

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

Sebastian Rahtz

Email: [sebastian.rahtz at oucs.ox.ac.uk](mailto:sebastian.rahtz@oucs.ox.ac.uk)

Heiko Oberdiek

Email: [heiko.oberdiek at gmail.com](mailto:heiko.oberdiek@gmail.com)

2011/12/04 v6.82m

## 1 Documentation overview for hyperref

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

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

[README](#) The **README** file (also available as text file). Here information is collected that is not yet in the manual: new features, package compatibility, limitations, known problems, ...


[ChangeLog](#) This file records the version history (also available as text file).

[Options](#) This file provides a short option summary.

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

[Bookmark talk, paper](#) The paper version of the talk.

Source code documentation:

 [hyperref.dtx](#) This is the source code documentation for hyperref (this file).

[backref.dtx](#) “Back referencing from bibliographical citations”

[nameref.dtx](#) “Section name references in L<sup>A</sup>T<sub>E</sub>X”

## 2 Contents

<b>1</b>	<b>Documentation overview for hyperref</b>	<b>1</b>
<b>2</b>	<b>Contents</b>	<b>2</b>
<b>3</b>	<b>File hycheck.tex</b>	<b>7</b>
<b>4</b>	<b>Package options and setup</b>	<b>11</b>
4.1	Save catcodes . . . . .	11
4.2	Version check . . . . .	13
4.3	Checks with regular expressions . . . . .	14
4.4	Compatibility with format dumps . . . . .	15
4.5	Switches . . . . .	15
<b>5</b>	<b>Common help macros</b>	<b>17</b>
5.1	Macros for recursions . . . . .	17
5.2	Babel's protection of shorthand characters . . . . .	17
5.3	Coordinate transformations . . . . .	17
<b>6</b>	<b>Dealing with PDF strings</b>	<b>19</b>
6.1	Description of PDF strings . . . . .	19
6.2	Definition of <code>\pdfstringdef</code> . . . . .	19
6.2.1	Preprocessing . . . . .	20
6.2.2	Expansion . . . . .	25
6.2.3	Postprocessing . . . . .	26
6.3	Encodings . . . . .	31
6.3.1	XeTeX . . . . .	31
6.3.2	Workaround for package linguex . . . . .	32
6.3.3	PD1 encoding . . . . .	33
6.3.4	PU encoding . . . . .	33
6.4	Additional user commands . . . . .	33
6.4.1	<code>\texorpdfstring</code> . . . . .	33
6.4.2	Hooks for <code>\pdfstringdef</code> . . . . .	33
6.5	Help macros for expansion . . . . .	34
6.5.1	<code>\ignorespaces</code> . . . . .	34
6.5.2	Babel languages . . . . .	35
6.5.3	CJK patch . . . . .	40
6.5.4	CJK bookmarks . . . . .	40
6.5.5	CJK unicode . . . . .	42
6.5.6	<code>\@inmathwarn-Patch</code> . . . . .	46
6.5.7	Unexpandable spaces . . . . .	48
6.5.8	Marker for commands . . . . .	48
6.5.9	<code>\hspace fix</code> . . . . .	48
6.5.10	Fix for AMS classes . . . . .	49
6.5.11	Reference commands . . . . .	49
6.5.12	Redefining the defining commands . . . . .	51
6.5.13	<code>\ifnextchar</code> . . . . .	52
6.5.14	<code>\@protected@testoptifnextchar</code> . . . . .	53
6.6	Help macros for postprocessing . . . . .	53
6.6.1	Generic warning. . . . .	53
6.6.2	Protecting spaces . . . . .	53
6.6.3	Remove grouping braces . . . . .	54
6.6.4	Catcode check . . . . .	55

6.6.5	Check for wrong glyphs . . . . .	59
6.6.6	Replacing tokens . . . . .	60
6.6.7	Support for package <code>xspace</code> . . . . .	60
6.6.8	Converting to Unicode . . . . .	61
6.6.9	Support for UTF-8 input encoding . . . . .	63
<b>7</b>	<b>Support of other packages</b>	<b>67</b>
7.1	Class memoir . . . . .	67
7.2	Package subfigure . . . . .	67
7.3	Package xr and xr-hyper . . . . .	68
<b>8</b>	<b>Help macros for links</b>	<b>68</b>
<b>9</b>	<b>Options</b>	<b>70</b>
9.1	Help macros . . . . .	70
9.2	Defining the options . . . . .	72
<b>10</b>	<b>Options for different drivers</b>	<b>77</b>
<b>11</b>	<b>Options to add extra features</b>	<b>80</b>
<b>12</b>	<b>Language options</b>	<b>81</b>
<b>13</b>	<b>Options to change appearance of links</b>	<b>88</b>
<b>14</b>	<b>Bookmarking</b>	<b>88</b>
<b>15</b>	<b>PDF-specific options</b>	<b>91</b>
15.1	Package xspace support . . . . .	101
15.2	Option draft . . . . .	102
15.3	PDF/A . . . . .	102
15.4	Patch for babel's <code>\texttilde</code> . . . . .	103
15.4.1	Driver loading . . . . .	105
15.4.2	Bookmarks . . . . .	108
<b>16</b>	<b>User hypertext macros</b>	<b>111</b>
<b>17</b>	<b>Underlying basic hypertext macros</b>	<b>117</b>
<b>18</b>	<b>Compatibility with the <i>L<sup>A</sup>T<sub>E</sub>X</i>2html package</b>	<b>121</b>
<b>19</b>	<b>Forms creation</b>	<b>121</b>
19.1	Field flags . . . . .	121
19.1.1	Declarations of field flags . . . . .	123
19.1.2	Set submit flags . . . . .	125
19.1.3	Set annot flags in fields . . . . .	126
19.1.4	Pushbutton field . . . . .	126
19.1.5	Check box field . . . . .	127
19.1.6	Radio button field . . . . .	127
19.1.7	Text fields . . . . .	127
19.1.8	Choice fields . . . . .	128
19.2	Choice field . . . . .	128
19.3	Forms . . . . .	130
<b>20</b>	<b>Setup</b>	<b>138</b>

<b>21 Low-level utility macros</b>	<b>139</b>
<b>22 Localized nullifying of package</b>	<b>140</b>
<b>23 Package nohyperref</b>	<b>140</b>
<b>24 The Mangling Of Aux and Toc Files</b>	<b>141</b>
<b>25 Title strings</b>	<b>143</b>
<b>26 Page numbers</b>	<b>144</b>
<b>27 Every page</b>	<b>144</b>
27.1 PDF /PageLabels . . . . .	144
27.1.1 pdfTeX and VTeX . . . . .	148
27.1.2 xetex . . . . .	150
27.1.3 pdfmarkbase, dvipdfm, xetex . . . . .	150
<b>28 Automated L<sup>A</sup>T<sub>E</sub>X hypertext cross-references</b>	<b>152</b>
<b>29 Package lastpage support</b>	<b>156</b>
<b>30 Package ifthen support</b>	<b>158</b>
<b>31 Package titlesec and titletoc support</b>	<b>158</b>
<b>32 Package varioref support</b>	<b>159</b>
<b>33 Package longtable support</b>	<b>159</b>
<b>34 Equations</b>	<b>160</b>
<b>35 Footnotes</b>	<b>165</b>
<b>36 Float captions</b>	<b>169</b>
<b>37 Bibliographic references</b>	<b>172</b>
37.1 Package harvard . . . . .	175
37.2 Package chicago . . . . .	177
<b>38 Page numbers</b>	<b>177</b>
<b>39 Table of contents</b>	<b>179</b>
<b>40 New counters</b>	<b>181</b>
<b>41 AMSL<sup>A</sup>T<sub>E</sub>X compatibility</b>	<b>181</b>
41.1 \@addtoreset and \numberwithin patches . . . . .	182
<b>42 Included figures</b>	<b>183</b>
<b>43 hyperindex entries</b>	<b>183</b>
<b>44 Compatibility with foiltex</b>	<b>186</b>
<b>45 Compatibility with seminar slide package</b>	<b>187</b>

<b>46 Configuration files</b>	<b>195</b>
46.1 PS/PDF strings	195
46.2 pdftex	196
46.2.1 Fix for problem with different nesting levels	209
46.3 hypertext	210
46.4 dviwindo	212
46.5 dvipdfm/xetex dvi to PDF converter	217
46.6 VTeX typesetting system	227
46.7 Fix for Adobe bug number 466320	239
46.8 Direct pdfmark support	240
46.9 Rokicki's dvips	253
46.10 VTeX's vtexpdfmark driver	255
46.11 Textures	257
46.12 dvipsone	261
46.13 TeX4ht	264
<b>47 Driver-specific form support</b>	<b>267</b>
47.1 pdfmarks	267
47.2 HyperTeX	274
47.3 TeX4ht	274
47.4 pdfTeX	277
47.5 dvipdfm, xetex	284
47.6 Common forms part	291
<b>48 Bookmarks in the PDF file</b>	<b>298</b>
48.1 Bookmarks	298
48.1.1 Rerun warning	301
48.1.2 Driver stuff	301
<b>49 Compatibility with koma-script classes</b>	<b>307</b>
<b>50 Encoding definition files for encodings of PDF strings</b>	<b>308</b>
50.1 PD1 encoding	308
50.2 PU encoding	316
50.2.1 NFSS2 accents	316
50.2.2 Basic Latin: U+0000 to U+007F	318
50.2.3 Latin-1 Supplement: U+0080 to U+00FF	320
50.2.4 Latin Extended-A: U+0080 to U+017F	323
50.2.5 Latin Extended-B: U+0180 to U+024F	328
50.2.6 Spacing Modifier Letters: U+02B0 to U+02FF	330
50.2.7 Combining Diacritical Marks: U+0300 to U+036F	330
50.2.8 Greek and Coptic: U+0370 to U+03FF	331
50.2.9 Cyrillic: U+0400 to U+04FF	334
50.2.10 Thai: U+0E00 to U+0E7F	344
50.2.11 Latin Extended Additional: U+1E00 to U+1EFF	344
50.2.12 General Punctuation: U+2000 to U+206F	347
50.2.13 Superscripts and Subscripts: U+2070 to U+209F	348
50.2.14 Currency Symbols: U+20A0 to U+20CF	349
50.2.15 Letterlike Symbols: U+2100 to U+214F	349
50.2.16 Arrows: U+2190 to U+21FF	349
50.2.17 Mathematical Operators: U+2200 to U+22FF	349
50.2.18 Miscellaneous Technical: U+2300 to U+23FF	350
50.2.19 Control Pictures: U+2400 to U+243F	350

50.2.20 Enclosed Alphanumerics: U+2460 to U+24FF . . . . .	350
50.2.21 Box Drawing: U+2500 to U+257F . . . . .	352
50.2.22 Miscellaneous Symbols: U+2600 to U+26FF . . . . .	352
50.2.23 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF	353
50.2.24 Alphabetic Presentation Forms: U+FB00 to U+FB4F . . .	353
50.2.25 Miscellaneous . . . . .	353
50.2.26 Aliases . . . . .	353
50.3 PU encoding, additions for VnT <sub>E</sub> X . . . . .	353
50.4 PU encoding, additions for Arabi . . . . .	356
<b>51 End of file hycheck.tex</b>	<b>357</b>
<b>52 Index</b>	<b>358</b>

### 3 File hycheck.tex

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

```
1 \langle*check\rangle
2 \documentclass{article}
3 \makeatletter
```

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

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

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

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

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

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

`\HyC@checkPackage`

```
18 \def\HyC@checkPackage{
19   \typeout{}{
20     \begingroup
21       \edef\x{\endgroup
22         \noexpand\RequirePackage{\HyC@package}{
23           \ifx\HyC@date\@empty\relax\else\HyC@date\fi
24         }}{
25       \x
26       \typeout{}{
27         \typeout{
28           * Package '\HyC@package'
29           \ifx\HyC@date\@empty
30             \else
31               \space\HyC@date
32             \fi
33         }}{
34       \@ifundefined{ver@\HyC@package.sty}{
35         }{
36           \typeout{
37             \space\space Loaded: '\HyC@package' %
38             \csname ver@\HyC@package.sty\endcsname
39           }}
```

```

40 }%
41 }

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

74 \def\HyC@check#1{%
75   \def\HyC@cmd{#1}%
76   \let\HyC@org@cmd#1%
77   \let#1\relax
78   \let\HyC@param\@empty
79   \HyC@Toks{}%
80   \let\HyC@org@optcmd\HyC@noValue
81   \let\HyC@org@robustcmd\HyC@noValue
82   \let\HyC@org@robustoptcmd\HyC@noValue
83   \HyC@next
84 }

```

`\HyC@noValue`

```

85 \def\HyC@noValue{NoValue}

```



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

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

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

```
90 \newtoks\HyC@Toks
```

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

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

`\HyC@nc@opt` This macro scans the first optional argument of a L<sup>A</sup>T<sub>E</sub>X definition (number of arguments).

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

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

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

`\HyC@DeclareRobustCommand` `\DeclareRobustCommand{\cmd}` makes the command `\cmd` robust, that then calls `\cmd␣` 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

```

It needs the December 95 release of L<sup>A</sup>T<sub>E</sub>X, because it uses `\protected@write`, and it defines commands in options; and the page setup internal code changed at that point. It'll probably break with the later releases!

Use package `hobsub-hyperref` for faster package loading.

```

232 \IfFileExists{hobsub-hyperref.sty}{%
233 \RequirePackage{hobsub-hyperref}[2011/01/30]%
234 }{}

235 \RequirePackage{ltxcmds}[2010/10/25]
236 \RequirePackage{ifpdf}[2006/02/20]
237 \RequirePackage{pdftexcmds}[2009/04/10]
238 \@ifpackagelater{pdftexcmds}{2010/11/04}{%}{%
239 \ltx@ifundefined{pdfdraftmode}{%
240 \let\pdf@ifdraftmode\ltx@secondoftwo
241 }{%
242 \ifpdf
243 \def\pdf@ifdraftmode{%
244 \ifnum\pdfdraftmode=\ltx@one
245 \expandafter\ltx@firstoftwo
246 \else
247 \expandafter\ltx@secondoftwo
248 \fi
249 }%
250 \else
251 \let\pdf@ifdraftmode\ltx@secondoftwo
252 \fi
253 }%
254 }

255 \RequirePackage{infwarerr}[2010/04/08]
256 \RequirePackage{keyval}[1997/11/10]
257 \RequirePackage{kvsetkeys}[2007/09/29]
258 \RequirePackage{pdfescape}[2007/11/11]
259 \RequirePackage{ifvtex}
260 \RequirePackage{ifxetex}[2006/08/21]

```

```

261 \RequirePackage{hycolor}
262 \RequirePackage{letltxmacro}[2008/06/13]
263 \def\Hy@Error{\@PackageError{hyperref}}
264 \def\Hy@Warning{\@PackageWarning{hyperref}}
265 \def\Hy@WarningNoLine{\@PackageWarningNoLine{hyperref}}
266 \def\Hy@Info{\@PackageInfo{hyperref}}
267 \def\Hy@InfoNoLine{\@PackageInfoNoLine{hyperref}}
268 \def\Hy@Message#1{%
269   \GenericWarning{%
270     (hyperref)\@spaces\@spaces\@spaces\@spaces
271   }{%
272     Package hyperref Message: #1\ltx@gobble
273   }%
274 }

```

## 4.2 Version check

\Hy@VersionChecked

```

275 \chardef\Hy@VersionChecked=0 %

```

\Hy@VersionCheck

```

276 \def\Hy@VersionCheck#1{%
277   \begingroup
278   \ltx@ifundefined{ver@hyperref.sty}{%
279     \Hy@Error{%
280       This should not happen!\MessageBreak
281       Missing hyperref version%
282     }\@ehd
283   }{%
284     \ltx@ifundefined{ver@#1}{%
285       \Hy@Error{%
286         This should not happen!\MessageBreak
287         Missing version of '#1'%
288       }\@ehd
289     }{%
290       \def\x##1##2##3{%
291         \expandafter\expandafter\expandafter\Hy@@VersionCheck
292         \expandafter\expandafter\expandafter##2%
293         \csname ver@##3\endcsname##1##1\@nil
294       }%
295       \x{ }\y{hyperref.sty}%
296       \x{ }\z{#1}%
297       \ifx\y\z
298       \else
299         \Hy@Error{%
300           Version mismatch!\MessageBreak
301           * \y: hyperref.sty\MessageBreak
302           * \z: #1%
303         }\@ehd
304       \fi
305     }%
306   }%
307   \endgroup
308   \chardef\Hy@VersionChecked=1 %
309 }

```

\Hy@@VersionCheck

```

310 \def\Hy@@VersionCheck #1#2 #3 #4\@nil{%
311   \def#1{#2 #3}%
312 }

```

### 4.3 Checks with regular expressions

```

313 \ltx@ifundefined{pdfmatch}{%
314   \let\Hy@Match\ltx@gobblefour
315 }{%
316   \def\Hy@Match#1#2{%
317     \begingroup
318     \edef\~{\ltx@backslashchar\string^}%
319     \edef\.\{\ltx@backslashchar.}%
320     \edef\[\{\ltx@backslashchar[]%
321     \edef\${\ltx@backslashchar$}%
322     \edef\(\{\ltx@backslashchar(%
323     \edef\)\{\ltx@backslashchar)%
324     \edef\|\{\ltx@backslashchar|}%
325     \edef\*\{\ltx@backslashchar*}%
326     \edef\+\{\ltx@backslashchar+}%
327     \edef\?\{\ltx@backslashchar?}%
328     \edef\{\{\ltx@backslashchar\ltx@leftbracechar}%
329     \edef\}\{\ltx@rightbracechar}%
330     \edef\\{\ltx@backslashchar\ltx@backslashchar}%
331     \let\ \ltx@space
332     \ifcase\pdfmatch{#2}{#1} %
333       \endgroup
334       \expandafter\ltx@secondoftwo
335     \or
336       \endgroup
337       \expandafter\ltx@firstoftwo
338     \else
339       \Hy@Warning{%
340         Internal error: Wrong pattern!\MessageBreak
341         --> #2 <--\MessageBreak
342         Pattern check ignored%
343       }%
344       \endgroup
345       \expandafter\ltx@firstoftwo
346     \fi
347   }%
348   \ltx@ifpackagelater{ltxcmds}{2010/09/11}{%
349     \begingroup
350     \lccode'0=\{\relax
351     \lowercase{\endgroup
352       \def\ltx@leftbracechar{0}%
353     }%
354     \begingroup
355     \lccode'0=\}\relax
356     \lowercase{\endgroup
357       \def\ltx@rightbracechar{0}%
358     }%
359   }%
360 }

```

## 4.4 Compatibility with format dumps

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

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

```
361 \@ifundefined{AfterBeginDocument}{%
362   \def\AfterBeginDocument{\AtBeginDocument}%
363 }{}%
```

`\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.

```
364 \def\Hy@AtBeginDocument{%
365   \ltx@LocalAppendToMacro\Hy@AtBeginDocumentHook
366 }
```

`\Hy@AtEndOfPackage`

```
367 \def\Hy@AtEndOfPackage{%
368   \ltx@LocalAppendToMacro\Hy@AtEndOfPackageHook
369 }
```

`\Hy@AtBeginDocumentHook`

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

`\Hy@AtEndOfPackageHook`

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

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

```
372 \AtEndOfPackage{%
373   \Hy@AtEndOfPackageHook
374   \let\Hy@AtEndOfPackageHook\@undefined
375   \AfterBeginDocument{%
376     \Hy@AtBeginDocumentHook}%
377   \let\Hy@AtBeginDocumentHook\@undefined
378 }%
379 }
```

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

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

## 4.5 Switches

```
381 \newif\ifHy@stoppedearly
382 \newif\ifHy@typexml
383 \newif\ifHy@activeanchor
384 \newif\ifHy@backref
385 \newif\ifHy@bookmarks
386 \newif\ifHy@bookmarksnumbered
387 \newif\ifHy@bookmarksopen
388 \newif\ifHy@breaklinks
```

```

389 \newif\ifHy@pdfcenterwindow
390 \newif\ifHy@CJKbookmarks
391 \newif\ifHy@colorlinks
392 \newif\ifHy@draft
393 \let\Hy@finaltrue\Hy@draftfalse
394 \let\Hy@finalfalse\Hy@drafttrue
395 \newif\ifHy@pdfescapeform
396 \newif\ifHy@hyperfigures
397 \newif\ifHy@pdffitwindow
398 \newif\ifHy@frenchlinks
399 \newif\ifHy@hyperfootnotes
400 \newif\ifHy@hyperindex
401 \newif\ifHy@hypertextnames
402 \newif\ifHy@implicit
403 \newif\ifHy@linktocpage
404 \newif\ifHy@localanchorname
405 \newif\ifHy@pdfmenubar
406 \newif\ifHy@naturalnames
407 \newif\ifHy@nesting
408 \newif\ifHy@pdfnewwindowset
409 \newif\ifHy@pdfnewwindow
410 \newif\ifHy@ocgcolorlinks
411 \newif\ifHy@pageanchor
412 \newif\ifHy@pdfpagelabels
413 \newif\ifHy@pdfpagehidden
414 \newif\ifHy@pdfstring
415 \newif\ifHy@plainpages
416 \newif\ifHy@psize
417 \newif\ifHy@raiselinks
418 \newif\ifHy@seminarslides
419 \newif\ifHy@setpagesize
420 \newif\ifHy@texht
421 \newif\ifHy@pdftoolbar
422 \newif\ifHy@unicode
423 \newif\ifHy@pdfusetitle
424 \newif\ifHy@verbose
425 \let\Hy@debugtrue\Hy@verbosetrue
426 \let\Hy@debugfalse\Hy@verbosefalse
427 \newif\ifHy@pdfwindowui
428 \newif\ifHy@pdfdisplaydoctitle
429 \newif\ifHy@pdfa

```

Defaults for the switches are now set.

```

430 \Hy@backreffalse
431 \Hy@bookmarksnumberedfalse
432 \Hy@bookmarksopenfalse
433 \Hy@bookmarkstrue
434 \Hy@breaklinksfalse
435 \Hy@pdfcenterwindowfalse
436 \Hy@CJKbookmarksfalse
437 \Hy@pdfescapeformfalse
438 \Hy@hyperfiguresfalse
439 \Hy@pdffitwindowfalse
440 \Hy@hyperfootnotetrue
441 \Hy@hyperindextrue
442 \Hy@hypertextnametrue
443 \Hy@implicittrue
444 \Hy@linktocpagefalse

```



```

445 \Hy@localanchornamefalse
446 \Hy@pdfmenubartrue
447 \Hy@naturalnamesfalse
448 \Hy@nestingfalse
449 \Hy@pdfnewwindowsetfalse
450 \Hy@pdfnewwindowfalse
451 \Hy@pageanchortrue
452 \Hy@pdfpagelabelstrue
453 \Hy@pdfpagehiddenfalse
454 \Hy@pdfstringfalse
455 \Hy@plainpagesfalse
456 \Hy@raiselinksfalse
457 \Hy@setpagesizetrue
458 \Hy@texhtfalse
459 \Hy@pdftoolbartrue
460 \Hy@typexmlfalse
461 \Hy@unicodetrue
462 \Hy@pdfusetitlefalse
463 \Hy@verbosefalse
464 \Hy@pdfwindowuitrue
465 \Hy@pdfdisplaydoctitlefalse
466 \Hy@pdfafalse

```

## 5 Common help macros

\Hy@StepCount

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

\Hy@GlobalStepCount

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

```

469 \newdimen\@linkdim
470 \let\Hy@driver\ltx@empty
471 \let\MaybeStopEarly\relax
472 \newcount\Hy@linkcounter
473 \newcount\Hy@pagecounter
474 \Hy@linkcounter0
475 \Hy@pagecounter0

```

### 5.1 Macros for recursions

```

476 \let\Hy@ReturnEnd\@empty
477 \long\def\Hy@ReturnAfterFiFiEnd#1\fi#2\Hy@ReturnEnd{\fi\fi#1}
478 \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.

```

479 \def\Hy@safe@activetrue{\csname @safe@activetrue\endcsname}
480 \def\Hy@safe@activesfalse{\csname @safe@activesfalse\endcsname}

```

### 5.3 Coordinate transformations

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

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

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

- It cannot be used inside `\usepackage`, because LaTeX expands the options before package `hyperref` is loaded and `\hypercalcbp` is defined.
- With e-TeX extensions an expandable implementation is very easy; `\hypercalcbp` can be used everywhere and is expanded at use.
- Without e-TeX's features `\hypercalcbp` cannot be implemented expandable (practically) and have to be supported by `\hypercalcbpdef`. Limitations:
  - Works only in options that use `\hypercalcbpdef` (currently only `pdfstartview`).
  - For calculations package `calc` has to be loaded.
  - The expansion of the argument is done at definition time.

Example (TeX):

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

`\hypercalcbp`

```
481 \begingroup\expandafter\expandafter\expandafter\endgroup
482 \expandafter\ifx\csname dimexpr\endcsname\relax
483   \def\hypercalcbpdef#1#2{%
484     \begingroup
485       \toks@{}%
486       \HyCal@scan#2\hypercalcbp\@nil
487     \expandafter\endgroup
488     \expandafter\def\expandafter#1\expandafter{\the\toks@}%
489   }%
490   \def\HyCal@scan#1\hypercalcbp#2\@nil{%
491     \toks@\expandafter{\the\toks@ #1}%
492     \ifx\#2\%
493       \else
494         \ltx@ReturnAfterFi{%
495           \HyCal@do#2\@nil
496         }%
497       \fi
498     }%
499     \def\HyCal@do#1#2\@nil{%
500       \@ifpackageloaded{calc}{-}{%
501         \Hy@Warning{%
502           For calculations \string\hypercalcbp\space needs\MessageBreak
503           package calc or e-TeX%
504         }%
505       }%
506       \setlength{\dimen@}{#1}%
507       \setlength{\dimen@}{0.99626401\dimen@}%
508       \edef\x{%
509         \toks@{%
510           \the\toks@
```

```

511     \strip@pt\dimen@
512   }%
513 } \x
514   \HyCal@scan#2\@nil
515 }%
516 \else
517   \def\hypercalcbp#1{%
518     \strip@pt\dimexpr 0.99626401\dimexpr(#1)\relax\relax
519   }%
520   \def\hypercalcbpdef{\def}%
521 \fi

```

## 6 Dealing with PDF strings

The PDF string stuff done by Heiko Oberdiek.

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

### 6.1 Description of PDF strings

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

- They are surrounded by parentheses. The hexadecimal form is not supported.
- Like PostScript language strings they use the same escaping mechanism:
 

<code>\\</code>	the backslash itself
<code>\), \((</code>	unbalanced parentheses
<code>\n, \r, \t, \b, \f</code>	special white space escape sequences
<code>\ddd</code>	octal character code <code>ddd</code>
- Strings are stored either in `PDFDocEncoding`, which is a superset of ISO-Latin1 and is compatible with Unicode with character codes below 256, or in Unicode.

### 6.2 Definition of `\pdfstringdef`

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

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

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

1. Preprocessing. Here the expansion is prepared. The encoding is set and many commands are redefined, so that they work appropriate.
2. Expansion. The  $\text{\TeX}$  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.

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

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

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

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

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

```
523 \begingroup
```

### 6.2.1 Preprocessing

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

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

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

```
524 \escapechar'\%
```

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

```
525 \edef\0{\string\0}%
526 \edef\1{\string\1}%
527 \edef\2{\string\2}%
528 \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.

```
529 \ifHy@unicode
530 \edef\8{\string\8}%
531 \edef\9{\string\9}%
532 \fontencoding{PU}%
533 \HyPsd@UTFviii
534 \def\ifpdfstringunicode##1##2{##1}%
535 \else
536 \fontencoding{PD1}%
```

```

537 \def\ifpdfstringunicode##1##2{##2}%
538 \fi
539 \let\utf@viii@undeferr\HyPsd@utf@viii@undeferr
540 \enc@update

```

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

```

541 \@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).

```

542 \let\@inmathwarn\HyPsd@inmathwarn

```

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

```

543 \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.

```

544 \let\{\textbraceleft
545 \let\}\textbraceright
546 \let\\\textbackslash
547 \let\#\textnumbersign
548 \let\$\textdollar
549 \let\%\textpercent
550 \let\&\textampersand
551 % \let\~\textasciitilde
552 \let\_ \textunderscore
553 \let\P\textparagraph
554 \let\ldots\textellipsis
555 \let\dots\textellipsis

```

**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.

```

556 \def\{\pdfstringdefWarn\}%
557 \def\newline{\pdfstringdefWarn\newline}%

```

**Logos.** Because the box shifting used in the T<sub>E</sub>X logo does not work while writing to a file, the standard T<sub>E</sub>X logos are redefined.

```

558 \def\TeX{\TeX}%
559 \def\LaTeX{\LaTeX}%
560 \def\LaTeXe{%
561   \LaTeX2%
562   \ifHy@unicode\textepsilon\else e\fi
563 }%
564 \def\eTeX{%
565   \ifHy@unicode\textepsilon\else e\fi
566   -\TeX%
567 }%
568 \def\SliTeX{\SliTeX}%
569 \def\MF{Metafont}%
570 \def\MP{Metapost}%

```

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

```

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

```

```

609 \let\small\@empty
610 \let\tiny\@empty
611 \let\mathversion\@gobble
612 \let\phantom\@gobble
613 \let\vphantom\@gobble
614 \let\hphantom\@gobble

```

#### Environments.

```

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

```

#### Package color.

```

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

```

#### Upper- and lowercase.

```

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

```

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

```

620 \let\foreignlanguage\@secondoftwo
621 \let\textlatin\@firstofone
622 \ltx@ifundefined{language@group}{\{%
623   \csname HyPsd@babel@language@group\endcsname
624 }%
625 \HyPsd@GreekPatch
626 \HyPsd@SpanishPatch
627 \HyPsd@RussianPatch
628 \HyPsd@BabelPatch
629 \let\@safe@activetrue\relax
630 \let\@safe@activesfalse\relax

```

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

```

631 \let\cyr\relax

```

Redefine `\es@roman`, used in `spanish.ldf`.

```

632 \let\es@roman\@Roman

```

#### Package german.

```

633 \let\glqq\textglqq
634 \let\grqq\textgrqq
635 \let\glq\textglq
636 \let\grq\textgrq
637 \let\flqq\textflqq
638 \let\frqq\textfrqq
639 \let\flq\textflq
640 \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}
```

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

**AMS classes.**

```
642 \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.

```
643 \let\hspace\HyPsd@hspace
```

**Commands of referencing and indexing systems.** Some L<sup>A</sup>T<sub>E</sub>X commands that are legal in `\section` commands have to be disabled here.

```
644 \let\label\@gobble
645 \let\index\@gobble
646 \let\glossary\@gobble
647 \let\href\HyPsd@href
648 \let\@mkboth\@gobbletwo
```

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

```
649 \let\ref\HyPsd@ref
650 \let\pageref\HyPsd@pageref
651 \let\nameref\HyPsd@nameref
652 \let\autoref\HyPsd@autoref
```

**Miscellaneous commands.**

```
653 \let\leavevmode\@empty
654 \let\mbox\@empty
```

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

```
655 \def\halign{\pdfstringdefWarn\halign\@gobble}%
656 \let\ignorespaces\HyPsd@ignorespaces
657 \let\Hy@SectionAnchorHref\@gobble
```

**Patch for cjk bookmarks.**

```
658 \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 T<sub>E</sub>X's stomach, but to be expanded by the mouth to give a PDF string. At this place before interpreting the string in `#2` additional redefinitions can be added by the hook `\pdfstringdef-PreHook`.

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`).

```
659 \Hy@pdfstringtrue
660 \pdfstringdefPreHook
```



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

```
661 \HyPsd@LetUnexpandableSpace\space
662 \HyPsd@LetUnexpandableSpace\ %
663 \HyPsd@LetUnexpandableSpace~%
664 \HyPsd@LetUnexpandableSpace\nobreakspace
```

**Package xspace.**

```
665 \ltx@ifundefined{@xspace}{%
666 \let\xspace\HyPsd@ITALCORR
667 }{%
668 \let\xspace\HyPsd@XSPACE
669 }%
670 \let\/\HyPsd@ITALCORR
671 \let\bgroup\/%
672 \let\egroup\/%
```

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

```
673 \let\discretionary\@gobbletwo
\@ifstar is defined in LATEX as follows:
```

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

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

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

```
674 \def\@ifnextchar{\HyPsd@ifnextchar\@ifnextchar}%
675 \def\kernel@ifnextchar{\HyPsd@ifnextchar\kernel@ifnextchar}%
676 \def\new@ifnextchar{\HyPsd@ifnextchar\new@ifnextchar}%
677 \let\@protected@testopt\HyPsd@protected@testopt
```

Support for package 'xargs':

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

### 6.2.2 Expansion

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

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

**\csname:** First the string is expanded within a \csname and \endcsname. Then the command name is converted to characters with catcode 12 by \string and the first escape character removed by \@gobble. This method has the great *advantage* that stomach tokens that aren't allowed in PDF strings are detected by T<sub>E</sub>X and reported as errors in order to force the user to write correct things. So he get no wrong results by forgetting the proofreading of his text. But the *disadvantage* is that old wrong code cannot processed without errors. Mainly the error message is very cryptic and for the normal user hard to understand. T<sub>E</sub>X provides no way to catch the error caused by \csname or allows to support the user with a descriptive error message.

Therefore the experienced user had to enable this behaviour by an option `exactdef` in previous versions less or equal 6.50.

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

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

```
679 \begingroup
680 \let\GenericError\@gobblefour
681 \let\GenericWarning\@gobbletwo
682 \let\GenericInfo\@gobbletwo
```

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

```
683 \ifx\nofrenchguillemets\@undefined
684 \else
685 \nofrenchguillemets
686 \fi
```

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

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

### 6.2.3 Postprocessing

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

```
696 \ifx#1\@empty
697 \else
```

**Protecting spaces and removing grouping characters.** In order to check the tokens we must separate them. This will be done with  $\TeX$ 's argument parsing. With this method we must the following item takes into account, that makes makes things a litte more complicate:

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

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

```

698 \HyPsd@ProtectSpaces#1%
699 \let\HyPsd@String\@empty
700 \expandafter\HyPsd@RemoveBraces\expandafter{#1|}%
701 \global\let#1\HyPsd@String

```

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

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

After `\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.

```

702 \let\HyPsd@SPACEOPTI\relax
703 {%
704 \let\HyPsd@String\@empty
705 \expandafter\HyPsd@CheckCatcodes#1\HyPsd@End
706 \global\let#1\HyPsd@String
707 }%
708 \expandafter\HyPsd@RemoveMask\expandafter
709 | \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.

```
710 \expandafter\HyPsd@Subst\expandafter{\HyPsd@GLYPHERR}{\relax}#1%
711 \let\HyPsd@String\@empty
712 \expandafter\HyPsd@GlyphProcess#1\relax\@empty
713 \global\let#1\HyPsd@String
```

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

```
714 \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 `\guillemotright`, because `\lastskip` and `\unskip` do not work. Therefore it is removed here.

```
715 \ifHy@unicode
716 \expandafter\HyPsd@StringSubst\csname 80\040\endcsname
717 \HyPsd@SPACEOPTI#1%
718 \edef\Hy@temp@A{\HyPsd@SPACEOPTI\HyPsd@SPACEOPTI\80\273}%
719 \expandafter\HyPsd@Subst\expandafter{\Hy@temp@A}%
720 {\HyPsd@SPACEOPTI\80\273}#1%
721 \else
722 \HyPsd@StringSubst{\040}\HyPsd@SPACEOPTI#1%
723 \expandafter\HyPsd@Subst\expandafter{%
724 \expandafter\HyPsd@SPACEOPTI\expandafter\HyPsd@SPACEOPTI
725 \string\273}\HyPsd@SPACEOPTI\273}#1%
726 \fi
```

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

```
727 \ifHy@unicode
728 \HyPsd@StringSubst{)}{\80\051}#1%
729 \HyPsd@Subst){\80\051}#1%
730 \let\HyPsd@empty\relax
731 \expandafter\HyPsd@StringSubst\csname 80\051\endcsname
732 {\HyPsd@empty\80\051}#1%
733 \else
734 \HyPsd@StringSubst{)}{\051}#1%
735 \HyPsd@Subst){\051}#1%
```

```

736     \let\HyPsd@empty\relax
737     \HyPsd@StringSubst{\051}{\HyPsd@empty\string\)}#1%
738     \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`.

```

739     \expandafter\HyPsd@Subst\expandafter{\}/\HyPsd@empty#1%
740     \ltx@ifundefined{@xspace}{%
741     }{%
742     \let\HyPsd@xspace\relax
743     \expandafter\HyPsd@Subst\expandafter
744     {\HyPsd@XSPACE}\HyPsd@xspace#1%
745     \let\HyPsd@xspace\HyPsd@doxspace
746     }%
747     \xdef#1{#1\HyPsd@empty}%

```

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

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

```

748     \HyPsd@Subst{---}\textemdash#1%
749     \HyPsd@Subst{--}\textendash#1%
750 %     \HyPsd@Subst{fi}\textfi#1%
751 %     \HyPsd@Subst{fl}\textfl#1%
752     \HyPsd@Subst{!'}\textexclamdown#1%
753     \HyPsd@Subst{?'}\textquestiondown#1%

```

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

```

754     \let\HyPsd@empty\@empty

```

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

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

```

755     \ifHy@unicode

```

```

756 \HyPsd@StringSubst\(\textparenleft#1%
757 \HyPsd@Subst(\textparenleft#1%
758 \else
759 \HyPsd@StringSubst\({\050}#1%
760 \HyPsd@Subst({\050}#1%
761 \HyPsd@StringSubst{\050}{\string\{ }#1%
762 \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.

```

763 \ifHy@unicode
764 \edef\HyPsd@SPACEOPTI{\80\040}%
765 \else
766 \let\HyPsd@SPACEOPTI\HyPsd@spaceopti
767 \fi
768 \xdef#1{#1\@empty}%
769 \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.

```

770 \endgroup
771 \begingroup
772 \ifHy@unicode
773 \HyPsd@ConvertToUnicode#1%

```

**Try conversion back to PDFDocEncoding.**

```

774 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
775 \ltx@ifundefined{StringEncodingConvertTest}{%
776 }{%
777 \EdefUnescapeString\HyPsd@temp#1%
778 \ifxetex
779 \let\HyPsd@UnescapedString\HyPsd@temp
780 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
781 {utf16be}{ascii-print}{%
782 \EdefEscapeString\HyPsd@temp\HyPsd@temp
783 \global\let#1\HyPsd@temp
784 \HyPsd@EscapeTeX#1%
785 \Hy@unicodedefalse
786 }{%
787 \HyPsd@ToBigChars#1%
788 }%
789 \else
790 \StringEncodingConvertTest\HyPsd@temp\HyPsd@temp
791 {utf16be}{pdfdoc}{%
792 \EdefEscapeString\HyPsd@temp\HyPsd@temp
793 \global\let#1\HyPsd@temp
794 \HyPsd@EscapeTeX#1%
795 \Hy@unicodedefalse
796 }{}%
797 \fi
798 }%
799 \fi

```

```

800 \fi
801 \HyPsd@XeTeXBigCharsfalse

```

**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

```

809 \edef\Hy@temp{\catcode0=\the\catcode0\relax}
810 \catcode\z@=12 %
811 \ifxetex
812 \expandafter\@firstofone
813 \else
814 \let\HyPsd@XeTeXBigCharstrue\@empty
815 \let\HyPsd@XeTeXBigCharsfalse\@empty
816 \expandafter\@gobble
817 \fi
818 {%
819 \newif\ifHyPsd@XeTeXBigChars
820 \def\HyPsd@XeTeXBigCharsfalse{%
821 \global\let\ifHyPsd@XeTeXBigChars\iffalse
822 }%
823 \def\HyPsd@XeTeXBigCharstrue{%
824 \global\let\ifHyPsd@XeTeXBigChars\iftrue
825 }%
826 \def\HyPsd@ToBigChars#1{%
827 \ifHyPsd@XeTeXBigChars
828 \EdefEscapeHex\HyPsd@UnescapedString{%
829 \expandafter\@gobbletwo\HyPsd@UnescapedString
830 }%
831 \begingroup
832 \toks@{}%
833 \escapechar=92\relax
834 \let\x\HyPsd@ToBigChar
835 \expandafter\HyPsd@ToBigChar\HyPsd@UnescapedString
836 \relax\relax\relax\relax\relax\relax\relax
837 \edef\x{%
838 \endgroup
839 \gdef\noexpand#1{\the\toks@}%
840 }%
841 \x
842 \fi
843 }%
844 \def\HyPsd@ToBigChar#1#2#3#4{%
845 \ifx\relax#1\relax
846 \let\x\relax

```

```

847 \else
848 \count@=" #1#2#3#4\relax
849 \let\y\@empty
850 \lccode\z@=\count@
851 \ifnum\count@=40 % (
852 \let\y\@backslashchar
853 \else
854 \ifnum\count@=41 % )
855 \let\y\@backslashchar
856 \else
857 \ifnum\count@=92 % backslash
858 \let\y\@backslashchar
859 \else
860 \ifnum\count@=10 % newline
861 \edef\y##1{\string\n}%
862 \else
863 \ifnum\count@=13 % carriage return
864 \edef\y##1{\string\r}%
865 \fi
866 \fi
867 \fi
868 \fi
869 \fi
870 \lowercase{%
871 \toks@\expandafter{%
872 \the\expandafter\toks@
873 \y
874 ^^@%
875 }%
876 }%
877 \fi
878 \x
879 }%
880 }
881 \Hy@temp

```

### 6.3.2 Workaround for package linguex

```

882 \@ifpackageloaded{linguex}{%
883 \let\HyLinguex@OrgB\b
884 \let\HyLinguex@OrgC\c
885 \let\HyLinguex@OrgD\d
886 \def\HyLinguex@Restore{%
887 \let\b\HyLinguex@OrgB
888 \let\c\HyLinguex@OrgC
889 \let\d\HyLinguex@OrgD
890 }%
891 \Hy@AtEndOfPackage{%
892 \pdfstringdefDisableCommands{%
893 \ltx@ifundefined{oldb}{-}{\let\b\oldb}%
894 \ltx@ifundefined{oldc}{-}{\let\c\oldc}%
895 \ltx@ifundefined{oldd}{-}{\let\d\oldd}%
896 }%
897 }%
898 }{%
899 \let\HyLinguex@Restore\relax
900 }%

```



### 6.3.3 PD1 encoding

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

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

```
901 \@ifundefined{T@PD1}{%
902   \input{pd1enc.def}%
903   \HyLinguex@Restore
904 }{}
905 \DeclareFontFamily{PD1}{pdf}{}
906 \DeclareFontShape{PD1}{pdf}{m}{n}{ <-> cmr10 }{}
907 \DeclareFontSubstitution{PD1}{pdf}{m}{n}
```

### 6.3.4 PU encoding

The PU encoding implements the Unicode encoding for use with L<sup>A</sup>T<sub>E</sub>X's NFSS. Because of large memory requirements the encoding file for Unicode support is only loaded, if option `unicode` is specified as package option.

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

```
908 \def\HyPsd@InitUnicode{%
909   \@ifundefined{T@PU}{%
910     \input{puenc.def}%
911     \HyLinguex@Restore
912   }{}%
913   \DeclareFontFamily{PU}{pdf}{}%
914   \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
915   \DeclareFontSubstitution{PU}{pdf}{m}{n}%
916   \let\HyPsd@InitUnicode\relax
917 }
```

## 6.4 Additional user commands

### 6.4.1 \texorpdfstring

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

```
918 \def\texorpdfstring{%
919   \ifHy@pdfstring
920     \expandafter\@secondoftwo
921   \else
922     \expandafter\@firstoftwo
923   \fi
924 }
```

### 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`.

```

925 \@ifundefined{pdfstringdefPreHook}{%
926   \let\pdfstringdefPreHook\@empty
927 }{}
928 \@ifundefined{pdfstringdefPostHook}{%
929   \let\pdfstringdefPostHook\@gobble
930 }{}

```

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

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

```

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

```

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

```

931 \def\pdfstringdefDisableCommands{%
932   \begingroup
933   \makeatletter
934   \HyPsd@DisableCommands
935 }

```

`\HyPsd@DisableCommands`

```

936 \long\def\HyPsd@DisableCommands#1{%
937   \ltx@GlobalAppendToMacro\pdfstringdefPreHook{#1}%
938   \endgroup
939 }

```

`\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`.

```

940 \def\pdfstringdefWarn#1{%
941   \expandafter\noexpand\csname<>-string#1\endcsname
942 }

```

## 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.

```

943 \begingroup
944 \catcode0=12 %
945 \def\x{\endgroup
946   \def\HyPsd@ignorespaces{%
947     \romannumeral\expandafter'\expandafter^^@%
948     \romannumeral'^~@%
949   }%
950 }%
951 \x

```

### 6.5.2 Babel languages

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

```

\pdfstringdefDisableCommands{%
  \languageshorthands{system}%
}

```

As consequence the shorthands are shown in the bookmarks, not its result. Therefore `\languageshorthands` is disabled before the user hook. If there is a need to use the command, then `\HyOrg@languageshorthands` can be used inside `\pdfstringdefDisableCommands`.

```

952 \def\HyPsd@BabelPatch{%
953   \let\HyOrg@languageshorthands\languageshorthands
954   \let\languageshorthands\HyPsd@LanguageShorthands
955 }
956 \begingroup\expandafter\expandafter\expandafter\endgroup
957 \expandafter\ifx\csname pdf@strcmp\endcsname\relax
958   \let\HyPsd@langshort@system\@empty
959   \def\HyPsd@LanguageShorthands#1{%
960     \expandafter\ifx\csname HyPsd@langshort@#1\endcsname
961       \HyPsd@langshort@system
962     \expandafter\@gobble
963   \else
964     \expandafter\@firstofone
965   \fi
966   {%
967     \HyOrg@languageshorthands{#1}%
968   }%
969 }%
970 \else
971   \def\HyPsd@LanguageShorthands#1{%
972     \ifnum\pdf@strcmp{#1}{system}=\z@
973       \expandafter\@gobble
974     \else
975       \expandafter\@firstofone
976     \fi
977     {%
978       \HyOrg@languageshorthands{#1}%
979     }%
980   }%
981 \fi
982 \def\Hy@temp{%
983   \@ifpackageloaded{babel}{%
984     \@ifpackagelater{babel}{2008/03/16}{%

```

```

985 \let\Hy@temp\@empty
986 }{%
987 \def\HyPsd@BabelPatch{%
988 \let\HyOrg@languageshorthands\languageshorthands
989 }%
990 }%
991 }{}%
992 }
993 \Hy@temp
994 \expandafter\Hy@AtBeginDocument\expandafter{\Hy@temp}
995 \newif\ifHy@next

Nothing to do for english.

996 \ltx@ifundefined{danish@sh@}{}{}%
997 \def\HyPsd@babel@danish{%
998 \declare@shorthand{danish}{"}{}%
999 \declare@shorthand{danish}{"}~{}{}%
1000 }%
1001 }
1002 \ltx@ifundefined{dutch@sh@}{}{}%
1003 \def\HyPsd@babel@dutch{%
1004 \declare@shorthand{dutch}{"}{}%
1005 \declare@shorthand{dutch}{"}~{}{}%
1006 }%
1007 }
1008 \ltx@ifundefined{finnish@sh@}{}{}%
1009 \def\HyPsd@babel@finnish{%
1010 \declare@shorthand{finnish}{"}{}%
1011 }%
1012 }
1013 \ltx@ifundefined{french@sh@}{}{}%
1014 \def\HyPsd@babel@frenchb{%
1015 \def\guill@spacing{ }%
1016 }%
1017 }
1018 \ltx@ifundefined{german@sh@}{}{}%
1019 \def\HyPsd@babel@german{%
1020 \declare@shorthand{german}{"}f{}f}%
1021 \declare@shorthand{german}{"}{}{}%
1022 \declare@shorthand{german}{"}~{}{}%
1023 }%
1024 }
1025 \ltx@ifundefined{macedonian@sh@}{}{}%
1026 \def\HyPsd@babel@macedonian{%
1027 \declare@shorthand{macedonian}{"}{}{}%
1028 \declare@shorthand{macedonian}{"}~{}{}%
1029 }%
1030 }{}
1031 \ltx@ifundefined{ngerman@sh@}{}{}%
1032 \def\HyPsd@babel@ngerman{%
1033 \declare@shorthand{ngerman}{"}{}{}%
1034 \declare@shorthand{ngerman}{"}~{}{}%
1035 }%
1036 }
1037 \ltx@ifundefined{portuges@sh@}{}{}%
1038 \def\HyPsd@babel@portuges{%
1039 \declare@shorthand{portuges}{"}{}{}%

```

```

1040 }%
1041 }
1042 \ltx@ifundefined{russian@sh@}{}{}%
1043 \def\HyPsd@babel@russian{%
1044   \declare@shorthand{russian}{"}|{}{}%
1045   \declare@shorthand{russian}{"}~{}{}%
1046 }%
1047 }
1048 \ltx@ifundefined{slovene@sh@}{}{}%
1049 \def\HyPsd@babel@slovene{%
1050   \declare@shorthand{slovene}{"}|{}{}%
1051 }%
1052 }

Nested quoting environments are not supported (<<, >>).

1053 \ltx@ifundefined{spanish@sh@>}{}{}%
1054 \def\HyPsd@babel@spanish{%
1055   \declare@shorthand{spanish}{<<}{\guillemotleft}%
1056   \declare@shorthand{spanish}{>>}{\guillemotright}%
1057   \declare@shorthand{spanish}{"}=}{-}%
1058   \declare@shorthand{spanish}{"}~}{-}%
1059   \declare@shorthand{spanish}{"}!}{\textexclamdown}%
1060   \declare@shorthand{spanish}{"}?}{\textquestiondown}%
1061 }%
1062 }
1063 \ltx@ifundefined{swedish@sh@}{}{}%
1064 \def\HyPsd@babel@swedish{%
1065   \declare@shorthand{swedish}{"}|{}{}%
1066   \declare@shorthand{swedish}{"}~{}{}%
1067 }%
1068 }
1069 \ltx@ifundefined{ukrainian@sh@}{}{}%
1070 \def\HyPsd@babel@ukrainian{%
1071   \declare@shorthand{ukrainian}{"}|{}{}%
1072   \declare@shorthand{ukrainian}{"}~{}{}%
1073 }%
1074 }
1075 \ltx@ifundefined{usorbian@sh@}{}{}%
1076 \def\HyPsd@babel@usorbian{%
1077   \declare@shorthand{usorbian}{"}f}{f}%
1078   \declare@shorthand{usorbian}{"}|{}{}%
1079 }%
1080 }

1081 \ltx@ifundefined{greek@sh@\string~}{}{}%
1082 \let\HyPsd@GreekPatch\@empty
1083 }{}%
1084 \def\HyPsd@GreekPatch{%
1085   \let\greeknumeral\HyPsd@greeknumeral
1086   \let\Greeknnumeral\HyPsd@Greeknnumeral
1087 }%
1088 }
1089 \def\HyPsd@greeknumeral#1{%
1090   \HyPsd@GreekNum\@firstoftwo{#1}%
1091 }
1092 \def\HyPsd@Greeknnumeral#1{%
1093   \HyPsd@GreekNum\@secondoftwo{#1}%
1094 }
1095 \def\HyPsd@GreekNum#1#2{%

```

```

1096 \ifHy@unicode
1097 \ifnum#2<\@ne
1098 \@arabic{#2}%
1099 \else
1100 \ifnum#2<1000000 %
1101 \HyPsd@@GreekNum#1{#2}%
1102 \else
1103 \@arabic{#2}%
1104 \fi
1105 \fi
1106 \else
1107 \@arabic{#2}%
1108 \fi
1109 }
1110 \def\HyPsd@@GreekNum#1#2{%
1111 \ifnum#2<\@m
1112 \ifnum#2<10 %
1113 \expandafter\HyPsd@GreekNumI
1114 \expandafter\@gobble\expandafter#1\number#2%
1115 \else
1116 \ifnum#2<100 %
1117 \expandafter\HyPsd@GreekNumII
1118 \expandafter\@gobble\expandafter#1\number#2%
1119 \else
1120 \expandafter\HyPsd@GreekNumIII
1121 \expandafter\@gobble\expandafter#1\number#2%
1122 \fi
1123 \fi
1124 \ifnum#2>\z@
1125 \textnumeralsigngreek
1126 \fi
1127 \else
1128 \ifnum#2<\@M
1129 \expandafter\HyPsd@GreekNumIV\expandafter#1\number#2%
1130 \else
1131 \ifnum#2<100000 %
1132 \expandafter\HyPsd@GreekNumV\expandafter#1\number#2%
1133 \else
1134 \expandafter\HyPsd@GreekNumVI\expandafter#1\number#2%
1135 \fi
1136 \fi
1137 \fi
1138 }
1139 \def\HyPsd@GreekNumI#1#2#3{%
1140 #1{%
1141 \ifnum#3>\z@
1142 \textnumeralsignlowergreek
1143 \fi
1144 }%
1145 \expandafter#2%
1146 \ifcase#3 %
1147 {}{}%
1148 \or\textalpha\textAlpha
1149 \or\textbeta\textBeta
1150 \or\textgamma\textGamma
1151 \or\textdelta\textDelta
1152 \or\textepsilon\textEpsilon

```

```

1153 \or\textstigmagreek\textStigmagreek
1154 \or\textzeta\textZeta
1155 \or\texteta\textEta
1156 \or\texttheta\textTheta
1157 \else
1158   {}{}%
1159 \fi
1160 }
1161 \def\HyPsd@GreekNumII#1#2#3#4{%
1162   #1{%
1163     \ifnum#3>\z@
1164       \textnumeralsignlowergreek
1165     \fi
1166   }%
1167   \expandafter#2%
1168   \ifcase#3 %
1169     {}{}%
1170     \or\textiota\textIota
1171     \or\textkappa\textKappa
1172     \or\textlambda\textLambda
1173     \or\textmu\textMu
1174     \or\textnu\textNu
1175     \or\textxi\textXi
1176     \or\textomicron\textOmicron
1177     \or\textpi\textPi
1178     \or\textkoppagreek\textKoppagreek
1179   \else
1180     {}{}%
1181   \fi
1182   \HyPsd@GreekNumI#1#2#4%
1183 }
1184 \def\HyPsd@GreekNumIII#1#2#3#4#5{%
1185   #1{%
1186     \ifnum#3>\z@
1187       \textnumeralsignlowergreek
1188     \fi
1189   }%
1190   \expandafter#2%
1191   \ifcase#3 %
1192     {}{}%
1193     \or\textrho\textRho
1194     \or\textsigma\textSigma
1195     \or\texttau\textTau
1196     \or\textupsilon\textUpsilon
1197     \or\textphi\textPhi
1198     \or\textchi\textChi
1199     \or\textpsi\textPsi
1200     \or\textomega\textOmega
1201     \or\textsampigreek\textSampigreek
1202   \else
1203     {}{}%
1204   \fi
1205   \HyPsd@GreekNumII#1#2#4#5%
1206 }
1207 \def\HyPsd@GreekNumIV#1#2#3#4#5{%
1208   \HyPsd@GreekNumI\@firstofone#1#2%
1209   \HyPsd@@@GreekNum#1{#3#4#5}%

```

```

1210 }
1211 \def\HyPsd@GreekNumV#1#2#3#4#5#6{%
1212   \HyPsd@GreekNumII\@firstofone#1#2#3%
1213   \HyPsd@@@GreekNum#1{#4#5#6}%
1214 }
1215 \def\HyPsd@GreekNumVI#1#2#3#4#5#6#7{%
1216   \HyPsd@GreekNumIII\@firstofone#1#2#3#4%
1217   \HyPsd@@@GreekNum#1{#5#6#7}%
1218 }

1219 \def\HyPsd@SpanishPatch{%
1220   \ltx@ifundefined{es@save@dot}{%
1221     }{%
1222       \let\.\es@save@dot
1223     }%
1224 }

```

Shorthand "- of 'russianb.ldr' is not expandable, therefore it is disabled and replaced by -.

```

1225 \def\HyPsd@RussianPatch{%
1226   \ltx@ifundefined{russian@sh@"@-@}{%
1227     }{%
1228       \@namedef{russian@sh@"@-@}{-}%
1229     }%
1230 }

```

### 6.5.3 CJK patch

```

1231 \RequirePackage{intcalc}[2007/09/27]

```

\HyPsd@CJKhook

```

1232 \def\HyPsd@CJKhook{%
1233   \ltx@ifpackageloaded{CJK}{%
1234     \let\CJK@kern\relax
1235     \let\CJKkern\relax
1236     \let\CJK@CJK\relax
1237     \ifHy@CJKbookmarks
1238       \HyPsd@CJKhook@bookmarks
1239     \fi
1240     \HyPsd@CJKhook@unicode
1241   }{}%
1242 }

```

### 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 ( $\geq 0x40$ ).

```

1243 \begingroup
1244   \catcode"7F=\active
1245   \toks@{%

```



```

1246 \let\CJK@ignorespaces\empty
1247 \def\CJK@char#1{\@gobbletwo}%
1248 \let\CJK@charx\@gobblefour
1249 \let\CJK@punctchar\@gobblefour
1250 \def\CJK@punctcharx#1{\@gobblefour}%
1251 \catcode"7F=\active
1252 \def^^7f#1^^7f#2^^7f{%
1253   \string #1\HyPsd@DecimalToOctal{#2}%
1254 }%
1255 % ... ?
1256 \ifHy@unicode
1257   \def\Hy@cjkpu{\80}%
1258 \else
1259   \let\Hy@cjkpu\@empty
1260 \fi
1261 \HyPsd@CJKActiveChars
1262 }%
1263 \count@=127 %
1264 \@whilenum\count@<255 \do{%
1265   \advance\count@ by 1 %
1266   \lccode'\~=\count@
1267   \lowercase{%
1268     \toks@\expandafter{\the\toks@ ~}%
1269   }%
1270 }%
1271 \toks@\expandafter{\the\toks@ !}%
1272 \xdef\HyPsd@CJKhook@bookmarks{%
1273   \the\toks@
1274 }%
1275 \endgroup

```

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

```

1276 \def\HyPsd@CJKActiveChars#1{%
1277   \ifx#1!%
1278     \let\HyPsd@CJKActiveChars\relax
1279   \else
1280     \edef#1{\noexpand\Hy@cjkpu\string#1}%
1281   \fi
1282   \HyPsd@CJKActiveChars
1283 }

```

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

```

1284 \def\HyPsd@DecimalToOctal#1{%
1285   \ifcase #1 %
1286     \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1287     \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1288     \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%
1289     \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1290     \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1291     \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1292     \or 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1293     \or 8\or 9\or \072\or \073\or \074\or \075\or \076\or \077%
1294     \or @\or A\or B\or C\or D\or E\or F\or G%
1295     \or H\or I\or J\or K\or L\or M\or N\or O%
1296     \or P\or Q\or R\or S\or T\or U\or V\or W%
1297     \or X\or Y\or Z\or \133\or \134\or \135\or \136\or \137%

```

```

1298 \or \140\or a\or b\or c\or d\or e\or f\or g%
1299 \or h\or i\or j\or k\or l\or m\or n\or o%
1300 \or p\or q\or r\or s\or t\or u\or v\or w%
1301 \or x\or y\or z\or \173\or \174\or \175\or \176\or \177%
1302 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1303 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1304 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1305 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1306 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1307 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1308 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1309 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1310 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1311 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1312 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1313 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1314 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1315 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1316 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1317 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1318 \fi
1319 }

```

### 6.5.5 CJK unicode

\HyPsd@CJKhook@unicode

```

1320 \def\HyPsd@CJKhook@unicode{%
1321 \let\Unicode\HyPsd@CJK@Unicode
1322 \let\CJKnumber\HyPsd@CJKnumber
1323 \let\CJKdigits\HyPsd@CJKdigits
1324 }

```

\HyPsd@CJK@Unicode

```

1325 \def\HyPsd@CJK@Unicode#1#2{%
1326 \ifnum#1<256 %
1327 \HyPsd@DecimalToOctalFirst{#1}%
1328 \HyPsd@DecimalToOctalSecond{#2}%
1329 \else
1330 \933%
1331 \expandafter\expandafter\expandafter\HyPsd@HighA
1332 \intcalcDiv{#1}{4}!%
1333 \933%
1334 \ifcase\intcalcMod{#1}{4} %
1335 4\or 5\or 6\or 7%
1336 \fi
1337 \HyPsd@DecimalToOctalSecond{#2}%
1338 \fi
1339 }

1340 \def\HyPsd@HighA#1!{%
1341 \expandafter\expandafter\expandafter\HyPsd@HighB
1342 \IntCalcDiv#1!64!!%
1343 \expandafter\expandafter\expandafter\HyPsd@HighD
1344 \IntCalcMod#1!64!!%
1345 }
1346 \def\HyPsd@HighB#1!{%
1347 \expandafter\expandafter\expandafter\HyPsd@HighC

```

```

1348 \IntCalcDec#1!!%
1349 }
1350 \def\HyPsd@HighC#1!{%
1351 \IntCalcDiv#1!4!%
1352 \@backslashchar
1353 \IntCalcMod#1!4!%
1354 }
1355 \def\HyPsd@HighD#1!{%
1356 \ifcase\IntCalcDiv#1!8! %
1357 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1358 \fi
1359 \ifcase\IntCalcMod#1!8! %
1360 0\or 1\or 2\or 3\or 4\or 5\or 6\or 7%
1361 \fi
1362 }
1363 \def\HyPsd@DecimalToOctalFirst#1{%
1364 \9%
1365 \ifcase#1 %
1366 000\or 001\or 002\or 003\or 004\or 005\or 006\or 007%
1367 \or 010\or 011\or 012\or 013\or 014\or 015\or 016\or 017%
1368 \or 020\or 021\or 022\or 023\or 024\or 025\or 026\or 027%
1369 \or 030\or 031\or 032\or 033\or 034\or 035\or 036\or 037%
1370 \or 040\or 041\or 042\or 043\or 044\or 045\or 046\or 047%
1371 \or 050\or 051\or 052\or 053\or 054\or 055\or 056\or 057%
1372 \or 060\or 061\or 062\or 063\or 064\or 065\or 066\or 067%
1373 \or 070\or 071\or 072\or 073\or 074\or 075\or 076\or 077%
1374 \or 100\or 101\or 102\or 103\or 104\or 105\or 106\or 107%
1375 \or 120\or 111\or 112\or 113\or 114\or 115\or 116\or 117%
1376 \or 120\or 121\or 122\or 123\or 124\or 125\or 126\or 127%
1377 \or 130\or 131\or 132\or 133\or 134\or 135\or 136\or 137%
1378 \or 140\or 141\or 142\or 143\or 144\or 145\or 146\or 147%
1379 \or 150\or 151\or 152\or 153\or 154\or 155\or 156\or 157%
1380 \or 160\or 161\or 162\or 163\or 164\or 165\or 166\or 167%
1381 \or 170\or 171\or 172\or 173\or 174\or 175\or 176\or 177%
1382 \or 200\or 201\or 202\or 203\or 204\or 205\or 206\or 207%
1383 \or 210\or 211\or 212\or 213\or 214\or 215\or 216\or 217%
1384 \or 220\or 221\or 222\or 223\or 224\or 225\or 226\or 227%
1385 \or 230\or 231\or 232\or 233\or 234\or 235\or 236\or 237%
1386 \or 240\or 241\or 242\or 243\or 244\or 245\or 246\or 247%
1387 \or 250\or 251\or 252\or 253\or 254\or 255\or 256\or 257%
1388 \or 260\or 261\or 262\or 263\or 264\or 265\or 266\or 267%
1389 \or 270\or 271\or 272\or 273\or 274\or 275\or 276\or 277%
1390 \or 300\or 301\or 302\or 303\or 304\or 305\or 306\or 307%
1391 \or 310\or 311\or 312\or 313\or 314\or 315\or 316\or 317%
1392 \or 320\or 321\or 322\or 323\or 324\or 325\or 326\or 327%
1393 \or 330\or 331\or 332\or 333\or 334\or 335\or 336\or 337%
1394 \or 340\or 341\or 342\or 343\or 344\or 345\or 346\or 347%
1395 \or 350\or 351\or 352\or 353\or 354\or 355\or 356\or 357%
1396 \or 360\or 361\or 362\or 363\or 364\or 365\or 366\or 367%
1397 \or 370\or 371\or 372\or 373\or 374\or 375\or 376\or 377%
1398 \fi
1399 }
1400 \def\HyPsd@DecimalToOctalSecond#1{%
1401 \ifcase #1 %
1402 \000\or \001\or \002\or \003\or \004\or \005\or \006\or \007%
1403 \or \010\or \011\or \012\or \013\or \014\or \015\or \016\or \017%
1404 \or \020\or \021\or \022\or \023\or \024\or \025\or \026\or \027%

```

```

1405 \or \030\or \031\or \032\or \033\or \034\or \035\or \036\or \037%
1406 \or \040\or \041\or \042\or \043\or \044\or \045\or \046\or \047%
1407 \or \050\or \051\or \052\or \053\or \054\or \055\or \056\or \057%
1408 \or \060\or \061\or \062\or \063\or \064\or \065\or \066\or \067%
1409 \or \070\or \071\or \072\or \073\or \074\or \075\or \076\or \077%
1410 \or \100\or \101\or \102\or \103\or \104\or \105\or \106\or \107%
1411 \or \110\or \111\or \112\or \113\or \114\or \115\or \116\or \117%
1412 \or \120\or \121\or \122\or \123\or \124\or \125\or \126\or \127%
1413 \or \130\or \131\or \132\or \133\or \134\or \135\or \136\or \137%
1414 \or \140\or \141\or \142\or \143\or \144\or \145\or \146\or \147%
1415 \or \150\or \151\or \152\or \153\or \154\or \155\or \156\or \157%
1416 \or \160\or \161\or \162\or \163\or \164\or \165\or \166\or \167%
1417 \or \170\or \171\or \172\or \173\or \174\or \175\or \176\or \177%
1418 \or \200\or \201\or \202\or \203\or \204\or \205\or \206\or \207%
1419 \or \210\or \211\or \212\or \213\or \214\or \215\or \216\or \217%
1420 \or \220\or \221\or \222\or \223\or \224\or \225\or \226\or \227%
1421 \or \230\or \231\or \232\or \233\or \234\or \235\or \236\or \237%
1422 \or \240\or \241\or \242\or \243\or \244\or \245\or \246\or \247%
1423 \or \250\or \251\or \252\or \253\or \254\or \255\or \256\or \257%
1424 \or \260\or \261\or \262\or \263\or \264\or \265\or \266\or \267%
1425 \or \270\or \271\or \272\or \273\or \274\or \275\or \276\or \277%
1426 \or \300\or \301\or \302\or \303\or \304\or \305\or \306\or \307%
1427 \or \310\or \311\or \312\or \313\or \314\or \315\or \316\or \317%
1428 \or \320\or \321\or \322\or \323\or \324\or \325\or \326\or \327%
1429 \or \330\or \331\or \332\or \333\or \334\or \335\or \336\or \337%
1430 \or \340\or \341\or \342\or \343\or \344\or \345\or \346\or \347%
1431 \or \350\or \351\or \352\or \353\or \354\or \355\or \356\or \357%
1432 \or \360\or \361\or \362\or \363\or \364\or \365\or \366\or \367%
1433 \or \370\or \371\or \372\or \373\or \374\or \375\or \376\or \377%
1434 \fi
1435 }

1436 \def\HyPsd@CJKnumber#1{%
1437 \ifnum#1<\z@
1438 \CJK@minus
1439 \expandafter\HyPsd@@CJKnumber\expandafter{\number-\number#1}%
1440 \else
1441 \expandafter\HyPsd@@CJKnumber\expandafter{\number#1}%
1442 \fi
1443 }

1444 \def\HyPsd@@CJKnumber#1{%
1445 \ifcase#1 %
1446 \CJK@zero\or\CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1447 \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine\or
1448 \CJK@ten\or\CJK@ten\CJK@one\or\CJK@ten\CJK@two\or
1449 \CJK@ten\CJK@three\or\CJK@ten\CJK@four\or\CJK@ten\CJK@five\or
1450 \CJK@ten\CJK@six\or\CJK@ten\CJK@seven\or\CJK@ten\CJK@eight\or
1451 \CJK@ten\CJK@nine
1452 \else
1453 \ifnum#1<10000 %
1454 \HyPsd@CJKnumberFour#1!\@empty{20}%
1455 \@empty
1456 \else
1457 \ifnum#1<100000000 %
1458 \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1459 \IntCalcDiv#1!10000!%
1460 !{ }{20}%
1461 \CJK@tenthousand

```

```

1462     \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1463     \IntCalcMod#1!10000!%
1464     !\CJK@zero{10}%
1465     \@empty
1466   \else
1467     \expandafter\HyPsd@CJKnumberLarge
1468     \number\IntCalcDiv#1!100000000!\expandafter!%
1469     \number\IntCalcMod#1!100000000!!%
1470   \fi
1471 \fi
1472 \fi
1473 }
1474 \def\HyPsd@CJKnumberLarge#1!#2!{%
1475   \HyPsd@CJKnumberFour#1!{ }{20}%
1476   \CJK@hundredmillion
1477   \ifnum#2=\z@
1478   \else
1479     \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1480     \IntCalcDiv#2!10000!%
1481     !\CJK@zero{10}%
1482     \CJK@tenthousand
1483     \expandafter\expandafter\expandafter\HyPsd@CJKnumberFour
1484     \IntCalcMod#2!10000!%
1485     !\CJK@zero{10}%
1486     \@empty
1487   \fi
1488 }
1489 \def\HyPsd@CJKnumberFour#1!#2#3{%
1490   \ifnum#1=\z@
1491     \expandafter\@gobble
1492   \else
1493     \ifnum#1<1000 %
1494       #2%
1495       \HyPsd@CJKnumberThree#1!{ }{#3}%
1496     \else
1497       \HyPsd@@@CJKnumber{\IntCalcDiv#1!1000!}%
1498       \CJK@thousand
1499       \expandafter\expandafter\expandafter\HyPsd@CJKnumberThree
1500       \IntCalcMod#1!1000!%
1501       !\CJK@zero{10}%
1502     \fi
1503   \fi
1504 }
1505 \def\HyPsd@CJKnumberThree#1!#2#3{%
1506   \ifnum#1=\z@
1507   \else
1508     \ifnum#1<100 %
1509       #2%
1510       \HyPsd@CJKnumberTwo#1!{ }{#3}%
1511     \else
1512       \HyPsd@@@CJKnumber{\IntCalcDiv#1!100!}%
1513       \CJK@hundred
1514       \expandafter\expandafter\expandafter\HyPsd@CJKnumberTwo
1515       \IntCalcMod#1!100!%
1516       !\CJK@zero{10}%
1517     \fi
1518   \fi

```

```

1519 }
1520 \def\HyPsd@CJKnumberTwo#1!#2#3{%
1521   \ifnum#1=\z@
1522   \else
1523     \ifnum#1<#3 %
1524       #2%
1525       \HyPsd@@CJKnumber{#1}%
1526     \else
1527       \HyPsd@@CJKnumber{\IntCalcDiv#1!10!}%
1528       \CJK@ten
1529       \ifnum\IntCalcMod#1!10!=\z@
1530       \else
1531         \HyPsd@@CJKnumber{\IntCalcMod#1!10!}%
1532       \fi
1533     \fi
1534   \fi
1535 }

1536 \def\HyPsd@CJKdigits#1{%
1537   \ifx*#1\relax
1538     \expandafter\HyPsd@@CJKdigits\expandafter\CJK@zero
1539   \else
1540     \HyPsd@@CJKdigits\CJK@null{#1}%
1541   \fi
1542 }

1543 \def\HyPsd@@CJKdigits#1#2{%
1544   \ifx\#2\%
1545   \else
1546     \HyPsd@@@CJKdigits#1#2\@nil
1547   \fi
1548 }%

1549 \def\HyPsd@@@CJKdigits#1#2#3\@nil{%
1550   \HyPsd@CJKdigit#1{#2}%
1551   \ifx\#3\%
1552     \expandafter\@gobble
1553   \else
1554     \expandafter\@firstofone
1555   \fi
1556   {%
1557     \HyPsd@@@CJKdigits#1#3\@nil
1558   }%
1559 }

1560 \def\HyPsd@CJKdigit#1#2{%
1561   \ifcase#2 %
1562     #1\or
1563     \CJK@one\or\CJK@two\or\CJK@three\or\CJK@four\or
1564     \CJK@five\or\CJK@six\or\CJK@seven\or\CJK@eight\or\CJK@nine
1565   \fi
1566 }

```

### 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 (L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> release [1998/12/01]). In the normal case `\pdfstringdef` is executed in a context where `\protect` has the meaning of `\@typesetprotect` (`=\relax`).

```

\def\@current@cmd#1{%
  \ifx\protect\@typeset@protect
    \@inmathwarn#1%
  \else
    \noexpand#1\expandafter\@gobble
  \fi}
\def\@changed@cmd#1#2{%
  \ifx\protect\@typeset@protect
    \@inmathwarn#1%
    \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
      \expandafter\ifx\csname?\string#1\endcsname\relax
        \expandafter\def\csname?\string#1\endcsname{%
          \TextSymbolUnavailable#1%
        }%
      \fi
      \global\expandafter\let
        \csname\cf@encoding\string#1\expandafter\endcsname
        \csname?\string#1\endcsname
    \fi
    \csname\cf@encoding\string#1%
    \expandafter\endcsname
  \else
    \noexpand#1%
  \fi}
\gdef\TextSymbolUnavailable#1{%
  \@latex@error{%
    Command \protect#1 unavailable in encoding \cf@encoding%
  }\@eha}
\def\@inmathwarn#1{%
  \ifmmode
    \@latex@warning{Command \protect#1 invalid in math mode}%
  \fi}

1567 \def\HyPsd@inmathwarn#1#2{%
1568   \ifx#2\expandafter
1569     \expandafter\ifx\csname\cf@encoding\string#1\endcsname\relax
1570       \HyPsd@GLYPHERR
1571       \expandafter\@gobble\string#1%
1572       >%
1573       \expandafter\expandafter\expandafter\HyPsd@EndWithElse
1574     \else
1575       \expandafter\expandafter\expandafter\HyPsd@GobbleFiFi
1576     \fi
1577   \else
1578     \expandafter#2%
1579   \fi
1580 }
1581 \def\HyPsd@GobbleFiFi#1\fi#2\fi{%
1582 \def\HyPsd@EndWithElse#1\else{\else}

\HyPsd@add@accent
1583 \def\HyPsd@add@accent#1#2{%
1584   \HyPsd@GLYPHERR\expandafter\@gobble\string#1+\string#2>%

```

```

1585  #2%
1586 }%

```

### 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`.

```

1587 \def\HyPsd@LetUnexpandableSpace#1{%
1588   \expandafter\futurelet\expandafter#1\expandafter\@gobble\space\relax
1589 }

```

`\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.

```

1590 \HyPsd@LetUnexpandableSpace\HyPsd@UnexpandableSpace

```

### 6.5.8 Marker for commands

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

```

1591 \edef\HyPsd@XSPACE{\string#\string X}
1592 \edef\HyPsd@ITALCORR{\string#\string I}
1593 \edef\HyPsd@GLYPHERR{\string#\string G}

```

### 6.5.9 `\hspace` fix

`\HyPsd@hspace`

```

1594 \def\HyPsd@hspace#1{\HyPsd@@hspace#1*\END}

```

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

```

1595 \def\HyPsd@@hspace#1*##2\END{%
1596   \ifx\##2\%
1597     \HyPsd@hspacetest{#1}%
1598   \else
1599     \expandafter\HyPsd@hspacetest
1600   \fi
1601 }

```

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

```

1602 \def\HyPsd@hspacetest#1{\ifdim#1>\z@\space\fi}

```



### 6.5.10 Fix for AMS classes

```

1603 \ltx@ifundefined{tocsection}{%
1604   \let\HyPsd@AMSclassfix\relax
1605 }{%
1606   \def\HyPsd@AMSclassfix{%
1607     \let\tocpart\HyPsd@tocsection
1608     \let\tocchapter\HyPsd@tocsection
1609     \let\tocappendix\HyPsd@tocsection
1610     \let\tocsection\HyPsd@tocsection
1611     \let\tocsubsection\HyPsd@tocsection
1612     \let\tocsubsubsection\HyPsd@tocsection
1613     \let\tocparagraph\HyPsd@tocsection
1614   }%
1615   \def\HyPsd@tocsection#1#2#3{%
1616     \if @#2@ \else \if @#1@ \else #1 \fi #2. \fi
1617     #3%
1618   }%
1619 }

```

### 6.5.11 Reference commands

`\HyPsd@href`

```

1620 \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.

```

1621 \def\HyPsd@ref#1{\HyPsd@@ref#1*\END}%

```

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

```

1622 \def\HyPsd@@ref#1*#2\END{%
1623   \ifx\#2\%
1624     \HyPsd@@@ref{#1}%
1625   \else
1626     \expandafter\HyPsd@@@ref
1627   \fi
1628 }%

```

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

```

1629 \def\HyPsd@@@ref#1{%
1630   \expandafter\ifx\csname r@#1\endcsname\relax
1631     ??%
1632   \else
1633     \expandafter\expandafter\expandafter
1634     \@car\csname r@#1\endcsname\@nil
1635   \fi
1636 }

```

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

```

1637 \def\HyPsd@pageref#1{\HyPsd@@pageref#1*\END}

```

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

```

1638 \def\HyPsd@@pageref#1*#2\END{%
1639   \ifx\#2\%
1640     \HyPsd@@@pageref{#1}%
1641   \else
1642     \expandafter\HyPsd@@@pageref

```

```

1643 \fi
1644 }

```

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

```

1645 \def\HyPsd@@@pageref#1{%
1646 \expandafter\ifx\csname r@#1\endcsname\relax
1647 ??%
1648 \else
1649 \expandafter\expandafter\expandafter\expandafter
1650 \expandafter\expandafter\expandafter\@car
1651 \expandafter\expandafter\expandafter\@gobble
1652 \csname r@#1\endcsname{}\@nil
1653 \fi
1654 }

```

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

```

1655 \def\HyPsd@nameref#1{\HyPsd@@nameref#1*\END}

```

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

```

1656 \def\HyPsd@@nameref#1*#2\END{%
1657 \ifx\#2\%
1658 \HyPsd@@@nameref{#1}%
1659 \else
1660 \expandafter\HyPsd@@@nameref
1661 \fi
1662 }

```

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

```

1663 \def\HyPsd@@@nameref#1{%
1664 \expandafter\ifx\csname r@#1\endcsname\relax
1665 ??%
1666 \else
1667 \expandafter\expandafter\expandafter\expandafter
1668 \expandafter\expandafter\expandafter\@car
1669 \expandafter\expandafter\expandafter\@gobbletwo
1670 \csname r@#1\endcsname{}\@nil
1671 \fi
1672 }

```

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

```

1673 \def\HyPsd@autoref#1{\HyPsd@@autoref#1*\END}

```

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

```

1674 \def\HyPsd@@autoref#1*#2\END{%
1675 \ifx\#2\%
1676 \HyPsd@@@autoref{#1}%
1677 \else
1678 \expandafter\HyPsd@@@autoref
1679 \fi
1680 }

```

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

```

1681 \def\HyPsd@@@autoref#1{%
1682 \expandafter\ifx\csname r@#1\endcsname\relax

```

```

1683   ??%
1684   \else
1685     \expandafter\expandafter\expandafter\HyPsd@autorefname
1686       \csname r@#1\endcsname\}\}\}\@nil
1687     \expandafter\expandafter\expandafter
1688       \@car\csname r@#1\endcsname\@nil
1689   \fi
1690 }

```

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

```

1691 \def\HyPsd@autorefname#1#2#3#4#5\@nil{%
1692   \ifx\#4\%
1693   \else
1694     \HyPsd@@autorefname#4.\@nil
1695   \fi
1696 }

```

`\HyPsd@@autorefname`

```

1697 \def\HyPsd@@autorefname#1.#2\@nil{%
1698   \ltx@ifundefined{#1autorefname}{%
1699     \ltx@ifundefined{#1name}{%
1700     }{%
1701       \csname#1name\endcsname\space
1702     }%
1703   }{%
1704     \csname#1autorefname\endcsname\space
1705   }%
1706 }

```

### 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 1707 \begingroup
1708   \def\x#1#2{%
1709     \endgroup
1710     \let#1\def
1711     \def\HyPsd@DefCommand##1##2###{%
1712       #1%
1713       \expandafter\noexpand
1714       \csname\expandafter\@gobble\string##1\@empty\endcsname
1715       \@gobble
1716     }%
1717     \let#2\let
1718     \def\HyPsd@@LetCommand##1{%
1719       \expandafter\ifx\csname##1\expandafter\endcsname
1720         \csname iftrue\endcsname
1721         \pdfstringdefWarn\let
1722         \expandafter\@gobble
1723       \else
1724         \expandafter\ifx\csname##1\expandafter\endcsname
1725           \csname iffalse\endcsname
1726           \pdfstringdefWarn\let
1727           \expandafter\expandafter\expandafter\@gobble
1728         \else
1729           #2%
1730           \expandafter\noexpand
1731           \csname##1\expandafter\expandafter\expandafter\endcsname
1732         \fi
1733       \fi
1734     }%
1735   }%
1736   \expandafter\x\csname <def>-command\expandafter\endcsname
1737     \csname <let>-command\endcsname
1738   \def\HyPsd@LetCommand#1{%
1739     \expandafter\expandafter\expandafter\HyPsd@@LetCommand
1740     \expandafter\expandafter\expandafter{%
1741       \expandafter\@gobble\string#1\@empty
1742     }%
1743   }
```

### 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).

```

1744 \def\HyPsd@ifnextchar#1{%
1745   \pdfstringdefWarn#1%
1746   \expandafter\@gobbletwo\@gobble
1747 }

```

#### 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`.

```

1748 \def\HyPsd@protected@testopt#1{%
1749   \pdfstringdefWarn#1%
1750   \@gobbletwo
1751 }

```

## 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:

```

1752 \def\HyPsd@Warning#1{%
1753   \begingroup
1754   \let\space\ltx@space
1755   \Hy@Warning{#1}%
1756   \endgroup
1757 }

```

### 6.6.2 Protecting spaces

```

1758 \RequirePackage{etexcmds}[2007/09/09]
1759 \ifetex@unexpanded
1760   \expandafter\@secondoftwo
1761 \else
1762   \expandafter\@firstoftwo
1763 \fi
1764 {%

```

`\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`.

```

1765   \def\HyPsd@ProtectSpaces#1{%
1766     \iftrue
1767       \expandafter\HyPsd@@ProtectSpacesFi
1768       \expandafter|\expandafter\@empty#1| \HyPsd@End#1%
1769     \fi
1770   }%

```

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

```

1771   \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@End#3\fi{%

```

```

1772 \fi
1773 \ifx\scrollmode#2\scrollmode
1774 \HyPsd@RemoveMask#1\HyPsd@End#3%
1775 \else
1776 \gdef#3{#1\HyPsd@UnexpandableSpace#2}%
1777 \expandafter\HyPsd@@ProtectSpacesFi#3\HyPsd@End#3%
1778 \fi
1779 }%

```

### 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.

```

1780 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1781 \toks@{\expandafter{#1}}%
1782 \xdef#2{\the\toks@}%
1783 }%

1784 }{%
1785 \let\HyPsd@fi\fi
1786 \def\HyPsd@ProtectSpaces#1{%
1787 \xdef#1{%
1788 \iftrue
1789 \expandafter\HyPsd@@ProtectSpacesFi
1790 \expandafter|\expandafter\@empty#1| %
1791 \HyPsd@fi
1792 }%
1793 \expandafter\HyPsd@RemoveMask#1\HyPsd@End#1%
1794 }%
1795 \def\HyPsd@@ProtectSpacesFi#1 #2\HyPsd@fi{%
1796 \fi
1797 \etex@unexpanded{#1}%
1798 \ifx\scrollmode#2\scrollmode
1799 \else
1800 \HyPsd@@ProtectSpacesFi\HyPsd@UnexpandableSpace#2%
1801 \HyPsd@fi
1802 }%
1803 \def\HyPsd@RemoveMask|#1|\HyPsd@End#2{%
1804 \xdef#2{\etex@unexpanded\expandafter{#1}}%
1805 }%
1806 }

```

### 6.6.3 Remove grouping braces

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

```

1807 \def\HyPsd@RemoveBraces#1{%
1808 \ifx\scrollmode#1\scrollmode
1809 \else
1810 \HyPsd@@RemoveBracesFi#1\HyPsd@End{#1}%
1811 \fi
1812 }

```

`\HyPsd@@RemoveBraces` `\HyPsd@@RemoveBraces` is called with the expanded string, the end marked by `\HyPsd@End`, the expanded string again, but enclosed in braces and the string command. The first expanded string is scanned by the parameter text `#1#2`. By

a comparison with the original form in `#3` we can decide whether `#1` is a single token or a group. To avoid the case that `#2` is a group, the string is extended by a `|` before.

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

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

```

1813 \def\HyPsd@@RemoveBracesFi#1#2\HyPsd@End#3\fi{%
1814   \fi
1815   \def\Hy@temp@A{#1#2}%
1816   \def\Hy@temp@B{#3}%
1817   \ifx\Hy@temp@A\Hy@temp@B
1818     \expandafter\def\expandafter\HyPsd@String\expandafter{%
1819       \HyPsd@String#1%
1820     }%
1821     \ifx\scrollmode#2\scrollmode
1822     \else
1823       \Hy@ReturnAfterFiFiEnd{%
1824         \HyPsd@RemoveBraces{#2}%
1825       }%
1826     \fi
1827   \else
1828     \def\Hy@temp@A{#1}%
1829     \HyPsd@AppendItalcrr\HyPsd@String
1830     \ifx\Hy@temp@A\@empty
1831       \Hy@ReturnAfterElseFiFiEnd{%
1832         \HyPsd@RemoveBraces{#2}%
1833       }%
1834     \else
1835       \HyPsd@ProtectSpaces\Hy@temp@A
1836       \HyPsd@AppendItalcrr\Hy@temp@A
1837       \Hy@ReturnAfterFiFiEnd{%
1838         \expandafter\HyPsd@RemoveBraces\expandafter
1839           {\Hy@temp@A#2}%
1840       }%
1841     \fi
1842   \fi
1843   \Hy@ReturnEnd
1844 }
```

`\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`.

```

1845 \def\HyPsd@AppendItalcrr#1{%
1846   \expandafter\HyPsd@@AppendItalcrr\expandafter{\/#1%
1847 }
1848 \def\HyPsd@@AppendItalcrr#1#2{%
1849   \expandafter\def\expandafter#2\expandafter{#2#1}%
1850 }
```

#### 6.6.4 Catcode check

##### 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`).

```

1851 \def\HyPsd@CheckCatcodes#1#2\HyPsd@End{%
1852   \global\let\HyPsd@Rest\relax
1853   \ifcat\relax\noexpand#1\relax
1854     \ifx#1\protect
1855       \else
1856         \ifx#1\penalty
1857           \setbox\z@=\hbox{%
1858             \afterassignment\HyPsd@AfterCountRemove
1859             \count@=#2\HyPsd@End
1860           }%
1861         \else
1862           \ifx#1\kern
1863             \setbox\z@=\hbox{%
1864               \afterassignment\HyPsd@AfterDimenRemove
1865               \dimen@=#2\HyPsd@End
1866             }%
1867           \else
1868             \ifx#1\hskip
1869               \setbox\z@=\hbox{%
1870                 \afterassignment\HyPsd@AfterSkipRemove
1871                 \skip@=#2\HyPsd@End
1872               }%
1873             \else
1874               \HyPsd@CatcodeWarning{#1}%
1875             \fi
1876           \fi
1877         \fi
1878       \fi
1879     \else
1880       \ifcat#1A% letter
1881         \expandafter\def\expandafter\HyPsd@String\expandafter{%
1882           \HyPsd@String#1%
1883         }%
1884       \else
1885         \ifcat#1 % SPACE
1886           \expandafter\def\expandafter\HyPsd@String\expandafter{%
1887             \HyPsd@String\HyPsd@SPACEOPTI
1888           }%
1889         \else
1890           \ifcat$#1%
1891             \HyPsd@CatcodeWarning{math shift}%
1892           \else
1893             \ifcat&#1%
1894               \HyPsd@CatcodeWarning{alignment tab}%
1895             \else
1896               \ifcat^#1%
1897                 \HyPsd@CatcodeWarning{superscript}%
1898               \else
1899                 \ifcat_#1%
1900                   \HyPsd@CatcodeWarning{subscript}%
1901                 \else

```



```

1902         \expandafter\def\expandafter\HyPsd@String\expandafter{%
1903         \HyPsd@String#1%
1904         }%
1905     \fi
1906 \fi
1907 \fi
1908 \fi
1909 \fi
1910 \fi
1911 \fi
1912 \ifx\HyPsd@Rest\relax
1913 \ifx\scrollmode#2\scrollmode
1914 \else
1915 \Hy@ReturnAfterFiFiEnd{%
1916 \HyPsd@CheckCatcodes#2\HyPsd@end
1917 }%
1918 \fi
1919 \else
1920 \ifx\HyPsd@Rest\@empty
1921 \else
1922 \Hy@ReturnAfterFiFiEnd{%
1923 \expandafter\HyPsd@CheckCatcodes\HyPsd@Rest\HyPsd@end
1924 }%
1925 \fi
1926 \fi
1927 \Hy@ReturnEnd
1928 }

```

### Remove counts, dimens, skips.

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

```

1929 \def\HyPsd@AfterCountRemove#1\HyPsd@end{%
1930 \gdef\HyPsd@Rest{#1}%
1931 }

```

`\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.

```

1932 \def\HyPsd@AfterDimenRemove#1\HyPsd@end{%
1933 \ifdim\ifx\HyPsd@String\@empty\z@\else\dimen@>1ex %
1934 \HyPsd@ReplaceSpaceWarning{\string\kern\space\the\dimen@}%
1935 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1936 \else
1937 \ifdim\dimen@=\z@
1938 \else
1939 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\dimen@}%
1940 \fi
1941 \gdef\HyPsd@Rest{#1}%
1942 \fi
1943 }

```

`\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).

```

1944 \def\HyPsd@AfterSkipRemove#1\HyPsd@end{%
1945 \ifdim\ifx\HyPsd@String\@empty\z@\else\skip@>1ex %
1946 \HyPsd@ReplaceSpaceWarning{\string\hskip\space\the\skip@}%

```

```

1947 \gdef\HyPsd@Rest{\HyPsd@UnexpandableSpace #1}%
1948 \else
1949 \ifdim\skip@=\z@
1950 \else
1951 \HyPsd@RemoveSpaceWarning{\string\kern\space\the\skip@}%
1952 \fi
1953 \gdef\HyPsd@Rest{#1}%
1954 \fi
1955 }

```

### Catcode warnings.

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

```

1956 \def\HyPsd@CatcodeWarning#1{%
1957 \HyPsd@Warning{%
1958 Token not allowed in a PDF string (%)
1959 \ifHy@unicode
1960 Unicode%
1961 \else
1962 PDFDocEncoding%
1963 \fi
1964 }:%
1965 \MessageBreak removing '\HyPsd@RemoveCmdPrefix#1'%
1966 }%
1967 }
1968 \begingroup
1969 \catcode'\|=0 %
1970 \catcode'\|=12 %
1971 \gdef\HyPsd@RemoveCmdPrefix#1{%
1972 |expandafter\HyPsd@@RemoveCmdPrefix
1973 |string#1|@empty\<>-|@empty|@empty
1974 }%
1975 \gdef\HyPsd@@RemoveCmdPrefix#1\<>-#2|@empty#3|@empty{#1#2}%
1976 |endgroup

```

\HyPsd@RemoveSpaceWarning

```

1977 \def\HyPsd@RemoveSpaceWarning#1{%
1978 \HyPsd@Warning{%
1979 Token not allowed in a PDF string (%)
1980 \ifHy@unicode
1981 Unicode%
1982 \else
1983 PDFDocEncoding%
1984 \fi
1985 }:%
1986 \MessageBreak #1\MessageBreak
1987 removed%
1988 }%
1989 }

```

\HyPsd@ReplaceSpaceWarning

```

1990 \def\HyPsd@ReplaceSpaceWarning#1{%
1991 \HyPsd@Warning{%
1992 Token not allowed in a PDF string (%)
1993 \ifHy@unicode
1994 Unicode%
1995 \else

```

```

1996     PDFDocEncoding%
1997     \fi
1998     ):%
1999     \MessageBreak #1\MessageBreak
2000     replaced by space%
2001     }%
2002 }

```

### 6.6.5 Check for wrong glyphs

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

```

2003 \def\HyPsd@GlyphProcess#1\relax#2\@empty{%
2004   \expandafter\def\expandafter\HyPsd@String\expandafter{%
2005     \HyPsd@String#1%
2006   }%
2007   \ifx\#2\%
2008   \else
2009     \ltx@ReturnAfterFi{%
2010       \HyPsd@GlyphProcessWarning#2\@empty
2011     }%
2012   \fi
2013 }
2014 \def\HyPsd@GlyphProcessWarning#1>#2\@empty{%
2015   \HyPsd@@@GlyphProcessWarning#1++>%
2016   \HyPsd@GlyphProcess#2\@empty
2017 }
2018 \def\HyPsd@@@GlyphProcessWarning#1+#2+#3>{%
2019   \ifx\#2\%
2020     \HyPsd@Warning{%
2021       Glyph not defined in %
2022       P\ifHy@unicode U\else D1\fi\space encoding,\MessageBreak
2023       removing '@backslashchar#1'%
2024     }%
2025   \else
2026     \HyPsd@Warning{%
2027       Composite letter '@backslashchar#1+#2'\MessageBreak
2028       not defined in P\ifHy@unicode U\else D1\fi\space encoding,%
2029       \MessageBreak
2030       removing '@backslashchar#1'%
2031     }%
2032   \fi
2033 }

```

### 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`.

```

2034 \def\HyPsd@spaceopti#1{ % first space
2035   \ifx\HyPsd@spaceopti#1%
2036     \040%
2037   \else
2038     #1%
2039   \fi
2040 }%

```

### 6.6.6 Replacing tokens

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

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

`#3` Command with the string.

```
2041 \def\HyPsd@Subst#1#2#3{%
2042   \def\HyPsd@@ReplaceFi##1#1##2\END\fi{%
2043     \fi
2044     ##1%
2045     \ifx\scrollmode##2\scrollmode
2046     \else
2047       #2%
2048       \HyPsd@@ReplaceFi##2\END
2049     \fi
2050   }%
2051   \xdef#3{%
2052     \iftrue
2053       \expandafter\HyPsd@@ReplaceFi#3#1\END
2054     \fi
2055   }%
2056 }
```

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

```
2057 \def\HyPsd@StringSubst#1{%
2058   \expandafter\HyPsd@Subst\expandafter{\string#1}%
2059 }
```

`\HyPsd@EscapeTeX`

```
2060 \begingroup
2061   \lccode'\!='\%%
2062   \lccode'\|='\%%
2063   \lccode'\(='\{%
2064   \lccode'\)='\}%
2065   \lccode'0=\ltx@zero
2066   \lccode'1=\ltx@zero
2067   \lccode'3=\ltx@zero
2068   \lccode'4=\ltx@zero
2069   \lccode'5=\ltx@zero
2070   \lccode'7=\ltx@zero
2071 \lowercase{\endgroup
2072   \def\HyPsd@EscapeTeX#1{%
2073     \HyPsd@Subst!{|045}#1%
2074     \HyPsd@Subst({|173}#1%
2075     \HyPsd@Subst){|175}#1%
2076   }%
2077 }
```

### 6.6.7 Support for package `xspace`

`\HyPsd@doxspace` `\xspace` does not work, because it uses a `\futurelet` that cannot be executed in  $\text{\TeX}$ '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.

```

2078 \def\HyPsd@doxspace#1{%
2079   \ifx#1\relax\else
2080   \ifx#1.\else
2081   \ifx#1:\else
2082   \ifx#1,\else
2083   \ifx#1;\else
2084   \ifx#1!\else
2085   \ifx#1?\else
2086   \ifx#1/\else
2087   \ifx#1-\else
2088   \ifx#1'\else
2089   \HyPsd@SPACEOPTI
2090   \fi
2091   \fi
2092   \fi
2093   \fi
2094   \fi
2095   \fi
2096   \fi
2097   \fi
2098   \fi
2099   \fi
2100   #1%
2101 }%

```

### 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.

```

2102 \begingroup
2103   \catcode'\|=0 %
2104   \catcode'\|=12 %

```

\HyPsd@ConvertToUnicode

```

2105 |gdef|HyPsd@ConvertToUnicode#1{%
2106   |xdef#1{%
2107     |expandafter|HyPsd@DoConvert#1|@empty|@empty|@empty
2108   }%
2109   |ifx#1|@empty
2110   |else
2111     |xdef#1{%
2112       \376\377%
2113       #1%
2114     }%
2115   |fi
2116 }%

```

\HyPsd@DoConvert

```

2117 |gdef|HyPsd@DoConvert#1{%
2118   |ifx#1|@empty
2119   |else
2120     |ltx@ReturnAfterFi{%
2121       |ifx#1\%%
2122       \%%
2123       |expandafter|HyPsd@DoEscape
2124     |else

```

```

2125     |HyPsd@Char{#1}%
2126     |expandafter|HyPsd@DoConvert
2127     |fi
2128   }%
2129   |fi
2130 }%

```

\HyPsd@DoEscape

```

2131 |gdef|HyPsd@DoEscape#1{%
2132   |ifx#19%
2133   |expandafter|HyPsd@GetTwoBytes
2134   |else
2135   |ltx@ReturnAfterFi{%
2136   |ifx#18%
2137   00%
2138   |expandafter|HyPsd@GetTwoBytes
2139   |else
2140   #1%
2141   |expandafter|HyPsd@GetOneByte
2142   |fi
2143   }%
2144   |fi
2145 }%

```

\HyPsd@GetTwoBytes

```

2146 |gdef|HyPsd@GetTwoBytes#1\#2#3#4{%
2147   #1\#2#3#4%
2148   |HyPsd@DoConvert
2149   }%

```

\HyPsd@GetOneByte

```

2150 |gdef|HyPsd@GetOneByte#1#2{%
2151   #1#2%
2152   |HyPsd@DoConvert
2153   }%
2154 |endgroup

```

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

```

2155 \def\HyPsd@GetNextTwoTokens#1#2#3\END#4{%
2156   \xdef#4{#4#1#2}%
2157   \HyPsd@@ConvertToUnicode#3\END#4%
2158 }

```

\HyPsd@Char

```

2159 \begingroup
2160   \catcode0=9 %
2161   \catcode'\^=7 %
2162   \catcode'\^^=12 %
2163   \def\x{^^^^0000}%
2164   \expandafter\endgroup
2165   \ifx\x\@empty
2166     \def\HyPsd@Char#1{%
2167       \ifnum'#1<128 %
2168         \@backslashchar 000#1%
2169       \else
2170         \ifnum'#1<65536 %

```

```

2171 \expandafter\HyPsd@CharTwoByte\number'#1!%
2172 \else
2173 \expandafter\expandafter\expandafter\HyPsd@CharSurrogate
2174 \intcalcSub{'#1}{65536}!%
2175 \fi
2176 \fi
2177 }%
2178 \def\HyPsd@CharTwoByte#1!{%
2179 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2180 \IntCalcDiv#1!256!!%
2181 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2182 \IntCalcMod#1!256!!%
2183 }%
2184 \def\HyPsd@CharOctByte#1!{%
2185 \@backslashchar
2186 \IntCalcDiv#1!64!%
2187 \intcalcDiv{\IntCalcMod#1!64!}{8}%
2188 \IntCalcMod#1!8!%
2189 }%
2190 \def\HyPsd@CharSurrogate#1!{%
2191 \@backslashchar 33%
2192 \IntCalcDiv#1!262144!%
2193 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2194 \intcalcDiv{\IntCalcMod#1!262144!}{1024}!%
2195 \@backslashchar 33%
2196 \expandafter\expandafter\expandafter\IntCalcAdd
2197 \intcalcDiv{\IntCalcMod#1!1024!}{256}!4!%
2198 \expandafter\expandafter\expandafter\HyPsd@CharOctByte
2199 \IntCalcMod#1!256!!%
2200 }%
2201 \else
2202 \def\HyPsd@Char#1{%
2203 \@backslashchar 000#1%
2204 }%
2205 \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`

```

2206 \begingroup\expandafter\expandafter\expandafter\endgroup
2207 \expandafter\ifx\csname numexpr\endcsname\relax
2208 \let\HyPsd@UTFviii\relax
2209 \else
2210 \begingroup
2211 \lccode'\~='^^f4\relax
2212 \lowercase{\endgroup
2213 \def\HyPsd@UTFviii{%

```

```

2214 \let\UTFviii@two@octets\HyPsd@UTFviii@two
2215 \let\UTFviii@three@octets\HyPsd@UTFviii@three
2216 \let\UTFviii@four@octets\HyPsd@UTFviii@four
2217 \ifx~\HyPsd@UTFviii@ccxliv@undef
2218 \let~\HyPsd@UTFviii@ccxliv@def
2219 \fi
2220 \let\unichar\HyPsd@unichar
2221 }%
2222 }%
2223 \def\HyPsd@UTFviii@ccxliv@undef{\@inpenc@undefined@{utf8}}}%
2224 \edef\HyPsd@UTFviii@ccxliv@def{%
2225 \noexpand\UTFviii@four@octets\string~^f4%
2226 }%

```

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.

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

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

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

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

$$(5)$$

```

2227 \def\HyPsd@UTFviii@two#1#2{%
2228 \expandafter\HyPsd@UTFviii@@two
2229 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter| %
2230 \number'#1\expandafter| %
2231 \number\dimexpr.125\dimexpr'#2sp\expandafter\relax\expandafter| %
2232 \number'#2 \@nil
2233 }%
2234 \def\HyPsd@UTFviii@@two#1|#2|#3|#4\@nil{%
2235 \expandafter\8%
2236 \number\numexpr #1-48\expandafter\relax
2237 \csname\number\numexpr #2-4*#1\relax\expandafter\endcsname
2238 \number\numexpr #3-8*%
2239 \number\dimexpr.125\dimexpr'#3sp\relax\relax\expandafter\relax
2240 \number\numexpr #4-8*#3\relax
2241 }%

```

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

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

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

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

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

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

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

$$(12)$$

```

2242 \def\HyPsd@UTFviii@three#1#2#3{%
2243 \expandafter\HyPsd@UTFviii@@three
2244 \number\dimexpr.25\dimexpr'#1sp\expandafter\relax\expandafter| %
2245 \number'#1\expandafter| %

```



```

2246 \number\ifnum\numexpr'#2-128\relax <32 0\else 1\fi\expandafter| %
2247 \number\dimexpr.25\dimexpr'#2sp\expandafter\relax\expandafter| %
2248 \number'#2\expandafter| %
2249 \number\dimexpr.125\dimexpr'#3sp\expandafter\relax\expandafter| %
2250 \number'#3 \@nil
2251 }%
2252 \def\HyPsd@UTFviii@@three#1|#2|#3|#4|#5|#6|#7\@nil{%
2253 \expandafter\9%
2254 \number\numexpr #1-56\expandafter\relax
2255 \number\numexpr 2*(#2-4*#1)+#3\expandafter\relax
2256 \number\numexpr #4 - 32 -\ifcase#3 0\else 8\fi\expandafter\relax
2257 \csname\number\numexpr #5-4*#4\relax\expandafter\endcsname
2258 \number\numexpr #6-16\expandafter\relax
2259 \number\numexpr #7-8*#6\relax
2260 }%

```

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

```

```

2261 \def\HyPsd@UTFviii@four#1#2{%
2262 \expandafter\HyPsd@@UTFviii@four\number
2263 \numexpr-1+('#1-240)*4+\dimexpr.0625\dimexpr'#2sp-128sp%
2264 \expandafter|\number
2265 \numexpr'#2-16*\dimexpr.0625\dimexpr'#2sp| %
2266 }%
2267 \def\HyPsd@@UTFviii@four#1|#2|#3{%
2268 \933\number\dimexpr.25\dimexpr#1sp\relax\relax
2269 \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
2270 \ifodd#2 %
2271 \number\numexpr(#2-1)/2\relax
2272 \else
2273 \number\numexpr#2/2\relax
2274 \fi
2275 \number\numexpr\ifodd#2 4+\fi
2276 \dimexpr.0625\dimexpr'#3sp-128sp\relax\relax\relax
2277 \933%
2278 \expandafter\HyPsd@@@UTFviii@four\number
2279 \numexpr'#3-16*\dimexpr.0625\dimexpr'#3sp| %
2280 }%
2281 \def\HyPsd@@@UTFviii@four#1|#2{%
2282 \number\numexpr4+\dimexpr.25\dimexpr#1sp\relax\relax\relax
2283 \csname\number\numexpr#1-4*\dimexpr.25\dimexpr#1sp\endcsname
2284 \number\dimexpr.125\dimexpr'#2sp-128sp\relax\relax
2285 \number\numexpr'#2-8*\dimexpr.125\dimexpr'#2sp\relax\relax\relax
2286 }%

```

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

```

2287 \def\HyPsd@unichar#1{%
2288 \ifHy@unicode
2289 \ifnum#1>"10FFFF %
2290 \HyPsd@UnicodeReplacementCharacter % illegal
2291 \else
2292 \ifnum#1>"FFFF %

```

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

```

2293      \expandafter\HyPsd@unichar\expandafter{%
2294      \number\numexpr 55296+%
2295      \dimexpr.0009765625\dimexpr\number#1sp-\p@
2296      \relax\relax\relax
2297      }%

```

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

```

2298      \expandafter\HyPsd@unichar\expandafter{%
2299      \number\numexpr#1-9216%
2300      -1024*\dimexpr.0009765625\dimexpr\number#1sp-\p@
2301      \relax\relax\relax
2302      }%
2303      \else
2304      \ifnum#1>"7FF %
2305      \9%
2306      \expandafter\HyPsd@unichar@first@byte\expandafter{%
2307      \number
2308      \dimexpr.00390625\dimexpr\number#1sp\relax\relax
2309      }%
2310      \else
2311      \8%
2312      \number\dimexpr.00390625\dimexpr\number#1sp\relax\relax
2313      \fi
2314      \expandafter\HyPsd@unichar@second@byte\expandafter{%
2315      \number
2316      \numexpr#1-256*\number
2317      \dimexpr.00390625\dimexpr\number#1sp\relax\relax\relax
2318      }%
2319      \fi
2320      \fi
2321      \else
2322      .% unsupported (Unicode -> PDF Doc Encoding)
2323      \fi
2324      }%
2325      \def\HyPsd@UnicodeReplacementCharacter{\9377\375}%
2326      \def\HyPsd@unichar@first@byte#1{%
2327      \number\dimexpr.015625\dimexpr#1sp\relax\relax
2328      \expandafter\HyPsd@unichar@octtwo\expandafter{%
2329      \number
2330      \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2331      \relax\relax\relax
2332      }%
2333      }%
2334      \def\HyPsd@unichar@second@byte#1{%
2335      \csname\number\dimexpr.015625\dimexpr#1sp\relax\relax\endcsname
2336      \expandafter\HyPsd@unichar@octtwo\expandafter{%
2337      \number
2338      \numexpr#1-64*\number\dimexpr.015625\dimexpr#1sp%
2339      \relax\relax\relax
2340      }%
2341      }%
2342      \def\HyPsd@unichar@octtwo#1{%
2343      \number\dimexpr.125\dimexpr#1sp\relax\relax
2344      \number\numexpr#1-8*\number\dimexpr.125\dimexpr#1sp%
2345      \relax\relax\relax
2346      }%

```

2347 \fi

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

```
2348 \def\HyPsd@utf@viii@undeferr#1#2#3#4#5#6{%
2349   \ifx\@gobble#1%
2350   \else
2351     [Please insert \textbackslash PrerenderUnicode%
2352     \textbraceleft#1\textbraceright\space
2353     into preamble]%
2354   \fi
2355 }%
```

## 7 Support of other packages

### 7.1 Class memoir

```
2356 \@ifclassloaded{memoir}{%
2357   \Hy@AtEndOfPackage{\RequirePackage{memhfixc}}}%
2358 }
```

### 7.2 Package subfigure

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

```
2359 \@ifpackageloaded{subfigure}{%
2360   \ltx@ifundefined{sub@label}{%
2361     \Hy@hypertexnamesfalse
2362   }{%
2363     \renewcommand*{\sub@label}[1]{%
2364       \@bsphack
2365       \subfig@oldlabel{#1}%
2366       \if@filesw
2367         \begingroup
2368           \edef\@currentlabstr{%
2369             \expandafter\strip@prefix\meaning\@currentlabelname
2370           }%
2371           \protected@write\@auxout{}{%
2372             \string\newlabel{sub@#1}{%
2373               {\@nameuse{\@thesub\@capttype}}%
2374               {\thepage}%
2375             }%
2376             \expandafter\strip@period\@currentlabstr
2377             \relax.\relax\@@@%
2378           }%
2379           {\@currentHref}%
2380           {}%
2381         }%
2382       }%
2383     \endgroup
2384   \fi
2385   \@esphack
2386 }%
2387 \@ifpackagelater{subfigure}{2002/03/26}{%
2388   \providecommand*{\toclevel@subfigure}{1}%
2389   \providecommand*{\toclevel@subtable}{1}%
2390 }%
2391 }%
2392 }
```

## 7.3 Package xr and xr-hyper

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

```
2393 \ltx@ifundefined{XR@addURL}{%
2394 }{%
```

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.

```
2395 \def\xR@addURL#1{\xR@dURL#1{}{}{}}\}%
2396 \def\xR@dURL#1#2#3#4#5\{%
2397   {#1}{#2}%
2398   \if!#4!%
2399   \else
2400     {#3}{#4}{\xR@URL}%
2401   \fi
2402 }%
2403 }
```

```
2404 \def\Hy@true{true}
2405 \def\Hy@false{false}
```

Providing dummy definitions.

```
2406 \let\literalps@out\@gobble
2407 \newcommand\pdfbookmark[3]{}{}
2408 \def\Acrobatmenu#1#2{\leavevmode#2}
2409 \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

```
2410 \let\HyperRaiseLinkHook\@empty
2411 \def\HyperRaiseLinkDefault{\baselineskip}
```

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

```
2412 \newcount\Hy@SavedSpaceFactor
2413 \def\Hy@SaveSpaceFactor{%
2414   \global\Hy@SavedSpaceFactor=\ifhmode\spacefactor\else\z@\fi
2415 }
2416 \def\Hy@RestoreSpaceFactor{%
2417   \relax
2418   \ifhmode
2419     \ifnum\Hy@SavedSpaceFactor>\z@
2420       \spacefactor=\Hy@SavedSpaceFactor
2421     \fi
2422   \fi
```

```

2423 }
2424 \def\Hy@SaveSavedSpaceFactor{%
2425 \edef\Hy@RestoreSavedSpaceFactor{%
2426 \global\Hy@SavedSpaceFactor=\the\Hy@SavedSpaceFactor\relax
2427 }%
2428 }
2429 \def\Hy@raisedlink#1{%
2430 \ifvmode
2431 #1%
2432 \else
2433 \Hy@SaveSpaceFactor
2434 \penalty\@M
2435 \smash{%
2436 \begingroup
2437 \let\HyperRaiseLinkLength\@tempdima
2438 \setlength\HyperRaiseLinkLength\HyperRaiseLinkDefault
2439 \HyperRaiseLinkHook
2440 \expandafter\endgroup
2441 \expandafter\raise\the\HyperRaiseLinkLength\hbox{%
2442 \Hy@RestoreSpaceFactor
2443 #1%
2444 \Hy@SaveSpaceFactor
2445 }%
2446 }%
2447 \Hy@RestoreSpaceFactor
2448 \fi
2449 }

```

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

```

2450 \def\Hy@SaveLastskip{%
2451 \let\Hy@RestoreLastskip\relax
2452 \ifvmode
2453 \ifdim\lastskip=\z@
2454 \let\Hy@RestoreLastskip\nobreak
2455 \else
2456 \begingroup
2457 \skip@=-\lastskip
2458 \edef\x{%
2459 \endgroup
2460 \def\noexpand\Hy@RestoreLastskip{%
2461 \noexpand\ifvmode
2462 \noexpand\nobreak
2463 \vskip\the\skip@
2464 \vskip\the\lastskip\relax
2465 \noexpand\fi
2466 }%
2467 }%
2468 \x
2469 \fi
2470 \else
2471 \ifhmode
2472 \ifdim\lastskip=\z@
2473 \let\Hy@RestoreLastskip\nobreak
2474 \else
2475 \begingroup
2476 \skip@=-\lastskip
2477 \edef\x{%

```

```

2478         \endgroup
2479         \def\noexpand\Hy@RestoreLastskip{%
2480             \noexpand\ifhmode
2481                 \noexpand\nobreak
2482                 \hskip\the\skip@
2483                 \hskip\the\lastskip\relax
2484             \noexpand\fi
2485         }%
2486     }%
2487     \x
2488     \fi
2489     \fi
2490     \fi
2491 }%

```

## 9 Options

```

2492 \SetupKeyvalOptions{%
2493     family=Hyp,%
2494     prefix=HyOpt%
2495 }

```

### 9.1 Help macros

`\IfHyperBooleanExists`

```

2496 \def\IfHyperBooleanExists#1{%
2497     \ltx@ifundefined{Hy@#1false}\ltx@secondoftwo{%
2498         \ltx@ifundefined{KV@Hyp@#1@default}\ltx@secondoftwo\ltx@firstoftwo
2499     }%
2500 }

2501 \@namedef{KV@Hyp@stoppeearly@default}{ }

```

`\IfHyperBoolean`

```

2502 \def\IfHyperBoolean#1{%
2503     \IfHyperBooleanExists{#1}{%
2504         \csname ifHy@#1\endcsname
2505         \expandafter\ltx@firstoftwo
2506     \else
2507         \expandafter\ltx@secondoftwo
2508     \fi
2509 } \ltx@secondoftwo
2510 }

```

`\Hy@boolkey`

```

2511 \def\Hy@boolkey#1#2{%
2512     \edef\Hy@tempa{#2}%
2513     \lowercase\expandafter{%
2514         \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
2515     }%
2516     \ifx\Hy@tempa\@empty
2517         \let\Hy@tempa\Hy@true
2518     \fi
2519     \ifx\Hy@tempa\Hy@true
2520     \else
2521         \ifx\Hy@tempa\Hy@false
2522         \else

```

```

2523     \let\Hy@tempa\relax
2524   \fi
2525 \fi
2526 \ifx\Hy@tempa\relax
2527   \Hy@WarnOptionValue{#2}{#1}{‘true’ or ‘false’}%
2528 \else
2529   \Hy@Info{Option ‘#1’ set ‘\Hy@tempa’}%
2530   \csname Hy@#1\Hy@tempa\endcsname
2531 \fi
2532 }

```

\Hy@WarnOptionValue

```

2533 \def\Hy@WarnOptionValue#1#2#3{%
2534   \Hy@Warning{%
2535     Unexpected value ‘#1’\MessageBreak
2536     of option ‘#2’ instead of\MessageBreak
2537     #3%
2538   }%
2539 }

```

\Hy@DisableOption

```

2540 \def\Hy@DisableOption#1{%
2541   \ltx@ifundefined{KV@Hyp@#1@default}{%
2542     \define@key{Hyp}{#1}%
2543   }{%
2544     \define@key{Hyp}{#1}[]%
2545   }%
2546   {\Hy@WarnOptionDisabled{#1}}%
2547 }

```

\Hy@WarnOptionDisabled

```

2548 \def\Hy@WarnOptionDisabled#1{%
2549   \Hy@Warning{%
2550     Option ‘#1’ has already been used,\MessageBreak
2551     setting the option has no effect%
2552   }%
2553 }

```

\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.

