

# 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)

2012/02/06 v6.82o

## 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>157</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>170</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>178</b>
<b>39 Table of contents</b>	<b>180</b>
<b>40 New counters</b>	<b>181</b>
<b>41 AMSL<sup>A</sup>T<sub>E</sub>X compatibility</b>	<b>182</b>
41.1 \@addtoreset and \numberwithin patches . . . . .	183
<b>42 Included figures</b>	<b>184</b>
<b>43 hyperindex entries</b>	<b>184</b>
<b>44 Compatibility with foiltex</b>	<b>187</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	210
46.3 hypertext	210
46.4 dviwindo	213
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	254
46.10 VTeX's vtexpdfmark driver	256
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	275
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	302
48.1.2 Driver stuff	302
<b>49 Compatibility with koma-script classes</b>	<b>308</b>
<b>50 Encoding definition files for encodings of PDF strings</b>	<b>309</b>
50.1 PD1 encoding	309
50.2 PU encoding	317
50.2.1 NFSS2 accents	317
50.2.2 Basic Latin: U+0000 to U+007F	319
50.2.3 Latin-1 Supplement: U+0080 to U+00FF	320
50.2.4 Latin Extended-A: U+0080 to U+017F	324
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	331
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	350
50.2.17 Mathematical Operators: U+2200 to U+22FF	350
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 . . . . .	353
50.2.22 Miscellaneous Symbols: U+2600 to U+26FF . . . . .	353
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 . . . . .	354
50.4 PU encoding, additions for Arabi . . . . .	356
<b>51 End of file hycheck.tex</b>	<b>358</b>
<b>52 Index</b>	<b>359</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      \cname ver@\HyC@package.sty\endcsname
39    }%
```

```

40 }%
41 }

```

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

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

```
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@cjku{\80}%
1258   \else
1259     \let\Hy@cjku\@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@cjku\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\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@cccxliv@undef
2218 \let~\HyPsd@UTFviii@cccxliv@def
2219 \fi
2220 \let\unichar\HyPsd@unichar
2221 }%
2222 }%
2223 \def\HyPsd@UTFviii@cccxliv@undef{\@inpenc@undefined@{utf8}}}%
2224 \edef\HyPsd@UTFviii@cccxliv@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@
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\cyrm.%
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\cyrm\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@activestru
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\ltx@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\ltx@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\ltx@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{pdfprintsclning}%  
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{pdfwindow}%  
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@LoadStringEnc
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@stoppeearlytrue
6540 \expandafter\MaybeStopEarly
6541 \fi
6542 \Hy@stoppeearlyfalse

```

## 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 $\text{\LaTeX}$  processes all equations twice; we want to make sure that the hyper stuff is not executed twice, so we use the AMS `\ifmeasuring@`, initialized if AMS math is not used.

```

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\Hy@AlphNoErr#1{%
6655     \ifnum\value{#1}>26 %
6656     Alph\number\value{#1}%

```

```

6657 \else
6658 \ifnum\value{#1}<1 %
6659 Alph\number\value{#1}%
6660 \else
6661 \Alph{#1}%
6662 \fi
6663 \fi
6664 }%
6665 \def\appendix{%
6666 \ltx@ifundefined{chapter}{%
6667 \gdef\theHsection{\Hy@AlphNoErr{section}}}%
6668 }{%
6669 \gdef\theHchapter{\Hy@AlphNoErr{chapter}}}%
6670 }%
6671 \xdef\Hy@chapapp{\Hy@appendixstring}%
6672 \HyOrg@appendix
6673 }%
6674 }

```

\Hy@Test@alph

```

6675 \def\Hy@Test@alph#1{%
6676 \ifcase#1\or
6677 a\or b\or c\or d\or e\or f\or g\or h\or i\or j\or
6678 k\or l\or m\or n\or o\or p\or q\or r\or s\or t\or
6679 u\or v\or w\or x\or y\or z%
6680 \else
6681 \@ctrerr
6682 \fi
6683 }

```

\Hy@Test@Alph

```

6684 \def\Hy@Test@Alph#1{%
6685 \ifcase#1\or
6686 A\or B\or C\or D\or E\or F\or G\or H\or I\or J\or
6687 K\or L\or M\or N\or O\or P\or Q\or R\or S\or T\or
6688 U\or V\or W\or X\or Y\or Z%
6689 \else
6690 \@ctrerr
6691 \fi
6692 }

```

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

```

6693 \def\hyper@makecurrent#1{%
6694 \begingroup
6695 \edef\Hy@param{#1}%
6696 \ifx\Hy@param\Hy@chapterstring
6697 \let\Hy@param\Hy@chapapp
6698 \fi
6699 \ifHy@hypertextnames
6700 \let\@number\@firstofone
6701 \def\@fnsymbol##1{fnsymbol\number##1}%
6702 \def\@arabic##1{\number##1}%
6703 \ifx\@alph\Hy@Test@alph
6704 \else
6705 \def\@alph{alph\number}%
6706 \fi

```

```

6707 \ifx\@Alph\Hy@Test@Alph
6708 \else
6709 \def\@Alph{Alph\number}%
6710 \fi
6711 \ifHy@naturalnames
6712 \let\textlatin\@firstofone
6713 \xdef\HyperGlobalCurrentHref{\csname the#1\endcsname}%
6714 \else
6715 \xdef\HyperGlobalCurrentHref{%
6716 \csname
6717 the%
6718 \expandafter\ifx\csname theH#1\endcsname\relax\else H\fi
6719 #1%
6720 \endcsname
6721 }%
6722 \fi
6723 \xdef\HyperGlobalCurrentHref{%
6724 \Hy@param.\expandafter\strip@prefix\meaning\HyperGlobalCurrentHref
6725 }%
6726 \else
6727 \Hy@GlobalStepCount\Hy@linkcounter
6728 \xdef\HyperGlobalCurrentHref{\Hy@param.\the\Hy@linkcounter}%
6729 \fi
6730 \endgroup
6731 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6732 \ifHy@localanchorname
6733 \let\@currentHref\HyperLocalCurrentHref
6734 \else
6735 \global\let\@currentHref\HyperGlobalCurrentHref
6736 \fi
6737 }

```

\Hy@MakeCurrentHref

