4874, 10977, 11009, 11334	\Hy@BorderArrayPatch	11405, 11408, 11673, 12161
\hvtex@param@duration	10704, 10726, 10773, 10775	\Hy@AlphNoErr	6949, 6962, 6964	\Hy@breaklinks@unsupported	2518, 10955
\hvtex@param@motion	10705, 10728, 10749, 10756	\Hy@AnchorName	5005, 5007, 5010, 5012, 5037, 5039, 5043, 5048, 5050	\Hy@breaklinksfalse	432
\hvtex@parse@trans	10678, 10700	\Hy@appendixstring	6943, 6966, 6967	\Hy@breaklinksunhbox	11301, 11355
\hvtex@produce@trans	10739, 10745	\Hy@AtBeginDocument	356, 2566, 2694, 2789, 3387, 4169, 4238, 4255, 4392, 4398, 4523, 4686, 4750, 6300, 6795, 7756, 8514, 8915, 9306, 9920, 10443, 11880, 11926, 13010, 13043	\Hy@CatcodeWrapper	4647, 4704, 4753
\hvtex@token	10697, 10708, 10714, 10721, 10726, 10729, 10732, 10734	\Hy@AtBeginDocumentHook	362, 367, 373, 374	\Hy@chapapp	6944, 6945, 6966, 6999, 14614, 14625
\hvtex@trans@code	10682, 10683, 10684, 10685, 10686, 10687, 10688, 10701, 10747, 10748, 10750, 10752, 10754, 10756, 10758, 10760, 10762, 10763, 10764, 10765, 10766, 10768	\Hy@AtEndOfPackage	364, 818, 3351, 3359, 3366, 4406, 4414, 4638	\Hy@chapterstring	6939, 6941, 6944, 6998
\hvtex@trans@effect@Blinds	10682			\Hy@CheckOptionValue	2397, 2434
\hvtex@trans@effect@Box	10683			\Hy@CJKbookmarksfalse	434
\hvtex@trans@effect@Dissolve	10684			\Hy@cjkpu	974, 976, 997
\hvtex@trans@effect@Glitter	10685			\Hy@CleanupFile	5281, 9073, 10012, 10538, 11599
\hvtex@trans@effect@R	10688			\Hy@colorlink	3379, 4707, 4715, 4719,
\hvtex@trans@effect@Split	10686				

8916, 8996, 9066, 9103,	9240, 9241, 9242, 9243,	10554, 10580, 10615, 10648,
9136, 9391, 9415, 9438,	9244, 9245, 9246, 9247,	10667, 11034, 11294, 11949,
9469, 9482, 9510, 9526,	9248, 9364, 9673, 9674,	11988, 12014, 12022, 12236,
9551, 9567, 9589, 9606,	9675, 9676, 9677, 9678,	12272, 12297, 12308
9629, 9646, 9921, 10000,	9679, 9680, 9681, 9682,	\Hy@EndWrap 4648, 4650, 4651,
10041, 10075, 10105, 10132,	9683, 9684, 9948, 10168,	4684
10460, 10482, 10552, 10578,	10169, 10170, 10171, 10172,	\Hy@Error 255, 271, 277,
10613, 10646, 10665, 11007,	10173, 10174, 10175, 10176,	300, 2570, 2680, 2706, 2722,
11280, 11282, 11949, 11972,	10177, 10178, 10179, 10297,	2757, 2796, 2803, 2814,
12007, 12020, 12236, 12258,	10445, 10905, 10906, 10907,	2820, 2858, 4320, 4935,
12293, 12306	10908, 10909, 10910, 10911,	5214, 5565, 5689, 5883,
\Hy@colorlinksfalse 3376	10912, 10913, 10914, 10915,	5915, 6111, 6164, 12719,
\Hy@ColorList 3522, 3523	10916, 11162, 11163, 11164,	12772, 13324, 13378, 13693,
\Hy@CounterExists 6823	11165, 11166, 11167, 11168,	13751
\Hy@currentbookmarklevel . . .	11169, 11170, 11171, 11172,	\Hy@escapeform . 12598, 12684,
. 14230, 14240, 14241,	11173, 11755, 12069, 12070,	12703, 12732, 12753, 12779,
14247, 14254, 14346, 14349,	12071, 12072, 12073, 12074,	12804, 13202, 13288, 13310,
14354, 14358	12075, 12076, 12077, 12078,	13337, 13358, 13386, 13409,
\Hy@debugfalse 424	12079, 12080	13554, 13646, 13675, 13707,
\Hy@debugtrue 423	\Hy@DistillerDestFix 7914,	13731, 13759, 13789, 13859,
\Hy@defaultbp 6002, 6004	10920, 10922	13889, 13896
\Hy@defaultbpAux . 6006, 6009	\Hy@draftfalse 391	\Hy@escapestring 13856, 13923,
\Hy@defaultdriver . . 4508, 4540,	\Hy@drafttrue 392	13927, 13931, 13935, 13939,
4550, 4562	\Hy@driver . . . 474, 2523, 2691,	13943, 13947, 13951, 13955,
\Hy@deferred@thm@head . 7251,	2703, 2715, 2718, 2730,	13959, 14005, 14039, 14099,
7252	2736, 2741, 2755, 2765,	14143, 14144, 14176
\Hy@DefFormAction 5862, 5864	2770, 2776, 2783, 2786,	\Hy@EveryPageAnchor . . 7913,
\Hy@DefNameKey . . 2426, 3554,	2812, 2828, 2835, 2841,	7959
3612, 3620, 3628, 3632,	2852, 2866, 4416, 4419,	\Hy@EveryPageBoxHook
3639, 3646, 3653, 3660,	4427, 4430, 4434, 4437,	. . . 6459, 6463, 6467, 7958,
3664, 3669, 3676, 4014	4439, 4443, 4449, 4453,	10265, 10794, 11084
\Hy@DEST 11302, 11369	4456, 4460, 4465, 4469,	\Hy@EveryPageHook 6458, 6462,
\Hy@destlabelfalse 435	4472, 4476, 4480, 4484,	6654, 9299
\Hy@DestName 8960, 8967	4487, 4491, 4494, 4496,	\Hy@ExchangeLeftParenthesis .
\Hy@DestRename . . 5346, 5371,	4500, 4506, 4511, 4513,	 8713, 8719
5375	4517, 4520, 4531, 4534,	\Hy@ExchangeRightParenthesis
\Hy@DisableOption	4537, 4540, 4549, 4550,	 8723, 8729
. . 2382, 4273, 4274, 4275,	4562, 4564, 4572, 4574,	\Hy@false 2223, 2363, 2915, 2951,
4289, 4294, 4411, 4582,	4576, 4578	5912
4583, 4584, 4585, 4586,	\Hy@dth@currentHref . . . 7234,	\Hy@finalfalse 392
4587, 4588, 4589, 4590,	7235, 7242	\Hy@finaltrue 391
4591, 4592, 4593, 4594,	\Hy@dviErrMsg . . . 2658, 2660,	\Hy@FirstPage 4306
4595, 4596, 4597, 4598,	2663, 2669, 2682	\Hy@FirstPageHook
4599, 4600, 4601, 4646,	\Hy@dviModetrue . . 2667, 2672	. . . 6460, 6474, 6475, 6479,
4699, 4724, 4725, 4761,	\Hy@dviPdfmxOutlineOpentru	. . . 6482, 6760, 6761, 11674,
4762, 5402, 6304, 6305,	 4608, 4615	11783, 11853, 12162, 12361
6306, 6307, 6308, 6309,	\Hy@endAnnot . . . 9956, 10003,	\Hy@float@caption . . 7535, 7586,
6310, 6311, 6312, 6313,	10044, 10078, 10108, 10135	7600
6314, 6315, 6316, 6317,	\Hy@endcolorlink . . 3380, 4711,	\Hy@float@currentHref
6318, 6319, 6320, 6321,	4716, 4720, 8925, 9002,	. . . 7590, 7593, 7595, 7601,
6322, 6323, 6324, 6325,	9415, 9452, 9476, 9484,	7603, 7605
6326, 6327, 6432, 6656,	9510, 9534, 9555, 9569,	\Hy@footnote@currentHref . . .
7496, 8245, 8371, 8372,	9593, 9608, 9633, 9648,	. . . 6299, 7316, 7321, 7324,
8839, 8943, 9238, 9239,	9930, 9958, 10460, 10533,	

7339, 7344, 7347, 7359, 7361, 7400, 7442, 7445	\Hy@levelcheck .. 14237, 14252	\Hy@nestingfalse 447
\Hy@FormObjects 13102, 13417, 13472, 13482, 13800, 13851	\Hy@linkcounter 476, 478, 7029, 7030, 7053, 7054	\Hy@newline@author 6453
\Hy@frenchlinksfalse 3378	\Hy@linkfileprefix .. 3501, 5233, 9455, 10333, 11992, 12275	\Hy@newline@title 6452
\Hy@Gin@setfile ... 8240, 8242	\Hy@LinkMath .. 10998, 11000, 11005, 11037, 11326, 11328, 11333, 11335, 11341, 11343	\Hy@next ... 6604, 6614, 6619, 14624, 14633, 14636
\Hy@GlobalAppendToMacro 358, 930, 5386	\Hy@linktoc . 2481, 2483, 2491, 2493, 2503, 8052, 8093, 8109, 8126, 8142	\Hy@nextfalse 8256
\Hy@GlobalStepCount 472, 6588, 7029, 7053, 7933	\Hy@linktoc@all 2489	\Hy@NextPage 4300
\Hy@gtemp 806, 807, 4351, 4357, 4359, 5777, 5791, 7376, 7381, 8737, 8739, 13916, 13918	\Hy@linktoc@none 2486	\Hy@nexttrue . 8257, 8258, 8259
\Hy@href 4884, 4886	\Hy@linktoc@page .. 2481, 2488, 2491	\Hy@NIL 4212, 4225, 4228
\Hy@href@nextactionraw	\Hy@linktoc@section 2483, 2487, 2493	\Hy@number 3907, 3914
.. 4921, 4944, 4946, 4947, 4949, 4954, 4958, 4960, 9062, 9099, 9132, 9387, 9996, 10037, 10071, 10101, 10128, 10497, 10567, 10635, 11624, 11653	\Hy@linktocpagefalse 443	\Hy@numberline . 14231, 14268, 14269, 14270, 14271
\Hy@href@page 4899, 4901, 4905, 4906, 4908, 4915, 4918, 9095, 10032, 11620	\Hy@localanchornamefalse . 444	\Hy@ObsoletePaperOption 2455, 2463
\Hy@hyperfiguresfalse 437	\Hy@LocalAppendToMacro 357, 362, 365, 6908, 6924, 6929	\Hy@ocgcolor 8919, 8933, 9924, 9938
\Hy@hyperfootnotetrue .. 439	\Hy@LookForParentCounter 6914	\Hy@ocgcolorlinksfalse ... 3377, 4694
\Hy@hyperindextrue 440	\Hy@LT@currentHref 7109, 7120	\Hy@org@chapter 14622, 14637
\Hy@hypertexnamesfalse . 2194	\Hy@LT@footnotetext 7399, 7408	\Hy@OrgMakeLabel 12330, 12337
\Hy@hypertexnamestrue .. 441	\Hy@make@anchor . 8168, 8174, 8180	\Hy@OutlineName 14502, 14554
\Hy@ifempty 359, 5157	\Hy@make@cdf@tag@@ 8172, 8187	\Hy@OutlineRerunCheck 14370, 14469, 14548
\Hy@iffileloaded . 898, 903, 6472	\Hy@make@cdf@tag@@@ .. 8178, 8188	\Hy@PageAnchorSlide ... 7873, 7911, 7925
\Hy@ifnotmeasuring 6888, 6891	\Hy@MakeCurrentHref .. 6992, 7041, 7054	\Hy@PageAnchorSlidesPlain 7859, 7910, 7920
\Hy@ifStringEndsWith .. 5249, 5261	\Hy@MakeCurrentHrefAuto 7052, 7066, 8169, 14598, 14614, 14625, 14652, 14666	\Hy@pageanchortrue 450
\Hy@imPLICITtrue 442	\Hy@MakeRemoteAction . 4904, 9076, 10015, 11602	\Hy@pagecounter 477, 479, 7933, 7935, 7937
\Hy@Info 258, 2371, 4362, 4364, 4367, 4369, 4372, 4374, 4377, 4379, 4382, 4384, 4631, 4637, 4712, 4717, 4721, 4843, 4870, 5472, 6261, 6263, 6266, 6268, 6271, 6273, 6276, 6278, 6281, 6283, 6286, 6288, 6291, 6293, 7757, 7984, 8001	\Hy@maketitle@end . 7472, 7477, 7479	\Hy@pageheight ... 4183, 11785, 11882
\Hy@InfoNoLine 259, 4387, 4389, 4574, 8761, 12215	\Hy@maketitle@optarg ... 7470, 7475	\Hy@param .. 4213, 4214, 4217, 4218, 6997, 6998, 6999, 7026, 7030
\Hy@IsNotEmpty .. 5353, 5354, 5377	\Hy@Match 318, 320, 2874, 3511, 3569, 3586, 3932, 4032, 4038, 4068, 4069, 4072, 4083, 4098, 4949, 6024	\Hy@pdf@majorminor@version . .. 2646, 4291, 5739, 8757, 8771, 8798, 8819, 13911
\Hy@LastPage 4309	\Hy@MaybeStopNow 2779, 4193, 4196	\Hy@pdf@majorversion 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2646, 6754, 8765, 8794, 8816, 8834, 8837
\Hy@leftbracechar 315, 332	\Hy@Message . 260, 2693, 2788, 4391, 4522, 10389, 10393, 10396, 10399, 10402, 10405, 10408, 10411, 12546, 12817, 12821, 12824, 12827, 12830, 12833, 12836, 12839, 12849, 12986, 13477	\Hy@pdf@minorversion 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 6755, 8765, 8795, 8817, 8834, 8838
\Hy@level 14236, 14238, 14249, 14254, 14255, 14256, 14286	\Hy@naturalnamesfalse ... 446	\Hy@pdfafalse 470, 4282
		\Hy@pdfatrue 4285
		\Hy@pdfcenterwindowfalse 433
		\Hy@pdfdisplaydoctitlefalse 469
		\Hy@pdfescapeformfalse .. 436
		\Hy@pdffitwindowfalse ... 438

\Hy@pdfmajorminor@version ..	\Hy@pstringF	12000, 12008, 12015, 12282,
... 2647, 8752, 8771	.. 9072, 9073, 9074, 9091,	12294, 12301, 12338, 12342
\Hy@pdfmajorversion 2647, 2655,	9109, 9125, 9130, 10011,	\Hy@ReturnAfterElseFi ... 483,
8794, 8816, 8832, 8837	10012, 10013, 10029, 10050,	4804
\Hy@pdfmarkerrorfalse .. 11254	10064, 10069, 10537, 10538,	\Hy@ReturnAfterElseFiFiEnd .
\Hy@pdfmarkerrortrue .. 11438,	10542, 10622, 10629, 10633,	 485, 1520
11447	11598, 11599, 11600, 11617,	\Hy@ReturnAfterFi . 482, 1714,
\Hy@pdfmenubartrue 445	11632, 11648, 11651	4808, 4824, 8383, 8419,
\Hy@pdfminorversion	\Hy@pstringName 14501, 14502,	8718, 8728, 13883
.. 2647, 8749, 8750, 8795,	14517, 14531	\Hy@ReturnAfterFiFiEnd . 484,
8817, 8833, 8838	\Hy@pstringP	1512, 1526, 1619, 1626
\Hy@pdfnewwindowfalse .. 449	9130, 10051, 10069, 10623,	\Hy@ReturnEnd . 481, 484, 485,
\Hy@pdfnewwindowsetfalse 448,	10633, 11633, 11651	1532, 1631
4002	\Hy@pstringURI ... 9040, 9058,	\Hy@rightbracechar ... 316, 333
\Hy@pdfnewwindowsettrue 4004,	10083, 10097, 10481, 10493,	\Hy@safe@activesfalse 486, 5182,
4923	10559, 10563, 11574, 11586	8588
\Hy@pdfnewwindowtrue . 4924	\Hy@PutCatalog ... 6650, 6658,	\Hy@safe@activetrue
\Hy@pdfpagelabelsfalse .. 6489	6777	... 486, 4340, 4796, 4833,
\Hy@pdfpagelabelstrue ... 451	\Hy@raisedlink 2248, 7068, 7089,	4841, 4869, 4986, 5339,
\Hy@pdfstringdef ... 805, 5737,	7090, 7091, 7094, 7121,	5349, 6996, 8045, 8480,
5745, 5948, 6041, 6047	7140, 7145, 7148, 7169,	8577, 13013, 13072, 14462,
\Hy@pdfstringfalse .. 452, 6329	7319, 7342, 7413, 7440,	14489
\Hy@pdfstringtrue ... 662, 6301	7573, 7653, 7679, 7684,	\Hy@SaveCatcodeSettings . 828,
\Hy@pdftoolbartrue	7704, 8170, 11662, 11768,	877, 887, 904
458	12042, 12213, 14587, 14615,	\Hy@saved@currentHref .. 7357,
\Hy@pdfusetitlefalse	14626, 14653	7360
466	\Hy@raiselinksfalse .. 454, 7758	\Hy@saved@footnotemark 7466,
\Hy@pdfversion	\Hy@RemoveDurPageAttr 9278,	7481
2645	9291	\Hy@saved@footnotetext . 7467,
\Hy@pdfwindowuitrue 468	\Hy@RemovePercentCr .. 4816,	7484
\Hy@pkg	4820, 4825	\Hy@saved@hook ... 6436, 6448
4211, 4218	\Hy@RemoveTransPageAttr ...	\Hy@saved@refstepcounter 6883
\Hy@plainpagesfalse	 9253, 9267	\Hy@SavedSpaceFactor
453	\Hy@reserved@a ... 5149, 7160,	.. 2230, 2232, 2237, 2238,
\Hy@PrevPage	7190, 12852, 12902, 12965	2244, 12335
4303	\Hy@RestoreCatcodes 205, 4189,	\Hy@SaveLastskip
\Hy@ProvideTheHCounter 6895	4581	.. 2269, 8957, 9406, 9421,
\Hy@ps@CR 11835, 11842,	\Hy@RestoreCatcodeSettings ..	9503, 9515, 9772, 10356,
11847, 11848, 11865, 11886,	... 872, 879, 889, 906	10372, 10452, 10465, 10960,
11887, 11888, 11894, 11901,	\Hy@RestoreLastskip	10974, 11941, 11955, 12228,
11908, 11915	.. 2269, 8961, 9418, 9433,	12242
\Hy@psdextrafalse	9512, 9522, 9824, 10369,	\Hy@SaveSavedSpaceFactor ...
457	10386, 10462, 10475, 10970,	.. 2242, 9461, 9541, 9578,
\Hy@pstringB	10990, 11952, 11967, 12239,	9618, 11999, 12281
9154,	12253	\Hy@SaveSpaceFactor
9159, 10210, 10222, 11227,	\Hy@RestoreSavedSpaceFactor	.. 2231, 2252, 2263, 9460,
11243, 12134, 12150	.. 2243, 9463, 9543, 9580,	9472, 9540, 9554, 9577,
\Hy@pstringD 9075, 9097, 10014,	9620, 12001, 12283	9592, 9617, 9632, 11002,
10034, 11601, 11622	\Hy@RestoreSpaceFactor	11038, 11324, 11336, 11344,
\Hy@pstringdef	.. 2234, 2261, 2266, 9462,	11998, 12010, 12280, 12296,
.. 8684, 8959, 8983, 9040,	9470, 9477, 9542, 9552,	12333, 12340
9074, 9075, 9109, 9110,	9560, 9579, 9590, 9598,	\Hy@scanauthor ... 6406, 6411
9154, 9775, 9976, 10013,	9619, 9630, 9638, 11004,	\Hy@scanoptauthor . 6406, 6407
10014, 10050, 10051, 10083,	11040, 11332, 11340, 11367,	\Hy@scanopttitle ... 6397, 6398
10210, 10481, 10559, 10622,		
10623, 11227, 11436, 11445,		
11574, 11600, 11601, 11632,		
11633, 12134, 13882, 14501,		
14517		
\Hy@pstringDest ... 8959, 8960,		
9775, 9822, 11436, 11437,		
11441, 11445, 11446, 11450		

\Hy@scantitle	6397, 6402	3548, 3549, 3550, 3551,	8323, 8350, 8774, 8785,
\Hy@secnum@part	14642, 14643,	3567, 3580, 3584, 3599,	8786, 8787, 8788, 8791,
	14645	3766, 3767, 3770, 3773,	8797, 8800, 8827
\Hy@SectionAnchorHref . .	659,	3776, 3801, 3809, 3810,	\Hy@temp@B
	14578, 14603, 14671	3811, 3812, 3813, 3814,	1505, 1506
\Hy@SectionHShift	14577, 14586,	3815, 3816, 3817, 4000,	\Hy@temp@menu
	14599, 14667	4001, 4024, 4025, 4071,	9371,
\Hy@setbreaklinks . .	2515, 2519,	4072, 4079, 4083, 4327,	9386, 10113, 10127, 10652,
	2531, 8745, 9765	4331, 4332, 4333, 4334,	10655, 11526, 11535
\Hy@SetCatcodes	181, 231, 4191	4422, 4424, 4427, 4432,	\Hy@tempa
\Hy@SetNewWindow	4008, 9093,	4434, 4437, 4451, 4453,	
	9127, 10036, 10066, 10630,	4458, 4460, 4467, 4469,	2354, 2356, 2358, 2359,
	11616, 11647	4474, 4476, 4482, 4484,	2361, 2363, 2365, 2368,
\Hy@setouterhbox	11300, 11331	4489, 4491, 4494, 4563,	2371, 2372, 2911, 2912,
\Hy@setpagesizetrue	455	4564, 5462, 5466, 5467,	2913, 2915, 2916, 2918,
\Hy@setpdfborder		5478, 5562, 5563, 5564,	2919, 2921, 2925, 2929,
.		5566, 5570, 5880, 5881,	2940, 2942, 2944, 2945,
.		5882, 5884, 5888, 5889,	2947, 2951, 4802, 4803,
.		6022, 6034, 6105, 6121,	4814, 4818, 4988, 4992,
.		6122, 6123, 6124, 6125,	5161, 5163, 5867, 5868,
.		6126, 6127, 6128, 6129,	5908, 5909, 5912, 5916,
.		6130, 6136, 6142, 6148,	6594, 6596, 6634, 6636,
.		6149, 6150, 6151, 6152,	6788, 6790, 7204, 7206,
.		6153, 6154, 6155, 6156,	7207, 7210, 7211, 7212,
.		6196, 6197, 6204, 6205,	7241, 7243, 7257, 7259,
.		6212, 6213, 6545, 6548,	7530, 7535, 7540, 7978,
.		6557, 6559, 6563, 6567,	7979, 7997, 7998, 8004,
.		6611, 6613, 6898, 6899,	9439, 9440, 10337, 10490,
.		6920, 7450, 7456, 8059,	10491, 11973, 11974, 12259,
.		8060, 8068, 8069, 8326,	12260, 14234, 14235, 14258,
.		8328, 8332, 8363, 8364,	14260, 14278, 14279, 14287,
.		8365, 8380, 8381, 8773,	14311, 14313, 14314, 14316,
.		8776, 8777, 8793, 8812,	14317
.		9169, 9198, 9200, 9694,	\Hy@tempb
.		9699, 9705, 9709, 9712,	
.		9717, 9748, 9750, 10182,	5162, 5164, 5185, 6595,
.		10225, 10227, 11125, 11128,	6596, 6635, 6636, 14259,
.		11132, 11133, 11139, 11140,	14260, 14287
.		11146, 11176, 11181, 11187,	\Hy@tempcolor
.		11191, 11194, 11199, 11232,	11016, 11018,
.		11234, 11306, 11307, 11311,	11031, 11095, 11097, 11109
.		11402, 11403, 11411, 11412,	\Hy@TempPageAnchor
.		11516, 11517, 12083, 12088,	7866,
.		12094, 12098, 12101, 12106,	7918, 7929, 7934, 7951
.		12139, 12141, 13073, 13085,	\Hy@Temp@Alph
.		13864, 13865, 14499, 14505,	6980, 7009
.		14513, 14528	\Hy@Test@alph
.			6971, 7005
.			\Hy@ttestname
.			8975, 8976, 8981,
.			8983, 8984, 8995, 9968,
.			9969, 9974, 9976, 9978,
.			9995, 10509, 10510, 10515,
.			10519, 10592, 10593, 10598,
.			10602, 11100, 11101, 11106,
.			11117
.			\Hy@texhtfalse
.			456
.			\Hy@texhttrue
.			2688, 4417
.			\Hy@theorem@makelinktarget
.			7235, 7237, 7253
.			\Hy@theorem@refstepcounter
.			7230, 7271