```

2554 \def\Hy@CheckOptionValue#1#2#3{%
2555   \begingroup
2556   \edef\x{#1}%
2557   \@onelevel@sanitize\x
2558   \let\y=y%
2559   \def\do##1##2{%
2560     \def\z{##1}%
2561     \@onelevel@sanitize\z
2562     \ifx\x\z
2563       \let\y=n%
2564     \let\do\@gobbletwo
2565   \fi
2566   }%
2567   #3%
2568   \ifx\y y%
2569     \def\do##1##2{%

```

```

2570      * '#1'%
2571      \ifx\##2\\\else\space(##2)\fi
2572      \MessageBreak
2573    }%
2574    \Hy@Warning{%
2575      Values of option '#2':\MessageBreak
2576      #3%
2577      * An empty value disables the option.\MessageBreak
2578      Unknown value '\x'%
2579    }%
2580    \fi
2581  \endgroup
2582 }

```

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

```

2583 \def\Hy@DefNameKey#1{%
2584   \expandafter\Hy@@DefNameKey\csname @#1\endcsname{#1}%
2585 }

```

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

```

2586 \def\Hy@@DefNameKey#1#2#3{%
2587   \define@key{Hyp}{#2}{%
2588     \edef#1{##1}%
2589     \ifx#1\@empty
2590     \else
2591       \Hy@CheckOptionValue{##1}{#2}{#3}%
2592     \fi
2593   }%
2594   \let#1\@empty
2595 }

```

`\Hy@UseNameKey`

```

2596 \def\Hy@UseNameKey#1#2{%
2597   \ifx#2\@empty
2598   \else
2599     /#1/#2%
2600   \fi
2601 }

```

## 9.2 Defining the options

```

2602 \define@key{Hyp}{implicit}[true]{%
2603   \Hy@boolkey{implicit}{#1}%
2604 }
2605 \define@key{Hyp}{draft}[true]{%
2606   \Hy@boolkey{draft}{#1}%
2607 }
2608 \define@key{Hyp}{final}[true]{%
2609   \Hy@boolkey{final}{#1}%
2610 }
2611 \let\KV@Hyp@nolinks\KV@Hyp@draft
2612 \def\Hy@ObsoletePaperOption#1{%

```



```

2613 \Hy@WarningNoLine{%
2614   Option '#1' is no longer used%
2615 }%
2616 \define@key{Hyp}{#1}[true]{}%
2617 }
2618 \def\Hy@temp#1{%
2619   \define@key{Hyp}{#1}[true]{}%
2620   \Hy@ObsoletePaperOption{#1}%
2621 }%
2622 }
2623 \Hy@temp{a4paper}
2624 \Hy@temp{a5paper}
2625 \Hy@temp{b5paper}
2626 \Hy@temp{letterpaper}
2627 \Hy@temp{legalpaper}
2628 \Hy@temp{executivepaper}

2629 \define@key{Hyp}{setpagesize}[true]{}%
2630 \Hy@boolkey{setpagesize}{#1}%
2631 }
2632 \define@key{Hyp}{debug}[true]{}%
2633 \Hy@boolkey{debug}{#1}%
2634 }
2635 \define@key{Hyp}{linktocpage}[true]{}%
2636 \Hy@boolkey{linktocpage}{#1}%
2637 \ifHy@linktocpage
2638   \let\Hy@linktoc\Hy@linktoc@page
2639 \else
2640   \let\Hy@linktoc\Hy@linktoc@section
2641 \fi
2642 }
2643 \chardef\Hy@linktoc@none=0 %
2644 \chardef\Hy@linktoc@section=1 %
2645 \chardef\Hy@linktoc@page=2 %
2646 \chardef\Hy@linktoc@all=3 %
2647 \ifHy@linktocpage
2648   \let\Hy@linktoc\Hy@linktoc@page
2649 \else
2650   \let\Hy@linktoc\Hy@linktoc@section
2651 \fi
2652 \define@key{Hyp}{linktoc}{}%
2653 \@ifundefined{Hy@linktoc@#1}{}%
2654 \Hy@Warning{%
2655   Unexpected value '#1' of\MessageBreak
2656   option 'linktoc' instead of 'none',\MessageBreak
2657   'section', 'page' or 'all'%
2658 }%
2659 }{}%
2660 \expandafter\let\expandafter\Hy@linktoc
2661 \csname Hy@linktoc@#1\endcsname
2662 }%
2663 }
2664 \define@key{Hyp}{extension}{\def\XR@ext{#1}}
2665 \let\XR@ext\relax
2666 \define@key{Hyp}{verbose}[true]{}%
2667 \Hy@boolkey{verbose}{#1}%
2668 }
2669 \define@key{Hyp}{typexml}[true]{}%

```

```

2670 \Hy@boolkey{typexml}{#1}%
2671 }

```

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.

```

2672 \define@key{Hyp}{raiselinks}[true]{%
2673 \Hy@boolkey{raiselinks}{#1}%
2674 }

```

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

```

2675 \def\Hy@setbreaklinks#1{%
2676 \csname breaklinks#1\endcsname
2677 }

2678 \def\Hy@breaklinks@unsupported{%
2679 \ifx\Hy@setbreaklinks\@gobble
2680 \ifHy@breaklinks
2681 \Hy@WarningNoLine{%
2682 You have enabled option 'breaklinks'.\MessageBreak
2683 But driver '\Hy@driver.def' does not support this.\MessageBreak
2684 Expect trouble with the link areas of broken links%
2685 }%
2686 \fi
2687 \fi
2688 }

```

```

2689 \define@key{Hyp}{breaklinks}[true]{%
2690 \Hy@boolkey{breaklinks}{#1}%
2691 \let\Hy@setbreaklinks\@gobble
2692 }

```

```

2693 \define@key{Hyp}{localanchorname}[true]{%
2694 \Hy@boolkey{localanchorname}{#1}%
2695 }

```

Determines whether an automatic anchor is put on each page

```

2696 \define@key{Hyp}{pageanchor}[true]{%
2697 \Hy@boolkey{pageanchor}{#1}%
2698 }

```

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.

```

2699 \define@key{Hyp}{plainpages}[true]{%
2700 \Hy@boolkey{plainpages}{#1}%
2701 }

```

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

```

2702 \define@key{Hyp}{naturalnames}[true]{%
2703 \Hy@boolkey{naturalnames}{#1}%
2704 }

```

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

```

2705 \define@key{Hyp}{hypertextnames}[true]{%
2706 \Hy@boolkey{hypertextnames}{#1}%
2707 }

```

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

```

2708 \define@key{Hyp}{nesting}[true]{%

```

```

2709 \Hy@boolkey{nesting}{#1}%
2710 }
2711 \define@key{Hyp}{unicode}[true]{%
2712 \Hy@boolkey{unicode}{#1}%
2713 \ifHy@unicode
2714 \def\HyPsd@pdfencoding{unicode}%
2715 \HyPsd@LoadUnicode
2716 \else
2717 \def\HyPsd@pdfencoding{pdfdoc}%
2718 \fi
2719 }
2720 \def\HyPsd@LoadUnicode{%
2721 \@ifundefined{T@PU}{%
2722 \input{puenc.def}%
2723 \HyLinguex@Restore
2724 }{}%
2725 \DeclareFontFamily{PU}{pdf}{}%
2726 \DeclareFontShape{PU}{pdf}{m}{n}{ <-> cmr10 }{}%
2727 \DeclareFontSubstitution{PU}{pdf}{m}{n}%
2728 \global\let\HyPsd@LoadUnicode\relax
2729 }
2730 \Hy@AtBeginDocument{%
2731 \ifx\HyPsd@LoadUnicode\relax
2732 \else
2733 \def\HyPsd@LoadUnicode{%
2734 \Hy@Error{%
2735 Unicode support for bookmarks is not available.\MessageBreak
2736 Activate unicode support by using one of the options\MessageBreak
2737 'unicode', 'pdfencoding=unicode', 'pdfencoding=auto'\MessageBreak
2738 in the preamble%
2739 } \@ehc
2740 \global\let\HyPsd@LoadUnicode\relax
2741 \global\Hy@unicodetrue
2742 \global\let\Hy@unicodetrue\Hy@unicodetrue
2743 }%
2744 \fi
2745 }
2746 \define@key{Hyp}{pdfencoding}{%
2747 \edef\HyPsd@temp{#1}%
2748 \ifx\HyPsd@temp\HyPsd@pdfencoding@pdfdoc
2749 \let\HyPsd@pdfencoding\HyPsd@temp
2750 \Hy@unicodetrue
2751 \else
2752 \ifcase\ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
2753 \z@
2754 \else
2755 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
2756 \z@
2757 \else
2758 \@ne
2759 \fi
2760 \fi
2761 \let\HyPsd@pdfencoding\HyPsd@temp
2762 \hypersetup{unicode}%
2763 \ifHy@unicode
2764 \def\HyPsd@pdfencoding{#1}%
2765 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@auto

```

```

2766     \HyPsd@LoadStringEnc
2767   \fi
2768 \else
2769   \Hy@Warning{Cannot switch to unicode bookmarks}%
2770   \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2771 \fi
2772 \else
2773   \@onelevel@sanitize\HyPsd@temp
2774   \Hy@Warning{%
2775     Values of option 'pdfencoding':\MessageBreak
2776     'pdfdoc', 'unicode', 'auto'.\MessageBreak
2777     Ignoring unknown value '\HyPsd@temp'%
2778   }%
2779 \fi
2780 \fi
2781 }
2782 \def\HyPsd@pdfencoding@auto{auto}
2783 \def\HyPsd@pdfencoding@pdfdoc{pdfdoc}
2784 \def\HyPsd@pdfencoding@unicode{unicode}
2785 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@pdfdoc
2786 \def\HyPsd@LoadStringEnc{%
2787   \RequirePackage{stringenc}[2009/12/15]%
2788   \let\HyPsd@LoadStringEnc\relax
2789 }
2790 \Hy@AtBeginDocument{%
2791   \@ifpackageloaded{stringenc}{%
2792     \let\HyPsd@LoadStringEnc\relax
2793   }{%
2794     \def\HyPsd@LoadStringEnc{%
2795       \Hy@WarningNoLine{%
2796         Missing package 'stringenc'. Use 'pdfencoding=auto'\MessageBreak
2797         in the preamble or load the package there%
2798       }%
2799     }%
2800   }%
2801 }
2802 \def\hypersetup{\kvsetkeys{Hyp}}
2803 \newif\ifHy@setpdfversion
2804 \define@key{Hyp}{pdfversion}{%
2805   \@ifundefined{Hy@pdfversion@#1}{%
2806     \PackageWarning{hyperref}{%
2807       Unsupported PDF version '#1'.\MessageBreak
2808       Valid values: 1.2 until 1.9%
2809     }%
2810   }{%
2811     \Hy@setpdfversiontrue
2812     \edef\Hy@pdfversion{\@nameuse{Hy@pdfversion@#1}}%
2813   }%
2814 }
2815 \@namedef{Hy@pdfversion@1.2}{2}%
2816 \@namedef{Hy@pdfversion@1.3}{3}%
2817 \@namedef{Hy@pdfversion@1.4}{4}%
2818 \@namedef{Hy@pdfversion@1.5}{5}%
2819 \@namedef{Hy@pdfversion@1.6}{6}%
2820 \@namedef{Hy@pdfversion@1.7}{7}%
2821 \@namedef{Hy@pdfversion@1.8}{8}%
2822 \@namedef{Hy@pdfversion@1.9}{9}%

```

```
2823 \def\Hy@pdfversion{2}
```

## 10 Options for different drivers

```
2824 \newif\ifHy@DviMode
2825 \let\Hy@DviErrMsg\ltx@empty
2826 \ifpdf
2827   \def\Hy@DviErrMsg{pdfTeX or LuaTeX is running in PDF mode}%
2828 \else
2829   \ifxetex
2830     \def\Hy@DviErrMsg{XeTeX is running}%
2831   \else
2832     \ifvtex
2833       \ifvtexdvi
2834         \Hy@DviModetrue
2835       \else
2836         \def\Hy@DviErrMsg{VTeX is running, but not in DVI mode}%
2837       \fi
2838     \else
2839       \Hy@DviModetrue
2840     \fi
2841   \fi
2842 \fi
2843 \def\HyOpt@CheckDvi#1{%
2844   \ifHy@DviMode
2845     \expandafter\ltx@firstofone
2846   \else
2847     \Hy@Error{%
2848       Wrong DVI mode driver option ‘#1’,\MessageBreak
2849       because \Hy@DviErrMsg
2850     }\@ehc
2851     \expandafter\ltx@gobble
2852   \fi
2853 }

2854 \DeclareVoidOption{tex4ht}{%
2855   \Hy@texhttrue
2856   \kvsetkeys{Hyp}{colorlinks=true}%
2857   \def\BeforeTeXIVht{\RequirePackage{color}}}%
2858 \def\Hy@driver{htex4ht}%
2859 \def\MaybeStopEarly{%
2860   \Hy@Message{Stopped early}%
2861   \Hy@AtBeginDocument{%
2862     \PDF@FinishDoc
2863     \gdef\PDF@FinishDoc{}%
2864   }%
2865   \endinput
2866 }%
2867 }

2868 \DeclareVoidOption{pdftex}{%
2869   \ifpdf
2870     \def\Hy@driver{hpdftex}%
2871   \else
2872     \Hy@Error{%
2873       Wrong driver option ‘pdftex’,\MessageBreak
2874       because pdfTeX in PDF mode is not detected%
2875     }\@ehc
2876   \fi
```

```

2877 }
2878 \DeclareVoidOption{nativepdf}{%
2879   \HyOpt@CheckDvi{nativepdf}{%
2880     \def\Hy@driver{hdvips}%
2881   }%
2882 }
2883 \DeclareVoidOption{dvipdfm}{%
2884   \HyOpt@CheckDvi{dvipdfm}{%
2885     \def\Hy@driver{hdvipdfm}%
2886   }%
2887 }
2888 \DeclareVoidOption{dvipdfmx}{%
2889   \HyOpt@CheckDvi{dvipdfmx}{%
2890     \def\Hy@driver{hdvipdfm}%
2891   }%
2892 }
2893 \define@key{Hyp}{dvipdfmx-outline-open}[true]{%
2894   \expandafter\ifx\csname if#1\expandafter\endcsname
2895     \csname iftrue\endcsname
2896   \chardef\SpecialDvipdfmxOutlineOpen\@ne
2897   \else
2898     \chardef\SpecialDvipdfmxOutlineOpen\z@
2899   \fi
2900 }
2901 \DeclareVoidOption{xetex}{%
2902   \ifxetex
2903     \def\Hy@driver{hxetex}%
2904   \else
2905     \Hy@Error{%
2906       Wrong driver option 'xetex',\MessageBreak
2907       because XeTeX is not detected%
2908     }\@ehc
2909   \fi
2910 }
2911 \DeclareVoidOption{pdfmark}{%
2912   \HyOpt@CheckDvi{pdfmark}{%
2913     \def\Hy@driver{hdvips}%
2914   }%
2915 }
2916 \DeclareVoidOption{dvips}{%
2917   \HyOpt@CheckDvi{dvips}{%
2918     \def\Hy@driver{hdvips}%
2919   }%
2920 }
2921 \DeclareVoidOption{hypertex}{%
2922   \HyOpt@CheckDvi{hypertex}{%
2923     \def\Hy@driver{hypertex}%
2924   }%
2925 }
2926 \let\Hy@MaybeStopNow\relax
2927 \DeclareVoidOption{vtex}{%
2928   \ifvtex
2929     \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2930     \def\Hy@driver{hvtex}%
2931   \else
2932     \ifnum\OpMode=10\relax
2933     \def\Hy@driver{hvtexhtm}%

```

```

2934     \def\MaybeStopEarly{%
2935         \Hy@Message{Stopped early}%
2936         \Hy@AtBeginDocument{%
2937             \PDF@FinishDoc
2938             \gdef\PDF@FinishDoc{}%
2939         }%
2940     \endinput
2941 }%
2942 \else
2943     \Hy@Error{%
2944         Wrong driver option 'vtex',\MessageBreak
2945         because of wrong OpMode (\the\OpMode)%
2946     }\@ehc
2947 \fi
2948 \fi
2949 \else
2950     \Hy@Error{%
2951         Wrong driver option 'vtex',\MessageBreak
2952         because VTeX is not running%
2953     }\@ehc
2954 \fi
2955 }
2956 \DeclareVoidOption{vtexpdfmark}{%
2957     \ifvtex
2958         \ifnum 0\ifnum\OpMode<1 1\fi \ifnum\OpMode>3 1\fi =0 %
2959         \def\Hy@driver{hvtexmrk}%
2960     \else
2961         \Hy@Error{%
2962             Wrong driver option 'vtexpdfmark',\MessageBreak
2963             because of wrong OpMode (\the\OpMode)%
2964         }\@ehc
2965     \fi
2966 \else
2967     \Hy@Error{%
2968         Wrong driver option 'vtexpdfmark',\MessageBreak
2969         because VTeX is not running%
2970     }\@ehc
2971 \fi
2972 }
2973 \DeclareVoidOption{dviwindo}{%
2974     \HyOpt@CheckDvi{dviwindo}{%
2975         \def\Hy@driver{hdviwind}%
2976         \kvsetkeys{Hyp}{colorlinks}%
2977         \PassOptionsToPackage{dviwindo}{color}%
2978     }%
2979 }
2980 \DeclareVoidOption{dvipsone}{%
2981     \HyOpt@CheckDvi{dvipsone}{%
2982         \def\Hy@driver{hdvipson}%
2983     }%
2984 }
2985 \DeclareVoidOption{textures}{%
2986     \HyOpt@CheckDvi{textures}{%
2987         \def\Hy@driver{htexture}%
2988     }%
2989 }
2990 \DeclareVoidOption{latex2html}{%

```

```

2991 \HyOpt@CheckDvi{latex2html}{}%
2992 \Hy@AtBeginDocument{\@latex2htmlX}%
2993 }%
2994 }

```

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

```

2995 \DeclareVoidOption{ps2pdf}{}%
2996 \HyOpt@CheckDvi{ps2pdf}{}%
2997 \def\Hy@driver{hdvips}%
2998 }%
2999 }

3000 \let\HyOpt@DriverFallback\ltx@empty
3001 \define@key{Hyp}{driverfallback}{}%
3002 \ifHy@DviMode
3003   \def\HyOpt@DriverFallback{#1}%
3004   \Hy@Match\HyOpt@DriverFallback{%
3005     ~(|dvipdfm|dvipdfmx|dvips|dvipsone|dviwindo|hypertex|ps2pdf|
3006       latex2html|tex4ht)$%
3007   }{}%
3008   \let\HyOpt@DriverFallback\ltx@empty
3009 }%
3010 \fi
3011 }

```

## 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.

```

3012 \define@key{Hyp}{hyperfigures}[true]{%
3013   \Hy@boolkey{hyperfigures}{#1}%
3014 }

```

The automatic footnote linking can be disabled by option hyperfootnotes.

```

3015 \define@key{Hyp}{hyperfootnotes}[true]{%
3016   \Hy@boolkey{hyperfootnotes}{#1}%
3017 }

```

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

```

3018 \def\back@none{none}
3019 \def\back@section{section}
3020 \def\back@page{page}
3021 \def\back@slide{slide}
3022 \define@key{Hyp}{backref}[section]{%
3023   \lowercase{\def\Hy@tempa{#1}}%
3024   \ifx\Hy@tempa\@empty
3025     \let\Hy@tempa\back@section
3026   \fi
3027   \ifx\Hy@tempa\Hy@false
3028     \let\Hy@tempa\back@none
3029   \fi
3030   \ifx\Hy@tempa\back@slide
3031     \let\Hy@tempa\back@section
3032   \fi
3033   \ifx\Hy@tempa\back@page
3034     \PassOptionsToPackage{hyperpageref}{backref}%
3035     \Hy@backreftrue
3036   \else
3037     \ifx\Hy@tempa\back@section

```



```

3038 \PassOptionsToPackage{hyperref}{backref}%
3039 \Hy@backreftrue
3040 \else
3041 \ifx\Hy@tempa\back@none
3042 \Hy@backreffalse
3043 \else
3044 \Hy@WarnOptionValue{#1}{backref}{%
3045 'section', 'slide', 'page', 'none',\MessageBreak
3046 or 'false'}%
3047 \fi
3048 \fi
3049 \fi
3050 }
3051 \define@key{Hyp}{pagebackref}[true]{%
3052 \edef\Hy@tempa{#1}%
3053 \lowercase\expandafter{%
3054 \expandafter\def\expandafter\Hy@tempa\expandafter{\Hy@tempa}%
3055 }%
3056 \ifx\Hy@tempa\@empty
3057 \let\Hy@tempa\Hy@true
3058 \fi
3059 \ifx\Hy@tempa\Hy@true
3060 \PassOptionsToPackage{hyperpageref}{backref}%
3061 \Hy@backreftrue
3062 \else
3063 \ifx\Hy@tempa\Hy@false
3064 \Hy@backreffalse
3065 \else
3066 \Hy@WarnOptionValue{#1}{pagebackref}{'true' or 'false'}%
3067 \fi
3068 \fi
3069 }

```

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

```

3070 \define@key{Hyp}{hyperindex}[true]{%
3071 \Hy@boolkey{hyperindex}{#1}%
3072 }

```

Configuration of encap char.

```

3073 \define@key{Hyp}{encap}[|]{%
3074 \def\HyInd@EncapChar{#1}%
3075 }

```

## 12 Language options

The `\autoref` feature depends on the language.

```

3076 \def\HyLang@afrikaans{%
3077 \def\equationautorefname{Vergelyking}%
3078 \def\footnoteautorefname{Voetnota}%
3079 \def\itemautorefname{Item}%
3080 \def\figureautorefname{Figuur}%
3081 \def\tableautorefname{Tabel}%
3082 \def\partautorefname{Deel}%
3083 \def\appendixautorefname{Bylae}%
3084 \def\chapterautorefname{Hoofstuk}%
3085 \def\sectionautorefname{Afdeling}%

```

```

3086 \def\subsectionautorefname{Subafdeling}%
3087 \def\subsubsectionautorefname{Subsubafdeling}%
3088 \def\paragraphautorefname{Paragraaf}%
3089 \def\subparagraphautorefname{Subparagraaf}%
3090 \def\FancyVerbLineautorefname{Lyn}%
3091 \def\theoremautorefname{Teorema}%
3092 \def\pageautorefname{Bladsy}%
3093 }
3094 \def\HyLang@english{%
3095 \def\equationautorefname{Equation}%
3096 \def\footnoteautorefname{footnote}%
3097 \def\itemautorefname{item}%
3098 \def\figureautorefname{Figure}%
3099 \def\tableautorefname{Table}%
3100 \def\partautorefname{Part}%
3101 \def\appendixautorefname{Appendix}%
3102 \def\chapterautorefname{chapter}%
3103 \def\sectionautorefname{section}%
3104 \def\subsectionautorefname{subsection}%
3105 \def\subsubsectionautorefname{subsubsection}%
3106 \def\paragraphautorefname{paragraph}%
3107 \def\subparagraphautorefname{subparagraph}%
3108 \def\FancyVerbLineautorefname{line}%
3109 \def\theoremautorefname{Theorem}%
3110 \def\pageautorefname{page}%
3111 }
3112 \def\HyLang@french{%
3113 \def\equationautorefname{'Equation}%
3114 \def\footnoteautorefname{note}%
3115 \def\itemautorefname{item}%
3116 \def\figureautorefname{Figure}%
3117 \def\tableautorefname{Tableau}%
3118 \def\partautorefname{Partie}%
3119 \def\appendixautorefname{Appendice}%
3120 \def\chapterautorefname{chapitre}%
3121 \def\sectionautorefname{section}%
3122 \def\subsectionautorefname{sous-section}%
3123 \def\subsubsectionautorefname{sous-sous-section}%
3124 \def\paragraphautorefname{paragraphe}%
3125 \def\subparagraphautorefname{sous-paragraphe}%
3126 \def\FancyVerbLineautorefname{ligne}%
3127 \def\theoremautorefname{Th\'eor\'eme}%
3128 \def\pageautorefname{page}%
3129 }
3130 \def\HyLang@german{%
3131 \def\equationautorefname{Gleichung}%
3132 \def\footnoteautorefname{Fu\ss note}%
3133 \def\itemautorefname{Punkt}%
3134 \def\figureautorefname{Abbildung}%
3135 \def\tableautorefname{Tabelle}%
3136 \def\partautorefname{Teil}%
3137 \def\appendixautorefname{Anhang}%
3138 \def\chapterautorefname{Kapitel}%
3139 \def\sectionautorefname{Abschnitt}%
3140 \def\subsectionautorefname{Unterabschnitt}%
3141 \def\subsubsectionautorefname{Unterunterabschnitt}%
3142 \def\paragraphautorefname{Absatz}%

```

```

3143 \def\subparagraphautorefname{Unterabsatz}%
3144 \def\FancyVerbLineautorefname{Zeile}%
3145 \def\theoremautorefname{Theorem}%
3146 \def\pageautorefname{Seite}%
3147 }
3148 \def\HyLang@italian{%
3149 \def\equationautorefname{Equazione}%
3150 \def\footnoteautorefname{nota}%
3151 \def\itemautorefname{punto}%
3152 \def\figureautorefname{Figura}%
3153 \def\tableautorefname{Tabella}%
3154 \def\partautorefname{Parte}%
3155 \def\appendixautorefname{Appendice}%
3156 \def\chapterautorefname{Capitolo}%
3157 \def\sectionautorefname{sezione}%
3158 \def\subsectionautorefname{sottosezione}%
3159 \def\subsubsectionautorefname{sottosottosezione}%
3160 \def\paragraphautorefname{paragrafo}%
3161 \def\subparagraphautorefname{sottoparagrafo}%
3162 \def\FancyVerbLineautorefname{linea}%
3163 \def\theoremautorefname{Teorema}%
3164 \def\pageautorefname{Pag.\@}%
3165 }
3166 \def\HyLang@magyar{%
3167 \def\equationautorefname{Egyenlet}%
3168 \def\footnoteautorefname{l'abjegyzet}%
3169 \def\itemautorefname{Elem}%
3170 \def\figureautorefname{'Abra}%
3171 \def\tableautorefname{T'abl'azat}%
3172 \def\partautorefname{R'esz}%
3173 \def\appendixautorefname{F'uggel'ek}%
3174 \def\chapterautorefname{fejezet}%
3175 \def\sectionautorefname{szakasz}%
3176 \def\subsectionautorefname{alszakasz}%
3177 \def\subsubsectionautorefname{alalszakasz}%
3178 \def\paragraphautorefname{bekezd'es}%
3179 \def\subparagraphautorefname{albekezd'es}%
3180 \def\FancyVerbLineautorefname{sor}%
3181 \def\theoremautorefname{T'etel}%
3182 \def\pageautorefname{oldal}%
3183 }
3184 \def\HyLang@portuges{%
3185 \def\equationautorefname{Equa\c c\~ao}%
3186 \def\footnoteautorefname{Nota de rodap'e}%
3187 \def\itemautorefname{Item}%
3188 \def\figureautorefname{Figura}%
3189 \def\tableautorefname{Tabela}%
3190 \def\partautorefname{Parte}%
3191 \def\appendixautorefname{Ap\~endice}%
3192 \def\chapterautorefname{Cap'itulo}%
3193 \def\sectionautorefname{Se\c c\~ao}%
3194 \def\subsectionautorefname{Subse\c c\~ao}%
3195 \def\subsubsectionautorefname{Subsubse\c c\~ao}%
3196 \def\paragraphautorefname{par'agrafo}%
3197 \def\subparagraphautorefname{subpar'agrafo}%
3198 \def\FancyVerbLineautorefname{linha}%
3199 \def\theoremautorefname{Teorema}%

```

```

3200 \def\pageautorefname{P\'agina}%
3201 }

```

Next commented section for Russian is provided by Olga Lapko.

Next follow the checked reference names with commented variants and explanations. All they are abbreviated and they won't create a grammatical problems in the *middle* of sentences.

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

```

3202 \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`?

```

3203 \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`.

```

3204 % \def\equationautorefname{%
3205 %   \cyr\cyrv\cyrry\cyrr\cyra\cyrzh\cyre\cyrn\cyri\cyre
3206 % }%

```

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

```

3207 \def\footnoteautorefname{%
3208   \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr.\ \cyrp\cyrr\cyri\cyrn.%
3209 }%

```

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}`”

```

3210 % \def\footnoteautorefname{%
3211 %   \cyr\cyrp\cyro\cyrd\cyrs\cyrt\cyrr\cyro\cyrch\cyrn\cyro\cyre\ %
3212 %   \cyrp\cyrr\cyri\cyrn\cyre\cyrch\cyra\cyrn\cyri\cyre
3213 % }%

```

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

```

3214 % \def\Nomfootnoteautorefname{\cyr\cyrs\cyrn\cyro\cyrs\cyrk\cyra}%
3215 % \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.

```

3216 \def\itemautorefname{\cyr\cyrp.}%
3217 % \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.

```

3218 \def\figureautorefname{\cyr\cyrr\cyri\cyrs.}%
3219 \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.

```

3220 \def\partautorefname{\cyr\cyrch.}%
3221 \def\chapterautorefname{\cyr\cyrg\cyrl.}%
3222 \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.

```
3223 \def\appendixautorefname{\cyr\cyrp\cyrr\cyri\cyr1.}%
3224 % \def\appendixautorefname{%
3225 % \cyr\cyrp\cyrr\cyri\cyr1\cyro\cyrzh\cyre\cyrn\cyri\cyre
3226 % }%
```

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.

```
3227 \def\subsectionautorefname{\cyr\cyrr\cyra\cyrz\cyrd.}%
3228 \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.

```
3229 \def\paragraphautorefname{\cyr\cyrp.}%
3230 \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.

```
3231 % \def\paragraphautorefname{\cyr\cyrp\cyru\cyrn\cyrk\cyrt}%
3232 % \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.

```
3233 \def\FancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr.}%
```

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

```
3234 % \def\NomFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyra}%
3235 % \def\AccFancyVerbLineautorefname{\cyr\cyrs\cyrt\cyrr\cyro\cyrk\cyru}%
```

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

```
3236 % \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 ...

```
3237 \def\theoremautorefname{\cyr\cyrt\cyre\cyro\cyrr.}%
```

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

```
3238 % \def\Nomtheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyra}%
3239 % \def\Acctheoremautorefname{\cyr\cyrt\cyre\cyro\cyrr\cyre\cyrm\cyru}%
```

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

```
3240 \def\pageautorefname{\cyr\cyrs.}%
3241 }
```

```
3242 \def\HyLang@spanish{%
3243 \def\equationautorefname{Ecuaci'on}%
3244 \def\footnoteautorefname{Nota a pie de p'agina}%
3245 \def\itemautorefname{Elemento}%
3246 \def\figureautorefname{Figura}%
```

```

3247 \def\tableautorefname{Tabla}%
3248 \def\partautorefname{Parte}%
3249 \def\appendixautorefname{Ap\`endice}%
3250 \def\chapterautorefname{Cap\`itulo}%
3251 \def\sectionautorefname{Secci\`on}%
3252 \def\subsectionautorefname{Subsecci\`on}%
3253 \def\subsubsectionautorefname{Subsubsecci\`on}%
3254 \def\paragraphautorefname{P\`arrafo}%
3255 \def\subparagraphautorefname{Subp\`arrafo}%
3256 \def\FancyVerbLineautorefname{L\`inea}%
3257 \def\theoremautorefname{Teorema}%
3258 \def\pageautorefname{P\`agina}%
3259 }
3260 \def\HyLang@vietnamese{%
3261 \def\equationautorefname{Ph\`uhorn{}}\ohorn{}ng tr\`inh}%
3262 \def\footnoteautorefname{Ch\`u th\`ich}%
3263 \def\itemautorefname{m\`d{u}c}%
3264 \def\figureautorefname{H\`inh}%
3265 \def\tableautorefname{B\`h{a}ng}%
3266 \def\partautorefname{Ph\`acircumflex{n}}%
3267 \def\appendixautorefname{Ph\`d{u} l\`d{u}c}%
3268 \def\chapterautorefname{ch\`uhorn{}}\ohorn{}ng}%
3269 \def\sectionautorefname{m\`d{u}c}%
3270 \def\subsectionautorefname{m\`d{u}c}%
3271 \def\subsubsectionautorefname{m\`d{u}c}%
3272 \def\paragraphautorefname{d\`j{o}d{a}n}%
3273 \def\subparagraphautorefname{d\`j{o}d{a}n}%
3274 \def\FancyVerbLineautorefname{d\`ong}%
3275 \def\theoremautorefname{D\`J{}}\d{i}nh l\`y}%
3276 \def\pageautorefname{Trang}%
3277 }

```

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

```

3278 \def\HyLang@addto#1#2{%
3279 #2%
3280 \@temptokena{#2}%
3281 \ifx#1\relax
3282 \let#1\@empty
3283 \fi
3284 \ifx#1\@undefined
3285 \edef#1{\the\@temptokena}%
3286 \else
3287 \toks@\expandafter{#1}%
3288 \edef#1{\the\toks@\the\@temptokena}%
3289 \fi
3290 \@temptokena{}\toks@\@temptokena
3291 }
3292 \def\HyLang@DeclareLang#1#2#3{%
3293 \@ifpackagewith{babel}{#1}{%
3294 \expandafter\HyLang@addto
3295 \csname extras#1\expandafter\endcsname
3296 \csname HyLang@#2\endcsname
3297 \begingroup
3298 \edef\x{\endgroup
3299 #3%
3300 }%

```

```

3301 \x
3302 \@namedef{HyLang@#1@done}{}%
3303 }{%
3304 \begingroup
3305 \edef\x##1##2{%
3306 \noexpand\ifx##2\relax
3307 \errmessage{No definitions for language #2' found!}%
3308 \noexpand\fi
3309 \endgroup
3310 \noexpand\define@key{Hyp}{#1}[]{%
3311 \noexpand\@ifundefined{HyLang@#1@done}{%
3312 \noexpand\HyLang@addto{\noexpand##1}{\noexpand##2}%
3313 #3%
3314 \noexpand\@namedef{HyLang@#1@done}{}%
3315 }{%
3316 }%
3317 }%
3318 \expandafter\x\csname extras#1\expandafter\endcsname
3319 \csname HyLang@#2\endcsname
3320 }
3321 \HyLang@DeclareLang{english}{english}{%
3322 \HyLang@DeclareLang{UKenglish}{english}{%
3323 \HyLang@DeclareLang{british}{english}{%
3324 \HyLang@DeclareLang{USenglish}{english}{%
3325 \HyLang@DeclareLang{american}{english}{%
3326 \HyLang@DeclareLang{german}{german}{%
3327 \HyLang@DeclareLang{austrian}{german}{%
3328 \HyLang@DeclareLang{ngerman}{german}{%
3329 \HyLang@DeclareLang{naustrian}{german}{%
3330 \HyLang@DeclareLang{russian}{russian}{\noexpand\hypersetup{unicode}}
3331 \HyLang@DeclareLang{brazil}{portuges}{%
3332 \HyLang@DeclareLang{brazilian}{portuges}{%
3333 \HyLang@DeclareLang{portuguese}{portuges}{%
3334 \HyLang@DeclareLang{spanish}{spanish}{%
3335 \HyLang@DeclareLang{afrikaans}{afrikaans}{%
3336 \HyLang@DeclareLang{french}{french}{%
3337 \HyLang@DeclareLang{frenchb}{french}{%
3338 \HyLang@DeclareLang{francais}{french}{%
3339 \HyLang@DeclareLang{acadian}{french}{%
3340 \HyLang@DeclareLang{canadien}{french}{%
3341 \HyLang@DeclareLang{italian}{italian}{%
3342 \HyLang@DeclareLang{magyar}{magyar}{%
3343 \HyLang@DeclareLang{hungarian}{magyar}{%

```

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

```

3344 \DeclareVoidOption{vietnamese}{%
3345 \HyLang@addto\extrasvietnamese\HyLang@vietnamese
3346 \Hy@AtEndOfPackage{%
3347 \@ifundefined{T@PU}{%
3348 \input{puvnenc.def}%
3349 }%
3350 }%
3351 }
3352 \DeclareVoidOption{vietnam}{%
3353 \HyLang@addto\extrasvietnam\HyLang@vietnamese
3354 \Hy@AtEndOfPackage{%
3355 \@ifundefined{T@PU}{%
3356 \input{puvnenc.def}%

```

```

3357 }%
3358 }%
3359 }

```

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

```

3360 \DeclareVoidOption{arabic}{%
3361   \Hy@AtEndOfPackage{%
3362     \@ifundefined{T@PU}{}{%
3363       \input{puarenc.def}%
3364     }%
3365   }%
3366 }

```

## 13 Options to change appearance of links

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

```

3367 \define@key{Hyp}{colorlinks}[true]{%
3368   \Hy@boolkey{colorlinks}{#1}%
3369 }
3370 \DeclareVoidOption{hidelinks}{%
3371   \Hy@colorlinksfalse
3372   \Hy@ocgcolorlinksfalse
3373   \Hy@frenchlinksfalse
3374   \def\Hy@colorlink##1{\begingroup}%
3375   \def\Hy@endcolorlink{\endgroup}%
3376   \def\@pdfborder{0 0 0}%
3377   \let\@pdfborderstyle\ltx@empty
3378 }
3379 \define@key{Hyp}{ocgcolorlinks}[true]{%
3380   \Hy@boolkey{ocgcolorlinks}{#1}%
3381 }
3382 \Hy@AtBeginDocument{%
3383   \begingroup
3384   \@ifundefined{OBJ@OCG@view}{%
3385     \ifHy@ocgcolorlinks
3386       \Hy@Warning{%
3387         Driver does not support ‘ocgcolorlinks’,\MessageBreak
3388         using ‘colorlinks’ instead%
3389       }%
3390     \fi
3391   }{}%
3392   \endgroup
3393 }
3394 \define@key{Hyp}{frenchlinks}[true]{%
3395   \Hy@boolkey{frenchlinks}{#1}%
3396 }

```

## 14 Bookmarking

```

3397 \begingroup\expandafter\expandafter\expandafter\endgroup
3398 \expandafter\ifx\csname chapter\endcsname\relax
3399   \def\toclevel@part{0}%
3400 \else
3401   \def\toclevel@part{-1}%
3402 \fi
3403 \def\toclevel@chapter{0}

```



```

3404 \def\toclevel@section{1}
3405 \def\toclevel@subsection{2}
3406 \def\toclevel@subsubsection{3}
3407 \def\toclevel@paragraph{4}
3408 \def\toclevel@subparagraph{5}
3409 \def\toclevel@figure{0}
3410 \def\toclevel@table{0}
3411 \ifpackageloaded{listings}{%
3412   \providecommand*\theHlstlisting{\thelstlisting}%
3413   \providecommand*\toclevel@lstlisting{0}%
3414 }{}
3415 \ifpackageloaded{listing}{%
3416   \providecommand*\theHlisting{\thelisting}%
3417   \providecommand*\toclevel@listing{0}%
3418 }{}

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

3422 \define@key{Hyp}{bookmarksopen}[true]{%
3423   \Hy@boolkey{bookmarksopen}{#1}%
3424 }

```

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.

```

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

```

```

3449     }%
3450   }%
3451   \fi
3452 \endgroup
3453 }

```

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

```

3454 \define@key{Hyp}{bookmarksopenlevel}{%
3455   \def\@bookmarksopenlevel{#1}%
3456 }
3457 \def\@bookmarksopenlevel{\maxdimen}
3458 % ‘bookmarkstype’ to specify which ‘toc’ file to mimic
3459 \define@key{Hyp}{bookmarkstype}{%
3460   \def\Hy@bookmarkstype{#1}%
3461 }
3462 \def\Hy@bookmarkstype{toc}

```

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

```

3463 \define@key{Hyp}{bookmarksnumbered}[true]{%
3464   \Hy@boolkey{bookmarksnumbered}{#1}%
3465 }

```

Option CJKbookmarks enables the patch for CJK bookmarks.

```

3466 \define@key{Hyp}{CJKbookmarks}[true]{%
3467   \Hy@boolkey{CJKbookmarks}{#1}%
3468 }

3469 \def\Hy@temp#1{%
3470   \expandafter\Hy@@temp\csname @#1color\endcsname{#1}%
3471 }
3472 \def\Hy@@temp#1#2#3{%
3473   \define@key{Hyp}{#2color}{%
3474     \HyColor@HyperrefColor{##1}#1%
3475   }%
3476   \def#1{#3}%
3477 }
3478 \Hy@temp{link}{red}
3479 \Hy@temp{anchor}{black}
3480 \Hy@temp{cite}{green}
3481 \Hy@temp{file}{cyan}
3482 \Hy@temp{url}{magenta}
3483 \Hy@temp{menu}{red}
3484 \Hy@temp{run}{\@filecolor}
3485 \define@key{Hyp}{pagecolor}{%
3486   \Hy@WarningPageColor
3487 }
3488 \def\Hy@WarningPageColor{%
3489   \Hy@WarningNoLine{Option ‘pagecolor’ is not available anymore}%
3490   \global\let\Hy@WarningPageColor\relax
3491 }
3492 \define@key{Hyp}{allcolors}{%
3493   \HyColor@HyperrefColor{#1}\@linkcolor
3494   \HyColor@HyperrefColor{#1}\@anchorcolor
3495   \HyColor@HyperrefColor{#1}\@citecolor
3496   \HyColor@HyperrefColor{#1}\@filecolor
3497   \HyColor@HyperrefColor{#1}\@urlcolor
3498   \HyColor@HyperrefColor{#1}\@menucolor
3499   \HyColor@HyperrefColor{#1}\@runcolor

```

```

3500 }
3501 \def\hyperbaseurl#1{\def\@baseurl{#1}}
3502 \define@key{Hyp}{baseurl}{\hyperbaseurl{#1}}
3503 \let\@baseurl\@empty
3504 \def\hyperlinkfileprefix#1{\def\Hy@linkfileprefix{#1}}
3505 \define@key{Hyp}{linkfileprefix}{\hyperlinkfileprefix{#1}}
3506 \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.

```

3507 \let\@pdfpagetransition\relax
3508 \define@key{Hyp}{pdfpagetransition}{%
3509   \def\@pdfpagetransition{#1}%
3510 }

```

`\@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.

```

3511 \let\@pdfpageduration\relax
3512 \define@key{Hyp}{pdfpageduration}{%
3513   \def\@pdfpageduration{#1}%
3514   \Hy@Match\@pdfpageduration{%
3515     ^(|[0-9]+\.[0-9]*|[0-9]*\.[0-9]+)$%
3516   }{%
3517     \Hy@Warning{%
3518       Invalid value '@pdfpageduration'\MessageBreak
3519       of option 'pdfpageduration'\MessageBreak
3520       is replaced by an empty value%
3521     }%
3522     \let\@pdfpageduration\ltx@empty
3523   }%
3524 }

```

The entry for the `/Hid` key in the page object is only necessary, if it is used and set to true for at least one time. If it is always false, then the `/Hid` key is not written to the pdf page object in order not to enlarge the pdf file.

```

3525 \newif\ifHy@useHidKey
3526 \Hy@useHidKeyfalse
3527 \define@key{Hyp}{pdfpagehidden}[true]{%
3528   \Hy@boolkey{pdfpagehidden}{#1}%
3529   \ifHy@pdfpagehidden
3530     \global\Hy@useHidKeytrue
3531   \fi
3532 }

```

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).

```

3533 \def\Hy@ColorList{cite,file,link,menu,run,url}
3534 \@for\Hy@temp:=\Hy@ColorList\do{%
3535   \edef\Hy@temp{%
3536     \noexpand\define@key{Hyp}{\Hy@temp bordercolor}{%
3537       \noexpand\HyColor@HyperrefBorderColor
3538       {##1}%
3539       \expandafter\noexpand\csname @\Hy@temp bordercolor\endcsname
3540       {hyperref}%
3541       {\Hy@temp bordercolor}%
3542     }%
3543   }%
3544   \Hy@temp
3545 }
3546 \define@key{Hyp}{pagebordercolor}{%
3547   \Hy@WarningPageBorderColor
3548 }
3549 \def\Hy@WarningPageBorderColor{%
3550   \Hy@WarningNoLine{Option 'pagebordercolor' is not available anymore}%
3551   \global\let\Hy@WarningPageBorderColor\relax
3552 }
3553 \define@key{Hyp}{allbordercolors}{%
3554   \def\Hy@temp##1##2{%
3555     \HyColor@HyperrefBorderColor{#1}##1{hyperref}{##2bordercolor}%
3556   }%
3557   \Hy@temp\@citebordercolor{cite}%
3558   \Hy@temp\@filebordercolor{file}%
3559   \Hy@temp\@linkbordercolor{link}%
3560   \Hy@temp\@menubordercolor{menu}%
3561   \Hy@temp\@runbordercolor{run}%
3562   \Hy@temp\@urlbordercolor{url}%
3563 }
3564 \define@key{Hyp}{pdfhighlight}{\def\@pdfhighlight{#1}}
3565 \Hy@DefNameKey{pdfhighlight}{%
3566   \do{/I}{Invert}%
3567   \do{/N}{None}%
3568   \do{/O}{Outline}%
3569   \do{/P}{Push}%
3570 }
3571 \define@key{Hyp}{pdfborder}{%
3572   \let\Hy@temp\@pdfborder
3573   \def\@pdfborder{#1}%
3574   \Hy@Match\@pdfborder{%
3575     ^\HyPat@NonNegativeReal/ %
3576     \HyPat@NonNegativeReal/ %
3577     \HyPat@NonNegativeReal/%
3578     ( ?[\HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)*])?%%
3579   }{}{%
3580     \Hy@Warning{%
3581       Invalid value '\@pdfborder'\MessageBreak
3582       for option 'pdfborder'\MessageBreak
3583       Option setting is ignored%
3584     }%
3585     \let\@pdfborder\Hy@temp
3586   }%
3587 }

```

```

3588 \define@key{Hyp}{pdfborderstyle}{%
3589   \let\Hy@temp\@pdfborderstyle
3590   \def\@pdfborderstyle{#1}%
3591   \Hy@Match\@pdfborderstyle{%
3592     ~%
3593     ( */Type */Border%
3594     | */W +\HyPat@NonNegativeReal/%
3595     | */S */[SDBIU]%
3596     | */D *\[ *(\HyPat@NonNegativeReal/( \HyPat@NonNegativeReal/)?)?]%
3597     )* *$%
3598   }{}{%
3599     \Hy@Warning{%
3600       Invalid value '\@pdfborderstyle'\MessageBreak
3601       for option 'pdfborderstyle'\MessageBreak
3602       Option setting is ignored%
3603     }%
3604     \let\@pdfborderstyle\Hy@temp
3605   }%
3606 }
3607 \def\Hy@setpdfborder{%
3608   \ifx\@pdfborder\@empty
3609     \else
3610       /Border[\@pdfborder]%
3611     \fi
3612   \ifx\@pdfborderstyle\@empty
3613     \else
3614       /BS<<\@pdfborderstyle>>%
3615     \fi
3616 }
3617 \Hy@DefNameKey{pdfpagemode}{%
3618   \do{UseNone}{}%
3619   \do{UseOutlines}{}%
3620   \do{UseThumbs}{}%
3621   \do{FullScreen}{}%
3622   \do{UseOC}{PDF 1.5}%
3623   \do{UseAttachments}{PDF 1.6}%
3624 }
3625 \Hy@DefNameKey{pdfnonfullscreenpagemode}{%
3626   \do{UseNone}{}%
3627   \do{UseOutlines}{}%
3628   \do{UseThumbs}{}%
3629   \do{FullScreen}{}%
3630   \do{UseOC}{PDF 1.5}%
3631   \do{UseAttachments}{PDF 1.6}%
3632 }
3633 \Hy@DefNameKey{pdfdirection}{%
3634   \do{L2R}{Left to right}%
3635   \do{R2L}{Right to left}%
3636 }
3637 \Hy@DefNameKey{pdfviewarea}{%
3638   \do{MediaBox}{}%
3639   \do{CropBox}{}%
3640   \do{BleedBox}{}%
3641   \do{TrimBox}{}%
3642   \do{ArtBox}{}%
3643 }
3644 \Hy@DefNameKey{pdfviewclip}{%

```

```

3645 \do{MediaBox}{}%
3646 \do{CropBox}{}%
3647 \do{BleedBox}{}%
3648 \do{TrimBox}{}%
3649 \do{ArtBox}{}%
3650 }
3651 \Hy@DefNameKey{pdfprintarea}{%
3652 \do{MediaBox}{}%
3653 \do{CropBox}{}%
3654 \do{BleedBox}{}%
3655 \do{TrimBox}{}%
3656 \do{ArtBox}{}%
3657 }
3658 \Hy@DefNameKey{pdfprintclip}{%
3659 \do{MediaBox}{}%
3660 \do{CropBox}{}%
3661 \do{BleedBox}{}%
3662 \do{TrimBox}{}%
3663 \do{ArtBox}{}%
3664 }
3665 \Hy@DefNameKey{pdfprintscaling}{%
3666 \do{AppDefault}{}%
3667 \do{None}{}%
3668 }
3669 \Hy@DefNameKey{pdfduplex}{%
3670 \do{Simplex}{}%
3671 \do{DuplexFlipShortEdge}{}%
3672 \do{DuplexFlipLongEdge}{}%
3673 }
3674 \Hy@DefNameKey{pdfpicktraybypdfsize}{%
3675 \do{true}{}%
3676 \do{false}{}%
3677 }
3678 \define@key{Hyp}{pdfprintpagerange}{%
3679 \def\@pdfprintpagerange{#1}%
3680 }
3681 \Hy@DefNameKey{pdfnumcopies}{%
3682 \do{2}{two copies}%
3683 \do{3}{three copies}%
3684 \do{4}{four copies}%
3685 \do{5}{five copies}%
3686 }
3687 \define@key{Hyp}{pdfusetitle}[true]{%
3688 \Hy@boolkey{pdfusetitle}{#1}%
3689 }
3690 \def\HyXeTeX@CheckUnicode{%
3691 \ifxetex
3692 \ifHy@unicode
3693 \else
3694 \Hy@WarningNoLine{%
3695 XeTeX driver only supports unicode.\MessageBreak
3696 Enabling option 'unicode'%
3697 }%
3698 \kvsetkeys{Hyp}{unicode}%
3699 \fi
3700 \else
3701 \let\HyXeTeX@CheckUnicode\relax

```

```

3702 \fi
3703 }
3704 \def\HyPsd@PrerenderUnicode#1{%
3705 \begingroup
3706 \expandafter\ifx\csname PrerenderUnicode\endcsname\relax
3707 \else
3708 \sbox0{%
3709 \let\GenericInfo\@gobbletwo
3710 \let\GenericWarning\@gobbletwo
3711 \let\GenericError\@gobblefour
3712 \PrerenderUnicode{#1}%
3713 }%
3714 \fi
3715 \endgroup
3716 }
3717 \define@key{Hyp}{pdftitle}{%
3718 \HyXeTeX@CheckUnicode
3719 \HyPsd@XeTeXBigCharstrue
3720 \HyPsd@PrerenderUnicode{#1}%
3721 \pdfstringdef\@pdftitle{#1}%
3722 }
3723 \define@key{Hyp}{pdfauthor}{%
3724 \HyXeTeX@CheckUnicode
3725 \HyPsd@XeTeXBigCharstrue
3726 \HyPsd@PrerenderUnicode{#1}%
3727 \pdfstringdef\@pdfauthor{#1}%
3728 }
3729 \define@key{Hyp}{pdfproducer}{%
3730 \HyXeTeX@CheckUnicode
3731 \HyPsd@XeTeXBigCharstrue
3732 \HyPsd@PrerenderUnicode{#1}%
3733 \pdfstringdef\@pdfproducer{#1}%
3734 }
3735 \define@key{Hyp}{pdfcreator}{%
3736 \HyXeTeX@CheckUnicode
3737 \HyPsd@XeTeXBigCharstrue
3738 \HyPsd@PrerenderUnicode{#1}%
3739 \pdfstringdef\@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 \HyXeTeX@CheckUnicode
3755 \HyPsd@XeTeXBigCharstrue
3756 \HyPsd@PrerenderUnicode{#1}%
3757 \pdfstringdef\@pdfsubject{#1}%
3758 }

```

```

3759 \define@key{Hyp}{pdfkeywords}{%
3760   \HyXeTeX@CheckUnicode
3761   \HyPsd@XeTeXBigCharstrue
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       \define@key{pdfinfo}{\HyInfo@Key}{%
3840         \HyXeTeX@CheckUnicode
3841         \HyPsd@XeTeXBigCharstrue
3842         \HyPsd@PrerenderUnicode{##1}%
3843         \pdfstringdef\HyInfo@Value{##1}%
3844         \expandafter\let\csname HyInfo@Value@\HyInfo@Key\endcsname
3845         \HyInfo@Value
3846       }%
3847     \edef\HyInfo@AddonList{%
3848       \HyInfo@AddonList
3849       \HyInfo@do{\HyInfo@Key}%
3850     }%
3851     \kv@parse@normalized{%
3852       \HyInfo@Key={#2}%
3853     }{%
3854       \kv@processor@default{pdfinfo}%
3855     }%
3856   \fi
3857 \else
3858   \kv@parse@normalized{%
3859     \HyInfo@Key={#2}%
3860   }{%
3861     \kv@processor@default{pdfinfo}%
3862   }%
3863 \fi
3864 \fi
3865 }
3866 \def\HyInfo@GenerateAddons{%
3867   \ifHyInfo@AddonUnsupported
3868     \def\HyInfo@Addons{}%
3869   \else
3870     \begingroup
3871     \toks@{}%
3872     \def\HyInfo@do##1{%

```

```

3873 \EdefEscapeName\HyInfo@Key{##1}%
3874 \edef\x{%
3875 \toks@{%
3876 \the\toks@
3877 /\HyInfo@Key(\csname HyInfo@Value@##1\endcsname)%
3878 }%
3879 }%
3880 \x
3881 }%
3882 \HyInfo@AddonList
3883 \edef\x{\endgroup
3884 \def\noexpand\HyInfo@Addons{\the\toks@}%
3885 }%
3886 \x
3887 \fi
3888 }
3889 \let\HyInfo@AddonList\ltx@empty

3890 \define@key{Hyp}{pdfview}{\calculate@pdfview#1 \\\}
3891 \define@key{Hyp}{pdfinkmargin}{\setpdfinkmargin{#1}}
3892 \let\setpdfinkmargin@gobble
3893 \def\calculate@pdfview#1 #2\{\%
3894 \def\@pdfview{#1}%
3895 \ifx\#2\%
3896 \def\@pdfviewparams{ -32768}%
3897 \else
3898 \def\@pdfviewparams{ #2}%
3899 \fi
3900 }
3901 \begingroup\expandafter\expandafter\expandafter\endgroup
3902 \expandafter\ifx\csname numexpr\endcsname\relax
3903 \def\Hy@number#1{%
3904 \expandafter\@firstofone\expandafter{\number#1}%
3905 }%
3906 \else
3907 \def\Hy@number#1{%
3908 \the\numexpr#1\relax
3909 }%
3910 \fi
3911 \define@key{Hyp}{pdfstartpage}{\%
3912 \ifx\#1\%
3913 \let\@pdfstartpage\ltx@empty
3914 \else
3915 \edef\@pdfstartpage{\Hy@number{#1}}%
3916 \fi
3917 }%
3918 \define@key{Hyp}{pdfstartview}{\%
3919 \ifx\#1\%
3920 \let\@pdfstartview\ltx@empty
3921 \else
3922 \hypercalcbpdef\@pdfstartview{/#1}%
3923 \fi
3924 }
3925 \def\HyPat@NonNegativeReal/{\%
3926 \ *([0-9]+\.[0-9]*|[0-9]*\.[0-9]+) *%
3927 }
3928 \define@key{Hyp}{pdfremotestartview}{\%
3929 \ifx\#1\%

```

```

3930 \def\@pdfremotestartview{/Fit}%
3931 \else
3932 \hypercalcbpdef\@pdfremotestartview{#1}%
3933 \edef\@pdfremotestartview{\@pdfremotestartview}%
3934 \Hy@Match\@pdfremotestartview{%
3935   ^{XYZ -?(null|\HyPat@NonNegativeReal/) %
3936   -?(null|\HyPat@NonNegativeReal/) %
3937   (null|\HyPat@NonNegativeReal/)|%
3938   Fit(|B| %
3939   (H|V|BH|BV) (null|\HyPat@NonNegativeReal/)|%
3940   R \HyPat@NonNegativeReal/ \HyPat@NonNegativeReal/ %
3941   \HyPat@NonNegativeReal/ \HyPat@NonNegativeReal/%
3942   )}$%
3943 }-}%
3944 \Hy@Warning{%
3945   Invalid value '\@pdfremotestartview'\MessageBreak
3946   of 'pdfremotestartview'\MessageBreak
3947   is replaced by 'Fit'%
3948 }%
3949 \let\@pdfremotestartview\@empty
3950 }%
3951 \ifx\@pdfremotestartview\@empty
3952 \def\@pdfremotestartview{/Fit}%
3953 \else
3954 \edef\@pdfremotestartview{/ \@pdfremotestartview}%
3955 \fi
3956 \fi
3957 }
3958 \define@key{Hyp}{pdfpagescrop}{\edef\@pdfpagescrop{#1}}
3959 \define@key{Hyp}{pdftoolbar}[true]{%
3960 \Hy@boolkey{pdftoolbar}{#1}%
3961 }
3962 \define@key{Hyp}{pdfmenubar}[true]{%
3963 \Hy@boolkey{pdfmenubar}{#1}%
3964 }
3965 \define@key{Hyp}{pdfwindowui}[true]{%
3966 \Hy@boolkey{pdfwindowui}{#1}%
3967 }
3968 \define@key{Hyp}{pdffitwindow}[true]{%
3969 \Hy@boolkey{pdffitwindow}{#1}%
3970 }
3971 \define@key{Hyp}{pdfcenterwindow}[true]{%
3972 \Hy@boolkey{pdfcenterwindow}{#1}%
3973 }
3974 \define@key{Hyp}{pdfdisplaydoctitle}[true]{%
3975 \Hy@boolkey{pdfdisplaydoctitle}{#1}%
3976 }
3977 \define@key{Hyp}{pdfa}[true]{%
3978 \Hy@boolkey{pdfa}{#1}%
3979 }
3980 \define@key{Hyp}{pdfnewwindow}[true]{%
3981 \def\Hy@temp{#1}%
3982 \ifx\Hy@temp\@empty
3983 \Hy@pdfnewwindowsetfalse
3984 \else
3985 \Hy@pdfnewwindowsettrue
3986 \Hy@boolkey{pdfnewwindow}{#1}%

```

```

3987 \fi
3988 }
3989 \def\Hy@SetNewWindow{%
3990 \ifHy@pdfnewwindowset
3991 /NewWindow %
3992 \ifHy@pdfnewwindow true\else false\fi
3993 \fi
3994 }
3995 \Hy@DefNameKey{pdfpagelayout}{%
3996 \do{SinglePage}{}%
3997 \do{OneColumn}{}%
3998 \do{TwoColumnLeft}{}%
3999 \do{TwoColumnRight}{}%
4000 \do{TwoPageLeft}{PDF 1.5}%
4001 \do{TwoPageRight}{PDF 1.5}%
4002 }
4003 \define@key{Hyp}{pdflang}{%
4004 \def\@pdflang{#1}%
4005 }
4006 \define@key{Hyp}{pdfpagelabels}[true]{%
4007 \Hy@boolkey{pdfpagelabels}{#1}%
4008 }
4009 \define@key{Hyp}{pdfescapeform}[true]{%
4010 \Hy@boolkey{pdfescapeform}{#1}%
4011 }

```

Default values:

```

4012 \def\@linkbordercolor{1 0 0}
4013 \def\@urlbordercolor{0 1 1}
4014 \def\@menubordercolor{1 0 0}
4015 \def\@filebordercolor{0 .5 .5}
4016 \def\@runbordercolor{0 .7 .7}
4017 \def\@citebordercolor{0 1 0}
4018 \def\@pdfhighlight{/I}
4019 \let\@pdftitle\ltx@empty
4020 \let\@pdfauthor\ltx@empty
4021 \let\@pdfproducer\relax
4022 \def\@pdfcreator{LaTeX with hyperref package}
4023 \let\@pdfcreationdate\ltx@empty
4024 \let\@pdfmoddate\ltx@empty
4025 \let\@pdfsubject\ltx@empty
4026 \let\@pdfkeywords\ltx@empty
4027 \let\@pdftrapped\ltx@empty
4028 \let\@pdfpagescrop\ltx@empty
4029 \def\@pdfstartview{/Fit}
4030 \def\@pdfremotestartview{/Fit}
4031 \def\@pdfstartpage{1}
4032 \let\@pdfprintpagerange\ltx@empty
4033 \let\@pdflang\ltx@empty
4034 \let\PDF@SetupDoc\@empty
4035 \let\PDF@FinishDoc\@empty
4036 \let\phantomsection\@empty
4037 \let\special@paper\@empty
4038 \def\HyperDestNameFilter#1{#1}
4039 \Hy@AtBeginDocument{%
4040 \begingroup
4041 \edef\x{\@ifundefined{stockheight}\paperheight\stockheight}%
4042 \dimen@=\x\relax

```

```

4043 \ifdim\dimen@>\z@
4044 \else
4045 \dimen@=11in\relax
4046 \Hy@WarningNoLine{%
4047   Height of page (\expandafter\string\x) %
4048   is invalid (\the\x),\MessageBreak
4049   using 11in%
4050 }%
4051 \fi
4052 \dimen@=0.99626401\dimen@
4053 \xdef\Hy@pageheight{\strip@pt\dimen@}%
4054 \endgroup
4055 }
4056 \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.

```

4057 \let\hyper@normalise\ExecuteOptions
4058 \let\ExecuteOptions\hypersetup
4059 \Hy@RestoreCatcodes
4060 \InputIfFileExists{hyperref.cfg}{-}{-}
4061 \Hy@SetCatcodes
4062 \let\ExecuteOptions\hyper@normalise
4063 \ifx\Hy@MaybeStopNow\relax
4064 \else
4065 \Hy@stoppedearlytrue
4066 \expandafter\Hy@MaybeStopNow
4067 \fi
4068 \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.

```

4069 \SetupKeyvalOptions{family=Hyp}
4070 \DeclareLocalOptions{%
4071   a4paper,a5paper,b5paper,letterpaper,legalpaper,executivepaper%
4072 }

```

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

```

4073 \@ifpackageloaded{tex4ht}{%
4074   \@ifpackagewith{hyperref}{tex4ht}{-}{-}%
4075   \PassOptionsToPackage{tex4ht}{hyperref}%
4076 }%
4077 }{-}

4078 \let\ReadBookmarks\relax
4079 \ProcessKeyvalOptions{Hyp}

```

After processing options.

## 15.1 Package `xspace` support

```

4080 \def\Hy@xspace@end{}
4081 \ltx@ifundefined{xspaceaddeceptions}{%
4082   \Hy@AtBeginDocument{%
4083     \ltx@ifundefined{xspaceaddeceptions}{%
4084       }{%
4085         \def\Hy@xspace@end{%
4086           \ltx@gobble{end for xspace}%

```

```

4087 }%
4088 \xspaceaddexceptions{\Hy@xspace@end,\hyper@linkend,\hyper@anchorend}%
4089 }%
4090 }%
4091 }{%
4092 \def\Hy@xspace@end{%
4093 \ltx@gobble{end for xspace}%
4094 }%
4095 \xspaceaddexceptions{\Hy@xspace@end,\hyper@linkend,\hyper@anchorend}%
4096 }

```

## 15.2 Option draft

```

4097 \Hy@AtBeginDocument{%
4098 \ifHy@draft
4099 \let\hyper@@anchor\@gobble
4100 \gdef\hyper@link#1#2#3{#3\Hy@xspace@end}%
4101 \def\hyper@anchorstart#1#2{#2\Hy@xspace@end}%
4102 \def\hyper@anchorend{\Hy@xspace@end}%
4103 \let\hyper@linkstart\@gobbletwo
4104 \def\hyper@linkend{\Hy@xspace@end}%
4105 \def\hyper@linkurl#1#2{#1\Hy@xspace@end}%
4106 \def\hyper@linkfile#1#2#3{#1\Hy@xspace@end}%
4107 \def\hyper@link@[#1]#2#3#4{#4\Hy@xspace@end}%
4108 \def\Acrobatmenu#1#2{\leavevmode#2\Hy@xspace@end}%
4109 \let\PDF@SetupDoc\@empty
4110 \let\PDF@FinishDoc\@empty
4111 \let\@fifthoffive\@secondoftwo
4112 \let\@secondoffive\@secondoftwo
4113 \let\ReadBookmarks\relax
4114 \let\WriteBookmarks\relax
4115 \Hy@WarningNoLine{Draft mode on}%
4116 \fi
4117 \Hy@DisableOption{draft}%
4118 \Hy@DisableOption{nolinks}%
4119 \Hy@DisableOption{final}%
4120 }

```

## 15.3 PDF/A

```

4121 \Hy@DisableOption{pdfa}
4122 \ifHy@pdfa
4123 \kvsetkeys{Hyp}{pdfversion=1.4}%
4124 \def\Hy@Acrobatmenu#1#2{%
4125 \leavevmode
4126 \begingroup
4127 \edef\x{#1}%
4128 \@onelevel@sanitize\x
4129 \ifx\x\Hy@NextPage
4130 \let\y=Y%
4131 \else
4132 \ifx\x\Hy@PrevPage
4133 \let\y=Y%
4134 \else
4135 \ifx\x\Hy@FirstPage
4136 \let\y=Y%
4137 \else
4138 \ifx\x\Hy@LastPage
4139 \let\y=Y%

```

```

4140         \else
4141         \let\y=N%
4142         \fi
4143     \fi
4144     \fi
4145     \fi
4146 \expandafter\endgroup
4147 \ifx\y Y%
4148 \else
4149     \Hy@Error{%
4150     PDF/A: Named action ‘#1’ is not permitted%
4151     }\@ehc
4152     {#2}%
4153     \expandafter\@gobble
4154 \fi
4155 }%
4156 \def\Hy@temp#1{%
4157     \expandafter\def\csname Hy@#1\endcsname{#1}%
4158     \expandafter\@onelevel@sanitize\csname Hy@#1\endcsname
4159 }%
4160 \Hy@temp{NextPage}%
4161 \Hy@temp{PrevPage}%
4162 \Hy@temp{FirstPage}%
4163 \Hy@temp{LastPage}%
4164 \else
4165 \def\Hy@Acrobatmenu#1#2{\leavevmode}%
4166 \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.

```

4167 \Hy@nextfalse
4168 \ltx@ifundefined{spanish@sh@}{\Hy@nexttrue}
4169 \ltx@ifundefined{galician@sh@}{\Hy@nexttrue}
4170 \ltx@ifundefined{estonian@sh@}{\Hy@nexttrue}
4171 \ifHy@next
4172     \let\texttilde\~%
4173 \fi

4174 \def\Hy@wrapper@babel#1#2{%
4175     \begingroup
4176     \Hy@safe@activetrue
4177     \set@display@protect
4178     \edef\x{#2}%
4179     \@onelevel@sanitize\x
4180     \toks@{#1}%
4181     \edef\x{\endgroup\the\toks@{\x}}%
4182     \x
4183 }
4184 \def\Hy@WrapperDef#1{%
4185     \begingroup
4186     \escapechar=\m@ne
4187     \xdef\Hy@gtemp{%
4188         \expandafter\noexpand\csname HyWrap@\string#1\endcsname
4189     }%
4190     \endgroup

```

```

4191 \edef#1{%
4192   \noexpand\Hy@wrapper@babel
4193   \expandafter\noexpand\Hy@gtemp
4194 }%
4195 \expandafter\def\Hy@gtemp
4196 }

4197 \ifHy@hyperfigures
4198   \Hy@Info{Hyper figures ON}%
4199 \else
4200   \Hy@Info{Hyper figures OFF}%
4201 \fi
4202 \ifHy@nesting
4203   \Hy@Info{Link nesting ON}%
4204 \else
4205   \Hy@Info{Link nesting OFF}%
4206 \fi
4207 \ifHy@hyperindex
4208   \Hy@Info{Hyper index ON}%
4209 \else
4210   \Hy@Info{Hyper index OFF}%
4211 \fi
4212 \ifHy@plainpages
4213   \Hy@Info{Plain pages ON}%
4214 \else
4215   \Hy@Info{Plain pages OFF}%
4216 \fi
4217 \ifHy@backref
4218   \Hy@Info{Backreferencing ON}%
4219 \else
4220   \Hy@Info{Backreferencing OFF}%
4221 \fi
4222 \ifHy@typexml
4223   \Hy@AtEndOfPackage{%
4224     \RequirePackage{color}%
4225     \RequirePackage{nameref}%
4226   }%
4227 \fi
4228 \Hy@DisableOption{typexml}
4229 \ifHy@implicit
4230   \Hy@InfoNoLine{Implicit mode ON; LaTeX internals redefined}%
4231 \else
4232   \Hy@InfoNoLine{Implicit mode OFF; no redefinition of LaTeX internals}%
4233   \def\MaybeStopEarly{%
4234     \Hy@Message{Stopped early}%
4235     \Hy@AtBeginDocument{%
4236       \PDF@FinishDoc
4237       \gdef\PDF@FinishDoc{}}%
4238   }%
4239   \endinput
4240 }%
4241 \Hy@AtBeginDocument{%
4242   \let\autoref\ref
4243   \let\autopageref\pageref
4244   \ifx\@pdfpagemode\@empty
4245     \gdef\@pdfpagemode{UseNone}%
4246   \fi
4247   \global\Hy@backreffalse

```



```

4248 }%
4249 \Hy@AtEndOfPackage{%
4250   \global\let\ReadBookmarks\relax
4251   \global\let\WriteBookmarks\relax
4252 }%
4253 \fi
4254 \Hy@DisableOption{implicit}

```

#### 15.4.1 Driver loading

```

4255 \Hy@AtEndOfPackage{%
4256   \@ifpackageloaded{tex4ht}{%
4257     \def\Hy@driver{htex4ht}%
4258     \Hy@texhttrue
4259   }{}%

```

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.

```

4260   \ifx\Hy@driver\@empty
4261   \else
4262     \def\Hy@temp{hpdftex}%
4263     \ifpdf
4264       \ifx\Hy@driver\Hy@temp
4265       \else
4266         \Hy@WarningNoLine{%
4267           Wrong driver ‘\Hy@driver.def’;\MessageBreak
4268           pdfTeX is running in PDF mode.\MessageBreak
4269           Forcing driver ‘\Hy@temp.def’%
4270         }%
4271       \let\Hy@driver\Hy@temp
4272     \fi
4273   \else
4274     \ifx\Hy@driver\Hy@temp
4275     \Hy@WarningNoLine{%
4276       Wrong driver ‘\Hy@driver.def’;\MessageBreak
4277       pdfTeX is not running in PDF mode.\MessageBreak
4278       Using default driver%
4279     }%
4280     \let\Hy@driver\@empty
4281   \fi
4282 \fi
4283 \fi
4284 \ifHy@texht
4285 \else
4286   \ifx\Hy@driver\@empty
4287   \else
4288     \def\Hy@temp{hxdetex}%
4289     \ifxdetex
4290       \ifx\Hy@driver\Hy@temp
4291       \else
4292         \Hy@WarningNoLine{%
4293           Wrong driver ‘\Hy@driver.def’;\MessageBreak
4294           XeTeX is running.\MessageBreak
4295           Forcing driver ‘\Hy@temp.def’ for XeTeX%
4296         }%
4297       \let\Hy@driver\Hy@temp
4298     \fi
4299   \fi

```

```

4300 \fi
4301 \fi
4302 \ifx\Hy@driver\@empty
4303 \else
4304 \def\Hy@temp{hvtexhtm}%
4305 \ifvtexhtml
4306 \ifx\Hy@driver\Hy@temp
4307 \else
4308 \Hy@WarningNoLine{%
4309   Wrong driver '\Hy@driver.def';\MessageBreak
4310   VTeX is running in HTML mode.\MessageBreak
4311   Forcing driver '\Hy@temp.def'%
4312 }%
4313 \let\Hy@driver\Hy@temp
4314 \fi
4315 \else
4316 \ifx\Hy@driver\Hy@temp
4317 \Hy@WarningNoLine{%
4318   Wrong driver '\Hy@driver.def';\MessageBreak
4319   VTeX is not running in HTML mode.\MessageBreak
4320   Using default driver%
4321 }%
4322 \let\Hy@driver\@empty
4323 \fi
4324 \fi
4325 \fi

```

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

```

4326 \def\HyOpt@DriverType{%
4327 \ifx\Hy@driver\@empty
4328 \def\HyOpt@DriverType{ (autodetected)}%
4329 \providecommand*\Hy@defaultdriver{hypertex}%
4330 \ifpdf
4331 \def\Hy@driver{hpdfTEX}%
4332 \else
4333 \ifxetex
4334 \def\Hy@driver{hxetex}%
4335 \else
4336 \ifvtexhtml
4337 \def\Hy@driver{hvtexhtm}%
4338 \def\MaybeStopEarly{%
4339 \Hy@Message{Stopped early}%
4340 \Hy@AtBeginDocument{%
4341 \PDF@FinishDoc
4342 \gdef\PDF@FinishDoc{}}%
4343 }%
4344 \endinput
4345 }%
4346 \else
4347 \ifvtexpdf
4348 \def\Hy@driver{hvtex}%
4349 \else
4350 \ifvtexps
4351 \def\Hy@driver{hvtex}%
4352 \else
4353 \ifx\HyOpt@DriverFallback\ltx@empty
4354 \let\Hy@driver\Hy@defaultdriver
4355 \def\HyOpt@DriverType{ (default)}%

```

```

4356         \else
4357         \begingroup
4358         \toks@\expandafter{\HyOpt@DriverFallback}%
4359         \edef\x{\endgroup
4360         \noexpand\kvsetkeys{Hyp}{\the\toks@}}%
4361         }%
4362         \x
4363         \ifx\Hy@driver\ltx@empty
4364         \let\Hy@driver\Hy@defaultdriver
4365         \def\HyOpt@DriverType{ (default)}%
4366         \else
4367         \def\HyOpt@DriverType{ (fallback)}%
4368         \fi
4369     \fi
4370 \fi
4371 \fi
4372 \fi
4373 \fi
4374 \fi
4375 \ifx\Hy@driver\Hy@defaultdriver
4376 \def\Hy@temp{hdvwind}%
4377 \ifx\Hy@temp\Hy@driver
4378 \kvsetkeys{Hyp}{colorlinks}%
4379 \PassOptionsToPackage{dviwindo}{color}%
4380 \fi
4381 \fi
4382 \fi
4383 \Hy@Message{Driver\HyOpt@DriverType: \Hy@driver}%
4384 \chardef\Hy@VersionChecked=0 %
4385 \input{\Hy@driver.def}%
4386 \ifcase\Hy@VersionChecked
4387 \Hy@VersionCheck{\Hy@driver.def}%
4388 \fi
4389 \let\@unprocessedoptions\relax
4390 \Hy@RestoreCatcodes
4391 \Hy@DisableOption{tex4ht}%
4392 \Hy@DisableOption{pdftex}%
4393 \Hy@DisableOption{nativepdf}%
4394 \Hy@DisableOption{dvipdfm}%
4395 \Hy@DisableOption{dvipdfmx}%
4396 \Hy@DisableOption{dvipdfmx-outline-open}%
4397 \Hy@DisableOption{pdfmark}%
4398 \Hy@DisableOption{dvips}%
4399 \Hy@DisableOption{hypertex}%
4400 \Hy@DisableOption{vtex}%
4401 \Hy@DisableOption{vtexpdfmark}%
4402 \Hy@DisableOption{dviwindo}%
4403 \Hy@DisableOption{dvipsone}%
4404 \Hy@DisableOption{textures}%
4405 \Hy@DisableOption{latex2html}%
4406 \Hy@DisableOption{ps2pdf}%
4407 \Hy@DisableOption{xetex}%
4408 \Hy@DisableOption{pdfversion}%
4409 }

```

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.

```

4410 \newif\ifHy@DvipdfmxOutlineOpen
4411 \ifxetex
4412 \ifdim\number\XeTeXversion\XeTeXrevision in<0.9995in %
4413 \else
4414 \chardef\SpecialDvipdfmxOutlineOpen\@ne
4415 \Hy@DvipdfmxOutlineOpenttrue
4416 \fi
4417 \fi
4418 \begingroup\expandafter\expandafter\expandafter\endgroup
4419 \expandafter\ifx\csname SpecialDvipdfmxOutlineOpen\endcsname\relax
4420 \else
4421 \ifnum\SpecialDvipdfmxOutlineOpen>\z@
4422 \Hy@DvipdfmxOutlineOpenttrue
4423 \fi
4424 \fi

```

### 15.4.2 Bookmarks

```

4425 \def\WriteBookmarks{0}
4426 \def\@bookmarkopenstatus#1{%
4427 \ifHy@bookmarksopen

```

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

```

4428 \ifnum#1<\expandafter\@firstofone\expandafter
4429 \{\number\@bookmarksopenlevel\} % explicit space
4430 \else
4431 -%
4432 \fi
4433 \else
4434 -%
4435 \fi
4436 }
4437 \ifHy@bookmarks
4438 \Hy@Info{Bookmarks ON}%
4439 \ifx\@pdfpagemode\@empty
4440 \def\@pdfpagemode{UseOutlines}%
4441 \fi
4442 \else
4443 \let\@bookmarkopenstatus\ltx@gobble
4444 \Hy@Info{Bookmarks OFF}%
4445 \Hy@AtEndOfPackage{%
4446 \global\let\ReadBookmarks\relax
4447 \global\let\WriteBookmarks\relax
4448 }%
4449 \ifx\@pdfpagemode\@empty
4450 \def\@pdfpagemode{UseNone}%
4451 \fi
4452 \fi
4453 \Hy@DisableOption{bookmarks}

```

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

```

4454 \def\Hy@CatcodeWrapper#1{%
4455 \let\Hy@endWrap\ltx@empty
4456 \def\TMP@EnsureCode##1##2{%
4457 \edef\Hy@endWrap{%
4458 \Hy@endWrap
4459 \catcode##1 \the\catcode##1\relax
4460 }%
4461 \catcode##1 ##2\relax

```

```

4462 }%
4463 \TMP@EnsureCode{10}{12}% ^^J
4464 \TMP@EnsureCode{33}{12}% !
4465 \TMP@EnsureCode{34}{12}% "
4466 \TMP@EnsureCode{36}{3}% $ (math)
4467 \TMP@EnsureCode{38}{4}% & (alignment)
4468 \TMP@EnsureCode{39}{12}% '
4469 \TMP@EnsureCode{40}{12}% (
4470 \TMP@EnsureCode{41}{12}% )
4471 \TMP@EnsureCode{42}{12}% *
4472 \TMP@EnsureCode{43}{12}% +
4473 \TMP@EnsureCode{44}{12}% ,
4474 \TMP@EnsureCode{45}{12}% -
4475 \TMP@EnsureCode{46}{12}% .
4476 \TMP@EnsureCode{47}{12}% /
4477 \TMP@EnsureCode{58}{12}% :
4478 \TMP@EnsureCode{59}{12}% ;
4479 \TMP@EnsureCode{60}{12}% <
4480 \TMP@EnsureCode{61}{12}% =
4481 \TMP@EnsureCode{62}{12}% >
4482 \TMP@EnsureCode{63}{12}% ?
4483 \TMP@EnsureCode{91}{12}% [
4484 \TMP@EnsureCode{93}{12}% ]
4485 \TMP@EnsureCode{94}{7}% ^ (superscript)
4486 \TMP@EnsureCode{95}{8}% _ (subscript)
4487 \TMP@EnsureCode{96}{12}% '
4488 \TMP@EnsureCode{124}{12}% |
4489 \TMP@EnsureCode{126}{13}% ~ (active)
4490 #1\relax
4491 \Hy@EndWrap
4492 }

```

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

```

4493 \Hy@AtBeginDocument{%
4494   \ifHy@ocgcolorlinks
4495     \kvsetkeys{Hyp}{colorlinks}%
4496     \ifHy@pdfa
4497       \Hy@Warning{%
4498         PDF/A: Optional Content Groups are prohibited,\MessageBreak
4499         using 'colorlinks' instead of 'ocgcolorlinks'%
4500       }%
4501       \Hy@ocgcolorlinksfalse
4502     \fi
4503   \fi
4504   \ifHy@ocgcolorlinks
4505   \else
4506     \Hy@DisableOption{ocgcolorlinks}%
4507   \fi
4508   \ifHy@colorlinks
4509     \def\@pdfborder{0 0 0}%
4510     \let\@pdfborderstyle\@empty
4511   \ifHy@typexml
4512   \else
4513     \Hy@CatcodeWrapper{%
4514       \RequirePackage{color}%
4515     }%
4516   \fi

```

```

4517 \def\Hy@colorlink#1{%
4518 \begingroup
4519 \HyColor@UseColor#1%
4520 }%
4521 \def\Hy@endcolorlink{\endgroup}%
4522 \Hy@Info{Link coloring ON}%
4523 \else
4524 \ifHy@frenchlinks
4525 \def\Hy@colorlink#1{\begingroup\fontshape{sc}\selectfont}%
4526 \def\Hy@endcolorlink{\endgroup}%
4527 \Hy@Info{French linking ON}%
4528 \else
for grouping consistency:
4529 \def\Hy@colorlink#1{\begingroup}%
4530 \def\Hy@endcolorlink{\endgroup}%
4531 \Hy@Info{Link coloring OFF}%
4532 \fi
4533 \fi
4534 \Hy@DisableOption{colorlinks}%
4535 \Hy@DisableOption{frenchlinks}%
4536 \ifHy@texht
4537 \long\def\@firstoffive#1#2#3#4#5{#1}%
4538 \long\def\@secondoffive#1#2#3#4#5{#2}%
4539 \long\def\@thirdoffive#1#2#3#4#5{#3}%
4540 \long\def\@fourthoffive#1#2#3#4#5{#4}%
4541 \long\def\@fifthoffive#1#2#3#4#5{#5}%
4542 \providecommand*\@safe@activetrue{}%
4543 \providecommand*\@safe@activesfalse{}%
4544 \def\T@ref#1{%
4545 \Hy@safe@activetrue
4546 \expandafter\@setref\csname r@#1\endcsname\@firstoffive{#1}%
4547 \Hy@safe@activesfalse
4548 }%
4549 \def\T@pageref#1{%
4550 \Hy@safe@activetrue
4551 \expandafter\@setref\csname r@#1\endcsname\@secondoffive{#1}%
4552 \Hy@safe@activesfalse
4553 }%
4554 \else
4555 \ifHy@typexml
4556 \else
4557 \Hy@CatcodeWrapper{%
4558 \RequirePackage{nameref}%
4559 }%
4560 \fi
4561 \fi
4562 \DeclareRobustCommand\ref{%
4563 \@ifstar\@refstar\T@ref
4564 }%
4565 \DeclareRobustCommand\pageref{%
4566 \@ifstar\@pagerefstar\T@pageref
4567 }%
4568 % \ifclassloaded{memoir}{%
4569 % \ltx@ifundefined{@mem@titlerefno link}\ltx@secondoftwo{%
4570 % \ltx@ifundefined{@mem@titleref}\ltx@secondoftwo\ltx@firstoftwo
4571 % }%
4572 % }\ltx@secondoftwo

```

```

4573 % {%
4574 %   \DeclareRobustCommand*{\nameref}{%
4575 %     \@ifstar\@mem@titlerefno link\@mem@titleref
4576 %   }%
4577 % }{%
4578   \DeclareRobustCommand*{\nameref}{%
4579     \@ifstar\@namerefstar\T@nameref
4580   }%
4581 % }%
4582 }
4583 \Hy@AtBeginDocument{%
4584   \ifHy@texht
4585   \else
4586     \Hy@CatcodeWrapper\ReadBookmarks
4587   \fi
4588 }
4589 \ifHy@backref
4590   \RequirePackage{backref}%
4591 \else
4592   \let\Hy@backout\@gobble
4593 \fi
4594 \Hy@DisableOption{backref}
4595 \Hy@DisableOption{pagebackref}
4596 \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`.

```

4597 \begingroup
4598   \endlinechar=-1 %
4599   \catcode'\^^A=14 %
4600   \catcode'\^^M\active
4601   \catcode'\%\active
4602   \catcode'\#\active
4603   \catcode'\_\active
4604   \catcode'\$\active
4605   \catcode'\&\active
4606   \gdef\hyper@normalise{^^A
4607     \begingroup
4608       \catcode'\^^M\active
4609       \def^^M{ }^^A
4610       \catcode'\%\active
4611       \let%\@percentchar
4612       \let\%\@percentchar
4613       \catcode'\#\active
4614       \def#{\hyper@hash}^^A
4615       \def\#{\hyper@hash}^^A
4616       \@makeother\&^^A
4617       \edef&{\string&}^^A
4618       \edef\&{\string&}^^A

```

```

4619 \edef\textunderscore{\string_}^^A
4620 \let_\textunderscore
4621 \catcode'\_ \active
4622 \let_\textunderscore
4623 \let~\hyper@tilde
4624 \let\~\hyper@tilde
4625 \let\textasciitilde\hyper@tilde
4626 \let\\\@backslashchar
4627 \edef$\string$}^^A
4628 \Hy@safe@activetrue
4629 \hyper@n@rmalise
4630 }^^A
4631 \catcode'\#=6 ^^A
4632 \gdef\Hy@ActiveCarriageReturn{^^M}^^A
4633 \gdef\hyper@n@rmalise#1#2{^^A
4634 \def\Hy@tempa{#2}^^A
4635 \ifx\Hy@tempa\Hy@ActiveCarriageReturn
4636 \ltx@ReturnAfterElseFi{^^A
4637 \hyper@@normalise{#1}^^A
4638 }^^A
4639 \else
4640 \ltx@ReturnAfterFi{^^A
4641 \hyper@@normalise{#1}{#2}^^A
4642 }^^A
4643 \fi
4644 }^^A
4645 \gdef\hyper@@normalise#1#2{^^A
4646 \edef\Hy@tempa{^^A
4647 \endgroup
4648 \noexpand#1{\Hy@RemovePercentCr#2%^^M\@nil}^^A
4649 }^^A
4650 \Hy@tempa
4651 }^^A
4652 \gdef\Hy@RemovePercentCr#1%^^M#2\@nil{^^A
4653 #1^^A
4654 \ifx\limits#2\limits
4655 \else
4656 \ltx@ReturnAfterFi{^^A
4657 \Hy@RemovePercentCr #2\@nil
4658 }^^A
4659 \fi
4660 }^^A
4661 \endgroup
4662 \providecommand*\hyper@chars{%
4663 \let\#\hyper@hash
4664 \let\%\@percentchar
4665 \Hy@safe@activetrue
4666 }

4667 \def\hyperlink#1#2{%
4668 \hyper@@link{#1}{#2}%
4669 }

4670 \def\Hy@VerboseLinkStart#1#2{%
4671 \ifHy@verbose
4672 \begingroup
4673 \Hy@safe@activetrue
4674 \xdef\Hy@VerboseGlobalTemp{(#1) '#2'}%
4675 \Hy@Info{Reference \Hy@VerboseGlobalTemp}%

```



```

4676 \xdef\Hy@VerboseGlobalTemp{%
4677 \Hy@VerboseGlobalTemp, %
4678 line \the\inputlineno
4679 }%
4680 \endgroup
4681 \let\Hy@VerboseLinkInfo\Hy@VerboseGlobalTemp
4682 \@onelevel@sanitize\Hy@VerboseLinkInfo
4683 \fi
4684 }

4685 \def\Hy@VerboseLinkInfo{<VerboseLinkInfo>}
4686 \def\Hy@VerboseLinkStop{%
4687 \ifHy@verbose
4688 \begingroup
4689 \edef\x{\endgroup
4690 \write\m@ne{%
4691 Package ‘hyperref’ Info: %
4692 End of reference \Hy@VerboseLinkInfo.%
4693 }%
4694 }%
4695 \x
4696 \fi
4697 }

4698 \def\Hy@VerboseAnchor#1{%
4699 \ifHy@verbose
4700 \begingroup
4701 \Hy@safe@activetrue
4702 \Hy@Info{Anchor ‘\HyperDestNameFilter{#1}’}%
4703 \endgroup
4704 \fi
4705 }

4706 \def\Hy@AllowHyphens{%
4707 \relax
4708 \ifhmode
4709 \penalty\@M
4710 \hskip\z@skip
4711 \fi
4712 }

4713 \DeclareRobustCommand*{\href}[1][]{%
4714 \begingroup
4715 \setkeys{href}{#1}%
4716 \@ifnextchar\bgroup\Hy@href{\hyper@normalise\href@}%
4717 }
4718 \def\Hy@href#1{%
4719 \hyper@normalise\href@
4720 }
4721 \begingroup
4722 \catcode'\$=6 %
4723 \catcode'\#=12 %
4724 \gdef\href@#1{\expandafter\href@split$1##\}%
4725 \gdef\href@split$1##$2##$3\\$4{%
4726 \hyper@@link{$1}{$2}{$3}{$4}%
4727 \endgroup
4728 }%
4729 \endgroup

```

Option ‘page’.

```

4730 \define@key{href}{page}{%
4731   \def\Hy@href@page{#1}%
4732 }
4733 \let\Hy@href@page\@empty
4734 \newcount\c@Hy@tempcnt
4735 \def\theHy@tempcnt{\the\c@Hy@tempcnt}
4736 \def\Hy@MakeRemoteAction{%
4737   \ifx\Hy@href@page\@empty
4738     \def\Hy@href@page{0}%
4739   \else
4740     \setcounter{Hy@tempcnt}{\Hy@href@page}%
4741     \ifnum\c@Hy@tempcnt<\@ne
4742       \Hy@Warning{%
4743         Invalid page number (\theHy@tempcnt)\MessageBreak
4744         for remote PDF file.\MessageBreak
4745         Using page 1%
4746       }%
4747     \def\Hy@href@page{0}%
4748   \else
4749     \global\advance\c@Hy@tempcnt\m@ne
4750   \edef\Hy@href@page{\theHy@tempcnt}%
4751   \fi
4752 }

```

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.

```

4753 \ifx\Hy@href@nextactionraw\@empty
4754 \else
4755   \Hy@pdfnewwindowsettrue
4756   \Hy@pdfnewwindowtrue
4757 \fi
4758 }

```

Option ‘pdfremotestartview’.

```

4759 \define@key{href}{pdfremotestartview}{%
4760   \setkeys{Hyp}{pdfremotestartview={#1}}%
4761 }

```

Option ‘pdfnewwindow’.

```

4762 \let\KV@href@pdfnewwindow\KV@Hyp@pdfnewwindow
4763 \let\KV@href@pdfnewwindow@default\KV@Hyp@pdfnewwindow@default

```

Option ‘ismap’.

```

4764 \newif\ifHy@href@ismap
4765 \define@key{href}{ismap}[true]{%
4766   \ltx@ifundefined{Hy@href@ismap#1}{%
4767     \Hy@Error{%
4768       Invalid value (#1) for key ‘ismap’.\MessageBreak
4769       Permitted values are ‘true’ or ‘false’.\MessageBreak
4770       Ignoring ‘ismap’%
4771     }\@ehc
4772   }{%
4773     \csname Hy@href@ismap#1\endcsname
4774   }%
4775 }

```

Option ‘nextactionraw’.

```

4776 \let\Hy@href@nextactionraw\@empty
4777 \define@key{href}{nextactionraw}{%

```

```

4778 \edef\Hy@href@nextactionraw{#1}%
4779 \ifx\Hy@href@nextactionraw\@empty
4780 \else
4781 \Hy@Match\Hy@href@nextactionraw{%
4782 ~(\HyPat@ObjRef/|<<./S[ /.+>>|%
4783 \[( ?\HyPat@ObjRef/|<<./S[ /.+>>)+ ?])$%
4784 }-}%
4785 \Hy@Warning{Invalid value for 'nextactionraw':\MessageBreak
4786 \Hy@href@nextactionraw\MessageBreak
4787 The action is discarded%
4788 }%
4789 }%
4790 \ifx\Hy@href@nextactionraw\@empty
4791 \else
4792 \edef\Hy@href@nextactionraw{/Next \Hy@href@nextactionraw}%
4793 \fi
4794 \fi
4795 }
4796 \def\HyPat@ObjRef/{.+}

```

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

```

4797 \RequirePackage{url}
4798 \let\HyOrg@url\url
4799 \def\Hurl{\begingroup \Url}
4800 \DeclareRobustCommand*{\nolinkurl}{\hyper@normalise\nolinkurl@}
4801 \def\nolinkurl@#1{\Hurl{#1}}
4802 \DeclareRobustCommand*{\url}{\hyper@normalise\url@}
4803 \def\url@#1{\hyper@linkurl{\Hurl{#1}}{#1}}
4804 \DeclareRobustCommand*{\hyperimage}{\hyper@normalise\hyper@image}
4805 \providecommand\hyper@image[2]{#2}
4806 \def\hypertarget#1#2{%
4807 \ifHy@nesting
4808 \hyper@@anchor{#1}{#2}%
4809 \else
4810 \hyper@@anchor{#1}{\relax}#2%
4811 \fi
4812 }

```

`\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.

```

4813 \DeclareRobustCommand*{\hyperref}{%
4814 \@ifnextchar{\Hy@babelnormalise\label@hyperref}\@hyperref
4815 }
4816 \def\Hy@babelnormalise#1[#2]{%
4817 \begingroup
4818 \Hy@safe@activestruer
4819 \edef\Hy@tempa{%
4820 \endgroup
4821 \noexpand#1[#2]}%
4822 }%
4823 \Hy@tempa
4824 }

```

```

4825 \def\@hyperref{\hyper@normalise\@hyperref}
4826 \def\@hyperref#1#2#3{%
4827   \edef\ref@one{\ifx\#2\#2\else#2.\fi#3}%
4828   \expandafter\tryhyper@link\ref@one\{#1}%
4829 }
4830 \def\tryhyper@link#1\#2{%
4831   \hyper@@link{#2}{#1}%
4832 }

4833 \def\hyperdef{\@ifnextchar{\label@hyperdef}{\@hyperdef}}
4834 \def\@hyperdef#1#2#3{% category, name, text
4835   \ifx\#1\%
4836     \def\Hy@AnchorName{#2}%
4837   \else
4838     \def\Hy@AnchorName{#1.#2}%
4839   \fi
4840   \ifHy@nesting
4841     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#3}%
4842   \else
4843     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}{#3}%
4844   \fi
4845 }

```

We also have a need to give a L<sup>A</sup>T<sub>E</sub>X *label* to a hyper reference, to ease the pain of referring to it later.

```

4846 \def\label@hyperref[#1]{%
4847   \expandafter\label@@hyperref\csname r@#1\endcsname{#1}%
4848 }%
4849 \def\label@@hyperref#1#2#3{%
4850   \ifx#1\relax
4851     \protect\G@refundefinedtrue
4852     \@latex@warning{%
4853       Hyper reference ‘#2’ on page \thepage \space undefined%
4854     }%
4855     \begingroup
4856       #3%
4857     \endgroup
4858   \else
4859     \hyper@@link{\expandafter\@fifthoffive#1}%
4860     {\expandafter\@fourthoffive#1\@empty\@empty}{#3}%
4861   \fi
4862 }
4863 \def\label@hyperdef[#1]#2#3#4{% label name, category, name,
4864                               % anchor text
4865   \@bsphack
4866   \ifx\#2\%
4867     \def\Hy@AnchorName{#3}%
4868   \else
4869     \def\Hy@AnchorName{#2.#3}%
4870   \fi
4871   \if@filesw
4872     \protected@write\@auxout{}{%
4873       \string\newlabel{#1}{\{#\}\}\{\Hy@AnchorName\}\}%
4874     }%
4875   \fi
4876   \@esphack
4877   \ifHy@nesting
4878     \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{#4}%

```

```

4879 \else
4880 \expandafter\hyper@@anchor\expandafter{\Hy@AnchorName}{\relax}#4%
4881 \fi
4882 }

```

## 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.

```

4883 \def\hyper@link{\let\Hy@reserved@a\relax
4884 \ifnextchar{\hyper@link@}{\hyper@link@[link]}%
4885 }
4886 \def\hyper@link@[#1]#2#3#4{%
4887 \begingroup
4888 \protected@edef\Hy@tempa{#2}%
4889 \Hy@safe@activetrue
4890 \edef\x{#3}%
4891 \ifx\Hy@tempa\@empty
4892 \toks0{\hyper@link{#1}}%
4893 \else
4894 \toks0{\expandafter\hyper@readexternallink#2\\{#1}}%
4895 \fi
4896 \toks2{%
4897 \Hy@safe@activesfalse
4898 #4%
4899 }%
4900 \edef\Hy@tempa{\the\toks2}%
4901 \edef\x{\endgroup
4902 \ifx\Hy@tempa\@empty
4903 \noexpand\Hy@Warning{Suppressing empty link}%
4904 \else
4905 \the\toks0 {\x}{\the\toks2}%%
4906 \fi
4907 }%
4908 \x
4909 }

```

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.

```

4910 \def\hyper@readexternallink#1\\#2#3#4{%
4911 \begingroup
4912 \let\\ \relax
4913 \expandafter\endgroup
4914 \expandafter\@hyper@@readexternallink#1\\{#2}{#3}{#4}%
4915 }
4916 \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.

```
4917 \@hyper@readexternallink{#2}{#3}{#4}#1::\{#1}%  
4918 }
```

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

```
4919 \def\@pdftempwordfile{file}%  
4920 \def\@pdftempwordrun{run}%  
4921 \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:

```
4922 \ifx\#6\%  
4923   \@hyper@linkfile file:#7\{#3}{#2}{#7}%  
4924 \else  
4925   \ifx\#4\%  
4926     \@hyper@linkfile file:#7\{#3}{#2}{#7}%  
4927   \else
```

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

```
4928   \def\@pdftempa{#4}%  
4929   \ifx\@pdftempa\@pdftempwordfile  
4930     \@hyper@linkfile#7\{#3}{#2}{#7}%  
4931   \else
```

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

```
4932     \ifx\@pdftempa\@pdftempwordrun  
4933       \ifHy@pdfa  
4934         \Hy@Error{%  
4935           PDF/A: Launch action is prohibited%  
4936         }\@ehc  
4937       \begingroup  
4938       \leavevmode  
4939       #2%  
4940     \endgroup  
4941   \else  
4942     \@hyper@launch#7\{#3}{#2}%  
4943   \fi  
4944 \else
```

otherwise its a URL

```
4945     \hyper@linkurl{#3}{#7\ifx\#2\%else\hyper@hash#2\fi}%  
4946   \fi  
4947 \fi  
4948 \fi  
4949 \fi  
4950 }
```

By default, turn run: into file:

```
4951 \def\@hyper@launch run:#1\#2#3{% filename, anchor text, linkname  
4952   \hyper@linkurl{#2}{%
```

```

4953 \Hy@linkfileprefix
4954 #1%
4955 \ifx\\#3\\%
4956 \else
4957 \hyper@hash
4958 #3%
4959 \fi
4960 }%
4961 }

```

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

```

4962 \def\@hyper@linkfile file:#1\\#2#3#4{%
4963 %file url,link string, name, original uri
4964 \filename@parse{#1}%
4965 \ifx\filename@ext\relax
4966 \edef\filename@ext{\XR@ext}%
4967 \fi
4968 \def\use@file{\filename@area\filename@base.\filename@ext}%
4969 \Hy@ifStringEndsWith\filename@ext\XR@ext{%
4970 \hyper@linkfile{#2}{\use@file}{#3}%
4971 }{%
4972 \ifx\@baseurl\@empty
4973 \hyper@linkurl{#2}{%
4974 #4\ifx\\#3\\%
4975 }%
4976 \else
4977 \hyper@linkurl{#2}{\use@file\ifx\\#3\\%
4978 }%
4979 }%
4980 }

4981 \def\Hy@ifStringEndsWith#1#2{%
4982 \begingroup
4983 \edef\x{#1}%
4984 \@onelevel@sanitize\x
4985 \edef\x{.\x}%
4986 \edef\y{#2}%
4987 \@onelevel@sanitize\y
4988 \edef\y{.\y}%
4989 \expandafter\def\expandafter\z\expandafter##\expandafter1\y##2\@nil{%
4990 \endgroup
4991 \ifx\relax##2\relax
4992 \expandafter\ltx@secondoftwo
4993 \else
4994 \expandafter\ltx@firstoftwo
4995 \fi
4996 }%
4997 \expandafter\expandafter\expandafter\z\expandafter\x\y\@nil
4998 }

4999 \def\Hy@StringLocalhost{localhost}
5000 \@onelevel@sanitize\Hy@StringLocalhost
5001 \def\Hy@CleanupFile#1{%
5002 \edef#1{#1}%
5003 \expandafter\Hy@@CleanupFile#1\hbox{//\hbox\@nil{#1}%
5004 }
5005 \def\Hy@@CleanupFile#1//#2/#3\hbox#4\@nil#5{%
5006 \begingroup

```

```

5007 \toks@{\endgroup}%
5008 \def\x{#1}%
5009 \ifx\x\@empty
5010 \def\x{#2}%
5011 \ifx\x\@empty
5012 \toks@{\endgroup\def#5{/#3}}%
5013 \else
5014 \@onelevel@sanitize\x
5015 \ifx\x\Hy@StringLocalhost
5016 \toks@{\endgroup\def#5{/#3}}%
5017 \fi
5018 \fi
5019 \fi
5020 \the\toks@
5021 }

```

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.

```

5022 \long\def\hyper@@anchor#1#2{\@hyper@@anchor#1\relax#2\relax}
5023 \long\def\@hyper@@anchor#1\relax#2#3\relax{%
5024 \ifx\#1\%
5025 #2\Hy@Warning{Ignoring empty anchor}%
5026 \else
5027 \def\anchor@spot{#2#3}%
5028 \let\put@me@back\@empty
5029 \ifx\relax#2\relax
5030 \else
5031 \ifHy@nesting
5032 \else
5033 \ifcat a\noexpand#2\relax
5034 \else
5035 \ifcat 0\noexpand#2 \relax
5036 \else
5037 % \typeout{Anchor start is not alphanumeric %
5038 % on input line\the\inputlineno%
5039 % }%
5040 \let\anchor@spot\@empty
5041 \def\put@me@back{#2#3}%
5042 \fi
5043 \fi
5044 \fi
5045 \fi
5046 \ifHy@activeanchor
5047 \anchor@spot
5048 \else
5049 \hyper@anchor{#1}%
5050 \fi
5051 \expandafter\put@me@back
5052 \fi
5053 \let\anchor@spot\@empty
5054 }
5055 \let\anchor@spot\ltx@empty

```



## 18 Compatibility with the *L<sup>A</sup>T<sub>E</sub>X2html* package

Map our macro names on to Nikos', so that documents prepared for that system will work without change.

Note, however, that the whole complicated structure for segmenting documents is not supported; it is assumed that the user will load `html.sty` first, and then `hyperref.sty`, so that the definitions in `html.sty` take effect, and are then overridden in a few circumstances by this package.

```
5056 \let\htmladdimg\hyperimage
5057 \def\htmladdnormallink#1#2{\href{#2}{#1}}
5058 \def\htmladdnormallinkfoot#1#2{\href{#2}{#1}\footnote{#2}}
5059 \def\htmlref#1#2{% anchor text, label
5060   \label@hyperref[{#2}]{#1}%
5061 }
```

This is really too much. The *L<sup>A</sup>T<sub>E</sub>X2html* package defines its own `\hyperref` command, with a different syntax. Was this always here? Its weird, anyway. We interpret it in the 'printed' way, since we are about fidelity to the page.

```
5062 \def\@@latextohtmlX{%
5063   \let\hhyperref\hyperref
5064   \def\hyperref##1##2##3##4{% anchor text for HTML
5065     % text to print before label in print
5066     % label
5067     % post-label text in print
5068     ##2\ref{##4}##3%
5069   }%
5070 }
```

## 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.

```
5071 \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
5072 \def\HyField@NewFlag#1#2{%
5073   \lowercase{\HyField@NewOption{#2}}%
5074   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5075 }
```

```

\HyField@NewFlagOnly
5076 \def\HyField@NewFlagOnly#1#2{%
5077   \lowercase{\HyField@NewBitsetFlag{#2}}{#2}{#1}%
5078 }

\HyField@NewOption #1: option name
5079 \def\HyField@NewOption#1{%
5080   \expandafter\newif\csname ifFld@#1\endcsname
5081   \define@key{Field}{#1}[true]{%
5082     \lowercase{\Field@boolkey{##1}}{#1}%
5083   }%
5084 }

\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
5085 \def\HyField@NewBitsetFlag#1#2#3#4{%
5086   \begingroup
5087     \count@=#4\relax
5088     \advance\count@\m@ne
5089     \def\x##1{%
5090       \endgroup
5091       \expandafter\def\csname HyField@#3@#1\endcsname{##1}%
5092       \expandafter\ifx\csname HyField@#3@#1\endcsname\relax
5093         \expandafter\edef\csname HyField@#3@#1\endcsname{%
5094           (\number#4) #2%
5095         }%
5096       \else
5097         \expandafter\edef\csname HyField@#3@#1\endcsname{%
5098           \csname HyField@#3@#1\endcsname
5099           /#2%
5100         }%
5101       \fi
5102     }%
5103   \expandafter\x\expandafter{\the\count@}%
5104 }

\HyField@UseFlag The bit set is HyField@#1
5105 \def\HyField@UseFlag#1#2{%
5106   \lowercase{\HyField@@UseFlag{#2}}{#1}%
5107 }

\HyField@@UseFlag
5108 \def\HyField@@UseFlag#1#2{%
5109   \bitsetSetValue{HyField@#2}{%
5110     \csname HyField@#2@#1\endcsname
5111   }{%
5112     \csname ifFld@#1\endcsname 1\else 0\fi
5113   }%
5114 }

\HyField@SetFlag The bit set is HyField@#1
5115 \def\HyField@SetFlag#1#2{%
5116   \lowercase{\HyField@@SetFlag{#2}}{#1}%
5117 }

```

```

\HyField@@SetFlag
5118 \def\HyField@@SetFlag#1#2{%
5119 \bitsetSetValue{HyField@#2}{%
5120 \csname HyField@#2@#1\endcsname
5121 }{1}%
5122 }

\HyField@PrintFlags
5123 \def\HyField@PrintFlags#1#2{%
5124 \ifHy@verbose
5125 \begingroup
5126 \let\Hy@temp\@empty
5127 \let\MessageBreak\relax
5128 \expandafter\@for\expandafter\x\expandafter:\expandafter=%
5129 \bitsetGetSetBitList{HyField@#1}\do{%
5130 \edef\Hy@temp{%
5131 \Hy@temp
5132 \csname HyField@#1@\x\endcsname\MessageBreak
5133 }%
5134 }%
5135 \edef\x{\endgroup
5136 \noexpand\Hy@Info{%
5137 Field flags: %
5138 \expandafter\ifx\@car#1\@nil S\else/\fi
5139 #1 %
5140 \bitsetGetDec{HyField@#1} %
5141 (0x\bitsetGetHex{HyField@#1}{32})\MessageBreak
5142 \Hy@temp
5143 for #2%
5144 }%
5145 }\x
5146 \fi
5147 }

```

### 19.1.1 Declarations of field flags

“Table 8.70 Field flags common to all field types”

```

5148 \HyField@NewFlag{Ff}{ReadOnly}{1}
5149 \HyField@NewFlag{Ff}{Required}{2}
5150 \HyField@NewFlag{Ff}{NoExport}{3}

```

“Table 8.75 Field flags specific to button fields”

```

5151 \HyField@NewFlag{Ff}{NoToggleToOff}{15}
5152 \HyField@NewFlag{Ff}{Radio}{16}
5153 \HyField@NewFlag{Ff}{Pushbutton}{17}
5154 \HyField@NewFlag{Ff}{RadiosInUnison}{26}

```

“Table 8.77 Field flags specific to text fields”

```

5155 \HyField@NewFlag{Ff}{Multiline}{13}
5156 \HyField@NewFlag{Ff}{Password}{14}
5157 \HyField@NewFlag{Ff}{FileSelect}{21}% PDF 1.4
5158 \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5159 \HyField@NewFlag{Ff}{DoNotScroll}{24}% PDF 1.4
5160 \HyField@NewFlag{Ff}{Comb}{25}% PDF 1.4
5161 \HyField@NewFlag{Ff}{RichText}{26}% PDF 1.5

```

“Table 8.79 field flags specific to choice fields”

```

5162 \HyField@NewFlag{Ff}{Combo}{18}

```

```

5163 \HyField@NewFlag{Ff}{Edit}{19}
5164 \HyField@NewFlag{Ff}{Sort}{20}
5165 \HyField@NewFlag{Ff}{MultiSelect}{22}% PDF 1.4
5166 % \HyField@NewFlag{Ff}{DoNotSpellCheck}{23}% PDF 1.4
5167 \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.