```

6738 \def\Hy@MakeCurrentHref#1{%
6739 \edef\HyperLocalCurrentHref{#1}%
6740 \@onelevel@sanitize\HyperLocalCurrentHref
6741 \global\let\HyperGlobalCurrentHref\HyperLocalCurrentHref
6742 \let\HyperLocalCurrentHref\HyperGlobalCurrentHref
6743 \ifHy@localanchorname
6744 \let\@currentHref\HyperLocalCurrentHref
6745 \else
6746 \global\let\@currentHref\HyperGlobalCurrentHref
6747 \fi
6748 }

```

\Hy@MakeCurrentHrefAuto

```

6749 \def\Hy@MakeCurrentHrefAuto#1{%
6750 \Hy@GlobalStepCount\Hy@linkcounter
6751 \Hy@MakeCurrentHref{#1.\the\Hy@linkcounter}%
6752 }

```

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

```

6753 \def\@currentHlabel{\@currentHref}

6754 \@ifpackageloaded{fancyvrb}{%
6755 \@ifpackagelater{fancyvrb}{1998/05/20}{%
6756 \def\FV@StepLineNo{%

```

```

6757 \FV@SetLineNo
6758 \def\FV@StepLineNo{\H@refstepcounter{FancyVerbLine}}%
6759 \FV@StepLineNo
6760 }%
6761 }%
6762 }{}

```

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

```

```

6801 \ifclassloaded{revtex4}{}%
6802 \begingroup
6803 \toks@{\expandafter{\lastpage@putlabel}}%
6804 \edef\x{\endgroup
6805 \def\noexpand\lastpage@putlabel{%
6806 \noexpand\stepcounter{page}}%
6807 \the\toks@
6808 \noexpand\addtocounter{page}\noexpand\m@ne
6809 }%
6810 }%
6811 \x
6812 }{}%
6813 }{}%
6814 }
6815 \</package>
6816 \<*check>
6817 \checkpackage{lastpage}[1994/06/25]
6818 \checkcommand\def\lastpage@putlabel{%
6819 \addtocounter{page}{-1}}%
6820 \immediate\write\@auxout{%
6821 \string\newlabel{LastPage}{{}\{\thepage}}}%
6822 }%
6823 \addtocounter{page}{1}}%
6824 }
6825 \</check>
6826 \<*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.

```

6827 \def\hypergetref#1{\getrefbykeydefault{#1}{\{??}}
6828 \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:

```

6829 \ifpackageloaded{titlesec}{%
6830 \def\ttl@Hy@steplink#1{%
6831 \Hy@MakeCurrentHrefAuto{#1*}%
6832 \edef\ttl@Hy@saveanchor{%
6833 \noexpand\Hy@raisedlink{%
6834 \noexpand\hyper@anchorstart{\@currentHref}}%
6835 \noexpand\hyper@anchorend
6836 \def\noexpand\ttl@Hy@SavedCurrentHref{\@currentHref}}%
6837 \noexpand\ttl@Hy@PatchSaveWrite
6838 }%
6839 }%
6840 }%
6841 \def\ttl@Hy@PatchSaveWrite{%
6842 \begingroup
6843 \toks@{\expandafter{\ttl@savewrite}}%
6844 \edef\x{\endgroup

```

```

6845 \def\noexpand\ttl@savewrite{%
6846 \let\noexpand\@currentHref
6847 \noexpand\ttl@Hy@SavedCurrentHref
6848 \the\toks@
6849 }%
6850 }%
6851 \x
6852 }%
6853 \def\ttl@Hy@refstepcounter#1{%
6854 \let\ttl@b\Hy@raisedlink
6855 \def\Hy@raisedlink##1{%
6856 \def\ttl@Hy@saveanchor{\Hy@raisedlink{##1}}%
6857 }%
6858 \refstepcounter{#1}%
6859 \let\Hy@raisedlink\ttl@b
6860 }%
6861 }{}

```

Package titletoc support:

```

6862 \@ifpackageloaded{titletoc}{%
6863 \def\ttl@gobblecontents#1#2#3#4{\ignorespaces}%
6864 }{}

```

## 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)).

```

6865 \def\Hy@varioref@undefined{{??}{??}{}}{}
6866 \@ifpackageloaded{varioref}{%
6867 \def\vref@pagenum#1#2{%
6868 \@ifundefined{r@#2}{%
6869 \expandafter\let\csname r@#2\endcsname\Hy@varioref@undefined
6870 }{}%
6871 \edef#1{\getpagerefnumber{#2}}%
6872 }%
6873 }{}

```

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

```

6874 \def\Hy@varioref@refstepcounter#1{%
6875 \stepcounter{#1}%
6876 \protected@edef\@currentlabel{%
6877 \csname p@#1\expandafter\endcsname\csname the#1\endcsname
6878 }%
6879 }
6880 \AtBeginDocument{%
6881 \ifx\refstepcounter\Hy@varioref@refstepcounter
6882 \let\H@refstepcounter\refstepcounter
6883 \let\refstepcounter\Hy@saved@refstepcounter
6884 \fi
6885 }