<code>\Hy@TheSlideOptionalPage</code> 7877, 7881, 7886, 7895	<code>\Hy@VerboseLinkStart</code> 4838, 9018, 9028, 9437, 9489, 9525, 9537, 9965, 10313, 10336, 10480, 10585, 10993, 11093, 11971, 12027, 12257, 12314	<code>\Hy@writebookmark</code> 2227, 7990, 14220, 14361
<code>\Hy@title</code> 6399, 6403	<code>\Hy@VerboseLinkStop</code> 4854, 9003	<code>\Hy@xspace@end</code> 4236, 4241, 4245, 4250, 4253, 4258, 4259, 4260, 4262, 4263, 4264, 4265, 4266, 6332, 6333, 6335, 6338, 6340, 6341, 6342, 6346, 6349, 6352, 6354, 6355, 6356, 9034, 9066, 9103, 9136, 9482, 9553, 9568, 9591, 9607, 9631, 9647, 10005, 10043, 10077, 10107, 10134, 10317, 10327, 10553, 10579, 10614, 10647, 10666, 11334, 11342, 12009, 12020, 12295, 12307, 12339
<code>\Hy@tocdestname</code> . . 8039, 8047, 8049	<code>\Hy@verbosetrue</code> 423	<code>\HyAnn@AbsPageLabel</code> . 13153, 13160, 13201, 13287, 13309, 13336, 13357, 13385, 13408
<code>\Hy@toclevel</code> . . 7989, 7993, 8006	<code>\Hy@VersionCheck</code> . 268, 4578, 19739	<code>\HyAnn@Count</code> . . 13158, 13159, 13161, 13162, 13163, 13166, 13168, 13170
<code>\Hy@toclinkend</code> 8040, 8056, 8064, 8071, 8075, 8077	<code>\Hy@VersionChecked</code> . 267, 310, 4575, 4577	<code>\HyC@@cmd</code> 87, 109, 122
<code>\Hy@toclinkstart</code> . . . 8039, 8056, 8064, 8071, 8075, 8077	<code>\Hy@vt@PutCatalog</code> 6687, 6689	<code>\HyC@check</code> 68, 71, 74
<code>\Hy@true</code> 2222, 2359, 2361, 2945, 2947, 5909	<code>\Hy@VTeXversion</code> . . 6667, 6679, 10541, 10671, 10801, 14383	<code>\HyC@checkcommand</code> 50, 57, 59
<code>\Hy@undefinedname</code> 8972, 8979, 8981, 9963, 9972, 9974, 10478, 10513, 10515, 10596, 10598, 11091, 11104, 11106	<code>\Hy@WarnHTMLFieldOption</code> . 5934, 5968, 5971, 6144	<code>\HyC@checkFailed</code> 146, 157
<code>\Hy@unicodefalse</code> 463, 787, 797, 2577, 2578, 2586, 3743, 3749, 7924, 13913	<code>\Hy@Warning</code> 256, 343, 1472, 2376, 2392, 2417, 2497, 2602, 2607, 2845, 2853, 2878, 2894, 3391, 3435, 3514, 3575, 3594, 3778, 3825, 3833, 3954, 4086, 4109, 4119, 4127, 4690, 4910, 4953, 5158, 5165, 5305, 5519, 5872, 5935, 6027, 6723, 6738, 7966, 8564, 8613, 8977, 9806, 9810, 9970, 10511, 10594, 10882, 10888, 11102, 11439, 11448, 14243, 14261	<code>\HyC@checkItem</code> . 132, 133, 134, 135, 138
<code>\Hy@unicodetrue</code> . . . 459, 2578, 6714, 6727	<code>\Hy@WarningNoLine</code> 257, 294, 2456, 2521, 2534, 3486, 3539, 3689, 3794, 4176, 4271, 4429, 4438, 4455, 4471, 4486, 4495, 6490, 6681, 6802, 7980, 8808, 11263	<code>\HyC@checklong</code> 45, 53
<code>\Hy@UseMaketitleInfos</code> . . 6454, 9211, 9654, 10140, 10894, 11123, 12050	<code>\Hy@WarningPageBorderColor</code> . . . 3536, 3538, 3540	<code>\HyC@checkOk</code> 144, 154
<code>\Hy@UseMaketitleString</code> . 6433, 6455, 6456	<code>\Hy@WarningPageColor</code> . 3483, 3485, 3487	<code>\HyC@checkPackage</code> . 12, 16, 18
<code>\Hy@UseNameKey</code> 2439, 9176, 9177, 9178, 9179, 9180, 9181, 9182, 9183, 9202, 9724, 9725, 9726, 9727, 9728, 9729, 9730, 9731, 9752, 10189, 10190, 10191, 10192, 10193, 10194, 10195, 10196, 10229, 10854, 10855, 10856, 10857, 10858, 10859, 10860, 10861, 11206, 11207, 11208, 11209, 11210, 11211, 11212, 11213, 11236, 12113, 12114, 12115, 12116, 12117, 12118, 12119, 12120, 12143	<code>\Hy@WarnOptionDisabled</code> 2388, 2391	<code>\HyC@cmd</code> . 62, 75, 87, 95, 118, 131
<code>\Hy@varioref@undefined</code> . 8583	<code>\Hy@WarnOptionValue</code> . . 2369, 2375, 2932, 2954	<code>\HyC@date</code> . . 11, 15, 23, 29, 31
<code>\Hy@VerboseAnchor</code> 4866, 8958, 9407, 9422, 9504, 9516, 9773, 10357, 10373, 10453, 10466, 10961, 10975, 11942, 11956, 12229, 12243	<code>\Hy@wrapper@babel</code> 4338, 4356	<code>\HyC@DeclareRobustCommand</code> 114
<code>\Hy@verbosefalse</code> 424, 467	<code>\Hy@WrapperDef</code> 4348, 8953, 9405, 9420, 9502, 9514, 9771, 10355, 10371, 10451, 10464, 10959, 10973, 11940, 11954, 12227, 12241	<code>\HyC@def</code> 125
<code>\Hy@VerboseGlobalTemp</code> 4842, 4843, 4844, 4845, 4849		<code>\HyC@defcmd</code> 47, 54, 93
<code>\Hy@VerboseLinkInfo</code> . . . 4849, 4850, 4853, 4860		<code>\HyC@doCheck</code> 99, 130
		<code>\HyC@edef</code> 125
		<code>\HyC@getDate</code> 12, 14
		<code>\HyC@meaning</code> 152, 160
		<code>\HyC@nc@default</code> 103, 105
		<code>\HyC@nc@noopt</code> . . 88, 91, 103, 112, 123, 127
		<code>\HyC@nc@opt</code> 88, 101, 123
		<code>\HyC@newcommand</code> 86
		<code>\HyC@next</code> 48, 55, 60, 83
		<code>\HyC@noValue</code> 80, 81, 82, 85, 139
		<code>\HyC@optcmd</code> 107, 111
		<code>\HyC@org@cmd</code> 76
		<code>\HyC@org@optcmd</code> 80, 111
		<code>\HyC@org@robustcmd</code> . . 81, 120

\HyC@org@robustoptcmd	82	\HyField@AuxAddToCoFields	13009, 13049, 13063, 13077	\HyField@SetFlag	5451, 5591, 5597, 5602, 5636, 5664
\HyC@package 10, 22, 28, 34, 37, 38		\HyField@AuxAddToFields	13008, 13046, 13053, 13092	\HyField@SetKeys	5832, 12589, 12625, 12628, 12647, 12715, 12747, 12767, 12796, 13192, 13226, 13229, 13248, 13319, 13350, 13373, 13400, 13541, 13582, 13585, 13604, 13688, 13723, 13746, 13777
\HyC@param	78, 96, 102	\HyField@cofields 12996, 13015, 13016, 13036, 13038, 13112, 13114		\HyField@TheAnnotCount	12553, 12562, 12571, 12601, 12690, 12707, 12735, 12757, 12783, 12807, 13517, 13522, 13525, 13556, 13653, 13678, 13709, 13734, 13762, 13791
\HyC@robustcmd 115, 120, 121, 122		\HyField@FlagsAnnot 5612, 5631, 5645, 5658, 5674, 5706		\HyField@UseFlag	5441, 5582, 5583, 5584, 5585, 5586, 5587, 5588, 5589, 5592, 5593, 5594, 5595, 5598, 5599, 5600, 5603, 5614, 5615, 5616, 5617, 5618, 5619, 5620, 5621, 5622, 5633, 5634, 5635, 5647, 5648, 5649, 5660, 5661, 5662, 5663, 5665, 5676, 5677, 5678, 5679, 5680, 5681, 5682, 5683, 5694, 5697, 5708, 5709, 5710, 5711, 5713, 5715, 5716, 5719, 5722
\HyC@star	67, 70, 94	\HyField@FlagsCheckBox 5644, 12799, 13404, 13781		\HyInd@@@wrindex	8271, 8274, 8305, 8311
\HyC@string 131, 152, 155, 158		\HyField@FlagsChoice	5705, 12658, 13260, 13616	\HyInd@@hyperpage 8378, 8388	
\HyC@Toks 79, 90, 96, 106, 126		\HyField@FlagsPushButton 5630, 12727, 12750, 12777, 13332, 13353, 13383, 13702, 13726, 13756		\HyInd@@wrindex	8266, 8267
\HyCnt@LookForParentCounter	6902, 6914	\HyField@FlagsRadioButton	5657, 12654, 13256, 13612	\HyInd@DefKey	8324, 8338, 8351, 8360
\HyCnt@ProvideTheHCounter	6895	\HyField@FlagsSubmit	5578, 12751, 13354, 13727	\HyInd@EncapChar	2962, 4186, 8261
\HyColor@FieldBColor	6086, 6089	\HyField@FlagsText 5673, 12592, 13196, 13545		\HyInd@hyperpage	8375, 8377, 8384
\HyColor@FieldColor	6092	\HyField@NeedAppearancesfalse	5900, 5913	\HyInd@key	8325, 8329, 8340, 8353, 8365
\HyColor@HyperrefBorderColor	3526, 3544	\HyField@NeedAppearancestrue	5903, 5906, 5910	\HyInd@org@wrindex 8265, 8269, 8279, 8285, 8287, 8290	
\HyColor@HyperrefColor	3471, 3490, 3491, 3492, 3493, 3494, 3495, 3496	\HyField@NewBitsetFlag	5410, 5413, 5421	\HyInd@pagelink	8393, 8399, 8401, 8404
\HyColor@UseColor	4709, 8922, 8933, 9927, 9938	\HyField@NewFlag	5408, 5484, 5485, 5486, 5487, 5488, 5489, 5490, 5491, 5492, 5493, 5494, 5495, 5496, 5497, 5498, 5499, 5500, 5501, 5502, 5503, 5508, 5509, 5510, 5511, 5512, 5513, 5514, 5515, 5516, 5549, 5551, 5552, 5554, 5555, 5557, 5558, 5559, 5560	\HyInd@ParenLeft	8247, 8276, 8313, 8350
\HyField@@AddToFields 13066, 13088		\HyField@NewFlagOnly	5412, 5550, 5553, 5556	\HyInd@ParenRight	8248, 8277, 8284, 8314, 8323
\HyField@@PDFChoices	5757, 5758, 5771	\HyField@NewOption 5409, 5415		\HyInd@removespaces	8407, 8410, 8420
\HyField@@@SetFlag	5452, 5454	\HyField@PDFAFlagWarning	5518, 5526, 5530, 5534, 5538, 5542, 5546		
\HyField@@@UseFlag	5442, 5444	\HyField@PDFChoices	5730, 12702, 13307, 13670		
\HyField@ABD@AuxAddToCoFields	13011, 13063	\HyField@PrintFlags	5459, 5605, 5623, 5637, 5650, 5666, 5698, 5723		
\HyField@AddCoField	13021, 13034, 13037				
\HyField@AddToFields	12557, 12605, 12696, 12710, 12739, 12760, 12786, 12811, 12999, 13065, 13205, 13300, 13314, 13341, 13366, 13390, 13413, 13521, 13561, 13664, 13683, 13715, 13739, 13767, 13796				
\HyField@AdvanceAnnotCount	12550, 12595, 12686, 12704, 12729, 12754, 12780, 12801, 13514, 13551, 13648, 13676, 13704, 13732, 13760, 13786				
\HyField@afields	12995, 13054, 13055, 13057, 13111				
\HyField@AfterAuxOpen 13010, 13052, 13089					
\HyField@AnnotCount	12548, 12549, 12551, 12554, 13512, 13515, 13518				

\HyInfo@AddonHandler . . . 3820, 3823	\HyLinguex@OrgB . . . 810, 814	\hyper@@normalise . 4805, 4809, 4813
\HyInfo@AddonList . . 3853, 3854, 3888, 3895	\HyLinguex@OrgC . . . 811, 815	\hyper@anchor
\HyInfo@Addons . . . 3874, 3890, 9235, 10165, 11155, 11159	\HyLinguex@OrgD . . . 812, 816	. . . 5329, 6336, 6350, 9006, 9405, 9502, 9829, 10371, 10451, 10959, 11940, 12227
\HyInfo@AddonUnsupportedtrue . . . 9652, 10880, 12048	\HyLinguex@Restore . . 813, 826, 880, 890	\hyper@anchorend
\HyInfo@do . . . 3822, 3855, 3878	\HyNew@float@makebox . . 7587, 7610	. . . 4245, 4253, 4260, 6328, 6338, 6352, 6366, 7070, 7122, 7146, 7148, 7170, 7193, 7655, 7682, 7685, 7705, 7789, 8170, 9013, 9430, 9520, 9836, 10366, 10473, 10981, 11964, 12250, 14362, 14588, 14616, 14627, 14654
\HyInfo@GenerateAddons . . 3872, 9212, 10141, 11124	\HyOpt@CheckDvi	\hyper@anchorstart . 4259, 6328, 6337, 6351, 6365, 7069, 7122, 7140, 7170, 7193, 7653, 7680, 7685, 7705, 7789, 8170, 9009, 9420, 9514, 9832, 10355, 10464, 10973, 11954, 12241, 14362, 14588, 14616, 14627, 14654
\HyInfo@Key . . 3830, 3831, 3849, 3851, 3852, 3855, 3858, 3865, 3879, 3883	. . . 2676, 2729, 2735, 2740, 2764, 2769, 2775, 2827, 2834, 2840, 2865	\hyper@chars
\HyInfo@KeyEscaped . 3829, 3830	\HyOpt@CustomDriver	. . . 4830, 9041, 9410, 9424, 9444, 9466, 9480, 9494, 9574, 9614, 10322, 10343, 10359, 10376, 10456, 10468, 10560, 11575, 11958, 11978, 12004, 12018, 12032, 12245, 12264, 12287, 12304, 12319
\HyInfo@tmp 3839, 3849	 292, 2887, 2888, 2892, 4505, 4572	\hyper@currentanchor . . 10978, 10987, 11010, 11027
\HyInfo@trapped@false . . 3770, 3789	\HyOpt@DriverFallback	\hyper@currentlinktype . 11011, 11015, 11019
\HyInfo@trapped@true . . . 3767, 3788	. . . 2870, 2873, 2874, 2882, 4539, 4544	\hyper@destlabel@hook . . 5345, 5352
\HyInfo@trapped@unknown . 3773, 3790	\HyOpt@DriverType	\hyper@hash . . 4782, 4783, 4831, 5225, 5237, 5254, 5257, 6295, 10316
\HyInfo@TrappedUnsupported . . 3791, 3795, 9655, 10895, 12051	. . . 4504, 4507, 4541, 4551, 4553, 4571, 4574	\hyper@image . 4972, 4973, 9492, 10618, 11088, 12030, 12317
\HyInfo@Value 3843, 3846	\HyOrg@addtoreset . . 8191, 8194, 8196, 8225	\hyper@link
\HyLang@addto 3274, 3289, 3307, 3350, 3358	\HyOrg@appendix . . 6948, 6968	. . . 4258, 5173, 6334, 6335, 6349, 6359, 6364, 9027, 9488, 9536, 10004, 10312, 10584, 11092, 12026, 12313
\HyLang@afrikaans 2964	\HyOrg@author . 6396, 6409, 6413	\hyper@link@ . 4265, 5150, 5156, 6332, 6346, 6371
\HyLang@catalan 3148	\HyOrg@elt 6900, 6906	\hyper@linkend
\HyLang@danish 3238	\HyOrg@float@makebox . . 7588, 7609	. . . 4245, 4253, 4262, 6340, 6354, 6368, 7363, 7648, 7650, 7727, 8040, 8112,
\HyLang@DeclareLang . . . 3287, 3317, 3318, 3319, 3320, 3321, 3322, 3323, 3324, 3325, 3326, 3327, 3328, 3329, 3330, 3331, 3332, 3333, 3334, 3335, 3336, 3337, 3338, 3339, 3340, 3341, 3342, 3343, 3344, 3345, 3346, 3347, 3348	\HyOrg@hyperpage . . 8250, 8252, 8253	
\HyLang@dutch 3202	\HyOrg@make@df@tag@@ . 8185	
\HyLang@english 2982	\HyOrg@make@df@tag@@@ . 8186	
\HyLang@french 3000	\HyOrg@maketitle . . 7464, 7471, 7476	
\HyLang@german 3018	\HyOrg@title . . 6395, 6400, 6404	
\HyLang@greek 3184	\HyOrg@TX@endtabularx . 7368	
\HyLang@italian 3036	\HyOrg@url 4966	
\HyLang@magyar 3054	\HyPat@NonNegativeReal	
\HyLang@norsk 3220	. . . 3570, 3571, 3572, 3573, 3589, 3591, 3924, 3935, 3936, 3937, 3944, 3947, 3948, 3949, 3950	
\HyLang@portuges 3072	\HyPat@ObjRef 4950, 4951, 4964, 8746, 9766, 10956	
\HyLang@russian 3090	\hyper@@anchor . . . 4257, 4976, 4978, 5010, 5012, 5048, 5050, 5302, 6333, 6348, 6363, 7315, 7320, 7338, 7343, 7411, 7414, 7441, 7571, 7574, 7592, 7867, 7918, 7929, 7935	
\HyLang@spanish 3130	\hyper@@link . 4836, 4894, 5000, 5029, 5149, 7663, 7760, 7761, 7762, 7810, 7812, 7814, 8441, 8456, 8574	
\HyLang@swedish 3256		
\HyLang@vietnamese . 3166, 3350, 3358		

8115, 8146, 8148, 9026, 9450, 9533, 10003, 10005, 10348, 10531, 11013, 11986, 12270	\hyper@quote 6297, 9412, 9426, 9441, 9446, 9467, 9481, 9495, 10316, 10326, 10339, 10362, 10380, 11946, 11960, 11975, 11981, 12005, 12019, 12033, 12233, 12246, 12261, 12266, 12289, 12305, 12320	\hyperref 4981, 6387, 8512, 8528, 8537, 8559
\hyper@linkfile 4264, 5250, 6342, 6356, 6370, 9070, 9454, 9612, 10007, 10332, 10535, 11596, 11990, 12274	\hyper@readexternallink . 5179, 5190	\hyperrefundefinedlink . . 5015, 5026
\hyper@linkstart	\hyper@refstepcounter . . . 6873, 6877, <u>6894</u>	\hypersetup
. . 4261, 6339, 6353, 6367, 7361, 7644, 7650, 7725, 8039, 8096, 8099, 8130, 8132, 9017, 9436, 9524, 9964, 10005, 10335, 10479, 10992, 11970, 12256	\hyper@tilde . 4791, 4792, 4793, 6296	. . 2598, 2624, 3328, 3806, 4188, 6381, 6945, 6967
\hyper@linkurl	\hyperbaseurl . 3498, 3499, 6382	\hypertarget 4974, 6386
. . 4263, 4971, 5225, 5232, 5253, 5257, 6341, 6355, 6369, 9038, 9455, 9457, 9490, 9572, 10080, 10320, 10333, 10557, 10619, 11089, 11572, 11991, 11995, 12028, 12275, 12277, 12315	\hypercalcbp <u>488</u> , <u>488</u>	\hyperxindexformat . 8249, 8255
\hyper@livelink 6334, 6359	\hypercalcbpdef 491	\HyPL@@@CheckThePage 6615, <u>6633</u>
\hyper@makecurrent 6994, 7108, 7138, 7167, 7192, 7233, 7358, 7547, 7602	\hyperdef 5002, 6384	\HyPL@@CheckThePage . 6591, <u>6593</u>
\hyper@n@rmalise . . 4797, 4801	\HyperDestLabelReplace . <u>5389</u> , 5396, <u>5399</u>	\HyPL@Alph 6510
\hyper@nat@current 7645	\HyperDestNameFilter	\HyPL@alph 6511
\hyper@nat@anchorend <u>510</u> , 7655	. . 4168, 4870, 5061, 5074, 5087, 5396, 8959, 8984, 9412, 9426, 9446, 9490, 9775, 9977, 10316, 10326, 10344, 10362, 10380, 10457, 10469, 10518, 10601, 11436, 11445, 11946, 11960, 11981, 12028, 12233, 12246, 12266, 12315, 14440, 14501, 14517	\HyPL@arabic 6507
\hyper@nat@anchorstart <u>510</u> , 7652	\HyperDestRename . <u>5369</u> , 5387, <u>5400</u>	\HyPL@CheckThePage . . 6542, <u>6590</u>
\hyper@nat@linkbreak . <u>510</u> , 7649	\hyperget <u>5053</u>	\HyPL@Entry 6790, 6798, 6806, <u>6808</u>
\hyper@nat@linkend <u>510</u>	\hypergetpageref 7058	\HyPL@EveryPage . <u>6530</u> , 6654
\hyper@nat@linkstart <u>510</u>	\hypergetref 7057	\HyPL@Format 6606, 6607, 6608, 6609, 6610, <u>6622</u>
\hyper@newdestlabel <u>5337</u> , 5359, <u>5398</u> , 5404, 5406	\HyperGlobalCurrentHref	\HyPL@found 6605, 6612, 6616, 6623, 6633, 6635
\hyper@nopatch@bib 237	. . 7015, 7017, 7025, 7026, 7030, 7033, 7037, 7044, 7045, 7049	\HyPL@Labels <u>6501</u> , 6645, 6646, 6648, 6650, 6701, 6702, 6801, 6809, 6810
\hyper@nopatch@caption . . 239	\hyperimage 4972, 8242	\HyPL@LastNumber 6505, 6561, 6584
\hyper@nopatch@counter . . 236	\hyperindexformat 8255	\HyPL@LastPrefix . . 6506, 6555, 6586
\hyper@nopatch@footnote . 240	\hyperlink 4835, 6385, 8416	\HyPL@LastType . . 6504, 6546, 6585
\hyper@nopatch@longtable 243	\hyperlinkfileprefix . 3501, 3502, 3503, 12219	\HyPL@page . 6524, 6533, 6536, 6542, 6551
\hyper@nopatch@sectioning 241	\HyperLocalCurrentHref	\HyPL@Prefix 6551, 6553, 6555, 6569, 6572, 6574, 6586, 6600, 6638
\hyper@nopatch@thm 238	. . 7033, 7035, 7042, 7043, 7044, 7045, 7047	\HyPL@Roman 6508
\hyper@nopatch@toc 242	\hyperpage . . 6391, 8250, 8251, 8253, 8374	\HyPL@roman 6509
\hyper@normalise . . 4187, 4192, 4773, 4884, 4887, 4968, 4970, 4972, 4994, 5862	\HyperRaiseLinkDefault . 2229, 2257	\HyPL@SetPageLabels . . <u>6644</u> , 6708, 6804
\hyper@pageduration <u>9274</u> , 9301, <u>10254</u> , 10267, 10784, 10796, <u>11067</u> , 11086	\HyperRaiseLinkHook 2228, 2258	\HyPL@SlidesOptionalPage 6517, 6521, 6526
\hyper@pagetransition . . . <u>9250</u> , 9300, <u>10243</u> , 10266, 10673, 10795, <u>11050</u> , 11085	\HyperRaiseLinkLength . . 2256, 2257, 2260	\HyPL@SlidesSetPage . . . 6512, 6514, 6534, 6541

\HyPL@Useless 6642, 6648
\HyPsd@@@autoref . 1393, 1395, 1398
\HyPsd@@@CJKdigits . . . 1263, 1266, 1274
\HyPsd@@@nameref 1375, 1377, 1380
\HyPsd@@@pageref . 1357, 1359, 1362
\HyPsd@@@ref . 1341, 1343, 1346
\HyPsd@@@UTFviii@four 1990, 1993
\HyPsd@@@AppendItalcorr 1534
\HyPsd@@@autoref . . 1390, 1391
\HyPsd@@@autorefname . . 1411, 1414
\HyPsd@@@CJKdigits 1255, 1257, 1260
\HyPsd@@@CJKnumber 1156, 1158, 1161, 1214, 1229, 1242, 1244, 1248
\HyPsd@@@ConvertToUnicode 1862
\HyPsd@@@ding 2127, 2131, 2142
\HyPsd@@@GetNextTwoTokens 1860
\HyPsd@@@GlyphProcessWarning 1720, 1723
\HyPsd@@@hspace . . . 1311, 1312
\HyPsd@@@LetCommand . 1435, 1456
\HyPsd@@@nameref . . 1372, 1373
\HyPsd@@@pageref . . 1354, 1355
\HyPsd@@@ProtectSpacesFi 1479, 1485
\HyPsd@@@ref 1338, 1339
\HyPsd@@@RemoveBraces . 1502
\HyPsd@@@RemoveBracesFi 1499, 1502
\HyPsd@@@RemoveCmdPrefix 1677, 1680
\HyPsd@@@ReplaceFi 1747, 1753, 1758
\HyPsd@@@UTFviii@four . . 1974, 1979
\HyPsd@add@accent . 536, 1300
\HyPsd@AfterCountRemove 1554, 1634
\HyPsd@AfterDimenRemove 1560, 1637
\HyPsd@AfterSkipRemove 1566, 1649
\HyPsd@AMScsfix 644, 1321, 1323
\HyPsd@AppendItalcorr . 1518, 1525, 1534
\HyPsd@autoref 654, 1390
\HyPsd@autorefname 1402, 1408
\HyPsd@CatcodeWarning 1570, 1594, 1597, 1600, 1603, 1661
\HyPsd@Char 1864
\HyPsd@CharOctByte . . . 1884, 1886, 1889, 1898, 1903
\HyPsd@CharSurrogate . . 1878, 1895
\HyPsd@CharTwoByte . . 1876, 1883
\HyPsd@CheckCatcodes . . 708, 1544
\HyPsd@CJK@Unicode . . 1038, 1042
\HyPsd@CJKActiveChars . 978, 993
\HyPsd@CJKdigit . . 1267, 1277
\HyPsd@CJKdigits . 1040, 1253
\HyPsd@CJKhook 661, 949, 960
\HyPsd@CJKhook@bookmarks 955, 989
\HyPsd@CJKhook@unicode 957, 1037
\HyPsd@CJKnumber 1039, 1153
\HyPsd@CJKnumberFour 1171, 1175, 1179, 1192, 1196, 1200, 1206
\HyPsd@CJKnumberLarge 1184, 1191
\HyPsd@CJKnumberThree 1212, 1216, 1222
\HyPsd@CJKnumberTwo 1227, 1231, 1237
\HyPsd@ConvertToUnicode 777, 1810
\HyPsd@DecimalToOctal . . 970, 1001
\HyPsd@DecimalToOctalFirst 1044, 1080
\HyPsd@DecimalToOctalSecond 1045, 1054, 1117, 2146, 2152, 2155
\HyPsd@DefCommand 691, 692, 693, 694, 1424
\HyPsd@DieFace . 611, 612, 613, 2067, 20649, 20650
\HyPsd@DieFaceLarge . . . 2075, 2084
\HyPsd@ding 610, 2117
\HyPsd@DisableCommands 927, 929
\HyPsd@DoConvert . 1812, 1822
\HyPsd@DoEscape 1836
\HyPsd@doxspace . . . 749, 1783
\HyPsd@empty . . 734, 736, 740, 741, 743, 751, 758
\HyPsd@end . . . 708, 712, 1483, 1493, 1499, 1502, 1547, 1555, 1561, 1567, 1620, 1627, 1634, 1637, 1649
\HyPsd@endWithElse . . . 1290, 1299
\HyPsd@EscapeTeX . 786, 789, 796, 1765
\HyPsd@expand@outfviii . . 1912, 1919, 1925
\HyPsd@fi 1475, 1481, 1485, 1491
\HyPsd@GetNextTwoTokens 1860
\HyPsd@GetOneByte 1855
\HyPsd@GetTwoBytes . . . 1851
\HyPsd@GLYPHERR 714, 1287, 1301, 1308
\HyPsd@GlyphProcess . . . 716, 1708, 1721
\HyPsd@GlyphProcessWarning 1715, 1719
\HyPsd@GobbleFiFi 1292, 1298
\HyPsd@HighA 1048, 1057
\HyPsd@HighB 1058, 1063
\HyPsd@HighC 1064, 1067
\HyPsd@HighD 1060, 1072
\HyPsd@href 649, 1337
\HyPsd@hspace 645, 1311
\HyPsd@hspacetest . 1314, 1316, 1319
\HyPsd@ifnextchar 677, 678, 679, 1461
\HyPsd@ignorespaces . 658, 936
\HyPsd@inmathwarn . 535, 1284
\HyPsd@ITALCORR . 669, 673, 1308
\HyPsd@LetCommand 695, 696, 1424
\HyPsd@LetUnexpandableSpace . 664, 665, 666, 667, 1304, 1307
\HyPsd@LoadExtra . . 895, 898, 2622
\HyPsd@LoadUnicode 885, 2561, 2567, 2569, 2576, 2619, 6713