```

5168 \newif\ifFld@popdown
5169 \define@key{Field}{popdown}[true]{%
5170 \lowercase{\Field@boolkey{#1}}{popdown}%
5171 }

```

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.

```

5172 \HyField@NewFlag{F}{Invisible}{1}
5173 \HyField@NewFlag{F}{Hidden}{2}% PDF 1.2
5174 \HyField@NewFlag{F}{Print}{3}% PDF 1.2
5175 \HyField@NewFlag{F}{NoZoom}{4}% PDF 1.2
5176 \HyField@NewFlag{F}{NoRotate}{5}% PDF 1.3
5177 \HyField@NewFlag{F}{NoView}{6}% PDF 1.3
5178 \HyField@NewFlag{F}{Locked}{8}% PDF 1.4
5179 \HyField@NewFlag{F}{ToggleNoView}{9}% PDF 1.5
5180 \HyField@NewFlag{F}{LockedContents}{10}% PDF 1.7

5181 \ifHy@pdfa
5182 \def\HyField@PDFAFflagWarning#1#2{%
5183 \Hy@Warning{%
5184 PDF/A: Annotation flag ‘#1’ must\MessageBreak
5185 be set to ‘#2’%
5186 }%
5187 }%
5188 \Fld@invisiblefalse
5189 \def\Fld@invisibletrue{%
5190 \HyField@PDFAFflagWarning{invisible}{false}%
5191 }%
5192 \Fld@hiddenfalse
5193 \def\Fld@hiddentrue{%
5194 \HyField@PDFAFflagWarning{hidden}{false}%
5195 }%
5196 \Fld@printtrue
5197 \def\Fld@printfalse{%
5198 \HyField@PDFAFflagWarning{print}{true}%
5199 }%
5200 \Fld@nozoomtrue
5201 \def\Fld@nozoomfalse{%
5202 \HyField@PDFAFflagWarning{nozoom}{true}%
5203 }%
5204 \Fld@norotatetrue
5205 \def\Fld@norotatefalse{%
5206 \HyField@PDFAFflagWarning{norotate}{true}%
5207 }%
5208 \Fld@noviewfalse
5209 \def\Fld@noviewtrue{%

```

```

5210 \HyField@PDFAFIWarning{noview}{false}%
5211 }%
5212 \fi

```

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

```

5213 \HyField@NewFlag{Submit}{IncludeNoValueFields}{2}
5214 \HyField@NewFlagOnly{Submit}{ExportFormat}{3}
5215 \HyField@NewFlag{Submit}{GetMethod}{4}
5216 \HyField@NewFlag{Submit}{SubmitCoordinates}{5}
5217 \HyField@NewFlagOnly{Submit}{XFDF}{6}
5218 \HyField@NewFlag{Submit}{IncludeAppendSaves}{7}
5219 \HyField@NewFlag{Submit}{IncludeAnnotations}{8}
5220 \HyField@NewFlagOnly{Submit}{SubmitPDF}{9}
5221 \HyField@NewFlag{Submit}{CanonicalFormat}{10}
5222 \HyField@NewFlag{Submit}{ExclNonUserAnnots}{11}
5223 \HyField@NewFlag{Submit}{ExclFKey}{12}
5224 \HyField@NewFlag{Submit}{EmbedForm}{14}

5225 \define@key{Field}{export}{%
5226 \lowercase{\def\Hy@temp{#1}}%
5227 \@ifundefined{Fld@export@\Hy@temp}{%
5228 \onelevel@sanitize\Hy@temp
5229 \Hy@Error{%
5230 Unknown export format '\Hy@temp'.\MessageBreak
5231 Known formats are 'FDF', 'HTML', 'XFDF', and 'PDF'%
5232 }\@ehc
5233 }%
5234 \let\Fld@export\Hy@temp
5235 }%
5236 }
5237 \def\Fld@export{fdf}
5238 \@namedef{Fld@export@fdf}{0}%
5239 \@namedef{Fld@export@html}{1}%
5240 \@namedef{Fld@export@xfdf}{2}%
5241 \@namedef{Fld@export@pdf}{3}%

```

### 19.1.2 Set submit flags

\HyField@FlagsSubmit

```

5242 \def\HyField@FlagsSubmit{%
5243 \bitsetReset{HyField@Submit}%
5244 \ifcase\@nameuse{Fld@export@\Fld@export} %
5245 % FDF
5246 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5247 \HyField@UseFlag{Submit}{SubmitCoordinates}%
5248 \HyField@UseFlag{Submit}{IncludeAppendSaves}%
5249 \HyField@UseFlag{Submit}{IncludeAnnotations}%
5250 \HyField@UseFlag{Submit}{CanonicalFormat}%
5251 \HyField@UseFlag{Submit}{ExclNonUserAnnots}%
5252 \HyField@UseFlag{Submit}{ExclFKey}%
5253 \HyField@UseFlag{Submit}{EmbedForm}%
5254 \or % HTML
5255 \HyField@SetFlag{Submit}{ExportFormat}%
5256 \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5257 \HyField@UseFlag{Submit}{GetMethod}%
5258 \HyField@UseFlag{Submit}{SubmitCoordinates}%
5259 \HyField@UseFlag{Submit}{CanonicalFormat}%

```

```

5260 \or % XFDF
5261   \HyField@SetFlag{Submit}{XFDF}%
5262   \HyField@UseFlag{Submit}{IncludeNoValueFields}%
5263   \HyField@UseFlag{Submit}{SubmitCoordinates}%
5264   \HyField@UseFlag{Submit}{CanonicalFormat}%
5265 \or % PDF
5266   \HyField@SetFlag{Submit}{SubmitPDF}%
5267   \HyField@UseFlag{Submit}{GetMethod}%
5268 \fi
5269 \HyField@PrintFlags{Submit}{submit button field}%
5270 \bitsetIsEmpty{HyField@Submit}{%
5271   \let\Fld@submitflags\tx@empty
5272 }{%
5273   \edef\Fld@submitflags{/Flags \bitsetGetDec{HyField@Submit}}%
5274 }%
5275 }

```

### 19.1.3 Set annot flags in fields

\HyField@FlagsAnnot

```

5276 \def\HyField@FlagsAnnot#1{%
5277   \bitsetReset{HyField@F}%
5278   \HyField@UseFlag{F}{Invisible}%
5279   \HyField@UseFlag{F}{Hidden}%
5280   \HyField@UseFlag{F}{Print}%
5281   \HyField@UseFlag{F}{NoZoom}%
5282   \HyField@UseFlag{F}{NoRotate}%
5283   \HyField@UseFlag{F}{NoView}%
5284   \HyField@UseFlag{F}{Locked}%
5285   \HyField@UseFlag{F}{ToggleNoView}%
5286   \HyField@UseFlag{F}{LockedContents}%
5287   \HyField@PrintFlags{F}{#1}%
5288   \bitsetIsEmpty{HyField@F}{%
5289     \let\Fld@annotflags\tx@empty
5290   }{%
5291     \edef\Fld@annotflags{/F \bitsetGetDec{HyField@F}}%
5292   }%
5293 }

```

### 19.1.4 Pushbutton field

\HyField@FlagsPushButton

```

5294 \def\HyField@FlagsPushButton{%
5295   \HyField@FlagsAnnot{push button field}%
5296   \bitsetReset{HyField@Ff}%
5297   \HyField@UseFlag{Ff}{ReadOnly}%
5298   \HyField@UseFlag{Ff}{Required}%
5299   \HyField@UseFlag{Ff}{NoExport}%
5300   \HyField@SetFlag{Ff}{Pushbutton}%
5301   \HyField@PrintFlags{Ff}{push button field}%
5302   \bitsetIsEmpty{HyField@Ff}{%
5303     \let\Fld@flags\tx@empty
5304   }{%
5305     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5306   }%
5307 }

```

### 19.1.5 Check box field

\HyField@FlagsCheckBox

```
5308 \def\HyField@FlagsCheckBox{%
5309   \HyField@FlagsAnnot{check box field}%
5310   \bitsetReset{HyField@Ff}%
5311   \HyField@UseFlag{Ff}{ReadOnly}%
5312   \HyField@UseFlag{Ff}{Required}%
5313   \HyField@UseFlag{Ff}{NoExport}%
5314   \HyField@PrintFlags{Ff}{check box field}%
5315   \bitsetIsEmpty{HyField@Ff}{%
5316     \let\Fld@flags\ltx@empty
5317   }{%
5318     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5319   }%
5320 }
```

### 19.1.6 Radio button field

\HyField@FlagsRadioButton

```
5321 \def\HyField@FlagsRadioButton{%
5322   \HyField@FlagsAnnot{radio button field}%
5323   \bitsetReset{HyField@Ff}%
5324   \HyField@UseFlag{Ff}{ReadOnly}%
5325   \HyField@UseFlag{Ff}{Required}%
5326   \HyField@UseFlag{Ff}{NoExport}%
5327   \HyField@UseFlag{Ff}{NoToggleToOff}%
5328   \HyField@SetFlag{Ff}{Radio}%
5329   \HyField@UseFlag{Ff}{RadiosInUnison}%
5330   \HyField@PrintFlags{Ff}{radio button field}%
5331   \bitsetIsEmpty{HyField@Ff}{%
5332     \let\Fld@flags\ltx@empty
5333   }{%
5334     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5335   }%
5336 }
```

### 19.1.7 Text fields

\HyField@FlagsText

```
5337 \def\HyField@FlagsText{%
5338   \HyField@FlagsAnnot{text field}%
5339   \bitsetReset{HyField@Ff}%
5340   \HyField@UseFlag{Ff}{ReadOnly}%
5341   \HyField@UseFlag{Ff}{Required}%
5342   \HyField@UseFlag{Ff}{NoExport}%
5343   \HyField@UseFlag{Ff}{Multiline}%
5344   \HyField@UseFlag{Ff}{Password}%
5345   \HyField@UseFlag{Ff}{FileSelect}%
5346   \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5347   \HyField@UseFlag{Ff}{DoNotScroll}%
5348   \ifFld@comb
5349     \ifcase0\ifFld@multiline
5350       \else\ifFld@password
5351       \else\ifFld@fileselect
5352       \else 1\fi\fi\fi\relax
5353     \Hy@Error{%
```

```

5354     Field option 'comb' cannot used together with \MessageBreak
5355     'multiline', 'password', or 'fileselect'%
5356   }\@ehc
5357   \else
5358     \HyField@UseFlag{Ff}{Comb}%
5359   \fi
5360 \fi
5361 \HyField@UseFlag{Ff}{RichText}%
5362 \HyField@PrintFlags{Ff}{text field}%
5363 \bitsetIsEmpty{HyField@Ff}{%
5364   \let\Fld@flags\ltx@empty
5365 }{%
5366   \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5367 }%
5368 }

```

### 19.1.8 Choice fields

\HyField@FlagsChoice

```

5369 \def\HyField@FlagsChoice{%
5370   \HyField@FlagsAnnot{choice field}%
5371   \bitsetReset{HyField@Ff}%
5372   \HyField@UseFlag{Ff}{ReadOnly}%
5373   \HyField@UseFlag{Ff}{Required}%
5374   \HyField@UseFlag{Ff}{NoExport}%
5375   \HyField@UseFlag{Ff}{Combo}%
5376   \ifFld@combo
5377     \HyField@UseFlag{Ff}{Edit}%
5378   \fi
5379   \HyField@UseFlag{Ff}{Sort}%
5380   \HyField@UseFlag{Ff}{MultiSelect}%
5381   \ifFld@combo
5382     \ifFld@edit
5383       \HyField@UseFlag{Ff}{DoNotSpellCheck}%
5384     \fi
5385   \fi
5386   \HyField@UseFlag{Ff}{CommitOnSelChange}%
5387   \HyField@PrintFlags{Ff}{choice field}%
5388   \bitsetIsEmpty{HyField@Ff}{%
5389     \let\Fld@flags\ltx@empty
5390   }{%
5391     \edef\Fld@flags{/Ff \bitsetGetDec{HyField@Ff}}%
5392   }%
5393 }

```

## 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.

```

5394 \def\HyField@PDFChoices#1{%
5395   \begingroup
5396   \global\let\Fld@choices\ltx@empty
5397   \let\HyTmp@optlist\ltx@empty
5398   \let\HyTmp@optitem\relax

```



```

5399 \count@=0 %
5400 \kv@parse{#1}{%
5401 \Hy@pdfstringdef\kv@key\kv@key
5402 \ifx\kv@value\relax
5403 \ifnum\Hy@pdfversion<3 % implementation note 122, PDF spec 1.7
5404 \xdef\Fld@choices{\Fld@choices(\kv@key)(\kv@key)}}%
5405 \else
5406 \xdef\Fld@choices{\Fld@choices(\kv@key)}%
5407 \fi
5408 \else
5409 \Hy@pdfstringdef\kv@value\kv@value
5410 \xdef\Fld@choices{\Fld@choices(\kv@value)(\kv@key)}}%
5411 \fi
5412 \edef\HyTmp@optlist{%
5413 \HyTmp@optlist
5414 \HyTmp@optitem{\the\count@}{\kv@key}0%
5415 }%
5416 \advance\count@ by 1 %
5417 \@gobbletwo
5418 }%
5419 \xdef\Fld@choices{/Opt[\Fld@choices]}%
5420 \ifFld@multiselect
5421 \HyField@@PDFChoices{DV}\Fld@default
5422 \HyField@@PDFChoices{V}\Fld@value
5423 \else
5424 \ifx\Fld@default\relax
5425 \else
5426 \pdfstringdef\Hy@gtemp\Fld@default
5427 \xdef\Fld@choices{\Fld@choices/DV(\Hy@gtemp)}%
5428 \fi
5429 \ifx\Fld@value\relax
5430 \else
5431 \pdfstringdef\Hy@gtemp\Fld@value
5432 \xdef\Fld@choices{\Fld@choices/V(\Hy@gtemp)}%
5433 \fi
5434 \fi
5435 \endgroup
5436 }

```

\HyField@@PDFChoices

```

5437 \def\HyField@@PDFChoices#1#2{%
5438 \ifx#2\relax
5439 \else
5440 \count@=0 %
5441 \def\HyTmp@optitem##1##2##3{%
5442 \def\HyTmp@key{##2}%
5443 \ifx\HyTmp@key\Hy@gtemp
5444 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5445 \HyTmp@optlist
5446 \HyTmp@optitem{##1}{##2}1%
5447 }%
5448 \let\HyTmp@found=Y%
5449 \else
5450 \expandafter\def\expandafter\HyTmp@optlist\expandafter{%
5451 \HyTmp@optlist
5452 \HyTmp@optitem{##1}{##2}##3%
5453 }%
5454 \fi

```

```

5455 }%
5456 \expandafter\comma@parse\expandafter{#2}{%
5457 \pdfstringdef\Hy@gtemp\comma@entry
5458 \let\HyTmp@found=N %
5459 \expandafter\let\expandafter\HyTmp@optlist\expandafter\@empty
5460 \HyTmp@optlist
5461 \ifx\HyTmp@found Y%
5462 \advance\count@ by 1 %
5463 \else
5464 \@onelevel@sanitize\comma@entry
5465 \PackageWarning{hyperref}{%
5466 \string\ChoiceBox: Ignoring value ‘\comma@entry’,%
5467 \MessageBreak
5468 it cannot be found in the choices%
5469 }%
5470 \fi
5471 \@gobble
5472 }%
5473 \def\HyTmp@optitem##1##2##3{%
5474 \ifnum##3=1 %
5475 (##2)%
5476 \fi
5477 }%
5478 \ifcase\count@
5479 \or
5480 \xdef\Fld@choices{\Fld@choices/#1\HyTmp@optlist}%
5481 \else
5482 \xdef\Fld@choices{\Fld@choices/#1[\HyTmp@optlist]}%
5483 \ifx#1V%
5484 \def\HyTmp@optitem##1##2##3{%
5485 \ifnum##3=1 %
5486 \@firstofone{ ##1}%
5487 \fi
5488 }%
5489 \edef\HyTmp@optlist{\HyTmp@optlist}%
5490 \xdef\Fld@choices{%
5491 \Fld@choices
5492 /I[\expandafter\@firstofone\HyTmp@optlist]%
5493 }%
5494 \fi
5495 \fi
5496 \fi
5497 }

```

## 19.3 Forms

\HyField@SetKeys

```

5498 \def\HyField@SetKeys{%
5499 \kvsetkeys{Field}%
5500 }

5501 \newif\ifFld@checked
5502 \newif\ifFld@disabled
5503 \Fld@checkedfalse
5504 \Fld@disabledfalse
5505 \newcount\Fld@menulength
5506 \newdimen\Field@Width

```

```

5507 \newdimen\Fld@charsize
5508 \Fld@charsize=10\p@
5509 \def\Fld@maxlen{0}
5510 \def\Fld@align{0}
5511 \def\Fld@color{0 0 0 rg}
5512 \def\Fld@bcolor{1 1 1}
5513 \def\Fld@bordercolor{1 0 0}
5514 \def\Fld@bordersep{1\p@}
5515 \def\Fld@borderwidth{1}
5516 \def\Fld@borderstyle{S}
5517 \def\Fld@cbsymbol{4}
5518 \def\Fld@radiosymbol{H}
5519 \def\Fld@rotation{0}
5520 \def\Form{\@ifnextchar{\@Form}{\@Form[]}}
5521 \def\endForm{\@endForm}
5522 \newif\ifForm@html
5523 \Form@htmlfalse
5524 \def\Form@boolkey#1#2{%
5525   \csname Form@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5526 }
5527 \define@key{Form}{action}{%
5528   \hyper@normalise\Hy@DefFormAction{#1}%
5529 }
5530 \def\Hy@DefFormAction{\def\Form@action}
5531 \def\enc@html{html}
5532 \define@key{Form}{encoding}{%
5533   \def\Hy@tempa{#1}%
5534   \ifx\Hy@tempa\enc@html
5535     \Form@htmltrue
5536     \def\Fld@export{html}%
5537   \else
5538     \Hy@Warning{%
5539       Form 'encoding' key with \MessageBreak
5540       unknown value '#1'%
5541     }%
5542     \Form@htmlfalse
5543   \fi
5544 }
5545 \define@key{Form}{method}{%
5546   \lowercase{\def\Hy@temp{#1}}%
5547   \@ifundefined{Form@method@\Hy@temp}{%
5548     \@onelevel@sanitize\Hy@temp
5549     \Hy@Error{%
5550       Unknown method '\Hy@temp'\MessageBreak
5551       Known values are 'post' and 'get'%
5552     }\@ehc
5553   }{%
5554     \let\Form@method\Hy@temp
5555     \ifcase\@nameuse{Form@method@\Hy@temp} %
5556       \Fld@getmethodfalse
5557     \else
5558       \Fld@getmethodtrue
5559     \fi
5560   }%
5561 }
5562 \def\Form@method{}
5563 \@namedef{Form@method@post}{0}

```

```

5564 \@namedef{Form@method@get}{1}
5565 \newif\ifHyField@NeedAppearances
5566 \def\HyField@NeedAppearancesfalse{%
5567   \global\let\ifHyField@NeedAppearances\iffalse
5568 }
5569 \def\HyField@NeedAppearancetrue{%
5570   \global\let\ifHyField@NeedAppearances\iftrue
5571 }
5572 \HyField@NeedAppearancetrue
5573 \define@key{Form}{NeedAppearances}[true]{%
5574   \edef\Hy@tempa{#1}%
5575   \ifx\Hy@tempa\Hy@true
5576     \HyField@NeedAppearancetrue
5577   \else
5578     \ifx\Hy@tempa\Hy@false
5579       \HyField@NeedAppearancesfalse
5580     \else
5581       \Hy@Error{%
5582         Unexpected value '\Hy@tempa'\MessageBreak
5583         of option 'NeedAppearances' instead of\MessageBreak
5584         'true' or 'false'%
5585       }\@ehc
5586     \fi
5587   \fi
5588 }
5589 \def\Field@boolkey#1#2{%
5590   \csname Fld@#2\ifx\relax#1\relax true\else#1\fi\endcsname
5591 }
5592 \ifHy@texht
5593   \newtoks\Field@toks
5594   \Field@toks={ }%
5595   \def\Field@addtoks#1#2{%
5596     \edef\@processme{\Field@toks{\the\Field@toks\space #1="#2"}}%
5597     \@processme
5598   }%
5599 \else
5600   \def\Hy@WarnHTMLFieldOption#1{%
5601     \Hy@Warning{%
5602       HTML field option '#1'\MessageBreak
5603       is ignored%
5604     }%
5605   }%
5606 \fi
5607 \def\Fld@checkequals#1=#2=#3\\{%
5608   \def\@currDisplay{#1}%
5609   \ifx\\#2\\%
5610     \def\@currValue{#1}%
5611   \else
5612     \def\@currValue{#2}%
5613   \fi
5614 }
5615 \define@key{Field}{loc}{%
5616   \def\Fld@loc{#1}%
5617 }
5618 \define@key{Field}{checked}[true]{%
5619   \lowercase{\Field@boolkey{#1}}{checked}%
5620 }

```

```

5621 \define@key{Field}{disabled}[true]{%
5622   \lowercase{\Field@boolkey{#1}}{disabled}%
5623 }
5624 \ifHy@texht
5625   \define@key{Field}{accesskey}{%
5626     \Field@addtoks{accesskey}{#1}%
5627   }%
5628   \define@key{Field}{tabkey}{%
5629     \Field@addtoks{tabkey}{#1}%
5630   }%
5631 \else
5632   \define@key{Field}{accesskey}{%
5633     \Hy@WarnHTMLFieldOption{accesskey}%
5634   }%
5635   \define@key{Field}{tabkey}{%
5636     \Hy@WarnHTMLFieldOption{tabkey}%
5637   }%
5638 \fi
5639 \define@key{Field}{name}{%
5640   \def\Fld@name{#1}%
5641 }
5642 \let\Fld@altname\relax
5643 \define@key{Field}{altname}{%
5644   \def\Fld@altname{#1}%
5645 }
5646 \let\Fld@mappingname\relax
5647 \define@key{Field}{mappingname}{%
5648   \def\Fld@mappingname{#1}%
5649 }
5650 \define@key{Field}{width}{%
5651   \def\Fld@width{#1}%
5652   \Field@Width#1\setbox0=\hbox{m}%
5653 }
5654 \define@key{Field}{maxlen}{%
5655   \def\Fld@maxlen{#1}%
5656 }
5657 \define@key{Field}{menulength}{%
5658   \Fld@menulength=#1\relax
5659 }
5660 \define@key{Field}{height}{%
5661   \def\Fld@height{#1}%
5662 }
5663 \define@key{Field}{charsize}{%
5664   \setlength{\Fld@charsize}{#1}%
5665 }
5666 \define@key{Field}{borderwidth}{%
5667   \Hy@defaultbp\Fld@borderwidth{#1}%
5668 }
5669 \def\Hy@defaultbp#1#2{%
5670   \begingroup
5671     \afterassignment\Hy@defaultbpAux
5672     \dimen@=#2bp\relax{#1}{#2}%
5673 }
5674 \begingroup\expandafter\expandafter\expandafter\endgroup
5675 \expandafter\ifx\csname dimexpr\endcsname\relax
5676   \def\Hy@defaultbpAux#1\relax#2#3{%
5677     \ifx!#1!%

```

```

5678 \endgroup
5679 \def#2{#3}%
5680 \else
5681 \dimen@=.99626\dimen@
5682 \edef\x{\endgroup
5683 \def\noexpand#2{%
5684 \strip@pt\dimen@
5685 }%
5686 }\x
5687 \fi
5688 }%
5689 \else
5690 \def\Hy@defaultbpAux#1\relax#2#3{%
5691 \ifx!#1!%
5692 \endgroup
5693 \def#2{#3}%
5694 \else
5695 \edef\x{\endgroup
5696 \def\noexpand#2{%
5697 \strip@pt\dimexpr\dimen@*800/803\relax
5698 }%
5699 }\x
5700 \fi
5701 }%
5702 \fi
5703 \define@key{Field}{borderstyle}{%
5704 \let\Hy@temp\Fld@borderstyle
5705 \def\Fld@borderstyle{#1}%
5706 \Hy@Match\Fld@borderstyle{%
5707 ^[SDBIU]$%
5708 }-}{%
5709 \Hy@Warning{%
5710 Invalid value '@pdfborderstyle'\MessageBreak
5711 for option 'pdfborderstyle'. Valid values:\MessageBreak
5712 \space\space S (Solid), D (Dashed), B (Beveled),\MessageBreak
5713 \space\space I (Inset), U (Underline)\MessageBreak
5714 Option setting is ignored%
5715 }%
5716 \let\Fld@borderstyle\Hy@temp
5717 }%
5718 }
5719 \define@key{Field}{bordersep}{%
5720 \def\Fld@bordersep{#1}%
5721 }
5722 \define@key{Field}{default}{%
5723 \def\Fld@default{#1}%
5724 }
5725 \define@key{Field}{align}{%
5726 \def\Fld@align{#1}%
5727 }
5728 \define@key{Field}{value}{%
5729 \def\Fld@value{#1}%
5730 }
5731 \define@key{Field}{checkboxsymbol}{%
5732 \Fld@DingDef\Fld@cbsymbol{#1}%
5733 }
5734 \define@key{Field}{radiosymbol}{%

```

```

5735 \Fld@DingDef\Fld@radiosymbol{#1}%
5736 }
5737 \def\Fld@DingDef#1#2{%
5738 \let\Fld@temp\ltx@empty
5739 \Fld@@@DingDef#2\ding{}}\@nil
5740 \let#1\Fld@temp
5741 }
5742 \def\Fld@@@DingDef#1\ding#2#3\@nil{%
5743 \expandafter\def\expandafter\Fld@temp\expandafter{%
5744 \Fld@temp
5745 #1%
5746 }%
5747 \ifx\\#3\\%
5748 \expandafter\@gobble
5749 \else
5750 \begingroup
5751 \lccode'0=#2\relax
5752 \lowercase{\endgroup
5753 \expandafter\def\expandafter\Fld@temp\expandafter{%
5754 \Fld@temp
5755 0%
5756 }%
5757 }%
5758 \expandafter\@firstofone
5759 \fi
5760 {%
5761 \Fld@@@DingDef#3\@nil
5762 }%
5763 }

5764 \define@key{Field}{rotation}{%
5765 \def\Fld@rotation{#1}%
5766 }

5767 \define@key{Field}{backgroundcolor}{%
5768 \HyColor@FieldBColor{#1}\Fld@bcolor{hyperref}{backgroundcolor}%
5769 }

5770 \define@key{Field}{bordercolor}{%
5771 \HyColor@FieldBColor{#1}\Fld@bordercolor{hyperref}{bordercolor}%
5772 }

5773 \define@key{Field}{color}{%
5774 \HyColor@FieldColor{#1}\Fld@color{hyperref}{color}%
5775 }

5776 \let\Fld@onclick@code\ltx@empty
5777 \let\Fld@format@code\ltx@empty
5778 \let\Fld@validate@code\ltx@empty
5779 \let\Fld@calculate@code\ltx@empty
5780 \let\Fld@keystroke@code\ltx@empty
5781 \let\Fld@onfocus@code\ltx@empty
5782 \let\Fld@onblur@code\ltx@empty
5783 \let\Fld@onmousedown@code\ltx@empty
5784 \let\Fld@onmouseup@code\ltx@empty
5785 \let\Fld@onenter@code\ltx@empty
5786 \let\Fld@onexit@code\ltx@empty
5787 \def\Hy@temp#1{%
5788 \expandafter\Hy@@temp\csname Fld@#1@code\endcsname{#1}%
5789 }
5790 \def\Hy@@temp#1#2{%

```

```

5791 \ifHy@pdfa
5792   \define@key{Field}{#2}{%
5793     \Hy@Error{%
5794       PDF/A: Additional action '#2' is prohibited%
5795     }\@ehc
5796   }%
5797 \else
5798   \define@key{Field}{#2}{%
5799     \def#1{##1}%
5800   }%
5801 \fi
5802 }
5803 \Hy@temp{keystroke}
5804 \Hy@temp{format}
5805 \Hy@temp{validate}
5806 \Hy@temp{calculate}
5807 \Hy@temp{onfocus}
5808 \Hy@temp{onblur}
5809 \Hy@temp{onenter}
5810 \Hy@temp{onexit}
5811 \ifHy@texht
5812   \def\Hy@temp#1{%
5813     \define@key{Field}{#1}{%
5814       \Field@addtoks{#1}{##1}%
5815     }%
5816   }%
5817 \else
5818   \def\Hy@temp#1{%
5819     \define@key{Field}{#1}{%
5820       \Hy@WarnHTMLFieldOption{#1}%
5821     }%
5822   }%
5823 \fi
5824 \Hy@temp{ondblclick}
5825 \Hy@temp{onmousedown}
5826 \Hy@temp{onmouseup}
5827 \Hy@temp{onmouseover}
5828 \Hy@temp{onmousemove}
5829 \Hy@temp{onmouseout}
5830 \Hy@temp{onkeydown}
5831 \Hy@temp{onkeyup}
5832 \Hy@temp{onselect}
5833 \Hy@temp{onchange}
5834 \Hy@temp{onkeypress}
5835 \ifHy@texht
5836   \define@key{Field}{onclick}{%
5837     \Field@addtoks{onclick}{#1}%
5838   }%
5839 \else
5840   \ifHy@pdfa
5841     \define@key{Field}{onclick}{%
5842       \Hy@Error{%
5843         PDF/A: Action 'onclick' is prohibited%
5844       }\@ehc
5845     }%
5846   \else
5847     \define@key{Field}{onclick}{%

```



```

5848 \def\Fld@onclick@code{#1}%
5849 }%
5850 \fi
5851 \fi

5852 \DeclareRobustCommand\TextField{%
5853 \@ifnextchar[{\@TextField}{\@TextField[]}%
5854 }
5855 \DeclareRobustCommand\ChoiceMenu{%
5856 \@ifnextchar[{\@ChoiceMenu}{\@ChoiceMenu[]}%
5857 }
5858 \DeclareRobustCommand\CheckBox{%
5859 \@ifnextchar[{\@CheckBox}{\@CheckBox[]}%
5860 }
5861 \DeclareRobustCommand\PushButton{%
5862 \@ifnextchar[{\@PushButton}{\@PushButton[]}%
5863 }
5864 \DeclareRobustCommand\Gauge{%
5865 \@ifnextchar[{\@Gauge}{\@Gauge[]}%
5866 }
5867 \DeclareRobustCommand\Submit{%
5868 \@ifnextchar[{\@Submit}{\@Submit[]}%
5869 }
5870 \DeclareRobustCommand\Reset{%
5871 \@ifnextchar[{\@Reset}{\@Reset[]}%
5872 }
5873 \def\LayoutTextField#1#2{% label, field
5874 #1 #2%
5875 }
5876 \def\LayoutChoiceField#1#2{% label, field
5877 #1 #2%
5878 }
5879 \def\LayoutCheckField#1#2{% label, field
5880 #1 #2%
5881 }
5882 \def\LayoutPushButtonField#1{% button
5883 #1%
5884 }
5885 \def\MakeRadioField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5886 \def\MakeCheckField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5887 \def\MakeTextField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5888 \def\MakeChoiceField#1#2{\vbox to #2{\hbox to #1{\hfill}\vfill}}
5889 \def\MakeButtonField#1{%
5890 \sbox0{%
5891 \hskip\Fld@borderwidth bp#1\hskip\Fld@borderwidth bp%
5892 }%
5893 \@tempdima\ht0 %
5894 \advance\@tempdima by \Fld@borderwidth bp %
5895 \advance\@tempdima by \Fld@borderwidth bp %
5896 \ht0\@tempdima
5897 \@tempdima\dp0 %
5898 \advance\@tempdima by \Fld@borderwidth bp %
5899 \advance\@tempdima by \Fld@borderwidth bp %
5900 \dp0\@tempdima
5901 \box0\relax
5902 }
5903 \def\DefaultHeightofSubmit{14pt}
5904 \def\DefaultWidthofSubmit{2cm}

```

```

5905 \def\DefaultHeightofReset{14pt}
5906 \def\DefaultWidthofReset{2cm}
5907 \def\DefaultHeightofCheckBox{\baselineskip}
5908 \def\DefaultWidthofCheckBox{\baselineskip}
5909 \def\DefaultHeightofChoiceMenu{\baselineskip}
5910 \def\DefaultWidthofChoiceMenu{\baselineskip}
5911 \def\DefaultHeightofText{\baselineskip}
5912 \def\DefaultHeightofTextMultiline{4\baselineskip}
5913 \def\DefaultWidthofText{3cm}
5914 \def\DefaultOptionsofSubmit{print,name=Submit,noexport}
5915 \def\DefaultOptionsofReset{print,name=Reset,noexport}
5916 \def\DefaultOptionsofPushButton{print}
5917 \def\DefaultOptionsofCheckBox{print}
5918 \def\DefaultOptionsofText{print}

```

Default options for the types of \ChoiceMenu.

```

5919 \def\DefaultOptionsofListBox{print}
5920 \def\DefaultOptionsofComboBox{print,edit,sort}
5921 \def\DefaultOptionsofPopdownBox{print}
5922 \def\DefaultOptionsofRadio{print,notoggletooff}

```

## 20 Setup

```

5923 \ifHy@hyperfigures
5924 \Hy@Info{Hyper figures ON}%
5925 \else
5926 \Hy@Info{Hyper figures OFF}%
5927 \fi
5928 \ifHy@nesting
5929 \Hy@Info{Link nesting ON}%
5930 \else
5931 \Hy@Info{Link nesting OFF}%
5932 \fi
5933 \ifHy@hyperindex
5934 \Hy@Info{Hyper index ON}%
5935 \else
5936 \Hy@Info{Hyper index OFF}%
5937 \fi
5938 \ifHy@backref
5939 \Hy@Info{backreferencing ON}%
5940 \else
5941 \Hy@Info{backreferencing OFF}%
5942 \fi
5943 \ifHy@colorlinks
5944 \Hy@Info{Link coloring ON}%
5945 \else
5946 \Hy@Info{Link coloring OFF}%
5947 \fi
5948 \ifHy@ocgcolorlinks
5949 \Hy@Info{Link coloring with OCG ON}%
5950 \else
5951 \Hy@Info{Link coloring with OCG OFF}%
5952 \fi
5953 \ifHy@pdfa
5954 \Hy@Info{PDF/A mode ON}%
5955 \else
5956 \Hy@Info{PDF/A mode OFF}%

```

5957 \fi

## 21 Low-level utility macros

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

```
5958 \edef\hyper@hash{\string#}  
5959 \edef\hyper@tilde{\string~}  
5960 \edef\hyper@quote{\string"}
```

Support \label before \begin{document}.

```
5961 \def\@currentHref{Doc-Start}  
5962 \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.

```
5963 \Hy@AtBeginDocument{%  
5964   \Hy@pdfstringtrue  
5965   \PDF@SetupDoc  
5966   \let\PDF@SetupDoc\@empty  
5967   \Hy@DisableOption{pdfpagescrop}%  
5968   \Hy@DisableOption{pdfpagemode}%  
5969   \Hy@DisableOption{pdfnonfullscreenpagemode}%  
5970   \Hy@DisableOption{pdfdirection}%  
5971   \Hy@DisableOption{pdfviewarea}%  
5972   \Hy@DisableOption{pdfviewclip}%  
5973   \Hy@DisableOption{pdfprintarea}%  
5974   \Hy@DisableOption{pdfprintclip}%  
5975   \Hy@DisableOption{pdfprintsclaling}%  
5976   \Hy@DisableOption{pdfduplex}%  
5977   \Hy@DisableOption{pdfpicktraybypdfsize}%  
5978   \Hy@DisableOption{pdfprintpagerange}%  
5979   \Hy@DisableOption{pdfnumcopies}%  
5980   \Hy@DisableOption{pdfstartview}%  
5981   \Hy@DisableOption{pdfstartpage}%  
5982   \Hy@DisableOption{pdftoolbar}%  
5983   \Hy@DisableOption{pdfmenubar}%  
5984   \Hy@DisableOption{pdfwindowui}%  
5985   \Hy@DisableOption{pdffitwindow}%  
5986   \Hy@DisableOption{pdfcenterwindow}%  
5987   \Hy@DisableOption{pdfdisplaydoctitle}%  
5988   \Hy@DisableOption{pdfpagelayout}%  
5989   \Hy@DisableOption{pdflang}%  
5990   \Hy@DisableOption{baseurl}%  
5991   \ifHy@texht\else\hyper@anchorstart{Doc-Start}\hyper@anchorend\fi  
5992   \Hy@pdfstringfalse  
5993 }
```

Ignore star from referencing macros:

```
5994 \LetLtxMacro\NoHy@OrgRef\ref  
5995 \DeclareRobustCommand*{\ref}{%  
5996   \@ifstar\NoHy@OrgRef\NoHy@OrgRef  
5997 }  
5998 \LetLtxMacro\NoHy@OrgPageRef\pageref  
5999 \DeclareRobustCommand*{\pageref}{%  
6000   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef  
6001 }
```

## 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.

```
6002 \def\NoHyper{%
6003   \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6004   \def\hyper@@anchor##1##2{##2\Hy@xspace@end}%
6005   \global\let\hyper@livelink\hyper@link
6006   \gdef\hyper@link##1##2##3{##3\Hy@xspace@end}%
6007   \let\hyper@anchor\ltx@gobble
6008   \let\hyper@anchorstart\ltx@gobble
6009   \def\hyper@anchorend{\Hy@xspace@end}%
6010   \let\hyper@linkstart\ltx@gobbletwo
6011   \def\hyper@linkend{\Hy@xspace@end}%
6012   \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6013   \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6014   \let\Hy@backout\@gobble
6015 }
6016 \def\stop@hyper{%
6017   \def\hyper@link@[##1]##2##3##4{##4\Hy@xspace@end}%
6018   \let\Hy@backout\@gobble
6019   \let\hyper@@anchor\ltx@gobble
6020   \def\hyper@link##1##2##3{##3\Hy@xspace@end}%
6021   \let\hyper@anchor\ltx@gobble
6022   \let\hyper@anchorstart\ltx@gobble
6023   \def\hyper@anchorend{\Hy@xspace@end}%
6024   \let\hyper@linkstart\ltx@gobbletwo
6025   \def\hyper@linkend{\Hy@xspace@end}%
6026   \def\hyper@linkurl##1##2{##1\Hy@xspace@end}%
6027   \def\hyper@linkfile##1##2##3{##1\Hy@xspace@end}%
6028 }
6029 \def\endNoHyper{%
6030   \global\let\hyper@link\hyper@livelink
6031 }
6032 \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:

```
6033 \nohyperref
6034 \RequirePackage{letltxmacro}[2008/06/13]
6035 \let\hyper@@anchor\@gobble
6036 \def\hyper@link##1##2##3{##3}%
6037 \let\hyper@anchorstart\@gobble
6038 \let\hyper@anchorend\@empty
6039 \let\hyper@linkstart\@gobbletwo
6040 \let\hyper@linkend\@empty
6041 \def\hyper@linkurl##1##2{##1}%

```

```

6042 \def\hyper@linkfile#1#2#3{#1}%
6043 \def\hyper@link@{#1}#2#3{}%
6044 \let\PDF@SetupDoc\@empty
6045 \let\PDF@FinishDoc\@empty
6046 \def\nohyperpage#1{#1}

```

Some top-level commands:

```

6047 \def\Acrobatmenu#1#2{\leavevmode#2}
6048 \let\pdfstringdefDisableCommands\@gobbletwo
6049 \let\texorpdfstring\@firstoftwo
6050 \let\pdfbookmark\@undefined
6051 \newcommand\pdfbookmark[3]{}{}
6052 \let\phantomsection\@empty
6053 \let\hypersetup\@gobble
6054 \let\hyperbaseurl\@gobble
6055 \newcommand*{\href}[3][]{#3}
6056 \let\hyperdef\@gobbletwo
6057 \let\hyperlink\@gobble
6058 \let\hypertarget\@gobble
6059 \def\hyperref{%
6060   \@ifnextchar{\@gobbleopt{\expandafter\@gobbletwo\@gobble}%
6061 }
6062 \long\def\@gobbleopt[#1]{}
6063 \let\hyperpage\@empty

```

Ignore star from referencing macros:

```

6064 \LetLtxMacro\NoHy@OrgRef\ref
6065 \DeclareRobustCommand*{\ref}{%
6066   \@ifstar\NoHy@OrgRef\NoHy@OrgRef
6067 }
6068 \LetLtxMacro\NoHy@OrgPageRef\pageref
6069 \DeclareRobustCommand*{\pageref}{%
6070   \@ifstar\NoHy@OrgPageRef\NoHy@OrgPageRef
6071 }
6072 \</nohyperref>

```

## 24 The Mangling Of Aux and Toc Files

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

```

6073 \<*package>
6074 \Hy@AtBeginDocument{%

```

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

Write some stuff into the aux file so if the next run is done without hyperref, then `\contentsline` and `\newlabel` are defined to cope with the extra arguments.

```

6075 \if@filesw
6076   \ifHy@typexml
6077     \immediate\closeout\@mainaux
6078     \immediate\openout\@mainaux\jobname.aux\relax
6079     \immediate\write\@auxout{<relaxxml>\relax}%
6080   \fi
6081   \immediate\write\@auxout{%
6082     \string\providecommand\string\HyperFirstAtBeginDocument{%
6083       \string\AtBeginDocument}^^J%
6084     \string\HyperFirstAtBeginDocument{%

```

```

6085 \string\ifx\string\hyper@anchor\string\@undefined^^J%
6086 \string\global\string\let\string\oldcontentsline\string\contentsline^^J%
6087 \string\gdef\string\contentsline%
6088 \string#1\string#2\string#3\string#4{%
6089 \string\oldcontentsline%
6090 {\string#1}{\string#2}{\string#3}}^^J%
6091 \string\global\string\let\string\oldnewlabel\string\newlabel^^J%
6092 \string\gdef\string\newlabel\string#1\string#2{%
6093 \string\newlabelxx{\string#1}\string#2}^^J%
6094 \string\gdef\string\newlabelxx%
6095 \string#1\string#2\string#3\string#4\string#5\string#6{%
6096 \string\oldnewlabel{\string#1}{\string#2}{\string#3}}^^J%

```

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

```

6097 \string\AtEndDocument{%
6098 \string\ifx\string\hyper@anchor\string\@undefined^^J%
6099 \string\let\string\contentsline\string\oldcontentsline^^J%
6100 \string\let\string\newlabel\string\oldnewlabel^^J%
6101 \string\fi%
6102 }^^J%

```

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

```

6103 \string\fi%
6104 }^^J%
6105 \string\global\string\let\string\hyper@last\relax^^J%
6106 \string\gdef\string\HyperFirstAtBeginDocument\string#1{\string#1}%
6107 }%
6108 \fi
6109 \let\HyperFirstAtBeginDocument\ltx@firstofone

```

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

If hyperref was used last time, do nothing. If it was not used, or an old version of hyperref was used, don't use that TOC at all but generate a warning. Not ideal, but better than failing with pre-5.0 hyperref TOCs.

```

6110 \ifx\hyper@last\@undefined
6111 \def\@starttoc#1{%
6112 \begingroup
6113 \makeatletter
6114 \IfFileExists{\jobname.#1}{%
6115 \Hy@WarningNoLine{%
6116 old #1 file detected, not used; run LaTeX again%
6117 }%
6118 }{}%
6119 \if@filesw
6120 \expandafter\newwrite\csname tf@#1\endcsname
6121 \immediate\openout\csname tf@#1\endcsname \jobname.#1\relax
6122 \fi
6123 \@nobreakfalse
6124 \endgroup
6125 }%
6126 \def\newlabel#1#2{\@newl@bel r{#1}{#2}{-}{-}{-}}%
6127 \fi
6128 }

```

## 25 Title strings

If options `pdftitle` and `pdfauthor` are not used, these informations for the pdf information dictionary can be extracted by the nd

```

6129 \ifHy@pdfusetitle
6130   \let\HyOrg@title\title
6131   \let\HyOrg@author\author
6132   \def\title{\@ifnextchar{\Hy@scanopttitle}{\Hy@scantitle}}%
6133   \def\Hy@scanopttitle[#1]{%
6134     \gdef\Hy@title{#1}%
6135     \HyOrg@title{#1}%
6136   }%
6137   \def\Hy@scantitle#1{%
6138     \gdef\Hy@title{#1}%
6139     \HyOrg@title{#1}%
6140   }%
6141   \def\author{\@ifnextchar{\Hy@scanoptauthor}{\Hy@scanauthor}}%
6142   \def\Hy@scanoptauthor[#1]{%
6143     \gdef\Hy@author{#1}%
6144     \HyOrg@author{#1}%
6145   }%
6146   \def\Hy@scanauthor#1{%
6147     \gdef\Hy@author{#1}%
6148     \HyOrg@author{#1}%
6149   }%

```

The case, that `or` re given before `hyperref` is loaded, is much more complicate, because LaTeX initializes the macros `title` and `author` with LaTeX error and warning messages.

```

6150 \begingroup
6151   \def\process@me#1\@nil#2{%
6152     \expandafter\let\expandafter\x\csname @#2\endcsname
6153     \edef\y{\expandafter\strip@prefix\meaning\x}%
6154     \def\c##1##2\@nil{%
6155       \ifx\\##1\\%
6156         \else
6157           \expandafter\gdef\csname Hy@#2\expandafter\endcsname
6158             \expandafter{\x}%
6159       \fi
6160     }%
6161     \expandafter\c\y\relax#1\@nil
6162   }%
6163   \expandafter\process@me\string\@latex@\@nil{title}%
6164   \expandafter\process@me\string\@latex@\@nil{author}%
6165 \endgroup
6166 \fi
6167 \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.

```

6168 \def\Hy@UseMaketitleString#1{%
6169 \ltx@ifundefined{Hy@#1}{}%
6170 \begingroup
6171 \let\Hy@saved@hook\pdfstringdefPreHook
6172 \pdfstringdefDisableCommands{%
6173 \expandafter\let\expandafter\\\csname Hy@newline@#1\endcsname
6174 \let\newline\\%
6175 }%
6176 \expandafter\ifx\csname @pdf#1\endcsname\@empty
6177 \expandafter\pdfstringdef\csname @pdf#1\endcsname{%
6178 \csname Hy@#1\endcsname\@empty
6179 }%
6180 \fi
6181 \global\let\pdfstringdefPreHook\Hy@saved@hook
6182 \endgroup
6183 }%
6184 }
6185 \def\Hy@newline@title#1{ #1}
6186 \def\Hy@newline@author#1{, #1}
6187 \def\Hy@UseMaketitleInfos{%
6188 \Hy@UseMaketitleString{title}%
6189 \Hy@UseMaketitleString{author}%
6190 }

```

## 26 Page numbers

This stuff is done by Heiko Oberdiek.

## 27 Every page

```

6191 \RequirePackage{atbegshi}[2007/09/09]
6192 \let\Hy@EveryPageHook\ltx@empty
6193 \let\Hy@EveryPageBoxHook\ltx@empty
6194 \let\Hy@FirstPageHook\ltx@empty
6195 \AtBeginShipout{%
6196 \Hy@EveryPageHook
6197 \ifx\Hy@EveryPageBoxHook\ltx@empty
6198 \else
6199 \setbox\AtBeginShipoutBox=\vbox{%
6200 \offinterlineskip
6201 \Hy@EveryPageBoxHook
6202 \box\AtBeginShipoutBox
6203 }%
6204 \fi
6205 }
6206 \AtBeginShipoutFirst{%
6207 \Hy@FirstPageHook
6208 }
6209 \g@addto@macro\Hy@FirstPageHook{%
6210 \PDF@FinishDoc
6211 \global\let\PDF@FinishDoc\ltx@empty
6212 }

```

### 27.1 PDF /PageLabels

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



```

6213 \ifHy@pdfpagelabels
6214 \begingroup\expandafter\expandafter\expandafter\endgroup
6215 \expandafter\ifx\csname thepage\endcsname\relax
6216 \Hy@pdfpagelabelsfalse
6217 \Hy@WarningNoLine{%
6218 Option 'pdfpagelabels' is turned off\MessageBreak
6219 because \string\thepage\space is undefined%
6220 }%
6221 \csname fi\endcsname
6222 \csname iffalse\expandafter\endcsname
6223 \fi

```

`\thispdfpagelabel` The command `\thispdfpagelabel` allows to label a special page without the re-definition of `\thepage` for the page.

```

6224 \def\thispdfpagelabel#1{%
6225 \gdef\HyPL@thisLabel{#1}%
6226 }%
6227 \global\let\HyPL@thisLabel\relax

```

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

```

6228 \let\HyPL@Labels\ltx@empty

```

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

```

6229 \newcount\Hy@abspage
6230 \Hy@abspage=0 %

```

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

```

6231 \def\HyPL@LastType{init}%
6232 \def\HyPL@LastNumber{0}%
6233 \let\HyPL@LastPrefix\ltx@empty

```

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

```

6234 \def\HyPL@arabic{D}%
6235 \def\HyPL@Roman{R}%
6236 \def\HyPL@roman{r}%
6237 \def\HyPL@Alph{A}%
6238 \def\HyPL@alph{a}%

6239 \let\HyPL@SlidesSetPage\ltx@empty
6240 \ltx@ifclassloaded{slides}{%
6241 \def\HyPL@SlidesSetPage{%
6242 \advance\c@page\ltx@one
6243 \ifnum\value{page}>\ltx@one
6244 \protected@edef\HyPL@SlidesOptionalPage{%
6245 \Hy@SlidesFormatOptionalPage{\thepage}%
6246 }%
6247 \else
6248 \let\HyPL@SlidesOptionalPage\ltx@empty
6249 \fi
6250 \advance\c@page-\ltx@one
6251 \def\HyPL@page{%
6252 \csname the\Hy@SlidesPage\endcsname
6253 \HyPL@SlidesOptionalPage
6254 }%
6255 }%
6256 }{}%

```

`\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.

```

6257 \def\HyPL@EveryPage{%
6258   \begingroup
6259   \ifx\HyPL@thisLabel\relax
6260     \let\HyPL@page\thepage
6261     \HyPL@SlidesSetPage
6262   \else
6263     \let\HyPL@page\HyPL@thisLabel
6264     \global\let\HyPL@thisLabel\relax
6265   \fi
6266   \let\HyPL@Type\relax
6267   \ifnum\c@page>0 %
6268     \ifx\HyPL@SlidesSetPage\ltx@empty
6269       \expandafter\HyPL@CheckThePage\HyPL@page\@nil
6270     \fi
6271   \fi
6272   \let\Hy@temp Y%
6273   \ifx\HyPL@Type\HyPL@LastType
6274   \else
6275     \let\Hy@temp N%
6276   \fi
6277   \ifx\HyPL@Type\relax
6278     \pdfstringdef\HyPL@Prefix{\HyPL@page}%
6279   \else
6280     \pdfstringdef\HyPL@Prefix\HyPL@Prefix
6281   \fi
6282   \ifx\HyPL@Prefix\HyPL@LastPrefix
6283   \else
6284     \let\Hy@temp N%
6285   \fi
6286   \if Y\Hy@temp
6287     \advance\c@page by -1 %
6288     \ifnum\HyPL@LastNumber=\the\c@page\relax
6289     \else
6290       \let\Hy@temp N%
6291     \fi
6292     \Hy@StepCount\c@page
6293   \fi
6294   \if N\Hy@temp
6295     \ifx\HyPL@Type\relax
6296       \HyPL@StorePageLabel{/P(\HyPL@Prefix)}%
6297     \else
6298       \HyPL@StorePageLabel{%
6299         \ifx\HyPL@Prefix\@empty
6300         \else
6301           /P(\HyPL@Prefix)%
6302         \fi
6303         /S/\csname HyPL\HyPL@Type\endcsname
6304         \ifnum\the\c@page=1 %
6305         \else
6306           \space/St \the\c@page
6307         \fi
6308       }%
6309     \fi
6310   \fi
6311   \xdef\HyPL@LastNumber{\the\c@page}%

```

```

6312 \global\let\HyPL@LastType\HyPL@Type
6313 \global\let\HyPL@LastPrefix\HyPL@Prefix
6314 \endgroup
6315 \Hy@GlobalStepCount\Hy@abspage
6316 }%

```

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

```

6317 \def\HyPL@CheckThePage#1\@nil{%
6318 \HyPL@@CheckThePage{#1}#1\csname\endcsname\c@page\@nil
6319 }%

```

`\HyPL@@CheckThePage` The first check is, is `\thepage` is defined such as in L<sup>A</sup>T<sub>E</sub>X, e.g.: `\csname @arabic\endcsname\c@page`. In the current implemenation 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`.

```

6320 \def\HyPL@@CheckThePage#1#2\csname#3\endcsname\c@page#4\@nil{%
6321 \def\Hy@tempa{#4}%
6322 \def\Hy@tempb{\csname\endcsname\c@page}%
6323 \ifx\Hy@tempa\Hy@tempb
6324 \expandafter\ifx\csname HyPL#3\endcsname\relax
6325 \else
6326 \def\HyPL@Type{#3}%
6327 \def\HyPL@Prefix{#2}%
6328 \fi
6329 \else
6330 \begingroup
6331 \let\Hy@next\endgroup
6332 \let\HyPL@found\@undefined
6333 \def\arabic{\HyPL@Format{arabic}}%
6334 \def\Roman{\HyPL@Format{Roman}}%
6335 \def\roman{\HyPL@Format{roman}}%
6336 \def\Alph{\HyPL@Format{Alph}}%
6337 \def\alph{\HyPL@Format{alph}}%
6338 \protected@edef\Hy@temp{#1}%
6339 \ifx\HyPL@found\relax
6340 \toks@\expandafter{\Hy@temp}%
6341 \edef\Hy@next{\endgroup
6342 \noexpand\HyPL@@@CheckThePage\the\toks@
6343 \noexpand\HyPL@found\relax\noexpand\@nil
6344 }%
6345 \fi
6346 \Hy@next
6347 \fi
6348 }%

```

`\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`.

```

6349 \def\HyPL@Format#1#2{%
6350 \ifx\HyPL@found\@undefined
6351 \expandafter\ifx\csname c@#2\endcsname\c@page
6352 \expandafter\noexpand\csname HyPL@found\endcsname{#1}%
6353 \else
6354 \expandafter\noexpand\csname#1\endcsname{#2}%
6355 \fi
6356 \else

```

```

6357 \expandafter\noexpand\csname#1\endcsname{#2}%
6358 \fi
6359 }%

```

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

```

6360 \def\HyPL@@@CheckThePage#1\HyPL@found#2#3\@nil{%
6361 \def\Hy@tempa{#3}%
6362 \def\Hy@tempb{\HyPL@found\relax}%
6363 \ifx\Hy@tempa\Hy@tempb
6364 \def\HyPL@Type{@#2}%
6365 \def\HyPL@Prefix{#1}%
6366 \fi
6367 }%

```

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

```

6368 \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`.

```

6369 \def\HyPL@Useless{0<</S/D>>}%
6370 \@onelevel@sanitize\HyPL@Useless

```

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

```

6371 \def\HyPL@SetPageLabels{%
6372 \@onelevel@sanitize\HyPL@Labels
6373 \ifx\HyPL@Labels\@empty
6374 \else
6375 \ifx\HyPL@Labels\HyPL@Useless
6376 \else
6377 \Hy@PutCatalog{/PageLabels<</Nums[\HyPL@Labels]>>}%
6378 \fi
6379 \fi
6380 }%

```

```

6381 \g@addto@macro\Hy@EveryPageHook{\HyPL@EveryPage}%
6382 \fi

```

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

```

6383 \Hy@DisableOption{pdfpagelabels}
6384 </package>

```

### 27.1.1.1 pdfTeX and VTeX

Because of pdfTeX’s `\pdfcatalog` command the `/PageLabels` entry can set at end of document in the first run.

`\Hy@PutCatalog`

```

6385 (*pdfTeX)
6386 \pdf@ifdraftmode{%
6387 \let\Hy@PutCatalog\ltx@gobble
6388 }{%
6389 \let\Hy@PutCatalog\pdfcatalog
6390 }
6391 </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.

```

6392 <*vtex>
6393 \providecommand*\XR@ext}{pdf}
6394 \edef\Hy@VTeXversion{%
6395   \ifx\VTeXversion\@undefined
6396     \z@
6397   \else
6398     \ifx\VTeXversion\relax
6399       \z@
6400     \else
6401       \VTeXversion
6402     \fi
6403   \fi
6404 }
6405 \begingroup
6406   \ifnum\Hy@VTeXversion<660 %
6407     \gdef\Hy@PutCatalog#1{%
6408       \Hy@WarningNoLine{%
6409         VTeX 6.59g or above required for pdfpagelabels%
6410       }%
6411     }%
6412   \else
6413     \gdef\Hy@PutCatalog#1{%
6414       \Hy@vt@PutCatalog#1/PageLabels<<>>\@nil
6415     }%
6416     \gdef\Hy@vt@PutCatalog#1/PageLabels<<#2>>#3\@nil{%
6417       \ifx\#2\%
6418         \else
6419           \immediate\special{!pdfpagelabels #2}%
6420         \fi
6421       }%
6422     \fi
6423 \endgroup
6424 </vtex>

6425 <*pdftex|vtex>

```

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

```

6426 \ifHy@pdfpagelabels
6427   \def\HyPL@StorePageLabel#1{%
6428     \toks@\expandafter{\HyPL@Labels}%
6429     \xdef\HyPL@Labels{%
6430       \the\toks@
6431       \the\Hy@abspace<<#1>>%
6432     }%
6433   }%

```

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

```

6434 \RequirePackage{atveryend}[2009/12/07]%
6435 \AtVeryEndDocument{%
6436   \HyPL@SetPageLabels

```

```

6437 }%
6438 \fi
6439 </pdfTeX | vTeX>

```

### 27.1.2 xetex

```

6440 <*xetex>
6441 \HyPsd@LoadUnicode
6442 \Hy@unicodetrue
6443 \ifx\HyPsd@pdfencoding\HyPsd@pdfencoding@unicode
6444 \else
6445 \let\HyPsd@pdfencoding\HyPsd@pdfencoding@auto
6446 \fi
6447 \HyPsd@LoadStringEncoding
6448 \define@key{Hyp}{unicode}[true]{%
6449 \Hy@boolkey{unicode}{#1}%
6450 \ifHy@unicode
6451 \else
6452 \Hy@Warning{%
6453 XeTeX driver only supports 'unicode=true'. Ignoring\MessageBreak
6454 option setting 'unicode=false'%
6455 }%
6456 \Hy@unicodetrue
6457 \fi
6458 }
6459 \define@key{Hyp}{pdfencoding}{%
6460 \edef\HyPsd@temp{#1}%
6461 \ifx\HyPsd@temp\HyPsd@pdfencoding@unicode
6462 \let\HyPsd@pdfencoding\HyPsd@temp
6463 \else
6464 \ifx\HyPsd@temp\HyPsd@pdfencoding@auto
6465 \let\HyPsd@pdfencoding\HyPsd@temp
6466 \else
6467 \Hy@Warning{%
6468 XeTeX driver only supports\MessageBreak
6469 'pdfencoding=unicode|auto'. Ignoring option\MessageBreak
6470 setting 'pdfencoding=\HyPsd@temp'%
6471 }%
6472 \fi
6473 \fi
6474 }
6475 \let\HyXeTeX@CheckUnicode\relax
6476 </xetex>

```

### 27.1.3 pdfmarkbase, dvipdfm, xetex

```

6477 <*pdfmarkbase>
6478 \begingroup
6479 \@ifundefined{headerps@out}{-}{%
6480 \toks@\expandafter{\Hy@FirstPageHook}%
6481 \xdef\Hy@FirstPageHook{%
6482 \noexpand\headerps@out{%
6483 systemdict /pdfmark known%
6484 {%
6485 userdict /?pdfmark systemdict /exec get put%
6486 }{%
6487 userdict /?pdfmark systemdict /pop get put %
6488 userdict /pdfmark systemdict /cleartomark get put%

```

```

6489     }%
6490     ifelse%
6491     }%
6492     \the\toks@
6493     }%
6494     }%
6495 \endgroup
6496 \pdfmarkbase>

```

\Hy@PutCatalog

```

6497 \dvipdfm | xetex>\def\Hy@PutCatalog#1{\@pdfmark{docview << #1 >>}}
6498 \*pdfmarkbase>
6499 \def\Hy@PutCatalog#1{%
6500   \pdfmark{pdfmark=/PUT,Raw={\string{Catalog\string} << #1 >>}}%
6501 }
6502 \pdfmarkbase>

6503 \*pdfmarkbase | dvipdfm | xetex>
6504 \ifHy@pdfpagelabels

```

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

```

6505 \def\HyPL@StorePageLabel#1{%
6506   \if@filesw
6507     \begingroup
6508     \edef\Hy@tempa{\the\Hy@abspage<<#1>>}%
6509     \immediate\write\@mainaux{%
6510       \string\HyPL@Entry{\Hy@tempa}%
6511     }%
6512   \endgroup
6513   \fi
6514 }%

```

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.

```

6515 \Hy@AtBeginDocument{%
6516   \if@filesw
6517     \immediate\write\@mainaux{%
6518       \string\providecommand\string*\string\HyPL@Entry[1]{}%
6519     }%
6520   \fi
6521   \ifx\HyPL@Labels\@empty
6522     \Hy@WarningNoLine{Rerun to get /PageLabels entry}%
6523   \else
6524     \HyPL@SetPageLabels
6525   \fi
6526   \let\HyPL@Entry\@gobble
6527 }%

```

\HyPL@Entry

```

6528 \def\HyPL@Entry#1{%
6529   \expandafter\gdef\expandafter\HyPL@Labels\expandafter{%
6530     \HyPL@Labels
6531     #1%
6532   }%
6533 }%

```

```

6534 \fi
6535 </pdfmarkbase | dvipdfm | xetex>
6536 (*package)
6537 \ifx\MaybeStopEarly\relax
6538 \else
6539 \Hy@stoppedearlytrue
6540 \expandafter\MaybeStopEarly
6541 \fi
6542 \Hy@stoppedearlyfalse

```

## 28 Automated L<sup>A</sup>T<sub>E</sub>X hypertext cross-references

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

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

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

Start with a fallback for equations

```

6543 \def\Hy@CounterExists#1{%
6544 \begingroup\expandafter\expandafter\expandafter\endgroup
6545 \expandafter\ifx\csname c@#1\endcsname\relax
6546 \expandafter\@gobble
6547 \else
6548 \begingroup\expandafter\expandafter\expandafter\endgroup
6549 \expandafter\ifx\csname the#1\endcsname\relax
6550 \expandafter\expandafter\expandafter\@gobble
6551 \else
6552 \expandafter\expandafter\expandafter\@firstofone
6553 \fi
6554 \fi
6555 }
6556 \Hy@CounterExists{section}{%
6557 \providecommand\theHequation{\theHsection.\arabic{equation}}}%
6558 }
6559 \Hy@CounterExists{part}{%
6560 \providecommand\theHpart{\arabic{part}}}%
6561 }
6562 \ltx@ifundefined{thechapter}{%
6563 \providecommand\theHsection {\arabic{section}}}%
6564 \providecommand\theHfigure {\arabic{figure}}}%
6565 \providecommand\theHtable {\arabic{table}}}%
6566 }{%

```



```

6567 \providecommand\theHchapter {\arabic{chapter}}%
6568 \providecommand\theHfigure {\theHchapter.\arabic{figure}}%
6569 \providecommand\theHtable {\theHchapter.\arabic{table}}%
6570 \providecommand\theHsection {\theHchapter.\arabic{section}}%
6571 }
6572 \providecommand\theHsubsection {\theHsection.\arabic{subsection}}
6573 \providecommand\theHsubsubsection{\theHsubsection.\arabic{subsubsection}}
6574 \providecommand\theHparagraph {\theHsubsubsection.\arabic{paragraph}}
6575 \providecommand\theHsubparagraph {\theHparagraph.\arabic{subparagraph}}
6576 \providecommand\theHtheorem {\theHsection.\arabic{theorem}}
6577 \providecommand\theHthm {\theHsection.\arabic{thm}}

```

Thanks to Greta Meyer (gbd@pop.cwru.edu) for making me realize that enumeration starts at 0 for every list! But `\item` occurs inside `\trivlist`, so check if its a real `\item` before incrementing counters.

```

6578 \let\H@item\item
6579 \newcounter{Item}
6580 \def\theHItem{\arabic{Item}}
6581 \def\item{%
6582   \@hyper@itemfalse
6583   \if@nmbrlist\@hyper@itemtrue\fi
6584   \H@item
6585 }

6586 \providecommand\theHenumi {\theHItem}
6587 \providecommand\theHenumii {\theHItem}
6588 \providecommand\theHenumiii {\theHItem}
6589 \providecommand\theHenumiv {\theHItem}
6590 \providecommand\theHHfootnote {\arabic{Hfootnote}}
6591 \providecommand\theHmpfootnote{\arabic{mpfootnote}}
6592 \@ifundefined{theHHmpfootnote}{%
6593   \let\theHHmpfootnote\theHHfootnote
6594 }{}

```

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.

```

6595 \let\H@refstepcounter\refstepcounter
6596 \edef\name@of@eq{equation}%
6597 \edef\name@of@slide{slide}%

```

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.

```

6598 \newif\if@hyper@item
6599 \newif\if@skiphyperref
6600 \@hyper@itemfalse
6601 \@skiphyperreffalse
6602 \def\refstepcounter#1{%
6603   \ifHy@pdfstring
6604   \else
6605     \H@refstepcounter{#1}%
6606     \edef\This@name{#1}%
6607     \ifx\This@name\name@of@slide
6608     \else
6609       \if@skiphyperref
6610       \else
6611         \if@hyper@item
6612         \stepcounter{Item}%

```

```

6613     \hyper@refstepcounter{Item}%
6614     \@hyper@itemfalse
6615   \else
6616     \hyper@refstepcounter{#1}%
6617   \fi
6618 \fi
6619 \fi
6620 \fi
6621 }
6622 \let\Hy@saved@refstepcounter\refstepcounter

```

AMS<sub>La</sub>T<sub>E</sub>X 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.

```

6623 \@ifpackageloaded{amsmath}{\newif\ifmeasuring@\measuring@false}

```

`\hyper@refstepcounter`

```

6624 \def\hyper@refstepcounter#1{%
6625   \edef\This@name{#1}%
6626   \ifx\This@name\name@of@eq
6627     \@ifundefined{theHequation}{%
6628       \make@stripped@name{\theequation}%
6629       \let\theHequation\newname
6630     }{}%
6631   \fi
6632   \@ifundefined{theH#1}{%
6633     \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
6634   }{}%
6635   \hyper@makecurrent{#1}%
6636   \ifmeasuring@
6637   \else
6638     \Hy@raisedlink{%
6639       \hyper@anchorstart{\@currentHref}\hyper@anchorend
6640     }%
6641   \fi
6642 }

```

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`.

```

6643 \begingroup\expandafter\expandafter\expandafter\endgroup
6644 \expandafter\ifx\csname chapter\endcsname\relax
6645   \def\Hy@chapterstring{section}%
6646 \else
6647   \def\Hy@chapterstring{chapter}%
6648 \fi
6649 \def\Hy@appendixstring{appendix}
6650 \def\Hy@chapapp{\Hy@chapterstring}
6651 \ltx@ifundefined{appendix}{%
6652 }{%
6653   \let\HyOrg@appendix\appendix
6654   \def\appendix{%
6655     \ltx@ifundefined{chapter}%
6656     {\gdef\theHsection{\Alph{section}}}%

```

```

6657     {\gdef\theHchapter{\Alph{chapter}}}%
6658     \xdef\Hy@chapapp{\Hy@appendixstring}%
6659     \HyOrg@appendix
6660 }%
6661 }

```

\Hy@Test@alph

```

6662 \def\Hy@Test@alph#1{%
6663   \ifcase#1\or
6664     a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
6665     k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
6666     u\or v\or w\or x\or y\or z%
6667   \else
6668     \@ctrerr
6669   \fi
6670 }

```

\Hy@Test@Alph

```

6671 \def\Hy@Test@Alph#1{%
6672   \ifcase#1\or
6673     A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
6674     K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
6675     U\or V\or W\or X\or Y\or Z%
6676   \else
6677     \@ctrerr
6678   \fi
6679 }

```

\hyper@makecurrent Because of Babel mucking around, nullify \textlatin when making names. And \@number because of babel's lrbabel.def.

```

6680 \def\hyper@makecurrent#1{%
6681   \begingroup
6682   \edef\Hy@param{#1}%
6683   \ifx\Hy@param\Hy@chapterstring
6684     \let\Hy@param\Hy@chapapp
6685   \fi
6686   \ifHy@hypertextnames
6687     \let\@number\@firstofone
6688     \def\@fnsymbol##1{\fnsymbol\number##1}%
6689     \def\@arabic##1{\number##1}%
6690     \ifx\@alph\Hy@Test@alph
6691       \else
6692         \def\@alph{alph\number}%
6693       \fi
6694     \ifx\@Alph\Hy@Test@Alph
6695       \else
6696         \def\@Alph{Alph\number}%
6697       \fi
6698     \ifHy@naturalnames
6699       \let\textlatin\@firstofone
6700       \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
6701     \else
6702       \xdef\HyperGlobalCurrentHref{%
6703         \csname
6704           the%
6705           \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
6706         #1%

```

```

6707     \endcsname
6708   }%
6709 \fi
6710 \xdef\HyperGlobalCurrentHref{%
6711   \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
6712 }%
6713 \else
6714   \Hy@GlobalStepCount\Hy@linkcounter
6715   \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
6716 \fi
6717 \endgroup
6718 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6719 \ifHy@localanchorname
6720   \let\@currentHref\HyperLocalCurrentHref
6721 \else
6722   \global\let\@currentHref\HyperGlobalCurrentHref
6723 \fi
6724 }

```

\Hy@MakeCurrentHref

```

6725 \def\Hy@MakeCurrentHref#1{%
6726   \edef\HyperLocalCurrentHref{#1}%
6727   \@onelevel@sanitize\HyperLocalCurrentHref
6728   \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
6729   \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6730   \ifHy@localanchorname
6731     \let\@currentHref\HyperLocalCurrentHref
6732   \else
6733     \global\let\@currentHref\HyperGlobalCurrentHref
6734   \fi
6735 }

```

\Hy@MakeCurrentHrefAuto

```

6736 \def\Hy@MakeCurrentHrefAuto#1{%
6737   \Hy@GlobalStepCount\Hy@linkcounter
6738   \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
6739 }

```

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

```

6740 \def\@currentHlabel{\@currentHref}

6741 \@ifpackageloaded{fancyvrb}{%
6742   \@ifpackagelater{fancyvrb}{1998/05/20}{-}{%
6743     \def\FV@StepLineNo{%
6744       \FV@SetLineNo
6745       \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
6746       \FV@StepLineNo
6747     }%
6748   }%
6749 }{}

```

## 29 Package lastpage support

Package lastpage directly writes the \newlabel command to the aux file. Because package hyperref requires additional arguments, the internal command \lastpage@putlabel is redefined. The patch is deferred by \AtBeginDocument,

because it is possible that package `lastpage` is loaded after package `hyperref`. The same algorithm (options `hypertextnames` and `plainpages`) is used to get the page anchor name as in `\Hy@EveryPageAnchor` (see sec. 38). The link will not work if option `pageanchor` is set to `false`.

`\lastpage@putlabel`

```

6750 \Hy@AtBeginDocument{%
6751   \@ifclassloaded{revtex4}{}%
6752   \@namedef{ver@lastpage.sty}{1994/06/25}%
6753 }{}%
6754 \@ifpackageloaded{lastpage}{%
6755   \ifHy@pageanchor
6756   \else
6757     \Hy@WarningNoLine{%
6758       The \string\pageref{LastPage} link doesn't work\MessageBreak
6759       with disabled option 'pageanchor'%
6760     }%
6761   \fi
6762   \def\lastpage@putlabel{%
6763     \addtocounter{page}{-1}%
6764     \if@filesw
6765       \begingroup
6766         \let\@number\@firstofone
6767         \ifHy@pageanchor
6768           \ifHy@hypertextnames
6769             \ifHy@plainpages
6770               \def\Hy@temp{\arabic{page}}%
6771             \else
6772               \Hy@unicodedefalse
6773               \pdfstringdef\Hy@temp{\thepage}%
6774             \fi
6775           \else
6776             \def\Hy@temp{\the\Hy@pagecounter}%
6777           \fi
6778         \fi
6779         \immediate\write\@auxout{%
6780           \string\newlabel
6781           {LastPage}{\the\Hy@temp}{\thepage}{\the\Hy@temp}{\the\Hy@temp}{\the\Hy@temp}%
6782           \ifHy@pageanchor page.\Hy@temp\fi}{\the\Hy@temp}%
6783         }%
6784       \endgroup
6785     \fi
6786     \addtocounter{page}{1}%
6787   }%
6788   \@ifclassloaded{revtex4}{%
6789     \begingroup
6790     \toks@\expandafter{\lastpage@putlabel}%
6791     \edef\x{\endgroup
6792       \def\noexpand\lastpage@putlabel{%
6793         \noexpand\stepcounter{page}%
6794         \the\toks@
6795         \noexpand\addtocounter{page}\noexpand\m@ne
6796       }%
6797     }%
6798     \x
6799   }{}%
6800 }{}%
```

```

6801 }
6802 </package>
6803 <*check>
6804 \checkpackage{lastpage}[1994/06/25]
6805 \checkcommand\def\lastpage@putlabel{%
6806   \addtocounter{page}{-1}%
6807   \immediate\write\@auxout{%
6808     \string\newlabel{LastPage}{\the\thepage}}%
6809   }%
6810   \addtocounter{page}{1}%
6811 }
6812 </check>
6813 <*package>

```

## 30 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.

```

6814 \def\hypergetref#1{\getrefbykeydefault{#1}{-}{??}}
6815 \def\hypergetpageref#1{\getrefbykeydefault{#1}{page}{0}}

```

## 31 Package titlesec and titletoc support

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

Package titlesec support:

```

6816 \@ifpackageloaded{titlesec}{%
6817   \def\ttl@Hy@steplink#1{%
6818     \Hy@MakeCurrentHrefAuto{#1*}%
6819     \edef\ttl@Hy@saveanchor{%
6820       \noexpand\Hy@raisedlink{%
6821         \noexpand\hyper@anchorstart{\@currentHref}%
6822         \noexpand\hyper@anchorend
6823         \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}%
6824         \noexpand\ttl@Hy@PatchSaveWrite
6825       }%
6826     }%
6827   }%
6828   \def\ttl@Hy@PatchSaveWrite{%
6829     \begingroup
6830     \toks@{\expandafter{\ttl@savewrite}}%
6831     \edef\x{\endgroup
6832       \def\noexpand\ttl@savewrite{%
6833         \let\noexpand\@currentHref
6834         \noexpand\ttl@Hy@SavedCurrentHref
6835         \the\toks@
6836       }%
6837     }%
6838   \x
6839 }%
6840 \def\ttl@Hy@refstepcounter#1{%
6841   \let\ttl@b\Hy@raisedlink
6842   \def\Hy@raisedlink##1{%
6843     \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
6844   }%

```

```

6845 \refstepcounter{#1}%
6846 \let\Hy@raisedlink\ttl@b
6847 }%
6848 }{}

Package titletoc support:

6849 \@ifpackageloaded{titletoc}{%
6850 \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
6851 }{}

```

## 32 Package varioref support

Package nameref uses five arguments for the ref system. Fix provided by Felix Neubauer ([felix.neubauer@gmx.net](mailto:felix.neubauer@gmx.net)).

```

6852 \def\Hy@varioref@undefined{{??}{??}{}}{}
6853 \@ifpackageloaded{varioref}{%
6854 \def\vref@pagenum#1#2{%
6855 \ifundefined{r@#2}{%
6856 \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
6857 }{}%
6858 \edef#1{\getpagerefnumber{#2}}%
6859 }%
6860 }{}

```

Package varioref redefines `\refstepcounter`, thus it needs fixing, if the package is loaded *after* `hyperref`.

```

6861 \def\Hy@varioref@refstepcounter#1{%
6862 \stepcounter{#1}%
6863 \protected@edef\@currentlabel{%
6864 \csname p@#1\expandafter\endcsname\csname the#1\endcsname
6865 }%
6866 }
6867 \AtBeginDocument{%
6868 \ifx\refstepcounter\Hy@varioref@refstepcounter
6869 \let\H@refstepcounter\refstepcounter
6870 \let\refstepcounter\Hy@saved@refstepcounter
6871 \fi
6872 }

```

## 33 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

```

6873 \@ifpackageloaded{longtable}{%
6874 \begingroup
6875 \def\y{\LT@array}%
6876 \@ifundefined{scr@LT@array}{%
6877 \ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}%
6878 }\def\y{\scr@LT@array}%
6879 \long\def\x\refstepcounter#1#2\sharp#3#4\@nil{%
6880 \expandafter\endgroup
6881 \expandafter\def\y[##1]##2{%

```

```

6882 \H@refstepcounter{#1}%
6883 \hyper@makecurrent{table}%
6884 \let\Hy@LT@currentHref\@currentHref
6885 #2\@sharp#####4%
6886 }%
6887 }%
6888 \expandafter\expandafter\expandafter\x\y[{#1}]{#2}\@nil
Patch of \LT@start: add anchor before first line after \vskip\LTpre
6889 \begingroup
6890 \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
6891 \endgroup
6892 \def\LT@start{%
6893 #1%
6894 \ifvoid\LT@foot#2\fi
6895 \let\@currentHref\Hy@LT@currentHref
6896 \Hy@raisedlink{%
6897 \hyper@anchorstart{\@currentHref}\hyper@anchorend
6898 }%
6899 #3%
6900 }%
6901 }%
6902 \expandafter\x\LT@start\@nil
6903 }{}

```

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

```

6904 \let\new@refstepcounter\refstepcounter
6905 \let\H@equation\equation
6906 \let\H@endequation\endequation
6907 \@ifpackageloaded{amsmath}{%
6908 \long\def\Hy@temp{%
6909 \incr@eqnum
6910 \mathdisplay@push
6911 \st@rredfalse \global\@eqnswtrue
6912 \mathdisplay{equation}%
6913 }%
6914 \ifx\Hy@temp\equation
6915 \expandafter\ifx\csname if@fleqn\expandafter\endcsname
6916 \csname iftrue\endcsname
6917 \else
6918 \long\def\equation{%
6919 \mathdisplay@push
6920 \st@rredfalse \global\@eqnswtrue
6921 \mathdisplay{equation}%
6922 \incr@eqnum
6923 }%
6924 \fi
6925 \fi
6926 }{%
6927 \def\equation{%

```



```

6928 \let\refstepcounter\H@refstepcounter
6929 \H@equation
6930 \@ifundefined{theHequation}{%
6931   \make@stripped@name{\theequation}%
6932   \let\theHequation\newname
6933 }{}%
6934 \hyper@makecurrent{equation}%
6935 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}%
6936 \let\refstepcounter\new@refstepcounter
6937 }%
6938 \def\endequation{\Hy@raisedlink{\hyper@anchorend}\H@endequation}%
6939 }

```

My goodness, why can't L<sup>A</sup>T<sub>E</sub>X be consistent? Why is `\eqnarray` set up differently from other objects?

People (you know who you are, Thomas Beuth) sometimes make an `eqnarray` where *all* the lines end with `\notag`, so there is no suitable anchor at all. In this case, pass by on the other side.

```

6940 \newif\if@eqnstar
6941 \@eqnstarfalse
6942 \let\H@eqnarray\eqnarray
6943 \let\H@endeqnarray\endeqnarray
6944 \def\eqnarray{%
6945   \let\Hy@reserved@a\relax
6946   \def\@currentHref{}%
6947   \H@eqnarray
6948   \if@eqnstar
6949   \else
6950     \ifx\\\@currentHref\\%
6951     \else
6952       \@ifundefined{theHequation}{%
6953         \make@stripped@name{\theequation}%
6954         \let\theHequation\newname
6955       }{}%
6956       \hyper@makecurrent{equation}%
6957       \hyper@anchorstart{\@currentHref}{\hyper@anchorend
6958     \fi
6959   \fi
6960 }
6961 \def\endeqnarray{%
6962   \H@endeqnarray
6963 }

```

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.

```

6964 \@namedef{eqnarray*}{%
6965   \def\@eqnocr{\nonumber\@seqnocr}\@eqnstartrue\eqnarray
6966 }
6967 \@namedef{endeqnarray*}{%
6968   \nonumber\endeqnarray\@eqnstarfalse
6969 }

```

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

```

6970 \ltx@ifundefined{subeqnarray}{}{}%
6971 \let\H@subeqnarray\subeqnarray
6972 \let\H@endsubeqnarray\endsubeqnarray

```

```

6973 \def\subeqnarray{%
6974   \let\Hy@reserved@a\relax
6975   \H@subeqnarray
6976   \@ifundefined{theHequation}{%
6977     \make@stripped@name{\theequation}%
6978     \let\theHequation\newname
6979   }{}%
6980   \hyper@makecurrent{equation}%
6981   \hyper@anchorstart{\@currentHref}{\hyper@anchorend
6982 }%
6983 \def\endsubeqnarray{%
6984   \H@endsubeqnarray
6985 }%
6986 \providecommand\theHsubequation{\theHequation\alph{subequation}}%
6987 }

```

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

```

6988 \def\make@stripped@name#1{%
6989   \begingroup
6990   \escapechar\m@ne
6991   \global\let\newname\@empty
6992   \protected@edef\Hy@tempa{#1}%
6993   \edef\@tempb{%
6994     \noexpand\@tfor\noexpand\Hy@tempa:=%
6995     \expandafter\strip@prefix\meaning\Hy@tempa
6996   }%
6997   \@tempb\do{%
6998     \if{\Hy@tempa\else
6999     \if}\Hy@tempa\else
7000     \xdef\newname{\newname\Hy@tempa}%
7001     \fi
7002   }%
7003 }%
7004 \endgroup
7005 }

```

Support for amsmath's subequations:

```

7006 \begingroup\expandafter\expandafter\expandafter\endgroup
7007 \expandafter\ifx\csname subequations\endcsname\relax
7008 \else
7009   \let\HyOrg@subequations\subequations
7010   \def\subequations{%
7011     \stepcounter{equation}%
7012     \protected@edef\theHparentequation{%
7013       \@ifundefined{theHequation}\theequation\theHequation
7014     }%
7015     \addtocounter{equation}{-1}%
7016     \HyOrg@subequations
7017     \def\theHequation{\theHparentequation\alph{equation}}%
7018     \ignorespaces
7019   }%
7020 \fi

```

Support for package `amsthm` (Daniel Müllner):

```

7021 \@ifpackageloaded{amsthm}{%

```

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

```

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

7022 \def\Hy@temp#1#2#3{%
7023   \ifhmode\unskip\unskip\par\fi
7024   \normalfont
7025   \trivlist
7026   \let\thmheadnl\relax
7027   \let\thm@swap\@gobble
7028   \let\thm@indent\indent % indent
7029   \thm@headfont{\scshape}% heading font small caps
7030   \thm@notefont{\fontseries\mddefault\upshape}%
7031   \thm@headpunct{.}% add period after heading
7032   \thm@headsep 5\p@ plus\p@ minus\p@\relax
7033   \thm@space@setup
7034   #1% style overrides
7035   \@topsep \thm@preskip % used by thm head
7036   \@topsepadd \thm@postskip % used by \@endparenv
7037   \def\@tempa{#2}\ifx\@empty\@tempa
7038     \def\@tempa{\@oparg{\@begintheorem{#3}{}}}%
7039   \else
7040     \refstepcounter{#2}%
7041     \def\@tempa{\@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}}%
7042   \fi
7043   \@tempa
7044 }%
7045 \ifx\Hy@temp\@thm
7046   \def\@thm#1#2#3{%
7047     \ifhmode
7048       \unskip\unskip\par
7049     \fi
7050     \normalfont
7051     \trivlist
7052     \let\thmheadnl\relax
7053     \let\thm@swap\@gobble
7054     \let\thm@indent\indent % indent
7055     \thm@headfont{\scshape}% heading font small caps
7056     \thm@notefont{\fontseries\mddefault\upshape}%
7057     \thm@headpunct{.}% add period after heading
7058     \thm@headsep 5\p@ plus\p@ minus\p@\relax
7059     \thm@space@setup
7060     #1% style overrides
7061     \@topsep \thm@preskip % used by thm head
7062     \@topsepadd \thm@postskip % used by \@endparenv
7063     \def\dth@counter{#2}%
7064     \ifx\@empty\dth@counter
7065       \def\@tempa{%
7066         \@oparg{\@begintheorem{#3}{}}}%
7067     }%
7068   \else
7069     \H@refstepcounter{#2}%
7070     \hyper@makecurrent{#2}%
7071     \let\Hy@dth@currentHref\@currentHref
7072     \def\@tempa{%
7073       \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}}%
7074   }%
7075   \fi
7076   \@tempa

```

```

7077 }%
7078 \else
7079 \def\@thm#1#2#3{%
7080 \ifhmode
7081 \unskip\unskip\par
7082 \fi
7083 \normalfont
7084 \trivlist
7085 \let\thmheadnl\relax
7086 \let\thm@swap\@gobble
7087 \thm@notefont{\fontseries\mddefault\upshape}%
7088 \thm@headpunct{.}% add period after heading
7089 \thm@headsep 5\p@ plus\p@ minus\p@\relax
7090 \thm@space@setup
7091 #1% style overrides
7092 \@topsep \thm@preskip % used by thm head
7093 \@topsepadd \thm@postskip % used by \@endparenv
7094 \def\dth@counter{#2}%
7095 \ifx\@empty\dth@counter
7096 \def\@tempa{%
7097 \@oparg{\@begintheorem{#3}{}}}%
7098 }%
7099 \else
7100 \H@refstepcounter{#2}%
7101 \hyper@makecurrent{#2}%
7102 \let\Hy@dth@currentHref\@currentHref
7103 \def\@tempa{%
7104 \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}}%
7105 }%
7106 \fi
7107 \@tempa
7108 }%
7109 \fi
7110 \dth@everypar={%
7111 \@minipagefalse
7112 \global\@newlistfalse
7113 \@nparitemfalse
7114 \if@inlabel
7115 \global\@inlabelfalse
7116 \begingroup
7117 \setbox\z@\lastbox
7118 \ifvoid\z@
7119 \kern-\itemindent
7120 \fi
7121 \endgroup
7122 \ifx\@empty\dth@counter
7123 \else
7124 \Hy@raisedlink{%
7125 \hyper@anchorstart{%
7126 \ltx@ifundefined{Hy@dth@currentHref}%
7127 \@currentHref\Hy@dth@currentHref
7128 }\hyper@anchorend
7129 }%
7130 \fi
7131 \unhbox\@labels
7132 \fi
7133 \if@nobreak

```

```

7134 \clubpenalty\@M
7135 \else
7136 \clubpenalty\clubpenalty \everypar{}%
7137 \fi
7138 }%
7139 }{}

```

## 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.

```

7140 \ifHy@hyperfootnotes
7141 \newcounter{Hfootnote}%
7142 \let\H@@footnotetext\@footnotetext
7143 \let\H@@footnotemark\@footnotemark
7144 \def\xfootnotenext[#1]{%
7145 \begingroup
7146 \csname c@\@mpfn\endcsname #1\relax
7147 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7148 \endgroup
7149 \ifx\@footnotetext\@mpfootnotetext
7150 \expandafter\H@@mpfootnotetext
7151 \else
7152 \expandafter\H@@footnotetext
7153 \fi
7154 }%
7155 \def\xfootnotemark[#1]{%
7156 \begingroup
7157 \c@footnote #1\relax
7158 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7159 \endgroup
7160 \H@@footnotemark
7161 }%
7162 \let\H@@mpfootnotetext\@mpfootnotetext
7163 \long\def\@mpfootnotetext#1{%
7164 \H@@mpfootnotetext{%
7165 \ifHy@nesting
7166 \expandafter\ltx@firstoftwo
7167 \else
7168 \expandafter\ltx@secondoftwo
7169 \fi
7170 {%
7171 \expandafter\hyper@@anchor\expandafter{%
7172 \Hy@footnote@currentHref
7173 }{#1}%
7174 }{%
7175 \Hy@raisedlink{%
7176 \expandafter\hyper@@anchor\expandafter{%
7177 \Hy@footnote@currentHref
7178 }{\relax}%
7179 }#1%
7180 }%
7181 }%

```

```

7182 }%
7183 \long\def\@footnotetext#1{%
7184   \H@@footnotetext{%
7185     \ifHy@nesting
7186       \expandafter\ltx@firstoftwo
7187     \else
7188       \expandafter\ltx@secondoftwo
7189     \fi
7190   {%
7191     \expandafter\hyper@@anchor\expandafter{%
7192       \Hy@footnote@currentHref
7193     }{#1}%
7194   }{%
7195     \Hy@raisedlink{%
7196       \expandafter\hyper@@anchor\expandafter{%
7197         \Hy@footnote@currentHref
7198       }{\relax}%
7199     }%
7200     \let\@currentHref\Hy@footnote@currentHref
7201     \let\@currentlabelname\@empty
7202     #1%
7203   }%
7204 }%
7205 }%

```

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.

```

7206 \def\@footnotemark{%
7207   \leavevmode
7208   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7209   \stepcounter{Hfootnote}%
7210   \global\let\Hy@saved@currentHref\@currentHref
7211   \hyper@makecurrent{Hfootnote}%
7212   \global\let\Hy@footnote@currentHref\@currentHref
7213   \global\let\@currentHref\Hy@saved@currentHref
7214   \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7215   \@makefnmark
7216   \hyper@linkend
7217   \ifhmode\spacefactor\@x@sf\fi
7218   \relax
7219 }%

```

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

```

7220 \@ifpackageloaded{tabularx}{%
7221   \let\HyOrg@TX@endtabularx\TX@endtabularx
7222   \def\Hy@tabularx@hook{%
7223     \let\@footnotetext\H@@footnotetext
7224     \let\@footnotemark\H@@footnotemark
7225     \let\@mpfootnotetext\H@@mpfootnotetext
7226   }%
7227   \begingroup
7228     \toks@\expandafter{\TX@endtabularx}%
7229     \xdef\Hy@gtemp{%
7230       \noexpand\Hy@tabularx@hook

```

```

7231     \the\toks@
7232   }%
7233   \endgroup
7234   \let\TX@endtabularx\Hy@gtemp
7235 }{}%

```

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

```

7236 \ifpackageloaded{longtable}{%
7237   \CheckCommand*{\LT@p@ftntext}[1]{%
7238     \edef\@tempa{%
7239       \the\LT@p@ftn
7240       \noexpand\footnotetext[\the\c@footnote]%
7241     }%
7242     \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7243   }%
7244   \long\def\LT@p@ftntext#1{%
7245     \edef\@tempa{%
7246       \the\LT@p@ftn
7247       \begingroup
7248         \noexpand\c@footnote=\the\c@footnote\relax
7249         \noexpand\protected@xdef\noexpand\@thefnmark{%
7250           \noexpand\thempfn
7251         }%
7252         \noexpand\Hy@LT@footnotetext{%
7253           \Hy@footnote@currentHref
7254         }%
7255       }%
7256       \global\LT@p@ftn\expandafter{%
7257         \@tempa{#1}%
7258       }%
7259     }%
7260   }%
7261   \long\def\Hy@LT@footnotetext#1#2{%
7262     \H@@@footnotetext{%
7263       \ifHy@nesting
7264         \hyper@@@anchor{#1}{#2}%
7265       \else
7266         \Hy@raisedlink{%
7267           \hyper@@@anchor{#1}{\relax}%
7268         }%
7269       \def\@currentHref{#1}%
7270       \let\@currentlabelname\@empty
7271       #2%
7272     }%
7273   }%
7274 }{}%
7275 }{}%

```

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

```

7276 \ifpackageloaded{fancyvrb}{%
7277   \def\V@@@footnotetext{%
7278     \insert\footins\bgroup
7279     \csname reset@font\endcsname
7280     \footnotesize
7281     \interlinepenalty\interfootnotelinepenalty

```

```

7282 \splittopskip\footnotesep
7283 \splitmaxdepth\dp\strutbox
7284 \floatingpenalty \@MM
7285 \hsize\columnwidth
7286 \@parboxrestore
7287 \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
7288 \@makefnmark{}%
7289 \rule{\z@}{\footnotesep}%
7290 \bgroup
7291 \aftergroup\V@@@footnotetext
7292 \Hy@raisedlink{%
7293   \expandafter\hyper@@anchor\expandafter{%
7294     \Hy@footnote@currentHref
7295   }\relax}%
7296 }%
7297 \let\@currentHref\Hy@footnote@currentHref
7298 \let\@currentlabelname\@empty
7299 \ignorespaces
7300 }%
7301 }{}%

```

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

```

7302 \def\Hy@temp#1{%
7303   \begingroup
7304     \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7305   \endgroup
7306   \@footnotemark
7307 }%
7308 \ifx\Hy@temp\footref
7309   \def\footref#1{%
7310     \begingroup
7311       \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7312     \endgroup
7313     \H@@@footnotemark
7314   }%
7315 \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.

```

7316 \let\HyOrg@maketitle\maketitle
7317 \def\maketitle{%
7318   \let\Hy@saved@footnotemark\@footnotemark
7319   \let\Hy@saved@footnotetext\@footnotetext
7320   \let\@footnotemark\H@@@footnotemark
7321   \let\@footnotetext\H@@@footnotetext
7322   \@ifnextchar[\Hy@maketitle@optarg{% ]
7323     \HyOrg@maketitle
7324     \Hy@maketitle@end
7325   }%
7326 }%
7327 \def\Hy@maketitle@optarg[#1]{%
7328   \HyOrg@maketitle[#1]%
7329   \Hy@maketitle@end
7330 }%
7331 \def\Hy@maketitle@end{%
7332   \ifx\@footnotemark\H@@@footnotemark

```



```

7333 \let\@footnotemark\Hy@saved@footnotemark
7334 \fi
7335 \ifx\@footnotetext\H@@footnotetext
7336 \let\@footnotetext\Hy@saved@footnotetext
7337 \fi
7338 }%

```

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

```

7339 \def\realfootnote{%
7340 \@ifnextchar\@xfootnote{%
7341 \stepcounter{\@mpfn}%
7342 \protected@xdef\@thefnmark{\thempfn}%
7343 \H@@footnotemark\H@@footnotetext
7344 }%
7345 }%

7346 \fi
7347 \Hy@DisableOption{hyperfootnotes}

7348 </package>
7349 <*check>
7350 \checklatex
7351 \checkcommand\def\@xfootnotenext[#1]{%
7352 \begingroup
7353 \csname c@\@mpfn\endcsname #1\relax
7354 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7355 \endgroup
7356 \@footnotetext
7357 }
7358 \checkcommand\def\@xfootnotemark[#1]{%
7359 \begingroup
7360 \c@footnote #1\relax
7361 \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7362 \endgroup
7363 \@footnotemark
7364 }
7365 \checkcommand\def\@footnotemark{%
7366 \leavevmode
7367 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7368 \@makefnmark
7369 \ifhmode\spacefactor\@x@sf\fi
7370 \relax
7371 }
7372 </check>
7373 <*package>

```

## 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.

```

7374 \def\caption{%
7375 \ifx\@captive\@undefined
7376 \@latex@error{\noexpand\caption outside float}\@ehd
7377 \expandafter\@gobble
7378 \else
7379 \H@refstepcounter\@captive
7380 \let\Hy@tempa\@caption

```

```

7381 \ifundefined{float@caption}{%
7382 }{%
7383 \expandafter\ifx\csname @float@c@\@capytype\endcsname
7384 \float@caption
7385 \let\Hy@tempa\Hy@float@caption
7386 \fi
7387 }%
7388 \expandafter\@firstofone
7389 \fi
7390 {\@dblarg{\Hy@tempa\@capytype}}}%
7391 }
7392 \long\def\@caption#1[#2]#3{%
7393 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7394 \csname iftrue\endcsname
7395 \global\let\@currentHref\hc@currentHref
7396 \else
7397 \hyper@makecurrent{\@capytype}%
7398 \fi
7399 \ifundefined{NR@gettitle}{%
7400 \def\@currentlabelname{#2}%
7401 }{%
7402 \NR@gettitle{#2}%
7403 }%
7404 \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7405 \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7406 }%
7407 \begingroup
7408 \@parboxrestore
7409 \if@minipage
7410 \@setminipage
7411 \fi
7412 \normalsize
7413 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7414 \csname iftrue\endcsname
7415 \global\@capstartfalse
7416 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7417 \else
7418 \@makecaption{\csname fnum@#1\endcsname}{%
7419 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7420 \ifHy@nesting
7421 \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7422 \else
7423 \Hy@raisedlink{%
7424 \expandafter\hyper@@anchor\expandafter{%
7425 \@currentHref
7426 }\relax}%
7427 }%
7428 #3%
7429 \fi
7430 }%
7431 \fi
7432 \par
7433 \endgroup
7434 }

```

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.

```
7435 \let\Hy@float@caption\@caption
7436 \@ifpackageloaded{float}{%
7437   \def\Hy@float@caption{%
7438     \ifx\Hy@float@currentHref\@undefined
7439       \hyper@makecurrent{\@capttype}%
7440       \global\let\Hy@float@currentHref\@currentHref
7441     \else
7442       \let\@currentHref\Hy@float@currentHref
7443     \fi
7444     \float@caption
7445   }%
7446   \let\HyOrg@float@makebox\float@makebox
7447   \renewcommand{\float@makebox}[1]{%
7448     \HyOrg@float@makebox{%
7449       #1\relax
7450     \ifx\Hy@float@currentHref\@undefined
7451     \else
7452       \expandafter\hyper@@anchor\expandafter{%
7453         \Hy@float@currentHref
7454       }\relax}%
7455     \global\let\Hy@float@currentHref\@undefined
7456     \fi
7457   }%
7458 }%
7459 }{}

7460 </package>
7461 <*check>
7462 \checklatex[1999/06/01 - 2000/06/01]
7463 \checkcommand\def\caption{%
7464   \ifx\@capttype\@undefined
7465     \@latex@error{\noexpand\caption outside float}\@ehd
7466     \expandafter\@gobble
7467   \else
7468     \refstepcounter\@capttype
7469     \expandafter\@firstofone
7470   \fi
7471   {\@dblarg{\@caption\@capttype}}}%
7472 }
7473 \checkcommand\long\def\@caption#1[#2]#3{%
7474   \par
7475   \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7476     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7477   }%
7478   \begingroup
7479     \@parboxrestore
7480     \if@minipage
7481       \@setminipage
7482     \fi
7483     \normalsize
7484     \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7485   \endgroup
7486 }
7487 </check>
7488 <*package>
```

## 37 Bibliographic references

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

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

```

7489 \def\hyper@natlinkstart#1{%
7490   \Hy@backout{#1}%
7491   \hyper@linkstart{cite}{cite.#1}%
7492   \def\hyper@nat@current{#1}%
7493 }
7494 \def\hyper@natlinkend{%
7495   \hyper@linkend
7496 }
7497 \def\hyper@natlinkbreak#1#2{%
7498   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7499 }
7500 \def\hyper@natanchorstart#1{%
7501   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7502 }
7503 \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.

```

7504 \ltx@ifundefined{NAT@parse}{%
7505   \providecommand*\@extra@binfo{}%
7506   \providecommand*\@extra@b@citeb{}%
7507   \def\bibcite#1#2{%
7508     \@newl@bel{b}{#1\@extra@binfo}{%
7509       \hyper@@link{cite}{cite.#1\@extra@b@citeb}{#2}%
7510     }%
7511   }%
7512   \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.”.

```

7513 \let\Hy@bibcite\bibcite
7514 \begingroup
7515   \@ifundefined{bbl@cite@choice}{}{%
7516     \g@addto@macro\bbl@cite@choice{%
7517       \let\bibcite\Hy@bibcite
7518     }%
7519   }%
7520 \endgroup

```

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

```

7521 \providecommand*\@BIBLABEL{\@biblabel}%
7522 \def\@bibitem[#1]#2{%
7523   \@skiphyperrtrue
7524   \H@item[%
7525     \ifx\Hy@raisedlink\@empty

```

```

7526     \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7527     \@BIBLABEL{#1}%
7528     \hyper@anchorend
7529   \else
7530     \Hy@raisedlink{%
7531       \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7532     }%
7533     \@BIBLABEL{#1}%
7534   \fi
7535   \hfill
7536 }%
7537 \@skiphyperrreffalse
7538 \if@filesw
7539   \begingroup
7540     \let\protect\noexpand
7541     \immediate\write\@auxout{%
7542       \string\bibcite{#2}{#1}%
7543     }%
7544   \endgroup
7545 \fi
7546 \ignorespaces
7547 }%

```

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

```

7548 \def\@bibitem#1{%
7549   \@skiphyperrrefftrue\H@item\@skiphyperrreffalse
7550   \Hy@raisedlink{%
7551     \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7552   }%
7553   \if@filesw
7554     \begingroup
7555       \let\protect\noexpand
7556       \immediate\write\@auxout{%
7557         \string\bibcite{#1}{\the\value{\@listctr}}%
7558       }%
7559     \endgroup
7560   \fi
7561   \ignorespaces
7562 }%
7563 }{}

7564 \endpackage
7565 \if*check
7566 \checklatex
7567 \checkcommand\def\@bibitem[#1]#2{%
7568   \item[\@biblabel{#1}]{\hfill}%
7569   \if@filesw
7570     {%
7571       \let\protect\noexpand
7572       \immediate\write\@auxout{%
7573         \string\bibcite{#2}{#1}%
7574       }%
7575     }%
7576   \fi
7577   \ignorespaces
7578 }
7579 \checkcommand\def\@bibitem#1{%

```

```

7580 \item
7581 \if@filesw
7582   \immediate\write\@auxout{%
7583     \string\bibcite{#1}{\the\value{\@listctr}}}%
7584   }%
7585 \fi
7586 \ignorespaces
7587 }
7588 \</check>
7589 \*package>

```

Revtext (bless its little heart) takes over \bibcite and looks at the result to measure something. Make this a hypertext link and it goes ape. Therefore, make an anodyne result first, call its business, then go back to the real thing.

```

7590 \ifclassloaded{revtex}{%
7591   \Hy@Info{*** compatibility with revtex **** }%
7592   \def\revtex@checking#1#2{%
7593     \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
7594     \expandafter\def\csname b@#1\endcsname{#2}%
7595     \@SetMaxRnhefLabel{#1}%
7596     \expandafter\let\csname b@#1\endcsname\T@temp
7597   }%

```

Tanmoy provided this replacement for CITE<sub>X</sub>. Lord knows what it does. For chapterbib added: extra@b@citeb

```

7598 \ifundefined{@CITE}{\def\CITE{\@cite}}}%
7599 \providecommand*\@extra@b@citeb{}%
7600 \def\CITEX[#1]#2{%
7601   \let\@citea\@empty
7602   \leavevmode
7603   \unskip
7604   $\{
7605   \scriptstyle
7606   \@CITE{
7607     \@for\@citeb:=#2\do{
7608       \@citea
7609       \def\@citea{,\penalty\@m\ }%
7610       \edef\@citeb{\expandafter\@firstofone\@citeb}%
7611       \if@filesw
7612         \immediate\write\@auxout{\string\citation{\@citeb}}%
7613       \fi
7614       \ifundefined{b@\@citeb\extra@b@citeb}{%
7615         \mbox{\reset@font\bfseries ?}%
7616         \G@refundefinedtrue
7617         \@latex@warning{%
7618           Citation ‘\@citeb’ on page \thepage \space undefined%
7619         }%
7620       }%
7621       {\csname b@\@citeb\@extra@b@citeb\endcsname}%
7622     }%
7623   }%
7624   }\#1}%
7625   }$%
7626 }%

```

No, life is too short. I am not going to understand the Revtext \@collapse macro, I shall just restore the original behaviour of \@citex; sigh. This is SO vile.

```

7627 \def\citex[#1]#2{%

```

```

7628 \let\@citea\@empty
7629 \@cite{%
7630   \@for\@citeb:=#2\do{%
7631     \@citea
7632     \def\@citea{,\penalty\@m\ }%
7633     \edef\@citeb{\expandafter\@firstofone\@citeb}%
7634     \if@filesw
7635       \immediate\write\@auxout{\string\citation{\@citeb}}%
7636     \fi
7637     \ifundefined{b@\@citeb\@extra@b@citeb}{%
7638       \mbox{\reset@font\bfseries ?}%
7639       \G@refundefinedtrue
7640       \@latex@warning{%
7641         Citation '\@citeb' on page \thepage \space undefined%
7642       }%
7643     }{%
7644       \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
7645     }%
7646   }%
7647 }{#1}%
7648 }%
7649 }{}

```

### 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 pdf $\TeX$ , then `hyperref` is already loaded at the begin of `harvard.sty`, and the `\newcommand` macros causes error messages.

```

7650 \ifpackageloaded{harvard}{%
7651   \Hy@AtBeginDocument{%
7652     \Hy@Info{*** compatibility with harvard **** }%
7653     \Hy@raiselinksfalse
7654     \def\harvardcite#1#2#3#4{%
7655       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{#1}{#2}}%
7656       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{#1}{#3}}%
7657       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{#1}{#4}}%
7658       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7659     }%
7660     \def\HAR@citetoaux#1{%
7661       \if@filesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7662       \ifHy@backref
7663         \ifx\@empty\@currentlabel
7664           \else
7665             \@bsphack
7666             \if@filesw
7667               \protected@write\@auxout{}{%
7668                 \string\@writefile{brf}{%
7669                   \string\backcite{#1}{%
7670                     {\thepage}{\@currentlabel}{\@currentHref}%
7671                   }%
7672                 }%
7673             }%

```

```

7674     \fi
7675     \@esphack
7676     \fi
7677     \fi
7678 }%
7679 \def\harvarditem{%
7680   \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
7681 }%
7682 \def\@harvarditem[#1]#2#3#4#5\par{%
7683   \item[]%
7684   \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7685   \if@filesw
7686     \begingroup
7687     \def\protect##1{\string ##1\space}%
7688     \ifthenelse{\equal{#1}{\null}}%
7689       {\def\next{{#4}{#2}{#2}{#3}}}%
7690       {\def\next{{#4}{#2}{#1}{#3}}}%
7691     \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7692   \endgroup
7693   \fi
7694   \protect\hspace*{-\labelwidth}%
7695   \protect\hspace*{-\labelsep}%
7696   \ignorespaces
7697   #5%
7698   \ifHy@backref
7699     \newblock
7700     \backref{\csname br@#4\endcsname}%
7701   \fi
7702   \par
7703 }%

```

\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:

```

7704   \long\def\HAR@checkcitations#1#2#3#4{%
7705     \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#2}}%
7706     \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7707       \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#3}}%
7708       \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7709         \def\HAR@tempa{\hyper@@link[cite]{}{cite.#1}{#4}}%
7710         \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7711           \else
7712             \@tempswatrue
7713           \fi
7714         \else
7715           \@tempswatrue
7716         \fi
7717       \else
7718         \@tempswatrue
7719       \fi
7720     }%
7721   }%
7722 }{}

```



## 37.2 Package chicago

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

```

7723 \@ifpackageloaded{chicago}{%

\citeN
7724   \def\citeN{%
7725     \def\@citesep{~1000}%
7726     \def\@cite##1##2{##1}%
7727     \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}}%
7728     \@citedata@opt
7729   }%

\shortciteN
7730   \def\shortciteN{%
7731     \def\@citesep{~1000}%
7732     \def\@cite##1##2{##1}%
7733     \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}}%
7734     \@citedata@opt
7735   }%

\@citedata@opt
7736   \def\@citedata@opt{%
7737     \let\@cite@opt\@empty
7738     \@ifnextchar [{%
7739       \@tempwatrue
7740       \@citedatax@opt
7741     }{%
7742       \@tempwafalse
7743       \@citedatax[]%
7744     }%
7745   }%

\@citedatax@opt
7746   \def\@citedatax@opt[#1]{%
7747     \def\@cite@opt{, #1}%
7748     \@citedatax[{#1}]%
7749   }%

7750 }{}

```

## 38 Page numbers

The last page should not contain a `/Dur` key, because there is no page after the last page. Therefore at the last page there should be a command `\hypersetup{pdfpageduration={}}`. This can be set with `\AtEndDocument`, but it can be too late, if the last page is already finished, or too early, if lots of float pages will follow. Therefore currently nothing is done by `hyperref`.

This where we supply a destination for each page.

```

7751 \ltx@ifclassloaded{slides}{%
7752   \def\Hy@SlidesFormatOptionalPage#1{(#1)}%
7753   \def\Hy@PageAnchorSlidesPlain{%
7754     \advance\c@page\ltx@one
7755     \edef\Hy@TempPageAnchor{%
7756       \noexpand\hyper@@anchor{%

```

```

7757     page.\the\c@slide.\the\c@overlay.\the\c@note%
7758     \ifnum\c@page=\ltx@one
7759     \else
7760     .\the\c@page
7761     \fi
7762     }%
7763     }%
7764     \advance\c@page-\ltx@one
7765     }%
7766     \def\Hy@PageAnchorSlide{%
7767     \advance\c@page\ltx@one
7768     \ifnum\c@page>\ltx@one
7769     \ltx@ifundefined{theHpage}{%
7770     \protected@edef\Hy@TheSlideOptionalPage{%
7771     \Hy@SlidesFormatOptionalPage{theHpage}%
7772     }%
7773     }{%
7774     \protected@edef\Hy@TheSlideOptionalPage{%
7775     \Hy@SlidesFormatOptionalPage{theHpage}%
7776     }%
7777     }%
7778     \else
7779     \def\Hy@TheSlideOptionalPage{}%
7780     \fi
7781     \advance\c@page-\ltx@one
7782     \pdfstringdef\@the@H@page{%
7783     \csname
7784     the%
7785     \ltx@ifundefined{theH\Hy@SlidesPage}{H}%
7786     \Hy@SlidesPage
7787     \endcsname
7788     \Hy@TheSlideOptionalPage
7789     }%
7790     \ltx@gobblethree
7791     }%
7792     \def\Hy@SlidesPage{slide}%
7793     \g@addto@macro\slide{%
7794     \def\Hy@SlidesPage{slide}%
7795     }%
7796     \g@addto@macro\overlay{%
7797     \def\Hy@SlidesPage{overlay}%
7798     }%
7799     \g@addto@macro\note{%
7800     \def\Hy@SlidesPage{note}%
7801     }%
7802     }{%
7803     \def\Hy@PageAnchorSlidesPlain{}%
7804     \def\Hy@PageAnchorSlide{}%
7805     }
7806     \def\Hy@EveryPageAnchor{%
7807     \Hy@DistillerDestFix
7808     \ifHy@pageanchor
7809     \ifHy@hypertextnames
7810     \ifHy@plainpages
7811     \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
7812     \Hy@PageAnchorSlidesPlain
7813     \else

```

```

7814 \begingroup
7815 \let\@number\@firstofone
7816 \Hy@unicodedefalse
7817 \Hy@PageAnchorSlide
7818 \pdfstringdef\@the@H@page{\thepage}%
7819 \endgroup
7820 \EdefUnescapeString\@the@H@page{\@the@H@page}%
7821 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
7822 \fi
7823 \else
7824 \Hy@GlobalStepCount\Hy@pagecounter
7825 \def\Hy@TempPageAnchor{%
7826 \hyper@@anchor{page.\the\Hy@pagecounter}%
7827 }%
7828 \fi
7829 \vbox to 0pt{%
7830 \kern\voffset
7831 \kern\topmargin
7832 \kern-1bp\relax
7833 \hbox to 0pt{%
7834 \kern\hoffset
7835 \kern\ifodd\value{page}%
7836 \oddsidemargin
7837 \else
7838 \evensidemargin
7839 \fi
7840 \kern-1bp\relax
7841 \Hy@TempPageAnchor\relax
7842 \hss
7843 }%
7844 \vss
7845 }%
7846 \fi
7847 }
7848 \g@addto@macro\Hy@EveryPageBoxHook{%
7849 \Hy@EveryPageAnchor
7850 }

```

## 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.