```

## 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

```

6886 \@ifpackageloaded{longtable}{%
6887   \begingroup
6888   \def\y{\LT@array}%
6889   \@ifundefined{scr@LT@array}{%
6890     \@ifundefined{adl@LT@array}{\def\y{\adl@LT@array}}{%
6891       \def\y{\scr@LT@array}}%
6892   \long\def\x\refstepcounter#1#2\@sharp#3#4\@nil{%
6893     \expandafter\endgroup
6894     \expandafter\def\y[#1]#2{%
6895       \H@refstepcounter{#1}%
6896       \hyper@makecurrent{table}%
6897       \let\Hy@LT@currentHref\@currentHref
6898       #2\@sharp#3#4%
6899     }%
6900   }%
6901   \expandafter\expandafter\expandafter\x\y[{#1}]{#2}\@nil

```

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

```

6902 \begingroup
6903 \def\x#1\ifvoid\LT@foot#2\fi#3\@nil{%
6904   \endgroup
6905   \def\LT@start{%
6906     #1%
6907     \ifvoid\LT@foot#2\fi
6908     \let\@currentHref\Hy@LT@currentHref
6909     \Hy@raisedlink{%
6910       \hyper@anchorstart{\@currentHref}\hyper@anchorend
6911     }%
6912     #3%
6913   }%
6914 }%
6915 \expandafter\x\LT@start\@nil
6916 }{}

```

## 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.

```

6917 \let\new@refstepcounter\refstepcounter
6918 \let\H@equation\equation
6919 \let\H@endequation\endequation
6920 \@ifpackageloaded{amsmath}{%
6921   \long\def\Hy@temp{%
6922     \incr@eqnum
6923     \mathdisplay@push
6924     \st@rredfalse \global\@eqnswtrue
6925     \mathdisplay{equation}%
6926   }%
6927   \ifx\Hy@temp\equation

```



```

6928 \expandafter\ifx\csname if@fleqn\expandafter\endcsname
6929 \csname iftrue\endcsname
6930 \else
6931 \long\def\equation{%
6932 \mathdisplay@push
6933 \st@rredfalse \global\@eqnswtrue
6934 \mathdisplay{equation}%
6935 \incr@eqnum
6936 }%
6937 \fi
6938 \fi
6939 }{%
6940 \def\equation{%
6941 \let\refstepcounter\H@refstepcounter
6942 \H@equation
6943 \@ifundefined{theHequation}{%
6944 \make@stripped@name{\theequation}%
6945 \let\theHequation\newname
6946 }{}%
6947 \hyper@makecurrent{equation}%

```

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

```

6948 \mathopen{%
6949 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}}}%
6950 }%
6951 \let\refstepcounter\new@refstepcounter
6952 }%
6953 \def\endequation{%
6954 \ifx\Hy@raisedlink\ltx@empty
6955 \hyper@anchorend
6956 \else
6957 \mathclose{\Hy@raisedlink{\hyper@anchorend}}}%
6958 \fi
6959 \H@endequation
6960 }%
6961 }

```

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.

```

6962 \newif@if@eqnstar
6963 \@eqnstarfalse
6964 \let\H@eqnarray\eqnarray
6965 \let\H@endeqnarray\endeqnarray
6966 \def\eqnarray{%
6967 \let\Hy@reserved@a\relax
6968 \def\@currentHref{}%
6969 \H@eqnarray
6970 \if@eqnstar
6971 \else
6972 \ifx\\\@currentHref\\%
6973 \else
6974 \@ifundefined{theHequation}{%
6975 \make@stripped@name{\theequation}%
6976 \let\theHequation\newname
6977 }{}%

```

```

6978 \hyper@makecurrent{equation}%
6979 \mathopen{%
6980 \Hy@raisedlink{%
6981 \hyper@anchorstart{\@currentHref}\hyper@anchorend
6982 }%
6983 }%
6984 \fi
6985 \fi
6986 }
6987 \def\endeqnarray{%
6988 \H@endeqnarray
6989 }

```

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.

```

6990 \@namedef{eqnarray*}{%
6991 \def\@eqncr{\nonumber\@seqncr}\@eqnstartrue\eqnarray
6992 }
6993 \@namedef{endeqnarray*}{%
6994 \nonumber\endeqnarray\@eqnstarfalse
6995 }

```

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

```

7006 \ltx@ifundefined{subeqnarray}{-}{%
7007 \let\H@subeqnarray\subeqnarray
7008 \let\H@endsubeqnarray\endsubeqnarray
7009 \def\subeqnarray{%
7010 \let\Hy@reserved@a\relax
7011 \H@subeqnarray
7012 \@ifundefined{theHequation}{%
7013 \make@stripped@name{\theequation}%
7014 \let\theHequation\newname
7015 }{}%
7016 \hyper@makecurrent{equation}%
7017 \hyper@anchorstart{\@currentHref}{-}\hyper@anchorend
7018 }%
7019 \def\endsubeqnarray{%
7020 \H@endsubeqnarray
7021 }%
7022 \providecommand\theHsubequation{\theHequation\alph{subequation}}%
7023 }

```

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

```

7014 \def\make@stripped@name#1{%
7015 \begingroup
7016 \escapechar\m@ne
7017 \global\let\newname\@empty
7018 \protected@edef\Hy@tempa{#1}%
7019 \edef\@tempb{%
7020 \noexpand\@tfor\noexpand\Hy@tempa:=%
7021 \expandafter\strip@prefix\meaning\Hy@tempa
7022 }%
7023 \@tempb\do{%
7024 \if{\Hy@tempa\else
7025 \if{\Hy@tempa\else

```

```

7026      \xdef\newname{\newname\Hy@tempa}%
7027      \fi
7028      \fi
7029    }%
7030  \endgroup
7031 }