\HyPsd@MoonPha .. 2098, 2116, 20651
 \HyPsd@nameref 653, 1372
 \HyPsd@pageref 652, 1354
 \HyPsd@pdfencoding
 ... 778, 2560, 2563, 2585, 2597, 2600, 2603, 2618, 6715, 6717, 6733, 6736
 \HyPsd@pdfencoding@auto 778, 2591, 2615, 6717, 6735
 \HyPsd@pdfencoding@pdfdoc .
 ... 2584, 2603, 2616
 \HyPsd@pdfencoding@unicode .
 ... 2588, 2617, 2618, 6715, 6732
 \HyPsd@PrerenderUnicode 3699, 3715, 3721, 3727, 3733, 3738, 3756, 3762, 3842
 \HyPsd@protected@testopt 680, 681, 1465
 \HyPsd@ProtectSpaces ... 701, 1475, 1524
 \HyPsd@ref 651, 1338
 \HyPsd@RemoveBraces ... 703, 1496, 1513, 1521, 1527
 \HyPsd@RemoveCmdPrefix 1670, 1676
 \HyPsd@RemoveMask 711, 1483, 1493
 \HyPsd@RemoveSpaceWarning
 ... 1644, 1656, 1682
 \HyPsd@ReplaceSpaceWarning
 ... 1639, 1651, 1695
 \HyPsd@Rest 1548, 1616, 1624, 1627, 1635, 1640, 1646, 1652, 1658
 \HyPsd@SanitizeForOutFile ..
 14279, 14310
 \HyPsd@SanitizeOut@BraceLeft
 .. 14314, 14320, 14329
 \HyPsd@SanitizeOut@BraceRight
 .. 14317, 14332, 14341
 \HyPsd@SPACEOPTI 705, 721, 722, 724, 726, 728, 729, 768, 770, 1590, 1794
 \HyPsd@spaceopti ... 770, 1739
 \HyPsd@String 702, 704, 707, 709, 715, 717, 1507, 1508, 1518, 1578, 1580, 1584, 1585, 1589, 1590, 1605, 1606, 1638, 1650, 1709, 1710
 \HyPsd@StringSubst . 718, 720, 726, 732, 735, 738, 741, 760, 763, 765, 1762

\HyPsd@Subst 714, 723, 727, 733, 739, 743, 747, 752, 753, 754, 755, 756, 757, 761, 764, 1746, 1763, 1778, 1779, 1780
 \HyPsd@temp 779, 781, 782, 784, 785, 792, 794, 795, 2583, 2584, 2585, 2588, 2591, 2597, 2606, 2610, 6731, 6732, 6733, 6735, 6736, 6741
 \HyPsd@tocsection
 .. 1324, 1325, 1326, 1327, 1328, 1329, 1330, 1332
 \HyPsd@UnescapedString . 781
 \HyPsd@UnexpandableSpace ..
 . 1307, 1490, 1640, 1652
 \HyPsd@unichar ... 1932, 1999, 2005, 2010
 \HyPsd@unichar@first@byte ...
 2018, 2038
 \HyPsd@unichar@octtwo . 2040, 2048, 2054
 \HyPsd@unichar@second@byte .
 2026, 2046
 \HyPsd@UnicodeReplacementCharacter
 .. 2002, 2037, 2070, 2100, 2105, 2113, 2120, 2123, 2133, 2191
 \HyPsd@utf@viii@undeferr . 532, 2059
 \HyPsd@UTFviii 526, 1924
 \HyPsd@UTFviii@@three . 1955, 1964
 \HyPsd@UTFviii@@two .. 1940, 1946
 \HyPsd@UTFviii@ccxliv@def ..
 1930, 1936
 \HyPsd@UTFviii@ccxliv@undef
 1929, 1935
 \HyPsd@UTFviii@four ... 1928, 1973
 \HyPsd@UTFviii@three .. 1927, 1954
 \HyPsd@UTFviii@two 1926, 1939
 \HyPsd@Warning .. 1469, 1662, 1683, 1696, 1725, 1731
 \HyPsd@XSPACE 671, 748, 1308
 \HyPsd@xspace .. 746, 748, 749
 \HyRef@StarSetRef 8485, 8490
 \HyRef@autopageref 8556, 8558
 \HyRef@autopagerefname 8555, 8559, 8561
 \HyRef@autoref 8574, 8575

\HyRef@autosetref .. 8578, 8581
 \HyRef@CaseStar .. 8642, 8648
 \HyRef@currentHtag
 .. 8594, 8612, 8615, 8621, 8628, 8634, 8649
 \HyRef@MakeUppercaseFirstOfFive
 ... 4744, 8506, 8508
 \HyRef@name
 .. 8610, 8611, 8616, 8623, 8641, 8642, 8643, 8645
 \HyRef@Ref 4729, 8511
 \HyRef@ShowKeysInit ... 8651, 8662
 \HyRef@ShowKeysRef 8582, 8650
 \HyRef@StarSetRef . 4732, 4736, 4740, 4744, 8478, 8497, 8500, 8503, 8506
 \HyRef@StripStar .. 8609, 8640
 \HyRef@testreftype . 8587, 8606
 \HyRef@thisref 8584, 8587
 \HyTmp@found 5782, 5792, 5795
 \HyTmp@key 5776, 5777
 \HyTmp@optitem
 .. 5734, 5750, 5775, 5780, 5786, 5807, 5818
 \HyTmp@optlist ... 5733, 5748, 5749, 5778, 5779, 5784, 5785, 5793, 5794, 5814, 5816, 5823, 5826
 \HyXeTeX@CheckUnicode
 .. 3685, 3696, 3714, 3720, 3726, 3732, 3737, 3755, 3761, 3841, 6746

I

\i .. 14855, 15021, 15024, 15027, 15030, 15305, 15481, 15484, 15487, 15490, 15619, 15624, 15629, 15634, 15638, 15875, 15946, 15954
 \libar 16113, 20720
 \if 1333, 6559, 6567, 7210, 7211, 10747, 10750, 10754, 10758, 10762, 10764, 10766, 13963
 \if@eqnstar 7154, 7163
 \if@filesw 2199, 5041, 5357, 6786, 6796, 7692, 7707, 7734, 7746, 7766, 7771, 7790, 8299, 13044, 13075, 13090, 14280, 14467, 14546
 \if@hyper@item 6845
 \if@Localurl 10303, 10349
 \if@mid@expandable 643
 \if@minipage 7559, 7632

\if@nmbrlist	6840	\ifFld@popdown	5504, 12635, 6285, 8751, 8840, 8918, 8926, 9840, 9923, 9931
\if@skiphyperref	6846	13236, 13592	
\IfBooleanTF	8574	\ifFld@radio 12631, 12653, 12908, 13232, 13255, 13588, 13611	
\ifcase	336, 1002, 1051, 1073, 1076, 1082, 1118, 1162, 1278, 1968, 2099, 2588, 3432, 4577, 5580, 5685, 5812, 5889, 6972, 6981, 8052, 8276, 8313, 8583, 10814, 11319, 14024, 14052, 14121, 14157, 14193, 14387	\ifFld@readonly	12880, 12890, 12974
\ifcat	1549, 1576, 1583, 1588, 1593, 1596, 1599, 1602, 5313, 5315	\ifForm@html	5856
\ifcsname 1911, 3288, 6884, 10415		\IfFormatAtLeastT	232
\ifdim	1319, 1638, 1642, 1650, 1654, 2272, 2295, 4171, 4173, 4605, 9319, 9323, 9328, 9332, 9339, 9340, 9344, 9345, 9352, 9353, 9354, 10275, 10276, 10279, 10280, 10286, 10287, 10288, 10419, 10420, 10424, 10425, 10432, 10433, 10434, 11348, 11362, 11733, 11734, 11737, 11738, 11744, 11745, 11746, 12621, 12659, 12660, 13222, 13261, 13262, 13578, 13617, 13618	\ifhint	2850, 4468, 4530
\IfDocumentMetadataT	234, 4278, 7719, 8085	\ifhmode 2232, 2236, 2294, 2303, 4876, 7268, 7355, 7364, 7516, 7518, 8954, 8962, 11354, 12332	
\IfDocumentMetadataTF	3988	\ifHy@activeanchor	380, 5326
\iffalse	5901	\ifHy@backref	381, 4381, 4756, 6275, 7767, 7803
\IfFileExists	2851, 2891, 8799, 12347	\ifHy@bookmarks	382, 4630, 7964, 8019
\ifFld@checked	5835, 12972, 14010	\ifHy@bookmarksnumbered	383, 14267
\ifFld@comb	5684	\ifHy@bookmarksopen	384, 4620
\ifFld@combo	5712, 5717, 12634, 12663, 13235, 13265, 13591, 13621	\ifHy@breaklinks	385, 2520, 10994, 11035, 11330, 11353
\ifFld@disabled	5836, 12973	\ifHy@CJKbookmarks	387, 954
\ifFld@edit	5718	\ifHy@colorlinks	388, 4701, 6280, 11927
\ifFld@fileselect	5687	\ifHy@destlabel	389, 5336
\ifFld@hidden	12593, 12648, 12728, 12752, 12778, 12800, 12871, 12883, 12893, 12976, 13197, 13250, 13333, 13355, 13384, 13405, 13546, 13606, 13703, 13728, 13757, 13782	\ifHy@draft	390, 4256
\ifFld@multiline	5685, 12582, 12878, 13185, 13534	\ifHy@DviMode 2657, 2677, 2872	
\ifFld@multiselect	5756	\ifHy@DvipdfmxOutlineOpen	4603, 14519
\ifFld@password	5686, 12859	\ifHy@frenchlinks	396, 4714
		\ifHy@href@ismap	4932, 9059, 10098, 10494, 10564, 11587
		\ifHy@hyperfigures	394, 4361, 6260, 8239
		\ifHy@hyperfootnotes	397, 7275
		\ifHy@hyperindex	398, 4371, 6270, 8246
		\ifHy@hypertexnames	399, 6894, 7001, 7916
		\ifHy@implicit	400, 4386, 4728, 14571
		\ifHy@linktocpage	401, 2480, 2490
		\ifHy@localanchorname	402, 7034, 7046
		\ifHy@naturalnames	404, 7013
		\ifHy@nesting	405, 4366, 4975, 5009, 5047, 5311, 6265, 7309, 7332, 7410, 7570
		\ifHy@next	945, 8264
		\ifHy@ocgcolorlinks	408, 3390, 4687, 4697, 6285, 8751, 8840, 8918, 8926, 9840, 9923, 9931
		\ifHy@pageanchor	409, 7915
		\ifHy@pdfa 427, 4290, 4689, 5213, 5517, 6109, 6162, 6290, 8988, 9054, 9089, 9123, 9383, 9986, 10020, 10056, 10088, 10118, 10500, 10521, 10544, 10570, 10604, 10638, 10657, 11460, 12527, 12718, 12771, 13123, 13323, 13377, 13496, 13692, 13750, 13965, 14013, 14182	
		\ifHy@pdfcenterwindow	386, 9174, 9722, 10187, 10852, 11204, 12111
		\ifHy@pdfdisplaydoctitle	426, 9175, 9723, 10188, 10853, 11205, 12112
		\ifHy@pdfescapeform	393, 13860, 13890
		\ifHy@pdffitwindow	395, 9173, 9721, 10186, 10851, 11203, 12110
		\ifHy@pdfmarkerror	11251, 11260
		\ifHy@pdfmenubar	403, 9171, 9719, 10184, 10849, 11201, 12108
		\ifHy@pdfnewwindow	407, 4011, 10541
		\ifHy@pdfnewwindowset	406, 4009
		\ifHy@pdfpagelabels	410, 6486, 6699, 6784
		\ifHy@pdfstring	411, 912, 6850, 6857
		\ifHy@pdftoolbar	419, 9170, 9718, 10183, 10848, 11200, 12107
		\ifHy@pdfusetitle	421, 6394
		\ifHy@pdfwindowui	425, 9172, 9720, 10185, 10850, 11202, 12109
		\ifHy@plainpages	412, 4376, 7917
		\ifHy@psdextra	418, 620, 902
		\ifHy@psize	413
		\ifHy@raiselinks	414, 9459, 9539, 9576, 9616, 11997, 12279
		\ifHy@seminarslides	415
		\ifHy@setpagesize	416, 9307, 10272, 10416, 11730
		\ifHy@setpdfversion	2625, 8756
		\ifHy@stoppedearly	378

<code>\ifHy@texht</code> . . . 417, 4447, 4726, 5926, 5959, 6135, 6157, 6328, 8424	<code>\ifpdf</code> . . . 2659, 2702, 2713, 4426, 4509	<code>\IntCalcDiv</code> 1059, 1068, 1073, 1176, 1185, 1197, 1214, 1229, 1244, 1885, 1891, 1897
<code>\ifHy@typexml</code> 379	<code>\IfPDFManagementActiveTF</code> 2886	<code>\intcalcDiv</code> . . 1049, 1892, 1899, 1902
<code>\ifHy@unicode</code> . . . 420, 522, 557, 560, 621, 719, 731, 759, 767, 776, 973, 1664, 1685, 1698, 1727, 1733, 2000, 2068, 2118, 2559, 2599, 3687, 6721, 13912	<code>\ifpdfstringunicode</code> . . . 527, 530	<code>\IntCalcMod</code> 1061, 1070, 1076, 1180, 1186, 1201, 1217, 1232, 1246, 1248, 1887, 1892, 1893, 1899, 1902, 1904
<code>\ifHy@verbose</code> . 422, 4839, 4855, 4867, 5460, 7995, 8760	<code>\ifportrait</code> 9318	<code>\intcalcMod</code> 1051
<code>\ifHyField@NeedAppearances</code> . . 5899, 5901, 5904, 12529, 13125, 13498	<code>\ifthenelse</code> 7793	<code>\intcalcNum</code> . . 2099, 2127, 2131
<code>\ifHyInfo@AddonUnsupported</code> 3818, 3832, 3873	<code>\iftrue</code> . 1478, 1757, 5904, 14632	<code>\IntCalcSub</code> . . 2093, 2146, 2149, 2152, 2155
<code>\IfHyperBoolean</code> 2344	<code>\iftutex</code> 780	<code>\intcalcSub</code> 1879, 2075
<code>\IfHyperBooleanExists</code> . . . 2338, 2345	<code>\ifvmode</code> 2249, 2271, 2284	<code>\interfootnotelinepenalty</code> . 7428
<code>\ifin@</code> 6922	<code>\ifvoid</code> 7115, 7119	<code>\interleave</code> 19380, 20609
<code>\ifmeasuring@</code> 6892	<code>\ifvtex</code> . . 2665, 2781, 2810, 4483, 4519, 4533, 4536	<code>\interlinepenalty</code> 7428
<code>\ifnmode</code> . . . 619, 10997, 11325	<code>\ifxetex</code> . 2662, 2754, 3686, 4452, 4516, 4604	<code>\inva</code> 16026, 20696
<code>\ifnum</code> . . 1043, 1154, 1170, 1174, 1194, 1207, 1210, 1223, 1225, 1238, 1240, 1246, 1872, 1875, 1958, 2001, 2004, 2016, 2069, 2072, 2085, 2119, 2122, 2125, 2129, 2144, 2148, 2151, 2237, 2273, 2666, 2782, 2785, 2811, 3433, 3434, 4291, 4483, 4519, 4533, 4536, 4614, 4621, 4909, 5739, 5808, 5819, 6516, 6540, 6561, 6577, 6679, 6950, 6953, 7862, 7875, 8752, 8757, 8771, 8775, 8780, 8798, 8819, 9338, 9952, 9957, 10274, 10418, 10541, 10671, 10801, 10809, 10811, 10812, 10822, 10825, 10925, 10927, 11047, 11732, 11773, 12685, 12690, 12695, 13026, 13103, 13299, 13647, 13652, 13663, 13911, 13993, 14024, 14029, 14052, 14058, 14087, 14121, 14127, 14146, 14157, 14162, 14193, 14198, 14224, 14240, 14383, 14453, 14456, 14480, 14483, 14521, 14630, 14645, 14660	<code>\ignorespaces</code> . . 658, 7228, 7317, 7326, 7340, 7349, 7447, 7555, 7566, 7569, 7628, 7636, 7700, 7715, 7742, 7751, 7801	<code>\invamp</code> 17585
<code>\ifodd</code> 1982, 1987, 7945	<code>\iiint</code> 17903, 20071	<code>\invbackneg</code> 18379, 20274
<code>\ifpatchable</code> 7270	<code>\iinferior</code> 19876	<code>\invdiameter</code> 19179, 20522
	<code>\iint</code> 17901, 20070	<code>\inve</code> 15885, 19804
	<code>\IJ</code> 14851, 15640	<code>\invglotstop</code> 16270, 19837
	<code>\ij</code> 15064, 15642	<code>\invh</code> 16101, 20715
	<code>\Im</code> 17539, 19943	<code>\invlegr</code> 16176, 20738
	<code>\immediate</code> 5404, 5406, 6692, 6789, 6797, 7695, 7710, 7737, 7747, 7766, 7796, 8842, 8857, 8872, 10930, 11770, 12989, 13045, 13048, 13109, 14373, 14439, 14470, 14549	<code>\invm</code> 16135, 20726
	<code>\in</code> 17820, 20037	<code>\invneg</code> 19240, 20547
	<code>\in@</code> 6920	<code>\invr</code> 16171, 20736
	<code>\index</code> 647, 7974	<code>\invscr</code> 16198, 19825
	<code>\indexentry</code> . . 8302, 8317, 8332, 8336, 8346	<code>\invscripta</code> 16034, 20698
	<code>\Info</code> 19477, 20640	<code>\invv</code> 16233, 20750
	<code>\infty</code> 17863, 20055	<code>\invw</code> 16237, 20752
	<code>\input</code> 878, 888, 905, 3353, 3361, 3368, 4576, 11665, 11771, 11870, 12047, 16390	<code>\invy</code> 16241, 20754
	<code>\InputIfFileExists</code> . 4190, 14463, 14494, 14539, 14541	<code>\iota</code> 19857
	<code>\inputlineno</code> 4846, 5318	<code>\ipagamma</code> 16093, 19816
	<code>\insert</code> 7425	<code>\isuperior</code> 19900
	<code>\int</code> . . . 8093, 8109, 8126, 8142, 17898, 20069	<code>\item</code> . . . 6836, 6838, 7733, 7745, 7788
	<code>\IntCalcAdd</code> 1901	<code>\Itemautorefname</code> 8665
	<code>\IntCalcDec</code> 1065, 2095	<code>\itemautorefname</code> 2967, 2985, 3003, 3021, 3039, 3057, 3075, 3104, 3105, 3133, 3151, 3169, 3187, 3205, 3223, 3241, 3259, 8665, 8666, 8669
	<code>\intcalcDec</code> 2077	<code>\itshape</code> 590

J

<code>\j</code> 15647, 15905, 16012
<code>\JackStar</code> 18953, 20425
<code>\JackStarBold</code> . . . 18955, 20426
<code>\jarr</code> 19710

`\jeem` 19654
`\jeh` 19726
`\jinferior` 20613
`\jobname` . 12347, 14372, 14463,
14470, 14494, 14539, 14541,
14549
`\Join` 19223, 20540
`\Jupiter` 18741, 20922
`\jupiter` 18739, 20350

K

`\k` . 14732, 15081, 15083, 15088,
15090, 15142, 15173, 15202,
15217, 15535, 15537, 15581,
15583, 15631, 15633, 15634,
15771, 15773, 15901, 15903,
16747, 16750, 16792, 16795
`\kaf` 19690
`\kanjiskip` 460
`\kappa` 19858
`\kasra` 19716
`\keepPDF@SetupDoc` .. 11931,
11938
`\kern` ... 1558, 1639, 1644, 1656,
7940, 7941, 7942, 7944,
7945, 7950, 14586
`\kernel@ifnextchar` 678
`\Keyboard` 18397, 20282
`\kha` 19658
`\kinferior` 19934
`\Kutline` 18611, 20886
`\kv@define@key` 3840
`\KV@href@pdfnewwindow` 4930
`\KV@href@pdfnewwindow@default`
..... 4931
`\KV@Hyp@draft` 2454
`\KV@Hyp@nolinks` 2454
`\KV@Hyp@pdfnewwindow` 4930
`\KV@Hyp@pdfnewwindow@default`
..... 4931
`\kv@key` 3826, 3829, 3836, 5737,
5740, 5742, 5746, 5750
`\kv@parse` 5736
`\kv@parse@normalized` ... 3857,
3864
`\kv@processor@default` ... 3860,
3867
`\kv@set@family@handler` . 3819
`\kv@value` 3824, 5738, 5745, 5746
`\kvsetkeys` 2624, 2689, 2829, 3693,
3799, 4292, 4546, 4565,
4688, 5833, 8753, 11259,
12542, 12844, 12857, 12906,
12949, 12970, 13100, 13481

L

`\L` 14844, 15671
`\l` 6867, 14857, 15673
`\labdentalnas` ... 16143, 20729
`\label` 646, 7973
`\label@hyperref` ... 5017, 5019
`\label@hook` 5386
`\label@hyperdef` 5002, 5033
`\label@hyperref` 4982, 5016
`\label@name` .. 5351, 5361, 5387
`\labelsep` 7800
`\labelwidth` 7799
`\Ladiesroom` 19466, 20637
`\lam` 19692
`\Lambda` 19841
`\lambda` 19859
`\lambdabar` 15833, 20685
`\lambdaslash` 15834, 20686
`\langle` 18399, 20283
`\language@group` 630
`\LARGE` 597
`\Large` 598
`\large` 601
`\LargerOrEqual` .. 18045, 20839
`\lastnodetype` 2273
`\lastskip` 2272, 2280, 2287, 2295,
2299, 2306
`\LaTeX` . 554, 556, 12353, 12354
`\LaTeXe` 555, 12354
`\latfric` 16125, 20723
`\LayoutCheckField` 6211, 12802,
13406, 13787
`\LayoutChoiceField` 6203, 12652,
13254, 13610
`\LayoutPushButtonField` . 6219,
12722, 12730, 13327, 13334,
13696, 13705
`\LayoutTextField` . 6195, 12596,
13199, 13552
`\lbrackdbl` 20477
`\lccode` . 983, 1766, 1767, 1768,
1769, 1770, 1771, 1772,
1773, 1774, 1775, 1922,
6069, 8261, 8262, 14297,
14298, 14299, 14300, 14301,
14302, 14303, 14304, 14305,
14306, 14307
`\lcurvearrowdown` 19119, 20501
`\lcurvearrowse` ... 19111, 20498
`\lcurvearrowsw` .. 19114, 20499
`\ldots` 547
`\le` 18037, 20129
`\leadsto` 19105, 20496

`\leavevmode`
... 655, 2226, 4266, 4296,
4336, 5105, 5138, 5218,
6375, 7354, 7515, 8573,
8974, 9042, 9077, 9111,
9370, 9458, 9538, 9575,
9615, 9966, 10008, 10048,
10081, 10314, 10323, 10377,
10536, 10561, 10591, 10624,
10996, 11323, 11576, 11603,
11634, 11996, 12278, 12597,
12723, 12731, 12770, 12803,
13200, 13286, 13308, 13328,
13335, 13356, 13376, 13407,
13553, 13645, 13674, 13697,
13706, 13730, 13749, 13788,
14584
`\Leftarrow` 17749, 20006
`\leftarrow` 19956
`\leftarrowtail` 17666, 19974
`\leftarrowtriangle` 17797, 20026
`\leftbarharpoon` .. 19156, 20513
`\LEFTCIRCLE` .. 18648, 20320
`\leftharpoondown` 17697, 19987
`\leftharpoonup` .. 17694, 19986
`\leftleftarrows` ... 17726, 19997
`\leftleftharpoons` . 19144, 20509
`\leftModels` 19365, 20979
`\leftmodels` 19358, 20977
`\leftmoon` 18717, 20345
`\leftpointright` ... 18691, 20902
`\Leftrightarrow` .. 17760, 20010
`\leftrightarrow` ... 17635, 19960
`\leftrightharpoons` .. 17724, 19996
`\leftrightharpoontriangle` .. 17801,
20028
`\leftrightharpoon` . 19133, 20505
`\leftrightharpoons` 17735, 20001
`\Leftscissors` 18892, 20953
`\leftslice` 19302, 20574
`\leftspoon` 19062, 20476
`\leftsquigarrow` .. 17777, 20018
`\lefttherefore` ... 17415, 19896
`\leftthreetimes` ... 18276, 20229
`\LeftTorque` 19126, 20962
`\Lefttorque` 19127, 20963
`\leftVdash` 19352, 20975
`\leftvdash` 18197, 20852
`\legacy` 6868, 6870
`\legm` 16140, 20728
`\legr` 16183, 20740
`\Leo` 18768, 20931
`\leo` 18766, 20359
`\leq` 18037, 20128