```

7851 \def\addcontentsline#1#2#3{% toc extension, type, tag
7852 \begingroup
7853 \let\label\@gobble
7854 \ifx\@currentHref\@empty
7855 \Hy@Warning{%
7856 No destination for bookmark of \string\addcontentsline,%
7857 \MessageBreak destination is added%
7858 }%
7859 \phantomsection
7860 \fi
7861 \expandafter\ifx\csname toplevel@#2\endcsname\relax
7862 \begingroup
7863 \def\Hy@tempa{#1}%

```

```

7864 \ifx\Hy@tempa\Hy@bookmarkstype
7865 \Hy@WarningNoLine{%
7866 bookmark level for unknown #2 defaults to 0%
7867 }%
7868 \else
7869 \Hy@Info{bookmark level for unknown #2 defaults to 0}%
7870 \fi
7871 \endgroup
7872 \expandafter\gdef\csname toplevel@#2\endcsname{0}%
7873 \fi
7874 \edef\Hy@toplevel{\csname toplevel@#2\endcsname}%
7875 \Hy@writebookmark{\csname the#2\endcsname}%
7876 {#3}%
7877 {\@currentHref}%
7878 {\Hy@toplevel}%
7879 {#1}%
7880 \ifHy@verbose
7881 \begingroup
7882 \def\Hy@tempa{#3}%
7883 \@onelevel@sanitize\Hy@tempa
7884 \let\temp@online\on@line
7885 \let\on@line\@empty
7886 \Hy@Info{%
7887 bookmark\temp@online:\MessageBreak
7888 thecounter {\csname the#2\endcsname}\MessageBreak
7889 text {\Hy@tempa}\MessageBreak
7890 reference {\@currentHref}\MessageBreak
7891 toplevel {\Hy@toplevel}\MessageBreak
7892 type {#1}%
7893 }%
7894 \endgroup
7895 \fi
7896 \addtocontents{#1}{%
7897 \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
7898 }%
7899 \endgroup
7900 }
7901 \def\contentsline#1#2#3#4{%
7902 \ifx\#4\%
7903 \csname l@#1\endcsname{#2}{#3}%
7904 \else
7905 \ifcase\Hy@linktoc % none
7906 \csname l@#1\endcsname{#2}{#3}%
7907 \or % section
7908 \csname l@#1\endcsname{%
7909 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7910 }{#3}%
7911 \or % page
7912 \csname l@#1\endcsname{{#2}}{%
7913 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7914 }%
7915 \else % all
7916 \csname l@#1\endcsname{%
7917 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7918 }{%
7919 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7920 }%

```

```

7921 \fi
7922 \fi
7923 }

7924 \</package>
7925 \< *check>
7926 \checklatex
7927 \checkcommand\def\addcontentsline#1#2#3{%
7928 \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
7929 }
7930 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
7931 \</check>
7932 \< *package>

```

## 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.

```

7933 \let\H@definecounter\@definecounter
7934 \def\@definecounter#1{%
7935 \H@definecounter{#1}%
7936 \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
7937 }

```

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

```

7938 \let\H@newctr\@newctr
7939 \def\@newctr#1[#2]{%
7940 \H@newctr#1[{#2}]%
7941 \expandafter\def\csname theH#1\endcsname{%
7942 \csname the\@ifundefined{theH#2}{H}{H}#2\endcsname.\arabic{#1}%
7943 }%
7944 }

```

## 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.

```

7945 \@ifpackageloaded{amsmath}{%
7946 \def\Hy@make@anchor{%
7947 \Hy@MakeCurrentHrefAuto{AMS}%
7948 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
7949 }%
7950 \def\Hy@make@df@tag@@#1{%
7951 \gdef\df@tag{%
7952 \maketag@@@{\Hy@make@anchor#1}%
7953 \def\@currentlabel{#1}%
7954 }%
7955 }%
7956 \def\Hy@make@df@tag@@@#1{%
7957 \gdef\df@tag{%

```

```

7958 \tagform@{\Hy@make@anchor#1}%
7959 \toks@{\exp{p@equation{#1}}}%
7960 \edef\@currentlabel{\the\toks@}%
7961 }%
7962 }%
7963 \let\HyOrg@make@df@tag@@\make@df@tag@@
7964 \let\HyOrg@make@df@tag@@@\make@df@tag@@@
7965 \let\make@df@tag@@\Hy@make@df@tag@@
7966 \let\make@df@tag@@@\Hy@make@df@tag@@@
7967 }{}

```

Only play with `\seteqlebal` if we are using pdf<sub>tex</sub>. Other drivers cause problems; requested by Michael Downes (AMS).

```

7968 \@ifpackagewith{hyperref}{pdftex}{%
7969 \let\H@seteqlabel\@seteqlabel
7970 \def\@seteqlabel#1{%
7971 \H@seteqlabel{#1}%
7972 \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
7973 \Hy@raisedlink{%
7974 \hyper@anchorstart{\@currentHref}\hyper@anchorend
7975 }%
7976 }%
7977 }{}

```

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.

```

7978 \let\HyOrg@addtoreset\@addtoreset
7979 \def\@addtoreset#1#2{%
7980 \HyOrg@addtoreset{#1}{#2}%
7981 \expandafter\xdef\csname theH#1\endcsname{%
7982 \expandafter\noexpand
7983 \csname the\@ifundefined{theH#2}{H#2\endcsname
7984 .\noexpand\the\noexpand\value{#1}%
7985 }%
7986 }

```

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

```

7987 \</package>
7988 \< *check>
7989 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
7990 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
7991 \@ifundefined{c@#2}{\@nocounterr{#2}}{%
7992 \@ifundefined{c@#3}{\@nocnterr{#3}}{%

```

```

7993 \addtoreset{#2}{#3}%
7994 \exp\edef\csname the#2\endcsname{%
7995 \exp\@nx\csname the#3\endcsname .\@nx#1{#2}%
7996 }%
7997 }%
7998 }%
7999 }%
8000 </check>
8001 *package>
8002 \ifpackageloaded{amsmath}{%
8003 \ifpackagelater{amsmath}{1999/12/14}{%
8004 \renewcommand*{\numberwithin}[3][\arabic]{%
8005 \ifundefined{c@#2}{\@nocounterr{#2}}{%
8006 \ifundefined{c@#3}{\@nocnterr{#3}}{%
8007 \HyOrg@addtoreset{#2}{#3}%
8008 \exp\edef\csname the#2\endcsname{%
8009 \exp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8010 }%
8011 \exp\edef\csname theH#2\endcsname{%
8012 \exp\@nx
8013 \csname the\ifundefined{theH#3}{H#3}\endcsname
8014 .\@nx#1{#2}%
8015 }%
8016 }%
8017 }%
8018 }%
8019 }{%
8020 \Hy@WarningNoLine{%
8021 \string\numberwithin\space of package ‘amsmath’ %
8022 only fixed\MessageBreak
8023 for version 2000/06/06 v2.12 or newer%
8024 }%
8025 }%
8026 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

8027 \ifHy@hyperfigures
8028 \let\Hy@Gin@setfile\Gin@setfile
8029 \def\Gin@setfile#1#2#3{%
8030 \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
8031 }%
8032 \fi
8033 \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.

```

8034 \ifHy@hyperindex
8035   \def\HyInd@ParenLeft{()%
8036   \def\HyInd@ParenRight{)%}
8037   \def\hyperindexformat#1#2{%
8038     \let\HyOrg@hyperpage\hyperpage
8039     \let\hyperpage\@firstofone
8040     #1{\HyOrg@hyperpage{#2}}%
8041     \let\hyperpage\HyOrg@hyperpage
8042   }%
8043   \Hy@nextfalse
8044   \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
8045   \@ifpackageloaded{index}{\Hy@nexttrue}{}%
8046   \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
8047   \begingroup
8048     \lccode'\|=\expandafter\HyInd@EncapChar\relax
8049     \lccode'\|/'=\|\\relax
8050   \lowercase{\endgroup
8051   \ifHy@next
8052     \let\HyInd@org@wrindex\@wrindex
8053     \def\@wrindex#1#2{\HyInd@@wrindex{#1}#2||\}%
8054     \def\HyInd@@wrindex#1#2|#3|#4\{\%
8055       \ifx\|#3\%
8056         \HyInd@org@wrindex{#1}{#2|hyperpage}%
8057       \else
8058         \HyInd@@@wrindex{#1}{#2}#3\%
8059       \fi
8060     }%
8061     \def\HyInd@@@wrindex#1#2#3#4\{\%
8062     \def\Hy@temp@A{#3}%
8063     \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8064       \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8065       \relax
8066       \HyInd@org@wrindex{#1}{%
8067         #2|hyperindexformat{/#3#4}%
8068       }%
8069     \else
8070       \ifx\|#4\%
8071         \ifx\Hy@temp@A\HyInd@ParenRight
8072           \HyInd@org@wrindex{#1}{#2|#3}%
8073         \else
8074           \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
8075         \fi
8076       \else
8077         \HyInd@org@wrindex{#1}{%
8078           #2|#3hyperindexformat{/#4}%
8079         }%
8080       \fi
8081     \fi
8082   }%
8083   \else
8084     \def\@wrindex#1{\@@wrindex#1||\}%
8085     \def\@@wrindex#1|#2|#3\{\%
8086     \if@filesw
8087       \ifx\|#2\%
8088         \protected@write\@indexfile{}{%

```



```

8089         \string\indexentry{#1|hyperpage}{\thepage}%
8090     }%
8091     \else
8092         \HyInd@@@wrindex{#1}#2\\%
8093     \fi
8094 \fi
8095 \endgroup
8096 \@esphack
8097 }%
8098 \def\HyInd@@@wrindex#1#2#3\\{%
8099     \def\Hy@temp@A{#2}%
8100     \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8101         \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8102     \relax
8103     \protected@write\@indexfile{}{%
8104         \string\indexentry{%
8105             #1|hyperindexformat{/#2#3}%
8106         }{\thepage}%
8107     }%
8108     \else
8109         \ifx\\#3\\%
8110             \ifx\Hy@temp@A\HyInd@ParenRight
8111                 \protected@write\@indexfile{}{%
8112                     \string\indexentry{#1|#2}{\thepage}%
8113                 }%
8114             \else
8115                 \protected@write\@indexfile{}{%
8116                     \string\indexentry{#1|#2hyperpage}{\thepage}%
8117                 }%
8118             \fi
8119         \else
8120             \protected@write\@indexfile{}{%
8121                 \string\indexentry{%
8122                     #1|#2hyperindexformat{/#3}%
8123                 }{\thepage}%
8124             }%
8125         \fi
8126     \fi
8127 }%
8128 \fi
8129 }%
8130 \fi
8131 \Hy@DisableOption{hyperindex}
8132 \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.

```
8133 \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.

```

8134 \def\hyperpage#1{%
8135     \HyInd@hyperpage#1\nohyperpage{}\@nil
8136 }
8137 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
8138     \HyInd@@@hyperpage{#1}%
8139     #2%

```

```

8140 \def\Hy@temp{#3}%
8141 \ifx\Hy@temp\@empty
8142 \else
8143 \ltx@ReturnAfterFi{%
8144 \HyInd@hyperpage#3\@nil
8145 }%
8146 \fi
8147 }
8148 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
8149 \def\@hyperpage#1--#2--#3\{\{%
8150 \ifx\#2\%
8151 \@commahyperpage{#1}%
8152 \else
8153 \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
8154 \fi
8155 }
8156 \def\@commahyperpage#1{\@@commahyperpage#1, \}
8157 \def\@@commahyperpage#1, #2, #3\{\{%
8158 \ifx\#2\%
8159 \HyInd@pagelink{#1}%
8160 \else
8161 \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
8162 \fi
8163 }

```

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

```

8164 \def\HyInd@pagelink#1{%
8165 \begingroup
8166 \toks@={}%
8167 \HyInd@removespaces#1 \@nil
8168 \endgroup
8169 }
8170 \def\HyInd@removespaces#1 #2\@nil{%
8171 \toks@=\expandafter{\the\toks@#1}%
8172 \ifx\#2\%
8173 \edef\x{\the\toks@}%
8174 \ifx\x\@empty
8175 \else
8176 \hyperlink{page.\the\toks@}{\the\toks@}%
8177 \fi
8178 \else
8179 \ltx@ReturnAfterFi{%
8180 \HyInd@removespaces#2\@nil
8181 }%
8182 \fi
8183 }

```

## 44 Compatibility with foiltex

```

8184 \@ifclassloaded{foils}{%
8185 \providecommand*\ext@table{lot}%
8186 \providecommand*\ext@figure{lof}%
8187 }{}

```

## 45 Compatibility with seminar slide package

This requires `seminar.bg2`, version 1.6 or later. Contributions by Denis Girou ([denis.girou@idris.fr](mailto:denis.girou@idris.fr)).

```

8188 \@ifclassloaded{seminar}{%
8189   \Hy@seminarslidestrue
8190   \providecommand\theHslide{\arabic{slide}}%
8191 }{%
8192   \Hy@seminarslidesfalse
8193 }
8194 \@ifpackageloaded{slidesec}{%
8195   \providecommand\theHslidesection {\arabic{slidesection}}%
8196   \providecommand\theHslidesubsection{%
8197     \theHslidesection.\arabic{slidesubsection}}%
8198 }%
8199 \def\slide@heading[#1]#2{%
8200   \H@refstepcounter{slidesection}%
8201   \@addtoreset{slidesubsection}{slidesection}%
8202   \addtocontents{los}{%
8203     \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
8204     {\@SCTR}{\slideheading.\theslidesection}}%
8205 }%
8206 \def\Hy@tempa{#2}%
8207 \ifx\Hy@tempa\@empty
8208   \else
8209     {%
8210       \edef\@currentlabel{%
8211         \csname p@slidesection\endcsname\theslidesection
8212       }%
8213       \makeslideheading{#2}%
8214     }%
8215   \fi
8216   \gdef\theslideheading{#1}%
8217   \gdef\theslidesubheading{}%
8218   \ifHy@bookmarksnumbered
8219     \def\Hy@slidetitle{\theslidesection\space #1}%
8220   \else
8221     \def\Hy@slidetitle{#1}%
8222   \fi
8223   \ifHy@hypertextnames
8224     \ifHy@naturalnames
8225       \hyper@@anchor{slideheading.\theslidesection}{\relax}%
8226       \Hy@writebookmark
8227         {\theslidesection}%
8228         {\Hy@slidetitle}%
8229         {slideheading.\theslidesection}%
8230         {1}%
8231       {toc}%
8232     \else
8233       \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
8234       \Hy@writebookmark
8235         {\theslidesection}%
8236         {\Hy@slidetitle}%
8237         {slideheading.\theHslidesection}%
8238         {1}%
8239       {toc}%
8240     \fi

```

```

8241 \else
8242 \Hy@GlobalStepCount\Hy@linkcounter
8243 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
8244 \Hy@writebookmark
8245 {\theslidesubsection}%
8246 {\Hy@slidetitle}%
8247 {slideheading.\the\Hy@linkcounter}%
8248 {1}%
8249 {toc}%
8250 \fi
8251 }%
8252 \def\slide@subheading[#1]#2{%
8253 \H@refstepcounter{slidesubsection}%
8254 \addtocontents{los}{%
8255 \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
8256 {\@SCTR}{slideheading.\theslidesubsection}%
8257 }%
8258 \def\Hy@tempa{#2}%
8259 \ifx\Hy@tempa\@empty
8260 \else
8261 {%
8262 \edef\@currentlabel{%
8263 \csname p@slidesubsection\endcsname\theslidesubsection
8264 }%
8265 \makeslide@subheading{#2}%
8266 }%
8267 \fi
8268 \gdef\theslide@subheading{#1}%
8269 \ifHy@bookmarksnumbered
8270 \def\Hy@slidetitle{\theslidesubsection\space #1}%
8271 \else
8272 \def\Hy@slidetitle{#1}%
8273 \fi
8274 \ifHy@hypertextnames
8275 \ifHy@naturalnames
8276 \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
8277 \Hy@writebookmark
8278 {\theslidesubsection}%
8279 {\Hy@slidetitle}%
8280 {slideheading.\theslidesubsection}%
8281 {2}%
8282 {toc}%
8283 \else
8284 \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
8285 \Hy@writebookmark
8286 {\theslidesubsection}%
8287 {\Hy@slidetitle}%
8288 {slideheading.\theHslidesubsection}%
8289 {2}%
8290 {toc}%
8291 \fi
8292 \else
8293 \Hy@GlobalStepCount\Hy@linkcounter
8294 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
8295 \Hy@writebookmark
8296 {\theslidesubsection}%
8297 {\Hy@slidetitle}%

```

```

8298     {slideheading.\the\Hy@linkcounter}%
8299     {1}%
8300     {toc}%
8301   \fi
8302 }%
8303 \providecommand*\listslidenamename{List of Slides}%
8304 \def\listofslides{%
8305   \section*{%
8306     \listslidenamename
8307     \@mkboth{%
8308       \expandafter\MakeUppercase\listslidenamename
8309     }{%
8310       \expandafter\MakeUppercase\listslidenamename
8311     }%
8312   }%
8313   \def\l@slide###1##2###3###4{%
8314     \slide@undottedcline{%
8315       \slidenumberline{##3}{\hyperlink{##4}{##2}}%
8316     }{%
8317     }%
8318     \let\l@subslide\l@slide
8319     \@startlos
8320   }%
8321   \def\slide@contents{%
8322     \def\l@slide###1##2###3###4{%
8323       \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
8324     }%
8325     \let\l@subslide\@gobblefour
8326     \@startlos
8327   }%
8328   \def\Slide@contents{%
8329     \def\l@slide###1##2###3###4{%
8330       \ifcase\lslide@flag
8331         \message{##1 ** \the\c@slidesection}%
8332         \ifnum##1>\c@slidesection
8333           \def\lslide@flag{1}%
8334           {%
8335             \large
8336             \slide@ccline{%
8337               \slidenumberline{$\Rightarrow\bullet$}%
8338               {\hyperlink{##4}{##2}}%
8339             }{##3}%
8340           }%
8341         \else
8342           {%
8343             \large
8344             \slide@ccline{%
8345               \slidenumberline{$\surd\;\bullet$}%
8346               {\hyperlink{##4}{##2}}%
8347             }{##3}%
8348           }%
8349         \fi
8350       \or
8351       \def\lslide@flag{2}%
8352       {%
8353         \large
8354         \slide@ccline{%

```

```

8355         \slidenumberline{$\bullet$}%
8356         {\hyperlink{##4}{##2}}}%
8357     }{##3}%
8358 }%
8359 \or
8360 {%
8361     \large
8362     \slide@cline{%
8363         \slidenumberline{$\bullet$}%
8364         {\hyperlink{##4}{##2}}}%
8365     }{##3}%
8366 }%
8367 \fi
8368 }%
8369 \def\l@subslide##1##2##3##4{%
8370     \ifnum\lslide@flag=1 %
8371         \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}}%
8372     \fi
8373 }%
8374 \def\lslide@flag{0}%
8375 \@startlos
8376 }%
8377 }{}

```

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.)

```

8378 \ifHy@texht
8379     \expandafter\endinput
8380 \fi
8381 \let\real@setref\@setref
8382 \def\@setref#1#2#3{% csname, extract group, refname
8383     \ifx#1\relax
8384         \protect\G@refundefinedtrue
8385         \nfss@text{\reset@font\bfseries ??}%
8386         \@latex@warning{%
8387             Reference ‘#3’ on page \thepage \space undefined%
8388         }%
8389     \else
8390         \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
8391     \fi
8392 }

```

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

```

8393 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8394     \begingroup
8395     \toks0={\hyper@@link{#5}{#4}}%
8396     \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8397     \edef\x{\endgroup
8398         \the\toks0 {\the\toks1 }%
8399     }%
8400     \x
8401 }
8402 \def\@pagesetref#1#2#3{% csname, extract macro, ref
8403     \ifx#1\relax
8404         \protect\G@refundefinedtrue
8405         \nfss@text{\reset@font\bfseries ??}%

```

```

8406 \latex@warning{%
8407   Reference '#3' on page \thepage \space undefined%
8408 }%
8409 \else
8410 \protect\hyper@@link
8411   {\expandafter\@fifthoffive#1}%
8412   {page.\expandafter\@secondoffive#1}%
8413   {\expandafter\@secondoffive#1}%
8414 \fi
8415 }

8416 \end{package}
8417 \check
8418 \checklatex
8419 \checkcommand\def\@setref#1#2#3{%
8420 \ifx#1\relax
8421 \protect\G@refundefinedtrue
8422 \nfss@text{\reset@font\bfseries ??}%
8423 \latex@warning{%
8424   Reference '#3' on page \thepage\space undefined%
8425 }%
8426 \else
8427 \expandafter#2#1\relax
8428 \fi
8429 }
8430 \end{check}
8431 \end{package}

```

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

```

8432 \def\HyRef@StarSetRef#1{%
8433 \begingroup
8434 \Hy@safe@activetrue
8435 \edef\x{#1}%
8436 \@onelevel@sanitize\x
8437 \edef\x{\endgroup
8438   \noexpand\HyRef@@StarSetRef
8439   \expandafter\noexpand\csname r@\x\endcsname{\x}%
8440 }%
8441 \x
8442 }
8443 \def\HyRef@@StarSetRef#1#2#3{%
8444 \ifx#1\@undefined
8445 \let#1\relax
8446 \fi
8447 \real@setref#1#3{#2}%
8448 }
8449 \def\@refstar#1{%
8450 \HyRef@StarSetRef{#1}\@firstoffive
8451 }
8452 \def\@pagerefstar#1{%
8453 \HyRef@StarSetRef{#1}\@secondoffive
8454 }
8455 \def\@namerefstar#1{%
8456 \HyRef@StarSetRef{#1}\@thirdoffive
8457 }
8458 \Hy@AtBeginDocument{%
8459 \ifpackageloaded{varioref}{%

```

```

8460 \def\@Refstar#1{%
8461   \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8462 }%
8463 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8464   \MakeUppercase#1%
8465 }%
8466 \DeclareRobustCommand*{\Ref}{%
8467   \@ifstar\@Refstar\HyRef@Ref
8468 }%
8469 \def\HyRef@Ref#1{%
8470   \hyperref[{#1}]{\Ref*{#1}}%
8471 }%
8472 \def\@Vr@f#1{%
8473   \leavevmode\unskip\vref@space
8474   \hyperref[{#1}]{%
8475     \Ref*{#1}%
8476     \let\vref@space\nobreakspace
8477     \@vpageref[\unskip]{#1}%
8478   }%
8479 }%
8480 \def\@vr@f#1{%
8481   \leavevmode\unskip\vref@space
8482   \begingroup
8483   \let\T@pageref\@pagerefstar
8484   \hyperref[{#1}]{%
8485     \ref*{#1}%
8486     \vpageref[\unskip]{#1}%
8487   }%
8488   \endgroup
8489 }%
8490 }{%%
8491 }
8492 \DeclareRobustCommand*{\autopageref}{%
8493   \@ifstar{%
8494     \HyRef@autopagerefname\pageref*%
8495   }\HyRef@autopageref
8496 }
8497 \def\HyRef@autopageref#1{%
8498   \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
8499 }
8500 \def\HyRef@autopagerefname{%
8501   \ltx@ifundefined{pageautorefname}{%
8502     \ltx@ifundefined{pagename}{%
8503       \Hy@Warning{No autoref name for 'page'}%
8504     }{%
8505       \pagename\nobreakspace
8506     }%
8507   }{%
8508     \pageautorefname\nobreakspace
8509   }%
8510 }

```

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

```

8511 \DeclareRobustCommand*{\autoref}{%
8512   \leavevmode
8513   \@ifstar{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@@link}%
8514 }

```



```

8515 \def\HyRef@autoref#1#2{%
8516   \begingroup
8517   \Hy@safe@activestrue
8518   \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
8519   \endgroup
8520 }
8521 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
8522   \HyRef@ShowKeysRef{#2}%
8523   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8524   \edef\HyRef@thisref{%
8525     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8526   }%
8527   \expandafter\HyRef@testreftype\HyRef@thisref.\.%
8528   \Hy@safe@activesfalse
8529   #3{%
8530     \expandafter\@fifthoffive#1\@empty\@empty\@empty
8531   }{%
8532     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8533   }{%
8534     \HyRef@currentHtag
8535     \expandafter\@firstoffive#1\@empty\@empty\@empty
8536     \null
8537   }%
8538   \else
8539     \protect\G@refundefinedtrue
8540     \nfss@text{\reset@font\bfseries ??}%
8541     \@latex@warning{%
8542       Reference ‘#2’ on page \thepage\space undefined%
8543     }%
8544   \fi
8545 }
8546 \def\HyRef@testreftype#1.#2\{%
8547   \ltx@ifundefined{#1autorefname}{%
8548     \ltx@ifundefined{#1name}{%
8549       \HyRef@StripStar#1\*\@nil{#1}%
8550     \ltx@ifundefined{\HyRef@name autorefname}{%
8551       \ltx@ifundefined{\HyRef@name name}{%
8552         \def\HyRef@currentHtag{%
8553           \Hy@Warning{No autoref name for ‘#1’}%
8554         }{%
8555           \edef\HyRef@currentHtag{%
8556             \expandafter\noexpand\csname\HyRef@name name\endcsname
8557             \noexpand~%
8558           }%
8559         }%
8560       }{%
8561         \edef\HyRef@currentHtag{%
8562           \expandafter\noexpand
8563           \csname\HyRef@name autorefname\endcsname
8564           \noexpand~%
8565         }%
8566       }%
8567     }{%
8568       \edef\HyRef@currentHtag{%
8569         \expandafter\noexpand\csname#1name\endcsname
8570         \noexpand~%
8571       }%

```

```

8572 }%
8573 }{%
8574 \edef\HyRef@currentHtag{%
8575 \expandafter\noexpand\csname#1autorefname\endcsname
8576 \noexpand~%
8577 }%
8578 }%
8579 }
8580 \def\HyRef@StripStar#1*\#2\@nil#3{%
8581 \def\HyRef@name{#2}%
8582 \ifx\HyRef@name\HyRef@CaseStar
8583 \def\HyRef@name{#1}%
8584 \else
8585 \def\HyRef@name{#3}%
8586 \fi
8587 }
8588 \def\HyRef@CaseStar{*\\}
8589 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@ShowKeysRef

```

8590 \let\HyRef@ShowKeysRef\@gobble
8591 \def\HyRef@ShowKeysInit{%
8592 \begingroup\expandafter\expandafter\expandafter\endgroup
8593 \expandafter\ifx\csname SK@@label\endcsname\relax
8594 \else
8595 \ifx\SK@ref\@empty
8596 \else
8597 \def\HyRef@ShowKeysRef{%
8598 \SK@\SK@\ref
8599 }%
8600 \fi
8601 \fi
8602 }
8603 \@ifpackageloaded{showkeys}{%
8604 \HyRef@ShowKeysInit
8605 }{%
8606 \Hy@AtBeginDocument{%
8607 \@ifpackageloaded{showkeys}{%
8608 \HyRef@ShowKeysInit
8609 }{}%
8610 }%
8611 }

```

Defaults for the names that \autoref uses.

```

8612 \providecommand*\AMSautorefname{\equationautorefname}
8613 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8614 \providecommand*\Itemautorefname{\itemautorefname}
8615 \providecommand*\itemautorefname{item}
8616 \providecommand*\equationautorefname{Equation}
8617 \providecommand*\footnoteautorefname{footnote}
8618 \providecommand*\itemautorefname{item}
8619 \providecommand*\figureautorefname{Figure}
8620 \providecommand*\tableautorefname{Table}
8621 \providecommand*\partautorefname{Part}
8622 \providecommand*\appendixautorefname{Appendix}
8623 \providecommand*\chapterautorefname{chapter}

```

```

8624 \providecommand*\sectionautorefname{section}
8625 \providecommand*\subsectionautorefname{subsection}
8626 \providecommand*\subsubsectionautorefname{subsubsection}
8627 \providecommand*\paragraphautorefname{paragraph}
8628 \providecommand*\subparagraphautorefname{subparagraph}
8629 \providecommand*\FancyVerbLineautorefname{line}
8630 \providecommand*\theoremautorefname{Theorem}
8631 \providecommand*\pageautorefname{page}
8632 \end{package}

```

## 46 Configuration files

### 46.1 PS/PDF strings

Some drivers write PS or PDF strings. These strings are delimited by parentheses, therefore a lonely unmatched parenthesis must be avoided to avoid PS or PDF syntax errors. Also the backslash character itself has to be protected.

`\Hy@pstringdef` Therefore such strings should be passed through `\Hy@pstringdef`. The first argument holds a macro for the result, the second argument is the string that needs protecting. Since version 1.30.0 pdf<sub>T</sub><sub>E</sub>X offers `\pdfescapestring`.

```

8633 (*pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo)
8634 \begingroup\expandafter\expandafter\expandafter\endgroup
8635 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8636 \begingroup
8637 \catcode'\|=0 %
8638 \@makeother\|%
8639 |@firstofone{|endgroup
8640 |def|Hy@pstringdef#1#2{%
8641 |begingroup
8642 |edef~{|string~}%
8643 |xdef|Hy@gtemp{#2}%
8644 |endgroup
8645 |let#1|Hy@gtemp
8646 |@onelevel@sanitize#1%
8647 |edef#1{|expandafter|Hy@ExchangeBackslash#1|@nil}%
8648 |edef#1{|expandafter|Hy@ExchangeLeftParenthesis#1(|@nil}%
8649 |edef#1{|expandafter|Hy@ExchangeRightParenthesis#1)|@nil}%
8650 }%
8651 |def|Hy@ExchangeBackslash#1|#2|@nil{%
8652 #1%
8653 |ifx|\#2|\%%
8654 |else
8655 \\\%
8656 |ltx@ReturnAfterFi{%
8657 |Hy@ExchangeBackslash#2|@nil
8658 }%
8659 |fi
8660 }%
8661 }%
8662 \def|Hy@ExchangeLeftParenthesis#1|#2|@nil{%
8663 #1%
8664 \ifx\#2\%%
8665 \else
8666 \@backslashchar(%
8667 \ltx@ReturnAfterFi{%

```

```

8668     \Hy@ExchangeLeftParenthesis#2\@nil
8669   }%
8670   \fi
8671 }%
8672 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8673   #1%
8674   \ifx\#2\%
8675   \else
8676     \@backslashchar)%
8677     \ltx@ReturnAfterFi{%
8678       \Hy@ExchangeRightParenthesis#2\@nil
8679     }%
8680   \fi
8681 }%
8682 \else
8683 \def\Hy@pstringdef#1#2{%
8684   \begingroup
8685     \edef~{\string~}%
8686     \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8687   \endgroup
8688   \let#1\Hy@gtemp
8689 }%
8690 \fi
8691 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

## 46.2 pdfTeX

```

8692 < *pdfTeX>
8693 \providecommand*\XR@ext}{pdf}
8694 \Hy@setbreaklinks{true}
8695 \def\HyPat@ObjRef{%
8696   [0-9]*[1-9][0-9]* 0 R%
8697 }

```

This driver is for Han The Thanh's T<sub>E</sub>X variant which produces PDF directly. This has new primitives to do PDF things, which usually translate almost directly to PDF code, so there is a lot of flexibility which we do not at present harness.

Set PDF version if requested by option pdfversion.

- pdfT<sub>E</sub>X 1.10a, 2003-01-16: \pdfoptionpdfminorversion
- pdfT<sub>E</sub>X 1.30, 2005-08-081: \pdfminorversion

```

8698 \let\Hy@pdfminorversion\relax
8699 \begingroup\expandafter\expandafter\expandafter\endgroup
8700 \expandafter\ifx\csname pdfminorversion\endcsname\relax
8701   \begingroup\expandafter\expandafter\expandafter\endgroup
8702   \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
8703   \else
8704     \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8705   \fi
8706 \else
8707   \def\Hy@pdfminorversion{\pdfminorversion}%
8708 \fi
8709 \ifundefined{Hy@pdfminorversion}{%
8710   \PackageInfo{hyperref}{%
8711     PDF version is not set, because pdfTeX is too old (<1.10a)%
8712   }%
8713 }{

```

```

8714 \ifHy@ocgcolorlinks
8715   \ifnum\Hy@pdfminorversion<5 %
8716     \kvsetkeys{Hyp}{pdfversion=1.5}%
8717   \fi
8718 \fi
8719 \ifHy@setpdfversion
8720   \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
8721   \else
8722     \Hy@pdfminorversion=\Hy@pdfversion\relax
8723   \fi
8724   \PackageInfo{hyperref}{%
8725     \expandafter\string\Hy@pdfminorversion
8726     :=\number\Hy@pdfversion\space
8727   }%
8728 \fi
8729 \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
8730 }
8731 \Hy@DisableOption{pdfversion}%

8732 \ifHy@ocgcolorlinks
8733   \pdf@ifdraftmode{}{%
8734     \immediate\pdfobj{%
8735       <<%
8736         /Type/OCG%
8737         /Name(View)%
8738         /Usage<<%
8739         /Print<<%
8740         /PrintState/OFF%
8741       >>%
8742         /View<<%
8743         /ViewState/ON%
8744       >>%
8745       >>%
8746     >>%
8747   }%
8748   \edef\OBJ@OCG@view{\the\pdfastobj\space 0 R}%
8749   \immediate\pdfobj{%
8750     <<%
8751       /Type/OCG%
8752       /Name(Print)%
8753       /Usage<<%
8754       /Print<<%
8755       /PrintState/ON%
8756     >>%
8757       /View<<%
8758       /ViewState/OFF%
8759     >>%
8760     >>%
8761   >>%
8762 }%
8763 \edef\OBJ@OCG@print{\the\pdfastobj\space 0 R}%
8764 \immediate\pdfobj{%
8765   [%
8766     \OBJ@OCG@view\space\OBJ@OCG@print
8767   ]%
8768 }%
8769 \edef\OBJ@OCGs{\the\pdfastobj\space 0 R}%
8770 \pdfcatalog{%

```

```

8771 /OCProperties<<%
8772 /OCGs \OBJ@OCGs
8773 /D<<%
8774 /OFF[\OBJ@OCG@print]%
8775 /AS[%
8776 <<%
8777 /Event/View%
8778 /OCGs \OBJ@OCGs
8779 /Category[/View]%
8780 >>%
8781 <<%
8782 /Event/Print%
8783 /OCGs \OBJ@OCGs
8784 /Category[/Print]%
8785 >>%
8786 <<%
8787 /Event/Export%
8788 /OCGs \OBJ@OCGs
8789 /Category[/Print]%
8790 >>%
8791 ]%
8792 >>%
8793 >>%
8794 }%
8795 \begingroup
8796 \edef\x{\endgroup
8797 \pdfpageresources{%
8798 /Properties<<%
8799 /OCView \OBJ@OCG@view
8800 /OCPrint \OBJ@OCG@print
8801 >>%
8802 }%
8803 }%
8804 \x
8805 }%
8806 \Hy@AtBeginDocument{%
8807 \def\Hy@colorlink#1{%
8808 \begingroup
8809 \ifHy@ocgcolorlinks
8810 \def\Hy@ocgcolor{#1}%
8811 \setbox0=\hbox\bgroup\color@begingroup
8812 \else
8813 \HyColor@UseColor#1%
8814 \fi
8815 }%
8816 \def\Hy@endcolorlink{%
8817 \ifHy@ocgcolorlinks
8818 \color@endgroup\egroup
8819 \mbox{%
8820 \pdfliteral page{/OC/OCPrint BDC}%
8821 \rlap{\copy0}%
8822 \pdfliteral page{EMC/OC/OCView BDC}%
8823 \begingroup
8824 \expandafter\HyColor@UseColor\Hy@ocgcolor
8825 \box0 %
8826 \endgroup
8827 \pdfliteral page{EMC}%

```

```

8828     }%
8829     \fi
8830     \endgroup
8831 }%
8832 }%
8833 \else
8834 \Hy@DisableOption{ocgcolorlinks}%
8835 \fi

```

First, allow for some changes and additions to pdftex syntax:

```

8836 \def\setpdfinkmargin#1{\pdfinkmargin#1}
8837 \ifx\pdfstartlink\@undefined% less than version 14
8838 \let\pdfstartlink\pdfannotlink
8839 \let\pdfinkmargin\@tempdima
8840 \let\pdfxform\pdfform
8841 \let\pdfastxform\pdfastform
8842 \let\pdfrefxform\pdfrefform
8843 \else
8844 \pdfinkmargin1pt %
8845 \fi

```

First set up the default linking

```

8846 \providecommand*\@pdfview{XYZ}

```

First define the anchors:

```

8847 \Hy@WrapperDef\new@pdfink#1{%
8848 \ifhmode
8849 \@savsf\spacefactor
8850 \fi
8851 \Hy@SaveLastskip
8852 \Hy@VerboseAnchor{#1}%
8853 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8854 \Hy@DestName\Hy@pstringDest\@pdfview
8855 \Hy@RestoreLastskip
8856 \ifhmode
8857 \spacefactor\@savsf
8858 \fi
8859 }
8860 \let\pdf@endanchor\@empty

```

\Hy@DestName Wrap the call of \pdfdest name in \Hy@DestName. Then it can easier be caught by package hypdestopt.

```

8861 \def\Hy@DestName#1#2{%
8862 \pdfdest name{#1}#2\relax
8863 }

```

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.

```

8864 \providecommand*\@pdfborder{0 0 1}
8865 \providecommand*\@pdfborderstyle{}
8866 \def\Hy@undefinedname{UNDEFINED}
8867 \def\find@pdfink#1#2{%
8868 \leavevmode
8869 \protected@edef\Hy@testname{#2}%
8870 \ifx\Hy@testname\@empty
8871 \Hy@Warning{%

```

```

8872     Empty destination name,\MessageBreak
8873     using '\Hy@undefinedname'%
8874 }%
8875 \let\Hy@testname\Hy@undefinedname
8876 \else
8877 \Hy@pstringdef\Hy@testname{%
8878 \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8879 }%
8880 \fi
8881 \Hy@StartlinkName{%
8882 \ifHy@pdfa /F 4\fi
8883 \Hy@setpdfborder
8884 \ifx\@pdfhighlight\@empty
8885 \else
8886 /H\@pdfhighlight
8887 \fi
8888 \ifx\CurrentBorderColor\relax
8889 \else
8890 /C[\CurrentBorderColor]%
8891 \fi
8892 }\Hy@testname
8893 \expandafter\Hy@colorlink\csname @#1color\endcsname
8894 }
8895 \def\Hy@StartlinkName#1#2{%
8896 \pdfstartlink attr{#1}goto name{#2}\relax
8897 }
8898 \def\close@pdfink{%
8899 \Hy@endcolorlink
8900 \Hy@VerboseLinkStop
8901 \pdfendlink
8902 }
8903 \def\hyper@anchor#1{%
8904 \new@pdfink{#1}\anchor@spot\pdf@endanchor
8905 }
8906 \def\hyper@anchorstart#1{%
8907 \new@pdfink{#1}%
8908 \Hy@activeanchortrue
8909 }
8910 \def\hyper@anchorend{%
8911 \pdf@endanchor
8912 \Hy@activeanchorfalse
8913 }
8914 \def\hyper@linkstart#1#2{%
8915 \Hy@VerboseLinkStart{#1}{#2}%
8916 \ltx@ifundefined{@#1bordercolor}{%
8917 \let\CurrentBorderColor\relax
8918 }{%
8919 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8920 }%
8921 \find@pdfink{#1}{#2}%
8922 }
8923 \def\hyper@linkend{\close@pdfink}
8924 \def\hyper@link#1#2#3{%
8925 \Hy@VerboseLinkStart{#1}{#2}%
8926 \ltx@ifundefined{@#1bordercolor}{%
8927 \let\CurrentBorderColor\relax
8928 }{%

```



```

8929 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8930 }%
8931 \find@pdflink{#1}{#2}#3\Hy@xspace@end
8932 \close@pdflink
8933 }
8934 \let\CurrentBorderColor\@linkbordercolor
8935 \def\hyper@linkurl#1#2{%
8936 \begingroup
8937 \Hy@pstringdef\Hy@pstringURI{#2}%
8938 \hyper@chars
8939 \leavevmode
8940 \pdfstartlink
8941 attr{%
8942 \Hy@setpdfborder
8943 \ifx\@pdfhighlight\@empty
8944 \else
8945 /H\@pdfhighlight
8946 \fi
8947 \ifx\@urlbordercolor\relax
8948 \else
8949 /C[\@urlbordercolor]%
8950 \fi
8951 }%
8952 user{%
8953 /Subtype/Link%
8954 \ifHy@pdfa /F 4\fi
8955 /A<<%
8956 /Type/Action%
8957 /S/URI%
8958 /URI(\Hy@pstringURI)%
8959 \ifHy@href@ismap
8960 /IsMap true%
8961 \fi
8962 \Hy@href@nextactionraw
8963 >>%
8964 }%
8965 \relax
8966 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
8967 \close@pdflink
8968 \endgroup
8969 }
8970 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
8971 \begingroup
8972 \def\Hy@pstringF{#2}%
8973 \Hy@CleanupFile\Hy@pstringF
8974 \Hy@pstringdef\Hy@pstringF\Hy@pstringF
8975 \Hy@pstringdef\Hy@pstringD{#3}%
8976 \Hy@MakeRemoteAction
8977 \leavevmode
8978 \pdfstartlink
8979 attr{%
8980 \Hy@setpdfborder
8981 \ifx\@pdfhighlight\@empty
8982 \else
8983 /H\@pdfhighlight
8984 \fi
8985 \ifx\@filebordercolor\relax

```

```

8986      \else
8987      /C[\@filebordercolor]%
8988      \fi
8989    }%
8990    user {%
8991      /Subtype/Link%
8992      \ifHy@pdfa /F 4\fi
8993      /A<<%
8994      /F(\Hy@pstringF)%
8995      /S/GoToR%
8996      \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}

```

```

8997      \ifx\#3\%
8998      /D[\Hy@href@page\@pdfremotestartview]%
8999      \else
9000      /D(\Hy@pstringD)%
9001      \fi
9002      \Hy@href@nextactionraw
9003      >>%
9004    }%
9005    \relax
9006    \Hy@colorlink\@filecolor#1\Hy@xspace@end
9007    \close@pdflink
9008  \endgroup
9009 }
9010 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
9011  \begingroup
9012  \Hy@pstringdef\Hy@pstringF{#1}%
9013  \Hy@pstringdef\Hy@pstringP{#3}%
9014  \leavevmode
9015  \pdfstartlink
9016  attr{%
9017    \Hy@setpdfborder
9018    \ifx\@pdfhighlight\@empty
9019    \else
9020    /H\@pdfhighlight
9021    \fi
9022    \ifx\@runbordercolor\relax
9023    \else
9024    /C[\@runbordercolor]%
9025    \fi
9026  }%
9027  user {%
9028    /Subtype/Link%
9029    \ifHy@pdfa /F 4\fi
9030    /A<<%

```

```

9031      /F(\Hy@pstringF)%
9032      /S/Launch%
9033      \Hy@SetNewWindow
9034      \ifx\|#3\%
9035      \else
9036      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9037      \fi
9038      \Hy@href@nextactionraw
9039      >>%
9040      }%
9041      \relax
9042      \Hy@colorlink\@runcolor#2\Hy@xspace@end
9043      \close@pdflink
9044      \endgroup
9045      }

```

\@pdfproducer

```

9046 \ifx\@pdfproducer\relax
9047 \begingroup\expandafter\expandafter\expandafter\endgroup
9048 \expandafter\ifx\csname luatexversion\endcsname\relax
9049 \def\@pdfproducer{pdfTeX}%
9050 \ifx\eTeXversion\@undefined
9051 \else
9052 \ifx\eTeXversion\relax
9053 \else
9054 \ifnum\eTeXversion>0 %
9055 \def\@pdfproducer{pdfTeX}%
9056 \fi
9057 \fi
9058 \fi
9059 \ifx\pdfTeXversion\@undefined
9060 \else
9061 \ifnum\pdfTeXversion<100 %
9062 \edef\@pdfproducer{%
9063 \@pdfproducer
9064 \the\pdfTeXversion.\pdfTeXrevision
9065 }%
9066 \else
9067 \ifnum\pdfTeXversion<130 %
9068 \edef\@pdfproducer{%
9069 \@pdfproducer-%
9070 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
9071 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil
9072 \pdfTeXrevision
9073 }%
9074 \else
9075 \ifnum\pdfTeXversion<140 %
9076 \else
9077 \def\@pdfproducer{pdfTeX}%
9078 \fi
9079 \edef\@pdfproducer{%
9080 \@pdfproducer-%
9081 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
9082 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
9083 \pdfTeXrevision
9084 }%
9085 \fi

```

```

9086 \fi
9087 \fi
9088 \else
9089 \begingroup
9090 \count@=\luatexversion
9091 \divide\count@ by 100 %
9092 \edef\x{\the\count@}%
9093 \count@=-\x\relax
9094 \multiply\count@ by 100 %
9095 \advance\count@ by \luatexversion
9096 \edef\x{\endgroup
9097 \def\noexpand\@pdfproducer{%
9098 LuaTeX-\x.\the\count@.\luatexrevision
9099 }%
9100 }%
9101 \x
9102 \fi
9103 \fi

```

\PDF@SetupDox

```

9104 \def\PDF@SetupDoc{%
9105 \ifx\@pdfpagescrop\empty
9106 \else
9107 \edef\process@me{%
9108 \pdfpagesattr={%
9109 /CropBox[\@pdfpagescrop]%
9110 \expandafter\ifx\expandafter\\\the\pdfpagesattr\\%
9111 \else
9112 ^^J\the\pdfpagesattr
9113 \fi
9114 }%
9115 }%
9116 \process@me
9117 \fi
9118 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9119 \pdfcatalog{%
9120 /PageMode/\@pdfpagemode
9121 \ifx\@baseurl\empty
9122 \else
9123 /URI<</Base(\Hy@pstringB)>>%
9124 \fi
9125 }%
9126 \ifx\@pdfstartpage\empty
9127 \else
9128 \ifx\@pdfstartview\empty
9129 \else
9130 openaction goto page\@pdfstartpage{\@pdfstartview}%
9131 \fi
9132 \fi
9133 \edef\Hy@temp{%
9134 \ifHy@pdftoolbar\else /HideToolbar true\fi
9135 \ifHy@pdfmenubar\else /HideMenubar true\fi
9136 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9137 \ifHy@pdffitwindow /FitWindow true\fi
9138 \ifHy@pdfcenterwindow /CenterWindow true\fi
9139 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9140 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9141 \Hy@UseNameKey{Direction}\@pdfdirection

```

```

9142 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9143 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9144 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9145 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9146 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9147 \Hy@UseNameKey{Duplex}\@pdfduplex
9148 \ifx\@pdfpicktraybypdfsize\@empty
9149 \else
9150 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9151 \fi
9152 \ifx\@pdfprintpagerange\@empty
9153 \else
9154 /PrintPageRange[\@pdfprintpagerange]%
9155 \fi
9156 \ifx\@pdfnumcopies\@empty
9157 \else
9158 /NumCopies \@pdfnumcopies
9159 \fi
9160 }%
9161 \pdfcatalog{%
9162 \ifx\Hy@temp\@empty
9163 \else
9164 /ViewerPreferences<<\Hy@temp>>%
9165 \fi
9166 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9167 \ifx\@pdflang\@empty
9168 \else
9169 /Lang(\@pdflang)%
9170 \fi
9171 }%
9172 }

```

\PDF@FinishDoc

```

9173 \def\PDF@FinishDoc{%
9174 \pdf@ifdraftmode{}{%
9175 \Hy@UseMaketitleInfos
9176 \HyInfo@GenerateAddons
9177 \pdfinfo{%
9178 /Author(\@pdfauthor)%
9179 /Title(\@pdftitle)%
9180 /Subject(\@pdfsubject)%
9181 /Creator(\@pdfcreator)%
9182 \ifx\@pdfcreationdate\@empty
9183 \else
9184 /CreationDate(\@pdfcreationdate)%
9185 \fi
9186 \ifx\@pdfmoddate\@empty
9187 \else
9188 /ModDate(\@pdfmoddate)%
9189 \fi
9190 \ifx\@pdfproducer\relax
9191 \else
9192 /Producer(\@pdfproducer)%
9193 \fi
9194 /Keywords(\@pdfkeywords)%
9195 \ifx\@pdftrapped\@empty
9196 \else
9197 /Trapped/\@pdftrapped

```

```

9198 \fi
9199 \HyInfo@Addons
9200 }%
9201 }%
9202 \Hy@DisableOption{pdfauthor}%
9203 \Hy@DisableOption{pdftitle}%
9204 \Hy@DisableOption{pdfsubject}%
9205 \Hy@DisableOption{pdfcreator}%
9206 \Hy@DisableOption{pdfcreationdate}%
9207 \Hy@DisableOption{pdfmoddate}%
9208 \Hy@DisableOption{pdfproducer}%
9209 \Hy@DisableOption{pdfkeywords}%
9210 \Hy@DisableOption{pdftrapped}%
9211 \Hy@DisableOption{pdfinfo}%
9212 }

```

`\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`.

```

9213 \def\hyper@pagetransition{%
9214 \ifx\@pdfpagetransition\relax
9215 \else
9216 \expandafter\Hy@RemoveTransPageAttr
9217 \the\pdfpageattr^^J/Trans{}>>\END
9218 \ifx\@pdfpagetransition\empty
9219 \else
9220 \edef\@processme{%
9221 \global\pdfpageattr{%
9222 \the\pdfpageattr
9223 ^^J/Trans << /S /\@pdfpagetransition\space >>%
9224 }%
9225 }%
9226 \@processme
9227 \fi
9228 \fi
9229 }

```

`\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.

```

9230 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
9231 \ifx\#2\%
9232 \global\pdfpageattr{#1}%
9233 \else
9234 \Hy@RemoveTransPageAttr#1#4\END
9235 \fi
9236 }

```

`\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`.

```

9237 \def\hyper@pageduration{%
9238 \ifx\@pdfpageduration\relax
9239 \else

```

```

9240 \expandafter
9241 \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
9242 \ifx\@pdfpageduration\@empty
9243 \else
9244 \edef\@processme{%
9245 \global\pdfpageattr{%
9246 \the\pdfpageattr
9247 ^^J/Dur \@pdfpageduration\space
9248 }%
9249 }%
9250 \@processme
9251 \fi
9252 \fi
9253 }

```

**\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.

```

9254 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
9255 \ifx\#2\%
9256 \global\pdfpageattr{#1}%
9257 \else
9258 \Hy@RemoveDurPageAttr#1#4\END
9259 \fi
9260 }

```

**\hyper@pagehidden** The boolean value of the key **/Hid** is stored in switch **\ifHy@pdfpagehidden**. First previous **/Hid** entries are removed, then the new one is appended, if the value is true (the PDF default is false).

```

9261 \def\hyper@pagehidden{%
9262 \ifHy@useHidKey
9263 \expandafter
9264 \Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
9265 \ifHy@pdfpagehidden
9266 \edef\@processme{%
9267 \global\pdfpageattr{%
9268 \the\pdfpageattr
9269 ^^J/Hid true % SPACE
9270 }%
9271 }%
9272 \@processme
9273 \fi
9274 \fi
9275 }

```

**\Hy@RemoveHidPageAttr** Macro **\Hy@RemoveHidPageAttr** removes a **/Hid** entry from **\pdfpageattr**. It is called with the end marker **^^J/Hid{} \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 **/Hid** object or the end marker.

```

9276 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
9277 \ifx\#2\%
9278 \global\pdfpageattr{#1}%
9279 \else
9280 \Hy@RemoveHidPageAttr#1#4\END
9281 \fi
9282 }

```

```

9283 \pdf@ifdraftmode{}{%
9284 \g@addto@macro\Hy@EveryPageHook{%
9285 \hyper@pagetransition
9286 \hyper@pageduration
9287 \hyper@pagehidden
9288 }%
9289 }

```

Also XeTeX support \pdfpagewidth and \pdfpageheight, but it does not provide \pdfhorigin and \pdfvorigin.

```

9290 </pdfTeX>
9291 <*pdfTeX| xetex>
9292 \Hy@AtBeginDocument{%
9293 \ifHy@setpagesize
9294 \expandafter\@firstofone
9295 \else
9296 \expandafter\@gobble
9297 \fi
9298 {%
9299 \@ifclassloaded{seminar}{%
9300 <*pdfTeX>
9301 \setlength{\pdfhorigin}{1truein}%
9302 \setlength{\pdfvorigin}{1truein}%
9303 </pdfTeX>
9304 \ifportrait
9305 \ifdim\paperwidth=\z@
9306 \else
9307 \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9308 \fi
9309 \ifdim\paperheight=\z@
9310 \else
9311 \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%
9312 \fi
9313 \else
9314 \ifdim\paperheight=\z@
9315 \else
9316 \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9317 \fi
9318 \ifdim\paperwidth=\z@
9319 \else
9320 \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9321 \fi
9322 \fi
9323 }{%
9324 \ltx@ifundefined{stockwidth}{%
9325 \ifdim\paperwidth>\z@
9326 \setlength{\pdfpagewidth}{\paperwidth}%
9327 \fi
9328 \ifdim\paperheight>\z@
9329 \setlength{\pdfpageheight}{\paperheight}%
9330 \fi
9331 }{%
9332 \ifdim\stockwidth>\z@
9333 \setlength{\pdfpagewidth}{\stockwidth}%
9334 \fi
9335 \ifdim\stockheight>\z@
9336 \setlength{\pdfpageheight}{\stockheight}%
9337 \fi

```



```

9338 }%
9339 }%
9340 }%
9341 \Hy@DisableOption{setpagesize}%
9342 }
9343 </pdftex | xetex>
9344 <*pdftex>
9345 \def\Acrobatmenu#1#2{%
9346 \Hy@Acrobatmenu{#1}{#2}{%
9347 \leavevmode
9348 \pdfstartlink
9349 attr{%
9350 \Hy@setpdfborder
9351 \ifx\@pdfhighlight\@empty
9352 \else
9353 /H\@pdfhighlight
9354 \fi
9355 \ifx\@menubordercolor\relax
9356 \else
9357 /C[\@menubordercolor]%
9358 \fi
9359 }%
9360 user{%
9361 /Subtype/Link%
9362 \ifHy@pdfa /F 4\fi
9363 /A<<%
9364 /S/Named%
9365 /N/#1%
9366 \Hy@href@nextactionraw
9367 >>%
9368 }%
9369 \relax
9370 \Hy@colorlink\@menucolor#2%
9371 \close@pdflink
9372 }%
9373 }

```

#### 46.2.1 Fix for problem with different nesting levels

`\AtBeginShipoutFirst` adds an additional box layer around the first output page. This disturbs pdfTeX's low level link commands `\pdfstartlink` and `\pdfendlink`, if a link is broken across the first and second output page.

The problem could be fixed by replacing `\AtBeginShipoutFirst`, because the box layer is not necessary for pdfTeX – no `\specials` need to be inserted. However it's easier to add an additional box level for the pages after the first one. Also `\AtBeginShipoutFirst` could be invoked independently from `hyperref`.

```

9374 \def\Hy@FixNotFirstPage{%
9375 \gdef\Hy@FixNotFirstPage{%
9376 \setbox\AtBeginShipoutBox=\hbox{%
9377 \copy\AtBeginShipoutBox
9378 }%
9379 }%
9380 }
9381 \AtBeginShipout{\Hy@FixNotFirstPage}
9382 </pdftex>

```

### 46.3 hypertex

The HyperTeX specification (this is borrowed from an article by Arthur Smith) says that conformant viewers/translators must recognize the following set of \special commands:

**href:** html:<a href = "href\_string">

**name:** html:<a name = "name\_string">

**end:** html:</a>

**image:** html:<img src = "href\_string">

**base\_name:** html:<base href = "href\_string">

The *href*, *name* and *end* commands are used to do the basic hypertext operations of establishing links between sections of documents. The *image* command is intended (as with current html viewers) to place an image of arbitrary graphical format on the page in the current location. The *base\_name* command is be used to communicate to the *dvi* viewer the full (URL) location of the current document so that files specified by relative URL's may be retrieved correctly.

The *href* and *name* commands must be paired with an *end* command later in the TeX file — the TeX commands between the two ends of a pair form an *anchor* in the document. In the case of an *href* command, the *anchor* is to be highlighted in the *dvi* viewer, and when clicked on will cause the scene to shift to the destination specified by *href\_string*. The *anchor* associated with a *name* command represents a possible location to which other hypertext links may refer, either as local references (of the form href="#name\_string" with the *name\_string* identical to the one in the name command) or as part of a URL (of the form URL#name\_string). Here *href\_string* is a valid URL or local identifier, while *name\_string* could be any string at all: the only caveat is that "" characters should be escaped with a backslash (\), and if it looks like a URL name it may cause problems.

```
9383 \*hypertex
9384 \providecommand*\XR@ext}{dvi}
9385 \let\PDF@FinishDoc\ltx@empty
9386 \def\PDF@SetupDoc{%
9387   \ifx\@baseurl\@empty
9388   \else
9389     \special{html:<base href="\@baseurl">}%
9390   \fi
9391 }
9392 \Hy@WrapperDef\hyper@anchor#1{%
9393   \Hy@SaveLastskip
9394   \Hy@VerboseAnchor{#1}%
9395   \begingroup
9396     \let\protect=\string
9397     \hyper@chars
9398     \special{html:<a name=%
9399       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9400   \endgroup
9401   \Hy@activeanchortrue
9402   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9403   \special{html:</a>}%
9404   \Hy@activeanchorfalse
9405   \Hy@RestoreLastskip
9406 }
```

```

9407 \Hy@WrapperDef\hyper@anchorstart#1{%
9408 \Hy@SaveLastskip
9409 \Hy@VerboseAnchor{#1}%
9410 \begingroup
9411 \hyper@chars
9412 \special{html:<a name=%
9413 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9414 \endgroup
9415 \Hy@Activeanchortrue
9416 }
9417 \def\hyper@anchorend{%
9418 \special{html:</a>}%
9419 \Hy@Activeanchorfalse
9420 \Hy@RestoreLastskip
9421 }
9422 \def\@urltype{url}
9423 \def\hyper@linkstart#1#2{%
9424 \Hy@VerboseLinkStart{#1}{#2}%
9425 \expandafter\Hy@colorlink\csname @#1color\endcsname
9426 \def\Hy@tempa{#1}%
9427 \ifx\Hy@tempa\@urltype
9428 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9429 \else
9430 \begingroup
9431 \hyper@chars
9432 \special{html:<a href=%
9433 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
9434 \endgroup
9435 \fi
9436 }
9437 \def\hyper@linkend{%
9438 \special{html:</a>}%
9439 \Hy@endcolorlink
9440 }
9441 \def\hyper@linkfile#1#2#3{%
9442 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
9443 }
9444 \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.

```

9445 \leavevmode
9446 \ifHy@raiselinks
9447 \Hy@SaveSpaceFactor
9448 \Hy@SaveSavedSpaceFactor
9449 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9450 \Hy@RestoreSavedSpaceFactor
9451 \@linkdim\dp\@tempboxa
9452 \lower\@linkdim\hbox{%
9453 \hyper@chars
9454 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9455 }%
9456 \Hy@colorlink\@urlcolor
9457 \Hy@RestoreSpaceFactor
9458 #1%
9459 \Hy@SaveSpaceFactor
9460 \@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).

```

9461 \advance\@linkdim by -6.5\p@
9462 \raise\@linkdim\hbox{\special{html:</a>}}%
9463 \Hy@endcolorlink
9464 \Hy@RestoreSpaceFactor
9465 \else
9466 \begingroup
9467 \hyper@chars
9468 \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9469 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9470 \special{html:</a>}%
9471 \Hy@endcolorlink
9472 \endgroup
9473 \fi
9474 }

```

Very poor implementation of `\hyper@link` without considering #1.

```

9475 \def\hyper@link#1#2#3{%
9476 \Hy@VerboseLinkStart{#1}{#2}%
9477 \hyper@linkurl{#3}{\# \Hy@DestNameFilter{#2}}%
9478 }

9479 \def\hyper@image#1#2{%
9480 \begingroup
9481 \hyper@chars
9482 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
9483 \endgroup
9484 }
9485 </hypertex>
9486 <*dviwindo>

```

## 46.4 dviwindo

[This was developed by David Carlisle]. Within a file `dviwindo` hyperlinking is used, for external URL's a call to `\wwwbrowser` is made. (You can define this command before or after loading the `hyperref` package if the default `c:/netscape/netscape` is not suitable) `Dviwindo` could in fact handle external links to dvi files on the same machine without calling a web browser, but that would mean parsing the URL to recognise such, and this is currently not done.

This was more or less blindly copied from the `hypertex` cfg. For `dviwindo`,  $\LaTeX$  must specify the size of the active area for links. For some hooks this information is available but for some, the start and end of the link are specified separately in which case a fixed size area of 10000000sp wide by `\baselineskip` high is used.

```

9487 \providecommand*\XR@ext{dvi}
9488 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9489 \Hy@WrapperDef\hyper@anchor#1{%
9490 \Hy@SaveLastskip
9491 \Hy@VerboseAnchor{#1}%
9492 \begingroup
9493 \let\protect=\string
9494 \special{mark: #1}%
9495 \endgroup
9496 \Hy@activeanchortrue
9497 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink

```

```

9498 \Hy@activeanchorfalse
9499 \Hy@RestoreLastskip
9500 }
9501 \Hy@WrapperDef\hyper@anchorstart#1{%
9502 \Hy@SaveLastskip
9503 \Hy@VerboseAnchor{#1}%
9504 \special{mark: #1}%
9505 \Hy@activeanchortrue
9506 }
9507 \def\hyper@anchorend{%
9508 \Hy@activeanchorfalse
9509 \Hy@RestoreLastskip
9510 }
9511 \def\hyper@linkstart#1#2{%
9512 \Hy@VerboseLinkStart{#1}{#2}%
9513 \expandafter\Hy@colorlink\csname @#1color\endcsname
9514 \special{button: %
9515 10000000 %
9516 \number\baselineskip\space
9517 #2%
9518 }%
9519 }
9520 \def\hyper@linkend{%
9521 \Hy@endcolorlink
9522 }
9523 \def\hyper@link#1#2#3{%
9524 \Hy@VerboseLinkStart{#1}{#2}%
9525 \leavevmode
9526 \ifHy@raiselinks
9527 \Hy@SaveSpaceFactor
9528 \Hy@SaveSavedSpaceFactor
9529 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9530 \Hy@RestoreSavedSpaceFactor
9531 \@linkdim\dp\@tempboxa
9532 \lower\@linkdim\hbox{%
9533 \special{button: %
9534 \number\wd\@tempboxa\space
9535 \number\ht\@tempboxa\space
9536 #2%
9537 }%
9538 \expandafter\Hy@colorlink\csname @#1color\endcsname
9539 \Hy@RestoreSpaceFactor
9540 #3\Hy@xspace@end
9541 \Hy@SaveSpaceFactor
9542 \Hy@endcolorlink
9543 }%
9544 \@linkdim\ht\@tempboxa
9545 \advance\@linkdim by -6.5\p@
9546 \raise\@linkdim\hbox{}}%
9547 \Hy@RestoreSpaceFactor
9548 \else
9549 \special{button: %
9550 \number\wd\@tempboxa\space
9551 \number\ht\@tempboxa\space
9552 #2%
9553 }%
9554 \expandafter\Hy@colorlink\csname @#1color\endcsname

```

```

9555   #3\Hy@xspace@end
9556   \Hy@endcolorlink
9557   \fi
9558 }
9559 \def\hyper@linkurl#1#2{%
9560   \begingroup
9561     \hyper@chars
9562     \leavevmode
9563     \ifHy@raiselinks
9564       \Hy@SaveSpaceFactor
9565       \Hy@SaveSavedSpaceFactor
9566       \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9567       \Hy@RestoreSavedSpaceFactor
9568       \@linkdim\dp\@tempboxa
9569       \lower\@linkdim\hbox{%
9570         \special{button: %
9571           \number\wd\@tempboxa\space
9572           \number\ht\@tempboxa\space
9573           launch: \wwwbrowser\space
9574           #2%
9575         }%
9576         \Hy@colorlink\@urlcolor
9577         \Hy@RestoreSpaceFactor
9578         #1\Hy@xspace@end
9579         \Hy@SaveSpaceFactor
9580         \Hy@endcolorlink
9581       }%
9582       \@linkdim\ht\@tempboxa
9583       \advance\@linkdim by -6.5\p@
9584       \raise\@linkdim\hbox{}%
9585       \Hy@RestoreSpaceFactor
9586     \else
9587       \special{button: %
9588         \number\wd\@tempboxa\space
9589         \number\ht\@tempboxa\space
9590         launch: \wwwbrowser\space
9591         #2%
9592       }%
9593       \Hy@colorlink\@urlcolor
9594       #1\Hy@xspace@end
9595       \Hy@endcolorlink
9596     \fi
9597   \endgroup
9598 }
9599 \def\hyper@linkfile#1#2#3{%
9600   \begingroup
9601     \hyper@chars
9602     \leavevmode
9603     \ifHy@raiselinks
9604       \Hy@SaveSpaceFactor
9605       \Hy@SaveSavedSpaceFactor
9606       \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9607       \Hy@RestoreSavedSpaceFactor
9608       \@linkdim\dp\@tempboxa
9609       \lower\@linkdim\hbox{%
9610         \special{button: %
9611           \number\wd\@tempboxa\space

```

```

9612      \number\ht\@tempboxa\space
9613      #3,%
9614      file: #2%
9615  }%
9616  \Hy@colorlink\@filecolor
9617  \Hy@RestoreSpaceFactor
9618  #1\Hy@xspace@end
9619  \Hy@SaveSpaceFactor
9620  \Hy@endcolorlink
9621  }%
9622  \@linkdim\ht\@tempboxa
9623  \advance\@linkdim by -6.5\p@
9624  \raise\@linkdim\hbox{}%
9625  \Hy@RestoreSpaceFactor
9626  \else
9627  \special{button: %
9628  \number\wd\@tempboxa\space
9629  \number\ht\@tempboxa\space
9630  #3,%
9631  file: #2%
9632  }%
9633  \Hy@colorlink\@filecolor
9634  #1\Hy@xspace@end
9635  \Hy@endcolorlink
9636  \fi
9637  \endgroup
9638 }
9639 \ifx\@pdfproducer\relax
9640 \def\@pdfproducer{dviwindo + Distiller}%
9641 \fi
9642 \HyInfo@AddonUnsupportedtrue
9643 \def\PDF@FinishDoc{%
9644 \Hy@UseMaketitleInfos
9645 \HyInfo@TrappedUnsupported
9646 \special{PDF: Keywords \@pdfkeywords}%
9647 \special{PDF: Title \@pdftitle}%
9648 \special{PDF: Creator \@pdfcreator}%
9649 \ifx\@pdfcreationdate\@empty
9650 \else
9651 \special{PDF: CreationDate \@pdfcreationdate}%
9652 \fi
9653 \ifx\@pdfmoddate\@empty
9654 \else
9655 \special{PDF: ModDate \@pdfmoddate}%
9656 \fi
9657 \special{PDF: Author \@pdfauthor}%
9658 \ifx\@pdfproducer\relax
9659 \else
9660 \special{PDF: Producer \@pdfproducer}%
9661 \fi
9662 \special{PDF: Subject \@pdfsubject}%
9663 \Hy@DisableOption{pdfauthor}%
9664 \Hy@DisableOption{pdftitle}%
9665 \Hy@DisableOption{pdfsubject}%
9666 \Hy@DisableOption{pdfcreator}%
9667 \Hy@DisableOption{pdfcreationdate}%
9668 \Hy@DisableOption{pdfmoddate}%

```

```

9669 \Hy@DisableOption{pdfproducer}%
9670 \Hy@DisableOption{pdfkeywords}%
9671 \Hy@DisableOption{pdftrapped}%
9672 \Hy@DisableOption{pdfinfo}%
9673 }
9674 \def\PDF@SetupDoc{%
9675 \ifx\@baseurl\@empty
9676 \else
9677 \special{PDF: Base \@baseurl}%
9678 \fi
9679 \ifx\@pdfpagescrop\@empty\else
9680 \special{PDF: BBox \@pdfpagescrop}%
9681 \fi
9682 \def\Hy@temp{}%
9683 \ifx\@pdfstartpage\@empty
9684 \else
9685 \ifx\@pdfstartview\@empty
9686 \else
9687 \edef\Hy@temp{%
9688 ,Page=\@pdfstartpage
9689 ,View=\@pdfstartview
9690 }%
9691 \fi
9692 \fi
9693 \edef\Hy@temp{%
9694 \noexpand\pdfmark{%
9695 pdfmark=/DOCVIEW,%
9696 PageMode=/\@pdfpagemode
9697 \Hy@temp
9698 }%
9699 }%
9700 \Hy@temp
9701 \ifx\@pdfpagescrop\@empty
9702 \else
9703 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9704 \fi
9705 \edef\Hy@temp{%
9706 \ifHy@pdftoolbar\else /HideToolbar true\fi
9707 \ifHy@pdfmenubar\else /HideMenubar true\fi
9708 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9709 \ifHy@pdffitwindow /FitWindow true\fi
9710 \ifHy@pdfcenterwindow /CenterWindow true\fi
9711 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9712 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9713 \Hy@UseNameKey{Direction}\@pdfdirection
9714 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9715 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9716 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9717 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9718 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9719 \Hy@UseNameKey{Duplex}\@pdfduplex
9720 \ifx\@pdfpicktraybypdfsize\@empty
9721 \else
9722 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9723 \fi
9724 \ifx\@pdfprintpagerange\@empty
9725 \else

```



```

9726 /PrintPageRange[\@pdfprintpagerange]%
9727 \fi
9728 \ifx\@pdfnumcopies\@empty
9729 \else
9730 /NumCopies \@pdfnumcopies
9731 \fi
9732 }%
9733 \pdfmark{pdfmark=/PUT,%
9734 Raw={%
9735 \string{Catalog\string}<<%
9736 \ifx\Hy@temp\@empty
9737 \else
9738 /ViewerPreferences<<\Hy@temp>>%
9739 \fi
9740 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9741 \ifx\@pdflang\@empty
9742 \else
9743 /Lang(\@pdflang)%
9744 \fi
9745 >>%
9746 }%
9747 }%
9748 }
9749 </dviwindo>
9750 <*dvipdfm | xetex>

```

## 46.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```

9751 \providecommand*\XR@ext{pdf}
9752 \Hy@setbreaklinks{true}
9753 \def\HyPat@ObjRef{%
9754 @[\^ ]+}%
9755 }
9756 \newsavebox{\pdfm@box}
9757 \def\@pdfm@mark#1{\special{pdf:#1}}
9758 \Hy@WrapperDef\@pdfm@dest#1{%
9759 \Hy@SaveLastskip
9760 \Hy@VerboseAnchor{#1}%
9761 \begingroup
9762 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9763 \def\x{XYZ}%
9764 \ifx\x\@pdfview
9765 \def\x{XYZ @xpos @ypos null}%
9766 \else
9767 \def\x{FitH}%
9768 \ifx\x\@pdfview
9769 \def\x{FitH @ypos}%
9770 \else
9771 \def\x{FitBH}%
9772 \ifx\x\@pdfview
9773 \def\x{FitBH @ypos}%
9774 \else
9775 \def\x{FitV}%
9776 \ifx\x\@pdfview
9777 \def\x{FitV @xpos}%
9778 \else

```

```

9779         \def\x{FitBV}%
9780         \ifx\x\@pdfview
9781             \def\x{FitBV @xpos}%
9782         \else
9783             \def\x{Fit}%
9784             \ifx\x\@pdfview
9785                 \let\x\@pdfview
9786             \else
9787                 \def\x{FitB}%
9788                 \ifx\x\@pdfview
9789                     \let\x\@pdfview
9790                 \else
9791                     \def\x{FitR}%
9792                     \ifx\x\@pdfview
9793                         \Hy@Warning{'pdfview=FitR' is not supported}%
9794                         \def\x{XYZ @xpos @ypos null}%
9795                     \else
9796                         \@onelevel@sanitize\@pdfview
9797                         \Hy@Warning{%
9798                             Unknown value '\@pdfview' for pdfview%
9799                         }%
9800                         \def\x{XYZ @xpos @ypos null}%
9801                     \fi
9802                 \fi
9803             \fi
9804         \fi
9805     \fi
9806 \fi
9807 \fi
9808 \fi
9809 \@@pdfm@mark{dest (\Hy@pstringDest) [@thispage /\x]}%
9810 \endgroup
9811 \Hy@RestoreLastskip
9812 }
9813 \providecommand*\@pdfview{XYZ}
9814 \providecommand*\@pdfborder{0 0 1}
9815 \providecommand*\@pdfborderstyle{}
9816 \def\hyper@anchor#1{%
9817     \@pdfm@dest{#1}%
9818 }
9819 \def\hyper@anchorstart#1{%
9820     \Hy@activeanchortrue
9821     \@pdfm@dest{#1}%
9822 }
9823 \def\hyper@anchorend{%
9824     \Hy@activeanchorfalse
9825 }
9826 \newcounter{Hy@AnnotLevel}
9827 \ifHy@ocgcolorlinks
9828     \def\OBJ@OCG@view{@OCG@view}%
9829     \@pdfm@mark{%
9830         obj \OBJ@OCG@view <<%
9831         /Type/OCG%
9832         /Name(View)%
9833         /Usage<<%
9834         /Print<<%
9835         /PrintState/OFF%

```

```

9836     >>%
9837     /View<<%
9838     /ViewState/ON%
9839     >>%
9840     >>%
9841     >>%
9842 }%
9843 \@pdfm@mark{close \OBJ@OCG@view}%
9844 \def\OBJ@OCG@print{@OCG@print}%
9845 \@pdfm@mark{%
9846   obj \OBJ@OCG@print <<%
9847   /Type/OCG%
9848   /Name(Print)%
9849   /Usage<<%
9850   /Print<<%
9851   /PrintState/ON%
9852   >>%
9853   /View<<%
9854   /ViewState/OFF%
9855   >>%
9856   >>%
9857   >>%
9858 }%
9859 \@pdfm@mark{close \OBJ@OCG@print}%
9860 \def\OBJ@OCGs{@OCGs}%
9861 \@pdfm@mark{%
9862   obj \OBJ@OCGs [%
9863     \OBJ@OCG@view\space\OBJ@OCG@print
9864   ]%
9865 }%
9866 \@pdfm@mark{close \OBJ@OCGs}%
9867 \@pdfm@mark{%
9868   put @catalog <<%
9869   /OCProperties<<%
9870   /OCGs \OBJ@OCGs
9871   /D<<%
9872   /OFF[\OBJ@OCG@print]%
9873   /AS[%
9874     <<%
9875     /Event/View%
9876     /OCGs \OBJ@OCGs
9877     /Category[/View]%
9878     >>%
9879     <<%
9880     /Event/Print%
9881     /OCGs \OBJ@OCGs
9882     /Category[/Print]%
9883     >>%
9884     <<%
9885     /Event/Export%
9886     /OCGs \OBJ@OCGs
9887     /Category[/Print]%
9888     >>%
9889     ]%
9890     >>%
9891     >>%
9892     >>%

```

```

9893 }%
9894 \AtBeginShipout{%
9895   \setbox\AtBeginShipoutBox=\hbox{%
9896     \copy\AtBeginShipoutBox
9897     \@pdfm@mark{%
9898       put @resources <<%
9899       /Properties<<%
9900       /OCView \OBJ@OCG@view
9901       /OCPrint \OBJ@OCG@print
9902       >>%
9903     >>%
9904   }%
9905 }%
9906 }%
9907 \Hy@AtBeginDocument{%
9908   \def\Hy@colorlink#1{%
9909     \begingroup
9910     \ifHy@ocgcolorlinks
9911       \def\Hy@ocgcolor{#1}%
9912       \setbox0=\hbox\bgroup\color@begingroup
9913     \else
9914       \HyColor@UseColor#1%
9915     \fi
9916   }%
9917   \def\Hy@endcolorlink{%
9918     \ifHy@ocgcolorlinks
9919       \color@endgroup\egroup
9920     \mbox{%
9921       \@pdfm@mark{content /OC/OCPrint BDC}%
9922       \rlap{\copy0}%
9923       \@pdfm@mark{content EMC/OC/OCView BDC}%
9924     \begingroup
9925       \expandafter\HyColor@UseColor\Hy@ocgcolor
9926       \box0 %
9927     \endgroup
9928     \@pdfm@mark{content EMC}%
9929   }%
9930   \fi
9931   \endgroup
9932 }%
9933 }%
9934 \else
9935   \Hy@DisableOption{ocgcolorlinks}%
9936 \fi
9937 \def\Hy@BeginAnnot#1{%
9938   \stepcounter{Hy@AnnotLevel}%
9939   \ifnum\value{Hy@AnnotLevel}=\@ne
9940     #1%
9941   \fi
9942 }
9943 \def\Hy@endAnnot{%
9944   \ifnum\value{Hy@AnnotLevel}=\@ne
9945     \Hy@endcolorlink
9946     \@pdfm@mark{eann}%
9947   \fi
9948   \addtocounter{Hy@AnnotLevel}\m@ne
9949 }

```

```

9950 \def\Hy@undefinedname{UNDEFINED}
9951 \def\hyper@linkstart#1#2{%
9952   \Hy@VerboseLinkStart{#1}{#2}%
9953   \leavevmode
9954   \Hy@BeginAnnot{%
9955     \protected@edef\Hy@testname{#2}%
9956     \ifx\Hy@testname\@empty
9957       \Hy@Warning{%
9958         Empty destination name,\MessageBreak
9959         using '\Hy@undefinedname'%
9960       }%
9961       \let\Hy@testname\Hy@undefinedname
9962     \else
9963       \Hy@pstringdef\Hy@testname{%
9964         \expandafter\HyperDestNameFilter\expandafter{%
9965           \Hy@testname
9966         }%
9967       }%
9968     \fi
9969     \@pdfm@mark{%
9970       bann<<%
9971       /Type/Annot%
9972       /Subtype/Link%
9973       \ifHy@pdfa /F 4\fi
9974       \Hy@setpdfborder
9975       \expandafter\ifx\csname @#1bordercolor\endcsname\relax
9976       \else
9977         /C[\csname @#1bordercolor\endcsname]%
9978       \fi
9979       /A<<%
9980       /S/GoTo%
9981       /D(\Hy@testname)%
9982       \Hy@href@nextactionraw
9983       >>%
9984       >>%
9985     }%
9986     \expandafter\Hy@colorlink\csname @#1color\endcsname
9987   }%
9988 }
9989 \def\hyper@linkend{\Hy@EndAnnot}%
9990 \def\hyper@link#1#2#3{%
9991   \hyper@linkstart{#1}{#2}#3\Hy@xspace@end\hyper@linkend
9992 }
9993 \def\hyper@linkfile#1#2#3{%
9994   \leavevmode
9995   \Hy@BeginAnnot{%
9996     \def\Hy@pstringF{#2}%
9997     \Hy@CleanupFile\Hy@pstringF
9998     \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9999     \Hy@pstringdef\Hy@pstringD{#3}%
10000   \Hy@MakeRemoteAction
10001   \@pdfm@mark{%
10002     bann<<%
10003     /Type/Annot%
10004     /Subtype/Link%
10005     \ifHy@pdfa /F 4\fi
10006     \Hy@setpdfborder

```

```

10007 \ifx\@filebordercolor\relax
10008 \else
10009 /C[\@filebordercolor]%
10010 \fi
10011 /A<<%
10012 /S/GoToR%
10013 /F(\Hy@pstringF)%
10014 /D%
10015 \ifx\#3\%
10016 [\Hy@href@page\@pdfremotestartview]%
10017 \else
10018 (\Hy@pstringD)%
10019 \fi
10020 \Hy@SetNewWindow
10021 \Hy@href@nextactionraw
10022 >>%
10023 >>%
10024 }%
10025 \Hy@colorlink\@filecolor
10026 }%
10027 #1\Hy@xspace@end
10028 \Hy@endAnnot
10029 }
10030 \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
10031 \leavevmode
10032 \Hy@BeginAnnot{%
10033 \Hy@pstringdef\Hy@pstringF{#1}%
10034 \Hy@pstringdef\Hy@pstringP{#3}%
10035 \@pdfm@mark{%
10036 bann<<%
10037 /Type/Annot%
10038 /Subtype/Link%
10039 \ifHy@pdfa /F 4\fi
10040 \Hy@setpdfborder
10041 \ifx\@runbordercolor\relax
10042 \else
10043 /C[\@runbordercolor]%
10044 \fi
10045 /A<<%
10046 /F(\Hy@pstringF)%
10047 /S/Launch%
10048 \Hy@SetNewWindow
10049 \ifx\#3\%
10050 \else
10051 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
10052 \fi
10053 \Hy@href@nextactionraw
10054 >>%
10055 >>%
10056 }%
10057 \Hy@colorlink\@runcolor
10058 }%
10059 #2\Hy@xspace@end
10060 \Hy@endAnnot
10061 }
10062 \def\hyper@linkurl#1#2{%
10063 \leavevmode

```

```

10064 \Hy@BeginAnnot{%
10065 \Hy@pstringdef\Hy@pstringURI{#2}%
10066 \@pdfm@mark{%
10067   bann<<%
10068     /Type/Annot%
10069     /Subtype/Link%
10070     \ifHy@pdfa /F 4\fi
10071     \Hy@setpdfborder
10072     \ifx\@urlbordercolor\relax
10073     \else
10074       /C[\@urlbordercolor]%
10075     \fi
10076     /A<<%
10077     /S/URI%
10078     /URI(\Hy@pstringURI)%
10079     \ifHy@href@ismap
10080       /IsMap true%
10081     \fi
10082     \Hy@href@nextactionraw
10083   >>%
10084   >>%
10085  }%
10086 \Hy@colorlink\@urlcolor
10087}%
10088 #1\Hy@xspace@end
10089 \Hy@EndAnnot
10090 }
10091 \def\Acrobatmenu#1#2{%
10092 \Hy@Acrobatmenu{#1}{#2}{%
10093 \Hy@BeginAnnot{%
10094 \Atpdfm@mark{%
10095   bann<<%
10096     /Type/Annot%
10097     /Subtype/Link%
10098     \ifHy@pdfa /F 4\fi
10099     /A<<%
10100     /S/Named%
10101     /N/#1%
10102     \Hy@href@nextactionraw
10103   >>%
10104     \Hy@setpdfborder
10105     \ifx\@menubordercolor\relax
10106     \relax
10107     /C[\@menubordercolor]%
10108     \fi
10109   >>%
10110  }%
10111 \Hy@colorlink\@menucolor
10112}%
10113 #2\Hy@xspace@end
10114 \Hy@EndAnnot
10115}%
10116 }
10117 \ifx\@pdfproducer\relax
10118 \def\@pdfproducer{dvipdfm}%

```

Detect Xe<sub>T</sub>TeX. However, but xdvipdfmx will overwrite it in the final PDF file.

```

10119 \begingroup\expandafter\expandafter\expandafter\endgroup

```

```

10120 \expandafter\ifx\csname XeTeXversion\endcsname\relax
10121 \else
10122 \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
10123 \fi
10124 \fi
10125 \def\PDF@FinishDoc{%
10126 \Hy@UseMaketitleInfos
10127 \HyInfo@GenerateAddons
10128 \@pdfm@mark{%
10129 docinfo<<%
10130 /Title(\@pdftitle)%
10131 /Subject(\@pdfsubject)%
10132 /Creator(\@pdfcreator)%
10133 \ifx\@pdfcreationdate\@empty
10134 \else
10135 /CreationDate(\@pdfcreationdate)%
10136 \fi
10137 \ifx\@pdfmoddate\@empty
10138 \else
10139 /ModDate(\@pdfmoddate)%
10140 \fi
10141 /Author(\@pdfauthor)%
10142 \ifx\@pdfproducer\relax
10143 \else
10144 /Producer(\@pdfproducer)%
10145 \fi
10146 /Keywords(\@pdfkeywords)%
10147 \ifx\@pdftrapped\@empty
10148 \else
10149 /Trapped/\@pdftrapped
10150 \fi
10151 \HyInfo@Addons
10152 >>%
10153 }%
10154 \Hy@DisableOption{pdfauthor}%
10155 \Hy@DisableOption{pdftitle}%
10156 \Hy@DisableOption{pdfsubject}%
10157 \Hy@DisableOption{pdfcreator}%
10158 \Hy@DisableOption{pdfcreationdate}%
10159 \Hy@DisableOption{pdfmoddate}%
10160 \Hy@DisableOption{pdfproducer}%
10161 \Hy@DisableOption{pdfkeywords}%
10162 \Hy@DisableOption{pdftrapped}%
10163 \Hy@DisableOption{pdfinfo}%
10164 }

10165 \def\PDF@SetupDoc{%
10166 \edef\Hy@temp{%
10167 \ifHy@pdftoolbar\else /HideToolbar true\fi
10168 \ifHy@pdfmenubar\else /HideMenubar true\fi
10169 \ifHy@pdfwindowui\else /HideWindowUI true\fi
10170 \ifHy@pdffitwindow /FitWindow true\fi
10171 \ifHy@pdfcenterwindow /CenterWindow true\fi
10172 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10173 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10174 \Hy@UseNameKey{Direction}\@pdfdirection
10175 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10176 \Hy@UseNameKey{ViewClip}\@pdfviewclip

```



```

10177 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10178 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10179 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10180 \Hy@UseNameKey{Duplex}\@pdfduplex
10181 \ifx\@pdfpicktraybypdfsize\@empty
10182 \else
10183 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10184 \fi
10185 \ifx\@pdfprintpagerange\@empty
10186 \else
10187 /PrintPageRange[\@pdfprintpagerange]%
10188 \fi
10189 \ifx\@pdfnumcopies\@empty
10190 \else
10191 /NumCopies \@pdfnumcopies
10192 \fi
10193 }%
10194 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10195 \@pdfm@mark{%
10196 docview<<%
10197 \ifx\@pdfstartpage\@empty
10198 \else
10199 \ifx\@pdfstartview\@empty
10200 \else
10201 /OpenAction[@page\@pdfstartpage\@pdfstartview]%
10202 \fi
10203 \fi
10204 \ifx\@baseurl\@empty
10205 \else
10206 /URI<</Base(\Hy@pstringB)>>%
10207 \fi
10208 /PageMode/\@pdfpagemode
10209 \ifx\Hy@temp\@empty
10210 \else
10211 /ViewerPreferences<<\Hy@temp>>%
10212 \fi
10213 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10214 \ifx\@pdflang\@empty
10215 \else
10216 /Lang(\@pdflang)%
10217 \fi
10218 >>%
10219 }%
10220 \ifx\@pdfpagescrop\@empty
10221 \else
10222 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}%
10223 \fi
10224 }
10225 </dvipdfm | xetex>
10226 <*dvipdfm | xetex>

```

\hyper@pagetransition

```

10227 \def\hyper@pagetransition{%
10228 \ifx\@pdfpagetransition\relax
10229 \else
10230 \ifx\@pdfpagetransition\@empty
10231 \else

```

```

10232 \special{pdf:put @thispage %
10233 <</Trans<</S/\@pdfpagetransition>>>>%
10234 }%
10235 \fi
10236 \fi
10237 }

```

\hyper@pageduration

```

10238 \def\hyper@pageduration{%
10239 \ifx\@pdfpageduration\relax
10240 \else
10241 \ifx\@pdfpageduration\@empty
10242 \else
10243 \special{pdf:put @thispage %
10244 <</Dur \@pdfpageduration>>>%
10245 }%
10246 \fi
10247 \fi
10248 }

```

\hyper@pagehidden

```

10249 \def\hyper@pagehidden{%
10250 \ifHy@useHidKey
10251 \special{pdf:put @thispage %
10252 <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
10253 }%
10254 \fi
10255 }

10256 \g@addto@macro\Hy@EveryPageBoxHook{%
10257 \hyper@pagetransition
10258 \hyper@pageduration
10259 \hyper@pagehidden
10260 }

10261 </dvipdfm | xetex>

```

XeTeX uses pdfTeX's method \pdfpagewidth and \pdfpageheight for setting the paper size.

```

10262 <*\dvipdfm>
10263 \AtBeginShipoutFirst{%
10264 \ifHy@setpagesize
10265 \begingroup
10266 \@ifundefined{stockwidth}{%
10267 \ifdim\paperwidth>\z@
10268 \ifdim\paperheight>\z@
10269 \special{papersize=\the\paperwidth,\the\paperheight}%
10270 \fi
10271 \fi
10272 }{%
10273 \ifdim\stockwidth>\z@
10274 \ifdim\stockheight>\z@
10275 \special{papersize=\the\stockwidth,\the\stockheight}%
10276 \fi
10277 \fi
10278 }%
10279 \endgroup
10280 \fi

```

```

10281 \Hy@DisableOption{setpagesize}%
10282 }
10283 </dvipdfm>

```

## 46.6 VTeX typesetting system

Provided by MicroPress, May 1998. They require VTeX version 6.02 or newer; see <http://www.micropress-inc.com/> for details.

```

10284 <*vtexhtml>
10285 \providecommand*{\XR@ext}{htm}
10286 \RequirePackage{vtexhtml}
10287 \newif\if@Localurl
10288 \let\PDF@FinishDoc\ltx@empty
10289 \def\PDF@SetupDoc{%
10290   \ifx\@baseurl\@empty
10291   \else
10292     \special{!direct <base href="\@baseurl">}%
10293   \fi
10294 }
10295 \def\@urltype{url}
10296 \def\hyper@link#1#2#3{%
10297   \Hy@VerboseLinkStart{#1}{#2}%
10298   \leavevmode
10299   \special{!direct <a href=%
10300     \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
10301   #3\Hy@xspace@end
10302   \special{!direct </a>}%
10303 }
10304 \def\hyper@linkurl#1#2{%
10305   \begingroup
10306     \hyper@chars
10307     \leavevmode
10308     \MathBSuppress=1\relax
10309     \special{!direct <a href=%
10310       \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}}%
10311   #1\Hy@xspace@end
10312   \MathBSuppress=0\relax
10313   \special{!direct </a>}%
10314 \endgroup
10315 }
10316 \def\hyper@linkfile#1#2#3{%
10317   \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\\#3\fi}%
10318 }
10319 \def\hyper@linkstart#1#2{%
10320   \Hy@VerboseLinkStart{#1}{#2}%
10321   \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
10322     \@Localurltrue
10323     \special{!direct <a href=\hyper@quote#2\hyper@quote>}%
10324   \else
10325     \@Localurlfalse
10326     \begingroup
10327       \hyper@chars
10328       \special{!aref \HyperDestNameFilter{#2}}%
10329     \endgroup
10330   \fi
10331 }
10332 \def\hyper@linkend{%

```

```

10333 \if@Localurl
10334 \special{!endaref}%
10335 \else
10336 \special{!direct </a>}%
10337 \fi
10338 }
10339 \Hy@WrapperDef\hyper@anchorstart#1{%
10340 \Hy@SaveLastskip
10341 \Hy@VerboseAnchor{#1}%
10342 \begingroup
10343 \hyper@chars
10344 \special{!aname #1}%
10345 \special{!direct <a name=%
10346 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10347 \endgroup
10348 \Hy@activeanchortrue
10349 }
10350 \def\hyper@anchorend{%
10351 \special{!direct </a>}%
10352 \Hy@activeanchorfalse
10353 \Hy@RestoreLastskip
10354 }
10355 \Hy@WrapperDef\hyper@anchor#1{%
10356 \Hy@SaveLastskip
10357 \Hy@VerboseAnchor{#1}%
10358 \begingroup
10359 \let\protect=\string
10360 \hyper@chars
10361 \leavevmode
10362 \special{!aname #1}%
10363 \special{!direct <a name=%
10364 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10365 \endgroup
10366 \Hy@activeanchortrue
10367 \bgroup\anchor@spot\egroup
10368 \special{!direct </a>}%
10369 \Hy@activeanchorfalse
10370 \Hy@RestoreLastskip
10371 }
10372 \def\@Form[#1]{%
10373 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10374 }
10375 \let\@endForm\ltx@empty
10376 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10377 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10378 }
10379 \def\@TextField[#1]#2{% parameters, label
10380 \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10381 }
10382 \def\@CheckBox[#1]#2{% parameters, label
10383 \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10384 }
10385 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10386 \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10387 }
10388 \def\@PushButton[#1]#2{% parameters, label
10389 \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%

```

```

10390 }
10391 \def\@Reset[#1]#2{%
10392   \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10393 }
10394 \def\@Submit[#1]#2{%
10395   \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10396 }
10397 \</vtexhtml>
10398 \<*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.

```

10399 \ifx\mediaheight\@undefined
10400 \else
10401   \ifx\mediaheight\relax
10402   \else
10403     \ifHy@setpagesize
10404       \providecommand*\VTeXInitMediaSize{%
10405         \ltx@ifundefined{stockwidth}{%
10406           \ifdim\paperheight>0pt %
10407             \setlength\mediaheight\paperheight
10408           \fi
10409           \ifdim\paperheight>0pt %
10410             \setlength\mediawidth\paperwidth
10411           \fi
10412         }{%
10413           \ifdim\stockheight>0pt %
10414             \setlength\mediaheight\stockheight
10415           \fi
10416           \ifdim\stockwidth>0pt %
10417             \setlength\mediawidth\stockwidth
10418           \fi
10419         }%
10420       }%
10421     \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10422   \fi
10423   \Hy@DisableOption{setpagesize}%
10424 \fi
10425 \fi

```

Older versions of VTeX require `xyz` in lower case.

```

10426 \providecommand*\@pdfview{xyz}
10427 \providecommand*\@pdfborder{0 0 1}
10428 \providecommand*\@pdfborderstyle{}
10429 \let\CurrentBorderColor\@linkbordercolor
10430 \Hy@WrapperDef\hyper@anchor#1{%
10431   \Hy@SaveLastskip
10432   \Hy@VerboseAnchor{#1}%
10433   \begingroup
10434     \let\protect=\string
10435     \hyper@chars
10436     \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10437   \endgroup
10438   \Hy@activeanchortrue
10439   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10440   \Hy@activeanchorfalse
10441   \Hy@RestoreLastskip

```

```

10442 }
10443 \Hy@WrapperDef\hyper@anchorstart#1{%
10444 \Hy@SaveLastskip
10445 \Hy@VerboseAnchor{#1}%
10446 \begingroup
10447 \hyper@chars
10448 \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10449 \endgroup
10450 \Hy@activeanchortrue
10451 }
10452 \def\hyper@anchorend{%
10453 \Hy@activeanchorfalse
10454 \Hy@RestoreLastskip
10455 }
10456 \def\@urltype{url}
10457 \def\Hy@undefinedname{UNDEFINED}
10458 \def\hyper@linkstart#1#2{%
10459 \Hy@VerboseLinkStart{#1}{#2}%
10460 \Hy@pstringdef\Hy@pstringURI{#2}%
10461 \expandafter\Hy@colorlink\csname @#1color\endcsname
10462 \ltx@ifundefined{#@#1bordercolor}{%
10463 \let\CurrentBorderColor\relax
10464 }{%
10465 \edef\CurrentBorderColor{%
10466 \csname @#1bordercolor\endcsname
10467 }%
10468 }%
10469 \def\Hy@tempa{#1}%
10470 \ifx\Hy@tempa\@urltype
10471 \special{!%
10472 aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10473 \ifHy@href@ismap
10474 /IsMap true%
10475 \fi
10476 \Hy@href@nextactionraw
10477 >,%
10478 a=<%
10479 \ifHy@pdfa /F 4\fi
10480 \Hy@setpdfborder
10481 \ifx\CurrentBorderColor\relax
10482 \else
10483 /C [\CurrentBorderColor]%
10484 \fi
10485 >%
10486 }%
10487 \else
10488 \protected@edef\Hy@testname{#2}%
10489 \ifx\Hy@testname\@empty
10490 \Hy@Warning{%
10491 Empty destination name,\MessageBreak
10492 using '\Hy@undefinedname'%
10493 }%
10494 \let\Hy@testname\Hy@undefinedname
10495 \fi
10496 \special{!%
10497 aref \expandafter\HyperDestNameFilter
10498 \expandafter{\Hy@testname};%

```

```

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 \fi
10509 }
10510 \def\hyper@linkend{%
10511     \special{!endaref}%
10512     \Hy@endcolorlink
10513 }
10514 \def\hyper@linkfile#1#2#3{%
10515     \leavevmode
10516     \def\Hy@pstringF{#2}%
10517     \Hy@CleanupFile\Hy@pstringF
10518     \special{!%
10519         aref <%
10520         \ifnum\Hy@VTeXversion>753 \ifHy@pdfnewwindow n\fi\fi
10521         f=\Hy@pstringF>#3;%
10522         a=<%
10523             \ifHy@pdfa /F 4\fi
10524             \Hy@setpdfborder
10525             \ifx\@filebordercolor\relax
10526                 \else
10527                     /C [\@filebordercolor]%
10528                 \fi
10529             >%
10530         }%
10531         \Hy@colorlink\@filecolor
10532         #1\Hy@xspace@end
10533         \Hy@endcolorlink
10534         \special{!endaref}%
10535     }
10536 \def\hyper@linkurl#1#2{%
10537     \begingroup
10538     \Hy@pstringdef\Hy@pstringURI{#2}%
10539     \hyper@chars
10540     \leavevmode
10541     \special{!%
10542         aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10543         \ifHy@href@ismap
10544             /IsMap true%
10545         \fi
10546         \Hy@href@nextactionraw
10547         >;%
10548         a=<%
10549             \ifHy@pdfa /F 4\fi
10550             \Hy@setpdfborder
10551             \ifx\@urlbordercolor\relax
10552                 \else
10553                     /C [\@urlbordercolor]%
10554                 \fi
10555             >%

```

```

10556 }%
10557 \Hy@colorlink\@urlcolor
10558 #1\Hy@xspace@end
10559 \Hy@endcolorlink
10560 \special{!endaref}%
10561 \endgroup
10562 }
10563 \def\hyper@link#1#2#3{%
10564 \Hy@VerboseLinkStart{#1}{#2}%
10565 \ltx@ifundefined{#1bordercolor}{%
10566 \let\CurrentBorderColor\relax
10567 }{%
10568 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10569 }%
10570 \leavevmode
10571 \protected@edef\Hy@testname{#2}%
10572 \ifx\Hy@testname\@empty
10573 \Hy@Warning{%
10574 Empty destination name,\MessageBreak
10575 using '\Hy@undefinedname'%
10576 }%
10577 \let\Hy@testname\Hy@undefinedname
10578 \fi
10579 \special{!%
10580 aref \expandafter\HyperDestNameFilter
10581 \expandafter{\Hy@testname};%
10582 a=<%
10583 \ifHy@pdfa /F 4\fi
10584 \Hy@setpdfborder
10585 \ifx\CurrentBorderColor\relax
10586 \else
10587 /C [\CurrentBorderColor]%
10588 \fi
10589 >%
10590 }%
10591 \expandafter
10592 \Hy@colorlink\csname @#1color\endcsname
10593 #3\Hy@xspace@end
10594 \Hy@endcolorlink
10595 \special{!endaref}%
10596 }
10597 \def\hyper@image#1#2{%
10598 \hyper@linkurl{#2}{#1}%
10599 }
10600 \def\@hyper@launch run:#1\#2#3{%
10601 \Hy@pstringdef\Hy@pstringF{#1}%
10602 \Hy@pstringdef\Hy@pstringP{#3}%
10603 \leavevmode
10604 \special{!aref %
10605 <u=%
10606 /Type/Action%
10607 /S/Launch%
10608 /F(\Hy@pstringF)%
10609 \Hy@SetNewWindow
10610 \ifx\#3\%
10611 \else
10612 /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%

```



```

10613 \fi
10614 \Hy@href@nextactionraw
10615 >,%
10616 a=<%
10617 \ifHy@pdfa /F 4\fi
10618 \Hy@setpdfborder
10619 \ifx\@runbordercolor\relax
10620 \else
10621 /C[\@runbordercolor]%
10622 \fi
10623 >%
10624 }%
10625 \Hy@colorlink\@runcolor
10626 #2\Hy@xspace@end
10627 \Hy@endcolorlink
10628 \special{!endaref}%
10629 }
10630 \def\Acrobatmenu#1#2{%
10631 \Hy@Acrobatmenu{#1}{#2}{%
10632 \special{!%
10633 aref <u=/S /Named /N /#1>;%
10634 a=<%
10635 \ifHy@pdfa /F 4\fi
10636 \Hy@setpdfborder
10637 \ifx\@menubordercolor\relax
10638 \else
10639 /C[\@menubordercolor]%
10640 \fi
10641 >%
10642 }%
10643 \Hy@colorlink\@menucolor
10644 #2\Hy@xspace@end
10645 \Hy@endcolorlink
10646 \special{!endaref}%
10647 }%
10648 }

```

The following code (transition effects) is made by Alex Kostin.

The code below makes sense for V<sub>T</sub>E<sub>X</sub> 7.02 or later.

Please never use `\ifundefined{VTeXversion}{..}{..}` *globally*.

```

10649 \ifnum\Hy@VTeXversion<702 %
10650 \else
10651 \def\hyper@pagetransition{%
10652 \ifx\@pdfpagetransition\relax
10653 \else
10654 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

1. Does an old entry have to be deleted? 2. If 1=yes, how to delete?

```

10655 \else
10656 \hvtex@parse@trans\@pdfpagetransition
10657 \fi
10658 \fi
10659 }%

```

I have to write an “honest” parser to convert raw PDF code into V<sub>T</sub>E<sub>X</sub> \special. (AVK)

Syntax of V<sub>T</sub>E<sub>X</sub> `\special{!trans <transition_effect>}`:

```

<transition_effect> ::= <transition_style>[,<transition_duration>]
<transition_style> ::= <Blinds_effect> | <Box_effect> |
    <Dissolve_effect> | <Glitter_effect> |
    <Split_effect> | <Wipe_effect>
<Blinds_effect> ::= B[<effect_dimension>]
<Box_effect> ::= X[<effect_motion>]
<Dissolve_effect> ::= D
<Glitter_effect> ::= G[<effect_direction>]
<Split_effect> ::= S[<effect_motion>][<effect_dimension>]
<Wipe_effect> ::= W[<effect_direction>]
<Replace_effect> ::= R
<effect_direction> ::= <number>
<effect_dimension> ::= H | V
<effect_motion> ::= I | O
<transition_duration> ::= <number>

```

Transition codes:

```

10660 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10661 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10662 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10663 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10664 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10665 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10666 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

10667 \def\hvtex@par@dimension{/Dm}%
10668 \def\hvtex@par@direction{/Di}%
10669 \def\hvtex@par@duration{/D}%
10670 \def\hvtex@par@motion{/M}%

```

Tokenizer:

```

10671 \def\hvtex@gettoken{%
10672   \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10673 }%

```

Notice that tokens in the input buffer must be space delimited.

```

10674 \def\hvtex@gettoken@#1 #2\@nil{%
10675   \edef\hvtex@token{#1}%
10676   \edef\hvtex@buffer{#2}%
10677 }%
10678 \def\hvtex@parse@trans#1{%

```

Initializing code:

```

10679 \let\hvtex@trans@code\@empty
10680 \let\hvtex@param@dimension\@empty
10681 \let\hvtex@param@direction\@empty
10682 \let\hvtex@param@duration\@empty
10683 \let\hvtex@param@motion\@empty
10684 \edef\hvtex@buffer{#1\space}%

```

First token is the PDF transition name without escape.

```

10685 \hvtex@gettoken
10686 \ifx\hvtex@token\@empty

```

Leading space(s)?

```

10687   \ifx\hvtex@buffer\@empty

```

The buffer is empty, nothing to do.

```

10688   \else

```

```

10689     \hvtex@gettoken
10690     \fi
10691     \fi
10692     \csname hvtex@trans@effect@\hvtex@token\endcsname

```

Now is time to parse optional parameters.

```

10693     \hvtex@trans@params
10694 }%

```

Reentrant macro to parse optional parameters.

```

10695 \def\hvtex@trans@params{%
10696   \ifx\hvtex@buffer\@empty
10697   \else
10698     \hvtex@gettoken
10699     \let\hvtex@trans@par\hvtex@token
10700     \ifx\hvtex@buffer\@empty
10701     \else
10702       \hvtex@gettoken
10703       \ifx\hvtex@trans@par\hvtex@par@duration

```

/D is the effect duration in seconds. V<sub>TEX</sub> special takes it in milliseconds.

```

10704       \let\hvtex@param@duration\hvtex@token
10705     \else \ifx\hvtex@trans@par\hvtex@par@motion

```

/M can be either /I or /O

```

10706       \expandafter\edef\expandafter\hvtex@param@motion
10707       \expandafter{\expandafter\@gobble\hvtex@token}%
10708     \else \ifx\hvtex@trans@par\hvtex@par@dimension

```

/Dm can be either /H or /V

```

10709       \expandafter\edef\expandafter\hvtex@param@dimension
10710       \expandafter{\expandafter\@gobble\hvtex@token}%
10711     \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).

```

10712       \let\hvtex@param@direction\hvtex@token
10713       \fi\fi\fi
10714     \fi
10715     \fi
10716     \ifx\hvtex@buffer\@empty
10717     \let\next\hvtex@produce@trans
10718     \else
10719     \let\next\hvtex@trans@params
10720     \fi
10721     \next
10722 }%

```

Merge <transition\_effect> and issue the special when possible. Too lazy to validate optional parameters.

```

10723 \def\hvtex@produce@trans{%
10724   \let\vtex@trans@special\@empty
10725   \if S\hvtex@trans@code
10726     \edef\vtex@trans@special{\hvtex@trans@code
10727       \hvtex@param@dimension\hvtex@param@motion}%
10728   \else\if B\hvtex@trans@code
10729     \edef\vtex@trans@special{%
10730       \hvtex@trans@code\hvtex@param@dimension
10731     }%
10732   \else\if X\hvtex@trans@code

```

```

10733 \edef\vtex@trans@special{%
10734   \hvtex@trans@code\hvtex@param@motion
10735 }%
10736 \else\if W\hvtex@trans@code
10737   \edef\vtex@trans@special{%
10738     \hvtex@trans@code\hvtex@param@direction
10739   }%
10740 \else\if D\hvtex@trans@code
10741   \let\vtex@trans@special\hvtex@trans@code
10742 \else\if R\hvtex@trans@code
10743   \let\vtex@trans@special\hvtex@trans@code
10744 \else\if G\hvtex@trans@code
10745   \edef\vtex@trans@special{%
10746     \hvtex@trans@code\hvtex@param@direction
10747   }%
10748 \fi\fi\fi\fi\fi\fi
10749 \ifx\vtex@trans@special\@empty
10750 \else
10751   \ifx\hvtex@param@duration\@empty
10752   \else
10753     \setlength{\dimen@}{\hvtex@param@duration\p@}%

```

I'm not guilty of possible overflow.

```

10754   \multiply\dimen@\@m
10755   \edef\vtex@trans@special{%
10756     \vtex@trans@special,\strip@pt\dimen@
10757   }%
10758 \fi

```

And all the mess is just for this.

```

10759   \special{!trans \vtex@trans@special}%
10760 \fi
10761 }%
10762 \def\hyper@pageduration{%
10763   \ifx\@pdfpageduration\relax
10764   \else
10765     \ifx\@pdfpageduration\@empty
10766     \special{!duration-}%
10767   \else
10768     \special{!duration \@pdfpageduration}%
10769   \fi
10770 \fi
10771 }%
10772 \def\hyper@pagehidden{%
10773   \ifHy@useHidKey
10774     \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
10775   \fi
10776 }%
10777 \g@addto@macro\Hy@EveryPageBoxHook{%
10778   \hyper@pagetransition
10779   \hyper@pageduration
10780   \hyper@pagehidden
10781 }%
10782 \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

```

10783 \ifx\@pdfproducer\relax
10784 \def\@pdfproducer{VTeX}%
10785 \ifnum\Hy@VTeXversion>\z@
10786 \count@\VTeXversion
10787 \divide\count@ 100 %
10788 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10789 \multiply\count@ -100 %
10790 \advance\count@\VTeXversion
10791 \edef\@pdfproducer{%
10792 \@pdfproducer
10793 .\ifnum\count@<10 0\fi\the\count@
10794 \ifx\VTeXOS\@undefined\else
10795 \ifnum\VTeXOS>0 %
10796 \ifnum\VTeXOS<6 %
10797 \space%
10798 \ifcase\VTeXOS
10799 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10800 \fi
10801 )%
10802 \fi
10803 \fi
10804 \fi
10805 ,\space
10806 \ifnum\OpMode=\@ne PDF\else PS\fi
10807 \space backend%
10808 \ifx\gexmode\@undefined\else
10809 \ifnum\gexmode>\z@\space with GeX\fi
10810 \fi
10811 }%
10812 \fi
10813 \fi

```

Current `!pdfinfo` key syntax:

Key	Field	Type
<b>a</b>	<b>A</b> uthor	String
<b>b</b>	<b>C</b> rop <b>B</b> ox	String
<b>c</b>	<b>C</b> reator	String
<b>k</b>	<b>K</b> eywords	String
<b>l</b>	<b>P</b> age <b>L</b> ayout	PS
<b>p</b>	<b>P</b> age <b>M</b> ode	PS
<b>r</b>	<b>P</b> roducer	String
<b>s</b>	<b>S</b> ubject	String
<b>t</b>	<b>T</b> itle	String
<b>u</b>	<b>U</b> RI	PS
<b>v</b>	<b>V</b> iew <b>P</b> references	PS

Note: PS objects that are dicts are in `<<<...>>>` (yuck; no choice).