```

Support for amsmath's subequations:

```

7032 \begingroup\expandafter\expandafter\expandafter\endgroup
7033 \expandafter\ifx\csname subequations\endcsname\relax
7034 \else
7035   \let\HyOrg@subequations\subequations
7036   \def\subequations{%
7037     \stepcounter{equation}%
7038     \protected@edef\theHparentequation{%
7039       \ifundefined{theHequation}\theequation\theHequation
7040     }%
7041     \addtocounter{equation}{-1}%
7042     \HyOrg@subequations
7043     \def\theHequation{\theHparentequation\alph{equation}}%
7044     \ignorespaces
7045   }%
7046 \fi

```

Support for package `amsthm` (Daniel Müllner):

```

7047 \@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

7048 \def\Hy@temp#1#2#3{%
7049   \ifhmode\unskip\unskip\par\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\@tempa{#2}\ifx\@empty\@tempa
7064     \def\@tempa{\@oparg{\@begintheorem{#3}{}}{}}%
7065   \else
7066     \refstepcounter{#2}%
7067     \def\@tempa{\@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}}%
7068   \fi
7069   \@tempa
7070 }%
7071 \ifx\Hy@temp\@thm
7072   \def\@thm#1#2#3{%
7073     \ifhmode
7074       \unskip\unskip\par

```

```

7075 \fi
7076 \normalfont
7077 \trivlist
7078 \let\thmheadnl\relax
7079 \let\thm@swap\@gobble
7080 \let\thm@indent\indent % indent
7081 \thm@headfont{\scshape}% heading font small caps
7082 \thm@notefont{\fontseries\mddefault\upshape}%
7083 \thm@headpunct{.}% add period after heading
7084 \thm@headsep 5\p@ plus\p@ minus\p@\relax
7085 \thm@space@setup
7086 #1% style overrides
7087 \@topsep \thm@preskip % used by thm head
7088 \@topsepadd \thm@postskip % used by \@endparenv
7089 \def\dth@counter{#2}%
7090 \ifx\@empty\dth@counter
7091 \def\@tempa{%
7092 \@oparg{\@begintheorem{#3}{}}{}%
7093 }%
7094 \else
7095 \H@refstepcounter{#2}%
7096 \hyper@makecurrent{#2}%
7097 \let\Hy@dth@currentHref\@currentHref
7098 \def\@tempa{%
7099 \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}%
7100 }%
7101 \fi
7102 \@tempa
7103 }%
7104 \else
7105 \def\@thm#1#2#3{%
7106 \ifhmode
7107 \unskip\unskip\par
7108 \fi
7109 \normalfont
7110 \trivlist
7111 \let\thmheadnl\relax
7112 \let\thm@swap\@gobble
7113 \thm@notefont{\fontseries\mddefault\upshape}%
7114 \thm@headpunct{.}% add period after heading
7115 \thm@headsep 5\p@ plus\p@ minus\p@\relax
7116 \thm@space@setup
7117 #1% style overrides
7118 \@topsep \thm@preskip % used by thm head
7119 \@topsepadd \thm@postskip % used by \@endparenv
7120 \def\dth@counter{#2}%
7121 \ifx\@empty\dth@counter
7122 \def\@tempa{%
7123 \@oparg{\@begintheorem{#3}{}}{}%
7124 }%
7125 \else
7126 \H@refstepcounter{#2}%
7127 \hyper@makecurrent{#2}%
7128 \let\Hy@dth@currentHref\@currentHref
7129 \def\@tempa{%
7130 \@oparg{\@begintheorem{#3}{\csname the#2\endcsname}}{}%
7131 }%

```

```

7132 \fi
7133 \@tempa
7134 }%
7135 \fi
7136 \dth@everypar={%
7137 \@minipagefalse
7138 \global\@newlistfalse
7139 \@noparitemfalse
7140 \if@inlabel
7141 \global\@inlabelfalse
7142 \begingroup
7143 \setbox\z@\lastbox
7144 \ifvoid\z@
7145 \kern-\itemindent
7146 \fi
7147 \endgroup
7148 \ifx\@empty\dth@counter
7149 \else
7150 \Hy@raisedlink{%
7151 \hyper@anchorstart{%
7152 \ltx@ifundefined{Hy@dth@currentHref}%
7153 \@currentHref\Hy@dth@currentHref
7154 }\hyper@anchorend
7155 }%
7156 \fi
7157 \unhbox\@labels
7158 \fi
7159 \if@nobreak
7160 \@nobreakfalse \clubpenalty\@M
7161 \else
7162 \clubpenalty\@clubpenalty \everypar{}%
7163 \fi
7164 }%
7165 }{}

```

## 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.

```

7166 \ifHy@hyperfootnotes
7167 \newcounter{Hfootnote}%
7168 \let\H@@footnotetext\@footnotetext
7169 \let\H@@footnotemark\@footnotemark
7170 \def\@xfootnotenext[#1]{%
7171 \begingroup
7172 \csname c@\@mpfn\endcsname #1\relax
7173 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7174 \endgroup
7175 \ifx\@footnotetext\@mpfootnotetext
7176 \expandafter\H@@mpfootnotetext
7177 \else
7178 \expandafter\H@@footnotetext
7179 \fi