<code>\leqclosed</code>	18248, 20868	<code>\lowercase</code> 984, 1776, 1923, 2355, 2911, 2941, 3766, 3802, 5409, 5410, 5413, 5418, 5442, 5452, 5506, 5562, 5880, 5954, 5957, 6070, 8263, 11046, 14308	<code>\MaleMale</code>	18855, 20386	
<code>\leqq</code>	18046, 20132	<code>\lozenge</code>	18646, 20319	<code>\ManFace</code>	19452, 20631
<code>\leqslant</code>	19267, 20558	<code>\lrcorner</code>	18391, 20279	<code>\manstar</code>	18849, 20383
<code>\lessapprox</code>	19275, 20562	<code>\LT@array</code>	7100	<code>\mapsto</code>	17670, 19976
<code>\lessclosed</code>	18242, 20866	<code>\LT@foot</code>	7115, 7119	<code>\Mars</code>	18737, 20920
<code>\lessdot</code>	18306, 20242	<code>\LT@p@ftn</code>	7386, 7389, 7393, 7403	<code>\mars</code>	18736, 20919
<code>\lesseqgtr</code>	18315, 20246	<code>\LT@p@ftntext</code>	7384, 7391	<code>\MathBSuppress</code>	10324, 10328
<code>\lesseqqgtr</code>	19293, 20570	<code>\LT@start</code>	7117, 7127	<code>\mathclose</code>	7148
<code>\lessgtr</code>	18087, 20151	<code>\ltimes</code>	18271, 20227	<code>\mathdollar</code>	15243, 20652
<code>\LessOrEqual</code>	18040, 20838	<code>\lz</code>	16132, 20725	<code>\mathellipsis</code>	17386, 20786
<code>\lesssim</code>	18077, 20147			<code>\mathopen</code>	7139, 7168
<code>\Letter</code>	18905, 20954			<code>\mathparagraph</code>	15366, 20663
<code>\LHD</code>	18641, 20317			<code>\mathsection</code>	15333, 20661
<code>\lhd</code>	18240, 20215			<code>\mathsterling</code>	15322, 20658
<code>\hookrightarrow</code>	19097, 20492			<code>\mathunderscore</code>	15301, 20656
<code>\hookrightarrow</code>	19101, 20494			<code>\mathversion</code>	606
<code>\Libra</code>	18774, 20933			<code>\maxdimen</code>	3454, 12993
<code>\libra</code>	18772, 20361			<code>\MaybeStopEarly</code>	
<code>\Lightning</code>	17684, 20808			. . . 475, 2692, 2787, 4390, 4521, 6817, 6820	
<code>\lightning</code>	17682, 19982			<code>\mbox</code>	656, 8928, 9933
<code>\limits</code>	4822			<code>\mdseries</code>	589
<code>\inferior</code>	19935			<code>\meaning</code>	62, 153, 159, 2202, 6418, 7026, 7207, 14505, 14513, 14528
<code>\literalps@out</code> 2224, 10919, 10924, 10976, 10982, 11008, 11014, 11270, 11286, 11320, 11321, 11349, 11351, 11363, 11365, 11663, 11760, 11769, 11827, 11840, 11921, 12045, 12205				<code>\measuredangle</code>	17867, 20057
<code>\ll</code>	18058, 20138			<code>\measuring@false</code>	6886
<code>\llap</code>	5110			<code>\mediaheight</code> 10421, 10426, 10435	
<code>\llbracket</code>	19066, 20958			<code>\mediawidth</code> 10422, 10427, 10436	
<code>\llcorner</code>	18389, 20278			<code>\meem</code>	19694
<code>\Lleftarrow</code>	17773, 20016			<code>\Mercury</code>	18723, 20912
<code>\lll</code>	18310, 20244			<code>\mercury</code>	18721, 20347
<code>\llparenthesis</code>	19175, 20520			<code>\merge</code>	19254, 20974
<code>\lnapprox</code>	19288, 20568			<code>\MessageBreak</code>	272, 278, 295, 296, 301, 302, 344, 345, 1670, 1691, 1704, 1727, 1732, 1734, 2377, 2378, 2393, 2415, 2418, 2420, 2498, 2499, 2522, 2523, 2571, 2572, 2573, 2608, 2609, 2629, 2681, 2707, 2723, 2758, 2797, 2804, 2815, 2821, 2845, 2854, 2859, 2879, 2895, 2933, 3392, 3515, 3516, 3576, 3577, 3595, 3596, 3690, 3779, 3834, 3835, 3955, 3956, 3991, 3992, 3993, 4087, 4088, 4089, 4110, 4112, 4120, 4121, 4128, 4178, 4430, 4431, 4439, 4440, 4456, 4457, 4472, 4473, 4487, 4488, 4496, 4497, 4691, 4911, 4912,
<code>\lneq</code>	19283, 20566				
<code>\lneqq</code>	18054, 20136				
<code>\lnsim</code>	18342, 20258				
<code>\Lrightarrow</code>	19081, 20484				
<code>\longleftarrow</code>	19075, 20481				
<code>\Longleftarrow</code> 19085, 20486					
<code>\longrightarrow</code> 19079, 20483					
<code>\longrightarrow</code>	19823				
<code>\Longmapsfrom</code>	19089, 20488				
<code>\Longmapsto</code>	19091, 20489				
<code>\longmapsto</code>	19087, 20487				
<code>\Longrightarrow</code>	19083, 20485				
<code>\longrightarrow</code>	19077, 20482				
<code>\looparrowleft</code>	17676, 19979				
<code>\looparrowright</code>	17678, 19980				
<code>\lower</code>	5112, 9465, 9545, 9582, 9622, 11351, 12003, 12285				

4936, 4937, 4953, 4954, 5463, 5468, 5477, 5520, 5566, 5690, 5801, 5873, 5884, 5916, 5917, 5936, 6028, 6029, 6030, 6031, 6491, 6724, 6739, 6740, 7968, 8002, 8003, 8004, 8005, 8006, 8763, 8781, 8801, 8803, 8809, 8811, 8814, 8822, 8978, 9971, 10512, 10595, 10883, 10889, 11103, 13002, 13004, 14245, 14263, 14375	\MVPlus 15259, 19777 \MVRightArrow . 17629, 20802 \MVRightarrow . . 17630, 20803 \MVSeven 15283, 19789 \MVSix 15281, 19788 \MVThree 15275, 19785 \MVTwo 15273, 19784 \MVZero 15269, 19782	\newblock 7804 \newcommand 4, 9, 42, 2225, 5092, 5093, 5095, 5135, 5346, 5369, 6379, 6383, 6888, 7230, 7237, 7587, 8207, 14345, 14348, 14353, 19776, 20648 \newcount 476, 477, 2230, 2650, 4902, 5839, 6502, 12548, 12700, 13158, 13305, 13512, 13668, 14380 \newcounter . 6837, 7277, 7280, 9839, 14295 \newdimen . . . 473, 4412, 4413, 5090, 5840, 5841 \NewDocumentCommand 2323, 8572 \NewExpandableDocumentCommand 2332 \NewHook 6989 \newif 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 425, 426, 427, 945, 2625, 2657, 3818, 4603, 4932, 5416, 5504, 5835, 5836, 5856, 5899, 6845, 6846, 6886, 7154, 10303, 11251 \newlabel 2205, 5043 \newlength 14577 \newline 552, 6439 \newname 7203, 7212 \newsavebox 9769, 11299 \NewSocket 2247 \NewSocketPlug . . . 6850, 6856, 6864, 7061 \newtie . . 14734, 14735, 15132, 15183, 15212, 15230 \newtoks 90, 5927, 11121, 11374, 11375 \newwrite 14468, 14547 \nexists 17811, 20033 \next . . 7794, 7795, 7796, 10739, 10741, 10743 \nfallingdoteq 20112 \nfallingdotseq 17999 \nfss@text 8431, 8451, 8468, 8600 \NG 15689
\MF 564, 12356 \mho 19947 \mid 17874, 20059 \MineSign 18834, 20376 \inferior 19936 \minusdot 19230, 20543 \minusinferior 19924 \minussuperior 19908 \models 18214, 20857 \moo 20519 \Moon 19450, 20630 \MoonPha . . . 2102, 2107, 2110, 2116, 20651 \Mountain 18881, 20394 \MoveDown 18631, 20892 \MoveUp 18616, 20889 \MP 565, 12357 \mp 17842, 20046 \mu 19860 \mugreek 19861 \multimap 18258, 20221 \multimapboth . . 19213, 20535 \multimapdotbothA . . . 18254, 20219 \multimapdotbothB . . . 18256, 20220 \MultiplicationDot 15369, 20664 \multiply 10776, 10805 \Mundus 19448, 20629 \MVArrowDown . 17633, 20804 \MVAt 15293, 19792 \MVComma 15261, 19778 \MVDivision 15267, 19781 \MVEight 15285, 19790 \MVFive 15279, 19787 \MVFour 15277, 19786 \MVMinus 15263, 19779 \MVMultiplication 15437, 20667 \MVNine 15287, 19791 \MVOne 15271, 19783 \MVPeriod 15265, 19780	N \nabla 17818, 20036 \name@of@eq 6844 \nameref 653 \napprox 17957, 20094 \naproxeq 17962, 20096 \nasb 19706 \nasymp 17975, 20102 \natural 18822, 20371 \nbackcong 17971, 20100 \nbacksim 17935, 20084 \nbacksimeq 18282, 20232 \nBumpeq 17980, 20104 \nbumpeq 17984, 20106 \ncirceq 18016, 20120 \ncong 17953, 20092 \ncurlyeqprec . . . 18322, 20249 \ncurlyeqsucc . . . 18326, 20251 \nDashV 19366, 20603 \nDashv 19359, 20601 \ndashV 19353, 20599 \ndashv 18198, 20201 \nDoteq 17994, 20110 \ndoteq 17988, 20108 \ndownmodels . . . 19371, 20605 \ndownvdash 18204, 20203 \ne 18026, 20125 \Nearrow 17767, 20013 \nearrow 17641, 19963 \neg 20642 \Neptune 18750, 20925 \neptune 18748, 20353 \neq 18026, 20124 \neqcirc 18012, 20118 \neqdot 19263, 20556 \neqsim 17944, 20088 \nequal 18029, 20834 \nequiv 18033, 20127 \neswarrow 19095, 20491 \netscape 9501 \Neural 18861 \Neutral 20389 \new@ifnextchar 679 \new@pdflink . . 8953, 9007, 9010 \new@refstepcounter 7130, 7142	

1969, 1970, 1971, 1974,
 1976, 1980, 1981, 1983,
 1985, 1987, 1990, 1994,
 1995, 1996, 1997, 2006,
 2007, 2011, 2012, 2019,
 2020, 2024, 2027, 2028,
 2029, 2039, 2041, 2042,
 2047, 2049, 2050, 2055,
 2056, 4605, 4622, 5430,
 6951, 6954, 7003, 7004,
 7007, 7011, 8834, 8837,
 8838, 9529, 9547, 9548,
 9563, 9564, 9584, 9585,
 9601, 9602, 9624, 9625,
 9641, 9642
 \numberline . 7555, 7628, 14268,
 14273
 \numberwithin 8204
 \numexpr 1948, 1949, 1950, 1952,
 1958, 1966, 1967, 1968,
 1969, 1970, 1971, 1975,
 1977, 1981, 1983, 1985,
 1987, 1991, 1994, 1995,
 1997, 2006, 2011, 2028,
 2042, 2050, 2056, 2646,
 2647, 3908
 \nun 19696
 \nupmodels 19375, 20607
 \nupvdash 18209, 20205
 \nVDash 18237, 20214
 \nVdash 18234, 20213
 \nvDash 18230, 20212
 \nvdash 18227, 20211
 \nVdash 18221, 20209
 \Nwarrow 17765, 20012
 \narrow 17639, 19962
 \nwsearrow 19093, 20490

O

\O 14979, 15439, 15921
 \o 15048, 15509, 15924
 \oasterisk 18181, 20850
 \obackslash 19187, 20966
 \obar 19181, 20523
 \obeylines 11836
 \OBJ@acroform . . 13131, 13132
 \OBJ@Helv 13106, 13119, 13471
 \OBJ@OCG@print . . 8871, 8874,
 8882, 8909, 9857, 9859,
 9872, 9876, 9885, 9914
 \OBJ@OCG@view
 . . 8856, 8874, 8908, 9841,
 9843, 9856, 9876, 9913

\OBJ@OCGs
 . . 8877, 8880, 8886, 8891,
 8896, 9873, 9875, 9879,
 9883, 9889, 9894, 9899
 \OBJ@pdfdocencoding . 13104,
 13452, 13468
 \OBJ@ZaDb 13105, 13118, 13461
 \obot 19190, 20525
 \obslash 19184, 20524
 \ocirc 18176, 20847
 \OCIRCUMFLEX 19506, 19604,
 19605, 19606, 19607, 19608
 \ocircumflex 19500, 19544,
 19545, 19546, 19547, 19548
 \oddsidemargin 7946
 \odiv 19238, 20546
 \odot 18171, 20191
 \odplus 19192, 20968
 \OE 14846, 15707
 \oe 14859, 15709
 \offinterlineskip 6466
 \ogreaterthan . . . 19198, 20528
 \OHORN . 19507, 19609, 19610,
 19611, 19612, 19613
 \ohorn 3167, 3174, 19501, 19549,
 19550, 19551, 19552, 19553
 \oiint 17908, 20073
 \oinferior 19930
 \oint 17905, 20072
 \ointclockwise . . . 17911, 20074
 \ointctrclockwise . 17913, 20075
 \oldb 820
 \oldc 821
 \oldd 822
 \olessthan 19195, 20527
 \OMEGA 12352
 \Omega 19848
 \omega 19873
 \ominus 18162, 20188
 \on@line 7999, 8000
 \oneinferior 19914
 \onesuperior 19796
 \oo 19414, 20616
 \openbullet 20322
 \openo 16041, 19807
 \openout 14470, 14549
 \oplus 18159, 20187
 \OpMode 2666, 2782, 2785, 2798,
 2811, 2816, 4483, 4519,
 4533, 4536, 10822, 10927,
 11773
 \or 339, 1003, 1004, 1005, 1006,
 1007, 1008, 1009, 1010,
 1011, 1012, 1013, 1014,

1015, 1016, 1017, 1018,
 1019, 1020, 1021, 1022,
 1023, 1024, 1025, 1026,
 1027, 1028, 1029, 1030,
 1031, 1032, 1033, 1034,
 1052, 1074, 1077, 1083,
 1084, 1085, 1086, 1087,
 1088, 1089, 1090, 1091,
 1092, 1093, 1094, 1095,
 1096, 1097, 1098, 1099,
 1100, 1101, 1102, 1103,
 1104, 1105, 1106, 1107,
 1108, 1109, 1110, 1111,
 1112, 1113, 1114, 1119,
 1120, 1121, 1122, 1123,
 1124, 1125, 1126, 1127,
 1128, 1129, 1130, 1131,
 1132, 1133, 1134, 1135,
 1136, 1137, 1138, 1139,
 1140, 1141, 1142, 1143,
 1144, 1145, 1146, 1147,
 1148, 1149, 1150, 1163,
 1164, 1165, 1166, 1167,
 1279, 1280, 1281, 2101,
 2104, 2106, 2109, 5590,
 5596, 5601, 5813, 6972,
 6973, 6974, 6975, 6981,
 6982, 6983, 6984, 8054,
 8058, 10815, 14388, 14389,
 14390, 14391, 14392, 14393,
 14394, 14395, 14396, 14397,
 14398, 14399, 14400, 14401,
 14402, 14403, 14404, 14405,
 14406, 14407, 14408, 14409,
 14410, 14411, 14412, 14413,
 14414, 14415, 14416, 14417,
 14418, 14419

\OrnamentDiamondSolid . 19046
 \oslash 18168, 20190
 \otimes 18165, 20189
 \ovee 17891, 20066
 \overlay 7903
 \owedge 17886, 20064
 \owns 17828, 20813

P

\P 546
 \p@ 2007, 2012, 5842, 5848, 9474,
 9558, 9596, 9636, 10775,
 12012, 12299, 12623, 13224,
 13580
 \p@equation 8181
 \PackageError 61, 255

\PackageInfo . . .	258, 259, 8831, 13000	
\PackageWarning . .	256, 2628, 3990, 5799	
\PackageWarningNoLine . .	257	
\pageautorefname . .	2980, 2998, 3016, 3034, 3052, 3070, 3088, 3128, 3146, 3164, 3182, 3200, 3218, 3236, 3254, 3272, 8569, 8682	
\pagename	8566	
\pageref . .	652, 4400, 8555, 8559	
\paperheight . .	4171, 9323, 9325, 9328, 9330, 9345, 9347, 9354, 9356, 10280, 10281, 10288, 10289, 10425, 10426, 10434, 10435, 11738, 11739, 11746, 11747	
\paperwidth . .	9319, 9321, 9332, 9334, 9344, 9346, 9353, 9355, 10279, 10281, 10287, 10289, 10424, 10427, 10433, 10436, 11737, 11739, 11745, 11747	
\par	7554, 7583, 7626, 7636, 7787, 7807	
\paragraphautorefname	2976, 2994, 3012, 3030, 3048, 3066, 3084, 3117, 3119, 3142, 3160, 3178, 3196, 3214, 3232, 3250, 3268, 8678	
\parallel	17879, 20061	
\parenleftinferior	19926	
\parenleftsuperior	19910	
\parenrightinferior	19927	
\parenrightsuperior	19911	
\parr	17588, 20801	
\partautorefname . .	2970, 2988, 3006, 3024, 3042, 3060, 3078, 3108, 3136, 3154, 3172, 3190, 3208, 3226, 3244, 3262, 8672	
\partial	17807, 20031	
\partnumberline . .	14270, 14275	
\PassOptionsToPackage	2704, 2716, 2719, 2731, 2742, 2771, 2830, 2836, 2867, 2922, 2926, 2948, 4206, 4219, 4230, 4566	
\patchcmd	7271	
\pdf@addtoks . . .	11377, 11399, 11405, 11414, 11421, 11425, 11427, 11429, 11431, 11433, 11441, 11450, 11454, 11456, 11458, 11461, 11470, 11474, 11476, 11478, 11480, 11482, 11484, 11486, 11488, 11490, 11492, 11494, 11496, 11498, 11500, 11502, 11504, 11505, 11506, 11507, 11508, 11509, 11510, 11511, 11512, 11513, 11514, 11519	
\pdf@addtoksx . .	11371, 11381, 11397	
\pdf@box . .	11299, 11331, 11339, 11347, 11348, 11351, 11355, 11357, 11360	
\pdf@defaulttoks . .	11255, 11375, 11376, 11386	
\pdf@docset	11121	
\pdf@endanchor . .	8966, 9007, 9014	
\pdf@escapestring	8737	
\PDF@FinishDoc . . .	2695, 2696, 2790, 2791, 4165, 4268, 4393, 4394, 4524, 4525, 6373, 6483, 6484, 9209, 9398, 9653, 10139, 10304, 10893, 11122, 12049, 12220	
\pdf@ifdraftmode . .	6659, 8841, 9210, 9298, 13101, 14477	
\pdf@linktype . . .	11279, 11283, 11391, 11392	
\pdf@objdef . .	11258, 11272, 11274, 11288, 11290, 11394, 11395	
\pdf@rect . .	11266, 11285, 11303	
\PDF@SetupDoc . . .	4164, 4267, 6302, 6303, 6372, 9140, 9399, 9686, 10181, 10305, 10830, 11175, 11933, 12082, 12221	
\PDF@SetupDox	9140	
\pdf@toks . .	11255, 11276, 11292, 11374, 11378, 11382	
\pdf@type . .	11257, 11262, 11276, 11292, 11369, 11389	
\pdfbookmark . . .	2225, 6378, 6379, 14346, 14351, 14356, 14360	
\pdfcatalog . .	6662, 8878, 9155, 9197, 13132	
\PDFdefaults	11385	
\pdfdest	8968	
\pdfendlink . .	9004, 13204, 13298, 13313, 13340, 13365, 13389, 13412	
\pdfescapestring	13891	
\pdfextension . .	2714, 4421, 4510	
\PDFForm@@Name	13899, 13902, 13906, 13909	
\PDFForm@Check . .	12804, 12808, 13409, 13410, 13789, 13793, 13982	
\PDFForm@List . .	12703, 12708, 13310, 13311, 13675, 13680, 14043	
\PDFForm@Name . .	13195, 13249, 13322, 13403, 13544, 13605, 13691, 13780, 13898	
\PDFForm@Push . .	12732, 12736, 13337, 13338, 13707, 13711, 14013	
\PDFForm@Radio . .	12684, 12692, 13288, 13290, 13646, 13658, 14077	
\PDFForm@Reset . .	12779, 12784, 13386, 13387, 13759, 13764, 14182	
\PDFForm@Submit	12753, 12758, 13358, 13360, 13731, 13736, 14148	
\PDFForm@Text . .	12598, 12602, 13202, 13203, 13554, 13557, 14112	
\pdfhorigin	9315	
\pdfinfo	9213	
\pdflastannot	8788	
\pdflastlink . .	8791, 13067, 13080	
\pdflastmatch	4080	
\pdflastobj . .	8785, 8856, 8871, 8877, 13131, 13452, 13461, 13471	
\pdflastxform . .	8786, 12991, 12993	
\pdflastximage	8787	
\pdfinkmargin	8949, 8951	
\pdfliteral	8929, 8931, 8936	
\pdfm@box . .	9769, 13508, 13509, 13510, 13548, 13560, 13637, 13662, 13671, 13682, 13701, 13714, 13729, 13738, 13758, 13766, 13783, 13795	
\pdfmajorversion . . .	2650, 2651, 2654, 2655	
\pdfmark . .	6780, 9706, 9715, 9745, 10963, 10983, 11022, 11057, 11074, 11108, 11145, 11157, 11188, 11197, 11228, 11252, 11528, 11543, 11558, 11570, 11577, 11604, 11635, 12095, 12104, 12135, 12558, 12567, 12599, 12688, 12705, 12733, 12755, 12781, 12805, 14509	

<code>\pdfmark@</code>	11252, 11253	<code>\perp</code>	19054, 20472	8456, 8467, 8481, 8599,
<code>\pdfmatch</code>	336	<code>\phantom</code>	607	9409, 9506, 10375, 10455,
<code>\pdfminorversion</code>	8750	<code>\phantomsection</code> . . .	4166, 6380,	11944, 12231, 14285, 14579
<code>\PDFNextPage</code>	11541		7970, 14217, 14265, 14646	<code>\protected</code> 6387, 7181, 8039, 8040
<code>\PDFNextPage@</code>	11541, 11542	<code>\Phi</code>	19846	<code>\protected@edef</code>
<code>\pdfobj</code> 8842, 8857, 8872, 13109,	13418, 13453, 13462	<code>\phi</code>	19870	. . . 5161, 6517, 6611, 7204,
<code>\pdfobjcompresslevel</code> 8768, 8824		<code>\phiinferior</code>	19883	7221, 7435, 7877, 7881,
<code>\PDFOpen</code>	11569	<code>\Phone</code>	18667, 20328	8975, 9968, 10509, 10592,
<code>\pdfoptionpdfminorversion</code> 8749		<code>\PhoneHandset</code> . . .	18897, 20399	11100
<code>\pdfoutline</code>	14555	<code>\Pi</code>	19843	<code>\protected@file@percent</code> . . 7961,
<code>\pdfpageattr</code>		<code>\pi</code>	19864	8030
. . . 9254, 9258, 9259, 9269,	9278, 9282, 9283, 9293	<code>\pinferior</code>	19938	<code>\protected@write</code> . . . 2204, 5042,
<code>\pdfpageheight</code> 9325, 9334, 9342,	9347, 9356	<code>\Pisces</code>	18789, 20938	5358, 7772, 8301, 8316,
<code>\pdfpageref</code>	13169	<code>\pisces</code>	18787, 20366	8331, 8335, 8345, 14284
<code>\pdfpageresources</code> . . . 8905, 8906		<code>\pitchfork</code>	18304, 20241	<code>\protected@xdef</code> . . . 7396, 7490
<code>\pdfpagesattr</code> . . . 9144, 9146, 9148		<code>\planck</code>	15614, 20674	<code>\providecommand</code>
<code>\pdfpagewidth</code> 9321, 9330, 9341,	9346, 9355	<code>\Plane</code>	18901, 20401	. . . 492, 4508, 4830, 4973,
<code>\PDFPreviousPage</code>	11554	<code>\Plus</code>	18934, 20416	5345, 5404, 5406, 6641,
<code>\PDFPreviousPage@</code> . . . 11555,	11557	<code>\PlusCenterOpen</code> . . .	18938, 20418	6666, 6798, 7198, 7659,
<code>\pdfrefobj</code> . . . 13104, 13105, 13106		<code>\plusinferior</code>	19923	7660, 7675, 7961, 8663,
<code>\pdfrefxform</code>	12993	<code>\PlusOutline</code>	18932, 20415	8664, 8665, 8666, 8667,
<code>\pdfstartlink</code> . . . 8999, 9043, 9078,	9112, 9372, 13203, 13289,	<code>\plussuperior</code>	19907	8668, 8669, 8670, 8671,
13311, 13338, 13359, 13387,	13410	<code>\PlusThinCenterOpen</code> . .	18936,	8672, 8673, 8674, 8675,
<code>\pdfstrcmp</code>	13026		20417	8676, 8677, 8678, 8679,
<code>\pdfstringdef</code>	515,	<code>\Pluto</code>	18753, 20926	8680, 8681, 8682, 8744,
806, 3716, 3722, 3728, 3734,	3739, 3744, 3750, 3757,	<code>\pluto</code>	18751, 20354	8952, 8970, 8971, 9397,
3763, 3843, 5791, 6444,	6551, 6553, 7889, 7926,	<code>\pm</code>	20645	9500, 9501, 9764, 9826,
13916, 14278		<code>\pointer</code>	17792, 20024	9827, 9828, 10301, 10417,
<code>\pdfstringdefDisableCommands</code>	. . . 819, 924, 6376, 6437	<code>\PointingHand</code> . . .	18692, 20903	10447, 10448, 10449, 10920,
<code>\pdfstringdefPostHook</code> . . . 802, 918		<code>\Pointinghand</code> . . .	18693, 20904	11300, 11301, 11661, 11669,
<code>\pdfstringdefPreHook</code> 663, 918,	930, 6436, 6448	<code>\pounds</code>	15323, 20659	11670, 11671, 11672, 11767,
<code>\pdfstringdefWarn</code> 551, 552, 657,	933, 1438, 1443, 1462, 1466	<code>\Preamble</code>	12348	11779, 11780, 11781, 11782,
<code>\pdfTeXversion</code>	13103	<code>\prec</code>	18095, 20155	11834, 11875, 11876, 11877,
<code>\pdfvorigin</code>	9316	<code>\precapprox</code>	19330, 20588	11878, 12041, 12043, 12044,
<code>\pdfxform</code>	12989	<code>\preccurlyeq</code>	18099, 20157	12156, 12157, 12212, 13046,
<code>\Peace</code>	18906, 20403	<code>\preceq</code>	19306, 20576	13049, 13855
<code>\peh</code>	19722	<code>\preceqq</code>	19318, 20582	<code>\psdaliasnames</code> . . . 20648, 20991
<code>\penalty</code>	1552, 2253, 4877	<code>\precnapprox</code>	19338, 20592	<code>\psdmapshortnames</code> . . . 19776,
<code>\PencilRight</code>	18913, 20406	<code>\precneq</code>	19314, 20580	20647
<code>\PencilRightDown</code> 18911, 20405		<code>\precneqq</code>	19326, 20586	<code>\Psi</code>
<code>\PencilRightUp</code> . . . 18915, 20407		<code>\precnsim</code>	18346, 20260	19872
<code>\pentagon</code>	19385, 20611	<code>\precsim</code>	18103, 20159	<code>\PushButton</code>
		<code>\PrerenderUnicode</code>	3707	6183
		<code>\prime</code>	17391, 19892	<code>\put@me@back</code> 5308, 5321, 5331
		<code>\process@me</code> . . . 6416, 6428, 6429,	9143, 9152	<code>\pwedge</code>
		<code>\ProcessKeyvalOptions</code> . .	4235	16234, 20751
		<code>\prod</code>	17834, 20043	<code>\pxfonts</code>
		<code>\prop</code>	2322, 2326, 2334	19384
		<code>\propto</code>	17860, 20054	
		<code>\protect</code> . . . 1550, 4987, 5021, 7555,	7628, 7694, 7709, 7736,	
		7792, 7799, 7800, 8030,	8160, 8362, 8430, 8450,	