```

10814 \def\PDF@SetupDoc{%
10815 \ifx\@pdfpagescrop\@empty
10816 \else

```

```

10817 \special{!pdfinfo b=<\@pdfpagescrop>}%
10818 \fi
10819 \ifx\@pdfstartpage\@empty
10820 \else
10821 \ifx\@pdfstartview\@empty
10822 \else
10823 \special{!onopen Page\@pdfstartpage}%
10824 \fi
10825 \fi
10826 \special{!pdfinfo p=</\@pdfpagemode>}%
10827 \ifx\@baseurl\@empty
10828 \else
10829 \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
10830 \fi
10831 \special{!pdfinfo v=<<<%
10832 \ifHy@pdftoolbar\else /HideToolbar true\fi
10833 \ifHy@pdfmenubar\else /HideMenubar true\fi
10834 \ifHy@pdfwindowui\else /HideWindowUI true\fi
10835 \ifHy@pdfwindow /FitWindow true\fi
10836 \ifHy@pdfcenterwindow /CenterWindow true\fi
10837 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10838 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10839 \Hy@UseNameKey{Direction}\@pdfdirection
10840 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10841 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10842 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10843 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10844 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10845 \Hy@UseNameKey{Duplex}\@pdfduplex
10846 \ifx\@pdfpicktraybypdfsize\@empty
10847 \else
10848 /PickTrayByPDFSize \@pdfpicktraybypdfsize
10849 \fi
10850 \ifx\@pdfprintpagerange\@empty
10851 \else
10852 /PrintPageRange[\@pdfprintpagerange]%
10853 \fi
10854 \ifx\@pdfnumcopies\@empty
10855 \else
10856 /NumCopies \@pdfnumcopies
10857 \fi
10858 >>>}%
10859 \ifx\@pdfpagelayout\@empty
10860 \else
10861 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
10862 \fi
10863 }%
10864 \HyInfo@AddonUnsupportedtrue
10865 \def\PDF@FinishDoc{%
10866 \Hy@UseMaketitleInfos
10867 \HyInfo@TrappedUnsupported
10868 \special{!pdfinfo a=<\@pdfauthor>}%
10869 \special{!pdfinfo t=<\@pdftitle>}%
10870 \special{!pdfinfo s=<\@pdfsubject>}%
10871 \special{!pdfinfo c=<\@pdfcreator>}%
10872 \ifx\@pdfproducer\relax
10873 \else

```

```

10874 \special{!pdfinfo r=<\@pdfproducer>}%
10875 \fi
10876 \special{!pdfinfo k=<\@pdfkeywords>}%
10877 \Hy@DisableOption{pdfauthor}%
10878 \Hy@DisableOption{pdftitle}%
10879 \Hy@DisableOption{pdfsubject}%
10880 \Hy@DisableOption{pdfcreator}%
10881 \Hy@DisableOption{pdfcreationdate}%
10882 \Hy@DisableOption{pdfmoddate}%
10883 \Hy@DisableOption{pdfproducer}%
10884 \Hy@DisableOption{pdfkeywords}%
10885 \Hy@DisableOption{pdftrapped}%
10886 \Hy@DisableOption{pdfinfo}%
10887 }
10888 </vtex>

```

## 46.7 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.

```

10889 <dviwindo>\def\literalps@out#1{\special{ps:#1}}%
10890 <package>\providecommand*{\Hy@DistillerDestFix}{}
10891 <*pdfmark | dviwindo>
10892 \def\Hy@DistillerDestFix{%
10893   \begingroup
10894   \let\x\literalps@out

```

The fix has to be passed unchanged through GeX, if VTeX in PostScript mode with GeX is used.

```

10895   \ifnum \@ifundefined{OpMode}{0}{}%
10896     \@ifundefined{gexmode}{0}{}%
10897     \ifnum\gexmode>0 \OpMode\else 0\fi
10898   }>1 %
10899   \def\x##1{%
10900     \immediate\special{!=##1}%
10901   }%
10902   \fi
10903   \x{%
10904     /product where{%
10905       pop %
10906       product(Distiller)search{%
10907         pop pop pop %
10908         version(.)search{%
10909           exch pop exch pop%
10910           (3011)eq{%
10911             gsave %
10912             newpath 0 0 moveto closepath clip%
10913             /Courier findfont 10 scalefont setfont %
10914             72 72 moveto(.)show %
10915             grestore%

```

```

10916         }if%
10917         }{pop}ifelse%
10918         }{pop}ifelse%
10919     }if%
10920 }%
10921 \endgroup
10922 }
10923 </pdfmark | dviwindo>

```

## 46.8 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

```

```

10924 <*pdfmark>
10925 \Hy@breaklinks@unsupported
10926 \def\HyPat@ObjRef{%
10927   \[~{}]+\}%
10928 }
10929 \Hy@WrapperDef\hyper@anchor#1{%
10930   \Hy@SaveLastskip
10931   \Hy@VerboseAnchor{#1}%
10932   \begingroup
10933     \pdfmark[\anchor@spot]{%
10934       pdfmark=/DEST,%
10935       linktype=anchor,%
10936       View=/\@pdfview \@pdfviewparams,%
10937       DestAnchor={#1}%
10938     }%
10939   \endgroup
10940   \Hy@RestoreLastskip
10941 }
10942 \ltx@ifundefined{hyper@anchorstart}{\endinput}
10943 \Hy@WrapperDef\hyper@anchorstart#1{%
10944   \Hy@SaveLastskip
10945   \Hy@VerboseAnchor{#1}%
10946   \literalps@out{H.S}%
10947   \Hy@AllowHyphens
10948   \xdef\hyper@currentanchor{#1}%
10949   \Hy@activeanchortrue
10950 }
10951 \def\hyper@anchorend{%
10952   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10953   \pdfmark{%
10954     pdfmark=/DEST,%
10955     linktype=anchor,%
10956     View=/\@pdfview \@pdfviewparams,%

```



```

10957   DestAnchor=\hyper@currentanchor,%
10958 }%
10959 \Hy@activeanchorfalse
10960 \Hy@RestoreLastskip
10961 }
10962 \def\hyper@linkstart#1#2{%
10963   \Hy@VerboseLinkStart{#1}{#2}%
10964   \ifHy@breaklinks
10965   \else
10966     \leavevmode
10967     \ifmmode
10968       \def\Hy@LinkMath{$}%
10969     \else
10970       \let\Hy@LinkMath\ltx@empty
10971     \fi
10972     \Hy@SaveSpaceFactor
10973     \hbox\bgroup
10974     \Hy@RestoreSpaceFactor
10975     \Hy@LinkMath
10976   \fi
10977   \expandafter\Hy@colorlink\csname @#1color\endcsname
10978   \literalps@out{H.S}%
10979   \Hy@AllowHyphens
10980   \xdef\hyper@currentanchor{#2}%
10981   \gdef\hyper@currentlinktype{#1}%
10982 }
10983 \def\hyper@linkend{%
10984   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
10985   \ltx@ifundefined{@\hyper@currentlinktype bordercolor}{%
10986     \let\Hy@tempcolor\relax
10987   }{%
10988     \edef\Hy@tempcolor{%
10989       \csname @\hyper@currentlinktype bordercolor\endcsname
10990     }%
10991   }%
10992   \pdfmark{%
10993     pdfmark=/ANN,%
10994     linktype=link,%
10995     Subtype=/Link,%
10996     PDFAFlags=4,%
10997     Dest=\hyper@currentanchor,%
10998     AcroHighlight=\@pdfhighlight,%
10999     Border=\@pdfborder,%
11000     BorderStyle=\@pdfborderstyle,%
11001     Color=\Hy@tempcolor,%
11002     Raw=H.B%
11003   }%
11004   \Hy@endcolorlink
11005   \ifHy@breaklinks
11006   \else
11007     \Hy@LinkMath
11008     \Hy@SaveSpaceFactor
11009     \egroup
11010     \Hy@RestoreSpaceFactor
11011   \fi
11012 }

```

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.

```

11013 \begingroup
11014 \catcode'P=12 %
11015 \catcode'T=12 %
11016 \lowercase{\endgroup
11017 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
11018 }
11019 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

`\hyper@pagetransition`

```

11020 \def\hyper@pagetransition{%
11021 \ifx\@pdfpagetransition\relax
11022 \else
11023 \ifx\@pdfpagetransition\@empty
11024 % 1. Does an old entry have to be deleted?
11025 % 2. If 1=yes, how to delete?
11026 \else
11027 \pdfmark{%
11028 pdfmark=/PUT,%
11029 Raw={%
11030 \string{ThisPage\string}%
11031 <</Trans << /S /\@pdfpagetransition\space >> >>%
11032 }%
11033 }%
11034 \fi
11035 \fi
11036 }

```

`\hyper@pageduration`

```

11037 \def\hyper@pageduration{%
11038 \ifx\@pdfpageduration\relax
11039 \else
11040 \ifx\@pdfpageduration\@empty
11041 % 1. Does an old entry have to be deleted?
11042 % 2. If 1=yes, how to delete?
11043 \else
11044 \pdfmark{%
11045 pdfmark=/PUT,%
11046 Raw={%
11047 \string{ThisPage\string}%
11048 <</Dur \@pdfpageduration>>%
11049 }%
11050 }%
11051 \fi
11052 \fi
11053 }

```

`\hyper@pagehidden`

```

11054 \def\hyper@pagehidden{%
11055 \ifHy@useHidKey
11056 \pdfmark{%
11057 pdfmark=/PUT,%
11058 Raw={%
11059 \string{ThisPage\string}%
11060 <</Hid \ifHy@pdfpagehidden true\else false\fi>>%

```

```

11061 }%
11062 }%
11063 \fi
11064 }

11065 \g@addto@macro\Hy@EveryPageBoxHook{%
11066 \hyper@pagetransition
11067 \hyper@pageduration
11068 \hyper@pagehidden
11069 }

11070 \def\hyper@image#1#2{%
11071 \hyper@linkurl{#2}{#1}%
11072 }

11073 \def\Hy@undefinedname{UNDEFINED}
11074 \def\hyper@link#1#2#3{%
11075 \Hy@VerboseLinkStart{#1}{#2}%
11076 \ltx@ifundefined{c#1bordercolor}{%
11077 \let\Hy@tempcolor\relax
11078 }{%
11079 \edef\Hy@tempcolor{\csname c#1bordercolor\endcsname}%
11080 }%
11081 \begingroup
11082 \protected@edef\Hy@testname{#2}%
11083 \ifx\Hy@testname\@empty
11084 \Hy@Warning{%
11085 Empty destination name,\MessageBreak
11086 using '\Hy@undefinedname'%
11087 }%
11088 \let\Hy@testname\Hy@undefinedname
11089 \fi
11090 \pdfmark[{#3}]{%
11091 Color=\Hy@tempcolor,%
11092 linktype={#1},%
11093 AcroHighlight=\@pdfhighlight,%
11094 Border=\@pdfborder,%
11095 BorderStyle=\@pdfborderstyle,%
11096 pdfmark=/ANN,%
11097 Subtype=/Link,%
11098 PDFAFlags=4,%
11099 Dest=\Hy@testname
11100 }%
11101 \endgroup
11102 }

11103 \newtoks\pdf@docset
11104 \def\PDF@FinishDoc{%
11105 \Hy@UseMaketitleInfos
11106 \Hy@Info@GenerateAddons
11107 \let\Hy@temp\@empty
11108 \ifx\@pdfcreationdate\@empty
11109 \else
11110 \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
11111 \fi
11112 \ifx\@pdfmoddate\@empty
11113 \else
11114 \expandafter\def\expandafter\Hy@temp\expandafter{%
11115 \Hy@temp
11116 ModDate=\@pdfmoddate,%
11117 }%

```

```

11118 \fi
11119 \ifx\@pdfproducer\relax
11120 \else
11121 \expandafter\def\expandafter\Hy@temp\expandafter{%
11122 \Hy@temp
11123 Producer=\@pdfproducer,%
11124 }%
11125 \fi
11126 \expandafter
11127 \pdfmark\expandafter{%
11128 \Hy@temp
11129 pdfmark=/DOCINFO,%
11130 Title=\@pdftitle,%
11131 Subject=\@pdfsubject,%
11132 Creator=\@pdfcreator,%
11133 Author=\@pdfauthor,%
11134 Keywords=\@pdfkeywords,%
11135 Trapped=\@pdftrapped
11136 }%
11137 \ifx\HyInfo@Addons\@empty
11138 \else
11139 \pdfmark{%
11140 pdfmark=/DOCINFO,%
11141 Raw={\HyInfo@Addons}%
11142 }%
11143 \fi
11144 \Hy@DisableOption{pdfauthor}%
11145 \Hy@DisableOption{pdftitle}%
11146 \Hy@DisableOption{pdfsubject}%
11147 \Hy@DisableOption{pdfcreator}%
11148 \Hy@DisableOption{pdfcreationdate}%
11149 \Hy@DisableOption{pdfmoddate}%
11150 \Hy@DisableOption{pdfproducer}%
11151 \Hy@DisableOption{pdfkeywords}%
11152 \Hy@DisableOption{pdftrapped}%
11153 \Hy@DisableOption{pdfinfo}%
11154 }
11155 \def\PDF@SetupDoc{%
11156 \def\Hy@temp{}%
11157 \ifx\@pdfstartpage\@empty
11158 \else
11159 \ifx\@pdfstartview\@empty
11160 \else
11161 \edef\Hy@temp{%
11162 ,Page=\@pdfstartpage
11163 ,View=\@pdfstartview
11164 }%
11165 \fi
11166 \fi
11167 \edef\Hy@temp{%
11168 \noexpand\pdfmark{%
11169 pdfmark=/DOCVIEW,%
11170 PageMode=/\@pdfpagemode
11171 \Hy@temp
11172 }%
11173 }%
11174 \Hy@temp

```

```

11175 \ifx\@pdfpagescrop\@empty
11176 \else
11177 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11178 \fi
11179 \edef\Hy@temp{%
11180 \ifHy@pdftoolbar\else /HideToolbar true\fi
11181 \ifHy@pdfmenubar\else /HideMenubar true\fi
11182 \ifHy@pdfwindowui\else /HideWindowUI true\fi
11183 \ifHy@pdffitwindow /FitWindow true\fi
11184 \ifHy@pdfcenterwindow /CenterWindow true\fi
11185 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
11186 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11187 \Hy@UseNameKey{Direction}\@pdfdirection
11188 \Hy@UseNameKey{ViewArea}\@pdfviewarea
11189 \Hy@UseNameKey{ViewClip}\@pdfviewclip
11190 \Hy@UseNameKey{PrintArea}\@pdfprintarea
11191 \Hy@UseNameKey{PrintClip}\@pdfprintclip
11192 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11193 \Hy@UseNameKey{Duplex}\@pdfduplex
11194 \ifx\@pdfpicktraybypdfsize\@empty
11195 \else
11196 /PickTrayByPDFSize \@pdfpicktraybypdfsize
11197 \fi
11198 \ifx\@pdfprintpagerange\@empty
11199 \else
11200 /PrintPageRange[\@pdfprintpagerange]%
11201 \fi
11202 \ifx\@pdfnumcopies\@empty
11203 \else
11204 /NumCopies \@pdfnumcopies
11205 \fi
11206 }%
11207 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11208 \pdfmark{%
11209 pdfmark=/PUT,%
11210 Raw={%
11211 \string{Catalog\string}<<%
11212 \ifx\Hy@temp\@empty
11213 \else
11214 /ViewerPreferences<<\Hy@temp>>%
11215 \fi
11216 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11217 \ifx\@pdflang\@empty
11218 \else
11219 /Lang(\@pdflang)%
11220 \fi
11221 \ifx\@baseurl\@empty
11222 \else
11223 /URI<</Base(\Hy@pstringB)>>%
11224 \fi
11225 >>%
11226 }%
11227 }%
11228 }
11229 </pdfmark>
11230 <*\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.

```

11231 \newif\ifHy@pdfmarkerror
11232 \def\pdfmark{\ifnextchar{\pdfmark@}\pdfmark@{}}
11233 \def\pdfmark@[#1]#2{%
11234   \Hy@pdfmarkerrorfalse
11235   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
11236   \@processme
11237   \let\pdf@type\relax
11238   \kvsetkeys{PDF}{#2}%
11239   \ifHy@pdfmarkerror
11240   \else
11241     \ifx\pdf@type\relax
11242       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
11243       \ifx\\#1\\%
11244         \else
11245           \pdf@rect{#1}%
11246         \fi
11247       \else
11248         \ifx\\#1\\%
11249           \literalps@out{%
11250             [\the\pdf@toks\space\pdf@type\space pdfmark%
11251             ]%
11252           \else
11253             \ltx@ifundefined{\pdf@linktype color}{%
11254               \Hy@colorlink\@linkcolor
11255             }{%
11256               \expandafter\Hy@colorlink
11257                 \csname @\pdf@linktype color\endcsname
11258             }%
11259             \pdf@rect{#1}%
11260             \literalps@out{%
11261               [\the\pdf@toks\space\pdf@type\space pdfmark%
11262               ]%
11263             \Hy@endcolorlink
11264           \fi
11265         \fi
11266       \fi
11267 }

```

The complicated bit is working out the right enclosing rectangle of some piece of T<sub>E</sub>X 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}

```

```

11268 \newsavebox{\pdf@box}
11269 \providecommand*{\Hy@setouterhbox}{\sbox}
11270 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
11271 \def\Hy@DEST{/DEST}
11272 \def\pdf@rect#1{%
11273   \begingroup
11274     \chardef\x=1 %
11275     \def\Hy@temp{#1}%
11276     \ifx\Hy@temp\ltx@empty
11277       \chardef\x=0 %
11278     \else
11279       \def\y{\anchor@spot}%
11280       \ifx\Hy@temp\y
11281         \def\y{\relax}%
11282       \ifx\anchor@spot\y
11283         \chardef\x=0 %
11284       \fi
11285     \fi
11286   \fi
11287   \expandafter\endgroup
11288   \ifcase\x
11289     \literalps@out{H.S}%
11290     \literalps@out{H.R}%
11291   \else
11292     \leavevmode
11293     \Hy@SaveSpaceFactor
11294     \ifmmode
11295       \def\Hy@LinkMath{$}%
11296     \else
11297       \let\Hy@LinkMath\ltx@empty
11298     \fi
11299     \ifHy@breaklinks
11300       \Hy@setouterhbox\pdf@box{%
11301         \Hy@RestoreSpaceFactor
11302         \Hy@LinkMath
11303         \Hy@AllowHyphens#1\Hy@xspace@end
11304         \Hy@LinkMath
11305         \Hy@SaveSpaceFactor
11306       }%
11307     \else
11308       \sbox\pdf@box{%
11309         \Hy@RestoreSpaceFactor
11310         \Hy@LinkMath
11311         #1\Hy@xspace@end
11312         \Hy@LinkMath
11313         \Hy@SaveSpaceFactor
11314       }%
11315     \fi
11316     \dimen@ht\pdf@box
11317     \ifdim\dp\pdf@box=\z@
11318       \literalps@out{H.S}%
11319     \else
11320       \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
11321     \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...).

```

11322   \ifHy@breaklinks

```

```

11323 \ifhmode
11324 \Hy@breaklinksunhbox\pdf@box
11325 \else
11326 \box\pdf@box
11327 \fi
11328 \else
11329 \expandafter\box\pdf@box
11330 \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

11331 \ifdim\dimen@=\z@
11332 \literalps@out{H.R}%
11333 \else
11334 \raise\dimen@ \hbox{\literalps@out{H.R}}%
11335 \fi
11336 \Hy@RestoreSpaceFactor
11337 \fi
11338 \ifx\pdf@type\Hy@DEST
11339 \else
11340 \pdf@addtoksx{H.B}%
11341 \fi
11342 }

```

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.

```

11343 \newtoks\pdf@toks
11344 \newtoks\pdf@defaulttoks
11345 \pdf@defaulttoks={}
11346 \def\pdf@addtoks#1#2{%
11347 \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}}%
11348 \@processme
11349 }
11350 \def\pdf@addtoksx#1{%
11351 \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}}%
11352 \@processme
11353 }
11354 \def\PDFdefaults#1{%
11355 \pdf@defaulttoks={#1}%
11356 }

```

This is the list of allowed keys. See the Acrobat manual for an explanation.

```

11357 % what is the type of pdfmark?
11358 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11359 % what is the link type?
11360 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11361 \def\pdf@linktype{link}
11362 % parameter is a stream of PDF
11363 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
11364 % parameter is a name
11365 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11366 % parameter is a array
11367 \define@key{PDF}{Border}{%
11368 \edef\Hy@temp{#1}%

```



```

11369 \ifx\Hy@temp\@empty
11370 \else
11371 \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11372 \fi
11373 }
11374 \let\Hy@BorderArrayPatch\@empty
11375 % parameter is a dictionary
11376 \define@key{PDF}{BorderStyle}{%
11377 \edef\Hy@temp{#1}%
11378 \ifx\Hy@temp\@empty
11379 \else
11380 \pdf@addtoks{<<#1>>}{BS}%
11381 \fi
11382 }
11383 % parameter is a array
11384 \define@key{PDF}{Color}{%
11385 \ifx\relax#1\relax
11386 \else
11387 \pdf@addtoks{[#1]}{Color}% hash-ok
11388 \fi
11389 }
11390 % parameter is a string
11391 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11392 % parameter is a integer
11393 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11394 % parameter is a array
11395 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}}% hash-ok
11396 % parameter is a string
11397 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11398 % parameter is a string or file
11399 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}
11400 % parameter is a destination
11401 \define@key{PDF}{Dest}{%
11402 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11403 \ifx\Hy@pstringDest\@empty
11404 \Hy@pdfmarkerrortrue
11405 \Hy@Warning{Destination with empty name ignored}%
11406 \else
11407 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11408 \fi
11409 }
11410 \define@key{PDF}{DestAnchor}{%
11411 \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11412 \ifx\Hy@pstringDest\@empty
11413 \Hy@pdfmarkerrortrue
11414 \Hy@Warning{Destination with empty name ignored}%
11415 \else
11416 \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11417 \fi
11418 }
11419 % parameter is a string
11420 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11421 % parameter is a string
11422 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11423 % parameter is a int
11424 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11425 \define@key{PDF}{PDFAFlags}{%

```

```

11426 \ifHy@pdfa
11427 \pdf@addtoks{#1}{F}%
11428 \fi
11429 }
11430 % parameter is a name
11431 \define@key{PDF}{AcroHighlight}{%
11432 \begingroup
11433 \edef\x{#1}%
11434 \expandafter\endgroup\ifx\x\@empty
11435 \else
11436 \pdf@addtoks{#1}{H}%
11437 \fi
11438 }
11439 % parameter is a string
11440 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11441 % parameter is a string
11442 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11443 % parameter is a string
11444 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11445 % parameter is a string
11446 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11447 % parameter is a Boolean
11448 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11449 % parameter is a integer or name
11450 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11451 % parameter is a name
11452 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11453 % parameter is a string
11454 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11455 % parameter is a array
11456 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok
11457 % parameter is a integer
11458 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
11459 % parameter is a name
11460 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11461 % parameter is a string
11462 \define@key{PDF}{Title}{\pdf@addtoks{(#1)}{Title}}
11463 % parameter is a string
11464 \define@key{PDF}{Unix}{\pdf@addtoks{(#1)}{Unix}}
11465 % parameter is a string
11466 \define@key{PDF}{UnixFile}{\pdf@addtoks{(#1)}{UnixFile}}
11467 % parameter is an array
11468 \define@key{PDF}{View}{\pdf@addtoks{[#1]}{View}}% hash-ok
11469 % parameter is a string
11470 \define@key{PDF}{WinFile}{\pdf@addtoks{(#1)}{WinFile}}

```

These are the keys used in the DOCINFO section.

```

11471 \define@key{PDF}{Author}{\pdf@addtoks{(#1)}{Author}}
11472 \define@key{PDF}{Creator}{\pdf@addtoks{(#1)}{Creator}}
11473 \define@key{PDF}{CreationDate}{\pdf@addtoks{(#1)}{CreationDate}}
11474 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11475 \define@key{PDF}{Producer}{\pdf@addtoks{(#1)}{Producer}}
11476 \define@key{PDF}{Subject}{\pdf@addtoks{(#1)}{Subject}}
11477 \define@key{PDF}{Keywords}{\pdf@addtoks{(#1)}{Keywords}}
11478 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11479 \define@key{PDF}{Base}{\pdf@addtoks{(#1)}{Base}}
11480 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
11481 \define@key{PDF}{Trapped}{%

```

```

11482 \edef\Hy@temp{#1}%
11483 \ifx\Hy@temp\@empty
11484 \else
11485 \pdf@addtoks{/#1}{Trapped}%
11486 \fi
11487 }
11488
11489 </pdfmarkbase>
11490 <*pdfmark>
11491 \def\Acrobatmenu#1#2{%
11492 \Hy@Acrobatmenu{#1}{#2}{%
11493 \pdfmark[{#2}]{%
11494 linktype=menu,%
11495 pdfmark=/ANN,%
11496 AcroHighlight=\@pdfhighlight,%
11497 Border=\@pdfborder,%
11498 BorderStyle=\@pdfborderstyle,%
11499 Action={<< /Subtype /Named /N /#1 >>},%
11500 Subtype=/Link,%
11501 PDFAFlags=4%
11502 }%
11503 }%
11504 }

```

And now for some useful examples:

```

11505 \def\PDFNextPage{\@ifnextchar{\PDFNextPage@}{\PDFNextPage@[]}%
11506 \def\PDFNextPage@[#1]#2{%
11507 \pdfmark[{#2}]{%
11508 #1,%
11509 Border=\@pdfborder,%
11510 BorderStyle=\@pdfborderstyle,%
11511 Color=.2 .1 .5,%
11512 pdfmark=/ANN,%
11513 Subtype=/Link,%
11514 PDFAFlags=4,%
11515 Page=/Next%
11516 }%
11517 }
11518 \def\PDFPreviousPage{%
11519 \@ifnextchar{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11520 }
11521 \def\PDFPreviousPage@[#1]#2{%
11522 \pdfmark[{#2}]{%
11523 #1,%
11524 Border=\@pdfborder,%
11525 BorderStyle=\@pdfborderstyle,%
11526 Color=.4 .4 .1,%
11527 pdfmark=/ANN,%
11528 Subtype=/Link,%
11529 PDFAFlags=4,%
11530 Page=/Prev%
11531 }%
11532 }
11533 \def\PDFOpen#1{%
11534 \pdfmark{#1,pdfmark=/DOCVIEW}%
11535 }

```

This will only work if you use Distiller 2.1 or higher.

```

11536 \def\hyper@linkurl#1#2{%
11537   \begingroup
11538   \Hy@pstringdef\Hy@pstringURI{#2}%
11539   \hyper@chars
11540   \leavevmode
11541   \pdfmark[{#1}]{%
11542     pdfmark=/ANN,%
11543     linktype=url,%
11544     AcroHighlight=\@pdfhighlight,%
11545     Border=\@pdfborder,%
11546     BorderStyle=\@pdfborderstyle,%
11547     Color=\@urlbordercolor,%
11548     Action={<<%
11549       /Subtype/URI%
11550       /URI(\Hy@pstringURI)%
11551       \ifHy@href@ismap
11552         /IsMap true%
11553       \fi
11554     >>},%
11555     Subtype=/Link,%
11556     PDFAFlags=4%
11557   }%
11558 \endgroup
11559 }
11560 \def\hyper@linkfile#1#2#3{%
11561   \begingroup
11562   \def\Hy@pstringF{#2}%
11563   \Hy@CleanupFile\Hy@pstringF
11564   \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11565   \Hy@pstringdef\Hy@pstringD{#3}%
11566   \Hy@MakeRemoteAction
11567   \leavevmode
11568   \pdfmark[{#1}]{%
11569     pdfmark=/ANN,%
11570     Subtype=/Link,%
11571     PDFAFlags=4,%
11572     AcroHighlight=\@pdfhighlight,%
11573     Border=\@pdfborder,%
11574     BorderStyle=\@pdfborderstyle,%
11575     linktype=file,%
11576     Color=\@filebordercolor,%
11577     Action={%
11578       <<%
11579       /S/GoToR%
11580       \Hy@SetNewWindow
11581       /F(\Hy@pstringF)%
11582       /D%
11583       \ifx\#3\%
11584         [\Hy@href@page\@pdfremotestartview]%
11585       \else
11586         (\Hy@pstringD)cvn%
11587       \fi
11588       \Hy@href@nextactionraw
11589     >>%
11590   }%
11591 }%
11592 \endgroup

```

```

11593 }
11594 \def\@hyper@launch run:#1\#2#3{%
11595   \begingroup
11596     \Hy@pstringdef\Hy@pstringF{#1}%
11597     \Hy@pstringdef\Hy@pstringP{#3}%
11598     \leavevmode
11599     \pdfmark[{#2}]{%
11600       pdfmark=/ANN,%
11601       Subtype=/Link,%
11602       PDFAFlags=4,%
11603       AcroHighlight=\@pdfhighlight,%
11604       Border=\@pdfborder,%
11605       BorderStyle=\@pdfborderstyle,%
11606       linktype=run,%
11607       Color=\@runbordercolor,%
11608       Action={%
11609         <<%
11610           /S/Launch%
11611           \Hy@SetNewWindow
11612           /F(\Hy@pstringF)%
11613           \ifx\#3\%
11614             \else
11615               /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11616             \fi
11617           \Hy@href@nextactionraw
11618         >>%
11619       }%
11620     }%
11621   \endgroup
11622 }
11623 \pdfmark

```

Unfortunately, some parts of the pdfmark PostScript code depend on vagaries of the dvi driver. We isolate here all the problems.

## 46.9 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.

```

11624 \<dvips>
11625 \providecommand*\XR@ext\{pdf}
11626 \let\Hy@raisedlink\ltx@empty
11627 \def\literalps@out#1{\special{ps:SDict begin #1 end}}%
11628 \def\headerps@out#1{\special{! #1}}%
11629 \input{pdfmark.def}%
11630 \ifx\@pdfproducer\relax
11631   \def\@pdfproducer{dvips + Distiller}%
11632 \fi
11633 \providecommand*\@pdfborder{0 0 1}
11634 \providecommand*\@pdfborderstyle{}
11635 \providecommand*\@pdfview{XYZ}
11636 \providecommand*\@pdfviewparams{ H.V}
11637 \def\Hy@BorderArrayPatch{BorderArrayPatch}
11638 \g@addto@macro\Hy@FirstPageHook{%
11639   \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.

```
11640 /DvipsToPDF{72.27 mul Resolution div} def%
11641 /PDFToDvips{72.27 div Resolution mul} def%
11642 /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.

```
11643 /BorderArrayPatch{%
11644   [exch{%
11645     dup dup type/integertype eq exch type/realtype eq or%
11646     {BPToDvips}if%
11647   }forall]%
11648 }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.

```
11649 /HyperBorder {1 PDFToDvips} def%
11650 /H.V {pdf@hoff pdf@voff null} def%
11651 /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

```
11652 /H.S {%
11653   currentpoint %
11654   HyperBorder add /pdf@lly exch def %
11655   dup DvipsToPDF 72 add /pdf@hoff exch def %
11656   HyperBorder sub /pdf@llx exch def%
11657 } def%
```

The calculation of upper left *y* is done without raising the point in T<sub>E</sub>X, 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

```
11658 /H.L {%
11659   2 sub dup%
11660   /HyperBasePt exch def %
11661   PDFToDvips /HyperBaseDvips exch def %
11662   currentpoint %
11663   HyperBaseDvips sub /pdf@ury exch def%
11664   /pdf@urx exch def%
11665 } def%
11666 /H.A {%
```

```

11667   H.L. %
11668 % | /pdf@voff| = the distance from the top of the page to a point
11669 % | \baselineskip| above the current point in PDF coordinates
11670   currentpoint exch pop %
11671   vsize 72 sub exch DvipsToPDF %
11672   HyperBasePt sub % baseline skip
11673   sub /pdf@voff exch def%
11674 } def%
11675 /H.R. {%
11676   currentpoint %
11677   HyperBorder sub /pdf@ury exch def %
11678   HyperBorder add /pdf@urx exch def %
11679 % | /pdf@voff| = the distance from the top of the page to the current point, in
11680 % PDF coordinates
11681   currentpoint exch pop vsize 72 sub %
11682   exch DvipsToPDF sub /pdf@voff exch def%
11683 } def%
11684 }%
11685 }
11686 \AtBeginShipoutFirst{%
11687   \ifHy@setpagesize
11688     \begingroup
11689       \@ifundefined{stockwidth}{%
11690         \ifdim\paperwidth>\z@
11691           \ifdim\paperheight>\z@
11692             \special{papersize=\the\paperwidth,\the\paperheight}%
11693           \fi
11694         \fi
11695       }{%
11696         \ifdim\stockwidth>\z@
11697           \ifdim\stockheight>\z@
11698             \special{papersize=\the\stockwidth,\the\stockheight}%
11699           \fi
11700         \fi
11701       }%
11702     \endgroup
11703   \fi
11704   \Hy@DisableOption{setpagesize}%
11705 }
11706 </dvips>

```

## 46.10 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.

```

11707 <*vtexpdfmark>
11708 \providecommand*{\XR@ext}{pdf}
11709 \let\Hy@raisedlink\ltx@empty
11710 \def\literalps@out#1{\special{pS:#1}}%
11711 \def\headerps@out#1{\immediate\special{pS:#1}}%
11712 \input{pdfmark.def}%
11713 \ifx\@pdfproducer\relax
11714   \ifnum\OpMode=\@ne
11715     \def\@pdfproducer{VTeX}%
11716   \else

```

```

11717 \def\@pdfproducer{VTeX + Distiller}%
11718 \fi
11719 \fi
11720 \providecommand*\@pdfborder{0 0 1}
11721 \providecommand*\@pdfborderstyle{}
11722 \providecommand*\@pdfview{XYZ}
11723 \providecommand*\@pdfviewparams{ H.V}

11724 \g@addto@macro\Hy@FirstPageHook{%
11725 \headerps@out{%
11726 /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.

```

11727 /HyperBorder {1} def%
11728 /H.V {pdf@hoff pdf@voff null} def%
11729 /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

11730 /H.S {%
11731 currentpoint %
11732 HyperBorder sub%
11733 /pdf@lly exch def %
11734 dup 72 add /pdf@hoff exch def %
11735 HyperBorder sub%
11736 /pdf@llx exch def%
11737 } def%

```

The  $x$  and  $y$  coordinates of the current point, minus the `\baselineskip`:  $\text{pdf@ury} = Y_c + \text{HyperBasePt} + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11738 /H.L {%
11739 2 sub%
11740 /HyperBasePt exch def %
11741 currentpoint %
11742 HyperBasePt add HyperBorder add%
11743 /pdf@ury exch def %
11744 HyperBorder add%
11745 /pdf@urx exch def%
11746 } def%
11747 /H.A {%
11748 H.L %
11749 currentpoint exch pop %
11750 vsize 72 sub exch %
11751 HyperBasePt add add%
11752 /pdf@voff exch def%
11753 } def%

```

$\text{pdf@ury} = Y_c + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11754 /H.R {%
11755 currentpoint %
11756 HyperBorder add%
11757 /pdf@ury exch def %
11758 HyperBorder add%
11759 /pdf@urx exch def %
11760 currentpoint exch pop vsize 72 sub add%
11761 /pdf@voff exch def%
11762 } def%

```



```

11763 }%
11764 }
11765 </vtxpdfmark>

```

## 46.11 Textures

```

11766 <*textures>
11767 \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.

```

11768 \begingroup
11769 \obeylines %
11770 \gdef\Hy@ps@CR{\noexpand
11771 }%
11772 \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`.

```

11773 \def\literalps@out#1{%
11774 \special{postscript 0 0 transform}%
11775 \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11776 }%
11777 %

```

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.

```

11778 \def\headerps@out#1{%
11779 \special{%
11780 prepostscript TeXdict begin\Hy@ps@CR
11781 #1\Hy@ps@CR
11782 end%
11783 }%
11784 }%
11785 %

```

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.

```

11786 \g@addto@macro\Hy@FirstPageHook{%
11787 \headerps@out{%

```

```

11788 /betterpdfmark {%
11789   systemdict begin %
11790     dup /BP eq%
11791     {cleartomark gsave nulldevice []%
11792     {dup /EP eq%
11793     {cleartomark cleartomark grestore}%
11794     {cleartomark}%
11795     ifelse%
11796     }ifelse %
11797   end%
11798 }def\Hy@ps@CR
11799 ____pdfmark__ not{/pdfmark /betterpdfmark load def}if%
11800 }% end of \headerps@out
11801 }% end of \AtBeginShipoutFirst
11802 %
11803 \input{pdfmark.def}%
11804 %
11805 \ifx\@pdfproducer\relax
11806   \def\@pdfproducer{Textures + Distiller}%
11807 \fi
11808 \providecommand*\@pdfborder{0 0 1}
11809 \providecommand*\@pdfborderstyle{}
11810 \providecommand*\@pdfview{XYZ}
11811 \providecommand*\@pdfviewparams{ H.V}
11812 %

```

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  $\text{\TeX}$ .

```

11813 \Hy@AtBeginDocument{%
11814   \headerps@out{%

```

`Textures` lives in normal points, I think. So conversion from one coordinate system to another involves doing nothing.

```

11815   /vsize {\Hy@pageheight} def%
11816   /DvipsToPDF {} def%
11817   /PDFToDvips {} def%
11818   /BPToDvips {} def%
11819   /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11820   /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11821   /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11822   /H.S {%
11823     currentpoint %
11824     HyperBorder add /pdf@lly exch def %
11825     dup DvipsToPDF 72 add /pdf@hoff exch def %
11826     HyperBorder sub /pdf@llx exch def%
11827   } def\Hy@ps@CR
11828   /H.L {%
11829     2 sub %
11830     PDFToDvips /HyperBase exch def %
11831     currentpoint %
11832     HyperBase sub /pdf@ury exch def%
11833     /pdf@urx exch def%
11834   } def\Hy@ps@CR
11835   /H.A {%
11836     H.L %

```

```

11837     currentpoint exch pop %
11838     vsize 72 sub exch DvipsToPDF %
11839     HyperBase sub % baseline skip
11840     sub /pdf@voff exch def%
11841   } def\Hy@ps@CR
11842 /H.R {%
11843     currentpoint %
11844     HyperBorder sub /pdf@ury exch def %
11845     HyperBorder add /pdf@urx exch def %
11846     currentpoint exch pop vsize 72 sub %
11847     exch DvipsToPDF sub /pdf@voff exch def%
11848   } def\Hy@ps@CR
11849 }%
11850 }

11851 \Hy@AtBeginDocument{%
11852   \ifHy@colorlinks
11853     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11854   \fi
11855 }

```

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.

```

11856 \expandafter\let\expandafter\keepPDF@SetupDoc
11857   \csname PDF@SetupDoc\endcsname
11858 \def\PDF@SetupDoc{%
11859   \ifx\@baseurl\@empty
11860   \else
11861     \special{html:<base href="\@baseurl">}%
11862   \fi
11863   \keepPDF@SetupDoc
11864 }

11865 \Hy@WrapperDef\hyper@anchor#1{%
11866   \Hy@SaveLastskip
11867   \Hy@VerboseAnchor{#1}%
11868   \begingroup
11869     \let\protect=\string
11870     \special{html:<a name=%
11871       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11872   \endgroup
11873   \Hy@activeanchortrue
11874   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11875   \special{html:</a>}%
11876   \Hy@activeanchorfalse
11877   \Hy@RestoreLastskip
11878 }

11879 \Hy@WrapperDef\hyper@anchorstart#1{%
11880   \Hy@SaveLastskip
11881   \Hy@VerboseAnchor{#1}%
11882   \begingroup
11883     \hyper@chars
11884     \special{html:<a name=%
11885       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11886   \endgroup
11887   \Hy@activeanchortrue
11888 }
11889 \def\hyper@anchorend{%

```

```

11890 \special{html:</a>}%
11891 \Hy@activeanchorfalse
11892 \Hy@RestoreLastskip
11893 }
11894 \def\@urltype{url}
11895 \def\hyper@linkstart#1#2{%
11896   \Hy@VerboseLinkStart{#1}{#2}%
11897   \expandafter\Hy@colorlink\csname @#1color\endcsname
11898   \def\Hy@tempa{#1}%
11899   \ifx\Hy@tempa\@urltype
11900     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11901   \else
11902     \begingroup
11903     \hyper@chars
11904     \special{%
11905       html:<a href=
11906       \hyper@quote\#\Hy@DestNameFilter{#2}\hyper@quote>%
11907     }%
11908   \endgroup
11909   \fi
11910 }
11911 \def\hyper@linkend{%
11912   \special{html:</a>}%
11913   \Hy@endcolorlink
11914 }
11915 \def\hyper@linkfile#1#2#3{%
11916   \hyper@linkurl{#1}{%
11917     \Hy@linkfileprefix#2\ifx\#3\\ \else\##3\fi
11918   }%
11919 }
11920 \def\hyper@linkurl#1#2{%
11921   \leavevmode
11922   \ifHy@raiselinks
11923     \Hy@SaveSpaceFactor
11924     \Hy@SaveSavedSpaceFactor
11925     \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11926     \Hy@RestoreSavedSpaceFactor
11927     \@linkdim\dp\@tempboxa
11928     \lower\@linkdim\hbox{%
11929       \hyper@chars
11930       \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11931     }%
11932     \Hy@colorlink\@urlcolor
11933     \Hy@RestoreSpaceFactor
11934     #1\Hy@xspace@end
11935     \Hy@SaveSpaceFactor
11936     \@linkdim\ht\@tempboxa
11937     \advance\@linkdim by -6.5\p@
11938     \raise\@linkdim\hbox{\special{html:</a>}}%
11939     \Hy@endcolorlink
11940     \Hy@RestoreSpaceFactor
11941   \else
11942     \begingroup
11943     \hyper@chars
11944     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11945     \Hy@colorlink\@urlcolor#1\Hy@xspace@end
11946     \special{html:</a>}%

```

```

11947 \Hy@endcolorlink
11948 \endgroup
11949 \fi
11950 }

```

Very poor implementation of \hyper@link without considering #1.

```

11951 \def\hyper@link#1#2#3{%
11952 \Hy@VerboseLinkStart{#1}{#2}%
11953 \hyper@linkurl{#3}{\#\HyperDestNameFilter{#2}}%
11954 }
11955 \def\hyper@image#1#2{%
11956 \begingroup
11957 \hyper@chars
11958 \special{html:<img src=\hyper@quote#1\hyper@quote>}%
11959 \endgroup
11960 }
11961 </textures>

```

## 46.12 dvipsone

```

11962 % \subsection{dvipsone driver}
11963 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
11964 % | \special| commands.
11965 (*dvipsone)
11966 \providecommand*\XR@ext{}{pdf}
11967 \let\Hy@raisedlink\ltx@empty
11968 \providecommand*\@pdfborder{0 0 1}
11969 \providecommand*\@pdfborderstyle{}
11970 \def\literalps@out#1{\special{ps:#1}}%
11971 \def\headerps@out#1{\special{headertext=#1}}%
11972 \input{pdfmark.def}%
11973 \ifx\@pdfproducer\relax
11974 \def\@pdfproducer{dvipsone + Distiller}%
11975 \fi
11976 \HyInfo@AddonUnsupportedtrue
11977 \def\PDF@FinishDoc{%
11978 \Hy@UseMaketitleInfos
11979 \HyInfo@TrappedUnsupported
11980 \special{PDF: Keywords \@pdfkeywords}%
11981 \special{PDF: Title \@pdftitle}%
11982 \special{PDF: Creator \@pdfcreator}%
11983 \ifx\@pdfcreationdate\@empty
11984 \else
11985 \special{PDF: CreationDate \@pdfcreationdate}%
11986 \fi
11987 \ifx\@pdfmoddate\@empty
11988 \else
11989 \special{PDF: ModDate \@pdfmoddate}%
11990 \fi
11991 \special{PDF: Author \@pdfauthor}%
11992 \ifx\@pdfproducer\relax
11993 \else
11994 \special{PDF: Producer \@pdfproducer}%
11995 \fi
11996 \special{PDF: Subject \@pdfsubject}%
11997 \Hy@DisableOption{pdfauthor}%
11998 \Hy@DisableOption{pdftitle}%
11999 \Hy@DisableOption{pdfsubject}%

```

```

12000 \Hy@DisableOption{pdfcreator}%
12001 \Hy@DisableOption{pdfcreationdate}%
12002 \Hy@DisableOption{pdfmoddate}%
12003 \Hy@DisableOption{pdfproducer}%
12004 \Hy@DisableOption{pdfkeywords}%
12005 \Hy@DisableOption{pdftrapped}%
12006 \Hy@DisableOption{pdfinfo}%
12007 }
12008 \def\PDF@SetupDoc{%
12009 \def\Hy@temp{}%
12010 \ifx\@pdfstartpage\@empty
12011 \else
12012 \ifx\@pdfstartview\@empty
12013 \else
12014 \edef\Hy@temp{%
12015 ,Page=\@pdfstartpage
12016 ,View=\@pdfstartview
12017 }%
12018 \fi
12019 \fi
12020 \edef\Hy@temp{%
12021 \noexpand\pdfmark{%
12022 pdfmark=/DOCVIEW,%
12023 PageMode=/\@pdfpagemode
12024 \Hy@temp
12025 }%
12026 }%
12027 \Hy@temp
12028 \ifx\@pdfpagescrop\@empty
12029 \else
12030 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
12031 \fi
12032 \edef\Hy@temp{%
12033 \ifHy@pdftoolbar\else /HideToolbar true\fi
12034 \ifHy@pdfmenubar\else /HideMenubar true\fi
12035 \ifHy@pdfwindowui\else /HideWindowUI true\fi
12036 \ifHy@pdffitwindow /FitWindow true\fi
12037 \ifHy@pdfcenterwindow /CenterWindow true\fi
12038 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
12039 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
12040 \Hy@UseNameKey{Direction}\@pdfdirection
12041 \Hy@UseNameKey{ViewArea}\@pdfviewarea
12042 \Hy@UseNameKey{ViewClip}\@pdfviewclip
12043 \Hy@UseNameKey{PrintArea}\@pdfprintarea
12044 \Hy@UseNameKey{PrintClip}\@pdfprintclip
12045 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
12046 \Hy@UseNameKey{Duplex}\@pdfduplex
12047 \ifx\@pdfpicktraybypdfsize\@empty
12048 \else
12049 /PickTrayByPDFSize \@pdfpicktraybypdfsize
12050 \fi
12051 \ifx\@pdfprintpagerange\@empty
12052 \else
12053 /PrintPageRange[\@pdfprintpagerange]%
12054 \fi
12055 \ifx\@pdfnumcopies\@empty
12056 \else

```

```

12057 /NumCopies \@pdfnumcopies
12058 \fi
12059 }%
12060 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
12061 \pdfmark{%
12062 pdfmark=/PUT,%
12063 Raw={%
12064 \string{Catalog\string}<<%
12065 \ifx\Hy@temp\@empty
12066 \else
12067 /ViewerPreferences<<\Hy@temp>>%
12068 \fi
12069 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
12070 \ifx\@pdflang\@empty
12071 \else
12072 /Lang(\@pdflang)%
12073 \fi
12074 \ifx\@baseurl\@empty
12075 \else
12076 /URI<</Base(\Hy@pstringB)>>%
12077 \fi
12078 >>%
12079 }%
12080 }%
12081 }
12082 \providecommand*\@pdfview{XYZ}
12083 \providecommand*\@pdfviewparams{ %
12084 gsave revscl currentpoint grestore %
12085 72 add exch pop null exch null%
12086 }
12087 \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  $\text{\TeX}$ .

```

12088 \g@addto@macro\Hy@FirstPageHook{%
12089 \headerps@out{%

```

dvipsone lives in scaled points; does this mean 65536 or 65781?

```

12090 /DvipsToPDF { 65781 div } def%
12091 /PDFToDvips { 65781 mul } def%
12092 /BPToDvips{65781 mul}def%
12093 /HyperBorder { 1 PDFToDvips } def%
12094 /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.

```

12095 /BorderArrayPatch{%
12096 [exch{%
12097 dup dup type/integertype eq exch type/realtype eq or%
12098 {BPToDvips}if%
12099 }forall]%
12100 }def%
12101 /H.S {%
12102 currentpoint %
12103 HyperBorder add /pdf@lly exch def %

```

```

12104     dup DvipsToPDF 72 add /pdf@hoff exch def %
12105     HyperBorder sub /pdf@llx exch def%
12106   } def%
12107   /H.L {%
12108     2 sub %
12109     PDFToDvips /HyperBase exch def %
12110     currentpoint %
12111     HyperBase sub /pdf@ury exch def%
12112     /pdf@urx exch def%
12113   } def%
12114   /H.A {%
12115     H.L %
12116     currentpoint exch pop %
12117     HyperBase sub % baseline skip
12118     DvipsToPDF /pdf@voff exch def%
12119   } def%
12120   /H.R {%
12121     currentpoint %
12122     HyperBorder sub /pdf@ury exch def %
12123     HyperBorder add /pdf@urx exch def %
12124     currentpoint exch pop DvipsToPDF /pdf@voff exch def%
12125   } def%
12126 }%
12127 }
12128 </dvipsone>

```

## 46.13 TeX4ht

```

12129 <*tex4ht>
12130 \providecommand*{\XR@ext}{html}
12131 \let\Hy@raisedlink\ltx@empty
12132 \@ifpackageloaded{tex4ht}{%
12133   \Hy@InfoNoLine{tex4ht is already loaded}%
12134 }{%
12135   \RequirePackage[hTeX4ht]{tex4ht}%
12136 }
12137 \hyperlinkfileprefix{}
12138 \let\PDF@FinishDoc\ltx@empty
12139 \def\PDF@SetupDoc{%
12140   \ifx\@baseurl\@empty
12141     \else
12142       \special{t4ht=<base href="\@baseurl">}%
12143     \fi
12144 }
12145 \Hy@WrapperDef\hyper@anchor#1{%
12146   \Hy@SaveLastskip
12147   \Hy@VerboseAnchor{#1}%
12148   \begingroup
12149     \let\protect=\string
12150     \special{t4ht=<a name=%
12151       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12152   \endgroup
12153   \Hy@activeanchortrue
12154   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
12155   \special{t4ht=</a>}%
12156   \Hy@activeanchorfalse
12157   \Hy@RestoreLastskip
12158 }

```



```

12159 \Hy@WrapperDef\hyper@anchorstart#1{%
12160 \Hy@SaveLastskip
12161 \Hy@VerboseAnchor{#1}%
12162 \begingroup
12163 \hyper@chars\special{t4ht=<a name=%
12164 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}}%
12165 \endgroup
12166 \Hy@activeanchortrue
12167 }
12168 \def\hyper@anchorend{%
12169 \special{t4ht=</a>}}%
12170 \Hy@activeanchorfalse
12171 \Hy@RestoreLastskip
12172 }
12173 \def\@urltype{url}
12174 \def\hyper@linkstart#1#2{%
12175 \Hy@VerboseLinkStart{#1}{#2}%
12176 \expandafter\Hy@colorlink\csname @#1color\endcsname
12177 \def\Hy@tempa{#1}%
12178 \ifx\Hy@tempa\@urltype
12179 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}}%
12180 \else
12181 \begingroup
12182 \hyper@chars
12183 \special{t4ht=<a href=%
12184 \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}}%
12185 \endgroup
12186 \fi
12187 }
12188 \def\hyper@linkend{%
12189 \special{t4ht=</a>}}%
12190 \Hy@endcolorlink
12191 }
12192 \def\hyper@linkfile#1#2#3{%
12193 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi}%
12194 }
12195 \def\hyper@linkurl#1#2{%
12196 \leavevmode
12197 \ifHy@raiselinks
12198 \Hy@SaveSpaceFactor
12199 \Hy@SaveSavedSpaceFactor
12200 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12201 \Hy@RestoreSavedSpaceFactor
12202 \@linkdim\dp\@tempboxa
12203 \lower\@linkdim\hbox{%
12204 \begingroup
12205 \hyper@chars
12206 \special{%
12207 t4ht=<a href=\hyper@quote#2\hyper@quote>%
12208 }%
12209 \endgroup
12210 }%
12211 \Hy@colorlink\@urlcolor
12212 \Hy@RestoreSpaceFactor
12213 #1\Hy@xspace@end
12214 \Hy@SaveSpaceFactor
12215 \Hy@endcolorlink

```

```

12216 \@linkdim\ht\@tempboxa
12217 \advance\@linkdim by -6.5\p@
12218 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
12219 \Hy@RestoreSpaceFactor
12220 \else
12221 \begingroup
12222 \hyper@chars
12223 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12224 \Hy@colorlink\@urlcolor
12225 #1\Hy@xspace@end
12226 \Hy@endcolorlink
12227 \special{t4ht=</a>}}%
12228 \endgroup
12229 \fi
12230 }

```

Poor implementation of \hyper@link without considering #1.

```

12231 \def\hyper@link#1#2#3{%
12232 \Hy@VerboseLinkStart{#1}{#2}%
12233 \hyper@linkurl{#3}{\#\Hy@HyperDestNameFilter{#2}}%
12234 }
12235 \def\hyper@image#1#2{%
12236 \begingroup
12237 \hyper@chars
12238 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
12239 \endgroup
12240 }
12241 \let\autoref\ref
12242 \ifx \rEFLiNK \UnDef
12243 \def\rEFLiNK #1#2{#2}%
12244 \fi
12245 \let\backref\ltx@gobble

```

Fix for tex4ht.

```

12246 \AtBeginDocument{%
12247 \expandafter\let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endc-
sname
12248 \expandafter\def\csname Make:Label\endcsname#1#2{%
12249 \ifhmode
12250 \Hy@SaveSpaceFactor
12251 \else
12252 \global\Hy@SavedSpaceFactor=1000 %
12253 \fi
12254 \Hy@OrgMakeLabel{#1}{%
12255 \Hy@RestoreSpaceFactor
12256 #2\Hy@xspace@end%
12257 \Hy@SaveSpaceFactor
12258 }%
12259 \Hy@RestoreSpaceFactor
12260 }%
12261 }
12262 </tex4ht>
12263 <*tex4htcfg>
12264 \IfFileExists{\jobname.cfg}{\endinput}{\}
12265 \Preamble{html}
12266 \begin{document}%
12267 \EndPreamble
12268 \def\TeX{TeX}
12269 \def\OMEGA{\Omega}

```

```

12270 \def\LaTeX{\La\TeX}
12271 \def\LaTeXe{\LaTeX2e}
12272 \def\TeX{e-TeX}
12273 \def\MF{Metafont}
12274 \def\MP{MetaPost}
12275 \</tex4htcfg>

```

## 47 Driver-specific form support

### 47.1 pdfmarks

```

12276 \<{*pdfmark}
12277 \long\def\@Form[#1]{%
12278 \g@addto@macro\Hy@FirstPageHook{%
12279 \headerps@out{%
12280 [%
12281 /_objdef{pdfDocEncoding}%
12282 /type/dict%
12283 /OBJ pdfmark%
12284 [%
12285 {pdfDocEncoding}%
12286 <<%
12287 /Type/Encoding%
12288 /Differences[%
12289 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
12290 /tilde %
12291 39/quotesingle %
12292 96/grave %
12293 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12294 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
12295 /quotedblbase/quotedblleft/quotedblright/quoteleft%
12296 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
12297 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
12298 164/currency %
12299 166/brokenbar %
12300 168/dieresis/copyright/ordfeminine %
12301 172/logicalnot/.notdef/registered/macron/degree/plusminus%
12302 /twosuperior/threesuperior/acute/mu %
12303 183/periodcentered/cedilla/onesuperior/ordmasculine %
12304 188/onequarter/onehalf/threequarters %
12305 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
12306 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
12307 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
12308 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
12309 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
12310 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
12311 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
12312 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
12313 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%
12314 /ucircumflex/udieresis/yacute/thorn/ydieresis%
12315 ]%
12316 >>%
12317 /PUT pdfmark%
12318 [%
12319 /_objdef{ZaDb}%
12320 /type/dict%
12321 /OBJ pdfmark%
12322 [%

```

```

12323 {ZaDb}%
12324 <<%
12325 /Type/Font%
12326 /Subtype/Type1%
12327 /Name/ZaDb%
12328 /BaseFont/ZapfDingbats%
12329 >>%
12330 /PUT pdfmark%
12331 [%
12332 /__objdef{Helv}%
12333 /type/dict%
12334 /OBJ pdfmark%
12335 [%
12336 {Helv}%
12337 <<%
12338 /Type/Font%
12339 /Subtype/Type1%
12340 /Name/Helv%
12341 /BaseFont/Helvetica%
12342 /Encoding{pdfDocEncoding}%
12343 >>%
12344 /PUT pdfmark%
12345 [%
12346 /__objdef{aform}%
12347 /type/dict%
12348 /OBJ pdfmark%
12349 [%
12350 /__objdef{afields}%
12351 /type/array%
12352 /OBJ pdfmark%
12353 {%
12354 [%
12355 /BBox[0 0 100 100]%
12356 /__objdef{Check}%
12357 /BP pdfmark %
12358 1 0 0 setrgbcolor%
12359 /ZapfDingbats 80 selectfont %
12360 20 20 moveto%
12361 (4)show%
12362 [/EP pdfmark%
12363 [%
12364 /BBox[0 0 100 100]%
12365 /__objdef{Cross}%
12366 /BP pdfmark %
12367 1 0 0 setrgbcolor%
12368 /ZapfDingbats 80 selectfont %
12369 20 20 moveto%
12370 (8)show%
12371 [/EP pdfmark%
12372 [%
12373 /BBox[0 0 250 100]%
12374 /__objdef{Submit}%
12375 /BP pdfmark %
12376 0.6 setgray %
12377 0 0 250 100 rectfill %
12378 1 setgray %
12379 2 2 moveto %

```

```

12380 2 98 lineto %
12381 248 98 lineto %
12382 246 96 lineto %
12383 4 96 lineto %
12384 4 4 lineto %
12385 fill %
12386 0.34 setgray %
12387 248 98 moveto %
12388 248 2 lineto %
12389 2 2 lineto %
12390 4 4 lineto %
12391 246 4 lineto %
12392 246 96 lineto %
12393 fill%
12394 /Helvetica 76 selectfont %
12395 0 setgray %
12396 8 22.5 moveto%
12397 (Submit)show%
12398 [/EP pdfmark%
12399 [%
12400 /BBox[0 0 250 100]%
12401 /_objdef{SubmitP}%
12402 /BP pdfmark %
12403 0.6 setgray %
12404 0 0 250 100 rectfill %
12405 0.34 setgray %
12406 2 2 moveto %
12407 2 98 lineto %
12408 248 98 lineto %
12409 246 96 lineto %
12410 4 96 lineto %
12411 4 4 lineto %
12412 fill %
12413 1 setgray %
12414 248 98 moveto %
12415 248 2 lineto %
12416 2 2 lineto %
12417 4 4 lineto %
12418 246 4 lineto %
12419 246 96 lineto %
12420 fill%
12421 /Helvetica 76 selectfont %
12422 0 setgray %
12423 10 20.5 moveto%
12424 (Submit)show%
12425 [/EP pdfmark%
12426 } ?pdfmark%
12427 [%
12428 {aform}%
12429 <<%
12430 /Fields{afields}%
12431 /DR<<%
12432 /Font<<%
12433 /ZaDb{ZaDb}%
12434 /Helv{Helv}%
12435 >>%
12436 >>%

```

```

12437 /DA(/Helv 10 Tf 0 g)%
12438 /CO{corder}%
12439 \ifHy@pdfa
12440 \else
12441 \ifHyField@NeedAppearances
12442 /NeedAppearances true%
12443 \fi
12444 \fi
12445 >>%
12446 /PUT pdfmark%
12447 [%
12448 {Catalog}%
12449 <<%
12450 /AcroForm{aform}%
12451 >>%
12452 /PUT pdfmark%
12453 [%
12454 /__objdef{corder}%
12455 /type/array%
12456 /OBJ pdfmark% dps
12457 }}%
12458 \kvsetkeys{Form}{#1}%
12459 }
12460 \let\@endForm\ltx@empty
12461 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12462 \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
12463 }
12464 \def\@TextField[#1]#2{% parameters, label
12465 \def\Fld@name{#2}%
12466 \let\Fld@default\ltx@empty
12467 \let\Fld@value\@empty
12468 \def\Fld@width{\DefaultWidthofText}%
12469 \def\Fld@height{%
12470 \ifFld@multiline
12471 \DefaultHeightofTextMultiline
12472 \else
12473 \DefaultHeightofText
12474 \fi
12475 }%
12476 \begingroup
12477 \expandafter\HyField@SetKeys\expandafter{%
12478 \DefaultOptionsofText,#1%
12479 }%
12480 \HyField@FlagsText
12481 \ifFld@hidden\def\Fld@width{1sp}\fi
12482 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12483 \LayoutTextField{#2}{%
12484 \leavevmode
12485 \Hy@escapeform\PDFForm@Text
12486 \pdfmark[\MakeTextField{\Fld@width}{\Fld@height}]{%
12487 pdfmark=/ANN,Raw={\PDFForm@Text}%
12488 }%
12489 }%
12490 \endgroup
12491 }
12492 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12493 \def\Fld@name{#2}%

```

```

12494 \let\Fld@default\relax
12495 \let\Fld@value\relax
12496 \def\Fld@width{\DefaultWidthofChoiceMenu}%
12497 \def\Fld@height{\DefaultHeightofChoiceMenu}%
12498 \begingroup
12499 \Fld@menulength=0 %
12500 \@tempdima\z@
12501 \@for\@curropt:=#3\do{%
12502 \expandafter\Fld@checkequals\@curropt==\\%
12503 \Hy@StepCount\Fld@menulength
12504 \settowidth{\@tempdimb}{\@currDisplay}%
12505 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12506 }%
12507 \advance\@tempdima by 15\p@
12508 \begingroup
12509 \HyField@SetKeys{#1}%
12510 \edef\x{\endgroup
12511 \noexpand\expandafter
12512 \noexpand\HyField@SetKeys
12513 \noexpand\expandafter{%
12514 \expandafter\noexpand\csname DefaultOptionsof%
12515 \ifFld@radio
12516 Radio%
12517 \else
12518 \ifFld@combo
12519 \ifFld@popdown
12520 PopdownBox%
12521 \else
12522 ComboBox%
12523 \fi
12524 \else
12525 ListBox%
12526 \fi
12527 \fi
12528 \endcsname
12529 }%
12530 }\x
12531 \HyField@SetKeys{#1}%
12532 \ifFld@hidden\def\Fld@width{1sp}\fi
12533 \ifx\Fld@value\relax
12534 \let\Fld@value\Fld@default
12535 \fi
12536 \LayoutChoiceField{#2}{%
12537 \ifFld@radio
12538 \HyField@FlagsRadioButton
12539 \@@Radio{#3}%
12540 \else
12541 \begingroup
12542 \HyField@FlagsChoice
12543 \ifdim\Fld@width<\@tempdima
12544 \ifdim\@tempdima<1cm\@tempdima1cm\fi
12545 \edef\Fld@width{\the\@tempdima}%
12546 \fi
12547 \ifFld@combo
12548 \else
12549 \@tempdima=\the\Fld@menulength\Fld@charsize
12550 \advance\@tempdima by \Fld@borderwidth bp %

```

```

12551         \advance\@tempdima by \Fld@borderwidth bp %
12552         \edef\Fld@height{\the\@tempdima}%
12553     \fi
12554     \@@ListBox{#3}%
12555 \endgroup
12556 \fi
12557 }%
12558 \endgroup
12559 }
12560 \def\@@Radio#1{%
12561     \Fld@listcount=0 %
12562     \EdefEscapeName\Fld@default{\Fld@default}%
12563     \@for\@curropt:=#1\do{%
12564         \expandafter\Fld@checkequals\@curropt==\%
12565         \EdefEscapeName\@currValue{\@currValue}%
12566         \Hy@StepCount\Fld@listcount
12567         \@currDisplay\space
12568         \Hy@escapeform\PDFForm@Radio
12569         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12570             pdfmark=/ANN,%
12571             Raw={%
12572                 \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12573             }%
12574         } % deliberate space between radio buttons
12575     }%
12576 }
12577 \newcount\Fld@listcount
12578 \def\@@ListBox#1{%
12579     \HyField@PDFChoices{#1}%
12580     \Hy@escapeform\PDFForm@List
12581     \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%
12582         pdfmark=/ANN,Raw={\PDFForm@List}%
12583     }%
12584 }
12585 \def\@PushButton[#1]#2{% parameters, label
12586     \def\Fld@name{#2}%
12587     \begingroup
12588         \expandafter\HyField@SetKeys\expandafter{%
12589             \DefaultOptionsofPushButton,#1%
12590         }%
12591     \ifHy@pdfa
12592         \Hy@Error{%
12593             PDF/A: Push button with JavaScript is prohibited%
12594         }\@ehc
12595     \LayoutPushButtonField{%
12596         \leavevmode
12597         \MakeButtonField{#2}%
12598     }%
12599 \else
12600     \HyField@FlagsPushButton
12601     \ifFld@hidden\def\Fld@width{1sp}\fi
12602     \LayoutPushButtonField{%
12603         \leavevmode
12604         \Hy@escapeform\PDFForm@Push
12605         \pdfmark[\MakeButtonField{#2}]{%
12606             pdfmark=/ANN,Raw={\PDFForm@Push}%
12607         }%

```



```

12608     }%
12609     \fi
12610 \endgroup
12611 }
12612 \def\@Submit[#1]#2{%
12613   \def\Fld@width{\DefaultWidthofSubmit}%
12614   \def\Fld@height{\DefaultHeightofSubmit}%
12615   \begingroup
12616     \expandafter\HyField@SetKeys\expandafter{%
12617       \DefaultOptionsofSubmit,#1%
12618     }%
12619     \HyField@FlagsPushButton
12620     \HyField@FlagsSubmit
12621     \ifFld@hidden\def\Fld@width{1sp}\fi
12622     \Hy@escapeform\PDFForm@Submit
12623     \pdfmark[\MakeButtonField{#2}]{%
12624       pdfmark=/ANN,%
12625       Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
12626     }%
12627 \endgroup
12628 }
12629 \def\@Reset[#1]#2{%
12630   \def\Fld@width{\DefaultWidthofReset}%
12631   \def\Fld@height{\DefaultHeightofReset}%
12632   \begingroup
12633     \expandafter\HyField@SetKeys\expandafter{%
12634       \DefaultOptionsofReset,#1%
12635     }%
12636     \leavevmode
12637     \ifHy@pdfa
12638       \Hy@Error{%
12639         PDF/A: Reset action is prohibited%
12640       } \@ehc
12641       \MakeButtonField{#2}%
12642     \else
12643       \HyField@FlagsPushButton
12644       \ifFld@hidden\def\Fld@width{1sp}\fi
12645       \Hy@escapeform\PDFForm@Reset
12646       \pdfmark[\MakeButtonField{#2}]{%
12647         pdfmark=/ANN,Raw={\PDFForm@Reset}%
12648       }%
12649     \fi
12650 \endgroup
12651 }%
12652 \def\@CheckBox[#1]#2{% parameters, label
12653   \def\Fld@name{#2}%
12654   \def\Fld@default{0}%
12655   \begingroup
12656     \def\Fld@width{\DefaultWidthofCheckBox}%
12657     \def\Fld@height{\DefaultHeightofCheckBox}%
12658     \expandafter\HyField@SetKeys\expandafter{%
12659       \DefaultOptionsofCheckBox,#1%
12660     }%
12661     \HyField@FlagsCheckBox
12662     \ifFld@hidden\def\Fld@width{1sp}\fi
12663     \LayoutCheckField{#2}{%
12664       \leavevmode

```

```

12665 \Hy@escapeform\PDFForm@Check
12666 \pdfmark[\MakeCheckField{\Fld@width}{\Fld@height}]{%
12667 pdfmark=/ANN,Raw={\PDFForm@Check}%
12668 }%
12669 }%
12670 \endgroup
12671 }
12672 \pdfmark>

```

## 47.2 HyperTeX

```

12673 \*hypertex>
12674 \def\@Form[#1]{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12675 \let\@endForm\ltx@empty
12676 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12677 \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12678 }
12679 \def\@TextField[#1]#2{% parameters, label
12680 \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12681 }
12682 \def\@CheckBox[#1]#2{% parameters, label
12683 \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12684 }
12685 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12686 \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12687 }
12688 \def\@PushButton[#1]#2{% parameters, label
12689 \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12690 }
12691 \def\@Reset[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12692 \def\@Submit[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12693 \hypertex>

```

## 47.3 TeX4ht

```

12694 \*tex4ht>
12695 \def\@Form[#1]{%
12696 \kvsetkeys{Form}{#1}%
12697 \HCode{<form action="\Form@action" method="\Form@method">}%
12698 }
12699 \def\@endForm{\HCode{</form>}}
12700 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12701 \Hy@Message{Sorry, TeX4ht does not support gauges}%
12702 }
12703 \def\@TextField[#1]#2{% parameters, label
12704 \let\Hy@reserved@a\@empty
12705 \def\Fld@name{#2}%
12706 \let\Fld@default\ltx@empty
12707 \bgroup
12708 \Field@toks={ }%
12709 \kvsetkeys{Field}{#1}%
12710 \HCode{<label for="\Fld@name">#2</label>}%
12711 \ifFld@password
12712 \@@PasswordField
12713 \else
12714 \@@TextField
12715 \fi
12716 \egroup
12717 }

```

```

12718 \def\@@PasswordField{%
12719   \HCode{%
12720     <input type="password" %
12721       id="\Fld@name" %
12722       name="\Fld@name" %
12723       \ifFld@hidden type="hidden" \fi
12724       value="\Fld@default" %
12725       \the\Field@toks
12726     >%
12727   }%
12728 }
12729 \def\@@TextField{%
12730   \ifFld@multiline
12731     \HCode{<textarea %
12732       \ifFld@readonly readonly \fi
12733       id="\Fld@name" %
12734       name="\Fld@name" %
12735       \ifFld@hidden type="hidden" \fi
12736       \the\Field@toks>%
12737     }%
12738     \Fld@default
12739     \HCode{</textarea>}%
12740   \else
12741     \HCode{<input type="text" %
12742       \ifFld@readonly readonly \fi
12743       id="\Fld@name" %
12744       name="\Fld@name" %
12745       \ifFld@hidden type="hidden" \fi
12746       value="\Fld@default" %
12747       \the\Field@toks>%
12748     }%
12749   \fi
12750 }
12751 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12752   \def\Fld@name{#2}%
12753   \let\Fld@default\ltx@empty
12754   \let\Hy@reserved@a\relax
12755   \begingroup
12756     \expandafter\Fld@findlength#3\\%
12757     \Field@toks={ }%
12758     \kvsetkeys{Field}{#1}%
12759     #2%
12760     \ifFld@radio
12761       \expandafter\@@Radio#3\\%
12762     \else
12763       \expandafter\@@Menu#3\\%
12764     \fi
12765   \endgroup
12766 }
12767 \def\Fld@findlength#1\\{%
12768   \Fld@menulength=0 %
12769   \@for\@currupt:=#1\do{\Hy@StepCount\Fld@menulength}%
12770 }
12771 \def\@@Menu#1\\{%
12772   \HCode{<select size="\the\Fld@menulength" %
12773     name="\Fld@name" %
12774     \the\Field@toks>%

```

```

12775 }%
12776 \@for\@curropt:=#1\do{%
12777   \expandafter\Fld@ckekequals\@curropt==\\%
12778   \HCode{<option %
12779     \ifx\@curropt\Fld@default selected \fi
12780     value="\@currValue">\@currDisplay</option>%
12781   }%
12782 }%
12783 \HCode{</select>}%
12784 }
12785 \def\@@Radio#1\\{%
12786   \@for\@curropt:=#1\do{%
12787     \expandafter\Fld@ckekequals\@curropt==\\%
12788     \HCode{<input type="radio" %
12789       \ifx\@curropt\Fld@default checked \fi
12790       name="\Fld@name" %
12791       value="\@currValue" %
12792       \the\Fld@toks>%
12793     }%
12794     \@currDisplay
12795   }%
12796 }
12797 \def\@PushButton[#1]#2{% parameters, label
12798   \def\Fld@name{#2}%
12799   \bgroup
12800   \Fld@toks={ }%
12801   \kvsetkeys{Fld}{#1}%
12802   \HCode{<input type="button" %
12803     name="\Fld@name" %
12804     value="#2" %
12805     \the\Fld@toks>%
12806   }%
12807   \HCode{</button>}%
12808   \egroup
12809 }
12810 \def\@Submit[#1]#2{%
12811   \HCode{<button type="submit">#2</button>}%
12812 }
12813 \def\@Reset[#1]#2{%
12814   \HCode{<button type="reset">#2</button>}%
12815 }
12816 \def\@CheckBox[#1]#2{% parameters, label
12817   \let\Hy@reserved@a\@empty
12818   \def\Fld@name{#2}%
12819   \def\Fld@default{0}%
12820   \bgroup
12821   \Fld@toks={ }%
12822   \kvsetkeys{Fld}{#1}%
12823   \HCode{<input type="checkbox" %
12824     \ifFld@checked checked \fi
12825     \ifFld@disabled disabled \fi
12826     \ifFld@readonly readonly \fi
12827     name="\Fld@name" %
12828     \ifFld@hidden type="hidden" \fi
12829     value="\Fld@default" %
12830     \the\Fld@toks>%
12831   #2%

```

```

12832 }%
12833 \egroup
12834 }
12835 </tex4ht>

```

## 47.4 pdfTeX

```

12836 (*pdfTeX)
12837 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12838 \Hy@Message{Sorry, pdfTeX does not support FORM gauges}%
12839 }
12840 \def\MakeFieldObject#1#2{\sbox0{#1}%
12841 \immediate\pdfxform0 %
12842 \expandafter\edef\csname #2Object\endcsname{%
12843 \the\pdfastxform\space 0 R%
12844 }%
12845 % \hbox to Opt{\hskip-\maxdimen{\pdfrefxform \the\pdfastxform}}}%
12846 }%
12847 \let\HyField@afields\ltx@empty
12848 \begingroup\expandafter\expandafter\expandafter\endgroup
12849 \expandafter\ifx\csname pdfastlink\endcsname\relax
12850 \let\HyField@AddToFields\relax
12851 \PackageInfo{hyperref}{%
12852 You need pdfTeX 1.40.0 for setting the /Fields entry.%
12853 \MessageBreak
12854 Adobe Reader/Acrobat accepts an empty /Field array,%
12855 \MessageBreak
12856 but other PDF viewers might complain%
12857 }%
12858 \else
12859 \let\HyField@AuxAddToFields\ltx@gobble
12860 \def\HyField@AfterAuxOpen{\Hy@AtBeginDocument}%
12861 \Hy@AtBeginDocument{%
12862 \if@filesW
12863 \immediate\write\@mainaux{%
12864 \string\providecommand\string\HyField@AuxAddToFields[1]{}%
12865 }%
12866 \fi
12867 \let\HyField@AfterAuxOpen\@firstofone
12868 \def\HyField@AuxAddToFields#1{%
12869 \xdef\HyField@afields{%
12870 \ifx\HyField@afields\@empty
12871 \else
12872 \HyField@afields
12873 \space
12874 \fi
12875 #1 0 R%
12876 }%
12877 }%
12878 }%
12879 \def\HyField@AddToFields{%
12880 \expandafter\HyField@@AddToFields\expandafter{%
12881 \the\pdfastlink
12882 }%
12883 }%
12884 \def\HyField@@AddToFields#1{%
12885 \HyField@AfterAuxOpen{%
12886 \if@filesW

```

```

12887     \write\@mainaux{%
12888     \string\HyField@AuxAddToFields{#1}%
12889     }%
12890     \fi
12891     }%
12892     }%
12893     \fi
12894     \def\@Form[#1]{%
12895     \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
12896     \kvsetkeys{Form}{#1}%
12897     \pdf@ifdraftmode{}{%
12898     \Hy@FormObjects
12899     \ifnum\pdfTeXversion>13 %
12900     \pdfrefobj\OBJ@pdfdocencoding
12901     \pdfrefobj\OBJ@ZaDb
12902     \pdfrefobj\OBJ@Helv
12903     \fi
12904     \AtVeryEndDocument{%
12905     \immediate\pdfobj{%
12906     <<%
12907     /Fields[\HyField@afields]%
12908     /DR<<%
12909     /Font<<%
12910     /ZaDb \OBJ@ZaDb\space 0 R%
12911     /Helv \OBJ@Helv\space 0 R%
12912     >>%
12913     >>%
12914     /DA(/Helv 10 Tf 0 g)%
12915     \ifHy@pdfa
12916     \else
12917     \ifHyField@NeedAppearances
12918     /NeedAppearances true%
12919     \fi
12920     \fi
12921     >>%
12922     }%
12923     \edef\OBJ@acroform{\the\pdflastobj}%
12924     \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
12925     }%
12926     }%
12927     \MakeFieldObject{%

```

Same as \ding{123} of package pifont.

```

12928     \beginngroup
12929     \fontfamily{pzd}%
12930     \fontencoding{U}%
12931     \fontseries{m}%
12932     \fontshape{n}%
12933     \selectfont
12934     \char123 %
12935     \endgroup
12936     }{Ding}%
12937     \MakeFieldObject{%
12938     \fbox{\textcolor{yellow}{\textsf{Submit}}}%
12939     }{Submit}%
12940     \MakeFieldObject{%
12941     \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
12942     }{SubmitP}%

```

```

12943 }
12944 \let\@endForm\ltx@empty
12945 \def\@TextField[#1]#2{% parameters, label
12946   \def\Fld@name{#2}%
12947   \let\Fld@default\ltx@empty
12948   \let\Fld@value\@empty
12949   \def\Fld@width{\DefaultWidthofText}%
12950   \def\Fld@height{%
12951     \ifFld@multiline
12952       \DefaultHeightofTextMultiline
12953     \else
12954       \DefaultHeightofText
12955     \fi
12956   }%
12957   \begingroup
12958     \expandafter\HyField@SetKeys\expandafter{%
12959       \DefaultOptionsofText,#1%
12960     }%
12961     \PDFForm@Name
12962     \HyField@FlagsText
12963     \ifFld@hidden\def\Fld@width{1sp}\fi
12964     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12965     \LayoutTextField{#2}{%
12966       \leavevmode
12967       \Hy@escapeform\PDFForm@Text
12968       \pdfstartlink user {\PDFForm@Text}\relax
12969       \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
12970       \HyField@AddToFields
12971     }%
12972   \endgroup
12973 }
12974 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12975   \def\Fld@name{#2}%
12976   \let\Fld@default\relax
12977   \let\Fld@value\relax
12978   \def\Fld@width{\DefaultWidthofChoiceMenu}%
12979   \def\Fld@height{\DefaultHeightofChoiceMenu}%
12980   \begingroup
12981     \Fld@menulength=0 %
12982     \@tempdima\z@
12983     \@for\@curropt:=#3\do{%
12984       \expandafter\Fld@checkequals\@curropt==\%
12985       \Hy@StepCount\Fld@menulength
12986       \settowidth{\@tempdimb}{\@currDisplay}%
12987       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12988     }%
12989     \advance\@tempdima by 15\p@
12990     \begingroup
12991       \HyField@SetKeys{#1}%
12992     \edef\x{\endgroup
12993       \noexpand\expandafter
12994       \noexpand\HyField@SetKeys
12995       \noexpand\expandafter{%
12996         \expandafter\noexpand\csname DefaultOptionsof%
12997           \ifFld@radio
12998             Radio%
12999           \else

```

```

13000         \ifFld@combo
13001         \ifFld@popdown
13002             PopdownBox%
13003         \else
13004             ComboBox%
13005         \fi
13006     \else
13007         ListBox%
13008     \fi
13009 \fi
13010 \endcsname
13011 }%
13012 }\x
13013 \HyField@SetKeys{#1}%
13014 \PDFForm@Name
13015 \ifFld@hidden\def\Fld@width{1sp}\fi
13016 \ifx\Fld@value\relax
13017     \let\Fld@value\Fld@default
13018 \fi
13019 \LayoutChoiceField{#2}{%
13020     \ifFld@radio
13021         \HyField@FlagsRadioButton
13022         \@@Radio{#3}%
13023     \else
13024         \begingroup
13025             \HyField@FlagsChoice
13026             \ifdim\Fld@width<\@tempdima
13027                 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13028                 \edef\Fld@width{\the\@tempdima}%
13029             \fi
13030             \ifFld@combo
13031             \else
13032                 \@tempdima=\the\Fld@menulength\Fld@charsize
13033                 \advance\@tempdima by \Fld@borderwidth bp %
13034                 \advance\@tempdima by \Fld@borderwidth bp %
13035                 \edef\Fld@height{\the\@tempdima}%
13036             \fi
13037             \@@ListBox{#3}%
13038         \endgroup
13039     \fi
13040 }%
13041 \endgroup
13042 }
13043 \def\@@Radio#1{%
13044     \Fld@listcount=0 %
13045     \EdefEscapeName\Fld@default{\Fld@default}%
13046     \@for\@curropt:=#1\do{%
13047         \expandafter\Fld@checkequals\@curropt==\%
13048         \EdefEscapeName\@currValue{\@currValue}%
13049         \Hy@StepCount\Fld@listcount
13050         \@currDisplay\space
13051         \leavevmode
13052         \Hy@escapeform\PDFForm@Radio
13053         \pdfstartlink user {%
13054             \PDFForm@Radio
13055             /AP<<%
13056             /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.

```

13057      /\@currValue\space \DingObject
13058      >>%
13059      >>%
13060  }%
13061  \relax
13062  \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
13063  \ifnum\Fld@listcount=1 %
13064    \HyField@AddToFields
13065  \fi
13066  \space % deliberate space between radio buttons
13067  }%
13068  }
13069  \newcount\Fld@listcount
13070  \def\@@Listbox#1{%
13071    \HyField@PDFChoices{#1}%
13072    \leavevmode
13073    \Hy@escapeform\PDFForm@List
13074    \pdfstartlink user {\PDFForm@List}\relax
13075    \MakeChoiceField{\Fld@width}{\Fld@height}%
13076    \pdfendlink
13077    \HyField@AddToFields
13078  }
13079  \def\@PushButton[#1]#2{% parameters, label
13080    \def\Fld@name{#2}%
13081    \begingroup
13082    \expandafter\HyField@SetKeys\expandafter{%
13083      \DefaultOptionsofPushButton,#1%
13084    }%
13085    \PDFForm@Name
13086    \ifHy@pdfa
13087      \Hy@Error{%
13088        PDF/A: Push button with JavaScript is prohibited%
13089      }\@ehc
13090      \LayoutPushButtonField{%
13091        \leavevmode
13092        \MakeButtonField{#2}%
13093      }%
13094    \else
13095      \HyField@FlagsPushButton
13096      \ifFld@hidden\def\Fld@width{1sp}\fi
13097      \LayoutPushButtonField{%
13098        \leavevmode
13099        \Hy@escapeform\PDFForm@Push
13100        \pdfstartlink user {\PDFForm@Push}\relax
13101        \MakeButtonField{#2}%
13102        \pdfendlink
13103        \HyField@AddToFields
13104      }%
13105    \fi
13106  \endgroup
13107  }
13108  \def\@Submit[#1]#2{%
13109    \def\Fld@width{\DefaultWidthofSubmit}%
13110    \def\Fld@height{\DefaultHeightofSubmit}%

```

```

13111 \begingroup
13112 \expandafter\HyField@SetKeys\expandafter{%
13113 \DefaultOptionsofSubmit,#1%
13114 }%
13115 \HyField@FlagsPushButton
13116 \HyField@FlagsSubmit
13117 \ifFld@hidden\def\Fld@width{1sp}\fi
13118 \leavevmode
13119 \Hy@escapeform\PDFForm@Submit
13120 \pdfstartlink user {%
13121 \PDFForm@Submit
13122 /AP<</N \SubmitObject/D \SubmitPObject>>%
13123 }%
13124 \relax
13125 \MakeButtonField{#2}%
13126 \pdfendlink
13127 \HyField@AddToFields
13128 \endgroup
13129 }
13130 \def\@Reset[#1]#2{%
13131 \def\Fld@width{\DefaultWidthofReset}%
13132 \def\Fld@height{\DefaultHeightofReset}%
13133 \begingroup
13134 \expandafter\HyField@SetKeys\expandafter{%
13135 \DefaultOptionsofReset,#1%
13136 }%
13137 \leavevmode
13138 \ifHy@pdfa
13139 \Hy@Error{%
13140 PDF/A: Reset action is prohibited%
13141 }\@ehc
13142 \MakeButtonField{#2}%
13143 \else
13144 \HyField@FlagsPushButton
13145 \ifFld@hidden\def\Fld@width{1sp}\fi
13146 \Hy@escapeform\PDFForm@Reset
13147 \pdfstartlink user {\PDFForm@Reset}\relax
13148 \MakeButtonField{#2}%
13149 \pdfendlink
13150 \HyField@AddToFields
13151 \fi
13152 \endgroup
13153 }
13154 \def\@CheckBox[#1]#2{% parameters, label
13155 \def\Fld@name{#2}%
13156 \def\Fld@default{0}%
13157 \begingroup
13158 \def\Fld@width{\DefaultWidthofCheckBox}%
13159 \def\Fld@height{\DefaultHeightofCheckBox}%
13160 \expandafter\HyField@SetKeys\expandafter{%
13161 \DefaultOptionsofCheckBox,#1%
13162 }%
13163 \PDFForm@Name
13164 \HyField@FlagsCheckBox
13165 \ifFld@hidden\def\Fld@width{1sp}\fi
13166 \LayoutCheckField{#2}{%
13167 \leavevmode

```

```

13168 \Hy@escapeform\PDFForm@Check
13169 \pdfstartlink user {\PDFForm@Check}\relax
13170 \MakeCheckField{\Fld@width}{\Fld@height}%
13171 \pdfendlink
13172 \HyField@AddToFields
13173 }%
13174 \endgroup
13175 }
13176 \def\Hy@FormObjects{%
13177 \pdfobj {%
13178 <<%
13179 /Type/Encoding%
13180 /Differences[%
13181 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
13182 /ring/tilde %
13183 39/quotesingle %
13184 96/grave %
13185 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13186 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13187 /quotedblbase/quotedblleft/quotedblright/quoteleft%
13188 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
13189 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13190 164/currency %
13191 166/brokenbar %
13192 168/dieresis/copyright/ordfeminine %
13193 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13194 /twosuperior/threesuperior/acute/mu %
13195 183/periodcentered/cedilla/onesuperior/ordmasculine %
13196 188/onequarter/onehalf/threequarters %
13197 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13198 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
13199 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%
13200 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
13201 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
13202 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
13203 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%
13204 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%
13205 /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
13206 /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
13207 ]%
13208 >>%
13209 }%
13210 \xdef\OBJ@pdfdocencoding{\the\pdflastobj}%
13211 \pdfobj{%
13212 <<%
13213 /Type/Font%
13214 /Subtype/Type1%
13215 /Name/ZaDb%
13216 /BaseFont/ZapfDingbats%
13217 >>%
13218 }%
13219 \xdef\OBJ@ZaDb{\the\pdflastobj}%
13220 \pdfobj{%
13221 <<%
13222 /Type/Font%
13223 /Subtype/Type1%
13224 /Name/Helv%

```

```

13225 /BaseFont/Helvetica%
13226 /Encoding \OBJ@pdfdocencoding\space 0 R%
13227 >>%
13228 }%
13229 \xdef\OBJ@Helv{\the\pdfastobj}%
13230 \global\let\Hy@FormObjects\relax
13231 }
13232 \pdfTeX

```

## 47.5 dvipdfm, xetex

D. P. Story adapted the pdf<sub>T</sub>E<sub>X</sub> forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```

13233 \*dvipdfm | xetex

```

\@Gauge

```

13234 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13235 \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
13236 }

```

\@Form

```

13237 \def\@Form[#1]{%
13238 \ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13239 \kvsetkeys{Form}{#1}%
13240 \Hy@FormObjects
13241 \@pdfm@mark{obj @afields []}%
13242 \@pdfm@mark{obj @corder []}%
13243 \@pdfm@mark{%
13244 obj @aform <<%
13245 /Fields @afields%
13246 /DR<<%
13247 /Font<<%
13248 /ZaDb @OBJZaDb%
13249 /Helv @OBJHelv%
13250 >>%
13251 >>%
13252 /DA(/Helv 10 Tf 0 g)%
13253 /CO @corder%
13254 \ifHy@pdfa
13255 \else
13256 \ifHyField@NeedAppearances
13257 /NeedAppearances true%
13258 \fi
13259 \fi
13260 >>%
13261 }%
13262 \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
13263 }

```

\@endForm

```

13264 \let\@endForm\ltx@empty

```

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.

```

13265 \def\dvipdfm@setdim{%
13266 height \the\ht\pdfm@box\space
13267 width \the\wd\pdfm@box\space
13268 depth \the\dp\pdfm@box\space
13269 }

```

\HyField@AnnotCount

```
13270 \newcount\HyField@AnnotCount
13271 \HyField@AnnotCount=\z@
```

\HyField@AdvanceAnnotCount

```
13272 \def\HyField@AdvanceAnnotCount{%
13273   \global\advance\HyField@AnnotCount\@ne
13274 }
```

\HyField@TheAnnotCount

```
13275 \def\HyField@TheAnnotCount{%
13276   \the\HyField@AnnotCount
13277 }
```

\@TextField

```
13278 \def\@TextField[#1]#2{% parameters, label
13279   \def\Fld@name{#2}%
13280   \let\Fld@default\ltx@empty
13281   \let\Fld@value\@empty
13282   \def\Fld@width{\DefaultWidthofText}%
13283   \def\Fld@height{%
13284     \ifFld@multiline
13285       \DefaultHeightofTextMultiline
13286     \else
13287       \DefaultHeightofText
13288     \fi
13289   }%
13290   \begingroup
13291     \expandafter\HyField@SetKeys\expandafter{%
13292       \DefaultOptionsofText,#1%
13293     }%
13294     \PDFForm@Name
13295     \HyField@FlagsText
13296     \ifFld@hidden\def\Fld@width{1sp}\fi
13297     \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13298     \setbox\pdfm@box=\hbox{%
13299       \MakeTextField{\Fld@width}{\Fld@height}%
13300     }%
13301     \HyField@AdvanceAnnotCount
13302     \LayoutTextField{#2}{%
13303       \leavevmode
13304       \Hy@escapeform\PDFForm@Text
13305       \@pdfm@mark{%
13306         ann @text\HyField@TheAnnotCount\space
13307         \dviPDFm@setdim << \PDFForm@Text >>%
13308       }%
13309     }%
13310     \unhbox\pdfm@box
13311     \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
13312     % record in @afields array
13313   \endgroup
13314 }
```

\@ChoiceMenu

```
13315 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13316   \def\Fld@name{#2}%
13317   \let\Fld@default\relax
```

```

13318 \let\Fld@value\relax
13319 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13320 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13321 \begingroup
13322 \Fld@menulength=0 %
13323 \@tempdima\z@
13324 \@for\@curropt:=#3\do{%
13325 \expandafter\Fld@checkequals\@curropt==\%
13326 \Hy@StepCount\Fld@menulength
13327 \settowidth{\@tempdimb}{\@currDisplay}%
13328 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13329 }%
13330 \advance\@tempdima by 15\p@
13331 \begingroup
13332 \HyField@SetKeys{#1}%
13333 \edef\x{\endgroup
13334 \noexpand\expandafter
13335 \noexpand\HyField@SetKeys
13336 \noexpand\expandafter{%
13337 \expandafter\noexpand\cname DefaultOptionsof%
13338 \ifFld@radio
13339 Radio%
13340 \else
13341 \ifFld@combo
13342 \ifFld@popdown
13343 PopdownBox%
13344 \else
13345 ComboBox%
13346 \fi
13347 \else
13348 ListBox%
13349 \fi
13350 \fi
13351 \endcname
13352 }%
13353 }\x
13354 \HyField@SetKeys{#1}%
13355 \PDFForm@Name
13356 \ifFld@hidden\def\Fld@width{1sp}\fi
13357 \ifx\Fld@value\relax
13358 \let\Fld@value\Fld@default
13359 \fi
13360 \LayoutChoiceField{#2}{%
13361 \ifFld@radio
13362 \HyField@FlagsRadioButton
13363 \@@Radio{#3}%
13364 \else
13365 \begingroup
13366 \HyField@FlagsChoice
13367 \ifdim\Fld@width<\@tempdima
13368 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13369 \edef\Fld@width{\the\@tempdima}%
13370 \fi
13371 \ifFld@combo
13372 \else
13373 \@tempdima=\the\Fld@menulength\Fld@charsize
13374 \advance\@tempdima by \Fld@borderwidth bp %

```

```

13375         \advance\@tempdima by \Fld@borderwidth bp %
13376         \edef\Fld@height{\the\@tempdima}%
13377     \fi
13378     \@@ListBox{#3}%
13379 \endgroup
13380 \fi
13381 }%
13382 \endgroup
13383 }

```

\@@Radio

```

13384 \def\@@Radio#1{%
13385     \Fld@listcount=0 %
13386     \EdefEscapeName\Fld@default{\Fld@default}%
13387     \setbox\pdfm@box=\hbox{%
13388         \MakeRadioField{\Fld@width}{\Fld@height}%
13389     }%
13390     \@for\@curropt:=#1\do{%
13391         \expandafter\Fld@checkequals\@curropt==\%
13392         \EdefEscapeName\@currValue{\@currValue}%
13393         \Hy@StepCount\Fld@listcount
13394         \@currDisplay\space
13395         \leavevmode
13396         \Hy@escapeform\PDFForm@Radio
13397         \ifnum\Fld@listcount=1 %
13398             \HyField@AdvanceAnnotCount
13399         \fi
13400         \@pdfm@mark{%
13401             ann %
13402             \ifnum\Fld@listcount=1 %
13403                 @radio\HyField@TheAnnotCount%
13404             \space
13405             \fi
13406             \dvipdfm@setdim
13407             <<%
13408             \PDFForm@Radio
13409             /AP<</N<</\@currValue /null>>>>%
13410             >>%
13411         }%
13412         \unhcopy\pdfm@box\space% deliberate space between radio buttons
13413         \ifnum\Fld@listcount=1 %
13414             \@pdfm@mark{%
13415                 put @afields @radio\HyField@TheAnnotCount
13416             }%
13417         \fi
13418     }%
13419 }

```

\Fld@listcount

```

13420 \newcount\Fld@listcount

```

\@@ListBox

```

13421 \def\@@ListBox#1{%
13422     \HyField@PDFChoices{#1}%
13423     \setbox\pdfm@box=\hbox{%
13424         \MakeChoiceField{\Fld@width}{\Fld@height}%
13425     }%

```

```

13426 \leavevmode
13427 \Hy@escapeform\PDFForm@List
13428 \HyField@AdvanceAnnotCount
13429 \@pdfm@mark{%
13430   ann @list\HyField@TheAnnotCount\space
13431   \dvipdfm@setdim
13432   <<\PDFForm@List>>%
13433 }%
13434 \unhbox\pdfm@box
13435 \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
13436 }

```

#### \@PushButton

```

13437 \def\@PushButton[#1]#2{% parameters, label
13438   \def\Fld@name{#2}%
13439   \begingroup
13440     \expandafter\HyField@SetKeys\expandafter{%
13441       \DefaultOptionsofPushButton,#1%
13442     }%
13443     \PDFForm@Name
13444     \ifHy@pdfa
13445       \Hy@Error{%
13446         PDF/A: Push button with JavaScript is prohibited%
13447       } \@ehc
13448       \LayoutPushButtonField{%
13449         \leavevmode
13450         \MakeButtonField{#2}%
13451       }%
13452     \else
13453       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13454       \HyField@FlagsPushButton
13455       \ifFld@hidden\def\Fld@width{1sp}\fi
13456       \HyField@AdvanceAnnotCount
13457       \LayoutPushButtonField{%
13458         \leavevmode
13459         \Hy@escapeform\PDFForm@Push
13460         \@pdfm@mark{%
13461           ann @push\HyField@TheAnnotCount\space
13462           \dvipdfm@setdim
13463           <<\PDFForm@Push>>%
13464         }%
13465       }%
13466       \unhbox\pdfm@box
13467       \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
13468     \fi
13469   \endgroup
13470 }

```

#### \@Submit

```

13471 \def\@Submit[#1]#2{%
13472   \def\Fld@width{\DefaultWidthofSubmit}%
13473   \def\Fld@height{\DefaultHeightofSubmit}%
13474   \begingroup
13475     \expandafter\HyField@SetKeys\expandafter{%
13476       \DefaultOptionsofSubmit,#1%
13477     }%
13478     \HyField@FlagsPushButton

```



```

13479 \HyField@FlagsSubmit
13480 \ifFld@hidden\def\Fld@width{1sp}\fi
13481 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}}%
13482 \leavevmode
13483 \Hy@escapeform\PDFForm@Submit
13484 \HyField@AdvanceAnnotCount
13485 \@pdfm@mark{%
13486   ann @submit\HyField@TheAnnotCount\space
13487   \dvipdfm@setdim
13488   <<\PDFForm@Submit>>%
13489 }%
13490 \unhbox\pdfm@box%
13491 \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
13492 \endgroup
13493 }

```

#### \@Reset

```

13494 \def\@Reset[#1]#2{%
13495   \def\Fld@width{\DefaultWidthofReset}%
13496   \def\Fld@height{\DefaultHeightofReset}%
13497   \begingroup
13498     \expandafter\HyField@SetKeys\expandafter{%
13499       \DefaultOptionsofReset,#1%
13500     }%
13501     \leavevmode
13502     \ifHy@pdfa
13503       \Hy@Error{%
13504         PDF/A: Reset action is prohibited%
13505       }\@ehc
13506       \MakeButtonField{#2}%
13507     \else
13508       \HyField@FlagsPushButton
13509       \ifFld@hidden\def\Fld@width{1sp}\fi
13510       \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}}%
13511       \Hy@escapeform\PDFForm@Reset
13512       \HyField@AdvanceAnnotCount
13513       \@pdfm@mark{%
13514         ann @reset\HyField@TheAnnotCount\space
13515         \dvipdfm@setdim
13516         <<\PDFForm@Reset>>%
13517       }%
13518       \unhbox\pdfm@box
13519       \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
13520     \fi
13521   \endgroup
13522 }

```

#### \@CheckBox

```

13523 \def\@CheckBox[#1]#2{% parameters, label
13524   \def\Fld@name{#2}%
13525   \def\Fld@default{0}%
13526   \begingroup
13527     \def\Fld@width{\DefaultWidthofCheckBox}%
13528     \def\Fld@height{\DefaultHeightofCheckBox}%
13529     \expandafter\HyField@SetKeys\expandafter{%
13530       \DefaultOptionsofCheckBox,#1%
13531     }%

```

```

13532 \PDFForm@Name
13533 \HyField@FlagsCheckBox
13534 \ifFld@hidden\def\Fld@width{1sp}\fi
13535 \setbox\pdfm@box=\hbox{%
13536   \MakeCheckField{\Fld@width}{\Fld@height}%
13537 }%
13538 \HyField@AdvanceAnnotCount
13539 \LayoutCheckField{#2}{%
13540   \leavevmode
13541   \Hy@escapeform\PDFForm@Check
13542   \@pdfm@mark{%
13543     ann @check\HyField@TheAnnotCount\space
13544     \dvi pdfm@setdim
13545     <<\PDFForm@Check>>%
13546   }%
13547   \unhbox\pdfm@box
13548   \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
13549 }%
13550 \endgroup
13551 }

13552 \def\Hy@FormObjects{%
13553   \@pdfm@mark{obj @OBJpdfdocencoding%
13554     <<%
13555       /Type/Encoding%
13556       /Differences[
13557         24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13558         39/quotesingle %
13559         96/grave %
13560         128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13561         /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13562         /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
13563         /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
13564         /Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13565         164/currency %
13566         166/brokenbar %
13567         168/dieresis/copyright/ordfeminine %
13568         172/logicalnot/.notdef/registered/macron/degree/plusminus%
13569         /twosuperior/threesuperior/acute/mu %
13570         183/periodcentered/cedilla/onesuperior/ordmasculine %
13571         188/onequarter/onehalf/threequarters %
13572         192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13573         /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave/Iacute%
13574         /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/Ocircumflex%
13575         /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/Ucircumflex%
13576         /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
13577         /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
13578         /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
13579         /eth/ntilde/ograve/oacute/ocircumflex/otilde/odieresis%
13580         /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
13581         /thorn/ydieresis%
13582       ]%
13583     >>%
13584   }%
13585   \@pdfm@mark{obj @OBJZaDb%
13586     <<%
13587       /Type/Font%
13588       /Subtype/Type1%

```

```

13589 /Name/ZaDb%
13590 /BaseFont/ZapfDingbats%
13591 >>%
13592 }%
13593 \@pdfm@mark{obj @OBJHelv%
13594 <<%
13595 /Type/Font%
13596 /Subtype/Type1%
13597 /Name/Helv%
13598 /BaseFont/Helvetica%
13599 /Encoding @OBJpdfdocencoding%
13600 >>%
13601 }%
13602 \global\let\Hy@FormObjects\relax
13603 }
13604 </dvipdfm | xetex>

```

## 47.6 Common forms part

```

13605 <*pdfform>

\Hy@escapestring
13606 \begingroup\expandafter\expandafter\expandafter\endgroup
13607 \expandafter\ifx\csname pdfescapestring\endcsname\relax
13608 \let\Hy@escapestring\@firstofone
13609 \def\Hy@escapeform#1{%
13610 \ifHy@pdfescapeform
13611 \def\Hy@escapestring##1{%
13612 \noexpand\Hy@escapestring{\noexpand##1}%
13613 }%
13614 \edef\Hy@temp{#1}%
13615 \expandafter\Hy@@@escapeform\Hy@temp\Hy@escapestring{}\@nil
13616 \def\Hy@escapestring##1{%
13617 \@ifundefined{Hy@esc@\string##1}{%
13618 ##1%
13619 \ThisShouldNotHappen
13620 }{%
13621 \csname Hy@esc@\string##1\endcsname
13622 }%
13623 }%
13624 \else
13625 \let\Hy@escapestring\@firstofone
13626 \fi
13627 }%
13628 \def\Hy@@@escapeform#1\Hy@escapestring#2#3\@nil{%
13629 \ifx\#3\%
13630 \else
13631 \expandafter
13632 \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13633 \ltx@ReturnAfterFi{%
13634 \Hy@@@escapeform#3\@nil
13635 }%
13636 \fi
13637 }%
13638 \else
13639 \def\Hy@escapeform#1{%
13640 \ifHy@pdfescapeform
13641 \let\Hy@escapestring\pdfescapestring

```

```

13642 \else
13643 \let\Hy@escapestring\@firstofone
13644 \fi
13645 }%
13646 \Hy@escapeform{}%
13647 \fi

\PDFForm@Name
13648 \def\PDFForm@Name{%
13649 \PDFForm@@Name\Fld@name
13650 \ifx\Fld@altname\relax
13651 \else
13652 \PDFForm@@Name\Fld@altname
13653 \fi
13654 \ifx\Fld@mappingname\relax
13655 \else
13656 \PDFForm@@Name\Fld@mappingname
13657 \fi
13658 }

\PDFForm@@Name
13659 \def\PDFForm@@Name#1{%
13660 \begingroup
13661 \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
13662 \ifHy@unicode
13663 \Hy@unicodetrue
13664 \fi
13665 \fi
13666 \HyPsd@XeTeXBigCharstrue
13667 \pdfstringdef\Hy@gtemp#1%
13668 \endgroup
13669 \let#1\Hy@gtemp
13670 }

\Fld@additionalactions
13671 \def\Fld@@additionalactions{%
K input (keystroke) format
13672 \ifx\Fld@keystroke@code\@empty
13673 \else
13674 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
13675 \fi
F display format
13676 \ifx\Fld@format@code\@empty
13677 \else
13678 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
13679 \fi
V validation
13680 \ifx\Fld@validate@code\@empty
13681 \else
13682 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
13683 \fi
C calculation
13684 \ifx\Fld@calculate@code\@empty
13685 \else
13686 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
13687 \fi

```

Fo receiving the input focus

```
13688 \ifx\Fld@onfocus@code\@empty
13689 \else
13690 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
13691 \fi
```

Bl loosing the input focus (blurred)

```
13692 \ifx\Fld@onblur@code\@empty
13693 \else
13694 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
13695 \fi
```

D pressing the mouse button (down)

```
13696 \ifx\Fld@onmousedown@code\@empty
13697 \else
13698 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
13699 \fi
```

U releasing the mouse button (up)

```
13700 \ifx\Fld@onmouseup@code\@empty
13701 \else
13702 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
13703 \fi
```

E cursor enters the annotation's active area.

```
13704 \ifx\Fld@onenter@code\@empty
13705 \else
13706 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
13707 \fi
```

X cursor exits the annotation's active area.

```
13708 \ifx\Fld@onexit@code\@empty
13709 \else
13710 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
13711 \fi
13712 }
13713 \def\Fld@additionalactions{%
13714 \if\Fld@@additionalactions-%
13715 \else
13716 \ifHy@pdfa
13717 \else
13718 /AA<<\Fld@@additionalactions>>%
13719 \fi
13720 \fi
13721 }
```

\Fld@annotnames

```
13722 \def\Fld@annotnames{%
13723 /T(\Fld@name)%
13724 \ifx\Fld@altname\relax
13725 \else
13726 /TU(\Fld@altname)%
13727 \fi
13728 \ifx\Fld@mappingname\relax
13729 \else
13730 /TM(\Fld@mappingname)%
13731 \fi
13732 }
```

\PDFForm@Check

```
13733 \def\PDFForm@Check{%
13734 /Subtype/Widget%
13735 \Fld@annotflags
13736 \Fld@annotnames
13737 /FT/Btn%
13738 \Fld@flags
13739 /Q \Fld@align
13740 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13741 /MK<<%
13742 \ifnum\Fld@rotation=\z@
13743 \else
13744 /R \Fld@rotation
13745 \fi
13746 \ifx\Fld@bordercolor\relax
13747 \else
13748 /BC[\Fld@bordercolor]%
13749 \fi
13750 \ifx\Fld@bcolor\relax
13751 \else
13752 /BG[\Fld@bcolor]%
13753 \fi
13754 /CA(\Hy@escapestring{\Fld@cbsymbol})%
13755 >>%
13756 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13757 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13758 /H/P%
13759 \ifFld@checked /V/Yes\else /V/Off\fi
13760 \Fld@additionalactions
13761 }
```

\PDFForm@Push

```
13762 \ifHy@pdfa
13763 \else
13764 \def\PDFForm@Push{%
13765 /Subtype/Widget%
13766 \Fld@annotflags
13767 \Fld@annotnames
13768 /FT/Btn%
13769 \Fld@flags
13770 /H/P%
13771 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13772 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13773 \ifx\Fld@bordercolor\relax\else 1\fi
13774 \space
13775 \else
13776 /MK<<%
13777 \ifnum\Fld@rotation=\z@
13778 \else
13779 /R \Fld@rotation
13780 \fi
13781 \ifx\Fld@bordercolor\relax
13782 \else
13783 /BC[\Fld@bordercolor]%
13784 \fi
13785 >>%
13786 \fi
```

```

13787 /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
13788 \Fld@additionalactions
13789 }%
13790 \fi

```

#### \PDFForm@List

```

13791 \def\PDFForm@List{%
13792 /Subtype/Widget%
13793 \Fld@annotflags
13794 \Fld@annotnames
13795 /FT/Ch%
13796 \Fld@flags
13797 /Q \Fld@align
13798 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13799 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13800 \ifx\Fld@bordercolor\relax\else 1\fi
13801 \ifx\Fld@bcolor\relax \else 1\fi
13802 \space
13803 \else
13804 /MK<<%
13805 \ifnum\Fld@rotation=\z@
13806 \else
13807 /R \Fld@rotation
13808 \fi
13809 \ifx\Fld@bordercolor\relax
13810 \else
13811 /BC[\Fld@bordercolor]%
13812 \fi
13813 \ifx\Fld@bcolor\relax
13814 \else
13815 /BG[\Fld@bcolor]%
13816 \fi
13817 >>%
13818 \fi
13819 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13820 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13821 \Fld@choices
13822 \Fld@additionalactions
13823 }

```

#### \PDFForm@Radio

```

13824 \def\PDFForm@Radio{%
13825 /Subtype/Widget%
13826 \Fld@annotflags
13827 \Fld@annotnames
13828 /FT/Btn%
13829 \Fld@flags
13830 /H/P%
13831 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13832 /MK<<%
13833 \ifnum\Fld@rotation=\z@
13834 \else
13835 /R \Fld@rotation
13836 \fi
13837 \ifx\Fld@bordercolor\relax
13838 \else
13839 /BC[\Fld@bordercolor]%

```

```

13840 \fi
13841 \ifx\Fld@bcolor\relax
13842 \else
13843 /BG[\Fld@bcolor]%
13844 \fi
13845 /CA(\Fld@radiosymbol)%
13846 >>%
13847 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13848 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13849 \ifx\@currValue\Fld@default
13850 /V/\Fld@default
13851 /DV/\Fld@default
13852 \else
13853 /V/Off%
13854 /DV/Off%
13855 \fi
13856 \Fld@additionalactions
13857 }

```

#### \PDFForm@Text

```

13858 \def\PDFForm@Text{%
13859 /Subtype/Widget%
13860 \Fld@annotflags
13861 \Fld@annotnames
13862 /FT/Tx%
13863 \Fld@flags
13864 /Q \Fld@align
13865 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
13866 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13867 \ifx\Fld@bordercolor\relax\else 1\fi
13868 \ifx\Fld@bcolor\relax \else 1\fi
13869 \space
13870 \else
13871 /MK<<%
13872 \ifnum\Fld@rotation=\z@
13873 \else
13874 /R \Fld@rotation
13875 \fi
13876 \ifx\Fld@bordercolor\relax
13877 \else
13878 /BC[\Fld@bordercolor]%
13879 \fi
13880 \ifx\Fld@bcolor\relax
13881 \else
13882 /BG[\Fld@bcolor]%
13883 \fi
13884 >>%
13885 \fi
13886 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13887 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13888 /DV(\Hy@escapestring{\Fld@default})%
13889 /V(\Hy@escapestring{\Fld@value})%
13890 \Fld@additionalactions
13891 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
13892 }

```

#### \PDFForm@Submit



```

13893 \def\PDFForm@Submit{%
13894   /Subtype/Widget%
13895   \Fld@annotflags
13896   \Fld@annotnames
13897   /FT/Btn%
13898   \Fld@flags
13899   /H/P%
13900   /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13901   \ifcase0\ifnum\Fld@rotation=\z@   \else 1\fi
13902     \ifx\Fld@bordercolor\relax\else 1\fi
13903     \space
13904   \else
13905     /MK<<%
13906     \ifnum\Fld@rotation=\z@
13907     \else
13908       /R \Fld@rotation
13909     \fi
13910     \ifx\Fld@bordercolor\relax
13911     \else
13912       /BC[\Fld@bordercolor]%
13913     \fi
13914     >>%
13915   \fi
13916   /A<<%
13917   /S/SubmitForm%
13918   /F<<%
13919   /FS/URL%
13920   /F(\Hy@escapestring{\Form@action})%
13921   >>%
13922   \Fld@submitflags
13923   >>%
13924   \Fld@additionalactions
13925 }

```

\PDFForm@Reset

```

13926 \ifHy@pdfa
13927 \else
13928   \def\PDFForm@Reset{%
13929     /Subtype/Widget%
13930     \Fld@annotflags
13931     \Fld@annotnames
13932     /FT/Btn%
13933     \Fld@flags
13934     /H/P%
13935     /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
13936     \ifcase0\ifnum\Fld@rotation=\z@   \else 1\fi
13937       \ifx\Fld@bordercolor\relax\else 1\fi
13938       \space
13939     \else
13940       /MK<<%
13941       \ifnum\Fld@rotation=\z@
13942       \else
13943         /R \Fld@rotation
13944       \fi
13945       \ifx\Fld@bordercolor\relax
13946       \else
13947         /BC[\Fld@bordercolor]%
13948       \fi

```

```

13949 %      /CA (Clear)
13950 %      /AC (Done)
13951 >>%
13952 \fi
13953 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13954 /A<</S/ResetForm>>%
13955 \Fld@additionalactions
13956 }%
13957 \fi

13958 </pdfform>
13959 <*package>

```

## 48 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`

```

13960 \def\phantomsection{%
13961   \Hy@MakeCurrentHrefAuto{section*}%
13962   \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
13963 }
13964 </package>

```

### 48.1 Bookmarks

```

13965 <*outlines>

```

This section was written by Heiko Oberdiek; the code replaces an earlier version by David Carlisle.

The first part of bookmark code is in section 6. Further documentation is available as paper and slides of the talk, that Heiko Oberdiek has given at the EuroTeX'99 meeting in Heidelberg. See `paper.pdf` and `slides.pdf` in the `doc` directory of `hyperref`.

When using the right-to-left typesetting based on  $\varepsilon\text{-TeX}$ , the order of the `\BOOKMARK` commands written to the `\@outlinefile` could appear wrong, because of mis-feature of  $\varepsilon\text{-TeX}$ 's implementation (that it processes the shipped out lines left-to-right, instead of the order in which they appear in the document). The wrong order will appear when the file contains two bookmarks on the same line typeset right-to-left.

To work around this problem, the `bookmark@seq@number` counter is used to write the bookmark's sequential number into a comment in the `\@outlinefile`, which could be used to post-process it to achieve the proper ordering of `\BOOKMARK` commands in that file.