```

```

7180 }%
7181 \def\xfootnotemark[#1]{%
7182   \begingroup
7183     \c@footnote #1\relax
7184     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7185   \endgroup
7186   \H@@footnotemark
7187 }%
7188 \let\H@@mpfootnotetext\@mpfootnotetext
7189 \long\def\@mpfootnotetext#1{%
7190   \H@@mpfootnotetext{%
7191     \ifHy@nesting
7192       \expandafter\ltx@firstoftwo
7193     \else
7194       \expandafter\ltx@secondoftwo
7195     \fi
7196     {%
7197       \expandafter\hyper@@anchor\expandafter{%
7198         \Hy@footnote@currentHref
7199         }{#1}%
7200     }{%
7201       \Hy@raisedlink{%
7202         \expandafter\hyper@@anchor\expandafter{%
7203           \Hy@footnote@currentHref
7204           }{\relax}%
7205         }#1%
7206     }%
7207   }%
7208 }%
7209 \long\def\@footnotetext#1{%
7210   \H@@footnotetext{%
7211     \ifHy@nesting
7212       \expandafter\ltx@firstoftwo
7213     \else
7214       \expandafter\ltx@secondoftwo
7215     \fi
7216     {%
7217       \expandafter\hyper@@anchor\expandafter{%
7218         \Hy@footnote@currentHref
7219         }{#1}%
7220     }{%
7221       \Hy@raisedlink{%
7222         \expandafter\hyper@@anchor\expandafter{%
7223           \Hy@footnote@currentHref
7224           }{\relax}%
7225         }%
7226       \let\@currentHref\Hy@footnote@currentHref
7227       \let\@currentlabelname\@empty
7228       #1%
7229     }%
7230   }%
7231 }%

```

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.

```

7232 \def\@footnotemark{%
7233 \leavevmode
7234 \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7235 \stepcounter{Hfootnote}%
7236 \global\let\Hy@saved@currentHref\@currentHref
7237 \hyper@makecurrent{Hfootnote}%
7238 \global\let\Hy@footnote@currentHref\@currentHref
7239 \global\let\@currentHref\Hy@saved@currentHref
7240 \hyper@linkstart{link}{\Hy@footnote@currentHref}%
7241 \@makefnmark
7242 \hyper@linkend
7243 \ifhmode\spacefactor\@x@sf\fi
7244 \relax
7245 }%

```

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

```

7246 \@ifpackageloaded{tabularx}{%
7247 \let\HyOrg@TX@endtabularx\TX@endtabularx
7248 \def\Hy@tabularx@hook{%
7249 \let\@footnotetext\H@footnotetext
7250 \let\@footnotemark\H@footnotemark
7251 \let\@mpfootnotetext\H@mpfootnotetext
7252 }%
7253 \begingroup
7254 \toks@\expandafter{\TX@endtabularx}%
7255 \xdef\Hy@gtemp{%
7256 \noexpand\Hy@tabularx@hook
7257 \the\toks@
7258 }%
7259 \endgroup
7260 \let\TX@endtabularx\Hy@gtemp
7261 }{}%

```

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

```

7262 \@ifpackageloaded{longtable}{%
7263 \CheckCommand*{\LT@p@ftntext}[1]{%
7264 \edef\@tempa{%
7265 \the\LT@p@ftn
7266 \noexpand\footnotetext[\the\c@footnote]%
7267 }%
7268 \global\LT@p@ftn\expandafter{\@tempa{#1}}%
7269 }%
7270 \long\def\LT@p@ftntext#1{%
7271 \edef\@tempa{%
7272 \the\LT@p@ftn
7273 \begingroup
7274 \noexpand\c@footnote=\the\c@footnote\relax
7275 \noexpand\protected\xdef\noexpand\@thefnmark{%
7276 \noexpand\thempfn
7277 }%
7278 \noexpand\Hy@LT@footnotetext{%
7279 \Hy@footnote@currentHref
7280 }%

```

```

7281 }%
7282 \global\LT@p@ftn\expandafter{%
7283   \@tempa{#1}%
7284   \endgroup
7285 }%
7286 }%
7287 \long\def\Hy@LT@footnotetext#1#2{%
7288   \H@@footnotetext{%
7289     \ifHy@nesting
7290       \hyper@@anchor{#1}{#2}%
7291     \else
7292       \Hy@raisedlink{%
7293         \hyper@@anchor{#1}{\relax}%
7294       }%
7295       \def\@currentHref{#1}%
7296       \let\@currentlabelname\@empty
7297       #2%
7298     \fi
7299   }%
7300 }%
7301 }{}%

```

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

```

7302 \@ifpackageloaded{fancyvrb}{%
7303   \def\V@@footnotetext{%
7304     \insert\footins\bgroup
7305     \csname reset@font\endcsname
7306     \footnotesize
7307     \interlinepenalty\interfootnotelinepenalty
7308     \splittopskip\footnotesep
7309     \splitmaxdepth\dp\strutbox
7310     \floatingpenalty \@MM
7311     \hsize\columnwidth
7312     \@parboxrestore
7313     \edef\@currentlabel{\csname p@footnote\endcsname\@thefnmark}%
7314     \@makefntext{}%
7315     \rule{\z@}{\footnotesep}%
7316     \bgroup
7317     \aftergroup\V@@@footnotetext
7318     \Hy@raisedlink{%
7319       \expandafter\hyper@@anchor\expandafter{%
7320         \Hy@footnote@currentHref
7321       }\relax}%
7322   }%
7323   \let\@currentHref\Hy@footnote@currentHref
7324   \let\@currentlabelname\@empty
7325   \ignorespaces
7326 }%
7327 }{}%

```

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

```

7328 \def\Hy@temp#1{%
7329   \begingroup
7330   \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7331   \endgroup
7332   \@footnotemark
7333 }%

```



```

7334 \ifx\Hy@temp\footref
7335 \def\footref#1{%
7336 \begingroup
7337 \unrestored@protected@xdef\@thefnmark{\ref{#1}}%
7338 \endgroup
7339 \H@@footnotemark
7340 }%
7341 \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.