Q

<code>\Q</code>	1545, 13114
<code>\qaf</code>	19688
<code>\quaternnote</code>	18811, 20367
<code>\quotedblbase</code> . . .	14826, 15067,
	17372, 19482
<code>\quotesinglbase</code> . .	14836, 15069,
	17366, 19484

R		
\r	14701, 14713, 14725, 14940, 15006, 15118, 15163, 15192, 15224, 15399, 15466, 15763, 15765, 17311, 17313	
\ra	19664	
\Radiation	18696, 20905	
\Radioactivity	18694, 20337	
\raff	19708	
\Rain	18877, 20392	
\raise	2260, 5126, 9475, 9559, 9597, 9637, 11365, 12013, 12300	
\rangle	18401, 20284	
\rbrackdbl	20478	
\rcurvearrowdown	19124, 20502	
\rcurvearrowleft	19128, 20503	
\rcurvearrowne	19108, 20497	
\rcurvearrowright	19131, 20504	
\rcurvearrowse	19117, 20500	
\Re	17550, 19946	
\ReadBookmarks	4234, 4269, 4407, 4639, 4751, 4753, 14444, 14476	
\real@setref	8427, 8494	
\realfootnote	7487	
\Rectangle	19050, 20470	
\RectangleBold	19052, 20471	
\RectangleThin	19048, 20469	
\recycle	18826, 20373	
\Recycling	18828, 20945	
\Ref	8512, 8521, 8529	
\ref	651, 4399, 7452, 7459, 8538, 8546, 12323	
\ref@one	4996, 4997	
\rEFLiNK	12324, 12325	
\refstepcounter	6883, 7093, 7104, 7130, 7136, 7142, 7270, 7271, 7620	
\rem@ptetc	11047, 11049	
\RemoveFromHook	7722, 8153	
\renewcommand	2196, 5097, 5103, 5136, 6891, 7253, 8017, 8222, 8518, 8525, 8534, 8543, 14360	
\RenewCommandCopy	8016	
\Request	18431, 20295	
\RequirePackage	22, 246, 247, 248, 249, 250, 251, 252, 253, 254, 377, 948, 2690, 4212, 4228, 4705, 4757, 4965, 5407, 8802, 10302, 12217, 14370	
\RerunFileCheck	14372	
\Reset	6192	
\reset@font	8431, 8451, 8468, 8600	
\reve	16055, 19809	
\reveject	16268, 20761	
\revepsilon	16069, 19812	
\revglotstop	16266, 19836	
\Rewind	18636, 20315	
\RewindToIndex	18443, 20300	
\RHD	18627, 20312	
\rhd	18243, 20216	
\rho	19865	
\rhoinferior	19882	
\rhooknearrow	19099, 20493	
\rhookrepsilon	19813	
\rhookswarrow	19103, 20495	
\Rightarrow	17754, 20008	
\rightarrow	19958	
\rightarrowtail	17668, 19975	
\rightarrowtriangle	17799, 20027	
\rightbarharpoon	19162, 20515	
\RIGHTCIRCLE	18650, 20321	
\rightharpoonodown	17709, 19991	
\rightharpoonup	17706, 19990	
\rightleftarrows	17718, 19994	
\rightleftharpoon	19135, 20506	
\rightleftharpoons	17738, 20002	
\rightModels	18226, 20860	
\rightModels	18215, 20858	
\rightmoon	18719, 20346	
\rightpointleft	18688, 20901	
\righttrightharpoons	17730, 19999	
\righttrightharpoons	19150, 20511	
\RightScissors	18891, 20952	
\rightslice	19304, 20575	
\rightsquigarrow	17779, 20019	
\rightthreetimes	18278, 20230	
\RightTorque	19121, 20960	
\Righttorque	19122, 20961	
\rightVdash	18218, 20859	
\rightvdash	18194, 20851	
\rinferior	19877	
\riota	17563, 19948	
\risingdoteq	20113	
\risingdotseq	18002	
\rlap	5123, 8930, 9935	
\rm	595	
\rmfamily	585	
\Roman	6607	
\roman	6608	
\romannumeral	940, 941, 13114	
\rotm	16136, 20727	
\rotOmega	16227, 20749	
\rotr	16172, 20737	
\rotvara	16035, 20699	
\rotrw	16238, 20753	
\roty	16242, 20755	
\rrbracket	19069, 20959	
\Rrightarrow	17775, 20017	
\rrparenthesis	19177, 20521	
\rtaild	19808	
\rtimes	18274, 20228	
\rule	7437	
S		
\S	15334, 20662	
\sad	19672	
\Sagittarius	18780, 20935	
\sagittarius	18778, 20363	
\Saturn	18744, 20923	
\saturn	18742, 20351	
\sbox	3703, 5106, 5139, 6227, 9462, 9542, 9579, 9619, 11300, 11339, 12000, 12282, 12988	
\scd	16984, 19874	
\scdefault	4715	
\scg	16090, 19815	
\schwa	16058, 19810	
\schwainferior	19932	
\sci	16117, 19820	
\ScissorHollowRight	18895, 20398	
\ScissorRight	18889, 20396	
\ScissorRightBrokenBottom	18885	
\ScissorRightBrokenTop	18893, 20397	
\scn	16153, 19821	
\Scorpio	18777, 20934	
\scorpio	18775, 20362	
\scr	16195, 19824	
\scr@LT@array	7103	
\scripta	16028, 19806	
\scriptg	16087, 19814	
\scriptsize	603	
\scriptv	16229, 19829	
\scrollmode	1488, 1497, 1510, 1617, 1750	
\scshape	591	
\scu	17002, 19875	
\scy	16243, 19833	
\Searrow	17769, 20014	
\searrow	17644, 19964	
\Sech	19444, 20627	
\second	17393, 19893	
\sectionautorefname	2973, 2991, 3009, 3027, 3045, 3063,	

3081, 3110, 3139, 3157, 3175, 3193, 3211, 3229, 3247, 3265, 8675	\seen 19668	\sixteenthnote ... 18818, 20369	\SquareShadowBottomRight 19035, 20464
\selectfont 571, 4715, 13141	\setbox 1553, 1559, 1565, 3437, 3443, 5110, 5123, 5987, 6465, 8920, 9908, 9925, 13548, 13637, 13671, 13701, 13729, 13758, 13783	\SK@ 8657	\SquareShadowTopRight . 19038
\SePa 19430, 20621	\setcounter 4908	\SK@@ref 8657	\SquareTopRight 20465
\set@display@protect 4341	\setkeys 4883, 4928	\SK@ref 8654	\SS 15065, 19468
\setbox 1553, 1559, 1565, 3437, 3443, 5110, 5123, 5987, 6465, 8920, 9908, 9925, 13548, 13637, 13671, 13701, 13729, 13758, 13783	\setlength 2257, 5091, 5999, 6749, 8947, 9315, 9316, 9321, 9325, 9330, 9334, 9341, 9342, 9346, 9347, 9355, 9356, 10421, 10422, 10426, 10427, 10435, 10436, 10775, 11759, 11826, 11920, 12204, 14599, 14667	\skip@ .. 1567, 1650, 1651, 1654, 1656, 2280, 2286, 2299, 2305	\ss .. 3020, 14994, 15080, 15454
\setminusminus 17850, 20050	\setminusminus 17850, 20050	\slashc 16019, 19805	\slash 19382, 20610
\setpdfinkmargin .. 3897, 3898, 6747, 8945, 11757, 11824, 11918, 12202	\setpdfinkmargin .. 3897, 3898, 6747, 8945, 11757, 11824, 11918, 12202	\slashdiv 19391, 20614	\star 18264, 20224
\settowidth 12620, 13221, 13577	\settowidth 12620, 13221, 13577	\slide 7900	\stepcounter . 6872, 7220, 7356, 7489, 14281
\SetupKeyvalOptions 2315, 4199	\SetupKeyvalOptions 2315, 4199	\SliTeX 563	\stockheight . 4171, 4413, 9340, 9342, 10276, 10277, 10420, 10421, 11734, 11735
\seveninferior 19920	\seveninferior 19920	\slshape 592	\stockwidth .. 4412, 9339, 9341, 9352, 10275, 10277, 10286, 10419, 10422, 10432, 11733, 11735, 11744
\sevensuperior 19904	\sevensuperior 19904	\small 604	\stop@hyper 6345
\sffamily 586	\sffamily 586	\smallin 17824, 20039	\str 5145
\shadda 19718	\shadda 19718	\smallowns 17832, 20042	\StringEncodingConvertTest 782, 792
\sharp 18824, 20372	\sharp 18824, 20372	\smash 2254	\strip@period 2209
\sheen 19670	\sheen 19670	\smile 18395, 20281	\strip@prefix 62, 2202, 4080, 6418, 7026, 7207, 14505, 14513, 14528
\ShipoutBox . 6465, 6468, 9908, 9909	\ShipoutBox . 6465, 6468, 9908, 9909	\Smiley 18711, 20910	\strip@pt 489, 4183, 6016, 6750, 9321, 9325, 9330, 9334, 10778, 11761, 11828, 11922, 12206, 14007, 14072, 14101, 14141, 14192
\shortciteN 7835	\shortciteN 7835	\smiley 18709, 20342	\strip@pt@and@otherjunk 10982, 11014, 11049
\shuffle 19215, 20536	\shuffle 19215, 20536	\Snowflake 19016, 20456	\strutbox 7430
\Sigma 19844	\Sigma 19844	\SnowflakeChevron 19014, 20455	\sub@label 2196
\sigma 19867	\sigma 19867	\SnowflakeChevronBold . 19018, 20457	\subeqnarray 7187, 7189
\sim 17930, 20082	\sim 17930, 20082	\sofpasuq 16917	\subfig@oldlabel 2198
\simeq 17946, 20089	\simeq 17946, 20089	\softsign 16558, 20772	\Submit 6189
\sinferior 19939	\sinferior 19939	\spacefactor 2232, 2238, 7355, 7364, 7516, 7518, 8955, 8963	\SubmitObject 13361
\SixFlowerAlternate ... 19002, 20449	\SixFlowerAlternate ... 19002, 20449	\spadesuit . 18790, 18792, 20939	\SubmitPObject 13361
\SixFlowerAltPetal 19012, 20454	\SixFlowerAltPetal 19012, 20454	\Sparkle 19020, 20458	\subparagraphautorefname 2977, 2995, 3013, 3031, 3049, 3067, 3085, 3118, 3120, 3143, 3161, 3179, 3197, 3215, 3233, 3251, 3269, 8679
\SixFlowerOpenCenter . 18998, 20447	\SixFlowerOpenCenter . 18998, 20447	\SparkleBold 19022, 20459	\subpdfbookmark 14348
\SixFlowerPetalRemoved 18995, 20446	\SixFlowerPetalRemoved 18995, 20446	\special@paper 4167	\subsection 12037
\sixinferior 19919	\sixinferior 19919	\SpecialDvipdfmxOutlineOpen . 2748, 2750, 4607, 4614	\subsectionautorefname .. 2974, 2992, 3010, 3028, 3046, 3064, 3082, 3115, 3140, 3158, 3176, 3194, 3212, 3230, 3248, 3266, 8676
\SixStar 18985, 20441	\SixStar 18985, 20441	\sphericalangle .. 17869, 20058	\Subset 18290, 20235
\sixsuperior 19903	\sixsuperior 19903	\splitmaxdepth 7430	\subset 18115, 20165
\SixteenStarLight 18993, 20445	\SixteenStarLight 18993, 20445	\splittopskip 7429	
		\sqcap 18155, 20185	
		\sqcup 18157, 20186	
		\sqdoublecap 19242, 20548	
		\sqdoublecup 19247, 20550	
		\sqsubset 18139, 20177	
		\sqsubsest 18147, 20181	
		\sqsubsetneq 18336, 20256	
		\sqsupset 18143, 20179	
		\sqsupseteq 18151, 20183	
		\sqsupsetneq 18339, 20257	
		\SquareCastShadowBottomRight 19041, 20466	
		\SquareCastShadowTopRight 19044, 20467	
		\Squaredot 15370, 20665	
		\squaredots 17923, 20079	

<code>\subseteq</code>	18123, 20169	<code>\tailn</code>	16152, 20733	<code>\textaquarius</code>	18785, 18786, 20365, 20937
<code>\subseteqq</code>	19342, 20594	<code>\tailr</code>	16186, 20741	<code>\textaries</code>	18755, 18756, 20355, 20927
<code>\subsetneq</code>	18131, 20173	<code>\tails</code>	16202, 20744	<code>\textasciicute</code>	15361
<code>\subsubsectionautorefname</code>	2975, 2993, 3011, 3029, 3047, 3065, 3083, 3116, 3141, 3159, 3177, 3195, 3213, 3231, 3249, 3267, 8677	<code>\tailt</code>	16220, 20747	<code>\textasciibreve</code> . . .	14744, 15167, 15196, 16357
<code>\succ</code>	18097, 20156	<code>\tailz</code>	16248, 20756	<code>\textasciicaron</code> . . .	14702, 14714, 14726, 14746, 15164, 15193, 16343
<code>\succapprox</code>	19334, 20590	<code>\Tape</code>	18899, 20400	<code>\textasciicircum</code> . .	14698, 14710, 14722, 14784, 15160, 15189, 15298
<code>\succcurlyeq</code>	18101, 20158	<code>\tatweel</code>	19684	<code>\textasciidieresis</code> .	14700, 14712, 14724, 14881, 15162, 15191, 15336
<code>\succeq</code>	19310, 20578	<code>\tau</code>	19868	<code>\textasciigrave</code> . . .	14696, 14708, 14720, 14789, 15158, 15187, 15303
<code>\succeqq</code>	19322, 20584	<code>\Taurus</code>	18759, 20928	<code>\textasciimacron</code> .	14705, 14717, 14729, 14895, 15171, 15200, 15350
<code>\succnapprox</code>	19340, 20593	<code>\taurus</code>	18757, 20356	<code>\textasciitilde</code> . . .	544, 4793, 14799, 15315
<code>\succneq</code>	19316, 20581	<code>\tcheh</code>	19724	<code>\textast</code>	17853, 20051
<code>\succneqq</code>	19328, 20587	<code>\Telefon</code>	18669, 20896	<code>\textasterisk</code>	19001, 20448
<code>\succnsim</code>	18348, 20261	<code>\temp@online</code>	7999, 8002	<code>\textasteriskbold</code>	18978, 20437
<code>\succsim</code>	18107, 20161	<code>\Tent</code>	18883, 20395	<code>\textasteriskcentered</code>	15258
<code>\sukun</code>	19720	<code>\tesh</code>	16320, 20769	<code>\textasteriskcenteropen</code>	18980, 20438
<code>\sum</code>	17838, 20045	<code>\TeX</code>	553, 554, 561, 563, 12351, 12353, 12355	<code>\textasteriskroundedends</code>	19025, 20460
<code>\Sun</code>	18716, 20911	<code>\texorpdfstring</code>	911, 6377	<code>\textasymp</code>	17974, 20101
<code>\sun</code>	18714, 20344	<code>\text</code>	499, 505	<code>\textbabygamma</code> . .	16098, 19817
<code>\SunCloud</code>	20391	<code>\textAcht</code>	19443, 20626	<code>\textbackcong</code> . . .	17970, 20099
<code>\SunCloud</code>	18875	<code>\textAcPa</code>	19429, 20620	<code>\textbackneg</code>	18376, 20272
<code>\SunshineOpenCircled</code> . .	19010, 20453	<code>\textacute</code>	14697, 14709, 14721, 14905, 15159, 15188, 15360	<code>\textbackprime</code> . .	17398, 19895
<code>\Supset</code>	18294, 20237	<code>\textacutedbl</code>	16368	<code>\textbacksim</code>	17934, 20083
<code>\supset</code>	18117, 20166	<code>\textacutemacron</code>	15156, 15185, 15214, 17090, 17093, 17194, 17197	<code>\textbacksimeq</code> . .	18281, 20231
<code>\supseteq</code>	18125, 20170	<code>\textainferior</code>	17480, 19928	<code>\textbackslash</code> . . .	539, 718, 2062, 14780, 14782, 15296
<code>\supseteqq</code>	19346, 20596	<code>\textaleph</code>	17574, 19950	<code>\textbaht</code>	16981
<code>\supsetneq</code>	18133, 20174	<code>\textalpha</code>	3187, 3188, 3189, 3191, 3192, 3193, 3194, 3195, 3196, 3197, 3198, 3199, 3200, 19752, 19849	<code>\textbar</code>	14795, 15310, 15311, 20657
<code>\surd</code>	20053	<code>\textamalg</code>	17837, 20044	<code>\textbarb</code>	15802, 20678
<code>\Swarrow</code>	17771, 20015	<code>\textampersand</code>	543, 14768, 15248, 15249, 15250, 20654, 20655	<code>\textbarc</code>	16023, 20695
<code>\swarrow</code>	17647, 19965	<code>\textangle</code>	17866, 20056	<code>\textbard</code>	15566, 20670
<code>\sys</code>	5145	<code>\textangstrom</code>	17566	<code>\textbardbl</code>	17359, 17360, 20782
T		<code>\textAnkh</code>	18700, 20339	<code>\textbardotlessj</code> . .	16080, 16081, 16082, 20711
<code>\T</code>	19648	<code>\textaoilig</code>	19411, 19413, 20985	<code>\textbarglotstop</code> .	16302, 16303
<code>\t</code>	14733, 15153, 15182, 15211, 15229	<code>\textAPLbox</code>	18438, 20298	<code>\textbari</code>	16111, 16112, 16113, 19818, 20720
<code>\T@pageref</code>	8520, 8527, 8536, 8545	<code>\textAPLdownarrowbox</code>	18427, 20293	<code>\textbarin</code>	18372, 20270
<code>\T@Ref</code>	4729	<code>\textAPLinput</code>	18430, 20294		
<code>\Ta</code>	19676	<code>\textAPLinv</code>	18404, 20285		
<code>\taa</code>	19650	<code>\textAPLleftarrowbox</code> . .	18419, 20290		
<code>\tableautorefname</code> . .	2969, 2987, 3005, 3023, 3041, 3059, 3077, 3107, 3135, 3153, 3171, 3189, 3207, 3225, 3243, 3261, 8671	<code>\textAPLrightarrowbox</code> .	18422, 20291		
<code>\tagform@</code>	8180	<code>\textAPLuparrowbox</code> . .	18424, 20292		
<code>\taild</code>	16049, 20704	<code>\textapprox</code>	17956, 20093		
<code>\tailnvr</code>	16180, 20739	<code>\textapproxeq</code>	17961, 20095		
<code>\taill</code>	16129, 20724				

<code>\textbarl</code> . . . 15825, 15826, 19803	<code>\textboxtimes</code> . . . 18189, 20197	18493, 18498, 18500, 18502,
<code>\textbarleftharpoon</code> 19160, 20514	<code>\textbraceleft</code> 537, 2063, 14793,	18504, 18506, 18512, 18514,
<code>\textbaro</code> 16157, 16159	15308	18516, 18518, 18520, 18522,
<code>\textbarp</code> 17026, 19886	<code>\textbraceright</code> 538, 2063, 14797,	18524, 18526, 18528, 18530,
<code>\textbarrevglotstop</code> 16306, 16307	15313	18536, 18538, 18540, 18542,
<code>\textbarrightharpoon</code> . . . 19166,	<code>\textbrokenbar</code> . . 14877, 15329,	18544, 18546, 18548, 18550,
20516	15330, 20660	18552, 18554, 18556, 18558,
<code>\textbarsci</code> 17024, 19885	<code>\textbullet</code> . 14801, 17381, 19890	18560, 18562, 18564, 18566,
<code>\textbarscu</code> 17029, 19887	<code>\textbulletoperator</code> 17857	18568, 18570, 18572, 18574,
<code>\textbaru</code> . 16222, 16223, 16224,	<code>\textbullseye</code> 16277, 16278,	18576, 18578, 18580, 18582,
19827, 20748	16279, 16280, 20764, 20765	18584, 18586, 18588, 18590,
<code>\textbarwedge</code> . . . 18263, 20223	<code>\textBumpeq</code> 17979, 20103	18592, 18594, 18596, 18598,
<code>\textbbslash</code> 18450, 18451,	<code>\textbumpeq</code> 17983, 20105	18600, 18602, 18604, 18606,
20301, 20884	<code>\textcancer</code> 18764, 18765, 20358,	18608
<code>\textBeam</code> 18434, 20296	20930	<code>\textCircledA</code> . . . 18495, 18496,
<code>\textbecause</code> 17919, 17920,	<code>\textCap</code> . 18299, 18300, 20239,	20302, 20885
20077, 20824	20875	<code>\textcircledast</code> . . . 18179, 18180,
<code>\textbeltl</code> . 16123, 16124, 16125,	<code>\textcap</code> 17895, 20067	18181, 20193, 20849, 20850
20723	<code>\textcapdot</code> 19246, 20549	<code>\textcircledcirc</code> . . 18175, 18176,
<code>\textBeta</code> 16389	<code>\textcapricornus</code> . 18782, 18783,	18177, 20192, 20847, 20848
<code>\textbeta</code> . . 15080, 19753, 19850	20364, 20936	<code>\textcircleddash</code> . . 18183, 20194
<code>\textbetainferior</code> . 17013, 19880	<code>\textccnc</code> 19472, 20638	<code>\textcircledP</code> 17546
<code>\textbeth</code> 17576, 19951	<code>\textccnd</code> 19474	<code>\textCircleShadow</code> 19033, 20463
<code>\textbetween</code> 18067, 20142	<code>\textccsa</code> 19476, 20639	<code>\textcircplus</code> 19229, 20542
<code>\textbf</code> 578	<code>\textcdj</code> 16291	<code>\textcircumflex</code> 14748
<code>\textBicycle</code> 19463, 20635	<code>\textcdot</code> . . 15079, 19494, 20646	<code>\textcircumlow</code> . . 15177, 15206,
<code>\textbigcircle</code> 15184, 15213,	<code>\textcdots</code> 18366, 20267	19417
18658, 18659, 20324, 20895	<code>\textcedilla</code> 14704, 14716, 14728,	<code>\textCleaningF</code> . . 18508, 20303
<code>\textbigdoublevee</code> 19222, 20539	14913, 15166, 15195, 15372	<code>\textCleaningFF</code> . 18510, 20304
<code>\textbigdoublewedge</code> . . . 19220,	<code>\textcelsius</code> 15066, 17536	<code>\textCleaningP</code> . . 18532, 20305
20538	<code>\textcent</code> 14869, 15319	<code>\textCleaningPP</code> . 18534, 20306
<code>\textbigtriangledown</code> . . . 18634,	<code>\textcentoldstyle</code> . 16021, 20694	<code>\textclock</code> 18382, 18383, 18384,
18635, 20314, 20893	<code>\textCESign</code> 19480, 19481,	20275, 20881, 20882
<code>\textbigtriangleup</code> 18619, 18620,	20641, 20990	<code>\textcloseepsilon</code> . 16284, 16285
18621, 20309, 20890, 20891	<code>\textCheckedbox</code> . 18674, 18675,	<code>\textcloseomega</code> . . 16163, 16164,
<code>\textBiohazard</code> . . 18698, 20338	20330, 20898	16165, 16166, 20734, 20735
<code>\textblacksmiley</code> . 18713, 20343	<code>\textCheckmark</code> . 18922, 18923,	<code>\textcloserevepsilon</code> 16076,
<code>\textblank</code> 18446	20410, 20956	16077, 16078, 20710
<code>\textbot</code> . 18207, 18208, 20204,	<code>\textCheckmarkBold</code> . . . 18925,	<code>\textCloud</code> 18662, 20325
20855	20411	<code>\textClowerTips</code> . 18958, 20427
<code>\textbowtie</code> 18269, 18270, 20226,	<code>\textChi</code> 19749	<code>\textclubsuitblack</code> . 2184, 18801,
20872	<code>\textchi</code> 3188, 19773, 19871	18802, 20943
<code>\textboxast</code> 19206, 20531	<code>\textchiinferior</code> . . 17021, 19884	<code>\textclubsuitwhite</code> 18810
<code>\textboxbackslash</code> 18416, 20289	<code>\textcirc</code> 17855, 20052	<code>\textCoffeecup</code> . . . 18681, 20332
<code>\textboxbar</code> 18656, 20323	<code>\textcircreq</code> 18015, 20119	<code>\textcoloncolonequals</code> . . 19266,
<code>\textboxbox</code> 19210, 20533	<code>\textcirclearrowleft</code> 19072, 20479	20557
<code>\textboxbslash</code> . . . 19204, 20530	<code>\textcirclearrowright</code> . . . 19074,	<code>\textcolonequals</code> . 18007, 20115
<code>\textboxcircle</code> . . . 19208, 20532	20480	<code>\textcolonmonetary</code> 17506
<code>\textboxdot</code> 18191, 20198	<code>\textcircled</code> 15155, 15184, 15213,	<code>\textcolor</code> . . 616, 13099, 13146,
<code>\textboxempty</code> . . 18671, 18672,	18453, 18455, 18457, 18459,	13149, 13480
20329, 20897	18461, 18463, 18465, 18467,	<code>\textcommatailz</code> . 15989, 15990
<code>\textboxminus</code> . . . 18187, 20196	18469, 18471, 18473, 18475,	<code>\textcomplement</code> . 17806, 20030
<code>\textboxplus</code> 18185, 20195	18477, 18479, 18481, 18483,	<code>\textcompwordmark</code> 17353
<code>\textboxslash</code> 19202, 20529	18485, 18487, 18489, 18491,	<code>\textcong</code> 17951, 20091