```

13966 \def\Hy@writebookmark#1#2#3#4#5{%
13967   % section number, text, label, level, file
13968   \ifx\WriteBookmarks\relax%
13969     \else
13970     \ifnum#4>\Hy@bookmarksdepth\relax
13971     \else

```

```

13972 \@@writetorep{#1}{#2}{#3}{#4}{#5}%
13973 \fi
13974 \fi
13975 }
13976 \def\Hy@currentbookmarklevel{0}
13977 \def\Hy@numberline#1{#1 }
13978 \def\@@writetorep#1#2#3#4#5{%
13979 \begingroup
13980 \edef\Hy@tempa{#5}%
13981 \ifx\Hy@tempa\Hy@bookmarkstype
13982 \edef\Hy@level{#4}%
13983 \ifx\Hy@levelcheck Y%
13984 \@tempcnta\Hy@level\relax
13985 \advance\@tempcnta by -1 %
13986 \ifnum\Hy@currentbookmarklevel<\@tempcnta
13987 \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
13988 \advance\@tempcnta by 1 %
13989 \Hy@Warning{%
13990 Difference (\the\@tempcnta) between bookmark levels is %
13991 greater \MessageBreak than one, level fixed%
13992 }%
13993 \@tempcnta\Hy@currentbookmarklevel
13994 \advance\@tempcnta by 1 %
13995 \edef\Hy@level{\the\@tempcnta}%
13996 \fi
13997 \else
13998 \global\let\Hy@levelcheck Y%
13999 \fi
14000 \global\let\Hy@currentbookmarklevel\Hy@level
14001 \@tempcnta\Hy@level\relax
14002 \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
14003 \advance\@tempcnta by -1 %
14004 \edef\Hy@tempa{#3}%
14005 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
14006 \ifx\Hy@tempa\Hy@tempb
14007 \Hy@Warning{%
14008 The anchor of a bookmark and its parent's must not%
14009 \MessageBreak be the same. Added a new anchor%
14010 }%
14011 \phantomsection
14012 \fi
14013 \ifHy@bookmarksnumbered
14014 \let\numberline\Hy@numberline
14015 \let\booknumberline\Hy@numberline
14016 \let\partnumberline\Hy@numberline
14017 \let\chapternumberline\Hy@numberline
14018 \else
14019 \let\numberline\@gobble
14020 \let\booknumberline\@gobble
14021 \let\partnumberline\@gobble
14022 \let\chapternumberline\@gobble
14023 \fi
14024 \HyPsd@XeTeXBigCharstrue
14025 \pdfstringdef\Hy@tempa{#2}%
14026 \HyPsd@SanitizeForOutFile\Hy@tempa
14027 \if@filesw
14028 \stepcounter{bookmark@seq@number}%

```

```

14029 \ifundefined{@outlinefile}{%
14030 }{%
14031 \protected@write{@outlinefile}{{%
14032 \protect\BOOKMARK
14033 [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
14034 {\Hy@tempa}{\Hy@tempb}}%
14035 \@percentchar\space\thebookmark@seq@number
14036 }%
14037 }%
14038 \fi
14039 \fi
14040 \endgroup
14041 }
14042 \newcounter{bookmark@seq@number}

14043 \begingroup
14044 \lccode'('= '{%
14045 \lccode'('= '}%
14046 \lccode'1=\z@
14047 \lccode'2=\z@
14048 \lccode'3=\z@
14049 \lccode'5=\z@
14050 \lccode'7=\z@
14051 \lccode'\#=\z@
14052 \lccode'\='=\z@
14053 \lccode'\{=\z@
14054 \lccode'\}=\z@
14055 \lowercase{%
14056 \endgroup
14057 \def\HyPsd@SanitizeForOutFile#1{%
14058 \@onelevel@sanitize\Hy@tempa
14059 \escapechar'\%
14060 \edef\Hy@tempa{%
14061 \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa(\@nil
14062 }%
14063 \edef\Hy@tempa{%
14064 \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa)\@nil
14065 }%
14066 }%
14067 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
14068 #1%
14069 \ifx\#2\%
14070 \expandafter\ltx@gobble
14071 \else
14072 \expandafter\ltx@firstofone
14073 \fi
14074 {%
14075 \string\173%
14076 \HyPsd@SanitizeOut@BraceLeft#2\@nil
14077 }%
14078 }%
14079 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
14080 #1%
14081 \ifx\#2\%
14082 \expandafter\ltx@gobble
14083 \else
14084 \expandafter\ltx@firstofone
14085 \fi

```

```

14086   {%
14087     \string\175%
14088     \HyPsd@SanitizeOut@BraceRight#2\@nil
14089   }%
14090 }%
14091 }

```

In the call of `\BOOKMARK` the braces around `#4` are omitted, because it is not likely, that the level number contains `]`.

```

14092 \newcommand{\currentpdfbookmark}{%
14093   \pdfbookmark[\Hy@currentbookmarklevel]%
14094 }
14095 \newcommand{\subpdfbookmark}{%
14096   \@tempcnta\Hy@currentbookmarklevel
14097   \Hy@StepCount\@tempcnta
14098   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
14099 }
14100 \newcommand{\belowpdfbookmark}[2]{%
14101   \@tempcnta\Hy@currentbookmarklevel
14102   \Hy@StepCount\@tempcnta
14103   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
14104   \advance\@tempcnta by -1 %
14105   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
14106 }

```

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.

```

14107 \renewcommand\pdfbookmark[3][0]{%
14108   \Hy@writebookmark{}{#2}{#3.#1}{#1}{toc}%
14109   \hyper@anchorstart{#3.#1}\hyper@anchorend
14110 }
14111 \def\BOOKMARK{%
14112   \ifnextchar{\@BOOKMARK}{\@@BOOKMARK[1][-]}%
14113 }
14114 \def\@BOOKMARK[#1]{%
14115   \ifnextchar{\@@BOOKMARK[#1]}{\@@BOOKMARK[#1][-]}%
14116 }

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the `texinfo` macros.

#### 48.1.1 Rerun warning

`\Hy@OutlineRerunCheck`

```

14117 \RequirePackage{rerunfilecheck}[2009/12/10]
14118 \def\Hy@OutlineRerunCheck{%
14119   \RerunFileCheck{\jobname.out}{%
14120     \immediate\closeout\@outlinefile
14121   }{%
14122     Rerun to get outlines right\MessageBreak
14123     or use package 'bookmark'%
14124   }%
14125 }

```

#### 48.1.2 Driver stuff

The VTEX section was written originally by VTEX, but then amended by Denis Girou ([denis.girou@idris.fr](mailto:denis.girou@idris.fr)), then by Taco Hoekwater ([taco.hoekwater@wkap](mailto:taco.hoekwater@wkap)).

nl. The problem is that VTeX, with its close integration of the PDF backend, does look at the contents of bookmarks, escaping \ and the like.

14126 \(\*vtx\)

14127 \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.

14128 \begingroup

14129 \catcode'\'=12 %

14130 \ifnum\Hy@VTeXversion<650 %

14131 \catcode'\'=12 %

14132 \gdef\hv@pdf@char#1#2#3{%

14133 \char

14134 \ifcase'#1#2#3 %

14135 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%

14136 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%

14137 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%

14138 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%

14139 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%

14140 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%

14141 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%

14142 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%

14143 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%

14144 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%

14145 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%

14146 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%

14147 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%

14148 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%

14149 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%

14150 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%

14151 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%

14152 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%

14153 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%

14154 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%

14155 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%

14156 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%

14157 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%

14158 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%

14159 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%

14160 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%

14161 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%

14162 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%

14163 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%

14164 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%

14165 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%

14166 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%

14167 \fi

14168 }%

14169 \else

14170 \gdef\hv@pdf@char{\char'}%

14171 \fi

14172 \endgroup

\@@BOOKMARK

14173 \def\@@BOOKMARK[#1][#2]#3#4#5{%

```

14174 \expandafter\edef\csname @count@#3\endcsname{%
14175   \the\@serial@counter
14176 }%
14177 \edef\@mycount{\the\@serial@counter}%
14178 \Hy@StepCount\@serial@counter
14179 \edef\@parcount{%
14180   \expandafter\ifx\csname @count@#5\endcsname\relax
14181     0%
14182   \else
14183     \csname @count@#5\endcsname
14184   \fi
14185 }%
14186 \immediate\special{%
14187   !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
14188   s=\ifx#2-c\else o\fi,t=#4%
14189 }%
14190 }%

```

\ReadBookmarks

```

14191 \def\ReadBookmarks{%
14192   \begingroup
14193   \def\0{\hv@pdf@char 0}%
14194   \def\1{\hv@pdf@char 1}%
14195   \def\2{\hv@pdf@char 2}%
14196   \def\3{\hv@pdf@char 3}%
14197   \def\({}%
14198   \def\)}%
14199   \def\do##1{%
14200     \ifnum\catcode'##1=\active
14201       \@makeother##1%
14202     \else
14203       \ifnum\catcode'##1=6 %
14204         \@makeother##1%
14205       \fi
14206     \fi
14207   }%
14208   \dospecials
14209   \Hy@safe@activestrue
14210   \InputIfFileExists{\jobname.out}{\}{}%
14211 \endgroup
14212 \ifx\WriteBookmarks\relax
14213 \else
14214   \if@filesw
14215     \newwrite\@outlinefile
14216     \Hy@OutlineRerunCheck
14217     \immediate\openout\@outlinefile=\jobname.out\relax
14218     \ifHy@typexml
14219       \immediate\write\@outlinefile{<relaxxml>\relax}%
14220     \fi
14221   \fi
14222 \fi
14223 }

14224 </vtex>
14225 <!*vtex>
14226 \def\ReadBookmarks{%
14227   \pdf@ifdraftmode{\}%

```

```

14228 \begingroup
14229 \def\do##1{%
14230 \ifnum\catcode'##1=\active
14231 \@makeother##1%
14232 \else
14233 \ifnum\catcode'##1=6 %
14234 \@makeother##1%
14235 \fi
14236 \fi
14237 }%
14238 \dospecials
14239 \Hy@safe@activetrue
14240 \escapechar=\%
14241 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14242 \calc@bm@number{##5}%
14243 }%
14244 \InputIfFileExists{jobname.out}{\relax}{\relax}%
14245 \ifx\WriteBookmarks\relax
14246 \global\let\WriteBookmarks\relax
14247 \fi
14248 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14249 \def\Hy@temp{##4}%
14250 \pdfmark{
14251 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14252 \Hy@OutlineName{}\Hy@pstringName{
14253 ##2\check@bm@number{##3}%
14254 }%
14255 \expandafter\strip@prefix\meaning\Hy@temp
14256 }%
14257 \pdfmark}
14258 \pdfmark{
14259 \pdfmark{/OUT,%
14260 Count={##2\check@bm@number{##3}},%
14261 Dest={##3},%
14262 Title=\expandafter\strip@prefix\meaning\Hy@temp
14263 }%
14264 \pdfmark}
14265 \pdfmark}
14266 \dviopdfm|xetex
14267 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14268 \pdfm@mark{
14269 outline \ifHy@DvipdfmxOutlineOpen
14270 [%
14271 \ifnum##21>\z@
14272 \else
14273 -%
14274 \fi
14275 ] %
14276 \fi
14277 ##1<<%
14278 /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
14279 /A<<%
14280 /S/GoTo%
14281 /D(\Hy@pstringName)%
14282 >>%
14283 >>%
14284 }%

```



```

14285 </dvipdfm | xetex>
14286 }%
14287 \begingroup
14288 \def\WriteBookmarks{0}%
14289 \InputIfFileExists{jobname.out}{-}{-}%
14290 \endgroup
14291 %{\escapechar\m@ne\InputIfFileExists{jobname.out}{-}{-}}%
14292 \endgroup
14293 }%
14294 \ifx\WriteBookmarks\relax
14295 \else
14296 \if@filesw
14297 \newwrite\@outlinefile
14298 \Hy@OutlineRerunCheck
14299 \immediate\openout\@outlinefile=jobname.out\relax
14300 \ifHy@typexml
14301 \immediate\write\@outlinefile{<relaxxml>\relax}%
14302 \fi
14303 \fi
14304 \fi
14305 }
14306 <*pdfTeX>
14307 \def\Hy@OutlineName#1#2#3#4{%
14308 \pdfoutline goto name{#2}count#3{#4}%
14309 }
14310 </pdfTeX>
14311 \def\check@bm@number#1{%
14312 \expandafter\ifx\csname B_#1\endcsname\relax
14313 0%
14314 \else
14315 \csname B_#1\endcsname
14316 \fi
14317 }
14318 \def\calc@bm@number#1{%
14319 \@tempcnta=\check@bm@number{#1}\relax
14320 \advance\@tempcnta by 1 %
14321 \expandafter\xdef\csname B_#1\endcsname{the\@tempcnta}%
14322 }
14323 </!vTeX>
14324 \ifHy@implicit
14325 \else
14326 \expandafter\endinput
14327 \fi
14328 </outlines>
14329 <*outlines | hypertex>
14330 \newlength\Hy@SectionHShift
14331 \def\Hy@SectionAnchorHref#1{%
14332 \ifx\protect\@typeset@protect
14333 \Hy@@SectionAnchor{#1}%
14334 \fi
14335 }
14336 \DeclareRobustCommand*{\Hy@@SectionAnchor}[1]{%
14337 \leavevmode
14338 \hbox to 0pt{%
14339 \kern-\Hy@SectionHShift
14340 \Hy@raisedlink{%

```

```

14341 \hyper@anchorstart{#1}\hyper@anchorend
14342 }%
14343 \hss
14344 }%
14345 }
14346 \let\H@old@ssect\@ssect
14347 \def\@ssect#1#2#3#4#5{%
14348 \Hy@MakeCurrentHrefAuto{section*}%
14349 \setlength{\Hy@SectionHShift}{#1}%
14350 \begingroup
14351 \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
14352 \toks\tw@\expandafter{%
14353 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14354 #5%
14355 }%
14356 \edef\x{\endgroup
14357 \the\toks@\the\toks\tw@}%
14358 }\x
14359 }
14360 \let\H@old@schapter\@schapter
14361 \def\@schapter#1{%
14362 \begingroup
14363 \let\@mkboth\@gobbletwo
14364 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14365 \Hy@raisedlink{%
14366 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14367 }%
14368 \endgroup
14369 \H@old@schapter{#1}%
14370 }

```

If there is no chapter number (`\frontmatter` or `\backmatter`) then `\refstepcounter{chapter}` is not executed, so there will be no destination for `\ddcontentsline`. So `\@chapter` is overloaded to avoid this:

```

14371 \ltx@ifundefined{@chapter}{-}{%
14372 \let\Hy@org@chapter\@chapter
14373 \def\@chapter{%
14374 \def\Hy@next{%
14375 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14376 \Hy@raisedlink{%
14377 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14378 }%
14379 }%
14380 \ifnum\c@secnumdepth>\m@ne
14381 \ltx@ifundefined{if@mainmatter}%
14382 \iftrue{\csname if@mainmatter\endcsname}%
14383 \let\Hy@next\relax
14384 \fi
14385 \fi
14386 \Hy@next
14387 \Hy@org@chapter
14388 }%
14389 }
14390 \let\H@old@part\@part
14391 \begingroup\expandafter\expandafter\expandafter\endgroup
14392 \expandafter\ifx\csname chapter\endcsname\relax
14393 \let\Hy@secnum@part\z@

```

```

14394 \else
14395   \let\Hy@secnum@part\m@ne
14396 \fi
14397 \def\@part{%
14398   \ifnum\Hy@secnum@part>\c@secnumdepth
14399     \phantomsection
14400   \fi
14401   \H@old@part
14402 }

14403 \let\H@old@spart\@spart
14404 \def\@spart#1{%
14405   \Hy@MakeCurrentHrefAuto{part*}%
14406   \Hy@raisedlink{%
14407     \hyper@anchorstart{\@currentHref}\hyper@anchorend
14408   }%
14409   \H@old@spart{#1}%
14410 }
14411 \let\H@old@sect\@sect
14412 \def\@sect#1#2#3#4#5#6[#7]#8{%
14413   \ifnum #2>\c@secnumdepth
14414     \expandafter\@firstoftwo
14415   \else
14416     \expandafter\@secondoftwo
14417   \fi
14418   {%
14419     \Hy@MakeCurrentHrefAuto{section*}%
14420     \setlength{\Hy@SectionHShift}{#3}%
14421     \begingroup
14422       \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[#7]}%
14423       \toks\tw@\expandafter{%
14424         \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14425         #8%
14426       }%
14427       \edef\x{\endgroup
14428         \the\toks@{\the\toks\tw@}}%
14429       }\x
14430   }{%
14431     \H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}[#7]{#8}%
14432   }%
14433 }

14434 </outlines | hypertex>
14435 <*outlines>

14436 \expandafter\def\csname Parent-4\endcsname{}
14437 \expandafter\def\csname Parent-3\endcsname{}
14438 \expandafter\def\csname Parent-2\endcsname{}
14439 \expandafter\def\csname Parent-1\endcsname{}
14440 \expandafter\def\csname Parent0\endcsname{}
14441 \expandafter\def\csname Parent1\endcsname{}
14442 \expandafter\def\csname Parent2\endcsname{}
14443 \expandafter\def\csname Parent3\endcsname{}
14444 \expandafter\def\csname Parent4\endcsname{}

14445 </outlines>

```

## 49 Compatibility with koma-script classes

14446 <\*outlines | hypertex>

Hard-wire in an unpleasant over-ride of komascript ‘scrbook’ class for Tobias Isenberg (Tobias.Isenberg@gmx.de). With version 6.71b the hack is also applied to ‘scrreprt’ class and is removed for koma-script versions since 2001/01/01, because Markus Kohm supports hyperref in komascript.

```

14447 \def\Hy@tempa{%
14448   \def\@addchap[##1]##2{%
14449     \typeout{##2}%
14450     \if@twoside
14451       \@mkboth{##1}{}%
14452     \else
14453       \@mkboth{}{##1}%
14454     \fi
14455     \addtocontents{lof}{\protect\addvspace{10\p@}}%
14456     \addtocontents{lot}{\protect\addvspace{10\p@}}%
14457     \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14458     \Hy@raisedlink{%
14459       \hyper@anchorstart{\@currentHref}\hyper@anchorend
14460     }%
14461     \if@twocolumn
14462       \@topnewpage[\@makeschapterhead{##2}]%
14463     \else
14464       \@makeschapterhead{##2}%
14465       \@afterheading
14466     \fi
14467     \addcontentsline{toc}{chapter}{##1}%
14468   }%
14469 }
14470 \@ifclassloaded{scrbook}{%
14471   \@ifclasslater{scrbook}{2001/01/01}{%
14472     \let\Hy@tempa\@empty
14473   }{}%
14474 }{%
14475   \@ifclassloaded{scrreprt}{%
14476     \@ifclasslater{scrreprt}{2001/01/01}{%
14477       \let\Hy@tempa\@empty
14478     }{}%
14479   }{}%
14480   \let\Hy@tempa\@empty
14481 }%
14482 }%
14483 \Hy@tempa
14484 </outlines | hypertex>

```

## 50 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 50.1 PD1 encoding

```

14485 <*pd1enc>
14486 \DeclareFontEncoding{PD1}{}{}

Accents
14487 \DeclareTextAccent{'}{PD1}{\textasciigrave}

```

```

14488 \DeclareTextAccent{'}{PD1}{\textacute}
14489 \DeclareTextAccent{^}{PD1}{\textasciicircum}
14490 \DeclareTextAccent{~}{PD1}{\texttilde}
14491 \DeclareTextAccent{"}{PD1}{\textasciidieresis}
14492 \DeclareTextAccent{r}{PD1}{\textring}
14493 \DeclareTextAccent{v}{PD1}{\textasciicaron}
14494 \DeclareTextAccent{.}{PD1}{\textdotaccent}
14495 \DeclareTextAccent{c}{PD1}{\textcedilla}
14496 \DeclareTextAccent{=}{PD1}{\textasciimacron}
14497 \DeclareTextAccent{b}{PD1}{\textmacronbelow}
14498 \DeclareTextAccent{d}{PD1}{\textdotbelow}
14499 \DeclareTextCompositeCommand{'}{PD1}{\@empty}{\textasciigrave}
14500 \DeclareTextCompositeCommand{'}{PD1}{\@empty}{\textacute}
14501 \DeclareTextCompositeCommand{^}{PD1}{\@empty}{\textasciicircum}
14502 \DeclareTextCompositeCommand{~}{PD1}{\@empty}{\texttilde}
14503 \DeclareTextCompositeCommand{"}{PD1}{\@empty}{\textasciidieresis}
14504 \DeclareTextCompositeCommand{r}{PD1}{\@empty}{\textring}
14505 \DeclareTextCompositeCommand{v}{PD1}{\@empty}{\textasciicaron}
14506 \DeclareTextCompositeCommand{.}{PD1}{\@empty}{\textdotaccent}
14507 \DeclareTextCompositeCommand{c}{PD1}{\@empty}{\textcedilla}
14508 \DeclareTextCompositeCommand{=}{PD1}{\@empty}{\textasciimacron}
14509 \DeclareTextCompositeCommand{b}{PD1}{\@empty}{\textmacronbelow}
14510 \DeclareTextCompositeCommand{d}{PD1}{\@empty}{\textdotbelow}
14511 \DeclareTextCompositeCommand{'}{PD1}{\ }{\textasciigrave}
14512 \DeclareTextCompositeCommand{'}{PD1}{\ }{\textacute}
14513 \DeclareTextCompositeCommand{^}{PD1}{\ }{\textasciicircum}
14514 \DeclareTextCompositeCommand{~}{PD1}{\ }{\texttilde}
14515 \DeclareTextCompositeCommand{"}{PD1}{\ }{\textasciidieresis}
14516 \DeclareTextCompositeCommand{r}{PD1}{\ }{\textring}
14517 \DeclareTextCompositeCommand{v}{PD1}{\ }{\textasciicaron}
14518 \DeclareTextCompositeCommand{.}{PD1}{\ }{\textdotaccent}
14519 \DeclareTextCompositeCommand{c}{PD1}{\ }{\textcedilla}
14520 \DeclareTextCompositeCommand{=}{PD1}{\ }{\textasciimacron}
14521 \DeclareTextCompositeCommand{b}{PD1}{\ }{\textmacronbelow}
14522 \DeclareTextCompositeCommand{d}{PD1}{\ }{\textdotbelow}
14523 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
14524 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
14525 \DeclareTextCommand{\newtie}{PD1}[1]{%
14526 \TextSymbolUnavailable{\newtie{#1}}#1%
14527 }

```

Special white space escape characters not for use in bookmarks but for other PDF strings.

```

14528 % U+0009 (CHARACTER TABULATION)
14529 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
14530 % U+000A (LINE FEED)
14531 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
14532 % U+000D (CARRIAGE RETURN)
14533 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

```

Accent glyph names

```

14534 % U+02D8 BREVE; breve
14535 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
14536 % U+02C7 CARON; caron
14537 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
14538 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
14539 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6
14540 % U+02D9 DOT ABOVE; dotaccent
14541 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9

```

14542 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
14543 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD  
14544 % U+02DB OGONEK; ogonek  
14545 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB  
14546 % U+02DA RING ABOVE; ring  
14547 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA  
14548 % U+02DC SMALL TILDE; ilde, \*tilde  
14549 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC  
  
\040: U+0020 SPACE; \*space, spacehackarabic  
\041: U+0021 EXCLAMATION MARK; exclam  
14550 % U+0022 QUOTATION MARK; quotedbl  
14551 \DeclareTextCommand{\textquotedbl}{PD1}{\string"}% \042 U+0022  
14552 % U+0023 NUMBER SIGN; numbersign  
14553 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023  
14554 % U+0024 DOLLAR SIGN; dollar  
14555 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024  
14556 % U+0025 PERCENT SIGN; percent  
14557 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025  
14558 % U+0026 AMPERSAND; ampersand  
14559 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026  
  
\047: U+0027 APOSTROPHE; quotesingle  
  
14560 % U+0028 LEFT PARENTHESIS; parenleft  
14561 \DeclareTextCommand{\textparenleft}{PD1}{\string\(% \050 U+0028  
14562 % U+0029 RIGHT PARENTHESIS; parenright  
14563 \DeclareTextCommand{\textparenright}{PD1}{\string\)% \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  
14564 % U+002E FULL STOP; period  
14565 \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  
14566 % U+003C LESS-THAN SIGN; less  
14567 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
  
\075: U+003D EQUALS SIGN; equal  
14568 % U+003E GREATER-THAN SIGN; greater  
14569 \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  
14570 % U+005C REVERSE SOLIDUS; backslash  
14571 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
  
\135: U+005D RIGHT SQUARE BRACKET; bracketright  
14572 % U+005E CIRCUMFLEX ACCENT; asciicircum

14573 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
14574 % U+005F LOW LINE; underscore  
14575 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
14576 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
14577 % U+0060 GRAVE ACCENT; grave  
14578 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
\141: U+0061 LATIN SMALL LETTER A; a  
...  
\150: U+0068 LATIN SMALL LETTER H; h  
14579 % U+0069 LATIN SMALL LETTER I; i  
14580 \DeclareTextCompositeCommand{\.}{PD1}{i}{i}% \151 U+0069  
\152: U+006A LATIN SMALL LETTER J; j  
...  
\172: U+007A LATIN SMALL LETTER Z; z  
14581 % U+007B LEFT CURLY BRACKET; braceleft  
14582 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
14583 % U+007C VERTICAL LINE; \*bar, verticalbar  
14584 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
14585 % U+007D RIGHT CURLY BRACKET; braceright  
14586 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
14587 % U+007E TILDE; asciitilde  
14588 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
Slot \177 (0x7F) is undefined in PDFDocEncoding.  
14589 % U+2022 BULLET; bullet  
14590 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
14591 % U+2020 DAGGER; dagger  
14592 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
14593 % U+2021 DOUBLE DAGGER; daggerdbl  
14594 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
14595 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
14596 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
14597 % U+2014 EM DASH; emdash  
14598 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014  
14599 % U+2013 EN DASH; endash  
14600 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
14601 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
14602 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
14603 % U+2044 FRACTION SLASH; fraction  
14604 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
14605 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
ingleft  
14606 \DeclareTextCommand{\guilsingleft}{PD1}{\210}% U+2039  
14607 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
ingright  
14608 \DeclareTextCommand{\guilsingright}{PD1}{\211}% U+203A  
14609 % U+2212 MINUS SIGN; minus  
14610 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
14611 % U+2030 PER MILLE SIGN; perthousand  
14612 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
14613 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
14614 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
14615 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
14616 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
14617 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
14618 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
14619 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft

14620 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
14621 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
14622 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
14623 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
14624 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
14625 % U+2122 TRADE MARK SIGN; trademark  
14626 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
14627 % U+FB01 LATIN SMALL LIGATURE FI; fi  
14628 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
14629 % U+FB02 LATIN SMALL LIGATURE FL; fl  
14630 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
14631 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
14632 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
14633 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
14634 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
14635 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
14636 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
14637 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
14638 \DeclareTextCompositeCommand{\"}{PD1}{Y}{\230}% U+0178  
14639 \DeclareTextCommand{\IJ}{PD1}{\230}  
14640 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
14641 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
14642 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
14643 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
14644 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
14645 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
14646 % U+0153 LATIN SMALL LIGATURE OE; oe  
14647 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
14648 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
14649 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
14650 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
14651 \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.  
14652 % U+20AC EURO SIGN; \*Euro, euro  
14653 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
14654 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
14655 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
14656 % U+00A2 CENT SIGN; cent  
14657 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
14658 % U+00A3 POUND SIGN; sterling  
14659 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
14660 % U+00A4 CURRENCY SIGN; currency  
14661 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
14662 % U+00A5 YEN SIGN; yen  
14663 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
14664 % U+00A6 BROKEN BAR; brokenbar  
14665 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
14666 % U+00A7 SECTION SIGN; section  
14667 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
14668 % U+00A8 DIAERESIS; dieresis  
14669 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
14670 % U+00A9 COPYRIGHT SIGN; copyright  
14671 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
14672 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
14673 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA



14674 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft  
14675 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
14676 % U+00AC NOT SIGN; logicalnot  
14677 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
14678 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not

No glyph \255 in PDFDocEncoding.

14679 % U+00AE REGISTERED SIGN; registered  
14680 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
14681 % U+00AF MACRON; \*macron, overscore  
14682 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
14683 % U+00B0 DEGREE SIGN; degree  
14684 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
14685 % U+00B1 PLUS-MINUS SIGN; plusminus  
14686 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
14687 % U+00B2 SUPERSCRIPT TWO; twosuperior  
14688 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}% U+00B2  
14689 % U+00B3 SUPERSCRIPT THREE; threesuperior  
14690 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}% U+00B3  
14691 % U+00B4 ACUTE ACCENT; acute  
14692 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
14693 % U+00B5 MICRO SIGN; mu, mul  
14694 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
14695 % U+00B6 PILCROW SIGN; paragraph  
14696 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
14697 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
14698 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
14699 % U+00B8 CEDILLA; cedilla  
14700 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
14701 % U+00B9 SUPERSCRIPT ONE; onesuperior  
14702 \DeclareTextCommand{\textonesuperior}{PD1}{\271}% U+00B9  
14703 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
14704 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
14705 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
14706 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
14707 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
14708 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
14709 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14710 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
14711 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14712 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
14713 % U+00BF INVERTED QUESTION MARK; questiondown  
14714 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
14715 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14716 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
14717 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14718 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
14719 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14720 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
14721 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14722 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
14723 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14724 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
14725 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14726 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14727 % U+00C6 LATIN CAPITAL LETTER AE; AE

14728 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14729 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14730 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14731 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14732 \DeclareTextCompositeCommand{\' }{PD1}{E}{\310}% U+00C8  
14733 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14734 \DeclareTextCompositeCommand{\' }{PD1}{E}{\311}% U+00C9  
14735 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14736 \DeclareTextCompositeCommand{\^ }{PD1}{E}{\312}% U+00CA  
14737 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14738 \DeclareTextCompositeCommand{\" }{PD1}{E}{\313}% U+00CB  
14739 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14740 \DeclareTextCompositeCommand{\' }{PD1}{I}{\314}% U+00CC  
14741 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14742 \DeclareTextCompositeCommand{\' }{PD1}{I}{\315}% U+00CD  
14743 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14744 \DeclareTextCompositeCommand{\^ }{PD1}{I}{\316}% U+00CE  
14745 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14746 \DeclareTextCompositeCommand{\" }{PD1}{I}{\317}% U+00CF  
14747 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14748 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
14749 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14750 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14751 \DeclareTextCompositeCommand{\~ }{PD1}{N}{\321}% U+00D1  
14752 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14753 \DeclareTextCompositeCommand{\' }{PD1}{O}{\322}% U+00D2  
14754 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14755 \DeclareTextCompositeCommand{\' }{PD1}{O}{\323}% U+00D3  
14756 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14757 \DeclareTextCompositeCommand{\^ }{PD1}{O}{\324}% U+00D4  
14758 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14759 \DeclareTextCompositeCommand{\~ }{PD1}{O}{\325}% U+00D5  
14760 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14761 \DeclareTextCompositeCommand{\" }{PD1}{O}{\326}% U+00D6  
14762 % U+00D7 MULTIPLICATION SIGN; multiply  
14763 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14764 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14765 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14766 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14767 \DeclareTextCompositeCommand{\' }{PD1}{U}{\331}% U+00D9  
14768 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14769 \DeclareTextCompositeCommand{\' }{PD1}{U}{\332}% U+00DA  
14770 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14771 \DeclareTextCompositeCommand{\^ }{PD1}{U}{\333}% U+00DB  
14772 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14773 \DeclareTextCompositeCommand{\" }{PD1}{U}{\334}% U+00DC  
14774 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14775 \DeclareTextCompositeCommand{\' }{PD1}{Y}{\335}% U+00DD  
14776 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
14777 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
14778 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14779 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
14780 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14781 \DeclareTextCompositeCommand{\' }{PD1}{a}{\340}% U+00E0  
14782 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14783 \DeclareTextCompositeCommand{\' }{PD1}{a}{\341}% U+00E1  
14784 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex

14785 \DeclareTextCompositeCommand{\~}{PD1}{a}{\342}% U+00E2  
14786 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14787 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
14788 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
14789 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344}% U+00E4  
14790 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14791 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
14792 % U+00E6 LATIN SMALL LETTER AE; ae  
14793 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
14794 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14795 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7  
14796 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14797 \DeclareTextCompositeCommand{\'}{PD1}{e}{\350}% U+00E8  
14798 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14799 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351}% U+00E9  
14800 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14801 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352}% U+00EA  
14802 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14803 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353}% U+00EB  
14804 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14805 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354}% U+00EC  
14806 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354}% U+00EC  
14807 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14808 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
14809 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
14810 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14811 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14812 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14813 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14814 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14815 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14816 % U+00F0 LATIN SMALL LETTER ETH; eth  
14817 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
14818 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
14819 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1  
14820 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
14821 \DeclareTextCompositeCommand{\'}{PD1}{o}{\362}% U+00F2  
14822 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
14823 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363}% U+00F3  
14824 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
14825 \DeclareTextCompositeCommand{\^}{PD1}{o}{\364}% U+00F4  
14826 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otile  
14827 \DeclareTextCompositeCommand{\~}{PD1}{o}{\365}% U+00F5  
14828 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
14829 \DeclareTextCompositeCommand{\"}{PD1}{o}{\366}% U+00F6  
14830 % U+00F7 DIVISION SIGN; divide  
14831 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
14832 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
14833 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
14834 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
14835 \DeclareTextCompositeCommand{\'}{PD1}{u}{\371}% U+00F9  
14836 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
14837 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372}% U+00FA  
14838 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
14839 \DeclareTextCompositeCommand{\^}{PD1}{u}{\373}% U+00FB  
14840 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
14841 \DeclareTextCompositeCommand{\"}{PD1}{u}{\374}% U+00FC

```

14842 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute
14843 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375}% U+00FD
14844 % U+00FE LATIN SMALL LETTER THORN; thorn
14845 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE
14846 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis
14847 \DeclareTextCompositeCommand{\"}{PD1}{y}{\377}% U+00FF
14848 \DeclareTextCommand{\ij}{PD1}{\377}% U+00FF

```

Glyphs that consist of several characters.

```

14849 \DeclareTextCommand{\SS}{PD1}{SS}
14850 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

```

Aliases (german.sty)

```

14851 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}
14852 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}
14853 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}
14854 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}
14855 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}
14856 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}
14857 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}
14858 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

```

Aliases (math names)

```

14859 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}
14860 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}
14861 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}
14862 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}
14863 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}
14864 \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).

```

14865 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek
14866 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute
14867 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek
14868 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute
14869 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute
14870 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
14871 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
14872 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
14873 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
14874 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
14875 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
14876 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
14877 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
14878 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot

```

```

14879 </pd1enc>

```

## 50.2 PU encoding

```

14880 (*puenc)
14881 \DeclareFontEncoding{PU}{}{}

```

### 50.2.1 NFSS2 accents

```

14882 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
14883 \DeclareTextCommand{\'}{PU}[1]{\#1\83\000}% U+0300
14884 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
14885 \DeclareTextCommand{\'}{PU}[1]{\#1\83\001}% U+0301
14886 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb

```

```

14887 \DeclareTextCommand{\~}{PU}[1]{#1\83\002}% U+0302
14888 % U+0303 COMBINING TILDE; tildecmb, *tildecmb
14889 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303
14890 % U+0304 COMBINING MACRON; macroncmb
14891 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304
14892 % U+0306 COMBINING BREVE; brevecmb
14893 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306
14894 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306
14895 % U+0307 COMBINING DOT ABOVE; dotaccentcmb
14896 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307
14897 % U+0308 COMBINING DIAERESIS; dieresiscmb
14898 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308
14899 % U+030A COMBINING RING ABOVE; ringcmb
14900 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A
14901 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb
14902 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B
14903 % U+030C COMBINING CARON; caroncmb
14904 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C
14905 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravescmb
14906 \DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F
14907 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F
14908 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
14909 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311
14910 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcmb
14911 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323
14912 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
14913 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331
14914 % U+0327 COMBINING CEDILLA; cedillacmb
14915 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327
14916 % U+0328 COMBINING OGONEK; ogonekcmb
14917 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328
14918 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-
    blecmb
14919 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361
14920 % U+20DD COMBINING ENCLOSING CIRCLE
14921 \DeclareTextCommand{\textcircled}{PU}[1]{#1\9040\335}% U+20DD

\@empty is an artefact of the NFSS2 machinery, it gets inserted for empty argu-
ments and spaces.
14922 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textasciigrave}
14923 \DeclareTextCompositeCommand{\`}{PU}{\@empty}{\textacute}
14924 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textasciicircum}
14925 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}
14926 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}
14927 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textring}
14928 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}
14929 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
14930 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
14931 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}
14932 \DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}
14933 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}
14934 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}
14935 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}
14936 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}
14937 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}
14938 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}
14939 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}
14940 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}

```

```

14941 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textasciigrave}
14942 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}
14943 \DeclareTextCompositeCommand{\^}{PU}{\ }{\textasciicircum}
14944 \DeclareTextCompositeCommand{\~}{PU}{\ }{\texttilde}
14945 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}
14946 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textring}
14947 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}
14948 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}
14949 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}
14950 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}
14951 \DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}
14952 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}
14953 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}
14954 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}
14955 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}
14956 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}
14957 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}
14958 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}
14959 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}

```

Accents for capitals (see encoding TS1)

```

14960 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}
14961 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}
14962 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}
14963 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}
14964 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}
14965 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}
14966 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\">{#1}}
14967 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}
14968 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}
14969 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}
14970 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}
14971 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}
14972 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.{#1}}
14973 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}
14974 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}

```

## 50.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

```

14975 % U+0009 (CHARACTER TABULATION)
14976 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
14977 % U+000A (LINE FEED)
14978 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A
14979 % U+000D (CARRIAGE RETURN)
14980 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D
\80\040: U+0020 SPACE; space, spacehackarabic
\80\041: U+0021 EXCLAMATION MARK; exclam
14981 % U+0022 QUOTATION MARK; quotedbl
14982 \DeclareTextCommand{\textquotedbl}{PU}{\string"}% \80\042 U+0022
14983 % U+0023 NUMBER SIGN; numbersign
14984 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023
14985 % U+0024 DOLLAR SIGN; dollar
14986 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024
14987 % U+0025 PERCENT SIGN; percent
14988 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025
14989 % U+0026 AMPERSAND; ampersand
14990 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026

```

14991 % U+0027 APOSTROPHE; quotesingle  
14992 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027  
14993 % U+0028 LEFT PARENTHESIS; parenleft  
14994 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028  
14995 % U+0029 RIGHT PARENTHESIS; parenright  
14996 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029  
14997 % U+002A ASTERISK; asterisk  
14998 \DeclareTextCommand{\textasteriskcentered}{PU}{\80\052}% U+002A (?)  
  
\80\053: U+002B PLUS SIGN; plus  
\80\054: U+002C COMMA; comma  
\80\055: U+002D HYPHEN-MINUS; hyphen  
\80\056: U+002E FULL STOP; period  
\80\057: U+002F SOLIDUS; slash  
\80\060: U+0030 DIGIT ZERO; zero  
  
...  
\80\071: U+0039 DIGIT NINE; nine  
\80\072: U+003A COLON; colon  
\80\073: U+003B SEMICOLON; semicolon  
  
14999 % U+003C LESS-THAN SIGN; less  
15000 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C  
  
\80\075: U+003D EQUALS SIGN; equal  
  
15001 % U+003E GREATER-THAN SIGN; greater  
15002 \DeclareTextCommand{\textgreater}{PU}{>}% \80\076 U+003E  
  
\80\077: U+003F QUESTION MARK; question  
\80\100: U+0040 COMMERCIAL AT; at  
\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  
  
15003 % U+005C REVERSE SOLIDUS; backslash  
15004 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C  
  
\80\135: U+005D RIGHT SQUARE BRACKET; bracketright  
  
15005 % U+005E CIRCUMFLEX ACCENT; asciicircum  
15006 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E  
15007 % U+005F LOW LINE; underscore  
15008 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F  
15009 % U+0060 GRAVE ACCENT; grave  
15010 \DeclareTextCommand{\textasciigrave}{PU}{\80\140}% U+0060  
  
\80\141: U+0061 LATIN SMALL LETTER A; a  
  
...  
\80\150: U+0068 LATIN SMALL LETTER H; h  
  
15011 % U+0069 LATIN SMALL LETTER I; i  
15012 \DeclareTextCompositeCommand{\.}{PU}{i}% \80\151 U+0069  
15013 \DeclareTextCompositeCommand{\.}{PU}{i}% \80\151 U+0069  
  
\80\152: U+006A LATIN SMALL LETTER J; j  
  
...  
\80\172: U+007A LATIN SMALL LETTER Z; z  
  
15014 % U+007B LEFT CURLY BRACKET; braceleft  
15015 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B  
15016 % U+007C VERTICAL LINE; \*bar, verticalbar  
15017 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C  
15018 % U+007D RIGHT CURLY BRACKET; braceright

15019 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D  
 15020 % U+007E TILDE; asciitilde  
 15021 \DeclareTextCommand{\textasciitilde}{PU}{\80\176}% U+007E

### 50.2.3 Latin-1 Supplement: U+0080 to U+00FF

\80\240: U+00A0 NO-BREAK SPACE; nbspace, nonbreakingspace  
 15022 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 15023 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1  
 15024 % U+00A2 CENT SIGN; cent  
 15025 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2  
 15026 % U+00A3 POUND SIGN; sterling  
 15027 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3  
 15028 % U+00A4 CURRENCY SIGN; currency  
 15029 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
 15030 % U+00A5 YEN SIGN; yen  
 15031 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
 15032 % U+00A6 BROKEN BAR; brokenbar  
 15033 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
 15034 % U+00A7 SECTION SIGN; section  
 15035 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
 15036 % U+00A8 DIAERESIS; dieresis  
 15037 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
 15038 % U+00A9 COPYRIGHT SIGN; copyright  
 15039 \DeclareTextCommand{\textcopyright}{PU}{\80\251}% U+00A9  
 15040 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 15041 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
 15042 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
 motleft  
 15043 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
 15044 % U+00AC NOT SIGN; logicalnot  
 15045 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
 15046 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
 \80\255: U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
 15047 % U+00AE REGISTERED SIGN; registered  
 15048 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
 15049 % U+00AF MACRON; \*macron, overscore  
 15050 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
 15051 % U+00B0 DEGREE SIGN; degree  
 15052 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
 15053 % U+00B1 PLUS-MINUS SIGN; plusminus  
 15054 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
 15055 % U+00B2 SUPERScript TWO; twosuperior  
 15056 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}% U+00B2  
 15057 % U+00B3 SUPERScript THREE; threesuperior  
 15058 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}% U+00B3  
 15059 % U+00B4 ACUTE ACCENT; acute  
 15060 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
 15061 \DeclareTextCommand{\textasciacute}{PU}{\80\264}% U+00B4  
 15062 % U+00B5 MICRO SIGN; mu, mul  
 15063 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
 15064 % U+00B6 PILCROW SIGN; paragraph  
 15065 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
 15066 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
 15067 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
 15068 % U+00B8 CEDILLA; cedilla  
 15069 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8



15070 % U+00B9 SUPERSCRIPT ONE; onesuperior  
15071 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}% U+00B9  
15072 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
15073 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA  
15074 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotright  
15075 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
15076 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
15077 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
15078 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
15079 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
15080 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
15081 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
15082 % U+00BF INVERTED QUESTION MARK; questiondown  
15083 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
15084 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
15085 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
15086 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
15087 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
15088 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
15089 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
15090 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
15091 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
15092 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
15093 \DeclareTextCompositeCommand{\\"}{PU}{A}{\80\304}% U+00C4  
15094 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
15095 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
15096 % U+00C6 LATIN CAPITAL LETTER AE; AE  
15097 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
15098 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
15099 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
15100 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
15101 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
15102 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
15103 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9  
15104 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
15105 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
15106 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
15107 \DeclareTextCompositeCommand{\\"}{PU}{E}{\80\313}% U+00CB  
15108 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
15109 \DeclareTextCompositeCommand{\`}{PU}{I}{\80\314}% U+00CC  
15110 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
15111 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}% U+00CD  
15112 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
15113 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
15114 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
15115 \DeclareTextCompositeCommand{\\"}{PU}{I}{\80\317}% U+00CF  
15116 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
15117 \DeclareTextCommand{\DH}{PU}{\80\320}% U+00D0  
15118 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
15119 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
15120 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
15121 \DeclareTextCompositeCommand{\`}{PU}{O}{\80\322}% U+00D2  
15122 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
15123 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}% U+00D3  
15124 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
15125 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4

15126 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
15127 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
15128 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
15129 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6  
15130 % U+00D7 MULTIPLICATION SIGN; multiply  
15131 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
15132 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
15133 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
15134 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
15135 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}% U+00D9  
15136 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
15137 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}% U+00DA  
15138 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
15139 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
15140 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
15141 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
15142 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
15143 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}% U+00DD  
15144 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
15145 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
15146 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
15147 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
15148 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
15149 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}% U+00E0  
15150 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
15151 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}% U+00E1  
15152 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
15153 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
15154 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
15155 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
15156 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
15157 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
15158 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
15159 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
15160 % U+00E6 LATIN SMALL LETTER AE; ae  
15161 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
15162 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
15163 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
15164 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
15165 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}% U+00E8  
15166 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
15167 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
15168 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
15169 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
15170 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
15171 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
15172 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
15173 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
15174 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
15175 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
15176 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15177 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15178 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
15179 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15180 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15181 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
15182 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF

15183 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
 15184 % U+00F0 LATIN SMALL LETTER ETH; eth  
 15185 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
 15186 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
 15187 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
 15188 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
 15189 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}% U+00F2  
 15190 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
 15191 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
 15192 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
 15193 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
 15194 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
 15195 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
 15196 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
 15197 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
 15198 % U+00F7 DIVISION SIGN; divide  
 15199 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
 15200 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
 15201 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
 15202 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
 15203 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}% U+00F9  
 15204 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
 15205 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
 15206 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 15207 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
 15208 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 15209 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
 15210 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 15211 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
 15212 % U+00FE LATIN SMALL LETTER THORN; thorn  
 15213 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
 15214 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 15215 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

#### 50.2.4 Latin Extended-A: U+0080 to U+017F

15216 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
 15217 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
 15218 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
 15219 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
 15220 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
 15221 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
 15222 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
 15223 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
 15224 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
 15225 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
 15226 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
 15227 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
 15228 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
 15229 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
 15230 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
 15231 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
 15232 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
 15233 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
 15234 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
 15235 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109

15236 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
 15237 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
 15238 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
 15239 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
 15240 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
 15241 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
 15242 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
 15243 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
 15244 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
 15245 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
 15246 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
 15247 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
 15248 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
 15249 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
 15250 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron  
 15251 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
 15252 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
 15253 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
 15254 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
 15255 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
 15256 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
 15257 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
 15258 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
 15259 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
 15260 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
 15261 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
 15262 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
 15263 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
 15264 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
 15265 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
 15266 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
 15267 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
 15268 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
 15269 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
 15270 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron  
 15271 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
 15272 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
 15273 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
 15274 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
 15275 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
 15276 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
 15277 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
 15278 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
 15279 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
 15280 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotaccent  
 15281 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
 15282 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
 15283 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
 15284 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcommaaccent  
 15285 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
 15286 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
 15287 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
 15288 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
 15289 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124

15290 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
 15291 \DeclareTextCompositeCommand{\~}{PU}{h}{\81\045}% U+0125  
 15292 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
 15293 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
 15294 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar  
 15295 \DeclareTextCommand{\texthslash}{PU}{\81\047}% U+0127  
 15296 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; itilde  
 15297 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
 15298 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
 15299 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
 15300 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
 15301 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
 15302 \DeclareTextCompositeCommand{=} {PU}{I}{\81\052}% U+012A  
 15303 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
 15304 \DeclareTextCompositeCommand{=} {PU}{i}{\81\053}% U+012B  
 15305 \DeclareTextCompositeCommand{=} {PU}{i}{\81\053}% U+012B  
 15306 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
 15307 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
 15308 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
 15309 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
 15310 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
 15311 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
 15312 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
 15313 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
 15314 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
 15315 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
 15316 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
 15317 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
 15318 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
 15319 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
 15320 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
 15321 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
 15322 % U+0133 LATIN SMALL LIGATURE IJ; ij  
 15323 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
 15324 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
 15325 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134  
 15326 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex  
 15327 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
 15328 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135  
 15329 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaac-  
 cent  
 15330 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136  
 15331 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent  
 15332 \DeclareTextCompositeCommand{\c}{PU}{k}{\81\067}% U+0137

The canonical name of U+0138, small letter kra, would be `\textkgreenlandic`, following the glyph naming convention. However `latex/base/inputenc.dtx` has choosen `\textkra`.

15333 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic  
 15334 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138  
 15335 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute  
 15336 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139  
 15337 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute  
 15338 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A  
 15339 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaac-  
 cent  
 15340 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B  
 15341 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent

```

15342 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C
15343 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron
15344 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D
15345 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron
15346 \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.

15347 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotac-
cent
15348 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F
15349 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent
15350 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140
15351 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash
15352 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141
15353 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash
15354 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142
15355 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute
15356 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143
15357 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute
15358 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144
15359 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaac-
cent
15360 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145
15361 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent
15362 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146
15363 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron
15364 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147
15365 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron
15366 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148
15367 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napos-
trophe, quoterightn
15368 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149
15369 % U+014A LATIN CAPITAL LETTER ENG; Eng
15370 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A
15371 % U+014B LATIN SMALL LETTER ENG; eng
15372 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B
15373 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron
15374 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C
15375 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron
15376 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D
15377 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve
15378 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E
15379 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve
15380 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F
15381 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odbla-
cute, Ohungarumlaut
15382 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150
15383 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odbla-
cute, ohungarumlaut
15384 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151
15385 % U+0152 LATIN CAPITAL LIGATURE OE; OE
15386 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152
15387 % U+0153 LATIN SMALL LIGATURE OE; oe
15388 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153
15389 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute
15390 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124}% U+0154

```

15391 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
15392 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125}% U+0155  
15393 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaac-  
cent  
15394 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
15395 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
15396 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157  
15397 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
15398 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
15399 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
15400 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
15401 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
15402 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
15403 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
15404 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
15405 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
15406 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
15407 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
15408 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
15409 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
15410 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
15411 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
15412 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
15413 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
15414 \DeclareTextCompositeCommand{\v}{PU}{S}{\81\140}% U+0160  
15415 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
15416 \DeclareTextCompositeCommand{\v}{PU}{s}{\81\141}% U+0161  
15417 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaac-  
cent  
15418 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
15419 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
15420 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
15421 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
15422 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
15423 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron  
15424 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
15425 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
15426 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
15427 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
15428 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
15429 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
15430 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
15431 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
15432 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
15433 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
15434 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
15435 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
15436 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
15437 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
15438 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
15439 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
15440 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
15441 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
15442 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
15443 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
15444 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F

15445 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udblacute, Uhungarumlaut  
 15446 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
 15447 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udblacute, uhungarumlaut  
 15448 \DeclareTextCompositeCommand{\h}{PU}{u}{\81\161}% U+0171  
 15449 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
 15450 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172  
 15451 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
 15452 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
 15453 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
 15454 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
 15455 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
 15456 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
 15457 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
 15458 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
 15459 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
 15460 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
 15461 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
 15462 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178  
 15463 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
 15464 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
 15465 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
 15466 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
 15467 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
 15468 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B  
 15469 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
 15470 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C  
 15471 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
 15472 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
 15473 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
 15474 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
 15475 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
 15476 \DeclareTextCommand{\textlongS}{PU}{\81\177}% U+017F

## 50.2.5 Latin Extended-B: U+0180 to U+024F

15477 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
 15478 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
 15479 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
 15480 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
 15481 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
 15482 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
 15483 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
 15484 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
 15485 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
 15486 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15487 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
 15488 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
 15489 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
 15490 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
 15491 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
 15492 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
 15493 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
 15494 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
 15495 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
 15496 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
 15497 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4



15498 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
 15499 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
 15500 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
 15501 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
 15502 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
 15503 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
 15504 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
 15505 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8  
 15506 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
 15507 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
 15508 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
 15509 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
 15510 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
 15511 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
 15512 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
 15513 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
 15514 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
 15515 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
 15516 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
 15517 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
 15518 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
 15519 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
 15520 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\370}% U+01F8  
 15521 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
 15522 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\371}% U+01F9  
 15523 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
 15524 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC  
 15525 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
 15526 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD  
 15527 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE; \*Oslashacute, Ostrokeacute  
 15528 \DeclareTextCompositeCommand{\'}{PU}{\O}{\81\376}% U+01FE  
 15529 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE; \*oslashacute, ostrokeacute  
 15530 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF  
 15531 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave  
 15532 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
 15533 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
 15534 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
 15535 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
 15536 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
 15537 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
 15538 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
 15539 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; Idblgrave  
 15540 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
 15541 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
 15542 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
 15543 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
 15544 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
 15545 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
 15546 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
 15547 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
 15548 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
 15549 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
 15550 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
 15551 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
 15552 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave

15553 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
 15554 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
 15555 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
 15556 % U+021E LATIN CAPITAL LETTER H WITH CARON  
 15557 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
 15558 % U+021F LATIN SMALL LETTER H WITH CARON  
 15559 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
 15560 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
 15561 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
 15562 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
 15563 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
 15564 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
 15565 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
 15566 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
 15567 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
 15568 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
 15569 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
 15570 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
 15571 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
 15572 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
 15573 \DeclareTextCompositeCommand{\=}{PU}{Y}{\82\062}% U+0232  
 15574 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
 15575 \DeclareTextCompositeCommand{\=}{PU}{y}{\82\063}% U+0233  
 15576 % U+0237 LATIN SMALL LETTER DOTLESS J  
 15577 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237

## 50.2.6 Spacing Modifier Letters: U+02B0 to U+02FF

15578 % U+02C7 CARON; caron  
 15579 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
 15580 % U+02D8 BREVE; breve  
 15581 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
 15582 % U+02D9 DOT ABOVE; dotaccent  
 15583 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
 15584 % U+02DA RING ABOVE; ring  
 15585 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
 15586 % U+02DB OGONEK; ogonek  
 15587 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
 15588 % U+02DC SMALL TILDE; ilde, \*tilde  
 15589 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
 15590 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
 15591 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
 15592 \DeclareTextCommand{\textacutedbl}{PU}{\texthungarumlaut}% U+02DD  
 15593 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
 15594 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5  
 15595 % U+02F7 MODIFIER LETTER LOW TILDE  
 15596 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7

## 50.2.7 Combining Diacritical Marks: U+0300 to U+036F

15597 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 15598 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F  
 15599 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 15600 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311  
 15601 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcomb  
 15602 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323  
 15603 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 15604 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331

15605 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddoublecmb  
 15606 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

## 50.2.8 Greek and Coptic: U+0370 to U+03FF

15607 % U+0374 GREEK NUMERAL SIGN; numeralsigngreek  
 15608 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}% U+0374  
 15609 % U+0375 GREEK LOWER NUMERAL SIGN; numeralsignlowergreek  
 15610 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}% U+0375  
 15611 % U+0386 GREEK CAPITAL LETTER ALPHA WITH TONOS; Alphatonos  
 15612 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}% U+0386  
 15613 % U+0388 GREEK CAPITAL LETTER EPSILON WITH TONOS; Epsilontonos  
 15614 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}% U+0388  
 15615 % U+0389 GREEK CAPITAL LETTER ETA WITH TONOS; Etatonos  
 15616 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}% U+0389  
 15617 % U+038A GREEK CAPITAL LETTER IOTA WITH TONOS; Iotatonos  
 15618 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}% U+038A  
 15619 % U+038C GREEK CAPITAL LETTER OMICRON WITH TONOS; Omicrontonos  
 15620 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}% U+038C  
 15621 % U+038E GREEK CAPITAL LETTER UPSILON WITH TONOS; Upsilontonos  
 15622 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}% U+038E  
 15623 % U+038F GREEK CAPITAL LETTER OMEGA WITH TONOS; Omegatonos  
 15624 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}% U+038F  
 15625 % U+0390 GREEK SMALL LETTER IOTA WITH DIALYTIKA AND TONOS; iotadieresis  
 15626 \DeclareTextCompositeCommand{\'}{PU}{\textIotadieresis}{\83\220}% U+0390  
 15627 % U+0391 GREEK CAPITAL LETTER ALPHA; Alpha  
 15628 \DeclareTextCommand{\textAlpha}{PU}{\83\221}% U+0391  
 15629 % U+0392 GREEK CAPITAL LETTER BETA; Beta  
 15630 \DeclareTextCommand{\textBeta}{PU}{\83\222}% U+0392  
 15631 % U+0393 GREEK CAPITAL LETTER GAMMA; Gamma  
 15632 \DeclareTextCommand{\textGamma}{PU}{\83\223}% U+0393  
 15633 % U+0394 GREEK CAPITAL LETTER DELTA; Deltagreek, \*Delta  
 15634 \DeclareTextCommand{\textDelta}{PU}{\83\224}% U+0394  
 15635 % U+0395 GREEK CAPITAL LETTER EPSILON; Epsilon  
 15636 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}% U+0395  
 15637 % U+0396 GREEK CAPITAL LETTER ZETA; Zeta  
 15638 \DeclareTextCommand{\textZeta}{PU}{\83\226}% U+0396  
 15639 % U+0397 GREEK CAPITAL LETTER ETA; Eta  
 15640 \DeclareTextCommand{\textEta}{PU}{\83\227}% U+0397  
 15641 % U+0398 GREEK CAPITAL LETTER THETA; Theta  
 15642 \DeclareTextCommand{\textTheta}{PU}{\83\230}% U+0398  
 15643 % U+0399 GREEK CAPITAL LETTER IOTA; Iota  
 15644 \DeclareTextCommand{\textIota}{PU}{\83\231}% U+0399  
 15645 % U+039A GREEK CAPITAL LETTER KAPPA; Kappa  
 15646 \DeclareTextCommand{\textKappa}{PU}{\83\232}% U+039A  
 15647 % U+039B GREEK CAPITAL LETTER LAMDA; Lambda  
 15648 \DeclareTextCommand{\textLambda}{PU}{\83\233}% U+039B  
 15649 % U+039C GREEK CAPITAL LETTER MU; Mu  
 15650 \DeclareTextCommand{\textMu}{PU}{\83\234}% U+039C  
 15651 % U+039D GREEK CAPITAL LETTER NU; Nu  
 15652 \DeclareTextCommand{\textNu}{PU}{\83\235}% U+039D  
 15653 % U+039E GREEK CAPITAL LETTER XI; Xi  
 15654 \DeclareTextCommand{\textXi}{PU}{\83\236}% U+039E  
 15655 % U+039F GREEK CAPITAL LETTER OMICRON; Omicron  
 15656 \DeclareTextCommand{\textOmicron}{PU}{\83\237}% U+039F

15657 % U+03A0 GREEK CAPITAL LETTER PI; Pi  
15658 \DeclareTextCommand{\textPi}{PU}{\83\240}% U+03A0  
15659 % U+03A1 GREEK CAPITAL LETTER RHO; Rho  
15660 \DeclareTextCommand{\textRho}{PU}{\83\241}% U+03A1  
15661 % U+03A3 GREEK CAPITAL LETTER SIGMA; Sigma  
15662 \DeclareTextCommand{\textSigma}{PU}{\83\243}% U+03A3  
15663 % U+03A4 GREEK CAPITAL LETTER TAU; Tau  
15664 \DeclareTextCommand{\textTau}{PU}{\83\244}% U+03A4  
15665 % U+03A5 GREEK CAPITAL LETTER UPSILON; Upsilon  
15666 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}% U+03A5  
15667 % U+03A6 GREEK CAPITAL LETTER PHI; Phi  
15668 \DeclareTextCommand{\textPhi}{PU}{\83\246}% U+03A6  
15669 % U+03A7 GREEK CAPITAL LETTER CHI; Chi  
15670 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
15671 % U+03A8 GREEK CAPITAL LETTER PSI; Psi  
15672 \DeclareTextCommand{\textPsi}{PU}{\83\250}% U+03A8  
15673 % U+03A9 GREEK CAPITAL LETTER OMEGA; Omegagreek, \*Omega  
15674 \DeclareTextCommand{\textOmega}{PU}{\83\251}% U+03A9  
15675 % U+03AA GREEK CAPITAL LETTER IOTA WITH DIALYTIKA; Iotadieresis  
15676 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}% U+03AA  
15677 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\252}% U+03AA  
15678 % U+03AB GREEK CAPITAL LETTER UPSILON WITH DIALYTIKA; Upsilonondieresis  
15679 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\253}% U+03AB  
15680 % U+03AC GREEK SMALL LETTER ALPHA WITH TONOS; alphonos  
15681 \DeclareTextCompositeCommand{\'}{PU}{\textalpha}{\83\254}% U+03AC  
15682 % U+03AD GREEK SMALL LETTER EPSILON WITH TONOS; epsilonononos  
15683 \DeclareTextCompositeCommand{\'}{PU}{\textepsilon}{\83\255}% U+03AD  
15684 % U+03AE GREEK SMALL LETTER ETA WITH TONOS; etatonos  
15685 \DeclareTextCompositeCommand{\'}{PU}{\texteta}{\83\256}% U+03AE  
15686 % U+03AF GREEK SMALL LETTER IOTA WITH TONOS; iotatonos  
15687 \DeclareTextCompositeCommand{\'}{PU}{\textiota}{\83\257}% U+03AF  
15688 % U+03B0 GREEK SMALL LETTER UPSILON WITH DIALYTIKA AND TONOS; upsilondieresisisto  
15689 \DeclareTextCompositeCommand{\'}{PU}{\textupsilonacute}{\83\260}% U+03B0  
15690 % U+03B1 GREEK SMALL LETTER ALPHA; alpha  
15691 \DeclareTextCommand{\textalpha}{PU}{\83\261}% U+03B1  
15692 % U+03B2 GREEK SMALL LETTER BETA; beta  
15693 \DeclareTextCommand{\textbeta}{PU}{\83\262}% U+03B2  
15694 % U+03B3 GREEK SMALL LETTER GAMMA; gamma  
15695 \DeclareTextCommand{\textgamma}{PU}{\83\263}% U+03B3  
15696 % U+03B4 GREEK SMALL LETTER DELTA; delta  
15697 \DeclareTextCommand{\textdelta}{PU}{\83\264}% U+03B4  
15698 % U+03B5 GREEK SMALL LETTER EPSILON; epsilon  
15699 \DeclareTextCommand{\textepsilon}{PU}{\83\265}% U+03B5  
15700 % U+03B6 GREEK SMALL LETTER ZETA; zeta  
15701 \DeclareTextCommand{\textzeta}{PU}{\83\266}% U+03B6  
15702 % U+03B7 GREEK SMALL LETTER ETA; eta  
15703 \DeclareTextCommand{\texteta}{PU}{\83\267}% U+03B7  
15704 % U+03B8 GREEK SMALL LETTER THETA; theta  
15705 \DeclareTextCommand{\texttheta}{PU}{\83\270}% U+03B8  
15706 % U+03B9 GREEK SMALL LETTER IOTA; iota  
15707 \DeclareTextCommand{\textiota}{PU}{\83\271}% U+03B9  
15708 % U+03BA GREEK SMALL LETTER KAPPA; kappa  
15709 \DeclareTextCommand{\textkappa}{PU}{\83\272}% U+03BA  
15710 % U+03BB GREEK SMALL LETTER LAMDA; lambda  
15711 \DeclareTextCommand{\textlambda}{PU}{\83\273}% U+03BB

15712 % U+03BC GREEK SMALL LETTER MU; mugreek, \*mu  
15713 \DeclareTextCommand{\textmugreek}{PU}{\83\274}% U+03BC  
15714 % U+03BD GREEK SMALL LETTER NU; nu  
15715 \DeclareTextCommand{\textnu}{PU}{\83\275}% U+03BD  
15716 % U+03BE GREEK SMALL LETTER XI; xi  
15717 \DeclareTextCommand{\textxi}{PU}{\83\276}% U+03BE  
15718 % U+03BF GREEK SMALL LETTER OMICRON; omicron  
15719 \DeclareTextCommand{\textomicron}{PU}{\83\277}% U+03BF  
15720 % U+03C0 GREEK SMALL LETTER PI; pi  
15721 \DeclareTextCommand{\textpi}{PU}{\83\300}% U+03C0  
15722 % U+03C1 GREEK SMALL LETTER RHO; rho  
15723 \DeclareTextCommand{\textrho}{PU}{\83\301}% U+03C1  
15724 % U+03C2 GREEK SMALL LETTER FINAL SIGMA; \*sigma1, sigmafinal  
15725 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}% U+03C2  
15726 % U+03C3 GREEK SMALL LETTER SIGMA; sigma  
15727 \DeclareTextCommand{\textsigma}{PU}{\83\303}% U+03C3  
15728 % U+03C4 GREEK SMALL LETTER TAU; tau  
15729 \DeclareTextCommand{\texttau}{PU}{\83\304}% U+03C4  
15730 % U+03C5 GREEK SMALL LETTER UPSILON; upsilon  
15731 \DeclareTextCommand{\textupsilon}{PU}{\83\305}% U+03C5  
15732 % U+03C6 GREEK SMALL LETTER PHI; phi  
15733 \DeclareTextCommand{\textphi}{PU}{\83\306}% U+03C6  
15734 % U+03C7 GREEK SMALL LETTER CHI; chi  
15735 \DeclareTextCommand{\textchi}{PU}{\83\307}% U+03C7  
15736 % U+03C8 GREEK SMALL LETTER PSI; psi  
15737 \DeclareTextCommand{\textpsi}{PU}{\83\310}% U+03C8  
15738 % U+03C9 GREEK SMALL LETTER OMEGA; omega  
15739 \DeclareTextCommand{\textomega}{PU}{\83\311}% U+03C9  
15740 % U+03CA GREEK SMALL LETTER IOTA WITH DIALYTIKA; iotadieresis  
15741 \DeclareTextCompositeCommand{\'}{PU}{\textiota}{\83\312}% U+03CA  
15742 % U+03CB GREEK SMALL LETTER UPSILON WITH DIALYTIKA; up-  
silondieresis  
15743 \DeclareTextCompositeCommand{\'}{PU}{\textupsilon}{\83\313}% U+03CB  
15744 % U+03CC GREEK SMALL LETTER OMICRON WITH TONOS; omicrontonos  
15745 \DeclareTextCompositeCommand{\'}{PU}{\textomicron}{\83\314}% U+03CC  
15746 % U+03CD GREEK SMALL LETTER UPSILON WITH TONOS; upsilontonos  
15747 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}% U+03CD  
15748 \DeclareTextCompositeCommand{\'}{PU}{\textupsilon}{\83\315}% U+03CD  
15749 % U+03CE GREEK SMALL LETTER OMEGA WITH TONOS; omegatonos  
15750 \DeclareTextCompositeCommand{\'}{PU}{\textomega}{\83\316}% U+03CE  
15751 % U+03DA GREEK LETTER STIGMA; Stigmatreek  
15752 \DeclareTextCommand{\textStigmatreek}{PU}{\83\332}% U+03DA  
15753 % U+03DB GREEK SMALL LETTER STIGMA  
15754 \DeclareTextCommand{\textstigmatreek}{PU}{\83\333}% U+03DB  
15755 % U+03DC GREEK LETTER DIGAMMA; Digammagreek  
15756 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}% U+03DC  
15757 % U+03DD GREEK SMALL LETTER DIGAMMA  
15758 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}% U+03DD  
15759 % U+03DE GREEK LETTER KOPPA; Koppagreek  
15760 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}% U+03DE  
15761 % U+03DF GREEK SMALL LETTER KOPPA  
15762 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}% U+03DF  
15763 % U+03E0 GREEK LETTER SAMPI; Sampigreek  
15764 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}% U+03E0  
15765 % U+03E1 GREEK SMALL LETTER SAMPI  
15766 \DeclareTextCommand{\textsampigreek}{PU}{\83\341}% U+03E1

### 50.2.9 Cyrillic: U+0400 to U+04FF

Thanks to Vladimir Volovich (vvv@vvv.vsu.ru) for the help with the Cyrillic glyph names.

```
15767 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE
15768 \DeclareTextCompositeCommand{\'}{PU}{\CYRE}{\84\000}% U+0400
15769 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrrilic, *afii10023
15770 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401
15771 \DeclareTextCompositeCommand{\"}{PU}{\CYRE}{\84\001}% ???
15772 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, *afii10051
15773 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402
15774 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, *afii10052
15775 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403
15776 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrrilic, *afii10053
15777 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404
15778 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, *afii10054
15779 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405
15780 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I; Icyrrilic, *afii10055
15781 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406
15782 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrrilic, *afii10056
15783 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407
15784 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407
15785 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, *afii10057
15786 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408
15787 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, *afii10058
15788 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409
15789 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, *afii10059
15790 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A
15791 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, *afii10060
15792 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B
15793 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, *afii10061
15794 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C
15795 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE
15796 \DeclareTextCompositeCommand{\'}{PU}{\CYRI}{\84\015}% U+040D
15797 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrrilic, *afii10062
15798 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E
15799 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E
15800 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, *afii10145
15801 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F
15802 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, *afii10017
15803 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410
15804 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, *afii10018
15805 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411
15806 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, *afii10019
15807 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412
15808 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, *afii10020
15809 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413
15810 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, *afii10021
15811 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414
15812 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, *afii10022
15813 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415
15814 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, *afii10024
15815 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416
15816 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, *afii10025
15817 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417
15818 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrrilic, *afii10026
```

15819 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
15820 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
15821 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
15822 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
15823 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
15824 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
15825 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
15826 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
15827 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
15828 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
15829 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
15830 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
15831 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
15832 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
15833 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
15834 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
15835 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
15836 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
15837 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
15838 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
15839 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
15840 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
15841 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
15842 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
15843 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
15844 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
15845 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
15846 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
15847 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
15848 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
15849 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
15850 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
15851 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
15852 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
15853 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
15854 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
15855 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN; Hardsigncyrillic, \*afii10044  
15856 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A  
15857 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
15858 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
15859 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN; Softsigncyrillic, \*afii10046  
15860 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
15861 % U+042D CYRILLIC CAPITAL LETTER E; Ereversedcyrillic, \*afii10047  
15862 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
15863 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
15864 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
15865 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
15866 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
15867 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
15868 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
15869 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
15870 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
15871 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
15872 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
15873 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
15874 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
15875 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic

15876 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
15877 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
15878 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
15879 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhecyrillic  
15880 \DeclareTextCommand{\cyrzh}{PU}{\84\066}% U+0436  
15881 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
15882 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
15883 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
15884 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
15885 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
15886 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
15887 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
15888 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
15889 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
15890 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
15891 \DeclareTextCommand{\cyrl}{PU}{\84\073}% U+043B  
15892 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
15893 \DeclareTextCommand{\cym}{PU}{\84\074}% U+043C  
15894 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
15895 \DeclareTextCommand{\cym}{PU}{\84\075}% U+043D  
15896 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
15897 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
15898 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
15899 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
15900 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
15901 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
15902 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
15903 \DeclareTextCommand{\cyrs}{PU}{\84\101}% U+0441  
15904 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
15905 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442  
15906 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
15907 \DeclareTextCommand{\cyru}{PU}{\84\103}% U+0443  
15908 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
15909 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
15910 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
15911 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
15912 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
15913 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446  
15914 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
15915 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
15916 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
15917 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
15918 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
15919 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
15920 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyrillic  
15921 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
15922 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
15923 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
15924 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
15925 \DeclareTextCommand{\cyrsftsn}{PU}{\84\114}% U+044C  
15926 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
15927 \DeclareTextCommand{\cyrerev}{PU}{\84\115}% U+044D  
15928 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
15929 \DeclareTextCommand{\cyryu}{PU}{\84\116}% U+044E  
15930 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
15931 \DeclareTextCommand{\cyrya}{PU}{\84\117}% U+044F



15932 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
 15933 \DeclareTextCompositeCommand{\'}{PU}{\cyre}{\84\120}% U+0450  
 15934 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrrillic  
 15935 \DeclareTextCommand{\cyryo}{PU}{\84\121}% U+0451  
 15936 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451  
 15937 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
 15938 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452  
 15939 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
 15940 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% U+0453  
 15941 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrrillic  
 15942 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454  
 15943 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
 15944 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
 15945 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I; \*afii10103, icyril-  
 lic  
 15946 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456  
 15947 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrrillic  
 15948 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457  
 15949 \DeclareTextCompositeCommand{\"}{PU}{\cyrii}{\84\127}% U+0457  
 15950 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
 15951 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
 15952 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
 15953 \DeclareTextCommand{\cyrkje}{PU}{\84\131}% U+0459  
 15954 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
 15955 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
 15956 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrrillic  
 15957 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
 15958 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
 15959 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
 15960 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
 15961 \DeclareTextCompositeCommand{\'}{PU}{\cyri}{\84\135}% U+045D  
 15962 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrrillic  
 15963 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
 15964 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
 15965 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrrillic  
 15966 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
 15967 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrrillic  
 15968 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460  
 15969 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrrillic  
 15970 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
 15971 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrrillic, \*afii10146  
 15972 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
 15973 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrrillic  
 15974 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463  
 15975 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrrillic  
 15976 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
 15977 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrrillic  
 15978 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
 15979 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittlecyrillic  
 15980 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
 15981 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittlecyrillic  
 15982 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
 15983 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslittlei-  
 otifiedcyrrillic  
 15984 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
 15985 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslittlei-  
 otifiedcyrrillic

15986 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
 15987 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbicyrillic  
 15988 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
 15989 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbicyrillic  
 15990 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
 15991 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-cyrillic  
 15992 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
 15993 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotified-cyrillic  
 15994 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
 15995 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
 15996 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
 15997 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
 15998 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
 15999 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
 16000 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
 16001 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
 16002 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
 16003 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
 16004 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
 16005 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
 16006 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
 16007 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
 16008 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
 16009 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
 16010 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
 16011 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE GRAVE ACCENT; Izhitsadblgravecyrillic  
 16012 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
 16013 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE GRAVE ACCENT; izhitsadblgravecyrillic  
 16014 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
 16015 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
 16016 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
 16017 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
 16018 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479  
 16019 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyrillic  
 16020 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
 16021 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
 16022 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
 16023 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlocyrillic  
 16024 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
 16025 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlocyrillic  
 16026 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
 16027 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
 16028 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
 16029 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
 16030 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
 16031 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
 16032 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
 16033 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
 16034 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
 16035 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic

16036 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482  
 \84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrillicmb  
 \84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalization-  
 cyrillicmb  
 \84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneu-  
 matacyrillicmb  
 \84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumat-  
 acyrillicmb  
 \84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
 \84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
 \84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN  
 16037 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 16038 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
 16039 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 16040 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 16041 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 16042 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 16043 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 16044 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 16045 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 16046 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 16047 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 16048 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 16049 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturn-  
 cyrillic, \*afii10050  
 16050 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 16051 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, ghe-  
 upturncyrillic  
 16052 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 16053 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestroke-  
 cyrillic  
 16054 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 16055 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 16056 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 16057 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK; Ghemid-  
 dlehookcyrillic  
 16058 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 16059 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK; ghemid-  
 dlehookcyrillic  
 16060 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 16061 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER; Zhedescen-  
 dercyrillic  
 16062 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 16063 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER; zhedescen-  
 dercyrillic  
 16064 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 16065 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescen-  
 dercyrillic  
 16066 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 16067 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 16068 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescender-  
 cyrillic  
 16069 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499  
 16070 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 16071 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescen-  
 dercyrillic

16072 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
 16073 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kades-  
 dencyrillic  
 16074 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
 16075 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE; Kaver-  
 ticalstrokecyrillic  
 16076 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
 16077 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE; kaver-  
 ticalstrokecyrillic  
 16078 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
 16079 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
 16080 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
 16081 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
 16082 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
 16083 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
 16084 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
 16085 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
 16086 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
 16087 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescen-  
 dencyrillic  
 16088 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
 16089 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescender-  
 cyrillic  
 16090 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
 16091 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
 16092 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
 16093 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
 16094 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
 16095 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemid-  
 dlehookcyrillic  
 16096 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
 16097 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddle-  
 hookcyrillic  
 16098 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
 16099 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyril-  
 lic  
 16100 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8  
 16101 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
 16102 \DeclareTextCommand{\cyrabhha}{PU}{\84\251}% U+04A9  
 16103 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescen-  
 dencyrillic  
 16104 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
 16105 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
 16106 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescender-  
 cyrillic  
 16107 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
 16108 \DeclareTextCompositeCommand{\k}{PU}{\cyr}{\84\253}% U+04AB  
 16109 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescen-  
 dencyrillic  
 16110 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
 16111 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescen-  
 dencyrillic  
 16112 \DeclareTextCommand{\cyrtdsc}{PU}{\84\255}% U+04AD  
 16113 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
 16114 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
 16115 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
 16116 \DeclareTextCommand{\cyr}{PU}{\84\257}% U+04AF

16117 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Us-  
traightstrokecyrillic  
16118 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
16119 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; us-  
traightstrokecyrillic  
16120 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% U+04B1  
16121 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadescen-  
dercyrillic  
16122 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
16123 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescen-  
dercyrillic  
16124 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3  
16125 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
16126 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
16127 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
16128 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
16129 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER; Chedescen-  
dercyrillic  
16130 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
16131 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescen-  
dercyrillic  
16132 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
16133 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE; Chev-  
erticalstrokecyrillic  
16134 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
16135 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE; chev-  
erticalstrokecyrillic  
16136 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
16137 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
16138 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
16139 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
16140 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
16141 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasian-  
cyrillic  
16142 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
16143 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyril-  
lic  
16144 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
16145 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCEN-  
DER; Chedescenderabkhasiancyrillic  
16146 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
16147 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
16148 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCEN-  
DER; chedescenderabkhasiancyrillic  
16149 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
16150 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
16151 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
16152 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
16153 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
16154 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
16155 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
16156 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
16157 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
16158 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
16159 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
16160 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
16161 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL

16162 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
16163 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
16164 \DeclareTextCommand{\cyrljsc}{PU}{\84\306}% U+04C6  
16165 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
16166 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
16167 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
16168 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
16169 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakas-  
siancyrillic  
16170 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
16171 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-  
cyrillic  
16172 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
16173 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
16174 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
16175 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
16176 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
\84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
16177 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevecyrillic  
16178 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
16179 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevecyrillic  
16180 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
16181 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyri-  
lic  
16182 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\322}% U+04D2  
16183 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
16184 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\323}% U+04D3  
16185 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
16186 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
16187 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
16188 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
16189 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevcyrillic  
16190 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
16191 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevcyrillic  
16192 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
16193 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
16194 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8  
16195 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
16196 \DeclareTextCommand{\cyrswa}{PU}{\84\331}% U+04D9  
16197 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS; Schwadiere-  
siscyrillic  
16198 \DeclareTextCompositeCommand{\U}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
16199 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS; schwadiere-  
siscyrillic  
16200 \DeclareTextCompositeCommand{\U}{PU}{\cyrswa}{\84\333}% U+04DB  
16201 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhediere-  
siscyrillic  
16202 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\334}% U+04DC  
16203 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieresis-  
cyrillic  
16204 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\335}% U+04DD  
16205 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieresis-  
cyrillic  
16206 \DeclareTextCompositeCommand{\U}{PU}{\CYRZ}{\84\336}% U+04DE  
16207 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresiscyri-  
lic  
16208 \DeclareTextCompositeCommand{\U}{PU}{\cyrz}{\84\337}% U+04DF

16209 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-cyrillic  
 16210 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
 16211 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyrillic  
 16212 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
 16213 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
 16214 \DeclareTextCompositeCommand{\=} {PU}{\CYRI}{\84\342}% U+04E2  
 16215 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
 16216 \DeclareTextCompositeCommand{\=} {PU}{\cyri}{\84\343}% U+04E3  
 16217 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic  
 16218 \DeclareTextCompositeCommand{\"} {PU}{\CYRI}{\84\344}% U+04E4  
 16219 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic  
 16220 \DeclareTextCompositeCommand{\"} {PU}{\cyri}{\84\345}% U+04E5  
 16221 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyrillic  
 16222 \DeclareTextCompositeCommand{\"} {PU}{\CYRO}{\84\346}% U+04E6  
 16223 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
 16224 \DeclareTextCompositeCommand{\"} {PU}{\cyro}{\84\347}% U+04E7  
 16225 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
 16226 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
 16227 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
 16228 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
 16229 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERESIS; Obarreddieresiscyrillic  
 16230 \DeclareTextCompositeCommand{\"} {PU}{\CYROTLD}{\84\352}% U+04EA  
 16231 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS; obarreddieresiscyrillic  
 16232 \DeclareTextCompositeCommand{\"} {PU}{\cyrotld}{\84\353}% U+04EB  
 16233 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
 16234 \DeclareTextCompositeCommand{\"} {PU}{\CYREREV}{\84\354}% U+04EC  
 16235 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
 16236 \DeclareTextCompositeCommand{\"} {PU}{\cyreref}{\84\355}% U+04ED  
 16237 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
 16238 \DeclareTextCompositeCommand{\=} {PU}{\CYRU}{\84\356}% U+04EE  
 16239 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
 16240 \DeclareTextCompositeCommand{\=} {PU}{\cyru}{\84\357}% U+04EF  
 16241 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udieresiscyrillic  
 16242 \DeclareTextCompositeCommand{\"} {PU}{\CYRU}{\84\360}% U+04F0  
 16243 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udieresiscyrillic  
 16244 \DeclareTextCompositeCommand{\"} {PU}{\cyru}{\84\361}% U+04F1  
 16245 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhungarumlautcyrillic  
 16246 \DeclareTextCompositeCommand{\H} {PU}{\CYRU}{\84\362}% U+04F2  
 16247 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhungarumlautcyrillic  
 16248 \DeclareTextCompositeCommand{\H} {PU}{\cyru}{\84\363}% U+04F3  
 16249 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chedieresiscyrillic  
 16250 \DeclareTextCompositeCommand{\"} {PU}{\CYRCH}{\84\364}% U+04F4  
 16251 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
 16252 \DeclareTextCompositeCommand{\"} {PU}{\cyrch}{\84\365}% U+04F5  
 16253 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
 16254 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
 16255 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER

16256 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
 16257 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudiere-  
       siscyrillic  
 16258 \DeclareTextCompositeCommand{\"}{PU}{\CYRERY}{\84\370}% U+04F8  
 16259 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudiere-  
       siscyrillic  
 16260 \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  
 16261 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
 16262 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
 16263 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
 16264 \DeclareTextCommand{\cyrrhk}{PU}{\84\375}% U+04FD  
 \84\376: U+04FE CYRILLIC CAPITAL LETTER HA WITH STROKE  
 \84\377: U+04FF CYRILLIC SMALL LETTER HA WITH STROKE

#### 50.2.10 Thai: U+0E00 to U+0E7F

16265 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 16266 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

#### 50.2.11 Latin Extended Additional: U+1E00 to U+1EFF

16267 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
 16268 \DeclareTextCompositeCommand{.}{PU}{B}{\9036\002}% U+1E02  
 16269 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
 16270 \DeclareTextCompositeCommand{.}{PU}{b}{\9036\003}% U+1E03  
 16271 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
 16272 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
 16273 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
 16274 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
 16275 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
 16276 \DeclareTextCompositeCommand{.}{PU}{D}{\9036\012}% U+1E0A  
 16277 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
 16278 \DeclareTextCompositeCommand{.}{PU}{d}{\9036\013}% U+1E0B  
 16279 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
 16280 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
 16281 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
 16282 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
 16283 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
 16284 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
 16285 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
 16286 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
 16287 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
 16288 \DeclareTextCompositeCommand{.}{PU}{F}{\9036\036}% U+1E1E  
 16289 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
 16290 \DeclareTextCompositeCommand{.}{PU}{f}{\9036\037}% U+1E1F  
 16291 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
 16292 \DeclareTextCompositeCommand{\=}{PU}{G}{\9036\040}% U+1E20  
 16293 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
 16294 \DeclareTextCompositeCommand{\=}{PU}{g}{\9036\041}% U+1E21  
 16295 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
 16296 \DeclareTextCompositeCommand{.}{PU}{H}{\9036\042}% U+1E22  
 16297 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
 16298 \DeclareTextCompositeCommand{.}{PU}{h}{\9036\043}% U+1E23



16299 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
16300 \DeclareTextCompositeCommand{"}{PU}{H}{\9036\046}% U+1E26  
16301 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
16302 \DeclareTextCompositeCommand{"}{PU}{h}{\9036\047}% U+1E27  
16303 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
16304 \DeclareTextCompositeCommand{c}{PU}{H}{\9036\050}% U+1E28  
16305 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
16306 \DeclareTextCompositeCommand{c}{PU}{h}{\9036\051}% U+1E29  
16307 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
16308 \DeclareTextCompositeCommand{'}{PU}{K}{\9036\060}% U+1E30  
16309 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
16310 \DeclareTextCompositeCommand{'}{PU}{k}{\9036\061}% U+1E31  
16311 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
16312 \DeclareTextCompositeCommand{b}{PU}{K}{\9036\064}% U+1E34  
16313 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
16314 \DeclareTextCompositeCommand{b}{PU}{k}{\9036\065}% U+1E35  
16315 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
16316 \DeclareTextCompositeCommand{b}{PU}{L}{\9036\072}% U+1E3A  
16317 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
16318 \DeclareTextCompositeCommand{b}{PU}{l}{\9036\073}% U+1E3B  
16319 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
16320 \DeclareTextCompositeCommand{'}{PU}{M}{\9036\076}% U+1E3E  
16321 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
16322 \DeclareTextCompositeCommand{'}{PU}{m}{\9036\077}% U+1E3F  
16323 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
16324 \DeclareTextCompositeCommand{.}{PU}{M}{\9036\100}% U+1E40  
16325 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
16326 \DeclareTextCompositeCommand{.}{PU}{m}{\9036\101}% U+1E41  
16327 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
16328 \DeclareTextCompositeCommand{.}{PU}{N}{\9036\104}% U+1E44  
16329 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
16330 \DeclareTextCompositeCommand{.}{PU}{n}{\9036\105}% U+1E45  
16331 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
16332 \DeclareTextCompositeCommand{b}{PU}{N}{\9036\110}% U+1E48  
16333 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
16334 \DeclareTextCompositeCommand{b}{PU}{n}{\9036\111}% U+1E49  
16335 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute  
16336 \DeclareTextCompositeCommand{'}{PU}{P}{\9036\124}% U+1E54  
16337 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
16338 \DeclareTextCompositeCommand{'}{PU}{p}{\9036\125}% U+1E55  
16339 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
16340 \DeclareTextCompositeCommand{.}{PU}{P}{\9036\126}% U+1E56  
16341 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
16342 \DeclareTextCompositeCommand{.}{PU}{p}{\9036\127}% U+1E57  
16343 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
16344 \DeclareTextCompositeCommand{.}{PU}{R}{\9036\130}% U+1E58  
16345 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
16346 \DeclareTextCompositeCommand{.}{PU}{r}{\9036\131}% U+1E59  
16347 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
16348 \DeclareTextCompositeCommand{b}{PU}{R}{\9036\136}% U+1E5E  
16349 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
16350 \DeclareTextCompositeCommand{b}{PU}{r}{\9036\137}% U+1E5F  
16351 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
16352 \DeclareTextCompositeCommand{.}{PU}{S}{\9036\140}% U+1E60  
16353 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
16354 \DeclareTextCompositeCommand{.}{PU}{s}{\9036\141}% U+1E61  
16355 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow

16356 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
16357 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
16358 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
16359 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
16360 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
16361 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
16362 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
16363 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
16364 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80  
16365 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
16366 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81  
16367 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
16368 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\202}% U+1E82  
16369 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
16370 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\203}% U+1E83  
16371 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
16372 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84  
16373 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
16374 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85  
16375 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
16376 \DeclareTextCompositeCommand{.}{PU}{W}{\9036\206}% U+1E86  
16377 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
16378 \DeclareTextCompositeCommand{.}{PU}{w}{\9036\207}% U+1E87  
16379 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
16380 \DeclareTextCompositeCommand{.}{PU}{X}{\9036\212}% U+1E8A  
16381 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
16382 \DeclareTextCompositeCommand{.}{PU}{x}{\9036\213}% U+1E8B  
16383 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
16384 \DeclareTextCompositeCommand{\"}{PU}{X}{\9036\214}% U+1E8C  
16385 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
16386 \DeclareTextCompositeCommand{\"}{PU}{x}{\9036\215}% U+1E8D  
16387 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
16388 \DeclareTextCompositeCommand{.}{PU}{Y}{\9036\216}% U+1E8E  
16389 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
16390 \DeclareTextCompositeCommand{.}{PU}{y}{\9036\217}% U+1E8F  
16391 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
16392 \DeclareTextCompositeCommand{\^}{PU}{Z}{\9036\220}% U+1E90  
16393 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
16394 \DeclareTextCompositeCommand{\^}{PU}{z}{\9036\221}% U+1E91  
16395 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
16396 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
16397 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
16398 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
16399 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
16400 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
16401 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
16402 \DeclareTextCompositeCommand{\"}{PU}{t}{\9036\227}% U+1E97  
16403 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
16404 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
16405 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
16406 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
16407 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdotaccent  
16408 \DeclareTextCompositeCommand{.}{PU}{\textlongs}{\9036\233}% U+1E9B  
16409 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
16410 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
16411 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde

16412 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
 16413 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
 16414 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}% U+1EF2  
 16415 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
 16416 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}% U+1EF3  
 16417 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
 16418 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
 16419 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
 16420 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

## 50.2.12 General Punctuation: U+2000 to U+206F

16421 % U+200C ZERO WIDTH NON-JOINER; \*afii61664, zerowidthnonjoiner  
 16422 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
 16423 % U+2013 EN DASH; endash  
 16424 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
 16425 % U+2014 EM DASH; emdash  
 16426 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 16427 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 16428 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 16429 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 16430 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 16431 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 16432 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 16433 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 16434 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 16435 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 16436 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 16437 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 16438 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 16439 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 16440 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 16441 % U+2020 DAGGER; dagger  
 16442 \DeclareTextCommand{\textdagger}{PU}{\9040\040}% U+2020  
 16443 % U+2021 DOUBLE DAGGER; daggerdbl  
 16444 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
 16445 % U+2022 BULLET; bullet  
 16446 \DeclareTextCommand{\textbullet}{PU}{\9040\042}% U+2022  
 16447 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 16448 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
 16449 % U+2030 PER MILLE SIGN; perthousand  
 16450 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 16451 % U+2031 PER TEN THOUSAND SIGN  
 16452 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
 16453 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 ingleft  
 16454 \DeclareTextCommand{\guilsinglleft}{PU}{\9040\071}% U+2039  
 16455 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guil-  
 singlright  
 16456 \DeclareTextCommand{\guilsinglright}{PU}{\9040\072}% U+203A  
 16457 % U+203B REFERENCE MARK; referencemark  
 16458 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
 16459 % U+203D INTERROBANG  
 16460 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
 16461 % U+2044 FRACTION SLASH; fraction  
 16462 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
 16463 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
 16464 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045

16465 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
 16466 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
 16467 % U+2052 COMMERCIAL MINUS SIGN  
 16468 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052

### 50.2.13 Superscripts and Subscripts: U+2070 to U+209F

16469 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
 16470 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}% U+2070  
 16471 % U+2074 SUPERSCRIPT FOUR; foursuperior  
 16472 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}% U+2074  
 16473 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
 16474 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}% U+2075  
 16475 % U+2076 SUPERSCRIPT SIX; sixsuperior  
 16476 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}% U+2076  
 16477 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
 16478 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}% U+2077  
 16479 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
 16480 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}% U+2078  
 16481 % U+2079 SUPERSCRIPT NINE; ninesuperior  
 16482 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}% U+2079  
 16483 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
 16484 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}% U+207A  
 16485 % U+207B SUPERSCRIPT MINUS  
 16486 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}  
 16487 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
 16488 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}  
 16489 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
 16490 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}  
 16491 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
 16492 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}  
 16493 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
 16494 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}  
 16495 % U+2080 SUBSCRIPT ZERO; zeroinferior  
 16496 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}% U+2080  
 16497 % U+2081 SUBSCRIPT ONE; oneinferior  
 16498 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}% U+2081  
 16499 % U+2082 SUBSCRIPT TWO; twoinferior  
 16500 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}% U+2082  
 16501 % U+2083 SUBSCRIPT THREE; threeinferior  
 16502 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}% U+2083  
 16503 % U+2084 SUBSCRIPT FOUR; fourinferior  
 16504 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}% U+2084  
 16505 % U+2085 SUBSCRIPT FIVE; fiveinferior  
 16506 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}% U+2085  
 16507 % U+2086 SUBSCRIPT SIX; sixinferior  
 16508 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}% U+2086  
 16509 % U+2087 SUBSCRIPT SEVEN; seveninferior  
 16510 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}% U+2087  
 16511 % U+2088 SUBSCRIPT EIGHT; eightinferior  
 16512 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}% U+2088  
 16513 % U+2089 SUBSCRIPT NINE; nineinferior  
 16514 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}% U+2089  
 16515 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
 16516 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}% U+208D  
 16517 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
 16518 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}% U+208E

#### 50.2.14 Currency Symbols: U+20A0 to U+20CF

16519 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
16520 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
16521 % U+20A4 LIRA SIGN; afii08941, \*lira  
16522 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
16523 % U+20A6 NAIRA SIGN  
16524 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
16525 % U+20A7 PESETA SIGN; peseta  
16526 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
16527 % U+20A9 WON SIGN; won  
16528 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
16529 % U+20AB DONG SIGN; dong  
16530 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
16531 % U+20AC EURO SIGN; \*Euro, euro  
16532 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
16533 % U+20B1 PESO SIGN  
16534 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
16535 % U+20B2 GUARANI SIGN  
16536 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

#### 50.2.15 Letterlike Symbols: U+2100 to U+214F

16537 % U+2103 DEGREE CELSIUS; centigrade  
16538 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
16539 % U+2116 NUMERO SIGN; \*afii61352, numero  
16540 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
16541 % U+2117 SOUND RECORDING COPYRIGHT  
16542 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
16543 % U+211E PRESCRIPTION TAKE; prescription  
16544 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
16545 % U+2120 SERVICE MARK  
16546 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
16547 % U+2122 TRADE MARK SIGN; trademark  
16548 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
16549 % U+2126 OHM SIGN; Ohm, Omega  
16550 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
16551 % U+2127 INVERTED OHM SIGN  
16552 \DeclareTextCommand{\textmho}{PU}{\9041\047}% U+2127  
16553 % U+212B ANGSTROM SIGN; angstrom  
16554 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
16555 % U+212E ESTIMATED SYMBOL; estimated  
16556 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
16557 % U+2135 ALEF SYMBOL; aleph  
16558 \DeclareTextCommand{\textaleph}{PU}{\9041\065}% U+2135

#### 50.2.16 Arrows: U+2190 to U+21FF

16559 % U+2190 LEFTWARDS ARROW; arrowleft  
16560 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}% U+2190  
16561 % U+2191 UPWARDS ARROW; arrowup  
16562 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}% U+2191  
16563 % U+2192 RIGHTWARDS ARROW; arrowright  
16564 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}% U+2192  
16565 % U+2193 DOWNWARDS ARROW; arrowdown  
16566 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}% U+2193

#### 50.2.17 Mathematical Operators: U+2200 to U+22FF

16567 % U+2212 MINUS SIGN; minus  
16568 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212

16569 % U+221A SQUARE ROOT; radical  
 16570 \DeclareTextCommand{\textsurd}{PU}{\9042\032}% U+221A

### 50.2.18 Miscellaneous Technical: U+2300 to U+23FF

16571 % U+2329 LEFT-POINTING ANGLE BRACKET; angleleft  
 16572 \DeclareTextCommand{\textlangle}{PU}{\9043\051}% U+2329  
 16573 % U+232A RIGHT-POINTING ANGLE BRACKET; angleright  
 16574 \DeclareTextCommand{\textrangle}{PU}{\9043\052}% U+232A

### 50.2.19 Control Pictures: U+2400 to U+243F

16575 % U+2422 BLANK SYMBOL  
 16576 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
 16577 % U+2423 OPEN BOX; blank  
 16578 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

### 50.2.20 Enclosed Alphanumerics: U+2460 to U+24FF

16579 % U+2460 CIRCLED DIGIT ONE; onecircle  
 16580 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
 16581 % U+2461 CIRCLED DIGIT TWO; twocircle  
 16582 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
 16583 % U+2462 CIRCLED DIGIT THREE; threecircle  
 16584 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
 16585 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
 16586 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
 16587 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
 16588 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
 16589 % U+2465 CIRCLED DIGIT SIX; sixcircle  
 16590 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
 16591 % U+2466 CIRCLED DIGIT SEVEN; sevenscircle  
 16592 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
 16593 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
 16594 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
 16595 % U+2468 CIRCLED DIGIT NINE; ninecircle  
 16596 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
 16597 % U+2469 CIRCLED NUMBER TEN; tencircle  
 16598 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
 16599 % U+246A CIRCLED NUMBER ELEVEN; elevencircle  
 16600 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
 16601 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
 16602 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
 16603 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
 16604 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
 16605 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
 16606 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
 16607 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
 16608 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
 16609 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
 16610 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
 16611 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
 16612 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
 16613 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
 16614 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
 16615 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
 16616 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
 16617 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
 16618 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
 16619 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle

16620 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
16621 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
16622 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
16623 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
16624 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
16625 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
16626 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
16627 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
16628 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
16629 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
16630 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
16631 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
16632 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
16633 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
16634 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
16635 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle  
16636 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
16637 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
16638 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
16639 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
16640 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
16641 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
16642 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
16643 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
16644 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
16645 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
16646 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
16647 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
16648 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
16649 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
16650 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
16651 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
16652 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
16653 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
16654 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
16655 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
16656 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8  
16657 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
16658 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
16659 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
16660 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
16661 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
16662 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
16663 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
16664 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
16665 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
16666 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
16667 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
16668 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
16669 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
16670 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
16671 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
16672 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
16673 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
16674 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
16675 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
16676 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2

16677 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
 16678 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
 16679 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
 16680 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
 16681 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
 16682 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
 16683 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
 16684 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
 16685 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
 16686 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
 16687 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
 16688 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
 16689 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
 16690 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
 16691 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
 16692 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
 16693 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
 16694 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
 16695 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
 16696 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
 16697 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
 16698 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
 16699 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
 16700 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
 16701 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
 16702 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
 16703 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
 16704 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
 16705 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
 16706 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
 16707 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
 16708 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
 16709 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
 16710 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
 16711 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
 16712 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
 16713 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle  
 16714 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5  
 16715 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle  
 16716 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6  
 16717 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle  
 16718 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7  
 16719 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle  
 16720 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8  
 16721 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle  
 16722 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9  
 16723 % U+24EA CIRCLED DIGIT ZERO  
 16724 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

### 50.2.21 Box Drawing: U+2500 to U+257F

16725 % U+25E6 WHITE BULLET; \*openbullet, whitebullet  
 16726 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}% U+25E6  
 16727 % U+25EF LARGE CIRCLE; largecircle  
 16728 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}% U+25EF

### 50.2.22 Miscellaneous Symbols: U+2600 to U+26FF

16729 % U+266A EIGHTH NOTE; musicalnote



```

16730 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A
16731 % U+26AD MARRIAGE SYMBOL
16732 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD
16733 % U+26AE DIVORCE SYMBOL
16734 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE

```

### 50.2.23 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

```

16735 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET
16736 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}% U+27E6
16737 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET
16738 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}% U+27E7

```

### 50.2.24 Alphabetic Presentation Forms: U+FB00 to U+FB4F

```

16739 % U+FB01 LATIN SMALL LIGATURE FI; fi
16740 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01
16741 % U+FB02 LATIN SMALL LIGATURE FL; fl
16742 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

```

### 50.2.25 Miscellaneous

```

16743 \DeclareTextCommand{\SS}{PU}{SS}

```

### 50.2.26 Aliases

Aliases (german.sty)

```

16744 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
16745 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
16746 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
16747 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
16748 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
16749 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
16750 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
16751 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

16752 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
16753 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
16754 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
16755 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
16756 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}
16757 </puenc>

```

## 50.3 PU encoding, additions for VnTeX

This file is provided by Han The Thanh.