```

7342 \let\HyOrg@maketitle\maketitle
7343 \def\maketitle{%
7344 \let\Hy@saved@footnotemark\@footnotemark
7345 \let\Hy@saved@footnotetext\@footnotetext
7346 \let\@footnotemark\H@@footnotemark
7347 \let\@footnotetext\H@@footnotetext
7348 \@ifnextchar[\Hy@maketitle@optarg{% ]
7349 \HyOrg@maketitle
7350 \Hy@maketitle@end
7351 }%
7352 }%
7353 \def\Hy@maketitle@optarg[#1]{%
7354 \HyOrg@maketitle[{#1}]%
7355 \Hy@maketitle@end
7356 }%
7357 \def\Hy@maketitle@end{%
7358 \ifx\@footnotemark\H@@footnotemark
7359 \let\@footnotemark\Hy@saved@footnotemark
7360 \fi
7361 \ifx\@footnotetext\H@@footnotetext
7362 \let\@footnotetext\Hy@saved@footnotetext
7363 \fi
7364 }%

```

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

```

7365 \def\realfootnote{%
7366 \@ifnextchar[\@xfootnote{%
7367 \stepcounter{\@mpfn}%
7368 \protected@xdef\@thefnmark{\thempfn}%
7369 \H@@@footnotemark\H@@@footnotetext
7370 }%
7371 }%

7372 \fi
7373 \Hy@DisableOption{hyperfootnotes}

7374 \</package>
7375 \< *check>
7376 \checklatex
7377 \checkcommand\def\@xfootnotenext[#1]{%
7378 \begingroup
7379 \csname c@\@mpfn\endcsname #1\relax
7380 \unrestored@protected@xdef\@thefnmark{\thempfn}%
7381 \endgroup
7382 \@footnotetext
7383 }

```

```

7384 \checkcommand\def\@xfootnotemark[#1]{%
7385   \begingroup
7386     \c@footnote #1\relax
7387     \unrestored@protected@xdef\@thefnmark{\thefootnote}%
7388   \endgroup
7389   \@footnotemark
7390 }
7391 \checkcommand\def\@footnotemark{%
7392   \leavevmode
7393   \ifhmode\edef\@x@sf{\the\spacefactor}\nobreak\fi
7394   \@makefnmark
7395   \ifhmode\spacefactor\@x@sf\fi
7396   \relax
7397 }
7398 \</check>
7399 \<*/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.

```

7400 \def\caption{%
7401   \ifx\@capttype\@undefined
7402     \@latex@error{\noexpand\caption outside float}\@ehd
7403     \expandafter\@gobble
7404   \else
7405     \H@refstepcounter\@capttype
7406     \let\Hy@tempa\@caption
7407     \@ifundefined{float@caption}{%
7408       }{%
7409         \expandafter\ifx\csname @float@c@\@capttype\endcsname
7410           \float@caption
7411           \let\Hy@tempa\Hy@float@caption
7412         \fi
7413       }%
7414     \expandafter\@firstofone
7415     \fi
7416     {\@dblarg{\Hy@tempa\@capttype}}}%
7417 }
7418 \long\def\@caption#1[#2]#3{%
7419   \expandafter\ifx\csname if@capstart\expandafter\endcsname
7420     \csname iftrue\endcsname
7421     \global\let\@currentHref\hc@currentHref
7422   \else
7423     \hyper@makecurrent{\@capttype}%
7424   \fi
7425   \@ifundefined{NR@gettitle}{%
7426     \def\@currentlabelname{#2}%
7427   }{%
7428     \NR@gettitle{#2}%
7429   }%
7430   \par\addcontentsline{\csname ext@#1\endcsname}{#1}{%
7431     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7432   }%
7433   \begingroup
7434   \@parboxrestore

```

```

7435 \if@minipage
7436 \setminipage
7437 \fi
7438 \normalsize
7439 \expandafter\ifx\csname if@capstart\expandafter\endcsname
7440 \csname iftrue\endcsname
7441 \global\@capstartfalse
7442 \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces#3}%
7443 \else
7444 \@makecaption{\csname fnum@#1\endcsname}{%
7445 \ignorespaces

```

If we cannot have nesting, the anchor is empty.

```

7446 \ifHy@nesting
7447 \expandafter\hyper@@anchor\expandafter{\@currentHref}{#3}%
7448 \else
7449 \Hy@raisedlink{%
7450 \expandafter\hyper@@anchor\expandafter{%
7451 \@currentHref
7452 }{\relax}%
7453 }%
7454 #3%
7455 \fi
7456 }%
7457 \fi
7458 \par
7459 \endgroup
7460 }

```

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.

```

7461 \let\Hy@float@caption\@caption
7462 \@ifpackageloaded{float}{%
7463 \def\Hy@float@caption{%
7464 \ifx\Hy@float@currentHref\@undefined
7465 \hyper@makecurrent{\@cuptype}%
7466 \global\let\Hy@float@currentHref\@currentHref
7467 \else
7468 \let\@currentHref\Hy@float@currentHref
7469 \fi
7470 \float@caption
7471 }%
7472 \let\HyOrg@float@makebox\float@makebox
7473 \renewcommand{\float@makebox}[1]{%
7474 \HyOrg@float@makebox{%
7475 #1\relax
7476 \ifx\Hy@float@currentHref\@undefined
7477 \else
7478 \expandafter\hyper@@anchor\expandafter{%
7479 \Hy@float@currentHref
7480 }{\relax}%
7481 \global\let\Hy@float@currentHref\@undefined
7482 \fi
7483 }%
7484 }%
7485 }{}
7486 \</package>