<code>\textcopyleft</code>	19469, 19470	<code>\textCuttingLine</code> .	18610, 18611, 18612, 18613, 20307, 20886, 20887, 20888	<code>\textdlsh</code>	17687, 19983
<code>\textcopyright</code>	14883, 15338, 19793	<code>\textdagger</code> 14803, 17374, 17375, 19889, 20783		<code>\textdollar</code> . .	541, 14764, 15242, 15243, 15244, 20652, 20653
<code>\textcorner</code>	16377, 16378	<code>\textdaggerdbl</code>	14805, 14806, 17377, 17378, 17379, 20784, 20785	<code>\textdong</code>	17516
<code>\textCR</code>	14742, 15236	<code>\textdaleth</code>	17580, 19953	<code>\textdotaccent</code>	14703, 14715, 14727, 14750, 15165, 15194, 16359
<code>\textcrb</code>	15798, 15799, 15800, 15802, 15803, 20677, 20678, 20679	<code>\textdanger</code>	18852, 20384	<code>\textdotbelow</code>	14707, 14719, 14731, 14774, 15181, 15210, 16384
<code>\textcrd</code>	15561, 15563, 15564, 15566, 15567, 20669, 20670, 20671	<code>\textdasheddownarrow</code> .	17791, 20023	<code>\textdotdiv</code>	17927, 20825
<code>\textcrg</code>	15891, 20691	<code>\textdasheduparrow</code> 17786, 20021		<code>\textdoteq</code>	17987, 20107
<code>\textcrh</code>	15612, 20672	<code>\textdashleftarrow</code> 17783, 17784, 20020, 20810		<code>\textdoteqdot</code>	17992, 17993, 20109, 20831
<code>\textcrinvglotstop</code>	15852, 15853	<code>\textdashrightarrow</code>	17788, 17789, 20022, 20811	<code>\textdotminus</code>	17926, 17927, 20080, 20825
<code>\textcrlambda</code>	15829, 15830, 15831, 15832, 15833, 15834, 20683, 20684, 20685, 20686	<code>\textDashV</code> 19364, 19365, 20602, 20979		<code>\textdotplus</code>	17845, 20047
<code>\textCross</code>	18941, 20419	<code>\textDashv</code> 19357, 19358, 20600, 20977		<code>\textdottimes</code>	19234, 20544
<code>\textCrossedbox</code>	18677, 18678, 18679, 20331, 20899, 20900	<code>\textdashV</code> 19351, 19352, 20598, 20975		<code>\textdoublebarpipe</code> 15865, 15866, 15867, 20690	
<code>\textCrossMaltese</code>	18947, 20422	<code>\textdashv</code> 18196, 18197, 20200, 20852		<code>\textdoublebarpipevar</code>	15867, 20690
<code>\textCrossOpenShadow</code>	18943, 20420	<code>\textDavidStar</code>	18949, 18950, 20423, 20957	<code>\textdoublebarwedge</code>	19257, 20553
<code>\textCrossOutline</code>	18945, 20421	<code>\textdblig</code>	16013, 16015, 20692	<code>\textdoublegrave</code>	15169, 15198, 16380
<code>\textcrtwo</code>	15849, 15850	<code>\textdctzlig</code>	16314, 16315	<code>\textdoublepipe</code>	15861, 15862, 15863, 20689
<code>\textctc</code>	16044, 16045, 16046, 20703	<code>\textddagger</code>	14806	<code>\textdoublepipevar</code> 15863, 20689	
<code>\textctd</code>	15987, 15988	<code>\textddots</code>	18370, 20269	<code>\textdoublevee</code>	19253, 19254, 20552, 20974
<code>\textctesh</code>	16211, 16212, 16213, 20745	<code>\textdegree</code> 14897, 15066, 15352		<code>\textdoublevline</code> 17360, 20782	
<code>\textctj</code>	16292, 16293, 20766	<code>\textDeleatur</code>	17529, 17530, 19941, 20796	<code>\textdoublewedge</code> 19251, 20551	
<code>\textctjvar</code>	16293, 20766	<code>\textDelta</code>	19741, 19839	<code>\textDOWNarrow</code> 18630, 18631, 20313, 20892	
<code>\textctn</code>	16007, 16008	<code>\textdelta</code>	3200, 19755, 19852	<code>\textDownarrow</code>	17758, 20009
<code>\textctt</code>	16009, 16010	<code>\textdiameter</code>	18374, 20271	<code>\textdownarrow</code>	17632, 17633, 17634, 19959, 20804, 20805
<code>\textctyogh</code>	16256, 16257, 16258, 20758	<code>\textdiamond</code>	18644, 18645, 20318, 20894	<code>\textdownwardarrows</code>	17733, 20000
<code>\textctz</code>	16249, 16250, 16251, 20757	<code>\textdiamonddots</code> 17420, 19898		<code>\textdownwardharpoons</code> 19154, 20512	
<code>\textCup</code>	18302, 18303, 20240, 20876	<code>\textDiamondSolid</code> 19047, 20468		<code>\textdownharpoonleft</code>	17716, 19993
<code>\textcup</code>	17897, 20068	<code>\textdiamondsuitblack</code>	2185, 18808	<code>\textdownharpoonright</code>	17713, 19992
<code>\textcupdot</code>	18136, 20175	<code>\textdiamondsuitwhite</code>	18798, 18799, 20942	<code>\textdownmodels</code>	19370, 20604
<code>\textcupplus</code>	18138, 20176	<code>\textdigammagreek</code>	20770	<code>\textdownstep</code>	19400, 19401
<code>\textcurlyeqprec</code>	18321, 20248	<code>\textdiscount</code>	17414	<code>\textdownuparrows</code> 17796, 20025	
<code>\textcurlyeqsucc</code>	18325, 20250	<code>\textdiv</code>	15077, 19492, 20644	<code>\textdownupharpoons</code>	19172, 20518
<code>\textcurlyvee</code>	18285, 18286, 20233, 20873	<code>\textdivide</code> 15046, 15077, 15507, 19492		<code>\textdsbiological</code>	18846, 20381
<code>\textcurlywedge</code>	18288, 18289, 20234, 20874	<code>\textdivideontimes</code> 18267, 20225		<code>\textdschemical</code>	18844, 20380
<code>\textcurrency</code>	14873, 15325	<code>\textDivides</code>	17847, 20048	<code>\textdscommercial</code> 18848, 20382	
<code>\textcurvearrowleft</code> 17690, 19984		<code>\textDividesNot</code>	17849, 20049		
<code>\textcurvearrowright</code>	17692, 19985	<code>\textdivorced</code>	18866		

<code>\textdsjuridical</code> .. 18842, 20379	<code>\texteta</code> . 3185, 3186, 3188, 3191, 3193, 3194, 3195, 3198, 3199, 19758, 19855	<code>\textflat</code> 18821, 20370
<code>\textdsmedical</code> ... 18840, 20378	<code>\texteuro</code> . 14865, 17518, 17519, 17520, 17521, 17522, 17523, 17524, 17525, 17526, 17527, 20787, 20788, 20789, 20790, 20791, 20792, 20793, 20794, 20795	<code>\textflorin</code> 14814, 15814, 15815, 20680
<code>\textdsmilitary</code> .. 18837, 18838, 20377, 20947	<code>\textexclamdown</code> ... 756, 14867, 15317	<code>\textflq</code> 641, 15073, 19488
<code>\textdtimes</code> 19237, 20545	<code>\textexists</code> 17810, 20032	<code>\textflqq</code> 639, 15071, 19486
<code>\textdyoghlig</code> 16311, 16312	<code>\textfallingdotseq</code> . 17998, 20111	<code>\textforall</code> 17804, 20029
<code>\textdzlig</code> 16308, 16309, 16310, 20768	<code>\textfatsemi</code> 19227, 20541	<code>\textForward</code> 18623, 20310
<code>\textearth</code> 18732, 18733, 20348, 20918	<code>\textFax</code> . 19458, 19459, 20633, 20989	<code>\textForwardToIndex</code> ... 18441, 20299
<code>\textEightAsterisk</code> 19031, 20462	<code>\textfax</code> 17582, 19954	<code>\textFourAsterisk</code> 18952, 20424
<code>\textEightFlowerPetal</code> .. 19009, 20452	<code>\textfemale</code> 18726, 20913	<code>\textfourfifths</code> 17606
<code>\textEightFlowerPetalRemoved</code> 19028, 20461	<code>\textFemaleFemale</code> 18854, 20385	<code>\textfourinferior</code> . 17458, 19917
<code>\texteightinferior</code> . 17466, 19921	<code>\textFemaleMale</code> . 18858, 20387	<code>\textFourStar</code> ... 18960, 20428
<code>\textEightStar</code> ... 18988, 20442	<code>\textfi</code> 754, 14840, 19419	<code>\textFourStarOpen</code> 18962, 20429
<code>\textEightStarBold</code> 18990, 20443	<code>\TextField</code> 6174	<code>\textfoursuperior</code> . 17426, 19901
<code>\textEightStarConvex</code> .. 18984, 20440	<code>\textFinv</code> 17572, 19949	<code>\textfourth</code> 17418, 19897
<code>\textEightStarTaper</code> ... 18982, 20439	<code>\textFire</code> 19461, 20634	<code>\textfractionsolidus</code> 14816, 17408
<code>\texteightsuperior</code> 17434, 19905	<code>\textfishhookkr</code> ... 16188, 16189, 16190, 16191, 20742, 20743	<code>\textfrown</code> 18394, 20280
<code>\texteinferior</code> 17482, 19929	<code>\textfivedots</code> 19396, 20615	<code>\textfrownie</code> 18707, 18708, 20341, 20909
<code>\textell</code> 17542, 19944	<code>\textfiveeighths</code> 17616	<code>\textfrq</code> 642, 15074, 19489
<code>\textellipsis</code> ... 547, 548, 14808, 17385, 17386, 20786	<code>\textFiveFlowerOpen</code> .. 19007, 20451	<code>\textfrqq</code> 640, 15072, 19487
<code>\textemdash</code> . 752, 14810, 17357	<code>\textFiveFlowerPetal</code> ... 19005, 20450	<code>\textfullnote</code> 19435, 19436, 20623, 20986
<code>\textemptyset</code> ... 17814, 17815, 20034, 20812	<code>\textfiveinferior</code> .. 17460, 19918	<code>\textGame</code> 17584, 19955
<code>\textEncodingNoboundary</code> 550, 19736	<code>\textfivesixths</code> 17610	<code>\textGamma</code> 19740, 19838
<code>\textendash</code> .. 753, 14812, 17355	<code>\textFiveStar</code> 18664, 20326	<code>\textgamma</code> .. 3196, 3197, 3198, 19754, 19851
<code>\textEnvelope</code> ... 18904, 18905, 20402, 20954	<code>\textFiveStarCenterOpen</code> 18966, 20431	<code>\textgammainferior</code> 17015, 19881
<code>\textEpsilon</code> 3185	<code>\textFiveStarConvex</code> ... 18974, 20435	<code>\textGaPa</code> 19423, 20617
<code>\textepsilon</code> .. 3186, 3187, 3190, 3192, 3193, 3194, 3195, 3199, 3200, 19756, 19853	<code>\textFiveStarOpen</code> 18666, 20327	<code>\textge</code> 18044, 20131
<code>\texteqcirc</code> 18011, 20117	<code>\textFiveStarOpenCircled</code> 18964, 20430	<code>\textgemini</code> 18761, 18762, 20357, 20929
<code>\texteqcolon</code> 17929, 20081	<code>\textFiveStarOpenDotted</code> 18968, 20432	<code>\textGentsroom</code> .. 19465, 20636
<code>\texteqdot</code> 19262, 20555	<code>\textFiveStarOutline</code> ... 18970, 20433	<code>\textgeq</code> . 18043, 18045, 20130, 20839
<code>\texteqsim</code> 17943, 20087	<code>\textFiveStarOutlineHeavy</code> ... 18972, 20434	<code>\textgeqq</code> 18051, 20134
<code>\texteqslantgtr</code> .. 19301, 20573	<code>\textFiveStarShadow</code> ... 18976, 20436	<code>\textgeqslant</code> 19272, 20560
<code>\texteqslantless</code> .. 19299, 20572	<code>\textfivesuperior</code> . 17428, 19902	<code>\textgg</code> 18063, 20140
<code>\textequalscolon</code> . 18009, 20116	<code>\textfl</code> 755, 14842, 19421	<code>\textggg</code> 18313, 20245
<code>\textequalsinferior</code> 17474, 19925	<code>\textFlag</code> . 18832, 18833, 20375, 20946	<code>\textgimel</code> 17578, 19952
<code>\textequalsuperior</code> 17442, 19909		<code>\textglobfall</code> 17646, 20807
<code>\textequiv</code> 18031, 18032, 20126, 20835		<code>\textglobrise</code> 17643, 20806
<code>\textEreversed</code> 15811		<code>\textglotstop</code> 16260, 16261, 16262, 16263, 19835, 20759, 20760
<code>\textesh</code> ... 16203, 16204, 19826		<code>\textglq</code> 637, 15069, 19484
<code>\textestimated</code> ... 17568, 17569, 17570, 20798, 20799		<code>\textglqq</code> 635, 15067, 19482

<code>\textgravemacron</code>	15157, 15186, 15215, 17084, 17087, 17188, 17191	<code>\texthtbardotlessj</code>	16206, 16207	<code>\textJackStarBold</code>	18956, 20426
<code>\textgreater</code>	14778, 15292	<code>\texthtc</code>	15806, 15807	<code>\textjinferior</code>	19390, 20613
<code>\textgrq</code>	638, 15070, 19485	<code>\texthtd</code>	16050, 16051, 16052, 16053, 20705, 20706	<code>\textJoin</code>	19225, 20540
<code>\textgrqq</code>	636, 15068, 19483	<code>\texthtg</code>	16083, 16084, 16085, 20712	<code>\textjupiter</code>	18740, 18741, 20350, 20922
<code>\textGslash</code>	15888	<code>\texthth</code>	16103, 16104, 16105, 16106, 20717, 20718	<code>\textkappa</code>	3187, 3189, 3192, 19761, 19858
<code>\textgslash</code>	15890, 15891, 20691	<code>\texththeng</code>	16107, 16108, 16109, 20719	<code>\textKeyboard</code>	18398, 20282
<code>\textgtrapprox</code>	19280, 20564	<code>\texthtk</code>	15821, 15822, 15823, 20682	<code>\textkinferior</code>	17492, 19934
<code>\textgtrdot</code>	18309, 20243	<code>\texthttp</code>	15839, 15840	<code>\textkra</code>	15653
<code>\textgtreqless</code>	18319, 20247	<code>\texthtq</code>	16299, 16300	<code>\textLadiesroom</code>	19467, 20637
<code>\textgtreqqlless</code>	19297, 20571	<code>\texthttrtaild</code>	17033, 17034, 19888	<code>\textLambda</code>	19743, 19841
<code>\textgtrless</code>	18090, 20152	<code>\texthtscg</code>	16287, 16288	<code>\textlambda</code>	3192, 3200, 19762, 19859
<code>\textgtrsim</code>	18081, 18082, 20148, 20841	<code>\texthtt</code>	15844, 15845	<code>\textlangle</code>	18400, 20283
<code>\textguarani</code>	17534	<code>\texthungarumlaut</code>	14752, 15172, 15201, 16367	<code>\textlatin</code>	627, 7014
<code>\texthalflength</code>	16354, 16355	<code>\texthvlig</code>	15816, 15817, 15818, 20681	<code>\textlbrackdbl</code>	19065, 19066, 20477, 20958
<code>\texthalfnote</code>	19438, 19439, 20624, 20987	<code>\textiiint</code>	17904, 20071	<code>\textlcurvearrowdown</code>	19120, 19121, 19122, 20501, 20960, 20961
<code>\textHandCuffLeft</code>	18683, 20333	<code>\textiinferior</code>	17005, 19876	<code>\textlcurvearrowse</code>	19112, 20498
<code>\textHandCuffRight</code>	18685, 20334	<code>\textiint</code>	17902, 20070	<code>\textlcurvearrowsw</code>	19115, 20499
<code>\textHandLeft</code>	18687, 18688, 20335, 20901	<code>\textIm</code>	17540, 19943	<code>\textle</code>	18039, 20129
<code>\textHandRight</code>	18690, 18691, 18692, 18693, 20336, 20902, 20903, 20904	<code>\textInfo</code>	19478, 20640	<code>\textleadsto</code>	19106, 20496
<code>\textHaPa</code>	19425, 20618	<code>\textinfty</code>	17864, 20055	<code>\textLeftarrow</code>	17750, 20006
<code>\texthateq</code>	18019, 18020, 18021, 20121, 20832, 20833	<code>\textinsymbol</code>	17821, 20037	<code>\textleftarrow</code>	17624, 19956
<code>\texthausaB</code>	15805, 19800	<code>\textint</code>	17899, 17900, 20069, 20822	<code>\textleftarrowtail</code>	17667, 19974
<code>\texthausaD</code>	15809, 19801	<code>\textinterleave</code>	19381, 20609	<code>\textleftarrowtriangle</code>	17798, 20026
<code>\texthausaK</code>	15820, 19802	<code>\textinterrobang</code>	17406	<code>\textleftbarharpoon</code>	19157, 20513
<code>\texthbar</code>	15611, 15612, 15613, 15614, 19799, 20672, 20673, 20674	<code>\textinterrobangdown</code>	19393, 19394	<code>\textLEFTCIRCLE</code>	18649, 20320
<code>\texthdotfor</code>	17383, 19891	<code>\textinvamp</code>	17586, 17587, 17588, 20800, 20801	<code>\textleftharpoondown</code>	17698, 19987
<code>\textheartsuitblack</code>	2186, 18806	<code>\textinvbackneg</code>	18380, 20274	<code>\textleftharpoonup</code>	17695, 19986
<code>\textheartsuitwhite</code>	18794, 18795, 18796, 20940, 20941	<code>\textinvbreve</code>	15131, 15174, 15203, 15938, 15940, 15951, 15953, 15954, 15964, 15966, 15980, 15982	<code>\textleftleftarrows</code>	17727, 19997
<code>\textheng</code>	19402, 19404, 20982	<code>\textinvdiameter</code>	19180, 20522	<code>\textleftleftharpoons</code>	19145, 20509
<code>\textHermaphrodite</code>	18860, 20388	<code>\textinve</code>	15886, 19804	<code>\textleftmoon</code>	18718, 20345
<code>\texthexagon</code>	18436, 20297	<code>\textinvglotstop</code>	16270, 16271, 19837	<code>\textLeftrightarrow</code>	17761, 20010
<code>\texthexstar</code>	18871, 20390	<code>\textinvneg</code>	19241, 20547	<code>\textleftrightarrow</code>	2189, 17636, 19960
<code>\texthinferior</code>	17490, 19933	<code>\textinvscr</code>	16198, 16199, 19825	<code>\textleftrightarrows</code>	17725, 19996
<code>\texthookleftarrow</code>	17673, 19977	<code>\textiota</code>	3185, 3186, 3187, 3189, 3192, 3200, 19760, 19857	<code>\textleftrightarrowtriangle</code>	17802, 20028
<code>\texthookrightarrow</code>	17675, 19978	<code>\textipagamma</code>	16094, 16095, 19816, 20714	<code>\textleftrightharpoon</code>	19134, 20505
<code>\textHslash</code>	15609	<code>\textisuperior</code>	17424, 19900	<code>\textleftrightharpoons</code>	17736, 20001
<code>\texthslash</code>	17538, 19942	<code>\textit</code>	580	<code>\textleftslice</code>	19303, 20574
<code>\textHT</code>	14738, 15232	<code>\textJackStar</code>	18954, 20425	<code>\textleftspoon</code>	19063, 20476
<code>\texthtb</code>	16036, 16037, 16038, 16039, 20700, 20701			<code>\textleftsquigarrow</code>	17778, 20018
				<code>\textlefttherefore</code>	17416, 19896
				<code>\textleftthreetimes</code>	18277, 20229

<code>\textlengthmark</code> .	16351, 16352	<code>\textlongmapsto</code> .	19088, 20487	<code>\textmultimap</code> . . .	18259, 20221
<code>\textleo</code> . .	18767, 18768, 20359, 20931	<code>\textLongrightarrow</code> . . .	19084, 20485	<code>\textmultimapboth</code>	19214, 20535
<code>\textleq</code> . .	18038, 18040, 20128, 20838	<code>\textlongrightarrow</code>	19078, 20482	<code>\textmultimapdotbothA</code>	18255, 20219
<code>\textleqq</code>	18047, 20132	<code>\textlongs</code>	15797, 17315	<code>\textmultimapdotbothB</code>	18257, 20220
<code>\textleqslant</code>	19268, 20558	<code>\textlooparrowleft</code>	17677, 19979	<code>\textmultiply</code>	14977, 15076, 15435, 15436, 15437, 19491, 20666, 20667
<code>\textless</code>	14776, 15290	<code>\textlooparrowright</code>	17679, 19980	<code>\textMundus</code>	19449, 20629
<code>\textlessapprox</code> . .	19276, 20562	<code>\textlozenge</code>	18647, 20319	<code>\textmusicalnote</code> .	18813, 18814, 18815, 20944
<code>\textlessdot</code>	18307, 20242	<code>\textlptr</code>	16337, 16338	<code>\textMVAt</code>	15294, 19792
<code>\textlesseqgtr</code> . . .	18316, 20246	<code>\textlquill</code>	17410	<code>\textMVComma</code> .	15262, 19778
<code>\textlesseqqgtr</code> . .	19294, 20570	<code>\textlrcorner</code>	18392, 20279	<code>\textMVDivision</code> .	15268, 19781
<code>\textlessgtr</code>	18088, 20151	<code>\textltailm</code> 16141, 16142, 16143, 16144, 20729, 20730		<code>\textMVEight</code> . . .	15286, 19790
<code>\textlessssim</code> 18078, 18079, 20147, 20840		<code>\textltailn</code> 16145, 16146, 16147, 16148, 20731, 20732		<code>\textMVFive</code>	15280, 19787
<code>\textLF</code>	14740, 15234	<code>\textltilde</code> 16120, 16121, 16122, 20722		<code>\textMVFour</code>	15278, 19786
<code>\textLHD</code>	18642, 20317	<code>\textltimes</code>	18272, 20227	<code>\textMVMinus</code> . . .	15264, 19779
<code>\textlhd</code> . .	18241, 18242, 20215, 20866	<code>\textlyoghlig</code>	16130, 16131, 16132, 20725	<code>\textMVNine</code>	15288, 19791
<code>\texthookfour</code> . . .	19405, 19407, 20983	<code>\textmacronbelow</code>	14706, 14718, 14730, 14787, 15180, 15209, 16386	<code>\textMVOne</code>	15272, 19783
<code>\texthooknarrow</code>	19098, 20492	<code>\textmale</code> 18735, 18736, 18737, 18738, 20349, 20919, 20920, 20921		<code>\textMVPeriod</code> . .	15266, 19780
<code>\texthooksearrow</code>	19102, 20494	<code>\textMaleMale</code> . . .	18856, 20386	<code>\textMVPlus</code>	15260, 19777
<code>\texthookt</code>	15842, 15843	<code>\textManFace</code>	19453, 20631	<code>\textMVSeven</code> . . .	15284, 19789
<code>\textlhtlongi</code>	16193, 16194	<code>\textmanstar</code>	18850, 20383	<code>\textMVSix</code>	15282, 19788
<code>\textlhtlongy</code>	16325, 16326	<code>\textmapsto</code>	17671, 19976	<code>\textMVThree</code> . . .	15276, 19785
<code>\textlibra</code> .	18773, 18774, 20361, 20933	<code>\textmarried</code>	18864	<code>\textMVTwo</code>	15274, 19784
<code>\textlightning</code> . . .	17683, 17684, 19982, 20808	<code>\textmd</code>	579	<code>\textMVZero</code>	15270, 19782
<code>\textlinferior</code>	17494, 19935	<code>\textmeasuredangle</code>	17868, 20057	<code>\textnabla</code>	17819, 20036
<code>\textlira</code>	17508	<code>\textmercury</code>	18722, 18723, 20347, 20912	<code>\textnaira</code>	17510
<code>\textll</code>	18059, 20138	<code>\textmho</code> .	17561, 17562, 19947, 20797	<code>\textnapostrophe</code>	15687
<code>\textllcorner</code>	18390, 20278	<code>\textmid</code>	17875, 20059	<code>\textnapprox</code>	17958, 17959, 20094, 20828
<code>\textLleftarrow</code> . .	17774, 20016	<code>\textMineSign</code> . . .	18835, 20376	<code>\textnapproxeq</code> . .	17963, 20096
<code>\textlll</code>	18311, 20244	<code>\textminferior</code> . . .	17496, 19936	<code>\textnasymp</code>	17976, 17977, 20102, 20830
<code>\textllparenthesis</code> .	19176, 20520	<code>\textminus</code>	14822, 17841	<code>\textnatural</code>	18823, 20371
<code>\textlnapprox</code> . . .	19289, 20568	<code>\textminusdot</code> . . .	19231, 19232, 20543, 20971	<code>\textnbackcong</code> . .	17972, 20100
<code>\textlneq</code>	19284, 20566	<code>\textminusinferior</code>	17472, 19924	<code>\textnbacksim</code> . . .	17936, 20084
<code>\textlneqq</code>	18055, 20136	<code>\textminussuperior</code>	17440, 19908	<code>\textnbacksimeq</code> .	18283, 20232
<code>\textlnot</code>	14891, 15346	<code>\textmoo</code>	19174, 20519	<code>\textnBumpeq</code> . . .	17981, 20104
<code>\textlnsim</code>	18343, 20258	<code>\textMoon</code>	19451, 20630	<code>\textnbumpeq</code> . . .	17985, 20106
<code>\textlogicalnot</code> . . .	14890, 15075, 15345, 19490	<code>\textMountain</code> . . .	18882, 20394	<code>\textncirceq</code>	18017, 20120
<code>\textLongleftarrow</code>	19082, 20484	<code>\texttmp</code>	17843, 20046	<code>\textncong</code>	17954, 20092
<code>\textlongleftarrow</code>	19076, 20481	<code>\textMu</code>	3190	<code>\textncurlyeqprec</code>	18323, 20249
<code>\textLongleftrightarrow</code> .	19086, 20486	<code>\textmu</code> .	3186, 3187, 3188, 3191, 3198, 3199, 14907, 15363, 19860	<code>\textncurlyeqsucc</code>	18327, 20251
<code>\textlonglefttrightharpoon</code> .	19080, 20483	<code>\textmugreek</code>	19763, 19861	<code>\textnDashV</code>	19367, 19368, 20603, 20980
<code>\textlongleg</code>	16181, 16182, 16183, 19823, 20740			<code>\textnDashv</code>	19360, 19361, 20601, 20978
<code>\textLongmapsfrom</code>	19090, 20488			<code>\textndashV</code>	19354, 19355, 20599, 20976
<code>\textLongmapsto</code> .	19092, 20489			<code>\textndashv</code>	18199, 18200, 20201, 20853