```

16758 <*puvnenc>
16759 \DeclareTextCommand{\abreve}{PU}{\81\003}
16760 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
16761 \DeclareTextCommand{\dj}{PU}{\81\021}
16762 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
16763 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
16764 \DeclareTextCommand{\ohorn}{PU}{\81\241}
16765 \DeclareTextCommand{\uhorn}{PU}{\81\260}
16766 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
16767 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
16768 \DeclareTextCommand{\DJ}{PU}{\81\020}
16769 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
16770 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}

```

16771 \DeclareTextCommand{\OHORN}{PU}{\81\240}  
16772 \DeclareTextCommand{\UHORN}{PU}{\81\257}  
  
16773 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}  
16774 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}  
16775 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}  
16776 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}  
16777 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}  
16778 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}  
16779 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}  
16780 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}  
16781 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}  
16782 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}  
16783 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}  
16784 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}  
16785 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}  
16786 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}  
16787 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}  
16788 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}  
16789 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}  
16790 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}  
16791 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}  
16792 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}  
16793 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}  
16794 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}  
16795 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}  
16796 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}  
16797 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}  
16798 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}  
16799 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}  
16800 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}  
16801 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}  
16802 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}  
16803 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}  
16804 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}  
16805 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}  
16806 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}  
16807 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}  
16808 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}  
16809 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}  
16810 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}  
16811 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}  
16812 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}  
16813 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
16814 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
16815 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}  
16816 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
16817 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}  
16818 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
16819 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
16820 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}  
16821 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}  
16822 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}  
16823 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}  
16824 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}  
16825 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}  
16826 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}  
16827 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}

16828 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}  
16829 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}  
16830 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}  
16831 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}  
16832 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}  
16833 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}  
16834 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}  
16835 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}  
16836 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}  
16837 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}  
16838 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}  
16839 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}  
16840 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}  
16841 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}  
16842 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}  
16843 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}  
16844 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}  
16845 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\246}  
16846 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}  
16847 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}  
16848 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}  
16849 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}  
16850 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310}  
16851 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}  
16852 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}  
16853 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}  
16854 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}  
16855 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\300}  
16856 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}  
16857 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}  
16858 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}  
16859 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}  
16860 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314}  
16861 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}  
16862 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}  
16863 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}  
16864 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}  
16865 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322}  
16866 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}  
16867 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}  
16868 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}  
16869 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}  
16870 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\322}  
16871 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}  
16872 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}  
16873 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}  
16874 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}  
16875 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\334}  
16876 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}  
16877 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}  
16878 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}  
16879 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}  
16880 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}  
16881 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}  
16882 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}  
16883 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}  
16884 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}

```

16885 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\352}
16886 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}
16887 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}
16888 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}
16889 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
16890 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}
16891 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
16892 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}
16893 </puvnenc>

```

## 50.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```

16894 <*puarenc>
16895 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afi57409;ARABIC LET-
TER HAMZA
16896 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afi57410;ARABIC LET-
TER ALEF WITH MADDA ABOVE
16897 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afi57411;ARABIC LET-
TER ALEF WITH HAMZA ABOVE
16898 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afi57412;ARABIC LET-
TER WAW WITH HAMZA ABOVE
16899 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afi57413;ARA-
BIC LETTER ALEF WITH HAMZA BELOW
16900 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afi57414;ARABIC LET-
TER YEH WITH HAMZA ABOVE
16901 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afi57415;ARABIC LETTER ALEF
16902 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afi57416;ARABIC LETTER BEH
16903 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afi57417;ARABIC LETTER TEH MARBUTA
16904 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afi57418;ARABIC LETTER TEH
16905 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afi57419;ARABIC LET-
TER THEH
16906 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afi57420;ARABIC LET-
TER JEEM
16907 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afi57421;ARABIC LET-
TER HAH
16908 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afi57422;ARABIC LET-
TER KHAH
16909 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afi57423;ARABIC LETTER DAL
16910 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afi57424;ARABIC LET-
TER THAL
16911 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afi57425;ARABIC LETTER REH
16912 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afi57426;ARABIC LETTER ZAIN
16913 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afi57427;ARABIC LET-
TER SEEN
16914 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afi57428;ARABIC LET-
TER SHEEN
16915 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afi57429;ARABIC LETTER SAD
16916 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afi57430;ARABIC LETTER DAD
16917 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afi57431;ARABIC LETTER TAH
16918 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afi57432;ARABIC LETTER ZAH
16919 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afi57433;ARABIC LETTER AIN
16920 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afi57434;ARABIC LET-
TER GHAIN
16921 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afi57440;ARABIC TATWEEL
16922 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afi57441;ARABIC LETTER FEH

```

```

16923 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afi57442;ARABIC LETTER QAF
16924 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afi57443;ARABIC LETTER KAF
16925 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afi57444;ARABIC LETTER LAM
16926 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afi57445;ARABIC LET-
TER MEEM
16927 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afi57446;ARABIC LETTER NOON
16928 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afi57470;ARABIC LETTER HEH
16929 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afi57448;ARABIC LET-
TER WAW
16930 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afi57449;ARABIC LET-
TER ALEF MAKSURA
16931 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afi57450;ARABIC LETTER YEH
16932 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afi57451;ARABIC FATHATAN
16933 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afi57452;ARABIC DAMMATAN
16934 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afi57453;ARABIC KAS-
RATAN
16935 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afi57454;ARABIC FATHA
16936 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afi57455;ARABIC DAMMA
16937 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afi57456;ARABIC KASRA
16938 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afi57457;ARABIC SHADDA
16939 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afi57458;ARABIC SUKUN

Farsi
16940 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afi57506;ARABIC LET-
TER PEH
16941 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afi57507;ARABIC LET-
TER TCHEH
16942 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afi57508;ARABIC LETTER JEH
16943 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afi????;FARSI LET-
TER KAF
16944 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afi57509;ARABIC LETTER GAF
16945 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afi????;FARSI LET-
TER YEH

16946 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%
16947 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ
16948 (/puarenc)

```

## 51 End of file hycheck.tex

```

16949 ⟨*check⟩
16950 \typeout{}
16951 \begin{document}
16952 \end{document}
16953 ⟨/check⟩

```

## 52 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, 2061	15404, 15464, 15466, 15516,
\” 202, 227, 3173, 14131, 14491,		15518, 15524, 15526, 15528,
14503, 14515, 14638, 14724,		15530, 15612, 15614, 15616,
14738, 14746, 14761, 14773,		15618, 15620, 15622, 15624,
14789, 14803, 14814, 14815,		15626, 15681, 15683, 15685,
14829, 14841, 14847, 14898,		15687, 15745, 15748, 15750,
14926, 14945, 14966, 15093,		15775, 15794, 15940, 15959,
15107, 15115, 15129, 15141,		16308, 16310, 16320, 16322,
15157, 15171, 15182, 15183,		16336, 16338, 16368, 16370,
15197, 15209, 15215, 15462,		16773, 16778, 16783, 16788,
15677, 15679, 15689, 15741,		16793, 16798, 16803, 16808,
15743, 15771, 15784, 15936,		16813, 16818, 16823, 16828,
15949, 16182, 16184, 16198,		16833, 16838, 16843, 16848,
16200, 16202, 16204, 16206,		16853, 16858, 16863, 16868,
16208, 16218, 16220, 16222,		16873, 16878, 16883, 16888
16224, 16230, 16232, 16234,	\( . 190, 215, 322, 756, 759, 761,	
16236, 16242, 16244, 16250,	2063, 14197, 14561	
16252, 16258, 16260, 16300,	\) . 191, 216, 323, 728, 734, 737,	
16302, 16372, 16374, 16384,	2064, 14198, 14563	
16386, 16402	\* . . . . . 325	
\# . 547, 2146, 2147, 4602, 4613,	\+ . . . . . 200, 225, 326	
4615, 4631, 4663, 4723,	\- . . . . . 201, 226	
8651, 8653, 9433, 9442,	\. 198, 223, 319, 1222, 3515, 3926,	
9477, 10317, 11906, 11917,	14494, 14506, 14518, 14580,	
11953, 12184, 12193, 12233,	14871, 14878, 14896, 14929,	
14051	14948, 14972, 15012, 15013,	
\\$ 184, 209, 321, 548, 4604, 4722	15237, 15239, 15261, 15263,	
\% . 549, 2061, 2121, 2122, 4601,	15281, 15283, 15317, 15348,	
4610, 4612, 4664, 8653	15350, 15468, 15470, 15561,	
\& . . . 185, 210, 550, 4605, 4616,	15563, 15569, 15571, 16268,	
4618, 11963	16270, 16276, 16278, 16288,	
\’ . . . 203, 228, 3113, 3127, 3168,	16290, 16296, 16298, 16324,	
3170, 3171, 3172, 3173,	16326, 16328, 16330, 16340,	
3178, 3179, 3181, 3186,	16342, 16344, 16346, 16352,	
3192, 3196, 3197, 3200,	16354, 16376, 16378, 16380,	
3243, 3244, 3249, 3250,	16382, 16388, 16390, 16408	
3251, 3252, 3253, 3254,	\/. 194, 219, 670, 671, 672, 739,	
3255, 3256, 3258, 3262,	1846, 8049	
3275, 14129, 14488, 14500,	\: . . . . . 189, 214	
14512, 14718, 14734, 14742,	\; . . . . . 199, 224, 8345	
14755, 14769, 14775, 14783,	\< . . . . . 196, 221	
14799, 14808, 14809, 14823,	\= . . . 167, 173, 180, 183, 14496,	
14837, 14843, 14866, 14868,	14508, 14520, 14891, 14933,	
14869, 14870, 14873, 14875,	14952, 14971, 15217, 15219,	
14876, 14877, 14885, 14923,	15253, 15255, 15302, 15304,	
14942, 14963, 15087, 15103,	15305, 15374, 15376, 15434,	
15111, 15123, 15137, 15143,	15436, 15573, 15575, 16214,	
15151, 15167, 15176, 15177,	16216, 16238, 16240, 16292,	
15191, 15205, 15211, 15229,	16294	
15231, 15336, 15338, 15356,	\> . . . . . 197, 222	
15358, 15390, 15392, 15402,	\? . . . . . 327	
	\@ . . . . . 3164	
	\@@@ . . . . . 2377	
	\@@BOOKMARK 14112, 14115,	
	14173, 14241, 14248	
	\@@ListBox 12554, 12578, 13037,	
	13070, 13378, 13421	
	\@@Menu . . . . . 12763, 12771	
	\@@PasswordField . 12712, 12718	
	\@@Radio . 12539, 12560, 12761,	
	12785, 13022, 13043, 13363,	
	13384	
	\@@TextField . . . . 12714, 12729	
	\@@commahyperpage 8156, 8157	
	\@@hyper@creadexternallink . . .	
	. . . . . 4914, 4916	
	\@@hyperref . . . . . 4825, 4826	
	\@@latextohtmlX . . . 2992, 5062	
	\@@wrindex . . . . . 8084, 8085	
	\@@writetorep . . . . 13972, 13978	
	\@Alph . . . . . 6694, 6696	
	\@BIBLABEL . 7521, 7527, 7533	
	\@BOOKMARK . . 14112, 14114	
	\@CITE . . . . . 7598, 7606	
	\@CITEX . . . . . 7600	
	\@CheckBox 5859, 10382, 12652,	
	12682, 12816, 13154, 13523	
	\@ChoiceMenu . . . . 5856, 10385,	
	12492, 12685, 12751, 12974,	
	13315	
	\@Form . . . . 5520, 10372, 12277,	
	12674, 12695, 12894, 13237	
	\@Gauge . . . 5865, 10376, 12461,	
	12676, 12700, 12837, 13234	
	\@Localurlfalse . . . . . 10325	
	\@Localurltrue . . . . . 10322	
	\@M . . . 1128, 2434, 4709, 7134	
	\@MM . . . . . 7284	
	\@PackageError . . . . . 263	
	\@PackageInfo . . . . . 266	
	\@PackageInfoNoLine . . . . . 267	
	\@PackageWarning . . . . . 264	
	\@PackageWarningNoLine . . 265	
	\@PushButton . . . . 5862, 10388,	
	12585, 12688, 12797, 13079,	
	13437	
	\@Refstar . . . . . 8460, 8467	
	\@Reset . . . . 5871, 10391, 12629,	
	12691, 12813, 13130, 13494	
	\@Roman . . . . . 632	
	\@SCTR . . . . . 8204, 8256	
	\@SetMaxRnhefLabel . . . . 7595	
	\@Submit . . 5868, 10394, 12612,	
	12692, 12810, 13108, 13471	

<code>\@TextField</code> . 5853, 10379, 12464, 12679, 12703, 12945, 13278	<code>\@clubpenalty</code> . . . . . 7136	<code>\@filebordercolor</code> 3558, 4015, 8985, 8987, 10007, 10009, 10525, 10527, 11576
<code>\@addchap</code> . . . . . 14448	<code>\@commahyperpage</code> . 8151, 8156	<code>\@filecolor</code> 3484, 3496, 9006, 9616, 9633, 10025, 10531
<code>\@addtoreset</code> . 7978, 7979, 7993, 8201	<code>\@ctrerr</code> . . . . . 6668, 6677	<code>\@firstoffive</code> . . 4537, 4546, 8450, 8535
<code>\@afterheading</code> . . . . . 14465	<code>\@currDisplay</code> . . . . 5608, 12504, 12567, 12780, 12794, 12986, 13050, 13327, 13394	<code>\@firstofone</code> . . . . . 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 621, 812, 964, 975, 1208, 1212, 1216, 1554, 3904, 4428, 5486, 5492, 5758, 6552, 6687, 6699, 6766, 7388, 7469, 7610, 7633, 7815, 8039, 9294, 12867, 13608, 13625, 13643
<code>\@alph</code> . . . . . 6690, 6692	<code>\@currValue</code> . . 5610, 5612, 12565, 12572, 12780, 12791, 13048, 13057, 13392, 13409, 13849	<code>\@firstoftwo</code> 641, 922, 1090, 1762, 6049, 14414
<code>\@anchorcolor</code> 3494, 9402, 9497, 10439, 11874, 12154	<code>\@currentHlabel</code> . . . . . 6740	<code>\@fnsymbol</code> . . . . . 6688
<code>\@arabic</code> 1098, 1103, 1107, 6689	<code>\@currentHref</code> 2379, 5961, 6639, 6720, 6722, 6731, 6733, 6740, 6821, 6823, 6833, 6884, 6895, 6897, 6935, 6946, 6950, 6957, 6981, 7071, 7102, 7127, 7200, 7210, 7212, 7213, 7269, 7297, 7395, 7421, 7425, 7440, 7442, 7670, 7854, 7877, 7890, 7897, 7948, 7972, 7974, 13962, 14353, 14366, 14377, 14407, 14424, 14459	<code>\@footnotemark</code> 7143, 7206, 7224, 7306, 7318, 7320, 7332, 7333, 7363, 7365
<code>\@auxout</code> 2371, 4872, 6079, 6081, 6779, 6807, 7541, 7556, 7572, 7582, 7612, 7635, 7661, 7667, 7691	<code>\@currentlabel</code> 6863, 7287, 7663, 7670, 7953, 7960, 8210, 8262	<code>\@footnotetext</code> . . . . . . . 7142, 7149, 7183, 7223, 7319, 7321, 7335, 7336, 7356
<code>\@backslashchar</code> . . . . . 852, 855, 858, 1352, 2023, 2027, 2030, 2168, 2185, 2191, 2195, 2203, 4626, 8666, 8676	<code>\@currentlabelname</code> . 2369, 7201, 7270, 7298, 7400	<code>\@for</code> . . . 3534, 5128, 7607, 7630, 12501, 12563, 12769, 12776, 12786, 12983, 13046, 13324, 13390
<code>\@baseurl</code> 3501, 3503, 4972, 9118, 9121, 9387, 9389, 9675, 9677, 10194, 10204, 10290, 10292, 10827, 10829, 11207, 11221, 11859, 11861, 12060, 12074, 12140, 12142	<code>\@currentlabstr</code> . . . . 2368, 2376	<code>\@fourthoffive</code> 4540, 4860, 8525, 8532
<code>\@begintheorem</code> 7038, 7041, 7066, 7073, 7097, 7104	<code>\@curropt</code> . 12501, 12502, 12563, 12564, 12769, 12776, 12777, 12779, 12786, 12787, 12789, 12983, 12984, 13046, 13047, 13324, 13325, 13390, 13391	<code>\@gobble</code> . . . . . 49, 56, 117, 571, 572, 573, 574, 611, 612, 613, 614, 644, 645, 646, 655, 657, 816, 929, 962, 973, 1114, 1118, 1121, 1491, 1552, 1571, 1584, 1588, 1651, 1714, 1715, 1722, 1727, 1741, 1746, 2349, 2406, 2679, 2691, 3892, 4099, 4153, 4592, 5471, 5748, 6014, 6018, 6035, 6037, 6053, 6054, 6057, 6058, 6060, 6526, 6546, 6550, 7027, 7053, 7086, 7377, 7466, 7853, 8590, 9296, 10707, 10710, 12895, 13238, 14019, 14020, 14021, 14022
<code>\@bibitem</code> . . . . . 7548, 7579	<code>\@dblarg</code> . . . . . 7390, 7471	<code>\@gobblefour</code> . . . 577, 680, 1248, 1249, 1250, 3711, 8325
<code>\@biblabel</code> . . . . . 7521, 7568	<code>\@definecounter</code> . . . . 7933, 7934	<code>\@gobbleopt</code> . . . . . 6060, 6062
<code>\@bookmarkopenstatus</code> . . 4426, 4443, 14033	<code>\@ehc</code> . . 2739, 2850, 2875, 2908, 2946, 2953, 2964, 2970, 4151, 4771, 4936, 5232, 5356, 5552, 5585, 5795, 5844, 12594, 12640, 13089, 13141, 13447, 13505	<code>\@gobbletwo</code> 575, 648, 673, 681, 682, 829, 1247, 1669, 1746, 1750, 2564, 3709, 3710, 4103, 5417, 6039, 6048,
<code>\@bookmarksopenlevel</code> . . 3455, 3457, 4429	<code>\@ehd</code> . . 63, 282, 288, 303, 7376, 7465	
<code>\@bsphack</code> . . . . 2364, 4865, 7665	<code>\@endForm</code> . 5521, 10375, 12460, 12675, 12699, 12944, 13264	
<code>\@capstartfalse</code> . . . . . 7415	<code>\@endpary</code> . . 7036, 7062, 7093	
<code>\@caption</code> 7380, 7392, 7435, 7471, 7473	<code>\@eqnncr</code> . . . . . 6965	
<code>\@capttype</code> 2373, 7375, 7379, 7383, 7390, 7397, 7439, 7464, 7468, 7471	<code>\@eqnstarfalse</code> . . . . . 6941, 6968	
<code>\@car</code> . . . 1634, 1650, 1668, 1688, 3434, 5138, 9070, 9081	<code>\@eqnstartrue</code> . . . . . 6965	
<code>\@cdr</code> . . . . . 9071, 9082	<code>\@eqnswtrue</code> . . . . . 6911, 6920	
<code>\@chapter</code> . . . . . 14372, 14373	<code>\@esphack</code> 2385, 4876, 7675, 8096	
<code>\@cite</code> . . 7598, 7629, 7726, 7732	<code>\@extra@b@citeb</code> . . . . . . . 7506, 7509, 7526, 7531, 7551, 7599, 7621, 7637, 7644	
<code>\@cite@opt</code> 7727, 7733, 7737, 7747	<code>\@extra@b@info</code> . 7505, 7508, 7512	
<code>\@citea</code> . 7601, 7608, 7609, 7628, 7631, 7632	<code>\@fifthoffive</code> . . 4111, 4541, 4859, 8411, 8530	
<code>\@citeb</code> . 7607, 7610, 7612, 7614, 7618, 7621, 7630, 7633, 7635, 7637, 7641, 7644		
<code>\@citebordercolor</code> . . 3557, 4017		
<code>\@citecolor</code> . . . . . 3495		
<code>\@citedata@opt</code> 7728, 7734, 7736		
<code>\@citedatax</code> . . . . . 7743, 7748		
<code>\@citedatax@opt</code> . . . 7740, 7746		
<code>\@citeseppen</code> . . . . . 7725, 7731		
<code>\@citex</code> . . . . . 7627		

6056, 6060, 8513, 14363	<code>\@inmathwarn</code> . . . . . 541, 542	<code>\@one</code> 1097, 2758, 2896, 4414, 4741,
<code>\@charvarditem</code> . . . . . 7680, 7682	<code>\@inpenc@undefined@</code> . . . . 2223	9939, 9944, 10806, 11714,
<code>\@hyper@anchor</code> . . . . . 5022, 5023	<code>\@labels</code> . . . . . 7131	13273
<code>\@hyper@itemfalse</code> . . . . . 6582, 6600,	<code>\@latex@</code> . . . . . 6163, 6164	<code>\@newctr</code> . . . . . 7938, 7939
6614	<code>\@latex@error</code> . . . . . 7376, 7465	<code>\@newl@bel</code> . . . . . 6126, 7508
<code>\@hyper@itemtrue</code> . . . . . 6583	<code>\@latex@warning</code> . . . . . 4852, 7617,	<code>\@newlistfalse</code> . . . . . 7112
<code>\@hyper@launch</code> . . . . . 4942, 4951,	7640, 8386, 8406, 8423, 8541	<code>\@nil</code> 293, 310, 486, 490, 495, 499,
9010, 10030, 10600, 11594	<code>\@lbibitem</code> . . . . . 7522, 7567	514, 1546, 1549, 1557, 1634,
<code>\@hyper@linkfile</code> . . . . . 4923, 4926,	<code>\@linkbordercolor</code> . . . . . 3559, 4012,	1652, 1670, 1686, 1688,
4930, 4962	8934, 10429	1691, 1694, 1697, 2232,
<code>\@hyper@readexternallink</code> 4917,	<code>\@linkcolor</code> . . . . . 3493, 11254	2234, 2250, 2252, 3434,
4921	<code>\@linkdim</code> 469, 9451, 9452, 9460,	4648, 4652, 4657, 4989,
<code>\@hyperdef</code> . . . . . 4833, 4834	9461, 9462, 9531, 9532,	4997, 5003, 5005, 5138,
<code>\@hyperpage</code> . . . . . 8148, 8149	9544, 9545, 9546, 9568,	5739, 5742, 5761, 6151,
<code>\@hyperref</code> . . . . . 4814, 4825	9569, 9582, 9583, 9584,	6154, 6161, 6163, 6164,
<code>\@ifclasslater</code> . . . . . 14471, 14476	9608, 9609, 9622, 9623,	6269, 6317, 6318, 6320,
<code>\@ifclassloaded</code> 2356, 4568, 6751,	9624, 11927, 11928, 11936,	6343, 6360, 6414, 6416,
6788, 6790, 8184, 8188,	11937, 11938, 12202, 12203,	6879, 6888, 6890, 6902,
9299, 14470, 14475	12216, 12217, 12218	8135, 8137, 8144, 8167,
<code>\@ifnextchar</code> . . . . . 12, 88, 103, 123,	<code>\@listctr</code> . . . . . 7557, 7583	8170, 8180, 8390, 8393,
674, 4716, 4814, 4833, 4884,	<code>\@m</code> . . . . . 1111, 7609, 7632, 10754	8549, 8580, 8662, 8668,
5520, 5853, 5856, 5859,	<code>\@mainaux</code> . . . . . 6077, 6078, 6509,	8672, 8678, 9070, 9071,
5862, 5865, 5868, 5871,	6517, 12863, 12887	9081, 9082, 10672, 10674,
6060, 6132, 6141, 7322,	<code>\@makecaption</code> 7416, 7418, 7484	13615, 13628, 13634, 14061,
7340, 7680, 7738, 11232,	<code>\@makefnmark</code> . . . . . 7215, 7368	14064, 14067, 14076, 14079,
11505, 11519, 14112, 14115	<code>\@makefnmark</code> . . . . . 7288	14088
<code>\@ifpackagelater</code> 238, 984, 2387,	<code>\@makeoother</code> . . . . . 166, 167,	<code>\@nobreakfalse</code> . . . . . 6123, 7134
6742, 8003	179, 180, 182, 183, 188, 189,	<code>\@nocnterr</code> . . . . . 7992, 8006
<code>\@ifpackageloaded</code> . . . . . 500, 882,	190, 191, 192, 193, 194, 195,	<code>\@nocounterr</code> . . . . . 7991, 8005
983, 2359, 2791, 3411, 3415,	196, 197, 198, 199, 200, 201,	<code>\@noparitemfalse</code> . . . . . 7113
4073, 4256, 6623, 6741,	202, 203, 4616, 8638, 14201,	<code>\@number</code> . . . . . 6687, 6766, 7815
6754, 6816, 6849, 6853,	14204, 14231, 14234	<code>\@nx</code> . . . . . 7995, 8009, 8012, 8014
6873, 6907, 7021, 7220,	<code>\@makeschapterhead</code> . . . . . 14462,	<code>\@onelevel@sanitize</code> . . . . . 2557, 2561,
7236, 7276, 7436, 7650,	14464	2773, 3433, 4128, 4158,
7723, 7945, 8002, 8044,	<code>\@mem@titleref</code> . . . . . 4575	4179, 4682, 4984, 4987,
8045, 8046, 8194, 8459,	<code>\@mem@titleref@nolink</code> . . . . . 4575	5000, 5014, 5228, 5464,
8603, 8607, 12132	<code>\@menubordercolor</code> . . . . . 3560, 4014,	5548, 6370, 6372, 6727,
<code>\@ifpackagewith</code> 3293, 4074, 7968	9355, 9357, 10105, 10107,	7883, 8436, 9796, 14058
<code>\@ifstar</code> . . . . . 66, 4563, 4566, 4575,	10637, 10639	<code>\@oparg</code> . . . . . 7038, 7041, 7066, 7073,
4579, 5996, 6000, 6066,	<code>\@menucolor</code> . . . . . 3498, 9370, 10111,	7097, 7104
6070, 8467, 8493, 8513	10643	<code>\@outlinefile</code> 14031, 14120, 14215,
<code>\@ifundefined</code> 34, 361, 901, 909,	<code>\@minipagefalse</code> . . . . . 7111	14217, 14219, 14297, 14299,
925, 928, 2653, 2721, 2805,	<code>\@mkboth</code> . . . . . 648, 8307, 14363,	14301
3311, 3347, 3355, 3362,	14451, 14453	<code>\@pagerefstar</code> . . . . . 4566, 8452, 8483
3384, 3432, 4041, 5227,	<code>\@mpfn</code> . . . . . 7146, 7341, 7353	<code>\@pagesetref</code> . . . . . 8402
5547, 6479, 6592, 6627,	<code>\@mpfootnotetext</code> . . . . . 7149, 7162,	<code>\@parboxrestore</code> 7286, 7408, 7479
6632, 6855, 6876, 6877,	7163, 7225	<code>\@parcount</code> . . . . . 14179, 14187
6930, 6952, 6976, 7013,	<code>\@mycount</code> . . . . . 14177, 14187	<code>\@part</code> . . . . . 14390, 14397
7381, 7399, 7515, 7598,	<code>\@namedef</code> 1228, 2501, 2815, 2816,	<code>\@pdfauthor</code> . . . . . 3727, 4020, 9178,
7614, 7637, 7942, 7983,	2817, 2818, 2819, 2820,	9657, 10141, 10868, 11133,
7991, 7992, 8005, 8006,	2821, 2822, 3302, 3314,	11991
8013, 8709, 10266, 10895,	5238, 5239, 5240, 5241,	<code>\@pdfborder</code> . . . . .
10896, 11689, 12895, 13238,	5563, 5564, 6752, 6964,	. . . . . 3376, 3572, 3573, 3574,
13617, 14029	6967, 7655, 7656, 7657, 7658	3581, 3585, 3608, 3610,
<code>\@indexfile</code> . . . . . 8088, 8103, 8111,	<code>\@namerefstar</code> . . . . . 4579, 8455	4509, 8864, 9814, 10427,
8115, 8120	<code>\@nameuse</code> 2373, 2812, 5244, 5555	10999, 11094, 11497, 11509,
<code>\@inlabelfalse</code> . . . . . 7115		



11524, 11545, 11573, 11604,  
 11633, 11720, 11808, 11968  
 \@pdfborderstyle . . . 3377, 3589,  
 3590, 3591, 3600, 3604,  
 3612, 3614, 4510, 5710,  
 8865, 9815, 10428, 11000,  
 11095, 11498, 11510, 11525,  
 11546, 11574, 11605, 11634,  
 11721, 11809, 11969  
 \@pdfcreationdate . . . . .  
 . . 3744, 4023, 9182, 9184,  
 9649, 9651, 10133, 10135,  
 11108, 11110, 11983, 11985  
 \@pdfcreator . 3739, 4022, 9181,  
 9648, 10132, 10871, 11132,  
 11982  
 \@pdfdirection 9141, 9713, 10174,  
 10839, 11187, 12040  
 \@pdfduplex . 9147, 9719, 10180,  
 10845, 11193, 12046  
 \@pdfhighlight . . . . .  
 . . 3564, 4018, 8884, 8886,  
 8945, 8981, 8983, 9018,  
 9020, 9351, 9353, 10998,  
 11093, 11496, 11544, 11572,  
 11603  
 \@pdfhighlight 8943  
 \@pdfkeywords 3763, 4026, 9194,  
 9646, 10146, 10876, 11134,  
 11980  
 \@pdflang 4004, 4033, 9167, 9169,  
 9741, 9743, 10214, 10216,  
 11217, 11219, 12070, 12072  
 \@pdfm@dest . . 9758, 9817, 9821  
 \@pdfm@mark 6497, 9757, 9809,  
 9829, 9843, 9845, 9859,  
 9861, 9866, 9867, 9897,  
 9921, 9923, 9928, 9946,  
 9969, 10001, 10035, 10066,  
 10094, 10128, 10195, 10222,  
 13241, 13242, 13243, 13262,  
 13305, 13311, 13400, 13414,  
 13429, 13435, 13460, 13467,  
 13485, 13491, 13513, 13519,  
 13542, 13548, 13553, 13585,  
 13593, 14268  
 \@pdfmoddate . . . . .  
 . . 3750, 4024, 9186, 9188,  
 9653, 9655, 10137, 10139,  
 11112, 11116, 11987, 11989  
 \@pdfnonfullscreenpagemode . . .  
 . 9140, 9712, 10173, 10838,  
 11186, 12039  
 \@pdfnumcopies 9156, 9158, 9728,  
 9730, 10189, 10191, 10854,  
 10856, 11202, 11204, 12055,  
 12057  
 \@pdfpageduration . 3511, 9238,  
 9242, 9247, 10239, 10241,  
 10244, 10763, 10765, 10768,  
 11038, 11040, 11048  
 \@pdfpagelayout . . . 9166, 9740,  
 10213, 10859, 10861, 11216,  
 12069  
 \@pdfpagemode 4244, 4245, 4439,  
 4440, 4449, 4450, 9120,  
 9696, 10208, 10826, 11170,  
 12023  
 \@pdfpagescrop 3958, 4028, 9105,  
 9109, 9679, 9680, 9701,  
 9703, 10220, 10222, 10815,  
 10817, 11175, 11177, 12028,  
 12030  
 \@pdfpagetransition . 3507, 9214,  
 9218, 9223, 10228, 10230,  
 10233, 10652, 10654, 10656,  
 11021, 11023, 11031  
 \@pdfpicktraybypdfsize . . . . .  
 . . 9148, 9150, 9720, 9722,  
 10181, 10183, 10846, 10848,  
 11194, 11196, 12047, 12049  
 \@pdfprintarea 9144, 9716, 10177,  
 10842, 11190, 12043  
 \@pdfprintclip 9145, 9717, 10178,  
 10843, 11191, 12044  
 \@pdfprintpagerange . . . . .  
 . . 3679, 4032, 9152, 9154,  
 9724, 9726, 10185, 10187,  
 10850, 10852, 11198, 11200,  
 12051, 12053  
 \@pdfprintscaling . . 9146, 9718,  
 10179, 10844, 11192, 12045  
 \@pdfproducer 3733, 4021, 9046,  
 9190, 9192, 9639, 9640,  
 9658, 9660, 10117, 10118,  
 10122, 10142, 10144, 10783,  
 10784, 10788, 10791, 10792,  
 10872, 10874, 11119, 11123,  
 11630, 11631, 11713, 11715,  
 11717, 11805, 11806, 11973,  
 11974, 11992, 11994  
 \@pdfremotestartview . . . . .  
 . . 3930, 3932, 3933, 3934,  
 3945, 3949, 3951, 3952,  
 3954, 4030, 8998, 10016,  
 11584  
 \@pdfstartpage . . . . .  
 . . 3913, 3915, 4031, 9126,  
 9130, 9683, 9688, 10197,  
 10201, 10819, 10823, 11157,  
 11162, 12010, 12015  
 \@pdfstartview . . . . .  
 . . 3920, 3922, 4029, 9128,  
 9130, 9685, 9689, 10199,  
 10201, 10821, 11159, 11163,  
 12012, 12016  
 \@pdfsubject . 3757, 4025, 9180,  
 9662, 10131, 10870, 11131,  
 11996  
 \@pdftempa . . . 4928, 4929, 4932  
 \@pdftempwordfile . 4919, 4929  
 \@pdftempwordrun . 4920, 4932  
 \@pdftitle 3721, 4019, 9179, 9647,  
 10130, 10869, 11130, 11981  
 \@pdftrapped 3768, 3771, 3774,  
 3783, 3792, 4027, 9195,  
 9197, 10147, 10149, 11135  
 \@pdfview . . . 3894, 8846, 8854,  
 9764, 9768, 9772, 9776,  
 9780, 9784, 9785, 9788,  
 9789, 9792, 9796, 9798,  
 9813, 10426, 10436, 10448,  
 10936, 10956, 11635, 11722,  
 11810, 12082  
 \@pdfviewarea 9142, 9714, 10175,  
 10840, 11188, 12041  
 \@pdfviewclip 9143, 9715, 10176,  
 10841, 11189, 12042  
 \@pdfviewparams . . 3896, 3898,  
 10936, 10956, 11636, 11723,  
 11811, 12083  
 \@percentchar 4611, 4612, 4664,  
 14035  
 \@processme . 5596, 5597, 9220,  
 9226, 9244, 9250, 9266,  
 9272, 11235, 11236, 11347,  
 11348, 11351, 11352  
 \@protected@testopt . . . . . 677  
 \@protected@testopt@xargs . 678  
 \@refstar . . . . . 4563, 8449  
 \@runbordercolor . . . 3561, 4016,  
 9022, 9024, 10041, 10043,  
 10619, 10621, 11607  
 \@runcolor . . . 3499, 9042, 10057,  
 10625  
 \@safe@activesfalse . . 630, 4543  
 \@safe@activestrue . . . 629, 4542  
 \@savsf . . . . . 8849, 8857  
 \@schapter . . . . . 14360, 14361  
 \@secondoffive 4112, 4538, 4551,  
 8412, 8413, 8453  
 \@secondoftwo . . . . . 617, 620,  
 920, 1093, 1620, 1760, 4111,  
 4112, 14416  
 \@sect . . . . . 14411, 14412  
 \@seqncr . . . . . 6965  
 \@serial@counter . 14127, 14175,  
 14177, 14178  
 \@seteqlabel . . . . . 7969, 7970  
 \@setminipage . . . . . 7410, 7481

<code>\@setref</code> . 4546, 4551, 8381, 8382, 8419	<code>\@topsep</code> . . . . . 7035, 7061, 7092	14883, 14922, 14941, 14962,
<code>\@sharp</code> . . . . . 6879, 6885	<code>\@topsepadd</code> . . 7036, 7062, 7093	15085, 15101, 15109, 15121,
<code>\@skiphyperreffalse</code> . 6601, 7537, 7549	<code>\@typeset@protect</code> . . . . . 14332	15135, 15149, 15165, 15173,
<code>\@skiphyperreftrue</code> . 7523, 7549	<code>\@undefined</code> . . . . . 374, 377, 683, 3284, 6050, 6085, 6098, 6110, 6332, 6350, 6395, 7375, 7438, 7450, 7455, 7464, 8444, 8837, 9050, 9059, 10399, 10794, 10808	15174, 15189, 15203, 15520, 15522, 15768, 15796, 15933, 15961, 16364, 16366, 16414, 16416, 16775, 16780, 16785, 16790, 16795, 16800, 16805, 16810, 16815, 16820, 16825, 16830, 16835, 16840, 16845, 16850, 16855, 16860, 16865, 16870, 16875, 16880, 16885, 16890
<code>\@spaces</code> . . . . . 270	<code>\@undottedtocline</code> . . . . . 8371	<code>\l</code> . . . . . 188, 213, 324, 1969, 2062, 2103, 3073, 4056, 8048, 8637, 8647
<code>\@spart</code> . . . . . 14403, 14404	<code>\@unprocessedoptions</code> . . . . 4389	<code>\~</code> . . . . . 551, 1266, 2211, 3185, 3193, 3194, 3195, 4172, 4624, 14490, 14502, 14514, 14722, 14751, 14759, 14787, 14819, 14827, 14889, 14925, 14944, 14965, 15091, 15119, 15127, 15155, 15187, 15195, 15297, 15299, 15300, 15430, 15432, 16360, 16362, 16410, 16412, 16418, 16420, 16777, 16782, 16787, 16792, 16797, 16802, 16807, 16812, 16817, 16822, 16827, 16832, 16837, 16842, 16847, 16852, 16857, 16862, 16867, 16872, 16877, 16882, 16887, 16892
<code>\@ssect</code> . . . . . 14346, 14347	<code>\@urlbordercolor</code> 3562, 4013, 8947, 8949, 10072, 10074, 10551, 10553, 11547	<b>Numbers</b>
<code>\@startlos</code> . . . . 8319, 8326, 8375	<code>\@urlcolor</code> 3497, 8966, 9456, 9469, 9576, 9593, 10086, 10557, 11932, 11945, 12211, 12224	<code>\3</code> . 528, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1426, 1427, 1428, 1429, 1430, 1431, 1432, 1433, 2325, 14196, 14716, 14718, 14720, 14722, 14724, 14726, 14728, 14730, 14732, 14734, 14736, 14738, 14740, 14742, 14744, 14746, 14748, 14749, 14751, 14753, 14755, 14757, 14759, 14761, 14763, 14765, 14767, 14769, 14771, 14773, 14775, 14777, 14779, 14781, 14783, 14785, 14787, 14789, 14791, 14793, 14795, 14797, 14799, 14801, 14803, 14805, 14806, 14808, 14809, 14811, 14812, 14814, 14815, 14817, 14819, 14821, 14823, 14825, 14827, 14829, 14831, 14833, 14835, 14837, 14839, 14841, 14843, 14845, 14847, 14848, 14921, 15085, 15087, 15089, 15091, 15093, 15095, 15097,
<code>\@starttoc</code> . . . . . 6111	<code>\@xsf</code> . . 7208, 7217, 7367, 7369	
<code>\@tempa</code> 7037, 7038, 7041, 7043, 7065, 7072, 7076, 7096, 7103, 7107, 7238, 7242, 7245, 7257	<code>\@xfootnote</code> . . . . . 7340	
<code>\@tempb</code> . . . . . 6993, 6997	<code>\@xfootnotemark</code> . . . 7155, 7358	
<code>\@tempboxa</code> . 9449, 9451, 9460, 9529, 9531, 9534, 9535, 9544, 9550, 9551, 9566, 9568, 9571, 9572, 9582, 9588, 9589, 9606, 9608, 9611, 9612, 9622, 9628, 9629, 11925, 11927, 11936, 12200, 12202, 12216	<code>\@xfootnotenext</code> . . . 7144, 7351	
<code>\@tempcnta</code> 13984, 13985, 13986, 13987, 13988, 13990, 13993, 13994, 13995, 14001, 14003, 14005, 14096, 14097, 14098, 14101, 14102, 14103, 14104, 14105, 14319, 14320, 14321	<code>\@xp</code> . . . 7959, 7994, 7995, 8008, 8009, 8011, 8012	
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8839, 12500, 12505, 12507, 12543, 12544, 12545, 12549, 12550, 12551, 12552, 12982, 12987, 12989, 13026, 13027, 13028, 13032, 13033, 13034, 13035, 13323, 13328, 13330, 13367, 13368, 13369, 13373, 13374, 13375, 13376	<code>\l</code> 192, 217, 320, 3578, 3596, 4783	
<code>\@tempdimb</code> 12504, 12505, 12986, 12987, 13327, 13328	<code>\{</code> . . 328, 350, 544, 2063, 10927, 14053	
<code>\@tempswafalse</code> . . . . . 7742	<code>\}</code> . . 329, 355, 545, 2064, 10927, 14054	
<code>\@tempswatrue</code> 7712, 7715, 7718, 7739	<code>\]</code> . . . . . 193, 218	
<code>\@temptokena</code> 3280, 3285, 3288, 3290	<code>\^</code> . . . . . 186, 211, 318, 2161, 2162, 3191, 4599, 4600, 4608, 14489, 14501, 14513, 14720, 14736, 14744, 14757, 14771, 14785, 14801, 14811, 14812, 14825, 14839, 14887, 14924, 14943, 14964, 15089, 15105, 15113, 15125, 15139, 15153, 15169, 15179, 15180, 15193, 15207, 15233, 15235, 15273, 15275, 15289, 15291, 15325, 15327, 15328, 15406, 15408, 15454, 15456, 15458, 15460, 16392, 16394	
<code>\@tfor</code> . . . . . 6994	<code>\_</code> 187, 212, 552, 4603, 4620, 4621	
<code>\@the@H@page</code> 7782, 7818, 7820, 7821	<code>\'</code> . . . . . 166, 172, 179, 182, 3127, 3261, 3264, 3266, 3274, 14052, 14487, 14499, 14511, 14716, 14732, 14740, 14753, 14767, 14781, 14797, 14805, 14806, 14821, 14835,	
<code>\@thefnmark</code> . . . . . 7147, 7158, 7249, 7287, 7304, 7311, 7342, 7354, 7361		
<code>\@thirdoffive</code> . . . . . 4539, 8456		
<code>\@thm</code> . . . . . 7045, 7046, 7079		
<code>\@topnewpage</code> . . . . . 14462		

15099, 15101, 15103, 15105,  
 15107, 15109, 15111, 15113,  
 15115, 15117, 15119, 15121,  
 15123, 15125, 15127, 15129,  
 15131, 15133, 15135, 15137,  
 15139, 15141, 15143, 15145,  
 15147, 15149, 15151, 15153,  
 15155, 15157, 15159, 15161,  
 15163, 15165, 15167, 15169,  
 15171, 15173, 15174, 15176,  
 15177, 15179, 15180, 15182,  
 15183, 15185, 15187, 15189,  
 15191, 15193, 15195, 15197,  
 15199, 15201, 15203, 15205,  
 15207, 15209, 15211, 15213,  
 15215, 15480, 15482, 15484,  
 15486, 15487, 15489, 15491,  
 15493, 15495, 15497, 15499,  
 15501, 15503, 15505, 15507,  
 15509, 15511, 15513, 15514,  
 15516, 15518, 15520, 15522,  
 15524, 15526, 15528, 15530,  
 15579, 15581, 15583, 15585,  
 15587, 15589, 15591, 15594,  
 15596, 15721, 15723, 15725,  
 15727, 15729, 15731, 15733,  
 15735, 15737, 15739, 15741,  
 15743, 15745, 15747, 15748,  
 15750, 15752, 15754, 15756,  
 15758, 15760, 15762, 15764,  
 15766, 16152, 16154, 16156,  
 16158, 16160, 16162, 16164,  
 16166, 16168, 16170, 16172,  
 16174, 16176, 16178, 16180,  
 16182, 16184, 16186, 16188,  
 16190, 16192, 16194, 16196,  
 16198, 16200, 16202, 16204,  
 16206, 16208, 16210, 16212,  
 16214, 16216, 16218, 16220,  
 16222, 16224, 16226, 16228,  
 16230, 16232, 16234, 16236,  
 16238, 16240, 16242, 16244,  
 16246, 16248, 16250, 16252,  
 16254, 16256, 16258, 16260,  
 16262, 16264, 16414, 16416,  
 16418, 16420, 16640, 16642,  
 16644, 16646, 16648, 16650,  
 16652, 16654, 16656, 16658,  
 16660, 16662, 16664, 16666,  
 16668, 16670, 16672, 16674,  
 16676, 16678, 16680, 16682,  
 16684, 16686, 16688, 16690,  
 16692, 16694, 16696, 16698,  
 16700, 16702, 16704, 16706,  
 16708, 16710, 16712, 16714,  
 16716, 16718, 16720, 16722,  
 16724, 16726, 16728, 16736,

\9 . . . . . 531, 1330, 1333, 1364,  
 2253, 2268, 2277, 2305,  
 2325, 14921, 16266, 16268,  
 16270, 16272, 16274, 16276,  
 16278, 16280, 16282, 16284,  
 16286, 16288, 16290, 16292,  
 16294, 16296, 16298, 16300,  
 16302, 16304, 16306, 16308,  
 16310, 16312, 16314, 16316,  
 16318, 16320, 16322, 16324,  
 16326, 16328, 16330, 16332,  
 16334, 16336, 16338, 16340,  
 16342, 16344, 16346, 16348,  
 16350, 16352, 16354, 16356,  
 16358, 16360, 16362, 16364,  
 16366, 16368, 16370, 16372,  
 16374, 16376, 16378, 16380,  
 16382, 16384, 16386, 16388,  
 16390, 16392, 16394, 16396,  
 16398, 16400, 16402, 16404,  
 16406, 16408, 16410, 16412,  
 16414, 16416, 16418, 16420,  
 16422, 16424, 16426, 16428,  
 16430, 16432, 16434, 16436,  
 16438, 16440, 16442, 16444,  
 16446, 16448, 16450, 16452,  
 16454, 16456, 16458, 16460,  
 16462, 16464, 16466, 16468,  
 16470, 16472, 16474, 16476,  
 16478, 16480, 16482, 16484,  
 16486, 16488, 16490, 16492,  
 16494, 16496, 16498, 16500,  
 16502, 16504, 16506, 16508,

16510, 16512, 16514, 16516,  
 16518, 16520, 16522, 16524,  
 16526, 16528, 16530, 16532,  
 16534, 16536, 16538, 16540,  
 16542, 16544, 16546, 16548,  
 16550, 16552, 16554, 16556,  
 16558, 16560, 16562, 16564,  
 16566, 16568, 16570, 16572,  
 16574, 16576, 16578, 16580,  
 16582, 16584, 16586, 16588,  
 16590, 16592, 16594, 16596,  
 16598, 16600, 16602, 16604,  
 16606, 16608, 16610, 16612,  
 16614, 16616, 16618, 16620,  
 16622, 16624, 16626, 16628,  
 16630, 16632, 16634, 16636,  
 16638, 16640, 16642, 16644,  
 16646, 16648, 16650, 16652,  
 16654, 16656, 16658, 16660,  
 16662, 16664, 16666, 16668,  
 16670, 16672, 16674, 16676,  
 16678, 16680, 16682, 16684,  
 16686, 16688, 16690, 16692,  
 16694, 16696, 16698, 16700,  
 16702, 16704, 16706, 16708,  
 16710, 16712, 16714, 16716,  
 16718, 16720, 16722, 16724,  
 16726, 16728, 16730, 16732,  
 16734, 16736, 16738, 16740,  
 16742, 16774, 16776, 16778,  
 16779, 16780, 16781, 16782,  
 16783, 16784, 16785, 16786,  
 16787, 16789, 16791, 16792,  
 16793, 16794, 16795, 16796,  
 16797, 16799, 16801, 16804,  
 16806, 16808, 16809, 16810,  
 16811, 16812, 16813, 16814,  
 16815, 16816, 16817, 16819,  
 16821, 16823, 16824, 16825,  
 16826, 16827, 16829, 16830,  
 16831, 16832, 16833, 16835,  
 16837, 16848, 16850, 16854, 16855,  
 16856, 16857, 16858, 16859,  
 16860, 16861, 16863, 16864,  
 16865, 16866, 16867, 16868,  
 16869, 16870, 16871, 16872,  
 16873, 16874, 16875, 16876,  
 16877, 16878, 16879, 16880,  
 16881, 16883, 16884, 16885,  
 16886, 16887, 16888, 16889,  
 16890, 16891, 16892, 16945,  
 16947

\\_ . . . . . 331,  
 662, 3208, 3211, 3926, 7609,  
 7632, 14511, 14512, 14513,  
 14514, 14515, 14516, 14517,

14518, 14519, 14520, 14521,  
14522, 14941, 14942, 14943,  
14944, 14945, 14946, 14947,  
14948, 14949, 14950, 14951,  
14952, 14953, 14954, 14955,  
14956, 14957, 14958, 14959

## A

\ABREVE . 16766, 16838, 16839,  
16840, 16841, 16842  
\abreve ... 16759, 16778, 16779,  
16780, 16781, 16782  
\AccFancyVerbLineautorefname .  
..... 3235  
\Accfootnoteautorefname .. 3215  
\Acctheoremautorefname .. 3239  
\ACIRCUMFLEX 16767, 16843,  
16844, 16845, 16846, 16847  
\acircumflex 3266, 16760, 16783,  
16784, 16785, 16786, 16787  
\Acrobatmenu 2408, 4108, 6047,  
9345, 10091, 10630, 11491  
\active .. 1244, 1251, 4600, 4601,  
4602, 4603, 4604, 4605,  
4608, 4610, 4613, 4621,  
14200, 14230  
\add@accent ..... 543  
\addcontentsline ... 7404, 7475,  
7851, 7856, 7927, 14467  
\addtocontents 7896, 7928, 8202,  
8254, 14455, 14456  
\addtocounter 6763, 6786, 6795,  
6806, 6810, 7015, 9948  
\addvspace ..... 14455, 14456  
\adl@LT@array ..... 6877  
\advance ..... 467,  
468, 1265, 4749, 5088, 5416,  
5462, 5894, 5895, 5898,  
5899, 6242, 6250, 6287,  
7754, 7764, 7767, 7781,  
9095, 9461, 9545, 9583,  
9623, 10790, 11937, 12217,  
12507, 12550, 12551, 12989,  
13033, 13034, 13273, 13330,  
13374, 13375, 13985, 13987,  
13988, 13994, 14003, 14104,  
14320  
\AE ..... 14728, 15097, 15524  
\ae ..... 14793, 15161, 15526  
\afterassignment ... 1858, 1864,  
1870, 5671  
\AfterBeginDocument . 361, 375  
\aftergroup ..... 7291  
\alef ..... 16901  
\alefhamza ..... 16897  
\aleflowerhamza ..... 16899  
\alefmadda ..... 16896  
\alefmaqsurah ..... 16930

\Alph ..... 6336, 6656, 6657  
\alph ..... 6337, 6986, 7017  
\AMSautorefname ..... 8612  
\anchor@spot . 5027, 5040, 5047,  
5053, 5055, 8904, 9402,  
9497, 10367, 10439, 10933,  
11279, 11282, 11874, 12154  
\appendix ..... 6653, 6654  
\appendixautorefname .....  
.. 3083, 3101, 3119, 3137,  
3155, 3173, 3191, 3223,  
3224, 3249, 3267, 8622  
\arabic . 6333, 6557, 6560, 6563,  
6564, 6565, 6567, 6568,  
6569, 6570, 6572, 6573,  
6574, 6575, 6576, 6577,  
6580, 6590, 6591, 6633,  
6770, 7936, 7942, 7990,  
8004, 8190, 8195, 8197  
\AtBeginDocument .. 362, 6083,  
6867, 12246  
\AtBeginShipout 6195, 9381, 9894  
\AtBeginShipoutBox 6199, 6202,  
9376, 9377, 9895, 9896  
\AtBeginShipoutFirst ... 6206,  
10263, 11686, 11801  
\AtEndDocument ..... 6097  
\AtEndOfPackage ..... 372  
\AtVeryEndDocument ... 6435,  
12904  
\author ..... 6131, 6141  
\autopageref ..... 4243, 8492  
\autoref . 652, 4242, 8511, 12241  
\ayn ..... 16919

## B

\b . 883, 887, 893, 14497, 14509,  
14521, 14913, 14936, 14955,  
16272, 16274, 16280, 16282,  
16312, 16314, 16316, 16318,  
16332, 16334, 16348, 16350,  
16356, 16358, 16396, 16398,  
16400  
\baa ..... 16902  
\back@none ... 3018, 3028, 3041  
\back@page ..... 3020, 3033  
\back@section 3019, 3025, 3031,  
3037  
\back@slide ..... 3021, 3030  
\backcite ..... 7669  
\backref ..... 7700, 12245  
\baselineskip . 2411, 5907, 5908,  
5909, 5910, 5911, 5912,  
9516, 10952, 10984, 11669  
\bbl@cite@choice ..... 7516  
\BeforeTeXIVht ..... 2857  
\begin ..... 615, 12266, 16951

\belowpdfbookmark .... 14100  
\bfseries . 593, 7615, 7638, 8385,  
8405, 8422, 8540  
\bgroup .. 671, 4716, 7278, 7290,  
8811, 9912, 10367, 10973,  
12707, 12799, 12820  
\biblecite . 7507, 7513, 7517, 7542,  
7557, 7573, 7583  
\bitsetGetDec 5140, 5273, 5291,  
5305, 5318, 5334, 5366, 5391  
\bitsetGetHex ..... 5141  
\bitsetGetSetBitList ..... 5129  
\bitsetIsEmpty 5270, 5288, 5302,  
5315, 5331, 5363, 5388  
\bitsetReset .. 5243, 5277, 5296,  
5310, 5323, 5339, 5371  
\bitsetSetValue .... 5109, 5119  
\BOOKMARK ... 14032, 14111  
\booknumberline .. 14015, 14020  
\box ... 5901, 6202, 8825, 9926,  
11326, 11329  
\bullet .. 8337, 8345, 8355, 8363

## C

\C ..... 14907, 16012, 16014  
\c ..... 884, 888,  
894, 3185, 3193, 3194, 3195,  
6154, 6161, 14495, 14507,  
14519, 14730, 14795, 14915,  
14930, 14949, 14960, 15099,  
15163, 15285, 15287, 15330,  
15332, 15340, 15342, 15360,  
15362, 15394, 15396, 15410,  
15412, 15418, 15420, 15565,  
15567, 16067, 16070, 16284,  
16286, 16304, 16306  
\c@footnote .. 7157, 7240, 7248,  
7360  
\c@Hy@tempcnt ... 4734, 4735,  
4741, 4749  
\c@note ..... 7757  
\c@overlay ..... 7757  
\c@page . 6242, 6250, 6267, 6287,  
6288, 6292, 6304, 6306,  
6311, 6318, 6320, 6322,  
6351, 7754, 7758, 7760,  
7764, 7767, 7768, 7781, 7811  
\c@secnumdepth . 14380, 14398,  
14413  
\c@slide ..... 7757  
\c@slidesection 8203, 8331, 8332  
\c@slidesubsection ..... 8255  
\c@tocdepth ..... 3425, 3430  
\calc@bm@number . 14242, 14318  
\calculate@pdfview . 3890, 3893  
\capitalacute ..... 14963  
\capitalbreve ..... 14970

<code>\capitalcaron</code> . . . . .	14969	<code>\CJK@hundred</code> . . . . .	1513	3228, 3229, 3230, 3231,
<code>\capitalcedilla</code> . . . . .	14960	<code>\CJK@hundredmillion</code> . . . .	1476	3232, 3233, 3234, 3235,
<code>\capitalcircumflex</code> . . . . .	14964	<code>\CJK@ignorespaces</code> . . . . .	1246	3236, 3237, 3238, 3239, 3240
<code>\capitaldieresis</code> . . . . .	14966	<code>\CJK@kern</code> . . . . .	1234	<code>\CYRA</code> . . . 15803, 16178, 16182
<code>\capitaldotaccent</code> . . . . .	14972	<code>\CJK@minus</code> . . . . .	1438	<code>\cyra</code> . . . 3205, 3212, 3214, 3219,
<code>\capitalgrave</code> . . . . .	14962	<code>\CJK@nine</code> . . . 1447, 1451, 1564		3222, 3227, 3228, 3234,
<code>\capitalhungarumlaut</code> . . .	14967	<code>\CJK@null</code> . . . . .	1540	3238, 15868, 16180, 16184
<code>\capitalmacron</code> . . . . .	14971	<code>\CJK@one</code> . . . . 1446, 1448, 1563		<code>\CYRABHCH</code> . . . . 16142, 16147
<code>\capitalnewtie</code> . . . . .	14974	<code>\CJK@punctchar</code> . . . . .	1249	<code>\cyrabhch</code> . . . . . 16144, 16150
<code>\capitalogonek</code> . . . . .	14961	<code>\CJK@punctcharx</code> . . . . .	1250	<code>\CYRABHCHDSC</code> . . . . 16146
<code>\capitalring</code> . . . . .	14968	<code>\CJK@seven</code> . . 1447, 1450, 1564		<code>\cyrabhchdsc</code> . . . . . 16149
<code>\capitaltie</code> . . . . .	14973	<code>\CJK@six</code> . . . . 1447, 1450, 1564		<code>\CYRABHDZE</code> . . . . . 16210
<code>\capitaltilde</code> . . . . .	14965	<code>\CJK@ten</code> 1448, 1449, 1450, 1451,		<code>\cyrabhdze</code> . . . . . 16212
<code>\caption</code> 7374, 7376, 7463, 7465		1528		<code>\CYRABHHA</code> . . . . . 16100
<code>\catcode</code> . . . . . 172, 173, 184,		<code>\CJK@tenthousand</code> . 1461, 1482		<code>\cyrabhha</code> . . . . . 16102
185, 186, 187, 206, 809, 810,		<code>\CJK@thousand</code> . . . . . 1498		<code>\CYRAE</code> . . . . . 16186
944, 1244, 1251, 1969, 1970,		<code>\CJK@three</code> . . . 1446, 1449, 1563		<code>\cyrae</code> . . . . . 16188
2103, 2104, 2160, 2161,		<code>\CJK@two</code> . . . . 1446, 1448, 1563		<code>\CYRB</code> . . . . . 15805
2162, 4459, 4461, 4599,		<code>\CJK@zero</code> . . 1446, 1464, 1481,		<code>\cyrb</code> . . . . . 3219, 15870
4600, 4601, 4602, 4603,		1485, 1501, 1516, 1538		<code>\CYRBYUS</code> . . . . . 15988
4604, 4605, 4608, 4610,		<code>\CJKdigits</code> . . . . . 1323		<code>\cyrbyus</code> . . . . . 15990
4613, 4621, 4631, 4722,		<code>\CJKkern</code> . . . . . 1235		<code>\CYRC</code> . . . . . 15848
4723, 8637, 11014, 11015,		<code>\CJKnumber</code> . . . . . 1322		<code>\cycr</code> . . . . . 15913
14129, 14131, 14200, 14203,		<code>\close@pdfink</code> 8898, 8923, 8932,		<code>\CYRCH</code> . . . . . 15850, 16250
14230, 14233		8967, 9007, 9043, 9371		<code>\cyrch</code> . 3211, 3212, 3220, 15915,
<code>\cf@encoding</code> . . . . . 1569		<code>\closeout</code> . . . . . 6077, 14120		16252
<code>\chapterautorefname</code> 3084, 3102,		<code>\clubpenalty</code> . . . . . 7134, 7136		<code>\CYRCHLDSC</code> . . . . . 16170
3120, 3138, 3156, 3174,		<code>\codeof</code> . . . . . 7691		<code>\cyrchldsc</code> . . . . . 16172
3192, 3221, 3250, 3268, 8623		<code>\color@begingroup</code> . . 8811, 9912		<code>\CYRCHRDSC</code> . . . . . 16130
<code>\chapternumberline</code> 14017, 14022		<code>\color@endgroup</code> . . . 8818, 9919		<code>\cyrchrdsc</code> . . . . . 16132
<code>\char</code> . . . . . 12934, 14133, 14170		<code>\columnwidth</code> . . . . . 7285		<code>\CYRCHVCRS</code> . . . . . 16134
<code>\chardef</code> . . . . . 275,		<code>\comma@entry</code> 5457, 5464, 5466		<code>\cyrchvcrs</code> . . . . . 16136
308, 2643, 2644, 2645, 2646,		<code>\comma@parse</code> . . . . . 5456		<code>\CYRD</code> . . . . . 15811
2896, 2898, 4384, 4414,		<code>\contentsline</code> . 6086, 6087, 6099,		<code>\cyrd</code> . . . 3208, 3211, 3222, 3227,
11274, 11277, 11283		7897, 7901, 7928, 7930		3228, 15876
<code>\check@bmc@number</code> . . . . 14253,		<code>\copy</code> . . . 8821, 9377, 9896, 9922		<code>\CYRDJE</code> . . . . . 15773
14261, 14311, 14319		<code>\count@</code> . 848, 850, 851, 854, 857,		<code>\cyrdje</code> . . . . . 15938
<code>\CheckBox</code> . . . . . 5858		860, 863, 1263, 1264, 1265,		<code>\CYRDZE</code> . . . . . 15779
<code>\CheckCommand</code> . . . . . 7237		1266, 1859, 3441, 3442,		<code>\cyrdze</code> . . . . . 15944
<code>\checkcommand</code> . . . . .		3447, 3448, 5087, 5088,		<code>\CYRDZHE</code> . . . . . 15801
42, 6805, 7351, 7358, 7365,		5103, 5399, 5414, 5416,		<code>\cyrdzhe</code> . . . . . 15966
7463, 7473, 7567, 7579,		5440, 5462, 5478, 9090,		<code>\CYRE</code> . . . 15768, 15771, 15813,
7927, 7930, 7990, 8419		9091, 9092, 9093, 9094,		16190
<code>\checklatex</code> . 4, 7350, 7462, 7566,		9095, 9098, 10786, 10787,		<code>\cyre</code> 3205, 3211, 3212, 3225, 3237,
7926, 8418		10788, 10789, 10790, 10793		3238, 3239, 15878, 15933,
<code>\checkpackage</code> . . . 9, 6804, 7989		<code>\CurrentBorderColor</code> . . . . .		15936, 16192
<code>\ChoiceBox</code> . . . . . 5466		. . 8888, 8890, 8917, 8919,		<code>\cyreref</code> . . . . . 16236
<code>\ChoiceMenu</code> . . . . . 5855		8927, 8929, 8934, 10429,		<code>\CYREREV</code> . . . . 15862, 16234
<code>\citation</code> . . . . . 7612, 7635, 7661		10463, 10465, 10481, 10483,		<code>\cyrerev</code> . . . . . 15927
<code>\citeauthoryear</code> . . . . 7727, 7733		10502, 10504, 10566, 10568,		<code>\CYRERY</code> . . . . . 15858, 16258
<code>\citeN</code> . . . . . 7724		10585, 10587		<code>\cyrery</code> 3203, 3205, 15923, 16260
<code>\CJK@char</code> . . . . . 1247		<code>\currentpdfbookmark</code> . . . 14092		<code>\CYRF</code> . . . . . 15844
<code>\CJK@charx</code> . . . . . 1248		<code>\curu</code> . . . . . 15964		<code>\cyrf</code> . . . . . 15909
<code>\CJK@CJK</code> . . . . . 1236		<code>\cyr</code> 631, 3203, 3205, 3208, 3211,		<code>\CYRFITA</code> . . . . . 16004
<code>\CJK@eight</code> . . . 1447, 1450, 1564		3214, 3215, 3216, 3217,		<code>\cyrfita</code> . . . . . 16006
<code>\CJK@five</code> . . . . 1447, 1449, 1564		3218, 3219, 3220, 3221,		<code>\CYRG</code> . . . . . 15775, 15809
<code>\CJK@four</code> . . . . 1446, 1449, 1563		3222, 3223, 3225, 3227,		<code>\cyrg</code> . . . . . 3221, 15874, 15940



\CYRGDSC	16254	\CYRL	15826	\CYRS	15838, 16105
\cyrgdsc	16256	\cyr1	3219, 3221, 3223, 3225, 15891	\cyr5	3208, 3211, 3214, 3215, 3218, 3233, 3234, 3235, 3236, 3240, 15903, 16108
\CYRGHCRS	16054	\CYRLDSC	16162	\CYRSCHWA	16194, 16198
\cyrghcrs	16056	\cyrldsc	16164	\cyrswa	16196, 16200
\CYRGHK	16058	\CYRLJE	15788	\CYRSDSC	16104, 16105
\cyrghk	16060	\cyr1je	15953	\cyrsdsc	16107
\CYRGUP	16050	\CYRLYUS	15980	\CYRSEMISFTSN	16042
\cyrgup	16052	\cyrlyus	15982	\cyrsemisftsn	16044
\CYRH	15846	\CYRM	15828	\CYRSFTSN	15860
\cyrh	15911	\cyrm	3208, 3212, 3238, 3239, 15893	\cyrstsn	15925
\CYRHDSC	16122	\CYRMDSC	16174	\CYRSH	15852
\cyrhdsc	16124	\cyrmdsc	16176	\cyrsh	15917
\CYRHHK	16262	\CYRN	15830	\CYRSHCH	15854
\cyrhhk	16264	\cyrn	3205, 3211, 3212, 3214, 3215, 3217, 3225, 3231, 3232, 15895	\cyrshch	15919
\CYRHRDSN	15856	\CYRNDSC	16088	\CYRSHHA	16138
\cyrhrdsn	15921	\cyrndsc	16090	\cyrshha	16140
\CYRI	15796, 15819, 15822, 16214, 16218	\CYRNG	16092	\CYRT	15840
\cyri	3205, 3208, 3212, 3218, 3223, 3225, 15884, 15887, 15961, 16216, 16220	\cyrng	16094	\cyr1	3208, 3211, 3217, 3219, 3231, 3232, 3233, 3234, 3235, 3236, 3237, 3238, 3239, 15905
\CYRIE	15777	\CYRNHK	16166	\CYRTDSC	16110
\cyrie	15942	\cyrnhk	16168	\cyrtdsc	16112
\CYRII	15781, 15784	\CYRNJE	15790	\CYRTETSE	16126
\cyrii	15946, 15949	\cyrnje	15955	\cyrtetse	16128
\CYRIOTBYUS	15992	\CYRO	15832, 16222	\cyrthousands	16036
\cyriotbyus	15994	\cyro	3208, 3211, 3214, 3215, 3225, 3234, 3235, 3237, 3238, 3239, 15897, 16224	\CYRTSHE	15792
\CYRIOTE	15976	\CYROMEGA	15968	\cyrtshe	15957
\cyriote	15978	\cyromega	15970	\CYRU	15799, 15842, 16238, 16242, 16246
\CYRIOTLYUS	15984	\CYROMEGARND	16020	\cyru	3215, 3217, 3231, 3232, 3235, 3239, 15907, 16240, 16244, 16248
\cyriotlyus	15986	\cyromegarnd	16022	\CYRUK	16016
\CYRISHRT	15821	\CYROMEGATITLO	16024	\cyruk	16018
\cyrishrt	15886	\cyromegatitlo	16026	\CYRUSHRT	15798
\CYRISHRTDSC	16038	\CYROT	16028	\cyrushrt	15963
\cyrishrtdsc	16040	\cyrot	16030	\CYRV	15807
\CYRIZH	16008, 16012	\CYROTLD	16226, 16230	\cyrv	3203, 3205, 15872
\cyrizh	16010, 16014	\cyrotld	16228, 16232	\CYRY	16114
\CYRJE	15786	\CYRP	15834	\cyry	16116
\cyrje	15951	\cyrp	3208, 3211, 3212, 3216, 3217, 3223, 3225, 3229, 3230, 3231, 3232, 15899	\CYRYA	15866
\CYRK	15794, 15824	\CYRpalachka	16152	\cyrya	15931
\cyrk	3214, 3215, 3217, 3231, 3232, 3234, 3235, 3236, 15889, 15959	\CYRPHK	16096	\CYRYAT	15972
\CYRKBEAK	16084	\cyrphk	16098	\cyryat	15974
\cyrkbeak	16086	\CYRPSI	16000	\CYRYHCRS	16118
\CYRKDSC	16072	\cyrpsi	16002	\cyrhcrs	16120
\cyrkdsc	16074	\CYRR	15836	\CYRYI	15783
\CYRKHCRS	16080	\cyrr	3203, 3205, 3208, 3211, 3212, 3218, 3222, 3223, 3225, 3227, 3228, 3233, 3234, 3235, 3236, 3237, 3238, 3239, 15901	\cyryi	15948
\cyrkhcrs	16082	\CYRRTICK	16046	\CYRYO	15770
\CYRKHK	16158	\cyrrtick	16048	\cyryo	15935
\cyrkhk	16160			\CYRYU	15864
\CYRKOPPA	16032			\cyryu	15929
\cyrkoppa	16034			\CYRZ	15817, 16067, 16206
\CYRKSI	15996				
\cyrksi	15998				
\CYRKVCRS	16076				
\cyrkvcrs	16078				

<code>\cyrz</code> . . . . .	3222, 3227, 3228, 15882, 16070, 16208	<code>\DefaultHeightofCheckBox</code> . . . . .	5907, 12657, 13159, 13528	3911, 3918, 3928, 3958, 3959, 3962, 3965, 3968, 3971, 3974, 3977, 3980, 4003, 4006, 4009, 4730, 4759, 4765, 4777, 5081, 5169, 5225, 5527, 5532, 5545, 5573, 5615, 5618, 5621, 5625, 5628, 5632, 5635, 5639, 5643, 5647, 5650, 5654, 5657, 5660, 5663, 5666, 5703, 5719, 5722, 5725, 5728, 5731, 5734, 5764, 5767, 5770, 5773, 5792, 5798, 5813, 5819, 5836, 5841, 5847, 6448, 6459, 11358, 11360, 11363, 11365, 11367, 11376, 11384, 11391, 11393, 11395, 11397, 11399, 11401, 11410, 11420, 11422, 11424, 11425, 11431, 11440, 11442, 11444, 11446, 11448, 11450, 11452, 11454, 11456, 11458, 11460, 11462, 11464, 11466, 11468, 11470, 11471, 11472, 11473, 11474, 11475, 11476, 11477, 11478, 11479, 11480, 11481	
<code>\CYRZDSC</code> . . . . .	16066	<code>\DefaultHeightofChoiceMenu</code> . . . . .	5909, 12497, 12979, 13320	<code>\df@tag</code> . . . . .	7951, 7957
<code>\cyrzdsc</code> . . . . .	16069	<code>\DefaultHeightofReset</code> . . . . .	5905, 12631, 13132, 13496	<code>\DH</code> . . . . .	14748, 15117
<code>\CYRZH</code> . . . . .	15815, 16154, 16202	<code>\DefaultHeightofSubmit</code> . . . . .	5903, 12614, 13110, 13473	<code>\dh</code> . . . . .	14817, 15185
<code>\cyrzh</code> . . . . .	3205, 3225, 15880, 16156, 16204	<code>\DefaultHeightofText</code> . . . . .	5911, 12473, 12954, 13287	<code>\dhal</code> . . . . .	16910
<code>\CYRZHDSC</code> . . . . .	16062	<code>\DefaultHeightofTextMultiline</code> . . . . .	5912, 12471, 12952, 13285	<code>\dimen@</code> . . . . .	506, 507, 511, 1865, 1933, 1934, 1937, 1939, 4042, 4043, 4045, 4052, 4053, 5672, 5681, 5684, 5697, 10753, 10754, 10756, 11316, 11331, 11334
<code>\cyrzhdsc</code> . . . . .	16064	<code>\DefaultOptionsofCheckBox</code> . . . . .	5917, 12659, 13161, 13530	<code>\dimexpr</code> . . . . .	518, 2229, 2231, 2239, 2244, 2247, 2249, 2263, 2265, 2268, 2269, 2276, 2279, 2282, 2283, 2284, 2285, 2295, 2300, 2308, 2312, 2317, 2327, 2330, 2335, 2338, 2343, 2344, 5697
<b>D</b>		<code>\DefaultOptionsofComboBox</code> . . . . .	5920	<code>\ding</code> . . . . .	5739, 5742
<code>\d</code> . . . . .	885, 889, 895, 3263, 3267, 3269, 3270, 3271, 3272, 3273, 3275, 14498, 14510, 14522, 14911, 14937, 14956, 16774, 16779, 16784, 16789, 16794, 16799, 16804, 16809, 16814, 16819, 16824, 16829, 16834, 16839, 16844, 16849, 16854, 16859, 16864, 16869, 16874, 16879, 16884, 16889	<code>\DefaultOptionsofListBox</code> . . . . .	5919	<code>\DingObject</code> . . . . .	13057
<code>\dad</code> . . . . .	16916	<code>\DefaultOptionsofPopdownBox</code> . . . . .	5921	<code>\discretionary</code> . . . . .	673
<code>\dal</code> . . . . .	16909	<code>\DefaultOptionsofPushButton</code> . . . . .	5916, 12589, 13083, 13441	<code>\divide</code> . . . . .	9091, 10787
<code>\damma</code> . . . . .	16936	<code>\DefaultOptionsofRadio</code> . . . . .	5922	<code>\DJ</code> . . . . .	3275, 14749, 15249, 16768
<code>\declare@shorthand</code> . . . . .	998, 999, 1004, 1005, 1010, 1020, 1021, 1022, 1027, 1028, 1033, 1034, 1039, 1044, 1045, 1050, 1055, 1056, 1057, 1058, 1059, 1060, 1065, 1066, 1071, 1072, 1077, 1078	<code>\DefaultOptionsofReset</code> . . . . .	5915, 12634, 13135, 13499	<code>\dj</code> . . . . .	3272, 3273, 15251, 16761
<code>\DeclareFontEncoding</code> . . . . .	14486, 14881	<code>\DefaultOptionsofSubmit</code> . . . . .	5914, 12617, 13113, 13476	<code>\do</code> . . . . .	1264, 2559, 2564, 2569, 3534, 3566, 3567, 3568, 3569, 3618, 3619, 3620, 3621, 3622, 3623, 3626, 3627, 3628, 3629, 3630, 3631, 3634, 3635, 3638, 3639, 3640, 3641, 3642, 3645,
<code>\DeclareFontFamily</code> . . . . .	905, 913, 2725	<code>\DefaultOptionsofText</code> . . . . .	5918, 12478, 12959, 13292		
<code>\DeclareFontShape</code> . . . . .	906, 914, 2726	<code>\DefaultWidthofCheckBox</code> . . . . .	5908, 12656, 13158, 13527		
<code>\DeclareFontSubstitution</code> . . . . .	907, 915, 2727	<code>\DefaultWidthofChoiceMenu</code> . . . . .	5910, 12496, 12978, 13319		
<code>\DeclareLocalOptions</code> . . . . .	4070	<code>\DefaultWidthofReset</code> . . . . .	5906, 12630, 13131, 13495		
<code>\DeclareRobustCommand</code> . . . . .	4562, 4565, 4574, 4578, 4713, 4800, 4802, 4804, 4813, 5852, 5855, 5858, 5861, 5864, 5867, 5870, 5995, 5999, 6065, 6069, 8466, 8492, 8511, 14336	<code>\DefaultWidthofSubmit</code> . . . . .	5904, 12613, 13109, 13472		
<code>\DeclareTextAccent</code> . . . . .	14487, 14488, 14489, 14490, 14491, 14492, 14493, 14494, 14495, 14496, 14497, 14498	<code>\DefaultWidthofText</code> . . . . .	5913, 12468, 12949, 13282		
<code>\DeclareVoidOption</code> . . . . .	2854, 2868, 2878, 2883, 2888, 2901, 2911, 2916, 2921, 2927, 2956, 2973, 2980, 2985, 2990, 2995, 3344, 3352, 3360, 3370	<code>\define@key</code> . . . . .	2542, 2544, 2587, 2602, 2605, 2608, 2616, 2619, 2629, 2632, 2635, 2652, 2664, 2666, 2669, 2672, 2689, 2693, 2696, 2699, 2702, 2705, 2708, 2711, 2746, 2804, 2893, 3001, 3012, 3015, 3022, 3051, 3070, 3073, 3310, 3367, 3379, 3394, 3419, 3422, 3426, 3454, 3459, 3463, 3466, 3473, 3485, 3492, 3502, 3505, 3508, 3512, 3527, 3536, 3546, 3553, 3564, 3571, 3588, 3678, 3687, 3717, 3723, 3729, 3735, 3741, 3747, 3753, 3759, 3765, 3798, 3805, 3839, 3890, 3891,		

3646, 3647, 3648, 3649,  
3652, 3653, 3654, 3655,  
3656, 3659, 3660, 3661,  
3662, 3663, 3666, 3667,  
3670, 3671, 3672, 3675,  
3676, 3682, 3683, 3684,  
3685, 3996, 3997, 3998,  
3999, 4000, 4001, 5129,  
6997, 7607, 7630, 12501,  
12563, 12769, 12776, 12786,  
12983, 13046, 13324, 13390,  
14199, 14229  
\documentclass ..... 2  
\dospecials ..... 14208, 14238  
\dots ..... 555  
\dp 5897, 5900, 7283, 9451, 9531,  
9568, 9608, 11317, 11320,  
11927, 12202, 13268  
\dth@counter . 7063, 7064, 7094,  
7095, 7122  
\dth@everypar ..... 7110  
\dvipdfm@setdim 13265, 13307,  
13406, 13431, 13462, 13487,  
13515, 13544

## E

\ECIRCUMFLEX 16769, 16853,  
16854, 16855, 16856, 16857  
\ecircumflex 16762, 16793, 16794,  
16795, 16796, 16797  
\edefEscapeHex ..... 828  
\edefEscapeName .. 3829, 3873,  
12562, 12565, 13045, 13048,  
13386, 13392  
\edefEscapeString .... 782, 792  
\edefUnescapeName ..... 3830  
\edefUnescapeString . 777, 7820  
\egroup . 672, 8818, 9919, 10367,  
11009, 12716, 12808, 12833  
\em ..... 599  
\emph ..... 578  
\empty ..... 1246, 3429  
\enc@html ..... 5531, 5534  
\enc@update ..... 540  
\END .. 1594, 1595, 1621, 1622,  
1637, 1638, 1655, 1656,  
1673, 1674, 2042, 2048,  
2053, 2155, 2157, 9217,  
9230, 9234, 9241, 9254,  
9258, 9264, 9276, 9280  
\end ..... 616, 16952  
\endeqnarray .. 6943, 6961, 6968  
\endequation ..... 6906, 6938  
\endForm ..... 5521  
\endinput . 64, 2865, 2940, 4239,  
4344, 8379, 10942, 12264,  
14326  
\endlinechar ..... 4598

\endNoHyper ..... 6029  
\EndPreamble ..... 12267  
\endsubeqnarray ... 6972, 6983  
\eqnarray .... 6942, 6944, 6965  
\equal ..... 7688  
\equation 6905, 6914, 6918, 6927  
\equationautorefname .....  
.. 3077, 3095, 3113, 3131,  
3149, 3167, 3185, 3203,  
3204, 3243, 3261, 8612, 8616  
\errmessage ..... 3307  
\es@roman ..... 632  
\es@save@dot ..... 1222  
\escapechar 524, 833, 4186, 6990,  
14059, 14240, 14291  
\TeX ..... 564, 12272  
\etex@unexpanded .. 1797, 1804  
\TeXversion .. 9050, 9052, 9054  
\evensidemargin ..... 7838  
\everypar ..... 7136  
\ExecuteOptions 4057, 4058, 4062  
\ext@figure ..... 8186  
\ext@table ..... 8185  
\extra@b@citeb ..... 7614  
\extrasvietnam ..... 3353  
\extrasvietnamese ..... 3345

## F

\fa ..... 16922  
\FancyVerbLineautorefname ...  
.. 3090, 3108, 3126, 3144,  
3162, 3180, 3198, 3233,  
3236, 3256, 3274, 8629  
\farsikaf ..... 16943  
\farsiya ..... 16945  
\fatha ..... 16935  
\fbbox ..... 12938, 12941  
\Field@addtoks 5595, 5626, 5629,  
5814, 5837  
\Field@boolkey 5082, 5170, 5589,  
5619, 5622  
\Field@toks .. 5593, 5594, 5596,  
12708, 12725, 12736, 12747,  
12757, 12774, 12792, 12800,  
12805, 12821, 12830  
\Field@Width ..... 5506, 5652  
\figureautorefname . 3080, 3098,  
3116, 3134, 3152, 3170,  
3188, 3218, 3246, 3264, 8619  
\filename@area ..... 4968  
\filename@base ..... 4968  
\filename@ext 4965, 4966, 4968,  
4969  
\filename@parse ..... 4964  
\find@pdfink .. 8867, 8921, 8931  
\Fld@additionalactions . 13671,  
13714, 13718

\Fld@@DingDef 5739, 5742, 5761  
\Fld@additionalactions .. 13671,  
13760, 13788, 13822, 13856,  
13890, 13924, 13955  
\Fld@align ... 5510, 5726, 13739,  
13797, 13864  
\Fld@altname 5642, 5644, 13650,  
13652, 13724, 13726  
\Fld@annotflags .... 5289, 5291,  
13735, 13766, 13793, 13826,  
13860, 13895, 13930  
\Fld@annotnames 13722, 13736,  
13767, 13794, 13827, 13861,  
13896, 13931  
\Fld@bcolor .. 5512, 5768, 13750,  
13752, 13813, 13815, 13841,  
13843, 13868, 13880, 13882  
\fid@bcolor ..... 13801  
\Fld@bordercolor ... 5513, 5771,  
13746, 13748, 13773, 13781,  
13783, 13800, 13809, 13811,  
13837, 13839, 13867, 13876,  
13878, 13902, 13910, 13912,  
13937, 13945, 13947  
\Fld@bordersep .... 5514, 5720  
\Fld@borderstyle .....  
.. 5516, 5704, 5705, 5706,  
5716, 13740, 13771, 13798,  
13831, 13865, 13900, 13953  
\Fld@borderwidth .....  
.. 5515, 5667, 5891, 5894,  
5895, 5898, 5899, 12550,  
12551, 13033, 13034, 13374,  
13375, 13740, 13771, 13798,  
13831, 13865, 13900, 13953  
\Fld@calculate@code 5779, 13684,  
13686  
\Fld@cbsymbol 5517, 5732, 13754  
\Fld@charsize 5507, 5508, 5664,  
12549, 13032, 13373, 13756,  
13819, 13847, 13886, 13935  
\Fld@checkedfalse ..... 5503  
\Fld@checkequals . 5607, 12502,  
12564, 12777, 12787, 12984,  
13047, 13325, 13391  
\Fld@choices .....  
.. 5396, 5404, 5406, 5410,  
5419, 5427, 5432, 5480,  
5482, 5490, 5491, 13821  
\Fld@color ... 5511, 5774, 13757,  
13820, 13848, 13887  
\Fld@default . 5421, 5424, 5426,  
5723, 12466, 12482, 12494,  
12534, 12562, 12654, 12706,  
12724, 12738, 12746, 12753,  
12779, 12789, 12819, 12829,  
12947, 12964, 12976, 13017,



13045, 13156, 13280, 13297,  
 13317, 13358, 13386, 13525,  
 13849, 13850, 13851, 13888  
 \Fld@DingDef . 5732, 5735, 5737  
 \Fld@disabledfalse . . . . . 5504  
 \Fld@export . 5234, 5237, 5244,  
 5536  
 \Fld@findlength . . . 12756, 12767  
 \Fld@flags 5303, 5305, 5316, 5318,  
 5332, 5334, 5364, 5366,  
 5389, 5391, 13738, 13769,  
 13796, 13829, 13863, 13898,  
 13933  
 \Fld@format@code . 5777, 13676,  
 13678  
 \Fld@getmethodfalse . . . . . 5556  
 \Fld@getmethodtrue . . . . . 5558  
 \Fld@height . 5661, 12469, 12486,  
 12497, 12552, 12569, 12581,  
 12614, 12631, 12657, 12666,  
 12950, 12969, 12979, 13035,  
 13062, 13075, 13110, 13132,  
 13159, 13170, 13283, 13299,  
 13320, 13376, 13388, 13424,  
 13473, 13496, 13528, 13536  
 \Fld@hiddenfalse . . . . . 5192  
 \Fld@hiddentrue . . . . . 5193  
 \Fld@invisiblefalse . . . . . 5188  
 \Fld@invisibletrue . . . . . 5189  
 \Fld@keystroke@code . . . . 5780,  
 13672, 13674  
 \Fld@listcount . . . 12561, 12566,  
 12577, 13044, 13049, 13063,  
 13069, 13385, 13393, 13397,  
 13402, 13413, 13420  
 \Fld@loc . . . . . 5616  
 \Fld@mappingname . 5646, 5648,  
 13654, 13656, 13728, 13730  
 \Fld@maxlen . 5509, 5655, 13891  
 \Fld@menulength . . 5505, 5658,  
 12499, 12503, 12549, 12768,  
 12769, 12772, 12981, 12985,  
 13032, 13322, 13326, 13373  
 \Fld@name . 5640, 12465, 12493,  
 12586, 12653, 12705, 12710,  
 12721, 12722, 12733, 12734,  
 12743, 12744, 12752, 12773,  
 12790, 12798, 12803, 12818,  
 12827, 12946, 12975, 13080,  
 13155, 13279, 13316, 13438,  
 13524, 13649, 13723  
 \Fld@norotatefalse . . . . . 5205  
 \Fld@norotatetrue . . . . . 5204  
 \Fld@noviewfalse . . . . . 5208  
 \Fld@noviewtrue . . . . . 5209  
 \Fld@nozoomfalse . . . . . 5201  
 \Fld@nozoomtrue . . . . . 5200  
 \Fld@onblur@code . 5782, 13692,  
 13694  
 \Fld@onclick@code . 5776, 5848,  
 13787  
 \Fld@onenter@code 5785, 13704,  
 13706  
 \Fld@onexit@code . 5786, 13708,  
 13710  
 \Fld@onfocus@code 5781, 13688,  
 13690  
 \Fld@onmousedown@code 5783,  
 13696, 13698  
 \Fld@onmouseup@code . . 5784,  
 13700, 13702  
 \Fld@printfalse . . . . . 5197  
 \Fld@printtrue . . . . . 5196  
 \Fld@radiosymbol . . 5518, 5735,  
 13845  
 \Fld@rotation 5519, 5765, 13742,  
 13744, 13772, 13777, 13779,  
 13799, 13805, 13807, 13833,  
 13835, 13866, 13872, 13874,  
 13901, 13906, 13908, 13936,  
 13941, 13943  
 \Fld@submitflags . . . 5271, 5273,  
 13922  
 \Fld@temp . . 5738, 5740, 5743,  
 5744, 5753, 5754  
 \Fld@validate@code 5778, 13680,  
 13682  
 \Fld@value 5422, 5429, 5431, 5729,  
 12467, 12482, 12495, 12533,  
 12534, 12948, 12964, 12977,  
 13016, 13017, 13281, 13297,  
 13318, 13357, 13358, 13889  
 \Fld@width . 5651, 12468, 12481,  
 12486, 12496, 12532, 12543,  
 12545, 12569, 12581, 12601,  
 12613, 12621, 12630, 12644,  
 12656, 12662, 12666, 12949,  
 12963, 12969, 12978, 13015,  
 13026, 13028, 13062, 13075,  
 13096, 13109, 13117, 13131,  
 13145, 13158, 13165, 13170,  
 13282, 13296, 13299, 13319,  
 13356, 13367, 13369, 13388,  
 13424, 13455, 13472, 13480,  
 13495, 13509, 13527, 13534,  
 13536  
 \float@caption . . . . . 7384, 7444  
 \float@makebox . . . . 7446, 7447  
 \floatingpenalty . . . . . 7284  
 \flq . . . . . 639  
 \flqq . . . . . 637  
 \fmtname . . . . . 7  
 \fmtversion . . . . . 7  
 \fontencoding . . . 532, 536, 571,  
 12930  
 \fontfamily . . . . . 572, 12929  
 \fontseries 573, 7030, 7056, 7087,  
 12931  
 \fontshape . . . . 574, 4525, 12932  
 \fontsize . . . . . 575  
 \footins . . . . . 7278  
 \footnote . . . . . 5058  
 \footnoteautorefname . . . . .  
 . . 3078, 3096, 3114, 3132,  
 3150, 3168, 3186, 3207,  
 3210, 3244, 3262, 8613, 8617  
 \footnotesep . . . . . 7282, 7289  
 \footnotesize . . . . . 604, 7280  
 \footnotetext . . . . . 7240  
 \footref . . . . . 7308, 7309  
 \foreignlanguage . . . . . 620  
 \Form . . . . . 5520  
 \Form@action 5530, 12697, 13920  
 \Form@boolkey . . . . . 5524  
 \Form@htmlfalse . . . 5523, 5542  
 \Form@htmltrue . . . . . 5535  
 \Form@method 5554, 5562, 12697  
 \frq . . . . . 640  
 \frqq . . . . . 638  
 \futurelet . . . . . 692, 1588  
 \FV@SetLineNo . . . . . 6744  
 \FV@StepLineNo . . . 6743, 6745,  
 6746  
 G  
 \G . . 14906, 14932, 14951, 15532,  
 15534, 15536, 15538, 15540,  
 15542, 15543, 15545, 15547,  
 15549, 15551, 15553, 15555  
 \g@addto@macro . . . 6209, 6381,  
 7516, 7793, 7796, 7799,  
 7848, 9284, 10256, 10777,  
 11065, 11638, 11724, 11786,  
 12088, 12278  
 \G@refundefinedtrue 4851, 7616,  
 7639, 8384, 8404, 8421, 8539  
 \gaf . . . . . 16944  
 \Gauge . . . . . 5864  
 \GenericError . . . . . 680, 3711  
 \GenericInfo . . . . . 682, 3709  
 \GenericWarning . 269, 681, 3710  
 \getpagerefnumber . . . . . 6858  
 \getrefbykeydefault . 6814, 6815  
 \gexmode . 10808, 10809, 10897  
 \ghayn . . . . . 16920  
 \Gin@setfile . . . . . 8028, 8029  
 \glossary . . . . . 646  
 \glq . . . . . 635  
 \glqq . . . . . 633  
 \Greeksnumeral . . . . . 1086

<code>\greeknumeral</code> . . . . .	1085	<code>\harvardcite</code> . . . . .	7654, 7691	<code>\hvtex@par@dimension</code> . .	10667, 10708
<code>\grq</code> . . . . .	636	<code>\harvarditem</code> . . . . .	7679	<code>\hvtex@par@direction</code> . . .	10668, 10711
<code>\grqq</code> . . . . .	634	<code>\hbox</code> . . . . .	1857, 1863, 1869, 2441, 3440, 3446, 5003, 5005, 5652, 5885, 5886, 5887, 5888, 7644, 7833, 8811, 9376, 9452, 9462, 9532, 9546, 9569, 9584, 9609, 9624, 9895, 9912, 10973, 11320, 11334, 11928, 11938, 12203, 12218, 12845, 13298, 13387, 13423, 13453, 13481, 13510, 13535, 14338	<code>\hvtex@par@duration</code> . . . .	10669, 10703
<code>\guillemotleft</code> 1055, 14675, 14855, 15043, 16748		<code>\hc@currentHref</code> . . . . .	7395	<code>\hvtex@par@motion</code> 10670, 10705	
<code>\guillemotright</code> . . . . .	1056, 14706, 14856, 15075, 16749	<code>\HCode</code> . . . . .	12697, 12699, 12710, 12719, 12731, 12739, 12741, 12772, 12778, 12783, 12788, 12802, 12807, 12811, 12814, 12823	<code>\hvtex@param@dimension</code> 10680, 10709, 10727, 10730	
<code>\guilsinglleft</code> 14606, 14857, 16454, 16750		<code>\headerps@out</code> . . . . .	6482, 11628, 11639, 11711, 11725, 11778, 11787, 11800, 11814, 11853, 11971, 12089, 12279	<code>\hvtex@param@direction</code> .	10681, 10712, 10738, 10746
<code>\guilsinglright</code> . . . . .	14608, 14858, 16456, 16751	<code>\hfill</code> . . . . .	5885, 5886, 5887, 5888, 7535, 7568	<code>\hvtex@param@duration</code> .	10682, 10704, 10751, 10753
<b>H</b>					
<code>\H</code> . . . . .	14902, 14934, 14953, 14967, 15382, 15384, 15446, 15448, 16246, 16248	<code>\Hfootnoteautorefname</code> . . .	8613	<code>\hvtex@param@motion</code> . .	10683, 10706, 10727, 10734
<code>\h</code> . . . . .	3265, 16776, 16781, 16786, 16791, 16796, 16801, 16806, 16811, 16816, 16821, 16826, 16831, 16836, 16841, 16846, 16851, 16856, 16861, 16866, 16871, 16876, 16881, 16886, 16891	<code>\hhyperref</code> . . . . .	5063	<code>\hvtex@parse@trans</code> 10656, 10678	
<code>\H@@footnotemark</code> .	7143, 7160, 7224, 7313, 7320, 7332, 7343	<code>\hoffset</code> . . . . .	7834	<code>\hvtex@produce@trans</code> . . .	10717, 10723
<code>\H@@footnotetext</code> . . . . .	7142, 7152, 7184, 7223, 7262, 7321, 7335, 7343	<code>\hphantom</code> . . . . .	614	<code>\hvtex@token</code> . . . . .	10675, 10686, 10692, 10699, 10704, 10707, 10710, 10712
<code>\H@@mpfootnotetext</code>	7150, 7162, 7164, 7225	<code>\href</code> 647, 4713, 5057, 5058, 6055		<code>\hvtex@trans@code</code> 10660, 10661, 10662, 10663, 10664, 10665, 10666, 10679, 10725, 10726, 10728, 10730, 10732, 10734, 10736, 10738, 10740, 10741, 10742, 10743, 10744, 10746	
<code>\H@definecounter</code> . .	7933, 7935	<code>\href@</code> . . . . .	4716, 4719, 4724	<code>\hvtex@trans@effect@Blinds</code> . . . . .	10660
<code>\H@endeqnarray</code> . . .	6943, 6962	<code>\href@split</code> . . . . .	4724, 4725	<code>\hvtex@trans@effect@Box</code>	10661
<code>\H@endequation</code> . . .	6906, 6938	<code>\hsize</code> . . . . .	7285	<code>\hvtex@trans@effect@Dissolve</code> . . . . .	10662
<code>\H@endsubeqnarray</code> .	6972, 6984	<code>\hskip</code> . . . . .	1868, 1946, 2482, 2483, 4710, 5891, 12845	<code>\hvtex@trans@effect@Glitter</code> . . . . .	10663
<code>\H@eqnarray</code> . . . . .	6942, 6947	<code>\hspace</code> . . . . .	643, 7694, 7695	<code>\hvtex@trans@effect@R</code> . .	10666
<code>\H@equation</code> . . . . .	6905, 6929	<code>\hss</code> . . . . .	7842, 14343	<code>\hvtex@trans@effect@Split</code>	10664
<code>\H@item</code> 6578, 6584, 7524, 7549		<code>\ht</code> 5893, 5896, 9460, 9535, 9544, 9551, 9572, 9582, 9589, 9612, 9622, 9629, 11316, 11936, 12216, 13266		<code>\hvtex@trans@effect@Wipe</code>	10665
<code>\H@newctr</code> . . . . .	7938, 7940	<code>\htmladdimg</code> . . . . .	5056	<code>\hvtex@trans@par</code> 10699, 10703, 10705, 10708, 10711	
<code>\H@old@part</code> . . . . .	14390, 14401	<code>\htmladdnormallink</code> . . . . .	5057	<code>\hvtex@trans@params</code> . . .	10693, 10695, 10719
<code>\H@old@schapter</code> . .	14360, 14369	<code>\htmladdnormallinkfoot</code> . . .	5058	<code>\Hy@@CleanupFile</code> .	5003, 5005
<code>\H@old@sect</code> 14411, 14422, 14431		<code>\htmlref</code> . . . . .	5059	<code>\Hy@@DefNameKey</code> .	2584, 2586
<code>\H@old@spart</code> . . . .	14403, 14409	<code>\Huge</code> . . . . .	601	<code>\Hy@@escapeform</code>	13615, 13628, 13634
<code>\H@old@ssect</code> . . . .	14346, 14351	<code>\huge</code> . . . . .	605	<code>\Hy@@SectionAnchor</code> . . . .	14333, 14336
<code>\H@refstepcounter</code> . .	6595, 6605, 6745, 6869, 6882, 6928, 7069, 7100, 7379, 8200, 8253	<code>\Hurl</code> . . . . .	4799, 4801, 4803	<code>\Hy@@temp</code> . . . . .	3470, 3472, 5788, 5790
<code>\H@seteqlabel</code> . . . .	7969, 7971	<code>\hv@pdf@char</code> . . . . .	14128, 14193, 14194, 14195, 14196	<code>\Hy@@VersionCheck</code> . .	291, 310
<code>\H@subeqnarray</code> . . .	6971, 6975	<code>\hvtex@buffer</code> . . . . .	10672, 10676, 10684, 10687, 10696, 10700, 10716	<code>\Hy@abspage</code> .	6229, 6315, 6431, 6508
<code>\ha</code> . . . . .	16928	<code>\hvtex@gettoken</code> .	10671, 10685, 10689, 10698, 10702	<code>\Hy@Acrobatmenu</code> . .	4124, 4165, 9346, 10092, 10631, 11492
<code>\Haa</code> . . . . .	16907	<code>\hvtex@gettoken@</code> .	10672, 10674	<code>\Hy@activeanchorfalse</code> . . . . .	4596, 8912, 9404, 9419, 9498, 9508, 9824, 10352,
<code>\halign</code> . . . . .	655				
<code>\hamza</code> . . . . .	16895				
<code>\HAR@checkcitations</code> . . . . .	7704				
<code>\HAR@citetoaux</code> . . . . .	7660				
<code>\HAR@tempa</code> 7705, 7706, 7707, 7708, 7709, 7710					

10369, 10440, 10453, 10959, 11876, 11891, 12156, 12170	3528, 3688, 3960, 3963, 3966, 3969, 3972, 3975, 3978, 3986, 4007, 4010, 6449	4121, 4228, 4254, 4391, 4392, 4393, 4394, 4395, 4396, 4397, 4398, 4399, 4400, 4401, 4402, 4403, 4404, 4405, 4406, 4407, 4408, 4453, 4506, 4534, 4535, 4594, 4595, 5967, 5968, 5969, 5970, 5971, 5972, 5973, 5974, 5975, 5976, 5977, 5978, 5979, 5980, 5981, 5982, 5983, 5984, 5985, 5986, 5987, 5988, 5989, 5990, 6167, 6383, 7347, 8033, 8131, 8132, 8731, 8834, 9202, 9203, 9204, 9205, 9206, 9207, 9208, 9209, 9210, 9211, 9341, 9663, 9664, 9665, 9666, 9667, 9668, 9669, 9670, 9671, 9672, 9935, 10154, 10155, 10156, 10157, 10158, 10159, 10160, 10161, 10162, 10163, 10281, 10423, 10877, 10878, 10879, 10880, 10881, 10882, 10883, 10884, 10885, 10886, 11144, 11145, 11146, 11147, 11148, 11149, 11150, 11151, 11152, 11153, 11704, 11997, 11998, 11999, 12000, 12001, 12002, 12003, 12004, 12005, 12006
\Hy@activeanchortrue . . . . .	\Hy@BorderArrayPatch . . 11371, 11374, 11637, 12087	\Hy@DistillerDestFix . . . . 7807, 10890, 10892
.. 8908, 9401, 9415, 9496, 9505, 9820, 10348, 10366, 10438, 10450, 10949, 11873, 11887, 12153, 12166	\Hy@breaklinks@unsupported . . . . . . . 2678, 10925	\Hy@draftfalse . . . . . 393
\Hy@ActiveCarriageReturn 4632, 4635	\Hy@breaklinksfalse . . . . . 434	\Hy@drafttrue . . . . . 394
\Hy@AllowHyphens 4706, 10947, 10979, 11303	\Hy@breaklinksunhbox . . 11270, 11324	\Hy@driver 470, 2683, 2858, 2870, 2880, 2885, 2890, 2903, 2913, 2918, 2923, 2930, 2933, 2959, 2975, 2982, 2987, 2997, 4257, 4260, 4264, 4267, 4271, 4274, 4276, 4280, 4286, 4290, 4293, 4297, 4302, 4306, 4309, 4313, 4316, 4318, 4322, 4327, 4331, 4334, 4337, 4348, 4351, 4354, 4363, 4364, 4375, 4377, 4383, 4385, 4387
\Hy@AnchorName . . . . .	\Hy@CatcodeWrapper . . . 4454, 4513, 4557, 4586	\Hy@dth@currentHref 7071, 7102, 7127
.. 4836, 4838, 4841, 4843, 4867, 4869, 4873, 4878, 4880	\Hy@chapapp 6650, 6658, 6684, 14364, 14375, 14457	\Hy@dviErrMsg . . . 2825, 2827, 2830, 2836, 2849
\Hy@appendixstring 6649, 6658	\Hy@chapterstring . . 6645, 6647, 6650, 6683	\Hy@dviModetrue . . 2834, 2839
\Hy@AtBeginDocument . . . 364, 994, 2730, 2790, 2861, 2936, 2992, 3382, 4039, 4082, 4097, 4235, 4241, 4340, 4493, 4583, 5963, 6074, 6515, 6750, 7651, 8458, 8606, 8806, 9292, 9907, 10421, 11813, 11851, 12860, 12861	\Hy@CheckOptionValue . 2554, 2591	\Hy@dviopdfmxOutlineOpentrue . . . . . 4415, 4422
\Hy@AtBeginDocumentHook 365, 370, 376, 377	\Hy@CJKbookmarksfalse . . . 436	\Hy@endAnnot . . . 9943, 9989, 10028, 10060, 10089, 10114
\Hy@AtEndOfPackage . . . 367, 891, 2357, 3346, 3354, 3361, 4223, 4249, 4255, 4445	\Hy@cjkpu . . . . 1257, 1259, 1280	
\Hy@AtEndOfPackageHook 368, 371, 373, 374	\Hy@CleanupFile . . . 5001, 8973, 9997, 10517, 11563	
\Hy@author . . . . . 6143, 6147	\Hy@colorlink 3374, 4517, 4525, 4529, 8807, 8893, 8966, 9006, 9042, 9370, 9402, 9425, 9456, 9469, 9497, 9513, 9538, 9554, 9576, 9593, 9616, 9633, 9908, 9986, 10025, 10057, 10086, 10111, 10439, 10461, 10531, 10557, 10592, 10625, 10643, 10977, 11254, 11256, 11874, 11897, 11932, 11945, 12154, 12176, 12211, 12224	
\Hy@babelnormalise 4814, 4816	\Hy@colorlinksfalse . . . . . 3371	
\Hy@backout . 4592, 6014, 6018, 7490	\Hy@ColorList . . . . 3533, 3534	
\Hy@backreffalse 430, 3042, 3064, 4247	\Hy@CounterExists . 6543, 6556, 6559	
\Hy@backreftrue 3035, 3039, 3061	\Hy@currentbookmarklevel 13976, 13986, 13987, 13993, 14000, 14093, 14096, 14101, 14105	
\Hy@BeginAnnot . . . 9937, 9954, 9995, 10032, 10064, 10093	\Hy@debugfalse . . . . . 426	
\Hy@bibcite . . . . . 7513, 7517	\Hy@debugtrue . . . . . 425	
\Hy@bookmarksdepth . . . 3425, 3430, 3442, 3448, 13970	\Hy@defaultbp . . . . 5667, 5669	
\Hy@bookmarksnumberedfalse . . . . . . 431	\Hy@defaultbpAux . 5671, 5676, 5690	
\Hy@bookmarksopenfalse . . 432	\Hy@defaultdriver . . 4329, 4354, 4364, 4375	
\Hy@bookmarkstrue . . . . . 433	\Hy@DefFormAction 5528, 5530	
\Hy@bookmarkstype 3460, 3462, 7864, 13981	\Hy@DefNameKey . . 2583, 3565, 3617, 3625, 3633, 3637, 3644, 3651, 3658, 3665, 3669, 3674, 3681, 3995	
\Hy@boolkey . . . . .	\Hy@DEST . . . . . 11271, 11338	
.. 2511, 2603, 2606, 2609, 2630, 2633, 2636, 2667, 2670, 2673, 2690, 2694, 2697, 2700, 2703, 2706, 2709, 2712, 3013, 3016, 3071, 3368, 3380, 3395, 3420, 3423, 3464, 3467,	\Hy@DestName . . . . 8854, 8861	

\Hy@endcolorlink . . . . .	3375, 4521, 4526, 4530, 8816, 8899, 9402, 9439, 9463, 9471, 9497, 9521, 9542, 9556, 9580, 9595, 9620, 9635, 9917, 9945, 10439, 10512, 10533, 10559, 10594, 10627, 10645, 11004, 11263, 11874, 11913, 11939, 11947, 12154, 12190, 12215, 12226
\Hy@EndWrap . . . . .	4455, 4457, 4458, 4491
\Hy@Error . . . . .	263, 279, 285, 299, 2734, 2847, 2872, 2905, 2943, 2950, 2961, 2967, 4149, 4767, 4934, 5229, 5353, 5549, 5581, 5793, 5842, 12592, 12638, 13087, 13139, 13445, 13503
\Hy@escapeform . . . . .	12485, 12568, 12580, 12604, 12622, 12645, 12665, 12967, 13052, 13073, 13099, 13119, 13146, 13168, 13304, 13396, 13427, 13459, 13483, 13511, 13541, 13609, 13639, 13646
\Hy@escapestring . . . . .	13606, 13674, 13678, 13682, 13686, 13690, 13694, 13698, 13702, 13706, 13710, 13754, 13787, 13888, 13889, 13920
\Hy@EveryPageAnchor . . . . .	7806, 7849
\Hy@EveryPageBoxHook . . . . .	6193, 6197, 6201, 7848, 10256, 10777, 11065
\Hy@EveryPageHook . . . . .	6192, 6196, 6381, 9284
\Hy@ExchangeLeftParenthesis . . . . .	8662, 8668
\Hy@ExchangeRightParenthesis . . . . .	8672, 8678
\Hy@false . . . . .	2405, 2521, 3027, 3063, 5578
\Hy@finalfalse . . . . .	394
\Hy@finaltrue . . . . .	393
\Hy@FirstPage . . . . .	4135
\Hy@FirstPageHook . . . . .	6194, 6207, 6209, 6480, 6481, 11638, 11724, 11786, 12088, 12278
\Hy@FixNotFirstPage . . . . .	9374, 9375, 9381
\Hy@float@caption . . . . .	7385, 7435, 7437
\Hy@float@currentHref . . . . .	7438, 7440, 7442, 7450, 7453, 7455
\Hy@footnote@currentHref . . . . .	5962, 7172, 7177, 7192, 7197, 7200, 7212, 7214, 7253, 7294, 7297
\Hy@FormObjects . . . . .	12898, 13176, 13230, 13240, 13552, 13602
\Hy@frenchlinksfalse . . . . .	3373
\Hy@Gin@setfile . . . . .	8028, 8030
\Hy@GlobalStepCount . . . . .	468, 6315, 6714, 6737, 7824, 8242, 8293
\Hy@gtemp . . . . .	806, 807, 4187, 4193, 4195, 5426, 5427, 5431, 5432, 5443, 5457, 7229, 7234, 8686, 8688, 13667, 13669
\Hy@href . . . . .	4716, 4718
\Hy@href@nextactionraw . . . . .	4753, 4776, 4778, 4779, 4781, 4786, 4790, 4792, 8962, 9002, 9038, 9366, 9982, 10021, 10053, 10082, 10102, 10476, 10546, 10614, 11588, 11617
\Hy@href@page . . . . .	4731, 4733, 4737, 4738, 4740, 4747, 4750, 8998, 10016, 11584
\Hy@hyperfiguresfalse . . . . .	438
\Hy@hyperfootnotetrue . . . . .	440
\Hy@hyperindextrue . . . . .	441
\Hy@hypertexnamesfalse . . . . .	2361
\Hy@hypertexnametrue . . . . .	442
\Hy@ifStringEndsWith . . . . .	4969, 4981
\Hy@implicittrue . . . . .	443
\Hy@Info . . . . .	266, 2529, 4198, 4200, 4203, 4205, 4208, 4210, 4213, 4215, 4218, 4220, 4438, 4444, 4522, 4527, 4531, 4675, 4702, 5136, 5924, 5926, 5929, 5931, 5934, 5936, 5939, 5941, 5944, 5946, 5949, 5951, 5954, 5956, 7591, 7652, 7869, 7886
\Hy@InfoNoLine . . . . .	267, 4230, 4232, 12133
\Hy@LastPage . . . . .	4138
\Hy@level . . . . .	13982, 13984, 13995, 14000, 14001, 14002, 14033
\Hy@levelcheck . . . . .	13983, 13998
\Hy@linkcounter . . . . .	472, 474, 6714, 6715, 6737, 6738, 7972, 8242, 8243, 8247, 8293, 8294, 8298
\Hy@linkfileprefix . . . . .	3504, 4953, 9442, 10317, 11917, 12193
\Hy@LinkMath . . . . .	10968, 10970, 10975, 11007, 11295, 11297, 11302, 11304, 11310, 11312
\Hy@linktoc . . . . .	2638, 2640, 2648, 2650, 2660, 7905
\Hy@linktoc@call . . . . .	2646
\Hy@linktoc@none . . . . .	2643
\Hy@linktoc@page . . . . .	2638, 2645, 2648
\Hy@linktoc@section . . . . .	2640, 2644, 2650
\Hy@linktocpagefalse . . . . .	444
\Hy@localanchornamefalse . . . . .	445
\Hy@LT@currentHref . . . . .	6884, 6895
\Hy@LT@footnotetext . . . . .	7252, 7261
\Hy@make@anchor . . . . .	7946, 7952, 7958
\Hy@make@df@tag@@ . . . . .	7950, 7965
\Hy@make@df@tag@@@ . . . . .	7956, 7966
\Hy@MakeCurrentHref . . . . .	6725, 6738
\Hy@MakeCurrentHrefAuto . . . . .	6736, 6818, 7947, 13961, 14348, 14364, 14375, 14405, 14419, 14457
\Hy@MakeRemoteAction . . . . .	4736, 8976, 10000, 11566
\Hy@maketitle@end . . . . .	7324, 7329, 7331
\Hy@maketitle@optarg . . . . .	7322, 7327
\Hy@Match . . . . .	314, 316, 3004, 3514, 3574, 3591, 3934, 4781, 5706
\Hy@MaybeStopNow . . . . .	2926, 4063, 4066
\Hy@Message . . . . .	268, 2860, 2935, 4234, 4339, 4383, 10373, 10377, 10380, 10383, 10386, 10389, 10392, 10395, 12462, 12674, 12677, 12680, 12683, 12686, 12689, 12691, 12692, 12701, 12838, 13235
\Hy@naturalnamesfalse . . . . .	447
\Hy@nestingfalse . . . . .	448
\Hy@newline@author . . . . .	6186
\Hy@newline@title . . . . .	6185
\Hy@next . . . . .	6331, 6341, 6346, 14374, 14383, 14386
\Hy@nextfalse . . . . .	4167, 8043
\Hy@NextPage . . . . .	4129
\Hy@nexttrue . . . . .	4168, 4169, 4170, 8044, 8045, 8046
\Hy@number . . . . .	3903, 3907, 3915
\Hy@numberline . . . . .	13977, 14014, 14015, 14016, 14017

\Hy@ObsoletePaperOption	2612, 2620	11821, 11827, 11834, 11841, 11848	\Hy@RestoreCatcodes	205, 4059, 4390	
\Hy@ocgcolor	8810, 8824, 9911, 9925	\Hy@pstringB	9118, 9123, 10194, 10206, 11207, 11223, 12060, 12076	\Hy@RestoreLastskip	2450, 8855, 9405, 9420, 9499, 9509, 9811, 10353, 10370, 10441, 10454, 10940, 10960, 11877, 11892, 12157, 12171
\Hy@ocgcolorlinksfalse	3372, 4501	\Hy@pstringD	8975, 9000, 9999, 10018, 11565, 11586	\Hy@RestoreSavedSpaceFactor	2425, 9450, 9530, 9567, 9607, 11926, 12201
\Hy@org@chapter	14372, 14387	\Hy@pstringdef	8633, 8853, 8877, 8937, 8974, 8975, 9012, 9013, 9118, 9762, 9963, 9998, 9999, 10033, 10034, 10065, 10194, 10460, 10538, 10601, 10602, 11207, 11402, 11411, 11538, 11564, 11565, 11596, 11597, 12060, 13632, 14251, 14267	\Hy@RestoreSpaceFactor	2416, 2442, 2447, 9449, 9457, 9464, 9529, 9539, 9547, 9566, 9577, 9585, 9606, 9617, 9625, 10974, 11010, 11301, 11309, 11336, 11925, 11933, 11940, 12200, 12212, 12219, 12255, 12259
\Hy@OrgMakeLabel	12247, 12254	\Hy@pstringDest	8853, 8854, 9762, 9809, 11402, 11403, 11407, 11411, 11412, 11416	\Hy@ReturnAfterElseFiFiEnd	478, 1831
\Hy@OutlineName	14252, 14307	\Hy@pstringF	8972, 8973, 8974, 8994, 9012, 9031, 9036, 9996, 9997, 9998, 10013, 10033, 10046, 10051, 10516, 10517, 10521, 10601, 10608, 10612, 11562, 11563, 11564, 11581, 11596, 11612, 11615	\Hy@ReturnAfterFiFiEnd	477, 1823, 1837, 1915, 1922
\Hy@OutlineRerunCheck	14117, 14216, 14298	\Hy@pstringName	14251, 14252, 14267, 14281	\Hy@ReturnEnd	476, 477, 478, 1843, 1927
\Hy@PageAnchorSlide	7766, 7804, 7817	\Hy@pstringP	9013, 9036, 10034, 10051, 10602, 10612, 11597, 11615	\Hy@safe@activesfalse	479, 4547, 4552, 4897, 8528
\Hy@PageAnchorSlidesPlain	7753, 7803, 7812	\Hy@pstringURI	8937, 8958, 10065, 10078, 10460, 10472, 10538, 10542, 11538, 11550	\Hy@safe@activetrue	479, 4176, 4545, 4550, 4628, 4665, 4673, 4701, 4818, 4889, 8434, 8517, 14209, 14239
\Hy@pageanchortrue	451	\Hy@PutCatalog	6377, 6385, 6497	\Hy@samed@currentHref	7210, 7213
\Hy@pagecounter	473, 475, 6776, 7824, 7826	\Hy@raisedlink	2429, 6638, 6820, 6841, 6842, 6843, 6846, 6896, 6935, 6938, 7124, 7175, 7195, 7266, 7292, 7423, 7501, 7525, 7530, 7550, 7948, 7973, 11626, 11709, 11967, 12131, 13962, 14340, 14365, 14376, 14406, 14458	\Hy@samed@footnotemark	7318, 7333
\Hy@pageheight	4053, 11726, 11815	\Hy@raiselinksfalse	456, 7653	\Hy@samed@footnotetext	7319, 7336
\Hy@param	6682, 6683, 6684, 6711, 6715	\Hy@RemoveDurPageAttr	9241, 9254	\Hy@samed@hook	6171, 6181
\Hy@pdfafalse	466	\Hy@RemoveHidPageAttr	9264, 9276	\Hy@samed@refstepcounter	6622, 6870
\Hy@pdfcenterwindowfalse	435	\Hy@RemovePercentCr	4648, 4652, 4657	\Hy@SavedSpaceFactor	2412, 2414, 2419, 2420, 2426, 12252
\Hy@pdfdisplaydoctitlefalse	465	\Hy@RemoveTransPageAttr	9216, 9230	\Hy@SaveLastskip	2450, 8851, 9393, 9408, 9490, 9502, 9759, 10340, 10356, 10431, 10444, 10930, 10944, 11866, 11880, 12146, 12160
\Hy@pdfencoding@pdfdoc	2785	\Hy@reserved@a	4883, 6945, 6974, 12704, 12754, 12817	\Hy@SaveSavedSpaceFactor	2424, 9448, 9528, 9565, 9605, 11924, 12199
\Hy@pdfescapeformfalse	437			\Hy@SaveSpaceFactor	2413, 2433, 2444, 9447, 9459, 9527, 9541, 9564, 9579, 9604, 9619, 10972,
\Hy@pdffitwindowfalse	439				
\Hy@pdfmarkerrorfalse	11234				
\Hy@pdfmarkerrortrue	11404, 11413				
\Hy@pdfmenubartrue	446				
\Hy@pdfminorversion	8698, 8704, 8707, 8715, 8720, 8722, 8725, 8729				
\Hy@pdfnewwindowfalse	450				
\Hy@pdfnewwindowsetfalse	449, 3983				
\Hy@pdfnewwindowsettrue	3985, 4755				
\Hy@pdfnewwindowtrue	4756				
\Hy@pdfpagehiddenfalse	453				
\Hy@pdfpagelabelsfalse	6216				
\Hy@pdfpagelabelstrue	452				
\Hy@pdfstringdef	805, 5401, 5409				
\Hy@pdfstringfalse	454, 5992				
\Hy@pdfstringtrue	659, 5964				
\Hy@pdftoolbartrue	459				
\Hy@pdfusetitlefalse	462				
\Hy@pdfversion	2812, 2823, 5403, 8720, 8722, 8726, 8729, 13661				
\Hy@pdfwindowuitrue	464				
\Hy@plainpagesfalse	455				
\Hy@PrevPage	4132				
\Hy@ps@CR	11768, 11775, 11780, 11781, 11798, 11819, 11820,				



11008, 11293, 11305, 11313, 11923, 11935, 12198, 12214, 12250, 12257	3572, 3585, 3589, 3604, 3766, 3767, 3770, 3773, 3776, 3801, 3809, 3810, 3811, 3812, 3813, 3814, 3815, 3816, 3817, 3981, 3982, 4156, 4160, 4161, 4162, 4163, 4262, 4264, 4269, 4271, 4274, 4288, 4290, 4295, 4297, 4304, 4306, 4311, 4313, 4316, 4376, 4377, 5126, 5130, 5131, 5142, 5226, 5227, 5228, 5230, 5234, 5546, 5547, 5548, 5550, 5554, 5555, 5704, 5716, 5787, 5803, 5804, 5805, 5806, 5807, 5808, 5809, 5810, 5812, 5818, 5824, 5825, 5826, 5827, 5828, 5829, 5830, 5831, 5832, 5833, 5834, 6272, 6275, 6284, 6286, 6290, 6294, 6338, 6340, 6770, 6773, 6776, 6782, 6908, 6914, 7022, 7045, 7302, 7308, 8140, 8141, 9133, 9162, 9164, 9682, 9687, 9693, 9697, 9700, 9705, 9736, 9738, 10166, 10209, 10211, 11107, 11110, 11114, 11115, 11121, 11122, 11128, 11156, 11161, 11167, 11171, 11174, 11179, 11212, 11214, 11275, 11276, 11280, 11368, 11369, 11377, 11378, 11482, 11483, 12009, 12014, 12020, 12024, 12027, 12032, 12065, 12067, 13614, 13615, 14249, 14255, 14263, 14278	6510, 6992, 6994, 6995, 6998, 6999, 7000, 7380, 7385, 7390, 7863, 7864, 7882, 7883, 7889, 8206, 8207, 8258, 8259, 9426, 9427, 10321, 10469, 10470, 11898, 11899, 12177, 12178, 13980, 13981, 14004, 14006, 14025, 14026, 14034, 14058, 14060, 14061, 14063, 14064, 14447, 14472, 14477, 14480, 14483
\Hy@scanauthor . . . 6141, 6146 \Hy@scanoptauthor . 6141, 6142 \Hy@scanopttitle . . . 6132, 6133 \Hy@scantitle . . . . . 6132, 6137 \Hy@secnum@part 14393, 14395, 14398 \Hy@SectionAnchorHref . . 657, 14331, 14353, 14424 \Hy@SectionHShift 14330, 14339, 14349, 14420 \Hy@seminarslidesfalse . . . 8192 \Hy@seminarslidestrue . . . . 8189 \Hy@setbreaklinks . . 2675, 2679, 2691, 8694, 9752 \Hy@SetCatcodes 181, 231, 4061 \Hy@SetNewWindow 3989, 8996, 9033, 10020, 10048, 10609, 11580, 11611 \Hy@setouterhbox . 11269, 11300 \Hy@setpagesizetrue . . . . . 457 \Hy@setpdfborder . . . . . . . . 3607, 8883, 8942, 8980, 9017, 9350, 9974, 10006, 10040, 10071, 10104, 10480, 10501, 10524, 10550, 10584, 10618, 10636 \Hy@setpdfversiontrue . . . . 2811 \Hy@setref@link . . . . 8390, 8393 \Hy@SlidesFormatOptionalPage . 6245, 7752, 7771, 7775 \Hy@SlidesPage 6252, 7785, 7786, 7792, 7794, 7797, 7800 \Hy@slidetitle 8219, 8221, 8228, 8236, 8246, 8270, 8272, 8279, 8287, 8297 \Hy@StartlinkName . 8881, 8895 \Hy@StepCount 467, 6292, 12503, 12566, 12769, 12985, 13049, 13326, 13393, 14097, 14102, 14178 \Hy@stoppedearlyfalse 4068, 6542 \Hy@stoppedearlytrue 4065, 6539 \Hy@StringLocalhost 4999, 5000, 5015 \Hy@tabularx@hook 7222, 7230 \Hy@temp . . . . . 687, 694, 809, 881, 982, 985, 993, 994, 2618, 2623, 2624, 2625, 2626, 2627, 2628, 3469, 3478, 3479, 3480, 3481, 3482, 3483, 3484, 3534, 3535, 3536, 3539, 3541, 3544, 3554, 3557, 3558, 3559, 3560, 3561, 3562,	6322, 6323, 6362, 6363, 14005, 14006, 14034 \Hy@tempcolor . . 10986, 10988, 11001, 11077, 11079, 11091 \Hy@TempPageAnchor . . 7755, 7811, 7821, 7825, 7841 \Hy@Test@Alpha . . . . 6671, 6694 \Hy@Test@alpha . . . . 6662, 6690 \Hy@testname 8869, 8870, 8875, 8877, 8878, 8892, 9955, 9956, 9961, 9963, 9965, 9981, 10488, 10489, 10494, 10498, 10571, 10572, 10577, 10581, 11082, 11083, 11088, 11099 \Hy@texhtfalse . . . . . 458 \Hy@texhttrue . . . . . 2855, 4258 \Hy@TheSlideOptionalPage 7770, 7774, 7779, 7788 \Hy@title . . . . . 6134, 6138 \Hy@toclevel . . 7874, 7878, 7891 \Hy@true 2404, 2517, 2519, 3057, 3059, 5575 \Hy@typexmlfalse . . . . . 460 \Hy@undefinedname . . . . . . . 8866, 8873, 8875, 9950, 9959, 9961, 10457, 10492, 10494, 10575, 10577, 11073, 11086, 11088 \Hy@unicodfalse . . . . 461, 785, 795, 2741, 2742, 2750, 3743, 3749, 6772, 7816, 13663 \Hy@unicodetrue . . . 2742, 6442, 6456 \Hy@useHidKeyfalse . . . . 3526 \Hy@useHidKeytrue . . . . 3530 \Hy@UseMaketitleInfos . . 6187, 9175, 9644, 10126, 10866, 11105, 11978 \Hy@UseMaketitleString . 6168, 6188, 6189 \Hy@UseNameKey . . . . . . . 2596, 9140, 9141, 9142, 9143, 9144, 9145, 9146, 9147, 9166, 9712, 9713,	
\Hy@temp@A . . . . . 718, 719, 1815, 1817, 1828, 1830, 1835, 1836, 1839, 3802, 3804, 8062, 8063, 8064, 8071, 8099, 8100, 8101, 8110 \Hy@temp@B . . . . . 1816, 1817 \Hy@tempa . . 2512, 2514, 2516, 2517, 2519, 2521, 2523, 2526, 2529, 2530, 3023, 3024, 3025, 3027, 3028, 3030, 3031, 3033, 3037, 3041, 3052, 3054, 3056, 3057, 3059, 3063, 4634, 4635, 4646, 4650, 4819, 4823, 4888, 4891, 4900, 4902, 5533, 5534, 5574, 5575, 5578, 5582, 6321, 6323, 6361, 6363, 6508,		