```

```

7487 \check
7488 \checklatex[1999/06/01 - 2000/06/01]
7489 \checkcommand\def\caption{%
7490   \ifx\@captive\@undefined
7491     \@latex@error{\noexpand\caption outside float}\@ehd
7492     \expandafter\@gobble
7493   \else
7494     \refstepcounter\@captive
7495     \expandafter\@firstofone
7496   \fi
7497   {\@dblarg{\@caption\@captive}}}%
7498 }
7499 \checkcommand\long\def\@caption#1[#2]#3{%
7500   \par
7501   \addcontentsline{\csname ext@#1\endcsname}{#1}{%
7502     \protect\numberline{\csname the#1\endcsname}{\ignorespaces #2}%
7503   }%
7504   \begingroup
7505     \@parboxrestore
7506     \if@minipage
7507       \setminipage
7508     \fi
7509     \normalsize
7510     \@makecaption{\csname fnum@#1\endcsname}{\ignorespaces #3}\par
7511   \endgroup
7512 }
7513 \check
7514 \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, let's make an attempt to get *natbib* right, because that's a powerful, important package. Patrick Daly ([daly@linmpi.mpg.de](mailto:daly@linmpi.mpg.de)) has provided hooks for us, so all we need to do is activate them.

```

7515 \def\hyper@natlinkstart#1{%
7516   \Hy@backout{#1}%
7517   \hyper@linkstart{cite}{cite.#1}%
7518   \def\hyper@nat@current{#1}%
7519 }
7520 \def\hyper@natlinkend{%
7521   \hyper@linkend
7522 }
7523 \def\hyper@natlinkbreak#1#2{%
7524   \hyper@linkend#1\hyper@linkstart{cite}{cite.#2}%
7525 }
7526 \def\hyper@natanchorstart#1{%
7527   \Hy@raisedlink{\hyper@anchorstart{cite.#1}}%
7528 }
7529 \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.

```

7530 \ltx@ifundefined{NAT@parse}{%
7531   \providecommand*\@extra@binfo{}%
7532   \providecommand*\@extra@b@citeb{}%
7533   \def\bibcite#1#2{%
7534     \@newl@bel{b}{#1\@extra@binfo}{%
7535       \hyper@@link[cite]{cite.#1\@extra@b@citeb}{#2}%
7536     }%
7537   }%
7538   \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.”.

```

7539 \let\Hy@bibcite\bibcite
7540 \begingroup
7541   \@ifundefined{bbl@cite@choice}{}{%
7542     \g@addto@macro\bbl@cite@choice{%
7543       \let\bibcite\Hy@bibcite
7544     }%
7545   }%
7546 \endgroup

```

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

```

7547 \providecommand*\@BIBLABEL{\@biblabel}%
7548 \def\@bibitem[#1]#2{%
7549   \@skiphyperreftrue
7550   \H@item[%
7551     \ifx\Hy@raisedlink\@empty
7552       \hyper@anchorstart{cite.#2\@extra@b@citeb}%
7553       \@BIBLABEL{#1}%
7554       \hyper@anchorend
7555     \else
7556       \Hy@raisedlink{%
7557         \hyper@anchorstart{cite.#2\@extra@b@citeb}\hyper@anchorend
7558       }%
7559       \@BIBLABEL{#1}%
7560     \fi
7561     \hfill
7562   ]%
7563   \@skiphyperreffalse
7564   \if@filesw
7565     \begingroup
7566       \let\protect\noexpand
7567       \immediate\write\@auxout{%
7568         \string\bibcite{#2}{#1}%
7569       }%
7570     \endgroup
7571   \fi
7572   \ignorespaces
7573 }%

```

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

```

7574 \def\@bibitem#1{%
7575   \@skiphyperreftrue\H@item\@skiphyperreffalse
7576   \Hy@raisedlink{%

```

```

7577 \hyper@anchorstart{cite.#1\@extra@b@citeb}\relax\hyper@anchorend
7578 }%
7579 \if@filesw
7580 \begingroup
7581 \let\protect\noexpand
7582 \immediate\write\@auxout{%
7583 \string\bibcite{#1}{\the\value{\@listctr}}}%
7584 }%
7585 \endgroup
7586 \fi
7587 \ignorespaces
7588 }%
7589 }{}

7590 \</package>
7591 \< *check>
7592 \checklatex
7593 \checkcommand\def\@lbibitem[#1]#2{%
7594 \item[\@biblabel{#1}\hfill]%
7595 \if@filesw
7596 {%
7597 \let\protect\noexpand
7598 \immediate\write\@auxout{%
7599 \string\bibcite{#2}{#1}%
7600 }%
7601 }%
7602 \fi
7603 \ignorespaces
7604 }
7605 \checkcommand\def\@bibitem#1{%
7606 \item
7607 \if@filesw
7608 \immediate\write\@auxout{%
7609 \string\bibcite{#1}{\the\value{\@listctr}}}%
7610 }%
7611 \fi
7612 \ignorespaces
7613 }
7614 \</check>
7615 \< *package>

```

RevTeX (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.

```

7616 \@ifclassloaded{revtex}{%
7617 \Hy@Info{*** compatibility with revtex **** }%
7618 \def\revtex@checking#1#2{%
7619 \expandafter\let\expandafter\T@temp\csname b@#1\endcsname
7620 \expandafter\def\csname b@#1\endcsname{#2}%
7621 \@SetMaxRnhefLabel{#1}%
7622 \expandafter\let\csname b@#1\endcsname\T@temp
7623 }%

```

Tanmoy provided this replacement for CITEX. Lord knows what it does. For chapterbib added: `extra@b@citeb`

```

7624 \@ifundefined{CITE}{\def\CITE{\@cite}}{}%
7625 \providecommand*\@extra@b@citeb{}%
7626 \def\CITEX[#1]#2{%

```