<code>\textnDoteq</code>	....	17995, 20110	<code>\textnless</code>	.....	18069, 20143	<code>\textntrianglelefteq</code>	18358, 20264	
<code>\textndoteq</code>	.....	17989, 20108	<code>\textnlessapprox</code>	.	19278, 20563	<code>\textntriangleright</code>	18354, 18355,	
<code>\textndownmodels</code>		19372, 20605	<code>\textnlessgtr</code>	....	18094, 20154		20263, 20880	
<code>\textndownvdash</code>	.	18205, 20203	<code>\textnlesssim</code>	....	18084, 20149	<code>\textntrianglerighteq</code>	... 18361,	
<code>\textne</code>	.....	18028, 20125	<code>\textnll</code>	.....	18061, 20139		18362, 20265	
<code>\textNearrow</code>	....	17768, 20013	<code>\textnmid</code>	17877, 17878, 20060,		<code>\textntriplesim</code>	.. 17968, 20098	
<code>\textnearrow</code>	....	17642, 17643,		20819		<code>\textntwoheadleftarrow</code>	. 17656,	
		19963, 20806	<code>\textNoChemicalCleaning</code>	19194,			19969	
<code>\textneg</code>	..	15075, 19490, 20642		20526		<code>\textntwoheadrightarrow</code>	17663,	
<code>\textneptune</code>	....	18749, 18750,	<code>\textnormal</code>	.....	574		19972	
		20353, 20925	<code>\textnotbackslash</code>		18414, 20288	<code>\textnu</code>	. 3187, 3189, 3193, 3194,	
<code>\textneq</code>	.	18027, 18029, 20124,	<code>\textnotin</code>	.....	17823, 20038		3195, 19764, 19862	
		20834	<code>\textnotowner</code>	...	17830, 17831,	<code>\textnumbersign</code>	... 540, 14762,	
<code>\textneqcirc</code>	.....	18013, 20118		20041, 20814			15240	
<code>\textneqdot</code>	.....	19264, 20556	<code>\textnotperp</code>	....	19057, 20473	<code>\textnumero</code>	.....	17544
<code>\textneqsim</code>	.....	17945, 20088	<code>\textnotslash</code>	....	18411, 20287	<code>\textnupmodels</code>	..	19376, 20607
<code>\textnequiv</code>	18034, 18035, 18036,		<code>\textnoway</code>	....	18880, 20393	<code>\textnupvdash</code>	...	18210, 18211,
	20127, 20836, 20837		<code>\textnparallel</code>	...	17882, 17883,		20205, 20856	
<code>\textneswarrow</code>	..	19096, 20491		20062		<code>\textnVDash</code>	....	18238, 18239,
<code>\textNeutral</code>	....	18862, 20389	<code>\textnprec</code>	.....	18112, 20163		20214, 20865	
<code>\textnewtie</code>	15183, 15212, 16382		<code>\textnprecapprox</code>	.	19333, 20589	<code>\textnVdash</code>	18235, 18236, 20213,	
<code>\textnexists</code>	.....	17812, 20033	<code>\textnpreccurlyeq</code>		18329, 20252		20864	
<code>\textnfallingdoteq</code>		18000, 20112	<code>\textnpreceq</code>	....	19309, 20577	<code>\textnvDash</code>	....	18231, 18232,
<code>\textngeq</code>	.....	18076, 20146	<code>\textnpreceqq</code>	...	19321, 20583		18233, 20212, 20862, 20863	
<code>\textngeqq</code>	.....	18053, 20135	<code>\textnprecsim</code>	...	18106, 20160	<code>\textnvdash</code>	18228, 18229, 20211,	
<code>\textngeqslant</code>	...	19274, 20561	<code>\textnqsubseteq</code>	..	18333, 20254		20861	
<code>\textngg</code>	.....	18065, 20141	<code>\textnqsupseteq</code>	..	18335, 20255	<code>\textnVdash</code>	.....	18222, 20209
<code>\textngtr</code>	.....	18071, 20144	<code>\textnRightarrow</code>		17747, 20005	<code>\textNwarrow</code>	...	17766, 20012
<code>\textngtrapprox</code>	..	19282, 20565	<code>\textnrightarrow</code>	.	17652, 19967	<code>\textnwardow</code>	....	17640, 19962
<code>\textngtrless</code>	....	18092, 20153	<code>\textnrisingdoteq</code>	.	18005, 20114	<code>\textnwsearrow</code>	..	19094, 20490
<code>\textngtrsim</code>	....	18086, 20150	<code>\textnrleg</code>	. 15836, 15838, 20687		<code>\textobar</code>	. 19182, 19183, 20523,	
<code>\textnhateq</code>	.....	18023, 20122	<code>\textnsim</code>	.....	17941, 20086		20964	
<code>\textni</code>	... 17827, 17828, 20040,		<code>\textnsimeq</code>	.....	17949, 20090	<code>\textobot</code>	. 19191, 19192, 20525,	
	20813		<code>\textnsqsubset</code>	...	18142, 20178		20968	
<code>\textNibRight</code>	... 18918, 20408		<code>\textnsqsubseteq</code>	.	18150, 20182	<code>\textobslash</code>	19185, 19186, 19187,	
<code>\textNibSolidRight</code>	18920, 20409		<code>\textnsqsupset</code>	...	18146, 20180		19188, 20524, 20965, 20966,	
<code>\textniepsilon</code>	... 16066, 16067,		<code>\textnsqsupseteq</code>	.	18154, 20184		20967	
	19811, 20708		<code>\textnSubset</code>	....	18293, 20236	<code>\textObullseye</code>	... 16280, 20765	
<code>\textniota</code>	16115, 16116, 19819,		<code>\textnsubset</code>	....	18120, 20167	<code>\textodiv</code>	.....	19239, 20546
	20721		<code>\textnsubseq</code>	...	18128, 20171	<code>\textodot</code>	. 18172, 18173, 20191,	
<code>\textnineinferior</code>	.	17468, 19922	<code>\textnsubseqeq</code>	...	19345, 20595		20846	
<code>\textninesuperior</code>	.	17436, 19906	<code>\textnsucc</code>	.....	18114, 20164	<code>\textogonek</code>	14754, 15173, 15202,	
<code>\textninferior</code>	....	17498, 19937	<code>\textnsuccapprox</code>	.	19337, 20591		16363	
<code>\textnphi</code>	.....	16168, 19822	<code>\textnsucccurlyeq</code>		18331, 20253	<code>\textogreaterthan</code>	19199, 19200,	
<code>\textniupsilon</code>	... 16226, 16227,		<code>\textnsucceq</code>	....	19313, 20579		20528, 20970	
	19828, 20749		<code>\textnsucceqq</code>	...	19325, 20585	<code>\textohm</code>	.....	17559
<code>\textnLeftarrow</code>	.. 17742, 20003		<code>\textnsuccsim</code>	...	18110, 20162	<code>\textoiint</code>	.....	17909, 20073
<code>\textnleftarrow</code>	.. 17650, 19966		<code>\textnsuperior</code>	...	17448, 19912	<code>\textoinferior</code>	....	17484, 19930
<code>\textnLeftrightarrow</code>	... 17744,		<code>\textnSupset</code>	....	18297, 20238	<code>\textoint</code>	. 17906, 17907, 20072,	
	20004		<code>\textnsupset</code>	....	18122, 20168		20823	
<code>\textnleftrightarrow</code>	17681, 19981		<code>\textnsupseteq</code>	...	18130, 20172	<code>\textointclockwise</code>	17912, 20074	
<code>\textnleq</code>	.....	18074, 20145	<code>\textnsupseteqq</code>	..	19349, 20597	<code>\textointctrlockwise</code>	... 17914,	
<code>\textnleqq</code>	.....	18049, 20133	<code>\textntriangleleft</code>	18351, 18352,			20075	
<code>\textnleqslant</code>	...	19270, 20559		20262, 20879				

<code>\textolessthan</code> . . .	19196, 19197, 20527, 20969	<code>\textpartial</code>	17808, 20031	<code>\textprecneq</code>	19315, 20580
<code>\textOmega</code>	19751, 19848	<code>\textPeace</code>	18907, 20403	<code>\textprecneqq</code> . . .	19327, 20586
<code>\textomega</code> . . .	3185, 3186, 3199, 19775, 19873	<code>\textPencilRight</code> .	18914, 20406	<code>\textprecnsim</code> . . .	18347, 20260
<code>\textomicron</code> . .	3186, 3187, 3190, 3192, 3193, 3194, 3195, 3196, 3197	<code>\textPencilRightDown</code> . .	18912, 20405	<code>\textprecsim</code>	18104, 20159
<code>\textominus</code>	18163, 18164, 20188, 20843	<code>\textPencilRightUp</code>	18916, 20407	<code>\textprime</code>	17392, 19892
<code>\textoneeighth</code>	17612	<code>\textpentagon</code> . . .	19386, 20611	<code>\textprimstress</code> . .	16345, 16346
<code>\textonefifth</code>	17600	<code>\textpercent</code> .	542, 14766, 15246	<code>\textprod</code>	17835, 20043
<code>\textonehalf</code>	14924, 15383	<code>\textperiodcentered</code>	14911, 15079, 15368, 15369, 15370, 19494, 20664, 20665	<code>\textpropto</code>	17861, 17862, 20054, 20815
<code>\textoneinferior</code> . .	17452, 19914	<code>\textperp</code>	19055, 20472	<code>\textPsi</code>	19750, 19847
<code>\textoneninth</code>	17592	<code>\textpertenthousand</code>	17390	<code>\textpsi</code>	19774, 19872
<code>\textonequarter</code> . .	14922, 15381	<code>\textperthousand</code> .	14824, 17388	<code>\textPUaolig</code>	19412, 19413, 20985
<code>\textoneseventh</code>	17590	<code>\textpeseta</code>	17512	<code>\textPUdblig</code>	16014, 16015, 20692
<code>\textonesixth</code>	17608	<code>\textpeso</code>	17532	<code>\textPUfemale</code> . . .	18725, 18726, 18727, 18728, 18729, 18730, 20913, 20914, 20915, 20916, 20917
<code>\textonesuperior</code> .	14915, 15374, 19796	<code>\textPhi</code>	19748, 19846	<code>\textPUheng</code>	19403, 19404, 20982
<code>\textonetenth</code>	17594	<code>\textphi</code>	3192, 3196, 3197, 19772, 19870	<code>\textPUhookfour</code>	19406, 19407, 20983
<code>\textonethird</code>	17596	<code>\textphiinferior</code> . .	17019, 19883	<code>\textPUnrleg</code>	15837, 15838, 20687
<code>\textoo</code>	19415, 20616	<code>\textPhone</code>	18668, 18669, 20328, 20896	<code>\textPUqplig</code>	16017, 16018, 20693
<code>\textopenbullet</code> . .	18653, 20322	<code>\textPhoneHandset</code>	18898, 20399	<code>\textPUrevscr</code> . . .	17000, 17001, 20777
<code>\textopencorner</code> . .	16375, 16376	<code>\textPi</code>	3189, 3191, 19745, 19843	<code>\textPUrhooka</code> . .	17031, 17032, 20778
<code>\textopeno</code>	16041, 16042, 16043, 19807, 20702	<code>\textpi</code> . .	3186, 3194, 3195, 3196, 3197, 19766, 19864	<code>\textPUrhooko</code> . .	17036, 17037, 20779
<code>\textoplus</code>	18160, 18161, 20187, 20842	<code>\textpinferior</code>	17500, 19938	<code>\textPUrhookepsilon</code> . . .	17040, 17041, 20780
<code>\textordfeminine</code> .	14885, 15340	<code>\textpipe</code> .	15857, 15858, 15859, 20688	<code>\textPUrhookopeno</code>	17044, 17045, 20781
<code>\textordmasculine</code>	14917, 15376	<code>\textpipevar</code>	15859, 20688	<code>\textPUscf</code> .	19409, 19410, 20984
<code>\TextOrMath</code>	619	<code>\textpisces</code>	18788, 18789, 20366, 20938	<code>\textPUsc</code>	16991, 16992, 20774
<code>\textoslash</code>	18169, 18170, 20190, 20845	<code>\textpitchfork</code> . . .	18305, 20241	<code>\textPUscm</code>	16994, 16995, 20775
<code>\textotimes</code>	18166, 18167, 20189, 20844	<code>\textPlane</code>	18902, 20401	<code>\textPUscp</code>	16997, 16998, 20776
<code>\textovee</code> .	17892, 17893, 20066, 20821	<code>\textPlus</code>	18935, 20416	<code>\textPUuncrfemale</code>	18868, 18869, 20948
<code>\textowedge</code>	17887, 17888, 20064, 20820	<code>\textPlusCenterOpen</code> . .	18939, 20418	<code>\textqplig</code> .	16016, 16018, 20693
<code>\textparagraph</code>	546, 14909, 15365, 15366, 20663	<code>\textplusinferior</code> .	17470, 19923	<code>\textquarternote</code> .	18812, 20367
<code>\textparallel</code>	17880, 20061	<code>\textplusminus</code> . .	14899, 15078, 15354, 19493	<code>\textquestiondown</code> . .	757, 14928, 15387
<code>\textparenleft</code> .	760, 761, 14770, 15254	<code>\textplussuperior</code> .	17438, 19907	<code>\textquotedbl</code> . . .	14760, 15238
<code>\textparenleftinferior</code> . . .	17476, 19926	<code>\textPlusThinCenterOpen</code>	18937, 20417	<code>\textquotedblleft</code> .	14828, 15068, 17368, 19483
<code>\textparenleftsuperior</code> . .	17444, 19910	<code>\textpluto</code>	18752, 18753, 20354, 20926	<code>\textquotedblright</code>	14830, 17370
<code>\textparenright</code> . .	14772, 15256	<code>\texttpm</code> . . .	15078, 19493, 20645	<code>\textquoteleft</code> . . .	14832, 15070, 17362, 19485
<code>\textparenrightinferior</code> . .	17478, 19927	<code>\textpointer</code>	17793, 20024	<code>\textquoteright</code> . .	14834, 17364
<code>\textparenrightsuperior</code> .	17446, 19911	<code>\textprec</code>	18096, 20155	<code>\textquotesingle</code>	15252
		<code>\textprecapprox</code> . .	19331, 20588	<code>\textRadioactivity</code>	18695, 18696, 20337, 20905
		<code>\textpreccurlyeq</code> .	18100, 20157		
		<code>\textpreceq</code>	19307, 20576		
		<code>\textpreceqq</code>	19319, 20582		
		<code>\textprecnapprox</code> .	19339, 20592		

<code>\textRain</code>	18878, 20392	<code>\textrhookswarrow</code>	19104, 20495	<code>\textrtail</code>	16218, 16219, 16220, 20747
<code>\textraiseglotstop</code>	16334, 16335	<code>\textRightarrow</code> .	17755, 17756, 20008, 20809	<code>\textrtailz</code>	16246, 16247, 16248, 20756
<code>\textrangle</code>	18402, 20284	<code>\textrightarrow</code> . . .	2188, 17628, 17629, 17630, 19958, 20802, 20803	<code>\textrtimes</code>	18275, 20228
<code>\textrbrackdbl</code> . . .	19068, 19069, 20478, 20959	<code>\textrightarrowtail</code>	17669, 19975	<code>\textsagittarius</code> . .	18779, 18780, 20363, 20935
<code>\textrcurvearrowdown</code> . .	19125, 19126, 19127, 20502, 20962, 20963	<code>\textrightarrowtriangle</code> .	17800, 20027	<code>\textssaturn</code>	18743, 18744, 20351, 20923
<code>\textrcurvearrowleft</code> . . .	19129, 20503	<code>\textrightbarharpoon</code> . . .	19163, 20515	<code>\textsc</code>	581
<code>\textrcurvearrowne</code>	19109, 20497	<code>\textRIGHTCIRCLE</code> . . .	18651, 20321	<code>\textsc</code>	16982, 16983
<code>\textrcurvearrowright</code> . .	19132, 20504	<code>\textrightharpoondown</code> .	17710, 19991	<code>\textscb</code>	16281, 16282
<code>\textrcurvearrowse</code>	19118, 20500	<code>\textrightharpoonup</code> . . .	17707, 19990	<code>\textscd</code>	16985, 19874
<code>\textRe</code>	17551, 19946	<code>\textrightleftarrows</code>	17719, 19994	<code>\textsce</code>	16986, 16987
<code>\textrecipe</code>	17553	<code>\textrightleftharpoon</code> . . .	19136, 20506	<code>\textscf</code> . . .	19408, 19410, 20984
<code>\textRectangle</code> . . .	19051, 20470	<code>\textrightleftharpoons</code> . .	17739, 20002	<code>\textscg</code> . . .	16090, 16091, 19815
<code>\textRectangleBold</code>	19053, 20471	<code>\textrightmoon</code> . .	18720, 20346	<code>\textsch</code>	16289, 16290
<code>\textRectangleThin</code>	19049, 20469	<code>\textrighttriarrows</code> . . .	17731, 19999	<code>\textschwa</code> .	16058, 16059, 19810
<code>\textrecycle</code>	18827, 18828, 20373, 20945	<code>\textrighttrightharpoons</code> .	19151, 20511	<code>\textschwainferior</code>	17488, 19932
<code>\textreferencemark</code>	17404	<code>\textrightwslice</code> . . .	19305, 20575	<code>\textsci</code> . . .	16117, 16118, 19820
<code>\textregistered</code> . . .	14893, 15348	<code>\textrightwsquigarrow</code> . . .	17780, 20019	<code>\textScissorHollowRight</code>	18896, 20398
<code>\textRequest</code>	18432, 20295	<code>\textrightthreetimes</code> . . .	18279, 20230	<code>\textScissorRight</code> .	18890, 18891, 18892, 20396, 20952, 20953
<code>\textrevapostrophe</code>	16331, 16332	<code>\textrinferior</code>	17007, 19877	<code>\textScissorRightBrokenBottom</code>	18886, 18887, 18888, 20950, 20951
<code>\textrevc</code>	17620	<code>\textring</code> .	14701, 14713, 14725, 14756, 15163, 15192, 16361	<code>\textScissorRightBrokenTop</code> . .	18894, 20397
<code>\textrevE</code>	15812	<code>\textringlow</code>	15176, 15205, 16370	<code>\textscj</code>	16988, 16989
<code>\textreve</code> . .	16055, 16056, 19809	<code>\textriota</code>	17564, 19948	<code>\textsc</code> . . .	16990, 16992, 20774
<code>\textrepsilon</code> . .	16069, 16070, 19812	<code>\textringdotseq</code> . .	18003, 20113	<code>\textsc</code>	16297, 16298
<code>\textrevglotstop</code> .	16266, 16267, 16268, 19836, 20761	<code>\textrm</code>	575	<code>\textscm</code> . .	16993, 16995, 20775
<code>\textrevscr</code>	16999, 17001, 20777	<code>\textrptr</code>	16340, 16341	<code>\textscn</code> . . .	16153, 16154, 19821
<code>\textrevyogh</code>	15847, 15848	<code>\textrquill</code>	17412	<code>\textscelig</code>	16160, 16161
<code>\textRewind</code>	18637, 20315	<code>\textRrightarrow</code> .	17776, 20017	<code>\textscorpio</code>	18776, 18777, 20362, 20934
<code>\textRewindToIndex</code> . . .	18444, 20300	<code>\textrrparenthesis</code>	19178, 20521	<code>\textscp</code> . . .	16996, 16998, 20776
<code>\textRHD</code>	18628, 20312	<code>\textrtail</code>	16047, 16048, 16049, 19808, 20704	<code>\textscr</code> . . .	16195, 16196, 19824
<code>\textrhd</code> .	18244, 18245, 20216, 20867	<code>\textrtailn</code>	16150, 16151, 16152, 20733	<code>\textscripta</code>	16028, 16029, 16030, 19806, 20697
<code>\textrho</code>	3190, 3191, 3196, 3197, 3198, 3199, 19767, 19865	<code>\textrtailr</code>	16184, 16185, 16186, 20741	<code>\textscriptg</code>	16087, 16088, 16089, 19814, 20713
<code>\textrhoinferior</code> . .	17017, 19882	<code>\textrtails</code>	16200, 16201, 16202, 20744	<code>\textscriptv</code>	16229, 16230, 19829
<code>\textrhooka</code>	17030, 17032, 20778			<code>\textscu</code> . . .	17002, 17003, 19875
<code>\textrhookb</code>	17035, 17037, 20779			<code>\textscy</code> . . .	16243, 16244, 19833
<code>\textrhookepsilon</code>	17039, 17041, 20780			<code>\textSearrow</code>	17770, 20014
<code>\textrhookkernarrow</code>	19100, 20493			<code>\textsearrow</code>	17645, 17646, 19964, 20807
<code>\textrhookkernopeno</code> .	17043, 17045, 20781			<code>\textSech</code>	19445, 20627
<code>\textrhookkernepsilon</code> . . .	16072, 16073, 16074, 19813, 20709			<code>\textsecond</code>	17394, 19893
<code>\textrhookkernschwa</code> .	16061, 16062, 16063, 20707			<code>\textsecstress</code>	16348, 16349
				<code>\textsection</code>	14879, 15332, 15333, 15334, 20661, 20662

<code>\textSePa</code>	19431, 20621	<code>\textssphericalangle</code> 17870, 17871, 17872, 17873, 20058, 20816, 20817, 20818	<code>\textsubumlaut</code> . . 15135, 15136, 15175, 15204, 17243, 17245
<code>\textservicemark</code>	17555	<code>\textsqcap</code>	18098, 20156
<code>\textsetminus</code> . . . 14782, 17851, 20050		<code>\textsqcup</code>	19335, 20590
<code>\textseveneighths</code>	17618	<code>\textsqdoublecap</code> . 19243, 19244, 20548, 20972	<code>\textsuccurlyeq</code> . 18102, 20158
<code>\textseveninferior</code> 17464, 19920		<code>\textsqdoublecup</code> . 19248, 19249, 20550, 20973	<code>\textsucceq</code> 19311, 20578
<code>\textsevensuperior</code> 17432, 19904		<code>\textsqsubset</code> 18140, 20177	<code>\textsucceqq</code> 19323, 20584
<code>\textsf</code>	576, 13146, 13149	<code>\textsqsubseq</code> . . 18148, 20181	<code>\textsuccnapprox</code> . 19341, 20593
<code>\textsharp</code>	18825, 20372	<code>\textsqsubsetneq</code> . 18337, 18338, 20256, 20877	<code>\textsuccneq</code> 19317, 20581
<code>\textshuffle</code>	19216, 20536	<code>\textsqsupset</code> 18144, 20179	<code>\textsuccneqq</code> . . . 19329, 20587
<code>\textSigma</code> . 3188, 19746, 19844		<code>\textsqsupseteq</code> . . 18152, 20183	<code>\textsuccnsim</code> . . . 18349, 20261
<code>\textsigma</code> . . . 3185, 3186, 3200, 19769, 19867		<code>\textsqsupsetneq</code> . 18340, 18341, 20257, 20878	<code>\textsuccsim</code> 18108, 20161
<code>\textsim</code> . 17931, 17932, 20082, 20826		<code>\textSquareCastShadowBottomRight</code> 19042, 20466	<code>\textsum</code> 17839, 20045
<code>\textsimeq</code>	17947, 20089	<code>\textSquareCastShadowTopRight</code> 19045, 20467	<code>\textsun</code> . 18715, 18716, 20344, 20911
<code>\textsinferior</code> 17502, 19939		<code>\textssquaredots</code> . . 17924, 20079	<code>\textSunCloud</code> . . . 18876, 20391
<code>\textSixFlowerAlternate</code> 19003, 20449		<code>\textSquareShadowBottomRight</code> 19036, 20464	<code>\textSunshineOpenCircled</code> 19011, 20453
<code>\textSixFlowerAltPetal</code> . 19013, 20454		<code>\textSquareTopRight</code> . . . 19039, 20465	<code>\textSupset</code> 18295, 20237
<code>\textSixFlowerOpenCenter</code> 18999, 20447		<code>\textsslash</code> 19383, 19384, 20610, 20981	<code>\textsupset</code> 18118, 20166
<code>\textSixFlowerPetalRemoved</code> 18996, 20446		<code>\textstar</code> 18265, 20224	<code>\textsupseteq</code> 18126, 20170
<code>\textsixinferior</code> . . 17462, 19919		<code>\textsterling</code> 14871, 15321, 15322, 15323, 20658, 20659	<code>\textsupseteqq</code> . . . 19347, 20596
<code>\textSixStar</code> 18986, 20441		<code>\textstmaryrdbaro</code> 18408, 18409, 20883	<code>\textsupsetneq</code> . . . 18134, 20174
<code>\textsixsuperior</code> . . 17430, 19903		<code>\textstretchc</code> 16272, 16273, 16274, 16275, 20762, 20763	<code>\textsurd</code> 17859, 20053
<code>\textSixteenStarLight</code> . . 18994, 20445		<code>\textstretchcvar</code> . . 16275, 20763	<code>\textSwarrow</code> 17772, 20015
<code>\textsixteenthnote</code> 18819, 20369		<code>\textsubbreve</code> . . . 15147, 15178, 15207, 17127, 17129	<code>\textswarrow</code> 17648, 19965
<code>\textsl</code>	582	<code>\textsubcircum</code> . . 15144, 15145, 15177, 15206, 17079, 17081, 17095, 17097, 17155, 17157, 17183, 17185, 17239, 17241, 17251, 17253	<code>\textSymbolUnavailable</code> 14732, 14733, 14735
<code>\textslashc</code> 16020, 16021, 16023, 19805, 20694, 20695		<code>\textsubring</code> 15137, 15138, 15176, 15205, 17047, 17049	<code>\textTape</code> 18900, 20400
<code>\textslashdiv</code> 19392, 20614		<code>\textSubset</code> 18291, 20235	<code>\texttau</code> 3187, 3191, 3193, 3194, 3195, 19770, 19868
<code>\textsmallin</code>	17825, 20039	<code>\textsubset</code> 18116, 20165	<code>\texttaurus</code> 18758, 18759, 20356, 20928
<code>\textsmallowns</code> . . 17833, 20042		<code>\textsubseq</code> 18124, 20169	<code>\texttctclig</code> 16322, 16323
<code>\textsmile</code>	18396, 20281	<code>\textsubseqeq</code> . . . 19343, 20594	<code>\textTent</code> 18884, 20395
<code>\textsmiley</code> 18710, 18711, 20342, 20910		<code>\textsubsetneq</code> . . . 18132, 20173	<code>\textteshlig</code> 16318, 16319, 16320, 20769
<code>\textSnowflake</code> . . 19017, 20456		<code>\textsubtilde</code> 15148, 15149, 15179, 15208, 17099, 17101, 17131, 17133, 17247, 17249	<code>\texttherefore</code> . . . 17916, 17917, 20076
<code>\textSnowflakeChevron</code> . 19015, 20455			<code>\textTheta</code> . 3199, 19742, 19840
<code>\textSnowflakeChevronBold</code> 19019, 20457			<code>\texttheta</code> 19759, 19856
<code>\textSoccerBall</code> . . 18873, 18874, 20949			<code>\textthird</code> 17396, 19894
<code>\textspadesuitblack</code> 2187, 18791, 18792, 20939			<code>\textThorn</code> 14992, 15452, 19797
<code>\textspadesuitwhite</code>	18804		<code>\textthorn</code> 15061, 15521, 15523, 19798
<code>\textSparkle</code> 19021, 20458			<code>\textthreeeighths</code> 17614
<code>\textSparkleBold</code> . 19023, 20459			<code>\textthreefifths</code> 17604
			<code>\textthreeinferior</code> . 17456, 19916
			<code>\textthreequarters</code> 14926, 15385
			<code>\textthreesuperior</code> 14903, 15358, 19795
			<code>\texttie</code> . . 15182, 15211, 16388
			<code>\texttilde</code> . 14699, 14711, 14723, 14758, 15161, 15190, 16365