9714, 9715, 9716, 9717, 9718, 9719, 9740, 10173, 10174, 10175, 10176, 10177, 10178, 10179, 10180, 10213, 10838, 10839, 10840, 10841, 10842, 10843, 10844, 10845, 11186, 11187, 11188, 11189, 11190, 11191, 11192, 11193, 11216, 12039, 12040, 12041, 12042, 12043, 12044, 12045, 12046, 12069	4046, 4115, 4266, 4275, 4292, 4308, 4317, 6115, 6217, 6408, 6522, 6757, 7865, 8020, 11242	\HyC@nc@default . . . . 103, 105 \HyC@nc@noopt 88, 91, 103, 112, 123, 127 \HyC@nc@opt . . . . 88, 101, 123 \HyC@newcommand . . . . . 86 \HyC@next . . . . . 48, 55, 60, 83 \HyC@noValue 80, 81, 82, 85, 139 \HyC@optcmd . . . . . 107, 111 \HyC@org@cmd . . . . . 76 \HyC@org@optcmd . . . . 80, 111 \HyC@org@robustcmd . . 81, 120 \HyC@org@robustoptcmd . . 82 \HyC@package 10, 22, 28, 34, 37, 38 \HyC@param . . . . . 78, 96, 102 \HyC@robustcmd 115, 120, 121, 122 \HyC@star . . . . . 67, 70, 94 \HyC@string . 131, 152, 155, 158 \HyC@Toks . 79, 90, 96, 106, 126 \HyCal@do . . . . . 495, 499 \HyCal@scan . . . . 486, 490, 514 \HyColor@FieldBColor . . 5768, 5771 \HyColor@FieldColor . . . . 5774 \HyColor@HyperrefBorderColor . . . . . 3537, 3555 \HyColor@HyperrefColor . . . . . . . 3474, 3493, 3494, 3495, 3496, 3497, 3498, 3499 \HyColor@UseColor . 4519, 8813, 8824, 9914, 9925 \HyField@@AddToFields . 12880, 12884 \HyField@@PDFChoices . 5421, 5422, 5437 \HyField@@SetFlag . 5116, 5118 \HyField@@UseFlag . 5106, 5108 \HyField@AddToFields . . 12850, 12879, 12970, 13064, 13077, 13103, 13127, 13150, 13172 \HyField@AdvanceAnnotCount . . . . . 13272, 13301, 13398, 13428, 13456, 13484, 13512, 13538 \HyField@afields . 12847, 12869, 12870, 12872, 12907 \HyField@AfterAuxOpen . 12860, 12867, 12885 \HyField@AnnotCount . . 13270, 13273, 13276 \HyField@AuxAddToFields . . . . 12859, 12864, 12868, 12888 \HyField@FlagsAnnot 5276, 5295, 5309, 5322, 5338, 5370 \HyField@FlagsCheckBox 5308, 12661, 13164, 13533
\Hy@varioref@refstepcounter . . . . . . . . 6861, 6868 \Hy@varioref@undefined . 6852, 6856, 8523 \Hy@VerboseAnchor . . . . . . . 4698, 8852, 9394, 9409, 9491, 9503, 9760, 10341, 10357, 10432, 10445, 10931, 10945, 11867, 11881, 12147, 12161 \Hy@verbosefalse . . . . . 426, 463 \Hy@VerboseGlobalTemp 4674, 4675, 4676, 4677, 4681 \Hy@VerboseLinkInfo 4681, 4682, 4685, 4692 \Hy@VerboseLinkStart . . . . . . . . . . 4670, 8915, 8925, 9424, 9476, 9512, 9524, 9952, 10297, 10320, 10459, 10564, 10963, 11075, 11896, 11952, 12175, 12232 \Hy@VerboseLinkStop 4686, 8900 \Hy@verbostrue . . . . . 425 \Hy@VersionCheck . . 276, 4387 \Hy@VersionChecked . . 275, 308, 4384, 4386 \Hy@vt@PutCatalog 6414, 6416 \Hy@VTeXversion . . 6394, 6406, 10520, 10649, 10785, 14130 \Hy@WarnHTMLFieldOption . . . 5600, 5633, 5636, 5820 \Hy@Warning . . . . . 264, 339, 501, 1755, 2534, 2549, 2574, 2654, 2769, 2774, 3386, 3438, 3517, 3580, 3599, 3778, 3825, 3833, 3944, 4497, 4742, 4785, 4903, 5025, 5183, 5538, 5601, 5709, 6452, 6467, 7855, 8503, 8553, 8871, 9793, 9797, 9957, 10490, 10573, 11084, 11405, 11414, 13989, 14007 \Hy@WarningNoLine . . . . . . . . 265, 2613, 2681, 2795, 3489, 3550, 3694, 3794,	\Hy@WarningPageBorderColor . . . . 3547, 3549, 3551 \Hy@WarningPageColor . 3486, 3488, 3490 \Hy@WarnOptionDisabled 2546, 2548 \Hy@WarnOptionValue . . 2527, 2533, 3044, 3066 \Hy@wrapper@babel 4174, 4192 \Hy@WrapperDef . . . . . . . 4184, 8847, 9392, 9407, 9489, 9501, 9758, 10339, 10355, 10430, 10443, 10929, 10943, 11865, 11879, 12145, 12159 \Hy@writebookmark 2409, 7875, 8226, 8234, 8244, 8277, 8285, 8295, 13966, 14108 \Hy@xspace@end . . . . . . . 4080, 4085, 4088, 4092, 4095, 4100, 4101, 4102, 4104, 4105, 4106, 4107, 4108, 6003, 6004, 6006, 6009, 6011, 6012, 6013, 6017, 6020, 6023, 6025, 6026, 6027, 8931, 8966, 9006, 9042, 9469, 9540, 9555, 9578, 9594, 9618, 9634, 9991, 10027, 10059, 10088, 10113, 10301, 10311, 10532, 10558, 10593, 10626, 10644, 11303, 11311, 11934, 11945, 12213, 12225, 12256 \HyC@@@cmd . . . . . 87, 109, 122 \HyC@check . . . . . 68, 71, 74 \HyC@checkcommand 50, 57, 59 \HyC@checkFailed . . . 146, 157 \HyC@checkItem . 132, 133, 134, 135, 138 \HyC@checklong . . . . . 45, 53 \HyC@checkOk . . . . . 144, 154 \HyC@checkPackage . 12, 16, 18 \HyC@cmd . 62, 75, 87, 95, 118, 131 \HyC@date . . . 11, 15, 23, 29, 31 \HyC@DeclareRobustCommand . . . . . 114 \HyC@def . . . . . 125 \HyC@defcmd . . . . . 47, 54, 93 \HyC@doCheck . . . . . 99, 130 \HyC@edef . . . . . 125 \HyC@getDate . . . . . 12, 14 \HyC@meaning . . . . . 152, 160	

\HyField@FlagsChoice . . .	<a href="#">5369</a> , <a href="#">12542</a> , <a href="#">13025</a> , <a href="#">13366</a>	<a href="#">5259</a> , <a href="#">5262</a> , <a href="#">5263</a> , <a href="#">5264</a> , <a href="#">5267</a> , <a href="#">5278</a> , <a href="#">5279</a> , <a href="#">5280</a> , <a href="#">5281</a> , <a href="#">5282</a> , <a href="#">5283</a> , <a href="#">5284</a> , <a href="#">5285</a> , <a href="#">5286</a> , <a href="#">5297</a> , <a href="#">5298</a> , <a href="#">5299</a> , <a href="#">5311</a> , <a href="#">5312</a> , <a href="#">5313</a> , <a href="#">5324</a> , <a href="#">5325</a> , <a href="#">5326</a> , <a href="#">5327</a> , <a href="#">5329</a> , <a href="#">5340</a> , <a href="#">5341</a> , <a href="#">5342</a> , <a href="#">5343</a> , <a href="#">5344</a> , <a href="#">5345</a> , <a href="#">5346</a> , <a href="#">5347</a> , <a href="#">5358</a> , <a href="#">5361</a> , <a href="#">5372</a> , <a href="#">5373</a> , <a href="#">5374</a> , <a href="#">5375</a> , <a href="#">5377</a> , <a href="#">5379</a> , <a href="#">5380</a> , <a href="#">5383</a> , <a href="#">5386</a>	\HyLang@DeclareLang . . . . .	<a href="#">3292</a> , <a href="#">3321</a> , <a href="#">3322</a> , <a href="#">3323</a> , <a href="#">3324</a> , <a href="#">3325</a> , <a href="#">3326</a> , <a href="#">3327</a> , <a href="#">3328</a> , <a href="#">3329</a> , <a href="#">3330</a> , <a href="#">3331</a> , <a href="#">3332</a> , <a href="#">3333</a> , <a href="#">3334</a> , <a href="#">3335</a> , <a href="#">3336</a> , <a href="#">3337</a> , <a href="#">3338</a> , <a href="#">3339</a> , <a href="#">3340</a> , <a href="#">3341</a> , <a href="#">3342</a> , <a href="#">3343</a>	
\HyField@FlagsRadioButton . . .	<a href="#">5321</a> , <a href="#">12538</a> , <a href="#">13021</a> , <a href="#">13362</a>	\HyInd@@@wrindex .	<a href="#">8058</a> , <a href="#">8061</a> , <a href="#">8092</a> , <a href="#">8098</a>	\HyLang@english . . . . .	<a href="#">3094</a>
\HyField@FlagsSubmit . .	<a href="#">5242</a> , <a href="#">12620</a> , <a href="#">13116</a> , <a href="#">13479</a>	\HyInd@@hyperpage	<a href="#">8138</a> , <a href="#">8148</a>	\HyLang@french . . . . .	<a href="#">3112</a>
\HyField@FlagsText	<a href="#">5337</a> , <a href="#">12480</a> , <a href="#">12962</a> , <a href="#">13295</a>	\HyInd@@wrindex . .	<a href="#">8053</a> , <a href="#">8054</a>	\HyLang@german . . . . .	<a href="#">3130</a>
\HyField@NeedAppearancesfalse	. . . . . <a href="#">5566</a> , <a href="#">5579</a>	\HyInd@EncapChar .	<a href="#">3074</a> , <a href="#">4056</a> , <a href="#">8048</a>	\HyLang@italian . . . . .	<a href="#">3148</a>
\HyField@NeedAppearancetrue	. . . . . <a href="#">5569</a> , <a href="#">5572</a> , <a href="#">5576</a>	\HyInd@hyperpage .	<a href="#">8135</a> , <a href="#">8137</a> , <a href="#">8144</a>	\HyLang@magyar . . . . .	<a href="#">3166</a>
\HyField@NewBitsetFlag .	<a href="#">5074</a> , <a href="#">5077</a> , <a href="#">5085</a>	\HyInd@org@wrindex	<a href="#">8052</a> , <a href="#">8056</a> , <a href="#">8066</a> , <a href="#">8072</a> , <a href="#">8074</a> , <a href="#">8077</a>	\HyLang@portuges . . . . .	<a href="#">3184</a>
\HyField@NewFlag .	<a href="#">5072</a> , <a href="#">5148</a> , <a href="#">5149</a> , <a href="#">5150</a> , <a href="#">5151</a> , <a href="#">5152</a> , <a href="#">5153</a> , <a href="#">5154</a> , <a href="#">5155</a> , <a href="#">5156</a> , <a href="#">5157</a> , <a href="#">5158</a> , <a href="#">5159</a> , <a href="#">5160</a> , <a href="#">5161</a> , <a href="#">5162</a> , <a href="#">5163</a> , <a href="#">5164</a> , <a href="#">5165</a> , <a href="#">5166</a> , <a href="#">5167</a> , <a href="#">5172</a> , <a href="#">5173</a> , <a href="#">5174</a> , <a href="#">5175</a> , <a href="#">5176</a> , <a href="#">5177</a> , <a href="#">5178</a> , <a href="#">5179</a> , <a href="#">5180</a> , <a href="#">5213</a> , <a href="#">5215</a> , <a href="#">5216</a> , <a href="#">5218</a> , <a href="#">5219</a> , <a href="#">5221</a> , <a href="#">5222</a> , <a href="#">5223</a> , <a href="#">5224</a>	\HyInd@pagelink . . .	<a href="#">8153</a> , <a href="#">8159</a> , <a href="#">8161</a> , <a href="#">8164</a>	\HyLang@russian . . . . .	<a href="#">3202</a>
\HyField@NewFlagOnly .	<a href="#">5076</a> , <a href="#">5214</a> , <a href="#">5217</a> , <a href="#">5220</a>	\HyInd@ParenLeft . .	<a href="#">8035</a> , <a href="#">8063</a> , <a href="#">8100</a>	\HyLang@spanish . . . . .	<a href="#">3242</a>
\HyField@NewOption	<a href="#">5073</a> , <a href="#">5079</a>	\HyInd@ParenRight .	<a href="#">8036</a> , <a href="#">8064</a> , <a href="#">8071</a> , <a href="#">8101</a> , <a href="#">8110</a>	\HyLang@vietnamese	<a href="#">3260</a> , <a href="#">3345</a> , <a href="#">3353</a>
\HyField@PDFAFlagWarning . .	. . . . . <a href="#">5182</a> , <a href="#">5190</a> , <a href="#">5194</a> , <a href="#">5198</a> , <a href="#">5202</a> , <a href="#">5206</a> , <a href="#">5210</a>	\HyInd@removespaces	<a href="#">8167</a> , <a href="#">8170</a> , <a href="#">8180</a>	\HyLinguex@OrgB . . . . .	<a href="#">883</a> , <a href="#">887</a>
\HyField@PDFChoices . .	<a href="#">5394</a> , <a href="#">12579</a> , <a href="#">13071</a> , <a href="#">13422</a>	\HyInfo@AddonHandler . .	<a href="#">3820</a> , <a href="#">3823</a>	\HyLinguex@OrgC . . . . .	<a href="#">884</a> , <a href="#">888</a>
\HyField@PrintFlags . . . . .	. . . . . <a href="#">5123</a> , <a href="#">5269</a> , <a href="#">5287</a> , <a href="#">5301</a> , <a href="#">5314</a> , <a href="#">5330</a> , <a href="#">5362</a> , <a href="#">5387</a>	\HyInfo@AddonList .	<a href="#">3847</a> , <a href="#">3848</a> , <a href="#">3882</a> , <a href="#">3889</a>	\HyLinguex@OrgD . . . . .	<a href="#">885</a> , <a href="#">889</a>
\HyField@SetFlag . .	<a href="#">5115</a> , <a href="#">5255</a> , <a href="#">5261</a> , <a href="#">5266</a> , <a href="#">5300</a> , <a href="#">5328</a>	\HyInfo@Addons . . . .	<a href="#">3868</a> , <a href="#">3884</a> , <a href="#">9199</a> , <a href="#">10151</a> , <a href="#">11137</a> , <a href="#">11141</a>	\HyLinguex@Restore . .	<a href="#">886</a> , <a href="#">899</a> , <a href="#">903</a> , <a href="#">911</a> , <a href="#">2723</a>
\HyField@SetKeys .	<a href="#">5498</a> , <a href="#">12477</a> , <a href="#">12509</a> , <a href="#">12512</a> , <a href="#">12531</a> , <a href="#">12588</a> , <a href="#">12616</a> , <a href="#">12633</a> , <a href="#">12658</a> , <a href="#">12958</a> , <a href="#">12991</a> , <a href="#">12994</a> , <a href="#">13013</a> , <a href="#">13082</a> , <a href="#">13112</a> , <a href="#">13134</a> , <a href="#">13160</a> , <a href="#">13291</a> , <a href="#">13332</a> , <a href="#">13335</a> , <a href="#">13354</a> , <a href="#">13440</a> , <a href="#">13475</a> , <a href="#">13498</a> , <a href="#">13529</a>	\HyInfo@AddonUnsupportedtrue	. . . . . <a href="#">9642</a> , <a href="#">10864</a> , <a href="#">11976</a>	\HyOpt@CheckDvi . . . . .	. . . . . <a href="#">2843</a> , <a href="#">2879</a> , <a href="#">2884</a> , <a href="#">2889</a> , <a href="#">2912</a> , <a href="#">2917</a> , <a href="#">2922</a> , <a href="#">2974</a> , <a href="#">2981</a> , <a href="#">2986</a> , <a href="#">2991</a> , <a href="#">2996</a>
\HyField@TheAnnotCount	<a href="#">13275</a> , <a href="#">13306</a> , <a href="#">13311</a> , <a href="#">13403</a> , <a href="#">13415</a> , <a href="#">13430</a> , <a href="#">13435</a> , <a href="#">13461</a> , <a href="#">13467</a> , <a href="#">13486</a> , <a href="#">13491</a> , <a href="#">13514</a> , <a href="#">13519</a> , <a href="#">13543</a> , <a href="#">13548</a>	\HyInfo@do . . . . .	<a href="#">3822</a> , <a href="#">3849</a> , <a href="#">3872</a>	\HyOpt@DriverFallback . .	<a href="#">3000</a> , <a href="#">3003</a> , <a href="#">3004</a> , <a href="#">3008</a> , <a href="#">4353</a> , <a href="#">4358</a>
\HyField@UseFlag . . . . .	. . . . . <a href="#">5105</a> , <a href="#">5246</a> , <a href="#">5247</a> , <a href="#">5248</a> , <a href="#">5249</a> , <a href="#">5250</a> , <a href="#">5251</a> , <a href="#">5252</a> , <a href="#">5253</a> , <a href="#">5256</a> , <a href="#">5257</a> , <a href="#">5258</a> , <a href="#">5259</a> , <a href="#">5262</a> , <a href="#">5263</a> , <a href="#">5264</a> , <a href="#">5267</a> , <a href="#">5278</a> , <a href="#">5279</a> , <a href="#">5280</a> , <a href="#">5281</a> , <a href="#">5282</a> , <a href="#">5283</a> , <a href="#">5284</a> , <a href="#">5285</a> , <a href="#">5286</a> , <a href="#">5297</a> , <a href="#">5298</a> , <a href="#">5299</a> , <a href="#">5311</a> , <a href="#">5312</a> , <a href="#">5313</a> , <a href="#">5324</a> , <a href="#">5325</a> , <a href="#">5326</a> , <a href="#">5327</a> , <a href="#">5329</a> , <a href="#">5340</a> , <a href="#">5341</a> , <a href="#">5342</a> , <a href="#">5343</a> , <a href="#">5344</a> , <a href="#">5345</a> , <a href="#">5346</a> , <a href="#">5347</a> , <a href="#">5358</a> , <a href="#">5361</a> , <a href="#">5372</a> , <a href="#">5373</a> , <a href="#">5374</a> , <a href="#">5375</a> , <a href="#">5377</a> , <a href="#">5379</a> , <a href="#">5380</a> , <a href="#">5383</a> , <a href="#">5386</a>	\HyInfo@GenerateAddons	<a href="#">3866</a> , <a href="#">9176</a> , <a href="#">10127</a> , <a href="#">11106</a>	\HyOpt@DriverType	<a href="#">4326</a> , <a href="#">4328</a> , <a href="#">4355</a> , <a href="#">4365</a> , <a href="#">4367</a> , <a href="#">4383</a>
		\HyInfo@Key . . . . .	. . . . . <a href="#">3830</a> , <a href="#">3831</a> , <a href="#">3839</a> , <a href="#">3844</a> , <a href="#">3849</a> , <a href="#">3852</a> , <a href="#">3859</a> , <a href="#">3873</a> , <a href="#">3877</a>	\HyOrg@addtoreset .	<a href="#">7978</a> , <a href="#">7980</a> , <a href="#">8007</a>
		\HyInfo@KeyEscaped	<a href="#">3829</a> , <a href="#">3830</a>	\HyOrg@appendix . .	<a href="#">6653</a> , <a href="#">6659</a>
		\HyInfo@trapped@false . .	<a href="#">3770</a> , <a href="#">3789</a>	\HyOrg@author	<a href="#">6131</a> , <a href="#">6144</a> , <a href="#">6148</a>
		\HyInfo@trapped@true	<a href="#">3767</a> , <a href="#">3788</a>	\HyOrg@float@makebox . .	<a href="#">7446</a> , <a href="#">7448</a>
		\HyInfo@trapped@unknown	<a href="#">3773</a> , <a href="#">3790</a>	\HyOrg@hyperpage .	<a href="#">8038</a> , <a href="#">8040</a> , <a href="#">8041</a>
		\HyInfo@TrappedUnsupported .	. . . . . <a href="#">3791</a> , <a href="#">3795</a> , <a href="#">9645</a> , <a href="#">10867</a> , <a href="#">11979</a>	\HyOrg@languageshorthands	<a href="#">953</a> , <a href="#">967</a> , <a href="#">978</a> , <a href="#">988</a>
		\HyInfo@Value . . . . .	<a href="#">3843</a> , <a href="#">3845</a>	\HyOrg@make@df@tag@@	. . . . . <a href="#">7963</a>
		\HyLang@addto	<a href="#">3278</a> , <a href="#">3294</a> , <a href="#">3312</a> , <a href="#">3345</a> , <a href="#">3353</a>	\HyOrg@make@df@tag@@@	<a href="#">7964</a>
		\HyLang@afrikaans . . . . .	<a href="#">3076</a>	\HyOrg@maketitle . .	<a href="#">7316</a> , <a href="#">7323</a> , <a href="#">7328</a>
				\HyOrg@subequations	<a href="#">7009</a> , <a href="#">7016</a>
				\HyOrg@title . .	<a href="#">6130</a> , <a href="#">6135</a> , <a href="#">6139</a>
				\HyOrg@TX@endtabularx .	<a href="#">7221</a>
				\HyOrg@url . . . . .	<a href="#">4798</a>
				\HyPat@NonNegativeReal . . . . .	. . . . . <a href="#">3575</a> , <a href="#">3576</a> , <a href="#">3577</a> , <a href="#">3578</a> , <a href="#">3594</a> , <a href="#">3596</a> , <a href="#">3925</a> , <a href="#">3935</a> , <a href="#">3936</a> , <a href="#">3937</a> , <a href="#">3939</a> , <a href="#">3940</a> , <a href="#">3941</a>
				\HyPat@ObjRef	<a href="#">4782</a> , <a href="#">4783</a> , <a href="#">4796</a> , <a href="#">8695</a> , <a href="#">9753</a> , <a href="#">10926</a>
				\hyper@Canchor	<a href="#">4099</a> , <a href="#">4808</a> , <a href="#">4810</a> , <a href="#">4841</a> , <a href="#">4843</a> , <a href="#">4878</a> , <a href="#">4880</a> , <a href="#">5022</a> , <a href="#">6004</a> , <a href="#">6019</a> , <a href="#">6035</a> ,



7171, 7176, 7191, 7196,	9475, 9523, 9990, 10296,	11958, 12151, 12164, 12179,
7264, 7267, 7293, 7421,	10563, 11074, 11951, 12231	12184, 12207, 12223, 12238
7424, 7452, 7756, 7811,	\hyper@link@ . 4107, 4884, 4886,	\hyper@readexternallink . 4894,
7821, 7826, 8225, 8233,	6003, 6017, 6043	4910
8243, 8276, 8284, 8294	\hyper@linkend . . . . .	\hyper@refstepcounter . . . 6613,
\hyper@link . 4668, 4726, 4831,	. . 4088, 4095, 4104, 6011,	6616, 6624
4859, 4883, 7509, 7655,	6025, 6040, 7216, 7495,	\hyper@tilde . 4623, 4624, 4625,
7656, 7657, 7705, 7707,	7498, 7909, 7913, 7917,	5959
7709, 8395, 8410, 8513	7919, 8923, 9437, 9520,	\hyperbaseurl . 3501, 3502, 6054
\hyper@normalise . 4637, 4641,	9989, 9991, 10332, 10510,	\hypercalcbp . . . . . 481, 481
4645	10983, 11911, 12188	\hypercalcbpdef . 483, 520, 3922,
\hyper@anchor 5049, 6007, 6021,	\hyper@linkfile 4106, 4970, 6013,	3932
6085, 6098, 8903, 9392,	6027, 6042, 8970, 9441,	\hyperdef . . . . . 4833, 6056
9489, 9816, 10355, 10430,	9599, 9993, 10316, 10514,	\HyperDestNameFilter . . . . .
10929, 11865, 12145	11560, 11915, 12192	. . 4038, 4702, 8853, 8878,
\hyper@anchorend . . . . .	\hyper@linkstart 4103, 6010, 6024,	9399, 9413, 9433, 9477,
. . 4088, 4095, 4102, 5991,	6039, 7214, 7491, 7498,	9762, 9964, 10300, 10310,
6009, 6023, 6038, 6639,	7909, 7913, 7917, 7919,	10328, 10346, 10364, 10436,
6822, 6897, 6938, 6957,	8914, 9423, 9511, 9951,	10448, 10497, 10580, 11402,
6981, 7128, 7503, 7528,	9991, 10319, 10458, 10962,	11411, 11871, 11885, 11906,
7531, 7551, 7684, 7948,	11895, 12174	11953, 12151, 12164, 12184,
7974, 8910, 9417, 9507,	\hyper@linkurl . . . . .	12233, 14187, 14251, 14267
9823, 10350, 10452, 10951,	. . 4105, 4803, 4945, 4952,	\HyperFirstAtBeginDocument . .
11889, 12168, 13962, 14109,	4973, 4977, 6012, 6026,	. 6082, 6084, 6106, 6109
14341, 14366, 14377, 14407,	6041, 8935, 9442, 9444,	\hypergetpageref . . . . . 6815
14459	9477, 9559, 10062, 10304,	\hypergetref . . . . . 6814
\hyper@anchorstart . . . . .	10317, 10536, 10598, 11071,	\HyperGlobalCurrentHref 6700,
. . 4101, 5991, 6008, 6022,	11536, 11916, 11920, 11953,	6702, 6710, 6711, 6715,
6037, 6639, 6821, 6897,	12193, 12195, 12233	6718, 6722, 6728, 6729, 6733
6935, 6957, 6981, 7125,	\hyper@livelink . . . . 6005, 6030	\hyperimage . . 4804, 5056, 8030
7501, 7526, 7531, 7551,	\hyper@makecurrent 6635, 6680,	\hyperindexformat . . . . . 8037
7684, 7948, 7974, 8906,	6883, 6934, 6956, 6980,	\hyperlink . . . 4667, 6057, 8176,
9407, 9501, 9819, 10339,	7070, 7101, 7211, 7397, 7439	8315, 8323, 8338, 8346,
10443, 10943, 11879, 12159,	\hyper@normalise . . 4629, 4633	8356, 8364, 8371
13962, 14109, 14341, 14366,	\hyper@nat@current . . . . 7492	\hyperlinkfileprefix . 3504, 3505,
14377, 14407, 14459	\hyper@nat@anchorend . . . . 7503	3506, 12137
\hyper@chars . . . . .	\hyper@nat@anchorstart . . . 7500	\HyperLocalCurrentHref . . . . .
. . 4662, 8938, 9397, 9411,	\hyper@nat@linkbreak . . . . 7497	. . 6718, 6720, 6726, 6727,
9431, 9453, 9467, 9481,	\hyper@nat@linkend . . . . . 7494	6728, 6729, 6731
9561, 9601, 10306, 10327,	\hyper@nat@linkstart . . . . . 7489	\hyperpage . . 6063, 8038, 8039,
10343, 10360, 10435, 10447,	\hyper@normalise . . 4057, 4062,	8041, 8134
10539, 11539, 11883, 11903,	4606, 4716, 4719, 4800,	\HyperRaiseLinkDefault . 2411,
11929, 11943, 11957, 12163,	4802, 4804, 4825, 5528	2438
12182, 12205, 12222, 12237	\hyper@pageduration 9237, 9286,	\HyperRaiseLinkHook 2410, 2439
\hyper@currentanchor . . 10948,	10238, 10258, 10762, 10779,	\HyperRaiseLinkLength . . 2437,
10957, 10980, 10997	11037, 11067	2438, 2441
\hyper@currentlinktype . . 10981,	\hyper@pagehidden . 9261, 9287,	\hyperref 4813, 5063, 5064, 6059,
10985, 10989	10249, 10259, 10772, 10780,	8470, 8474, 8484, 8498
\hyper@hash . 4614, 4615, 4663,	11054, 11068	\hypersetup . . 2762, 2802, 3330,
4945, 4957, 4974, 4977,	\hyper@pagetransition 9213, 9285,	3806, 4058, 6053
5958, 10300	10227, 10257, 10651, 10778,	\hypertarget . . . . . 4806, 6058
\hyper@image 4804, 4805, 9479,	11020, 11066	\HyPL@@@CheckThePage 6342,
10597, 11070, 11955, 12235	\hyper@quote 5960, 9399, 9413,	6360
\hyper@last . . . . . 6105, 6110	9428, 9433, 9454, 9468,	\HyPL@@@CheckThePage . 6318,
\hyper@link . . . . .	9482, 10300, 10310, 10323,	6320
. . 4100, 4892, 6005, 6006,	10346, 10364, 11871, 11885,	\HyPL@Alph . . . . . 6237
6020, 6030, 6036, 8924,	11900, 11906, 11930, 11944,	\HyPL@alph . . . . . 6238

\HyPL@arabic . . . . .	6234	\HyPsd@@CJKnumber . . . . .	1439, 1441, 1444, 1497, 1512, 1525, 1527, 1531	\HyPsd@CatcodeWarning	1874, 1891, 1894, 1897, 1900, 1956
\HyPL@CheckThePage . .	6269, 6317	\HyPsd@@ConvertToUnicode . .	2157	\HyPsd@Char . . . . .	2159
\HyPL@Entry 6510, 6518, 6526,	6528	\HyPsd@@GetNextTwoTokens . .	2155	\HyPsd@CharOctByte . . .	2179, 2181, 2184, 2193, 2198
\HyPL@EveryPage .	6257, 6381	\HyPsd@@GlyphProcessWarning	2015, 2018	\HyPsd@CharSurrogate . .	2173, 2190
\HyPL@Format 6333, 6334, 6335,	6336, 6337, 6349	\HyPsd@@GreekNum 1101, 1110,	1209, 1213, 1217	\HyPsd@CharTwoByte . .	2171, 2178
\HyPL@found 6332, 6339, 6343,	6350, 6360, 6362	\HyPsd@@@hspace . . .	1594, 1595	\HyPsd@CheckCatcodes . .	705, 1851
\HyPL@Labels 6228, 6372, 6373,	6375, 6377, 6428, 6429, 6521, 6529, 6530	\HyPsd@@@LetCommand .	1718, 1739	\HyPsd@CJK@Unicode . .	1321, 1325
\HyPL@LastNumber 6232, 6288,	6311	\HyPsd@@@nameref . .	1655, 1656	\HyPsd@CJKActiveChars	1261, 1276
\HyPL@LastPrefix . .	6233, 6282, 6313	\HyPsd@@@pageref . .	1637, 1638	\HyPsd@CJKdigit . .	1550, 1560
\HyPL@LastType . .	6231, 6273, 6312	\HyPsd@@@ProtectSpacesFi	1767, 1771, 1789, 1795, 1800	\HyPsd@CJKdigits .	1323, 1536
\HyPL@page .	6251, 6260, 6263, 6269, 6278	\HyPsd@@@ref . . . . .	1621, 1622	\HyPsd@CJKhook . . .	658, 1232, 1243
\HyPL@Prefix . . . . .	6278, 6280, 6282, 6296, 6299, 6301, 6313, 6327, 6365	\HyPsd@@@RemoveBraces . .	1813	\HyPsd@CJKhook@bookmarks .	1238, 1272
\HyPL@Roman . . . . .	6235	\HyPsd@@@RemoveBracesFi	1810, 1813	\HyPsd@CJKhook@unicode	1240, 1320
\HyPL@roman . . . . .	6236	\HyPsd@@@RemoveCmdPrefix . .	1972, 1975	\HyPsd@CJKnumber	1322, 1436
\HyPL@SetPageLabels . . .	6371, 6436, 6524	\HyPsd@@@ReplaceFi	2042, 2048, 2053	\HyPsd@CJKnumberFour . . . . .	1454, 1458, 1462, 1475, 1479, 1483, 1489
\HyPL@SlidesOptionalPage	6244, 6248, 6253	\HyPsd@@@UTFviii@four . .	2262, 2267	\HyPsd@CJKnumberLarge	1467, 1474
\HyPL@SlidesSetPage	6239, 6241, 6261, 6268	\HyPsd@add@accent .	543, 1583	\HyPsd@CJKnumberThree	1495, 1499, 1505
\HyPL@storePageLabel . .	6296, 6298, 6368, 6426, 6505	\HyPsd@AfterCountRemove . . .	1858, 1929	\HyPsd@CJKnumberTwo	1510, 1514, 1520
\HyPL@thisLabel . .	6225, 6227, 6259, 6263, 6264	\HyPsd@AfterDimenRemove . . .	1864, 1932	\HyPsd@ConvertToUnicode	773, 2105
\HyPL@Type .	6266, 6273, 6277, 6295, 6303, 6312, 6326, 6364	\HyPsd@AfterSkipRemove	1870, 1944	\HyPsd@DecimalToOctal .	1253, 1284
\HyPL@Useless . . . .	6369, 6375	\HyPsd@AMScasflx .	642, 1604, 1606	\HyPsd@DecimalToOctalFirst . .	1327, 1363
\HyPsd@@@autoref .	1676, 1678, 1681	\HyPsd@AppendItalcorr .	1829, 1836, 1845	\HyPsd@DecimalToOctalSecond	1328, 1337, 1400
\HyPsd@@@CJKdigits . . .	1546, 1549, 1557	\HyPsd@autoref . . . . .	652, 1673	\HyPsd@DefCommand	688, 689, 690, 691, 1707
\HyPsd@@@nameref	1658, 1660, 1663	\HyPsd@babel@danish . . . . .	997	\HyPsd@DisableCommands	934, 936
\HyPsd@@@pageref .	1640, 1642, 1645	\HyPsd@babel@dutch . . . . .	1003	\HyPsd@DoConvert .	2107, 2117
\HyPsd@@@ref .	1624, 1626, 1629	\HyPsd@babel@finnish . . . .	1009	\HyPsd@DoEscape . . . . .	2131
\HyPsd@@@UTFviii@four	2278, 2281	\HyPsd@babel@frenchb . . .	1014	\HyPsd@doxspace . . .	745, 2078
\HyPsd@@@AppendItalcorr .	1845	\HyPsd@babel@german . . .	1019	\HyPsd@empty . .	730, 732, 736, 737, 739, 747, 754
\HyPsd@@@autoref . .	1673, 1674	\HyPsd@babel@macedonian	1026	\HyPsd@end . . . . .	705, 709, 1768, 1771, 1774, 1777, 1780, 1793, 1803, 1810, 1813, 1851, 1859, 1865, 1871, 1916, 1923, 1929, 1932, 1944
\HyPsd@@@autorefname . .	1694, 1697	\HyPsd@babel@ngerman . .	1032	\HyPsd@endWithElse	1573, 1582
\HyPsd@@@CJKdigits	1538, 1540, 1543	\HyPsd@babel@portuges . .	1038		
		\HyPsd@babel@russian . . .	1043		
		\HyPsd@babel@slovene . . .	1049		
		\HyPsd@babel@spanish . . .	1054		
		\HyPsd@babel@swedish . . .	1064		
		\HyPsd@babel@ukrainian .	1070		
		\HyPsd@babel@usorbian . .	1076		
		\HyPsd@BabelPatch . .	628, 952, 987		

\HyPsd@EscapeTeX . . . 784, 794, 2060	\HyPsd@nameref . . . . 651, 1655	760, 2041, 2058, 2073, 2074, 2075
\HyPsd@ffi 1785, 1791, 1795, 1801	\HyPsd@pageref . . . . 650, 1637	
\HyPsd@GetNextTwoTokens 2155	\HyPsd@pdfencoding . . . . .	\HyPsd@temp . . . . . 777,
\HyPsd@GetOneByte . . . . 2150	. . . . 774, 2714, 2717, 2749,	779, 780, 782, 783, 790, 792,
\HyPsd@GetTwoBytes . . . . 2146	2761, 2764, 2765, 2770,	793, 2747, 2748, 2749, 2752,
\HyPsd@GLYPHERR 710, 1570,	2785, 6443, 6445, 6462, 6465	2755, 2761, 2773, 2777,
1584, 1591	\HyPsd@pdfencoding@auto 774,	6460, 6461, 6462, 6464,
\HyPsd@GlyphProcess 712, 2003,	2755, 2765, 2782, 6445, 6464	6465, 6470
2016	\HyPsd@pdfencoding@pdfdoc . .	\HyPsd@ToBigChar 834, 835, 844
\HyPsd@GlyphProcessWarning .	. . . . 2748, 2770, 2783	\HyPsd@ToBigChars . . 787, 826
. . . . . 2010, 2014	\HyPsd@pdfencoding@unicode . .	\HyPsd@tocsection . . . . .
\HyPsd@GobbleFiFi 1575, 1581	. . 2752, 2784, 6443, 6461	. . 1607, 1608, 1609, 1610,
\HyPsd@GreekNum . 1090, 1093,	\HyPsd@PrerenderUnicode . . . .	1611, 1612, 1613, 1615
1095	. . 3704, 3720, 3726, 3732,	\HyPsd@UnescapedString . 779,
\HyPsd@Greeknumeral . . 1086,	3738, 3756, 3762, 3842	828, 829, 835
1092	\HyPsd@protected@testopt 677,	\HyPsd@UnexpandableSpace . . .
\HyPsd@greeknumeral 1085, 1089	678, 1748	. . 1590, 1776, 1800, 1935,
\HyPsd@GreekNumI 1113, 1139,	\HyPsd@ProtectSpaces 698, 1765,	1947
1182, 1208	1786, 1835	\HyPsd@unichar . . . 2220, 2287,
\HyPsd@GreekNumII 1117, 1161,	\HyPsd@ref . . . . . 649, 1621	2293, 2298
1205, 1212	\HyPsd@RemoveBraces . . . 700,	\HyPsd@unichar@first@byte 2306,
\HyPsd@GreekNumIII . . . 1120,	1807, 1824, 1832, 1838	2326
1184, 1216	\HyPsd@RemoveCmdPrefix 1965,	\HyPsd@unichar@octtwo . 2328,
\HyPsd@GreekNumIV 1129, 1207	1971	2336, 2342
\HyPsd@GreekNumV 1132, 1211	\HyPsd@RemoveMask 708, 1774,	\HyPsd@unichar@second@byte . .
\HyPsd@GreekNumVI 1134, 1215	1780, 1793, 1803	. . . . . 2314, 2334
\HyPsd@GreekPatch . 625, 1082,	\HyPsd@RemoveSpaceWarning .	\HyPsd@UnicodeReplace-
1084	. . . . 1939, 1951, 1977	mentCharacter . . . . 2290,
\HyPsd@HighA . . . . 1331, 1340	\HyPsd@ReplaceSpaceWarning .	2325
\HyPsd@HighB . . . . 1341, 1346	. . . . 1934, 1946, 1990	\HyPsd@utf@viii@undeferr . 539,
\HyPsd@HighC . . . . 1347, 1350	\HyPsd@Rest . . . . .	2348
\HyPsd@HighD . . . . 1343, 1355	. . 1852, 1912, 1920, 1923,	\HyPsd@UTFviii 533, 2208, 2213
\HyPsd@href . . . . . 647, 1620	1930, 1935, 1941, 1947, 1953	\HyPsd@UTFviii@cthree . 2243,
\HyPsd@hspace . . . . . 643, 1594	\HyPsd@RussianPatch 627, 1225	2252
\HyPsd@hspacetest . 1597, 1599,	\HyPsd@SanitizeForOutFile . . .	\HyPsd@UTFviii@ctwo . . 2228,
1602	. . . . . 14026, 14057	2234
\HyPsd@ifnextchar 674, 675, 676,	\HyPsd@SanitizeOut@BraceLeft	\HyPsd@UTFviii@ccxliv@def . . .
1744	. . 14061, 14067, 14076	. . . . . 2218, 2224
\HyPsd@ignorespaces . 656, 943	\HyPsd@SanitizeOut@BraceRight	\HyPsd@UTFviii@ccxliv@undef .
\HyPsd@InitUnicode . . . . . 908	. . 14064, 14079, 14088	. . . . . 2217, 2223
\HyPsd@inmathwarn . 542, 1567	\HyPsd@SPACEOPTI . 702, 717,	\HyPsd@UTFviii@four 2216, 2261
\HyPsd@ITALCORR . . 666, 670,	718, 720, 722, 724, 725, 764,	\HyPsd@UTFviii@three . . 2215,
1591	766, 1887, 2089	2242
\HyPsd@langshort@system 958,	\HyPsd@spaceopti . . . 766, 2034	\HyPsd@UTFviii@two 2214, 2227
961	\HyPsd@SpanishPatch 626, 1219	\HyPsd@Warning . . 1752, 1957,
\HyPsd@LanguageShorthands . .	\HyPsd@String . . . . .	1978, 1991, 2020, 2026
. . . . . 954, 959, 971	. . 699, 701, 704, 706, 711,	\HyPsd@XeTeXBigCharsfalse . .
\HyPsd@LetCommand 692, 693,	713, 1818, 1819, 1829, 1881,	. . . . . 801, 815, 820
1707	1882, 1886, 1887, 1902,	\HyPsd@XeTeXBigCharstrue 814,
\HyPsd@LetUnexpandableSpace	1903, 1933, 1945, 2004, 2005	823, 3719, 3725, 3731, 3737,
. 661, 662, 663, 664, 1587,	\HyPsd@StringSubst . . 714, 716,	3755, 3761, 3841, 13666,
1590	722, 728, 731, 734, 737, 756,	14024
\HyPsd@LoadStringEnc . . 2766,	759, 761, 2057	\HyPsd@XSPACE 668, 744, 1591
2786, 2788, 2792, 2794, 6447	\HyPsd@Subst . . . . . 710, 719,	\HyPsd@xspace . . 742, 744, 745
\HyPsd@LoadUnicode 2715, 2720,	723, 729, 735, 739, 743, 748,	\HyRef@@StarSetRef 8438, 8443
2728, 2731, 2733, 2740, 6441	749, 750, 751, 752, 753, 757,	\HyRef@autopageref 8495, 8497

<code>\HyRef@autopagerefname</code>	8494, 8498, 8500	<code>\if@skiphyperref</code>	6599, 6609	<code>\ifHy@activeanchor</code>	383, 5046
<code>\HyRef@autoref</code>	8513, 8515	<code>\if@twocolumn</code>	14461	<code>\ifHy@backref</code>	384, 4217, 4589, 5938, 7662, 7698
<code>\HyRef@autosetref</code>	8518, 8521	<code>\if@twoside</code>	14450	<code>\ifHy@bookmarks</code>	385, 4437
<code>\HyRef@CaseStar</code>	8582, 8588	<code>\ifcase</code>	332, 1146, 1168, 1191, 1285, 1334, 1356, 1359, 1365, 1401, 1445, 1561, 2256, 2752, 3435, 4386, 5244, 5349, 5478, 5555, 6663, 6672, 7905, 8063, 8100, 8330, 8523, 10798, 11288, 13772, 13799, 13866, 13901, 13936, 14134	<code>\ifHy@bookmarksnumbered</code>	386, 8218, 8269, 14013
<code>\HyRef@currentHtag</code>	8534, 8552, 8555, 8561, 8568, 8574, 8589	<code>\ifcat</code>	1853, 1880, 1885, 1890, 1893, 1896, 1899, 5033, 5035	<code>\ifHy@bookmarksopen</code>	387, 4427
<code>\HyRef@MakeUppercaseFirstOf-Five</code>	8461, 8463	<code>\ifdim</code>	1602, 1933, 1937, 1945, 1949, 2453, 2472, 4043, 4412, 9305, 9309, 9314, 9318, 9325, 9328, 9332, 9335, 10267, 10268, 10273, 10274, 10406, 10409, 10413, 10416, 11317, 11331, 11690, 11691, 11696, 11697, 12505, 12543, 12544, 12987, 13026, 13027, 13328, 13367, 13368	<code>\ifHy@breaklinks</code>	388, 2680, 10964, 11005, 11299, 11322
<code>\HyRef@name</code>	8550, 8551, 8556, 8563, 8581, 8582, 8583, 8585	<code>\ifetex@unexpanded</code>	1759	<code>\ifHy@CJKbookmarks</code>	390, 1237
<code>\HyRef@Ref</code>	8467, 8469	<code>\iffalse</code>	821, 5567	<code>\ifHy@colorlinks</code>	391, 4508, 5943, 11852
<code>\HyRef@ShowKeysInit</code>	8591, 8604, 8608	<code>\ifFileExists</code>	232, 6114, 12264	<code>\ifHy@draft</code>	392, 4098
<code>\HyRef@ShowKeysRef</code>	8522, 8590	<code>\ifFld@checked</code>	5501, 12824, 13759	<code>\ifHy@DviMode</code>	2824, 2844, 3002
<code>\HyRef@StarSetRef</code>	8432, 8450, 8453, 8456, 8461	<code>\ifFld@comb</code>	5348	<code>\ifHy@DvipdfmxOutlineOpen</code>	4410, 14269
<code>\HyRef@StripStar</code>	8549, 8580	<code>\ifFld@combo</code>	5376, 5381, 12518, 12547, 13000, 13030, 13341, 13371	<code>\ifHy@frenchlinks</code>	398, 4524
<code>\HyRef@testrestype</code>	8527, 8546	<code>\ifFld@disabled</code>	5502, 12825	<code>\ifHy@href@ismap</code>	4764, 8959, 10079, 10473, 10543, 11551
<code>\HyRef@thisref</code>	8524, 8527	<code>\ifFld@edit</code>	5382	<code>\ifHy@hyperfigures</code>	396, 4197, 5923, 8027
<code>\HyTmp@found</code>	5448, 5458, 5461	<code>\ifFld@fileselect</code>	5351	<code>\ifHy@hyperfootnotes</code>	399, 7140
<code>\HyTmp@key</code>	5442, 5443	<code>\ifFld@hidden</code>	12481, 12532, 12601, 12621, 12644, 12662, 12723, 12735, 12745, 12828, 12963, 13015, 13096, 13117, 13145, 13165, 13296, 13356, 13455, 13480, 13509, 13534	<code>\ifHy@hyperindex</code>	400, 4207, 5933, 8034
<code>\HyTmp@optitem</code>	5398, 5414, 5441, 5446, 5452, 5473, 5484	<code>\ifFld@multiline</code>	5349, 12470, 12730, 12951, 13284	<code>\ifHy@hypertexnames</code>	401, 6686, 6768, 7809, 8223, 8274
<code>\HyTmp@optlist</code>	5397, 5412, 5413, 5444, 5445, 5450, 5451, 5459, 5460, 5480, 5482, 5489, 5492	<code>\ifFld@multiselect</code>	5420	<code>\ifHy@implicit</code>	402, 4229, 14324
<code>\HyXeTeX@CheckUnicode</code>	3690, 3701, 3718, 3724, 3730, 3736, 3754, 3760, 3840, 6475	<code>\ifFld@password</code>	5350, 12711	<code>\ifHy@linktocpage</code>	403, 2637, 2647
		<code>\ifFld@popdown</code>	5168, 12519, 13001, 13342	<code>\ifHy@localanchorname</code>	404, 6719, 6730
		<code>\ifFld@radio</code>	12515, 12537, 12760, 12997, 13020, 13338, 13361	<code>\ifHy@naturalnames</code>	406, 6698, 8224, 8275
		<code>\ifFld@readonly</code>	12732, 12742, 12826	<code>\ifHy@nesting</code>	407, 4202, 4807, 4840, 4877, 5031, 5928, 7165, 7185, 7263, 7420
		<code>\ifForm@html</code>	5522	<code>\ifHy@next</code>	995, 4171, 8051
		<code>\ifhmode</code>	2414, 2418, 2471, 2480, 4708, 7023, 7047, 7080, 7208, 7217, 7367, 7369, 8848, 8856, 11323, 12249	<code>\ifHy@ocgcolorlinks</code>	410, 3385, 4494, 4504, 5948, 8714, 8732, 8809, 8817, 9827, 9910, 9918
				<code>\ifHy@pageanchor</code>	411, 6755, 6767, 6782, 7808
				<code>\ifHy@pdfa</code>	429, 4122, 4496, 4933, 5181, 5791, 5840, 5953, 8882, 8954, 8992, 9029, 9362, 9973, 10005, 10039, 10070, 10098, 10479, 10500, 10523, 10549, 10583, 10617, 10635, 11426, 12439, 12591, 12637, 12915, 13086, 13138, 13254, 13444, 13502, 13716, 13762, 13926
				<code>\ifHy@pdfcenterwindow</code>	389, 9138, 9710, 10171, 10836, 11184, 12037

## I

<code>\i</code>	14643, 14806, 14809, 14812, 14815, 15012, 15174, 15177, 15180, 15183, 15300, 15305, 15310, 15315, 15319, 15486, 15542
<code>\if</code>	1616, 2398, 6286, 6294, 6998, 6999, 10725, 10728, 10732, 10736, 10740, 10742, 10744, 13714
<code>\if@eqnstar</code>	6940, 6948
<code>\if@filesw</code>	2366, 4871, 6075, 6119, 6506, 6516, 6764, 7538, 7553, 7569, 7581, 7611, 7634, 7661, 7666, 7685, 8086, 12862, 12886, 14027, 14214, 14296
<code>\if@hyper@item</code>	6598, 6611
<code>\if@inlabel</code>	7114
<code>\if@Localurl</code>	10287, 10333
<code>\if@mid@expandable</code>	641
<code>\if@minipage</code>	7409, 7480
<code>\if@nmbrlist</code>	6583
<code>\if@nobreak</code>	7133

<code>\ifHy@pdfdisplaydoctitle</code> . .	428, 9139, 9711, 10172, 10837, 11185, 12038	
<code>\ifHy@pdfescapeform</code> 395,	13610, 13640	
<code>\ifHy@pdffitwindow</code> . .	397, 9137, 9709, 10170, 10835, 11183, 12036	
<code>\ifHy@pdfmarkerror</code> 11231,	11239	
<code>\ifHy@pdfmenubar</code> . . .	405, 9135, 9707, 10168, 10833, 11181, 12034	
<code>\ifHy@pdfnewwindow</code> 409,	3992, 10520	
<code>\ifHy@pdfnewwindowset</code> . .	408, 3990	
<code>\ifHy@pdfpagehidden</code> .	413, 3529, 9265, 10252, 10774, 11060	
<code>\ifHy@pdfpagelabels</code> .	412, 6213, 6426, 6504	
<code>\ifHy@pdfstring</code> . .	414, 919, 6603	
<code>\ifHy@pdftoolbar</code> 421,	9134, 9706, 10167, 10832, 11180, 12033	
<code>\ifHy@pdfusetitle</code> . . .	423, 6129	
<code>\ifHy@pdfwindowui</code> . .	427, 9136, 9708, 10169, 10834, 11182, 12035	
<code>\ifHy@plainpages</code> 415,	4212, 6769, 7810	
<code>\ifHy@psize</code> . . . . .	416	
<code>\ifHy@raiselinks</code> 417,	9446, 9526, 9563, 9603, 11922, 12197	
<code>\ifHy@seminarslides</code> . . . . .	418	
<code>\ifHy@setpagesize</code> . . .	419, 9293, 10264, 10403, 11687	
<code>\ifHy@setpdfversion</code> .	2803, 8719	
<code>\ifHy@stoppedearly</code> . . . . .	381	
<code>\ifHy@texht</code> . . . . .	420, 4284, 4536, 4584, 5592, 5624, 5811, 5835, 5991, 8378	
<code>\ifHy@typexml</code> 382,	4222, 4511, 4555, 6076, 14218, 14300	
<code>\ifHy@unicode</code> . . . . .	422, 529, 562, 565, 715, 727, 755, 763, 772, 1096, 1256, 1959, 1980, 1993, 2022, 2028, 2288, 2713, 2763, 3692, 6450, 13662	
<code>\ifHy@useHidKey</code> . . .	3525, 9262, 10250, 10773, 11055	
<code>\ifHy@verbose</code> .	424, 4671, 4687, 4699, 5124, 7880	
<code>\ifHyField@NeedAppearances</code> . .	5565, 5567, 5570, 12441, 12917, 13256	
<code>\ifHyInfo@AddonUnsupported</code> . .	3818, 3832, 3867	
<code>\IfHyperBoolean</code> . . . . .	2502	
<code>\IfHyperBooleanExists</code> 2496,	2503	
<code>\ifHyPsd@XeTeXBigChars</code> .	819, 821, 824, 827	
<code>\ifmeasuring@</code> . . . . .	6623, 6636	
<code>\ifmmode</code> . . . . .	10967, 11294	
<code>\ifnum</code> . . . . .	244, 851, 854, 857, 860, 863, 972, 1097, 1100, 1111, 1112, 1116, 1124, 1128, 1131, 1141, 1163, 1186, 1326, 1437, 1453, 1457, 1477, 1490, 1493, 1506, 1508, 1521, 1523, 1529, 2167, 2170, 2246, 2289, 2292, 2304, 2419, 2929, 2932, 2958, 3436, 3437, 4421, 4428, 4741, 5403, 5474, 5485, 6243, 6267, 6288, 6304, 6406, 7758, 7768, 8332, 8370, 8715, 8720, 9054, 9061, 9067, 9075, 9939, 9944, 10520, 10649, 10785, 10793, 10795, 10796, 10806, 10809, 10895, 10897, 11017, 11714, 12899, 13063, 13397, 13402, 13413, 13661, 13742, 13772, 13777, 13799, 13805, 13833, 13866, 13872, 13891, 13901, 13906, 13936, 13941, 13970, 13986, 14130, 14200, 14203, 14230, 14233, 14271, 14380, 14398, 14413	
<code>\ifodd</code> . . . . .	2270, 2275, 7835	
<code>\ifpdf</code> 242,	2826, 2869, 4263, 4330	
<code>\ifpdfstringunicode</code> . . .	534, 537	
<code>\ifportrait</code> . . . . .	9304	
<code>\ifthenelse</code> . . . . .	7688	
<code>\iftrue</code> . . .	824, 1766, 1788, 2052, 5570, 14382	
<code>\ifvmode</code> . . . . .	2430, 2452, 2461	
<code>\ifvoid</code> . . . . .	6890, 6894, 7118	
<code>\ifvtex</code> . . . . .	2832, 2928, 2957	
<code>\ifvtexdvi</code> . . . . .	2833	
<code>\ifvtexhtml</code> . . . . .	4305, 4336	
<code>\ifvtexpdf</code> . . . . .	4347	
<code>\ifvtexps</code> . . . . .	4350	
<code>\ifxetex</code> . . .	778, 811, 2829, 2902, 3691, 4289, 4333, 4411	
<code>\ignorespaces</code> . .	656, 6850, 7018, 7299, 7405, 7416, 7419, 7476, 7484, 7546, 7561, 7577, 7586, 7696, 8203, 8255	
<code>\IJ</code> . . . . .	14639, 15321	
<code>\ij</code> . . . . .	14848, 15323	
<code>\immediate</code> . .	6077, 6078, 6079, 6081, 6121, 6419, 6509, 6517, 6779, 6807, 7541, 7556, 7572, 7582, 7612, 7635, 7661, 7691, 8734, 8749, 8764, 10900, 11711, 12841, 12863, 12905, 14120, 14186, 14217, 14219, 14299, 14301	
<code>\incr@eqnum</code> . . . . .	6909, 6922	
<code>\indent</code> . . . . .	7028, 7054	
<code>\index</code> . . . . .	645	
<code>\indexentry</code> . .	8089, 8104, 8112, 8116, 8121	
<code>\input</code> . . . . .	902, 910, 2722, 3348, 3356, 3363, 4385, 11629, 11712, 11803, 11972	
<code>\InputIfFileExists</code> .	4060, 14210, 14244, 14289, 14291	
<code>\inputlineno</code> . . . . .	4678, 5038	
<code>\insert</code> . . . . .	7278	
<code>\IntCalcAdd</code> . . . . .	2196	
<code>\IntCalcDec</code> . . . . .	1348	
<code>\IntCalcDiv</code> . .	1342, 1351, 1356, 1459, 1468, 1480, 1497, 1512, 1527, 2180, 2186, 2192	
<code>\intcalcDiv</code> 1332,	2187, 2194, 2197	
<code>\IntCalcMod</code> .	1344, 1353, 1359, 1463, 1469, 1484, 1500, 1515, 1529, 1531, 2182, 2187, 2188, 2194, 2197, 2199	
<code>\intcalcMod</code> . . . . .	1334	
<code>\intcalcSub</code> . . . . .	2174	
<code>\interfootnotelinepenalty</code> . .	7281	
<code>\interlinepenalty</code> . . . . .	7281	
<code>\item</code> . . .	6578, 6581, 7568, 7580, 7683	
<code>\Itemautorefname</code> . . . . .	8614	
<code>\itemautorefname</code> . .	3079, 3097, 3115, 3133, 3151, 3169, 3187, 3216, 3217, 3245, 3263, 8614, 8615, 8618	
<code>\itemindent</code> . . . . .	7119	
<code>\itshape</code> . . . . .	595	
<b>J</b>		
<code>\j</code> . . . . .	15328, 15513, 15577	
<code>\jarr</code> . . . . .	16934	
<code>\jeem</code> . . . . .	16906	
<code>\jeh</code> . . . . .	16942	
<code>\jobname</code> . . . .	6078, 6114, 6121, 12264, 14119, 14210, 14217, 14244, 14289, 14291, 14299	
<b>K</b>		
<code>\k</code> . .	14523, 14865, 14867, 14872, 14874, 14917, 14935, 14954, 14961, 15225, 15227, 15265, 15267, 15312, 15314, 15315,	



15450, 15452, 15509, 15511,  
16108, 16147, 16150  
\kaf ..... 16924  
\kasra ..... 16937  
\keepPDF@SetupDoc ... 11856,  
11863  
\kern ... 1862, 1934, 1939, 1951,  
7119, 7830, 7831, 7832,  
7834, 7835, 7840, 14339  
\kernel@ifnextchar ..... 675  
\kha ..... 16908  
\KV@href@pdfnewwindow . 4762  
\KV@href@pdfnewwindow@de-  
fault ..... 4763  
\KV@Hyp@draft ..... 2611  
\KV@Hyp@nolinks ..... 2611  
\KV@Hyp@pdfnewwindow . 4762  
\KV@Hyp@pdfnewwindow@de-  
fault ..... 4763  
\kv@key 3826, 3829, 3836, 5401,  
5404, 5406, 5410, 5414  
\kv@parse ..... 5400  
\kv@parse@normalized 3851, 3858  
\kv@processor@default 3854, 3861  
\kv@set@family@handler .. 3819  
\kv@value 3824, 5402, 5409, 5410  
\kvsetkeys 2802, 2856, 2976, 3698,  
3799, 4123, 4360, 4378,  
4495, 5499, 8716, 11238,  
12458, 12696, 12709, 12758,  
12801, 12822, 12896, 13239

## L

\L ..... 14632, 15352  
\l ..... 14645, 15354  
\l@slide . 8203, 8313, 8318, 8322,  
8329  
\l@subslide 8255, 8318, 8325, 8369  
\label ..... 644, 7853  
\label@hyperref ... 4847, 4849  
\label@hyperdef .... 4833, 4863  
\label@hyperref 4814, 4846, 5060  
\labelsep ..... 7695  
\labelwidth ..... 7694  
\lam ..... 16925  
\language@group ..... 623  
\languageshorthands .. 953, 954,  
988  
\LARGE ..... 602  
\Large ..... 603  
\large 606, 8335, 8343, 8353, 8361  
\lastbox ..... 7117  
\lastpage@putlabel ..... 6750  
\lastskip 2453, 2457, 2464, 2472,  
2476, 2483  
\LaTeX . 559, 561, 12270, 12271  
\LaTeXe ..... 560, 12271

\LayoutCheckField 5879, 12663,  
13166, 13539  
\LayoutChoiceField 5876, 12536,  
13019, 13360  
\LayoutPushButtonField . 5882,  
12595, 12602, 13090, 13097,  
13448, 13457  
\LayoutTextField . 5873, 12483,  
12965, 13302  
\lccode ..... 350, 355,  
850, 1266, 2061, 2062, 2063,  
2064, 2065, 2066, 2067,  
2068, 2069, 2070, 2211,  
5751, 8048, 8049, 14044,  
14045, 14046, 14047, 14048,  
14049, 14050, 14051, 14052,  
14053, 14054  
\ldots ..... 554  
\leavevmode .....  
653, 2408, 4108, 4125, 4165,  
4938, 6047, 7207, 7366,  
7602, 8473, 8481, 8512,  
8868, 8939, 8977, 9014,  
9347, 9445, 9525, 9562,  
9602, 9953, 9994, 10031,  
10063, 10298, 10307, 10361,  
10515, 10540, 10570, 10603,  
10966, 11292, 11540, 11567,  
11598, 11921, 12196, 12484,  
12596, 12603, 12636, 12664,  
12966, 13051, 13072, 13091,  
13098, 13118, 13137, 13167,  
13303, 13395, 13426, 13449,  
13458, 13482, 13501, 13540,  
14337  
\LetLtxMacro 5994, 5998, 6064,  
6068  
\limits ..... 4654  
\listofslides ..... 8304  
\listslidenam 8303, 8306, 8308,  
8310  
\literalps@out 2406, 10889, 10894,  
10946, 10952, 10978, 10984,  
11249, 11260, 11289, 11290,  
11318, 11320, 11332, 11334,  
11627, 11710, 11773, 11970  
\lower .. 9452, 9532, 9569, 9609,  
11320, 11928, 12203  
\lowercase ..... 351, 356,  
870, 1267, 2071, 2212, 2513,  
3023, 3053, 3766, 3802,  
5073, 5074, 5077, 5082,  
5106, 5116, 5170, 5226,  
5546, 5619, 5622, 5752,  
8050, 11016, 14055  
\slide@flag .. 8330, 8333, 8351,  
8370, 8374

\LT@array ..... 6875  
\LT@foot ..... 6890, 6894  
\LT@p@ftn 7239, 7242, 7246, 7256  
\LT@p@ftntext .... 7237, 7244  
\LT@start ..... 6892, 6902  
\ltx@backslashchar 318, 319, 320,  
321, 322, 323, 324, 325, 326,  
327, 328, 330  
\ltx@empty ..... 370, 371,  
470, 2825, 3000, 3008, 3377,  
3522, 3889, 3913, 3920,  
4019, 4020, 4023, 4024,  
4025, 4026, 4027, 4028,  
4032, 4033, 4353, 4363,  
4455, 5055, 5271, 5289,  
5303, 5316, 5332, 5364,  
5389, 5396, 5397, 5738,  
5776, 5777, 5778, 5779,  
5780, 5781, 5782, 5783,  
5784, 5785, 5786, 6192,  
6193, 6194, 6197, 6211,  
6228, 6233, 6239, 6248,  
6268, 9385, 10288, 10375,  
10970, 11276, 11297, 11626,  
11709, 11967, 12131, 12138,  
12460, 12466, 12675, 12706,  
12753, 12847, 12944, 12947,  
13264, 13280  
\ltx@firstofone 2845, 6109, 14072,  
14084  
\ltx@firstoftwo ..... 245, 337,  
345, 2498, 2505, 4570, 4994,  
7166, 7186  
\ltx@GlobalAppendToMacro 937  
\ltx@gobble .....  
272, 2851, 4086, 4093, 4443,  
6007, 6008, 6019, 6021,  
6022, 6387, 12245, 12859,  
14070, 14082  
\ltx@gobblefour ..... 314  
\ltx@gobblethree ..... 7790  
\ltx@gobbletwo .... 6010, 6024  
\ltx@ifclassloaded .. 6240, 7751  
\ltx@ifpackagelater ..... 348  
\ltx@ifpackageloaded ..... 1233  
\ltx@ifUndefined .....  
.. 239, 278, 284, 313, 622,  
665, 740, 775, 893, 894, 895,  
996, 1002, 1008, 1013, 1018,  
1025, 1031, 1037, 1042,  
1048, 1053, 1063, 1069,  
1075, 1081, 1220, 1226,  
1603, 1698, 1699, 2360,  
2393, 4081, 4083, 4168,  
4169, 4170, 4569, 4570,  
4766, 6169, 6562, 6651,  
6655, 6970, 7504, 7769,

8501, 8502, 8547, 8548,  
8550, 8551, 8916, 8926,  
9324, 10405, 10462, 10565,  
10942, 10985, 11076, 11253,  
14371, 14381  
\ltx@ifundefined ... 2497, 2498,  
2541, 7126, 7785  
\ltx@leftbracechar .... 328, 352  
\ltx@LocalAppendToMacro 365,  
368  
\ltx@one .....  
244, 6242, 6243, 6250, 7754,  
7758, 7764, 7767, 7768, 7781  
\ltx@ReturnAfterElseFi ... 4636  
\ltx@ReturnAfterFi .....  
494, 2009, 4640, 4656, 8143,  
8179, 8667, 8677, 13633  
\ltx@rightbracechar ... 329, 357  
\ltx@secondoftwo . 240, 247, 251,  
334, 2497, 2498, 2507, 2509,  
4569, 4570, 4572, 4992,  
7168, 7188  
\ltx@space ..... 331, 1754  
\ltx@zero 2065, 2066, 2067, 2068,  
2069, 2070  
\luatexrevision ..... 9098  
\luatexversion ..... 9090, 9095

## M

\m@ne .. 4186, 4690, 4749, 5088,  
6795, 6990, 9948, 14291,  
14380, 14395  
\make@df@tag@@ ... 7963, 7965  
\make@df@tag@@@ ... 7964, 7966  
\make@stripped@name .. 6628,  
6931, 6953, 6977, 6988  
\makeatletter .... 3, 933, 6113  
\MakeButtonField . 5889, 12597,  
12605, 12623, 12641, 12646,  
13092, 13101, 13125, 13142,  
13148, 13450, 13453, 13481,  
13506, 13510  
\MakeCheckField . 5886, 12666,  
13170, 13536  
\MakeChoiceField . 5888, 12581,  
13075, 13424  
\MakeFieldObject 12840, 12927,  
12937, 12940  
\MakeLowercase ..... 619  
\MakeLowercaseUnsupportedIn-  
PdfStrings ..... 619  
\MakeRadioField .. 5885, 12569,  
13062, 13388  
\makeslideheading ..... 8213  
\makeslidesubheading .... 8265  
\maketag@@@ ..... 7952  
\MakeTextField ... 5887, 12486,  
12969, 13299

\maketitle ..... 7316, 7317  
\MakeUppercase 618, 8308, 8310,  
8464  
\MakeUppercaseUnsupportedIn-  
PdfStrings ..... 618  
\MathBSuppress .. 10308, 10312  
\mathdisplay ..... 6912, 6921  
\mathdisplay@push . 6910, 6919  
\mathversion ..... 611  
\maxdimen ..... 3457, 12845  
\MaybeStopEarly 471, 2859, 2934,  
4233, 4338, 6537, 6540  
\mbox 654, 7615, 7638, 8819, 9920  
\mddefault ... 7030, 7056, 7087  
\mdseries ..... 594  
\meaning ..... 62, 153,  
159, 2369, 6153, 6711, 6995,  
14255, 14263, 14278  
\measuring@false ..... 6623  
\mediaheight .... 10399, 10401,  
10407, 10414  
\mediawidth ..... 10410, 10417  
\meem ..... 16926  
\message ..... 8331  
\MessageBreak 280, 286, 300, 301,  
340, 341, 502, 1965, 1986,  
1999, 2022, 2027, 2029,  
2535, 2536, 2550, 2572,  
2575, 2577, 2655, 2656,  
2682, 2683, 2735, 2736,  
2737, 2775, 2776, 2796,  
2807, 2848, 2873, 2906,  
2944, 2951, 2962, 2968,  
3045, 3387, 3518, 3519,  
3581, 3582, 3600, 3601,  
3695, 3779, 3834, 3835,  
3945, 3946, 4048, 4267,  
4268, 4276, 4277, 4293,  
4294, 4309, 4310, 4318,  
4319, 4498, 4743, 4744,  
4768, 4769, 4785, 4786,  
5127, 5132, 5141, 5184,  
5230, 5354, 5467, 5539,  
5550, 5582, 5583, 5602,  
5710, 5711, 5712, 5713,  
6218, 6453, 6468, 6469,  
6758, 7857, 7887, 7888,  
7889, 7890, 7891, 8022,  
8872, 9958, 10491, 10574,  
11085, 12853, 12855, 13991,  
14009, 14122  
\MF ..... 569, 12273  
\MP ..... 570, 12274  
\multiply ... 9094, 10754, 10789

## N

\n ..... 861  
\name@of@eq ..... 6596, 6626

\name@of@slide .... 6597, 6607  
\nameref ..... 651, 4574, 4578  
\nasb ..... 16932  
\netscape ..... 9488  
\new@ifnextchar ..... 676  
\new@pdflink .. 8847, 8904, 8907  
\new@refstepcounter 6904, 6936  
\newblock ..... 7699  
\newcommand ..... 4, 9,  
42, 2407, 6051, 6055, 7990,  
14092, 14095, 14100  
\newcount ..... 472,  
473, 2412, 4734, 5505, 6229,  
12577, 13069, 13270, 13420,  
14127  
\newcounter . 6579, 7141, 9826,  
14042  
\newdimen .... 469, 5506, 5507  
\newif ..... 381, 382, 383, 384,  
385, 386, 387, 388, 389, 390,  
391, 392, 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,  
423, 424, 427, 428, 429, 819,  
995, 2803, 2824, 3525, 3818,  
4410, 4764, 5080, 5168,  
5501, 5502, 5522, 5565,  
6598, 6599, 6623, 6940,  
10287, 11231  
\newlabel 2372, 4873, 6091, 6092,  
6100, 6126, 6780, 6808  
\newlabelxx ..... 6093, 6094  
\newlength ..... 14330  
\newline ..... 557, 6174  
\newname 6629, 6932, 6954, 6978,  
6991, 7000  
\newsavebox ..... 9756, 11268  
\newtie ... 14525, 14526, 14909,  
14939, 14958, 14974  
\newtoks 90, 5593, 11103, 11343,  
11344  
\newwrite .. 6120, 14215, 14297  
\next .. 7689, 7690, 7691, 10717,  
10719, 10721  
\nfss@text 8385, 8405, 8422, 8540  
\NG ..... 15370  
\ng ..... 15372  
\noboundary ..... 16947  
\nobreak 2454, 2462, 2473, 2481,  
7208, 7367  
\nobreakspace . 664, 8476, 8505,  
8508  
\noexpand . 22, 93, 95, 108, 116,  
169, 171, 172, 173, 176, 206,  
839, 941, 1280, 1713, 1730,

1853,	2225,	2460,	2461,	2315,	2316,	2317,	2327,	\on@line	7884, 7885
2462,	2465,	2479,	2480,	2329,	2330,	2335,	2337,	\openout	6078, 6121, 14217,
2481,	2484,	3306,	3308,	2338,	2343,	2344,	3904,	14299	
3310,	3311,	3312,	3314,	4412,	4429,	5094,	6688,	\OpMode	2929, 2932, 2945, 2958,
3330,	3536,	3537,	3539,	6689,	6692,	6696,	8726,	2963,	10806, 10897, 11714
3884,	4188,	4192,	4193,	8729,	9516,	9534,	9535,	\or	335, 1148, 1149, 1150, 1151,
4360,	4648,	4821,	4903,	9550,	9551,	9571,	9572,	1152,	1153, 1154, 1155,
5033,	5035,	5136,	5683,	9588,	9589,	9611,	9612,	1156,	1170, 1171, 1172,
5696,	6342,	6343,	6352,	9628, 9629				1173,	1174, 1175, 1176,
6354,	6357,	6482,	6792,	\numberline	7405, 7476, 14014,			1177,	1178, 1193, 1194,
6793,	6795,	6820,	6821,	14019				1195,	1196, 1197, 1198,
6822,	6823,	6824,	6832,	\numberwithin	7987			1199,	1200, 1201, 1286,
6833,	6834,	6994,	7230,	\numexpr	2236, 2237, 2238, 2240,			1287,	1288, 1289, 1290,
7240,	7248,	7249,	7250,	2246,	2254, 2255, 2256,			1291,	1292, 1293, 1294,
7252,	7376,	7465,	7540,	2257,	2258, 2259, 2263,			1295,	1296, 1297, 1298,
7555,	7571,	7756,	7982,	2265,	2269, 2271, 2273,			1299,	1300, 1301, 1302,
7984,	8438,	8439,	8556,	2275,	2279, 2282, 2283,			1303,	1304, 1305, 1306,
8557,	8562,	8564,	8569,	2285,	2294, 2299, 2316,			1307,	1308, 1309, 1310,
8570,	8575,	8576,	9097,	2330, 2338, 2344, 3908				1311,	1312, 1313, 1314,
9694,	11168,	11235,	11770,	\nun	16927			1315,	1316, 1317, 1335,
12021,	12511,	12512,	12513,					1357,	1360, 1366, 1367,
12514,	12993,	12994,	12995,	O				1368,	1369, 1370, 1371,
12996,	13334,	13335,	13336,	\O	14765, 15133, 15528			1372,	1373, 1374, 1375,
13337,	13612			\o	14833, 15201, 15530			1376,	1377, 1378, 1379,
\nofrenchguillemets	683, 685			\obeylines	11769			1380,	1381, 1382, 1383,
\NoHy@OrgPageRef	5998, 6000,			\OBJ@acroform	12923, 12924			1384,	1385, 1386, 1387,
6068,	6070			\OBJ@Helv	12902, 12911, 13229			1388,	1389, 1390, 1391,
\NoHy@OrgRef	5994, 5996, 6064,			\OBJ@OCG@print	8763, 8766,			1392,	1393, 1394, 1395,
6066				8774, 8800, 9844, 9846,				1396,	1397, 1402, 1403,
\NoHyper	6002			9859, 9863, 9872, 9901				1404,	1405, 1406, 1407,
\nohyperpage	6046, 8133, 8135,			\OBJ@OCG@view	8748, 8766, 8799, 9828,			1408,	1409, 1410, 1411,
8137				9830, 9843, 9863, 9900				1412,	1413, 1414, 1415,
\nolinkurl	4800			\OBJ@OCGs	8769, 8772, 8778,			1416,	1417, 1418, 1419,
\nolinkurl@	4800, 4801			8783, 8788, 9860, 9862,				1420,	1421, 1422, 1423,
\NomFancyVerbLineautorefname	3234			9866, 9870, 9876, 9881, 9886				1424,	1425, 1426, 1427,
\Nomfootnoteautorefname	3214			\OBJ@pdfdocencoding	12900,			1428,	1429, 1430, 1431,
\Nomtheoremautorefname	3238			13210, 13226				1432,	1433, 1446, 1447,
\nonumber	6965, 6968			\OBJ@ZaDb	12901, 12910, 13219			1448,	1449, 1450, 1562,
\normalfont	589, 7024, 7050, 7083			\OCIRCUMFLEX	16770, 16868,			1563,	1564, 5254, 5260,
\normalsize	607, 7412, 7483			16869, 16870, 16871, 16872				5265,	5479, 6663, 6664,
\note	7799			\ocircumflex	16763, 16808, 16809,			6665,	6666, 6672, 6673,
\NR@getttitle	7402			16810, 16811, 16812				6674,	6675, 7907, 7911,
\null	7680, 7688, 8427, 8536			\oddsidemargin	7836			8350,	8359, 10799, 14135,
\number	1114, 1118, 1121, 1129,			\OE	14634, 15386			14136,	14137, 14138, 14139,
1132,	1134, 1439, 1441,			\oe	14647, 15388			14140,	14141, 14142, 14143,
1468,	1469, 2171, 2229,			\offinterlineskip	6200			14144,	14145, 14146, 14147,
2230,	2231, 2232, 2236,			\OHORN	16771, 16873, 16874,			14148,	14149, 14150, 14151,
2237,	2238, 2239, 2240,			16875, 16876, 16877				14152,	14153, 14154, 14155,
2244,	2245, 2246, 2247,			\ohorn	3261, 3268, 16764, 16813,			14156,	14157, 14158, 14159,
2248,	2249, 2250, 2254,			16814, 16815, 16816, 16817				14160,	14161, 14162, 14163,
2255,	2256, 2257, 2258,			\oldb	893			14164,	14165, 14166
2259,	2262, 2264, 2268,			\oldc	894			\overlay	7796
2269,	2271, 2273, 2275,			\oldcontentsline	6086, 6089, 6099			P	
2278,	2282, 2283, 2284,			\oldd	895			\P	553
2285,	2294, 2295, 2299,			\oldnewlabel	6091, 6096, 6100			\p@	2295, 2300, 5508, 5514, 7032,
2300,	2307, 2308, 2312,			\OMEGA	12269			7058,	7089, 9461, 9545,
2315,	2316, 2317, 2327,							9583,	9623, 10753, 11937,



12217, 12507, 12989, 13330, 14455, 14456	\PDF@FinishDoc . . . 2862, 2863, 2937, 2938, 4035, 4110, 4236, 4237, 4341, 4342, 6045, 6210, 6211, 9173, 9385, 9643, 10125, 10288, 10865, 11104, 11977, 12138	<u>13893</u>
\p@equation . . . . . 7959	\pdf@ifdraftmode . . . . 240, 243, 251, 6386, 8733, 9174, 9283, 12897, 14227	\PDFForm@Text . 12485, 12487, 12967, 12968, 13304, 13307, <u>13858</u>
\PackageError . . . . . 61	\pdf@linktype . . . 11253, 11257, 11360, 11361	\pdfhorigin . . . . . 9301
\PackageInfo . 8710, 8724, 12851	\pdf@rect . 11245, 11259, 11272	\pdfinfo . . . . . 9177
\PackageWarning . . 2806, 5465	\PDF@SetupDoc 4034, 4109, 5965, 5966, 6044, 9104, 9386, 9674, 10165, 10289, 10814, 11155, 11858, 12008, 12139	\pdflastform . . . . . 8841
\pageautorefname . . . . . . . 3092, 3110, 3128, 3146, 3164, 3182, 3200, 3240, 3258, 3276, 8508, 8631	\PDF@SetupDox . . . . . <u>9104</u>	\pdflastlink . . . . . 12881
\pagename . . . . . 8505	\pdf@strcmp . . . . . 972	\pdflastobj . . 8748, 8763, 8769, 12923, 13210, 13219, 13229
\pageref . . . . . 650, 4243, 4565, 5998, 5999, 6068, 6069, 6758, 8494, 8498	\pdf@toks . 11235, 11250, 11261, 11343, 11347, 11351	\pdflastxform 8841, 12843, 12845
\paperheight . . . . . . . 4041, 9309, 9311, 9314, 9316, 9328, 9329, 10268, 10269, 10406, 10407, 10409, 11691, 11692	\pdf@type . 11237, 11241, 11250, 11261, 11338, 11358	\pdflinkmargin 8836, 8839, 8844
\paperwidth . . . . . . . 9305, 9307, 9318, 9320, 9325, 9326, 10267, 10269, 10410, 11690, 11692	\pdfannotlink . . . . . 8838	\pdfliteral . . . . 8820, 8822, 8827
\par 7023, 7048, 7081, 7404, 7432, 7474, 7484, 7682, 7702	\pdfbookmark 2407, 6050, 6051, 14093, 14098, 14103, 14107	\pdfm@box . 9756, 13266, 13267, 13268, 13298, 13310, 13387, 13412, 13423, 13434, 13453, 13466, 13481, 13490, 13510, 13518, 13535, 13547
\paragraphautorefname . . . . . . . 3088, 3106, 3124, 3142, 3160, 3178, 3196, 3229, 3231, 3254, 3272, 8627	\pdfcatalog . . 6389, 8770, 9119, 9161, 12924	\pdfmark 6500, 9694, 9703, 9733, 10933, 10953, 10992, 11027, 11044, 11056, 11090, 11127, 11139, 11168, 11177, 11208, 11232, 11493, 11507, 11522, 11534, 11541, 11568, 11599, 12021, 12030, 12061, 12486, 12569, 12581, 12605, 12623, 12646, 12666, 14259
\partautorefname . . 3082, 3100, 3118, 3136, 3154, 3172, 3190, 3220, 3248, 3266, 8621	\PDFdefaults . . . . . 11354	\pdfmark@ . . . . . 11232, 11233
\partnumberline . . 14016, 14021	\pdfdest . . . . . 8862	\pdfmatch . . . . . 332
\PassOptionsToPackage . . 2977, 3034, 3038, 3060, 4075, 4379	\pdfdraftmode . . . . . 244	\pdfminorversion . . . . . 8707
\pdf@addtoks . . . 11346, 11365, 11371, 11380, 11387, 11391, 11393, 11395, 11397, 11399, 11407, 11416, 11420, 11422, 11424, 11427, 11436, 11440, 11442, 11444, 11446, 11448, 11450, 11452, 11454, 11456, 11458, 11460, 11462, 11464, 11466, 11468, 11470, 11471, 11472, 11473, 11474, 11475, 11476, 11477, 11478, 11479, 11480, 11485	\pdfendlink . 8901, 12969, 13062, 13076, 13102, 13126, 13149, 13171	\PDFNextPage . . . . . 11505
\pdf@addtoksx . . 11340, 11350, 11363	\pdfescapestring . . . . . 13641	\PDFNextPage@ . . 11505, 11506
\pdf@box . . 11268, 11300, 11308, 11316, 11317, 11320, 11324, 11326, 11329	\pdfform . . . . . 8840	\pdfobj 8734, 8749, 8764, 12905, 13177, 13211, 13220
\pdf@defaulttoks . 11235, 11344, 11345, 11355	\PDFForm@@@Name 13649, 13652, 13656, <u>13659</u>	\PDFOpen . . . . . 11533
\pdf@docset . . . . . 11103	\PDFForm@Check 12665, 12667, 13168, 13169, 13541, 13545, <u>13733</u>	\pdfoptionpdfminorversion 8704
\pdf@endanchor 8860, 8904, 8911	\PDFForm@List . 12580, 12582, 13073, 13074, 13427, 13432, <u>13791</u>	\pdfoutline . . . . . 14308
\pdf@escapestring . . . . . 8686	\PDFForm@Name 12961, 13014, 13085, 13163, 13294, 13355, 13443, 13532, <u>13648</u>	\pdfpageattr . 9217, 9221, 9222, 9232, 9241, 9245, 9246, 9256, 9264, 9267, 9268, 9278
	\PDFForm@Push . 12604, 12606, 13099, 13100, 13459, 13463, <u>13762</u>	\pdfpageheight 9311, 9320, 9329, 9336
	\PDFForm@Radio 12568, 12572, 13052, 13054, 13396, 13408, <u>13824</u>	\pdfpageresources . . . . . 8797
	\PDFForm@Reset 12645, 12647, 13146, 13147, 13511, 13516, <u>13926</u>	\pdfpagesattr . 9108, 9110, 9112
	\PDFForm@Submit 12622, 12625, 13119, 13121, 13483, 13488,	\pdfpagewidth 9307, 9316, 9326, 9333
		\PDFPreviousPage . . . . 11518
		\PDFPreviousPage@ . . . . 11519, 11521
		\pdfrefform . . . . . 8842
		\pdfrefobj . 12900, 12901, 12902
		\pdfrefxform . . . . . 8842, 12845
		\pdfstartlink . . . . . . . 8837, 8838, 8896, 8940, 8978, 9015, 9348, 12968, 13053, 13074, 13100, 13120, 13147, 13169

<code>\pdfstringdef</code> . . . . .	522, 806, 3721, 3727, 3733, 3739, 3744, 3750, 3757, 3763, 3843, 5426, 5431, 5457, 6177, 6278, 6280, 6773, 7782, 7818, 13667, 14025				
<code>\pdfstringdefDisableCommands</code> . ..	892, 931, 6048, 6172				
<code>\pdfstringdefPostHook</code> .	802, 925				
<code>\pdfstringdefPreHook</code> .	660, 925, 937, 6171, 6181				
<code>\pdfstringdefWarn</code>	556, 557, 655, 940, 1721, 1726, 1745, 1749				
<code>\pdfTeXrevision</code>	9064, 9072, 9083				
<code>\pdfTeXversion</code>	9059, 9061, 9064, 9067, 9070, 9071, 9075, 9081, 9082, 12899				
<code>\pdfvorigin</code> . . . . .	9302				
<code>\pdfxform</code> . . . . .	8840, 12841				
<code>\peh</code> . . . . .	16940				
<code>\penalty</code>	1856, 2434, 4709, 7609, 7632				
<code>\phantom</code> . . . . .	612				
<code>\phantomsection</code> . . .	4036, 6052, 7859, 13960, 14011, 14399				
<code>\Preamble</code> . . . . .	12265				
<code>\PrerenderUnicode</code> . . . . .	3712				
<code>\process@me</code> .	6151, 6163, 6164, 9107, 9116				
<code>\ProcessKeyvalOptions</code> . . .	4079				
<code>\protect</code> .	1854, 4851, 7405, 7476, 7540, 7555, 7571, 7687, 7694, 7695, 7897, 7928, 8203, 8255, 8384, 8404, 8410, 8421, 8539, 9396, 9493, 10359, 10434, 11869, 12149, 14032, 14332, 14455, 14456				
<code>\protected@edef</code> . . . . .	.. 4888, 6244, 6338, 6863, 6992, 7012, 7770, 7774, 8869, 9955, 10488, 10571, 11082				
<code>\protected@write</code> . . .	2371, 4872, 7667, 8088, 8103, 8111, 8115, 8120, 14031				
<code>\protected@xdef</code> . . .	7249, 7342				
<code>\providecommand</code> . . . . .	.. 2388, 2389, 3412, 3413, 3416, 3417, 4329, 4542, 4543, 4662, 4805, 6082, 6368, 6393, 6518, 6557, 6560, 6563, 6564, 6565, 6567, 6568, 6569, 6570, 6572, 6573, 6574, 6575, 6576, 6577, 6586, 6587, 6588, 6589, 6590, 6591,	6986, 7505, 7506, 7521, 7599, 8185, 8186, 8190, 8195, 8196, 8303, 8612, 8613, 8614, 8615, 8616, 8617, 8618, 8619, 8620, 8621, 8622, 8623, 8624, 8625, 8626, 8627, 8628, 8629, 8630, 8631, 8693, 8846, 8864, 8865, 9384, 9487, 9488, 9751, 9813, 9814, 9815, 10285, 10404, 10426, 10427, 10428, 10890, 11269, 11270, 11625, 11633, 11634, 11635, 11636, 11708, 11720, 11721, 11722, 11723, 11767, 11808, 11809, 11810, 11811, 11966, 11968, 11969, 12082, 12083, 12130, 12864			
<code>\PushButton</code> . . . . .	5861				
<code>\put@me@back</code>	5028, 5041, 5051				
<b>Q</b>					
<code>\qaf</code> . . . . .	16923				
<code>\quotedblbase</code> . . .	14614, 14851, 16440, 16744				
<code>\quotesinglbase</code> . .	14624, 14853, 16434, 16746				
<b>R</b>					
<code>\r</code> . . .	864, 14492, 14504, 14516, 14726, 14791, 14900, 14927, 14946, 14968, 15095, 15159, 15442, 15444, 16404, 16406				
<code>\ra</code> . . . . .	16911				
<code>\raff</code> . . . . .	16933				
<code>\raise</code> . . .	2441, 9462, 9546, 9584, 9624, 11334, 11938, 12218				
<code>\ReadBookmarks</code> . . . . .	.. 4078, 4113, 4250, 4446, 4586, 14191, 14226				
<code>\real@setref</code> . . . . .	8381, 8447				
<code>\realfootnote</code> . . . . .	7339				
<code>\Ref</code> . . . . .	8466, 8470, 8475				
<code>\ref</code>	649, 4242, 4562, 5068, 5994, 5995, 6064, 6065, 7304, 7311, 8485, 12241				
<code>\ref@one</code> . . . . .	4827, 4828				
<code>\rEfLiNK</code> . . . . .	12242, 12243				
<code>\refstepcounter</code> . . . . .	.. 6595, 6602, 6622, 6845, 6868, 6869, 6870, 6879, 6904, 6928, 6936, 7040, 7468				
<code>\rem@ptetc</code> . . . . .	11017, 11019				
<code>\renewcommand</code> . . .	2363, 7447, 8004, 14107				
<code>\RequirePackage</code> . . . . .	22, 233, 235, 236, 237, 255, 256, 257, 258, 259, 260, 261, 262,	380, 1231, 1758, 2357, 2787, 2857, 4224, 4225, 4514, 4558, 4590, 4797, 5071, 6034, 6191, 6434, 10286, 12135, 14117			
<code>\RerunFileCheck</code> . . . . .	14119				
<code>\Reset</code> . . . . .	5870				
<code>\reset@font</code> . .	7615, 7638, 8385, 8405, 8422, 8540				
<code>\revtex@checking</code> . . . . .	7592				
<code>\Rightarrow</code> . . . . .	8337				
<code>\rlap</code> . . . . .	8821, 9922				
<code>\rm</code> . . . . .	600				
<code>\rmfamily</code> . . . . .	590				
<code>\Roman</code> . . . . .	6334				
<code>\roman</code> . . . . .	6335				
<code>\romannumeral</code> . . . . .	947, 948				
<code>\rule</code> . . . . .	7289				
<b>S</b>					
<code>\sad</code> . . . . .	16915				
<code>\sbox</code>	3708, 5890, 9449, 9529, 9566, 9606, 11269, 11308, 11925, 12200, 12840				
<code>\scr@LT@array</code> . . . . .	6878				
<code>\scriptsize</code> . . . . .	608				
<code>\scriptstyle</code> . . . . .	7605				
<code>\scrollmode</code> . .	1773, 1798, 1808, 1821, 1913, 2045				
<code>\scshape</code> . . . . .	596, 7029, 7055				
<code>\section</code> . . . . .	8305				
<code>\sectionautorefname</code>	3085, 3103, 3121, 3139, 3157, 3175, 3193, 3222, 3251, 3269, 8624				
<code>\seen</code> . . . . .	16913				
<code>\selectfont</code> . . . .	576, 4525, 12933				
<code>\set@display@protect</code> . . . . .	4177				
<code>\setbox</code> . . . .	1857, 1863, 1869, 3440, 3446, 5652, 6199, 7117, 8811, 9376, 9895, 9912, 13298, 13387, 13423, 13453, 13481, 13510, 13535				
<code>\setcounter</code> . . . . .	4740				
<code>\setkeys</code> . . . . .	4715, 4760				
<code>\setlength</code> . . . . .	506, 507, 2438, 5664, 9301, 9302, 9307, 9311, 9316, 9320, 9326, 9329, 9333, 9336, 10407, 10410, 10414, 10417, 10753, 14349, 14420				
<code>\setpdfinkmargin</code> . .	3891, 3892, 8836				
<code>\settowidth</code>	12504, 12986, 13327				
<code>\SetupKeyvalOptions</code>	2492, 4069				
<code>\sffamily</code> . . . . .	591				
<code>\shadda</code> . . . . .	16938				
<code>\sheen</code> . . . . .	16914				



<code>\textcolonmonetary</code> . . . . .	16520	<code>\textfrq</code> . . . . .	640, 14858, 16751	<code>\textmusicalnote</code> . . . . .	16730
<code>\textcolor</code> . . . 617, 12895, 12938,		<code>\textfrqq</code> . . . . .	638, 14856, 16749	<code>\textnaira</code> . . . . .	16524
12941, 13238		<code>\textGamma</code> . . . . .	1150, 15632	<code>\textnapostrophe</code> . . . . .	15368
<code>\textcompwordmark</code> . . . . .	16422	<code>\textgamma</code> . . . . .	1150, 15695	<code>\textneg</code> . . . . .	14859, 16752
<code>\textcopyright</code> . . . . .	14671, 15039	<code>\textglq</code> . . . . .	635, 14853, 16746	<code>\textnewtie</code> 14939, 14958, 15600	
<code>\textCR</code> . . . . .	14533, 14980	<code>\textglqq</code> . . . . .	633, 14851, 16744	<code>\textnineinferior</code> . . . . .	16514
<code>\textcurrency</code> . . . . .	14661, 15029	<code>\textgravedbl</code> . . . . .	15594	<code>\textninesuperior</code> . . . . .	16482
<code>\textdagger</code> . . . . .	14592, 16442	<code>\textgreater</code> . . . . .	14569, 15002	<code>\textnormal</code> . . . . .	579
<code>\textdaggerdbl</code> . . . . .	14594, 16444	<code>\textgrq</code> . . . . .	636, 14854, 16747	<code>\textnsuperior</code> . . . . .	16494
<code>\textdegree</code> 14684, 14850, 15052		<code>\textgrqq</code> . . . . .	634, 14852, 16745	<code>\textNu</code> . . . . .	1174, 15652
<code>\textDelta</code> . . . . .	1151, 15634	<code>\textGslash</code> . . . . .	15497	<code>\textnu</code> . . . . .	1174, 15715
<code>\textdelta</code> . . . . .	1151, 15697	<code>\textgslash</code> . . . . .	15499	<code>\textnumbersign</code> . . . 547, 14553,	
<code>\textDigammagreek</code> . . . . .	15756	<code>\textguarani</code> . . . . .	16536	14984	
<code>\textdigammagreek</code> . . . . .	15758	<code>\textHslash</code> . . . . .	15293	<code>\textnumeralsigngreek</code> . . . 1125,	
<code>\textdiscount</code> . . . . .	16468	<code>\texthslash</code> . . . . .	15295	15608	
<code>\textdiv</code> . . . . .	14861, 16754	<code>\textHT</code> . . . . .	14529, 14976	<code>\textnumeralsignlowergreek</code> 1142,	
<code>\textdivide</code> 14831, 14861, 15199,		<code>\texthungarumlaut</code> 14543, 14934,		1164, 1187, 15610	
16754		14953, 15591, 15592		<code>\textnumero</code> . . . . .	16540
<code>\textdivorced</code> . . . . .	16734	<code>\textinterrobang</code> . . . . .	16460	<code>\textogonek</code> 14545, 14935, 14954,	
<code>\textdollar</code> . . . 548, 14555, 14986		<code>\textIota</code> . . . 1170, 15618, 15644,		15587	
<code>\textdong</code> . . . . .	16530	15677		<code>\textohm</code> . . . . .	16550
<code>\textdotaccent</code> . . . 14494, 14506,		<code>\textiota</code> . . . 1170, 15687, 15707,		<code>\textOmega</code> . 1200, 15624, 15674	
14518, 14541, 14929, 14948,		15741		<code>\textomega</code> . 1200, 15739, 15750	
15583		<code>\textIotadieresis</code> . . 15626, 15676		<code>\textOmicron</code> 1176, 15620, 15656	
<code>\textdotbelow</code> . . . 14498, 14510,		<code>\textit</code> . . . . .	585	<code>\textomicron</code> 1176, 15719, 15745	
14522, 14565, 14937, 14956,		<code>\textKappa</code> . . . . .	1171, 15646	<code>\textonehalf</code> . . . . .	14710, 15079
15602		<code>\textkappa</code> . . . . .	1171, 15709	<code>\textoneinferior</code> . . . . .	16498
<code>\textdoublegrave</code> . 14932, 14951,		<code>\textKoppagreek</code> . . . 1178, 15760		<code>\textonequarter</code> . . . 14708, 15077	
15598		<code>\textkoppagreek</code> . . . 1178, 15762		<code>\textonesuperior</code> . . 14702, 15071	
<code>\textdownarrow</code> . . . . .	16566	<code>\textkra</code> . . . . .	15334	<code>\textopenbullet</code> . . . . .	16726
<code>\texteightinferior</code> . . . . .	16512	<code>\textLambda</code> . . . . .	1172, 15648	<code>\textordfeminine</code> . . 14673, 15041	
<code>\texteightsuperior</code> . . . . .	16480	<code>\textlambda</code> . . . . .	1172, 15711	<code>\textordmasculine</code> . 14704, 15073	
<code>\textellipsis</code> . . . 554, 555, 14596,		<code>\textlangle</code> . . . . .	16572	<code>\textparagraph</code> 553, 14696, 15065	
16448		<code>\textlatin</code> . . . . .	621, 6699	<code>\textparenleft</code> . 756, 757, 14561,	
<code>\textemdash</code> . 748, 14598, 16426		<code>\textlbrackdbl</code> . . . . .	16736	14994	
<code>\textendash</code> . . 749, 14600, 16424		<code>\textleftarrow</code> . . . . .	16560	<code>\textparenleftinferior</code> . . . . 16516	
<code>\textEpsilon</code> 1152, 15614, 15636		<code>\textless</code> . . . . .	14567, 15000	<code>\textparenleftsuperior</code> . . . 16490	
<code>\textepsilon</code> . . . . 562, 565, 1152,		<code>\textLF</code> . . . . .	14531, 14978	<code>\textparenright</code> . . . 14563, 14996	
15683, 15699		<code>\textlira</code> . . . . .	16522	<code>\textparenrightinferior</code> . . . 16518	
<code>\textequalsuperior</code> . . . . .	16488	<code>\textlnot</code> . . . . .	14678, 15046	<code>\textparenrightsuperior</code> . . 16492	
<code>\textestimated</code> . . . . .	16556	<code>\textlogicalnot</code> . . . 14677, 14859,		<code>\textpercent</code> . 549, 14557, 14988	
<code>\textEta</code> . . . 1155, 15616, 15640		15045, 16752		<code>\textperiodcentered</code> 14698, 14863,	
<code>\texteta</code> . . . . 1155, 15685, 15703		<code>\textlongs</code> . . . . .	15476, 16408	15067, 16756	
<code>\texteuro</code> . . . . .	14653, 16532	<code>\textlquill</code> . . . . .	16464	<code>\textpertenthousand</code> . . . . 16452	
<code>\textexclamdown</code> . . . . 752, 1059,		<code>\textmacronbelow</code> 14497, 14509,		<code>\textperthousand</code> . . 14612, 16450	
14655, 15023		14521, 14576, 14936, 14955,		<code>\textpeseta</code> . . . . .	16526
<code>\textfi</code> . . . . .	750, 14628, 16740	15604		<code>\textpeso</code> . . . . .	16534
<code>\TextField</code> . . . . .	5852	<code>\textmarried</code> . . . . .	16732	<code>\textPhi</code> . . . . .	1197, 15668
<code>\textfiveinferior</code> . . . . .	16506	<code>\textmd</code> . . . . .	584	<code>\textphi</code> . . . . .	1197, 15733
<code>\textfivesuperior</code> . . . . .	16474	<code>\textmho</code> . . . . .	16552	<code>\textPi</code> . . . . .	1177, 15658
<code>\textfl</code> . . . . .	751, 14630, 16742	<code>\textminus</code> . . . . .	14610, 16568	<code>\textpi</code> . . . . .	1177, 15721
<code>\textflorin</code> . . . . .	14602, 15478	<code>\textminussuperior</code> . . . . 16486		<code>\textplusminus</code> . . 14686, 14862,	
<code>\textflq</code> . . . . .	639, 14857, 16750	<code>\textMu</code> . . . . .	1173, 15650	15054, 16755	
<code>\textflqq</code> . . . . 637, 14855, 16748		<code>\textmu</code> . . . . .	1173, 14694, 15063	<code>\textplussuperior</code> . . . . .	16484
<code>\textfourinferior</code> . . . . .	16504	<code>\textmugreek</code> . . . . .	15713	<code>\textpm</code> . . . . .	14862, 16755
<code>\textfoursuperior</code> . . . . .	16472	<code>\textmultiply</code> . . . . 14763, 14860,		<code>\textPsi</code> . . . . .	1199, 15672
<code>\textfractionsolidus</code> 14604, 16462		15131, 16753		<code>\textpsi</code> . . . . .	1199, 15737

<code>\textquestiondown</code> . . .	753, 1060, 14714, 15083	<code>\theHsubequation</code> . . . . .	6986
<code>\textquotedbl</code> . . . .	14551, 14982	<code>\theHsubparagraph</code> . . . . .	6575
<code>\textquotedblleft</code> . .	14616, 14852, 16436, 16745	<code>\theHsubsection</code> . . . .	6572, 6573
<code>\textquotedblright</code> .	14618, 16438	<code>\theHsubsubsection</code> .	6573, 6574
<code>\textquoteleft</code> . . .	14620, 14854, 16430, 16747	<code>\theHtable</code> . . . . .	6565, 6569
<code>\textquoteright</code> . . .	14622, 16432	<code>\theHtheorem</code> . . . . .	6576
<code>\textquotesingle</code> . . . . .	14992	<code>\theHthm</code> . . . . .	6577
<code>\texttriangle</code> . . . . .	16574	<code>\theHy@tempcnt</code> 4735, 4743, 4750	
<code>\texttrbrackdbl</code> . . . . .	16738	<code>\thelisting</code> . . . . .	3416
<code>\textrecipe</code> . . . . .	16544	<code>\thelstlisting</code> . . . . .	3412
<code>\textreferencemark</code> . . . . .	16458	<code>\thempfn</code> 7147, 7250, 7342, 7354	
<code>\textregistered</code> . . . .	14680, 15048	<code>\theoremautorefname</code> 3091, 3109, 3127, 3145, 3163, 3181, 3199, 3237, 3257, 3275, 8630	
<code>\textRho</code> . . . . .	1193, 15660	<code>\thepage</code> 2374, 4853, 6219, 6245, 6260, 6773, 6781, 6808, 7618, 7641, 7670, 7771, 7818, 7897, 7928, 8089, 8106, 8112, 8116, 8123, 8387, 8407, 8424, 8542	
<code>\textrho</code> . . . . .	1193, 15723	<code>\theslideheading</code> . . . . .	8216
<code>\textrightarrow</code> . . . . .	16564	<code>\theslidesection</code> 8204, 8211, 8219, 8225, 8227, 8229, 8235, 8245	
<code>\textring</code> . . . . .	14492, 14504, 14516, 14547, 14927, 14946, 15585	<code>\theslidesubheading</code> .	8217, 8268
<code>\textrm</code> . . . . .	580	<code>\theslidesubsection</code> . . . . .	8256, 8263, 8270, 8276, 8278, 8280, 8286, 8296
<code>\textrquill</code> . . . . .	16466	<code>\ThisName</code> . . . . .	6606, 6607, 6625, 6626
<code>\textSampiGreek</code> . . .	1201, 15764	<code>\thispdfpagelabel</code> . . . . .	6224
<code>\textsampiGreek</code> . . . .	1201, 15766	<code>\ThisShouldNotHappen</code> . .	13619
<code>\textsc</code> . . . . .	586	<code>\thm@headfont</code> . . . .	7029, 7055
<code>\textsection</code> . . . . .	14667, 15035	<code>\thm@headpunct</code> . . .	7031, 7057, 7088
<code>\textservicemark</code> . . . . .	16546	<code>\thm@headsep</code> . . . .	7032, 7058, 7089
<code>\textseveninferior</code> . . . . .	16510	<code>\thm@indent</code> . . . . .	7028, 7054
<code>\textsevensuperior</code> . . . . .	16478	<code>\thm@notefont</code> 7030, 7056, 7087	
<code>\textsf</code> . . . . .	581, 12938, 12941	<code>\thm@postskip</code> 7036, 7062, 7093	
<code>\textSigma</code> . . . . .	1194, 15662	<code>\thm@preskip</code> . . . .	7035, 7061, 7092
<code>\textsigma</code> . . . . .	1194, 15727	<code>\thm@space@setup</code> .	7033, 7059, 7090
<code>\textsixinferior</code> . . . . .	16508	<code>\thm@swap</code> . . . . .	7027, 7053, 7086
<code>\textsixsuperior</code> . . . . .	16476	<code>\thmheadnl</code> . . . . .	7026, 7052, 7085
<code>\textsl</code> . . . . .	587	<code>\tiny</code> . . . . .	610
<code>\textsterling</code> . . . .	14659, 15027	<code>\title</code> . . . . .	6130, 6132
<code>\textStigmaGreek</code> . . .	1153, 15752	<code>\TMP@EnsureCode</code> . . . . .	4456, 4463, 4464, 4465, 4466, 4467, 4468, 4469, 4470, 4471, 4472, 4473, 4474, 4475, 4476, 4477, 4478, 4479, 4480, 4481, 4482, 4483, 4484, 4485, 4486, 4487, 4488, 4489
<code>\textstigmaGreek</code> . . .	1153, 15754	<code>\tocappendix</code> . . . . .	1609
<code>\textsurd</code> . . . . .	16570	<code>\tocchapter</code> . . . . .	1608
<code>\TextSymbolUnavailable</code> .	14523, 14524, 14526	<code>\toclevel@chapter</code> . . . . .	3403
<code>\textTau</code> . . . . .	1195, 15664	<code>\toclevel@figure</code> . . . . .	3409
<code>\texttau</code> . . . . .	1195, 15729		
<code>\textTheta</code> . . . . .	1156, 15642		
<code>\texttheta</code> . . . . .	1156, 15705		
<code>\textthreeinferior</code> . . . . .	16502		
<code>\textthreequarters</code> .	14712, 15081		
<code>\textthreesuperior</code> .	14690, 15058		
<code>\texttie</code> . . . . .	14938, 14957, 15606		
<code>\texttilde</code> . . . . .	4172, 14490, 14502, 14514, 14549, 14925, 14944, 15589		
<code>\texttildelow</code> . . . . .	15596		
<code>\texttimes</code> . . . . .	14860, 16753		
<code>\texttrademark</code> . . .	14626, 16548		
<code>\textTslash</code> . . . . .	15426		
<code>\texttslash</code> . . . . .	15428		
<code>\texttt</code> . . . . .	582		
<code>\texttwoinferior</code> . . . . .	16500		
<code>\texttwosuperior</code> . .	14688, 15056		
<code>\textunderscore</code> 552, 4619, 4620, 4622, 14575, 15008			
<code>\textup</code> . . . . .	588		
<code>\textuparrow</code> . . . . .	16562		
<code>\textUpsilon</code> 1196, 15622, 15666, 15679			
<code>\textupsilon</code> . . . . .	1196, 15731, 15743, 15748		
<code>\textupsilonacute</code> .	15689, 15747		
<code>\textvarsigma</code> . . . . .	15725		
<code>\textvisiblespace</code> . . . . .	16578		
<code>\textwon</code> . . . . .	16528		
<code>\textXi</code> . . . . .	1175, 15654		
<code>\textxi</code> . . . . .	1175, 15717		
<code>\textyen</code> . . . . .	14663, 15031		
<code>\textzeroinferior</code> . . . . .	16496		
<code>\textzerosuperior</code> . . . . .	16470		
<code>\textZeta</code> . . . . .	1154, 15638		
<code>\textzeta</code> . . . . .	1154, 15701		
<code>\TH</code> . . . . .	14777, 15145		
<code>\th</code> . . . . .	14845, 15213		
<code>\thaa</code> . . . . .	16905		
<code>\thebookmark@seq@number</code> . . . . .	14035		
<code>\theequation</code> . . . . .	6628, 6931, 6953, 6977, 7013		
<code>\thefootnote</code> . . . . .	7158, 7361		
<code>\theHchapter</code> . . . . .	6567, 6568, 6569, 6570, 6657		
<code>\theHenumi</code> . . . . .	6586		
<code>\theHenumii</code> . . . . .	6587		
<code>\theHenumiii</code> . . . . .	6588		
<code>\theHenumiv</code> . . . . .	6589		
<code>\theHequation</code> 6557, 6629, 6932, 6954, 6978, 6986, 7013, 7017			
<code>\theHfigure</code> . . . . .	6564, 6568		
<code>\theHHfootnote</code> . . . .	6590, 6593		
<code>\theHHmpfootnote</code> . . . . .	6593		
<code>\theHItem</code> . . . . .	6580, 6586, 6587, 6588, 6589		
<code>\theHlisting</code> . . . . .	3416		
<code>\theHlstlisting</code> . . . . .	3412		
<code>\theHmpfootnote</code> . . . . .	6591		
<code>\theHpage</code> . . . . .	7775		
<code>\theHparagraph</code> . . . .	6574, 6575		
<code>\theHparentequation</code> 7012, 7017			
<code>\theHpart</code> . . . . .	6560		
<code>\theHsection</code> . . . . .	6557, 6563, 6570, 6572, 6576, 6577, 6656		
<code>\theHslide</code> . . . . .	8190		
<code>\theHslidesection</code> . . .	8195, 8197, 8233, 8237		
<code>\theHslidesubsection</code> 8196, 8284, 8288			





8439, 8441, 8796, 8804,	\xspace . . . . . 666, 668	1521, 1529, 1602,
9092, 9093, 9096, 9098,	\xspaceaddexceptions 4088, 4095	1863, 1869, 1933,
9101, 9763, 9764, 9765,		1945, 1949, 2414,
9767, 9768, 9769, 9771,	<b>Y</b>	2453, 2472, 2753,
9772, 9773, 9775, 9776,	\y . . . . . 295, 297, 301,	2898, 3440, 3446,
9777, 9779, 9780, 9781,	849, 852, 855, 858, 861, 864,	4421, 6396, 6399,
9783, 9784, 9785, 9787,	873, 2558, 2563, 2568, 3434,	7118, 7289, 9305,
9788, 9789, 9791, 9792,	3435, 3436, 3437, 4130,	9314, 9318, 9325,
9794, 9800, 9809, 10894,	4133, 4136, 4139, 4141,	9332, 9335, 10267,
10899, 10903, 11274, 11277,	4147, 4986, 4987, 4988,	10273, 10274, 10785,
11283, 11288, 11433, 11434,	4989, 4997, 6153, 6161,	11017, 11317, 11331,
12510, 12530, 12992, 13012,	6875, 6877, 6878, 6881,	11691, 11696, 11697,
13333, 13353, 14356, 14358,	6888, 11279, 11280, 11281,	12982, 13271, 13323,
14427, 14429	11282	13772, 13777, 13799,
\XeTeXrevision . . . . 4412, 10122	\ya . . . . . 16931	13833, 13866, 13872,
\XeTeXversion . . . . 4412, 10122	\yahamza . . . . . 16900	13901, 13906, 13936,
\XR@dURL . . . . . 2395, 2396		14046, 14047, 14048,
\XR@addURL . . . . . 2395	<b>Z</b>	14050, 14051, 14052,
\XR@ext 2664, 2665, 4966, 4969,	\z 296, 297, 302, 2560, 2561, 2562,	14054, 14271, 14393
6393, 8693, 9384, 9487,	4989, 4997	\z@skip . . . . .
9751, 10285, 11625, 11708,	\z@ . . . . . 810, 850,	\za . . . . .
11767, 11966, 12130	972, 1124, 1141, 1163, 1186,	\zay . . . . .
\XR@URL . . . . . 2400	1437, 1477, 1490, 1506,	\ZWNJ . . . . .