<code>\texttildelow</code>	15179, 15208, 16374	<code>\texttwoinferior</code>	17454, 19915	<code>\textVdash</code>	18217, 18218, 20207, 20859
<code>\texttimes</code>	15076, 19491, 20643	<code>\texttwoonotes</code>	18817, 20368	<code>\textvDash</code>	18213, 18214, 18215, 20206, 20857, 20858
<code>\texttinferior</code>	17504, 19940	<code>\texttwosuperior</code>	14901, 15356, 19794	<code>\textvdash</code>	18193, 18194, 20199, 20851
<code>\texttop</code>	18202, 18203, 20202, 20854	<code>\texttwothirds</code>	17598	<code>\textvdotdot</code>	17922, 20078
<code>\texttrademark</code>	14838, 17557	<code>\texttudots</code>	18368, 20268	<code>\textvdots</code>	18364, 20266
<code>\texttriangle</code>	17817, 20035	<code>\texttuinferior</code>	17009, 19878	<code>\textvee</code>	17890, 20065
<code>\texttriangleeq</code>	18025, 20123	<code>\texttulcorner</code>	18386, 20276	<code>\textveebar</code>	18261, 20222
<code>\texttriangleleft</code>	18640, 20316	<code>\textuncrfemale</code>	18867, 18869, 20948	<code>\textveedot</code>	19059, 20474
<code>\texttriangleright</code>	18626, 20311	<code>\textunderscore</code>	545, 4787, 4788, 4790, 14786, 15300, 15301, 20656	<code>\textveedoublebar</code>	19260, 20554
<code>\texttriplesim</code>	17965, 17966, 20097, 20829	<code>\textunlhd</code>	18247, 18248, 18249, 20217, 20868, 20869	<code>\textvline</code>	15311, 20657
<code>\textTslash</code>	15747	<code>\textunrhd</code>	18251, 18252, 18253, 20218, 20870, 20871	<code>\textvibyi</code>	16209, 16210
<code>\texttslash</code>	15749	<code>\textup</code>	583	<code>\textvibyy</code>	16328, 16329
<code>\texttslig</code>	16316, 16317	<code>\textUParrow</code>	18615, 18616, 20308, 20889	<code>\textvier</code>	19441, 20625
<code>\texttt</code>	577	<code>\textUparrow</code>	17752, 20007	<code>\textvinferior</code>	17011, 19879
<code>\textTumbler</code>	18406, 20286	<code>\textuparrow</code>	17626, 19957	<code>\textViPa</code>	19427, 20619
<code>\textturna</code>	16024, 16025, 16026, 20696	<code>\textUpdownarrow</code>	17764, 20011	<code>\textvirgo</code>	18770, 18771, 20360, 20932
<code>\textturnh</code>	16099, 16100, 16101, 16102, 20715, 20716	<code>\textupdownarrow</code>	2190, 17638, 19961	<code>\textvisiblespace</code>	18448
<code>\textturnk</code>	16294, 16295, 16296, 20767	<code>\textupdownarrows</code>	17722, 19995	<code>\textVvdash</code>	18220, 20208
<code>\textturnlongleg</code>	16174, 16175, 16176, 20738	<code>\textupdownharpoonleft</code>	19142, 20508	<code>\textwasylounge</code>	18378, 20273
<code>\textturnm</code>	16133, 16134, 16135, 16136, 20726, 20727	<code>\textupdownharpoonleft</code>	19139, 20507	<code>\textwedge</code>	17885, 20063
<code>\textturnmrleg</code>	16138, 16139, 16140, 20728	<code>\textupdownharpoons</code>	19169, 20517	<code>\textwedgedot</code>	19061, 20475
<code>\textturnr</code>	16169, 16170, 16171, 16172, 20736, 20737	<code>\textupharpoonleft</code>	17704, 19989	<code>\textWheelchair</code>	18830, 20374
<code>\textturnrrtail</code>	16178, 16179, 16180, 20739	<code>\textupharpoonright</code>	17701, 19988	<code>\textWomanFace</code>	19455, 19456, 20632, 20988
<code>\textturnsck</code>	16296, 20767	<code>\textuplus</code>	19218, 20537	<code>\textwon</code>	17514
<code>\textturnscripta</code>	16032, 16033, 16034, 16035, 20698, 20699	<code>\textupmodels</code>	19374, 20606	<code>\textwp</code>	17549, 19945
<code>\textturnt</code>	16214, 16215, 16216, 20746	<code>\textUpsilon</code>	19747, 19845	<code>\textwr</code>	17938, 17939, 20085, 20827
<code>\textturnv</code>	16231, 16232, 16233, 16234, 19830, 20750, 20751	<code>\textupsilon</code>	3186, 3194, 3195, 3197, 19771, 19869	<code>\textWritingHand</code>	18909, 18910, 20404, 20955
<code>\textturnw</code>	16235, 16236, 16237, 16238, 19831, 20752, 20753	<code>\textupspoon</code>	19378, 20608	<code>\textwynn</code>	15854, 15855
<code>\textturny</code>	16239, 16240, 16241, 16242, 19832, 20754, 20755	<code>\textupstep</code>	19397, 19398	<code>\textXi</code>	19744, 19842
<code>\textTwelveStar</code>	18992, 20444	<code>\textupuparrows</code>	17729, 19998	<code>\textxi</code>	3185, 19765, 19863
<code>\texttwofifths</code>	17602	<code>\textupupharpoons</code>	19148, 20510	<code>\textxinferior</code>	17486, 19931
<code>\texttwoheaddownarrow</code>	17665, 19973	<code>\texturanus</code>	18746, 18747, 20352, 20924	<code>\textXSolid</code>	18927, 20412
<code>\texttwoheadleftarrow</code>	17654, 19968	<code>\texturcorner</code>	18388, 20277	<code>\textXSolidBold</code>	18929, 20413
<code>\texttwoheadrightarrow</code>	17661, 19971	<code>\textValve</code>	19212, 20534	<code>\textXSolidBrush</code>	18931, 20414
<code>\texttwoheaduparrow</code>	17658, 19970	<code>\textvarhexagon</code>	19388, 20612	<code>\textxswup</code>	18838, 20947
		<code>\textvarobar</code>	19183, 20964	<code>\textyen</code>	14875, 15327
		<code>\textvarsigma</code>	3190, 3196, 3197, 19768, 19866	<code>\textYinYang</code>	18702, 18703, 18704, 18705, 20340, 20906, 20907, 20908
		<code>\textVDash</code>	18225, 18226, 20210, 20860	<code>\textyogh</code>	16253, 16254, 19834
				<code>\textzeroinferior</code>	17450, 19913
				<code>\textzerosuperior</code>	17422, 19899
				<code>\textzerothirds</code>	17622
				<code>\textzeta</code>	19757, 19854
				<code>\textZwdr</code>	19447, 20628
				<code>\textZwPa</code>	19433, 20622
				<code>\TH</code>	14990, 14991, 15450, 15451

<code>\th</code> .	15059, 15060, 15521, 15522				
<code>\thaa</code>	19652				
<code>\thanks</code>	6441				
<code>\thebookmark@seq@number</code>	14288				
<code>\thefootnote</code>	7302, 7510				
<code>\theHchapter</code>	6964				
<code>\theHequation</code> .	7198, 7221, 7227				
<code>\theHfootnote</code> .	7278, 7279, 7281				
<code>\theHHfootnote</code>	7284				
<code>\theHHmpfootnote</code>	7284				
<code>\theHpage</code>	7882				
<code>\theHparentequation</code>	7221, 7227				
<code>\theHsection</code>	6962				
<code>\theHsubequation</code>	7198				
<code>\theHy@tempcnt</code> . . .	4903, 4911, 4918				
<code>\thempfn</code>	7291, 7397, 7490, 7503				
<code>\theoremautorefname</code>	2979, 2997, 3015, 3033, 3051, 3069, 3087, 3125, 3145, 3163, 3181, 3199, 3217, 3235, 3253, 3271, 8681				
<code>\thepage</code>	2207, 5023, 6492, 6518, 6533, 7775, 7878, 7926, 8030, 8160, 8302, 8319, 8332, 8336, 8348, 8433, 8453, 8470, 8602				
<code>\therefore</code>	17915, 20076				
<code>\Theta</code>	19840				
<code>\theta</code>	19856				
<code>\third</code>	17395, 19894				
<code>\thispdfpagelabel</code>	6497				
<code>\ThisShouldNotHappen</code> . .	13869				
<code>\Thorn</code> . . .	14990, 15450, 19797				
<code>\thorn</code> . . .	15059, 15521, 19798				
<code>\threesinferior</code>	19916				
<code>\threesuperior</code>	19795				
<code>\tildel</code>	16122, 20722				
<code>\times</code>	20643				
<code>\tinferior</code>	19940				
<code>\tiny</code>	605				
<code>\title</code>	6395, 6397				
<code>\tl</code>	357, 358, 359, 2328, 4280, 5065, 5078, 8089, 8091, 8105, 8107, 8122, 8124, 8138, 8140				
<code>\TMP@EnsureCode</code>	4649, 4656, 4657, 4658, 4659, 4660, 4661, 4662, 4663, 4664, 4665, 4666, 4667, 4668, 4669, 4670, 4671, 4672, 4673, 4674, 4675, 4676, 4677, 4678, 4679, 4680, 4681, 4682				
<code>\tocappendix</code>	1326				
<code>\tocchapter</code>	1325				
<code>\toclevel@chapter</code>	3408				
<code>\toclevel@figure</code>	3414				
<code>\toclevel@paragraph</code>	3412				
<code>\toclevel@part</code>	3404, 3406				
<code>\toclevel@section</code>	3409				
<code>\toclevel@subparagraph</code> . .	3413				
<code>\toclevel@subsection</code>	3410				
<code>\toclevel@subsubsection</code> . .	3411				
<code>\toclevel@table</code>	3415				
<code>\tocparagraph</code>	1330				
<code>\tocpart</code>	1324				
<code>\tocsection</code>	1327				
<code>\tocsubsection</code>	1328				
<code>\tocsubsubsection</code>	1329				
<code>\toks</code> . .	8441, 8442, 8444, 14602, 14607, 14670, 14675				
<code>\toks@</code> .	171, 208, 962, 985, 988, 990, 3282, 3283, 3285, 3877, 3881, 3882, 3890, 4344, 4345, 4544, 4546, 5166, 5171, 5177, 5183, 5184, 5187, 5287, 5292, 5296, 5300, 6613, 6615, 6701, 6703, 6760, 6772, 7078, 7083, 7375, 7378, 8181, 8182, 8406, 8411, 8413, 8416, 14601, 14607, 14669, 14675				
<code>\top</code>	18201, 20202				
<code>\topmargin</code>	7941				
<code>\triangle</code>	17816, 20035				
<code>\triangleleft</code>	18024, 20123				
<code>\trianglelefteq</code>	18639, 20316				
<code>\trianglelefteq</code>	18249, 20869				
<code>\triangleright</code>	18625, 20311				
<code>\trianglerighteq</code>	18253, 20871				
<code>\triplesim</code>	17964, 20097				
<code>\tryhyper@link</code>	4997, 4999				
<code>\ttfamily</code>	587				
<code>\ttl@b</code>	7089, 7094				
<code>\ttl@Hy@PatchSaveWrite</code> .	7072, 7076				
<code>\ttl@Hy@refstepcounter</code> . .	7088				
<code>\ttl@Hy@saveanchor</code>	7067, 7091				
<code>\ttl@Hy@SavedCurrentHref</code>	7071, 7082				
<code>\ttl@Hy@steplink</code>	7065				
<code>\ttl@savewrite</code>	7078, 7080				
<code>\Tumbler</code>	18405, 20286				
<code>\turnv</code>	19830				
<code>\turnw</code>	19831				
<code>\turny</code>	19832				
<code>\tw@</code> . . .	4536, 5110, 5116, 5117, 5118, 5123, 5129, 5130, 5131, 14602, 14607, 14670, 14675				
<code>\TwelveStar</code>	18991, 20444				
<code>\twoheaddownarrow</code> . . .	17664, 19973				
<code>\twoheadleftarrow</code>	17653, 19968				
<code>\twoheadrightarrow</code>	17660, 19971				
<code>\twoheaduparrow</code> .	17657, 19970				
<code>\twoinferior</code>	19915				
<code>\twonotes</code>	18816, 20368				
<code>\twosuperior</code>	19794				
<code>\TX@endtabularx</code> . .	7368, 7375, 7381				
<code>\typeout</code> . . .	5, 6, 7, 19, 26, 27, 36, 131, 155, 158, 159, 160, 5317, 20994				
U					
<code>\U</code> .	15111, 16428, 16451, 16518, 16598, 16799, 16801, 16823, 16825, 16835, 16837				
<code>\u</code> .	15109, 15167, 15196, 15226, 15531, 15533, 15573, 15575, 15593, 15595, 15626, 15628, 15629, 15699, 15701, 15759, 15761				
<code>\ubar</code>	16224, 20748				
<code>\udesc</code>	16102, 20716				
<code>\udots</code>	18367, 20268				
<code>\UHORN</code> .	19508, 19619, 19620, 19621, 19622, 19623				
<code>\uhorn</code>	3167, 3174, 19502, 19559, 19560, 19561, 19562, 19563				
<code>\uinferior</code>	19878				
<code>\ulcorner</code>	18385, 20276				
<code>\UnDef</code>	12324				
<code>\undefined</code>	7279				
<code>\unexpanded</code>	1487, 1494				
<code>\unhbox</code> .	11301, 13560, 13682, 13714, 13738, 13766, 13795				
<code>\unhcopy</code>	13662				
<code>\unichar</code>	1932				
<code>\Unicode</code>	1038				
<code>\unlhd</code>	18246, 20217				
<code>\unrestored@protected@xdef</code>	7291, 7302, 7452, 7459, 7503, 7510				
<code>\unrhd</code>	18250, 20218				
<code>\unskip</code>	7268				
<code>\UParrow</code>	18614, 20308				

<code>\Uparrow</code>	17751, 20007	<code>\V@@@footnotetext</code>	7439	<code>\vfill</code> . . .	6222, 6223, 6224, 6225
<code>\uparrow</code>	19957	<code>\V@footnotetext</code>	7424	<code>\VHF</code>	17966, 20829
<code>\Updownarrow</code> . .	17763, 20011	<code>\value</code> . .	6516, 6950, 6951, 6953, 6954, 7711, 7748, 7945, 8200, 9957	<code>\Vier</code>	19440, 20625
<code>\updownarrow</code> . .	17637, 19961	<code>\Valve</code>	19211, 20534	<code>\vinferior</code>	19879
<code>\updownarrows</code> . .	17721, 19995	<code>\vara</code>	16030, 20697	<code>\ViPa</code>	19426, 20619
<code>\updownharpoonleftright</code>	19141, 20508	<code>\varangle</code>	17871, 20816	<code>\Virgo</code>	18771, 20932
<code>\updownharpoonrightleft</code>	19138, 20507	<code>\varbigcirc</code>	18659, 20895	<code>\virgo</code>	18769, 20360
<code>\updownharpoons</code>	19168, 20517	<code>\varcurlyvee</code>	18286, 20873	<code>\vod</code>	16093, 16095, 20714
<code>\upharpoonleft</code> . .	17703, 19989	<code>\varcurlywedge</code> . .	18289, 20874	<code>\voffset</code>	7940
<code>\upharpoonright</code> . .	17700, 19988	<code>\VarFlag</code>	18833, 20946	<code>\voicedh</code>	16106, 20718
<code>\uplus</code>	19217, 20537	<code>\varg</code>	16089, 20713	<code>\vpageref</code>	8522, 8530, 8539, 8547
<code>\upmodels</code>	19373, 20606	<code>\varhexagon</code>	19387, 20612	<code>\vphantom</code>	608
<code>\upshape</code>	593	<code>\vari</code>	16116, 20721	<code>\Vr@f</code>	8525
<code>\Upsilon</code>	19845	<code>\varint</code>	17900, 20822	<code>\Vref@star</code>	8518
<code>\Upsilon</code>	19869	<code>\varnothing</code>	17813, 17815, 20812	<code>\vref@star</code>	8543
<code>\upspoon</code>	19377, 20608	<code>\varoast</code>	18180, 20849	<code>\vskip</code>	2286, 2287
<code>\upuparrows</code>	17728, 19998	<code>\varobslash</code>	19188, 20967	<code>\vss</code>	7954
<code>\upupharpoons</code> . .	19147, 20510	<code>\varocircle</code>	18177, 20848	<code>\vtex@trans@special</code> . . .	10746, 10748, 10751, 10755, 10759, 10763, 10765, 10767, 10771, 10777, 10778, 10781
<code>\upvdash</code>	18208, 20855	<code>\varodot</code>	18173, 20846	<code>\VTeXInitMediaSize</code> . . .	10417, 10443
<code>\Uranus</code>	18747, 20924	<code>\varogreaterthan</code> .	19200, 20970	<code>\VTeXOS</code>	10810, 10811, 10812, 10814
<code>\uranus</code>	18745, 20352	<code>\varoint</code>	17907, 20823	<code>\VTeXversion</code>	6668, 6671, 6674, 10802, 10806
<code>\urcorner</code>	18387, 20277	<code>\varolessthan</code> . . .	19197, 20969	<code>\Vdash</code>	18219, 20208
<code>\Url</code>	4967	<code>\varomega</code>	16166, 20735	W	
<code>\url</code>	4966, 4970	<code>\varominus</code>	18164, 20843		
<code>\url@</code>	4970, 4971	<code>\varopeno</code>	16043, 20702	<code>\wasylozenge</code>	18377, 20273
<code>\use</code>	497, 503, 5056	<code>\varoplus</code>	18161, 20842	<code>\waw</code>	19700
<code>\use@file</code>	5248, 5250, 5257	<code>\varoslash</code>	18170, 20845	<code>\wawhamza</code>	19638
<code>\usefont</code>	572	<code>\varotimes</code>	18167, 20844	<code>\wd</code>	9547, 9563, 9584, 9601, 9624, 9641, 13509
<code>\UseHook</code>	7039, 7055	<code>\varovee</code>	17893, 20821	<code>\wedge</code>	17884, 20063
<code>\UseName</code>	3308	<code>\varowedge</code>	17888, 20820	<code>\wedgedot</code>	19060, 20475
<code>\UseSocket</code>	2250	<code>\varparallel</code>	19384, 20981	<code>\Wheelchair</code>	18829, 20374
<code>\UseTaggingSocket</code>	7580	<code>\varparallelinv</code> . .	18451, 20884	<code>\with</code>	15250, 20655
<code>\utf@viii@undeferr</code>	532	<code>\varprop</code>	17862, 20815	<code>\WomanFace</code>	19454, 20632
<code>\UTFviii@four@octets</code>	1928, 1937	<code>\varsigma</code>	19866	<code>\Womanface</code>	19456, 20988
<code>\UTFviii@loop</code>	1916	<code>\varsqsubsetneq</code> . .	18338, 20877	<code>\wp</code>	17548, 19945
<code>\UTFviii@three@octets</code> . .	1927	<code>\varsqsupsetneq</code> . .	18341, 20878	<code>\wr</code>	17937, 20085
<code>\UTFviii@tmp</code>	1915	<code>\vartimes</code>	15436, 20666	<code>\wreath</code>	17939, 20827
<code>\UTFviii@two@octets</code> . . .	1926	<code>\vayyod</code>	16976	<code>\write</code> . .	4858, 5404, 5406, 6789, 6797, 7695, 7710, 7737, 7747, 7766, 7796, 13045, 13048, 13076, 13091
V		<code>\vbox</code> . .	6222, 6223, 6224, 6225, 6465, 7939	<code>\WriteBookmarks</code> . .	4270, 4408, 4618, 4640, 14222, 14465, 14495, 14496, 14538, 14544
<code>\v</code> .	14702, 14714, 14726, 14848, 14853, 14861, 14863, 15122, 15164, 15193, 15225, 15551, 15553, 15555, 15557, 15585, 15587, 15663, 15665, 15683, 15685, 15719, 15721, 15735, 15737, 15743, 15745, 15793, 15795, 15869, 15871, 15873, 15875, 15876, 15878, 15880, 15882, 15884, 15893, 15895, 15897, 15899, 15905, 15906, 15984, 15986	<code>\VDash</code>	18224, 20210	<code>\WritingHand</code> . . .	18908, 20404
		<code>\Vdash</code>	18216, 20207	<code>\Writinghand</code>	18910, 20955
		<code>\vDash</code>	18212, 20206		
		<code>\vdash</code>	18192, 20199		
		<code>\vdotdot</code>	17921, 20078		
		<code>\vdots</code>	18363, 20266		
		<code>\vee</code>	17889, 20065		
		<code>\veebar</code>	18260, 20222		
		<code>\veedot</code>	19058, 20474		
		<code>\veedoublebar</code> . . .	19259, 20554		
		<code>\Venus</code>	18729, 20916		
		<code>\venus</code>	18728, 20915		

\wwwbrowser . 9501, 9586, 9603

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, 282, 287, 288, 938,
944, 1425, 1453, 1868, 1870,
2281, 2291, 2300, 2310,
2399, 2400, 2405, 2421,
3293, 3296, 3300, 3314,
3425, 3426, 3429, 3430,
3431, 3435, 3438, 3444,
3880, 3886, 3889, 3892,
4171, 4172, 4177, 4178,
4298, 4299, 4300, 4303,
4306, 4309, 4342, 4343,
4345, 4346, 4545, 4548,
4857, 4863, 5263, 5264,
5265, 5277, 5288, 5289,
5290, 5291, 5294, 5295,
5340, 5343, 5425, 5439,
5464, 5468, 5471, 5481,
6014, 6018, 6417, 6418,
6423, 7079, 7086, 7104,
7113, 7115, 7127, 8046,
8048, 8413, 8414, 8443,
8446, 8482, 8483, 8484,
8486, 8488, 8904, 8913,
9776, 9777, 9778, 9780,
9781, 9782, 9784, 9785,
9786, 9788, 9789, 9790,
9792, 9793, 9794, 9796,
9797, 9798, 9800, 9801,
9802, 9804, 9805, 9807,
9813, 9822, 10924, 10929,
10933, 11305, 11308, 11314,
11319, 11467, 11468, 12626,
12646, 13227, 13247, 13583,
13603, 14606, 14608, 14674,
14676

\XBox 18678, 20899
\XeTeXLink@font . . 5096, 5099
\XeTeXLink@space . 5093, 5097,
5112, 5126
\XeTeXLinkBox 5092, 5103, 5136
\XeTeXLinkMargin . 5090, 5091,
5109, 5111, 5122, 5124
\XeTeXrevision 4605
\XeTeXversion 4605
\Xi 19842
\xi 19863
\xinferior 19931
\XR@ext 2507, 2508, 5246, 5249,
6666, 8744, 9397, 9500,
9764, 10301, 11661, 11767,
11834, 12041, 12212
\XSolid 18926, 20412
\XSolidBold 18928, 20413
\XSolidBrush ... 18930, 20414
\xspace 669, 671
\xspaceaddexceptions 4244, 4253

Y

\y 287, 289, 296,
302, 2401, 2406, 2411, 3431,
3432, 3433, 3434, 4301,
4304, 4307, 4310, 4312,
4318, 5266, 5267, 5268,
5269, 5277, 6418, 6426,
7100, 7102, 7103, 7106,
7113, 11310, 11311, 11312,
11313
\ya 19704
\yahamza 19642
\YingYang 18704, 20907
\Yingyang 18705, 20908
\YinYang 18701, 20340
\Yinyang 18703, 20906
\yogh 16253, 19834

Z

\z 288, 289, 297, 303, 2403, 2404,
2405, 5269, 5277

\z@ 1154, 1194, 1207, 1223, 1
1246, 1319, 1553, 1
1565, 1638, 1642, 1
1654, 1770, 1771, 1
1773, 1774, 1775, 2
2237, 2272, 2295, 2
2592, 2666, 2750, 3
3443, 4171, 4173, 4
5106, 5108, 5116, 5
5120, 5121, 5129, 5
5139, 5140, 6669, 6
7437, 8768, 8775, 9
9323, 9328, 9332, 9
9340, 9344, 9345, 9
9353, 9354, 10275, 10
10279, 10280, 10286, 10
10288, 10419, 10420, 10
10425, 10432, 10433, 10
10801, 10825, 11047, 11
11362, 11733, 11734, 11
11738, 11744, 11745, 11
12549, 12616, 13026, 13
13217, 13513, 13573, 13
14024, 14029, 14052, 14
14087, 14121, 14127, 14
14157, 14162, 14193, 14
14299, 14300, 14301, 14
14303, 14304, 14305, 14
14307, 14521, 14642
\z@skip
\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 19446, 2
\ZWNJ 1
\ZwPa 19432, 2