```

7627 \let\@citea\@empty
7628 \leavevmode
7629 \unskip
7630 ${\%
7631 \scriptstyle
7632 \@CITE{%
7633 \@for\@citeb:=#2\do{%
7634 \@citea
7635 \def\@citea{,\penalty\@m\ }%
7636 \edef\@citeb{\expandafter\@firstofone\@citeb}%
7637 \if@filesw
7638 \immediate\write\@auxout{\string\citation{\@citeb}}%
7639 \fi
7640 \@ifundefined{b@\@citeb\extra@b@citeb}{%
7641 \mbox{\reset@font\bfseries ?}%
7642 \G@refundefinedtrue
7643 \@latex@warning{%
7644 Citation '\@citeb' on page \thepage \space undefined%
7645 }%
7646 }{%
7647 {\csname b@\@citeb\@extra@b@citeb\endcsname}%
7648 }%
7649 }%
7650 }{#1}%
7651 }$%
7652 }%

```

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

```

7653 \def\@citex[#1]#2{%
7654 \let\@citea\@empty
7655 \@cite{%
7656 \@for\@citeb:=#2\do{%
7657 \@citea
7658 \def\@citea{,\penalty\@m\ }%
7659 \edef\@citeb{\expandafter\@firstofone\@citeb}%
7660 \if@filesw
7661 \immediate\write\@auxout{\string\citation{\@citeb}}%
7662 \fi
7663 \@ifundefined{b@\@citeb\@extra@b@citeb}{%
7664 \mbox{\reset@font\bfseries ?}%
7665 \G@refundefinedtrue
7666 \@latex@warning{%
7667 Citation '\@citeb' on page \thepage \space undefined%
7668 }%
7669 }{%
7670 \hbox{\csname b@\@citeb\@extra@b@citeb\endcsname}%
7671 }%
7672 }%
7673 }{#1}%
7674 }%
7675 }{}

```

### 37.1 Package harvard

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

backreference section for each bibliography entry.

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

```

7676 \@ifpackageloaded{harvard}{%
7677   \Hy@AtBeginDocument{%
7678     \Hy@Info{*** compatibility with harvard **** }%
7679     \Hy@raiselinksfalse
7680     \def\harvardcite#1#2#3#4{%
7681       \global\@namedef{HAR@fn@#1}{\hyper@link[cite]{#1}{#2}}%
7682       \global\@namedef{HAR@an@#1}{\hyper@link[cite]{#1}{#3}}%
7683       \global\@namedef{HAR@yr@#1}{\hyper@link[cite]{#1}{#4}}%
7684       \global\@namedef{HAR@df@#1}{\csname HAR@fn@#1\endcsname}%
7685     }%
7686     \def\HAR@citetoaux#1{%
7687       \iffilesw\immediate\write\@auxout{\string\citation{#1}}\fi%
7688       \ifHy@backref
7689         \ifx\@empty\@currentlabel
7690           \else
7691             \@bsphack
7692             \iffilesw
7693               \protected@write\@auxout{}{%
7694                 \string\@writefile{brf}{%
7695                   \string\backcite{#1}{%
7696                     {\thepage}{\@currentlabel}{\@currentHref}%
7697                   }%
7698                 }%
7699               }%
7700             \fi
7701             \@esphack
7702           \fi
7703         \fi
7704       }%
7705     \def\harvarditem{%
7706       \@ifnextchar[{\@harvarditem}{\@harvarditem[\null]}%
7707     }%
7708     \def\@harvarditem[#1]#2#3#4#5\par{%
7709       \item[]%
7710       \hyper@anchorstart{cite.#4}\relax\hyper@anchorend
7711       \iffilesw
7712         \begingroup
7713         \def\protect##1{\string ##1\space}%
7714         \ifthenelse{\equal{#1}{\null}}{%
7715           {\def\next{{#4}{#2}{#2}{#3}}}%
7716           {\def\next{{#4}{#2}{#1}{#3}}}%
7717         \immediate\write\@auxout{\string\harvardcite\codeof\next}%
7718         \endgroup
7719       \fi
7720       \protect\hspace*{-\labelwidth}%
7721       \protect\hspace*{-\labelsep}%
7722       \ignorespaces
7723       #5%
7724       \ifHy@backref
7725         \newblock
7726         \backref{\csname br@#4\endcsname}%
7727       \fi

```



```

7728 \par
7729 }%

```

\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:

```

7730 \long\def\HAR@checkcitations#1#2#3#4{%
7731 \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#2}}%
7732 \expandafter\ifx\csname HAR@fn@#1\endcsname\HAR@tempa
7733 \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#3}}%
7734 \expandafter\ifx\csname HAR@an@#1\endcsname\HAR@tempa
7735 \def\HAR@tempa{\hyper@@link[cite]{\cite.#1}{#4}}%
7736 \expandafter\ifx\csname HAR@yr@#1\endcsname\HAR@tempa
7737 \else
7738 \@tempswatrue
7739 \fi
7740 \else
7741 \@tempswatrue
7742 \fi
7743 \else
7744 \@tempswatrue
7745 \fi
7746 }%
7747 }%

7748 }{}

```

## 37.2 Package chicago

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

```

7749 \@ifpackageloaded{chicago}{%

```

\citeN

```

7750 \def\citeN{%
7751 \def\@citesep{-1000}%
7752 \def\@cite##1##2{##1}%
7753 \def\citeauthoryear##1##2##3{##1 (##3\@cite@opt)}%
7754 \@citedata@opt
7755 }%

```

\shortciteN

```

7756 \def\shortciteN{%
7757 \def\@citesep{-1000}%
7758 \def\@cite##1##2{##1}%
7759 \def\citeauthoryear##1##2##3{##2 (##3\@cite@opt)}%
7760 \@citedata@opt
7761 }%

```

\@citedata@opt

```

7762 \def\@citedata@opt{%
7763 \let\@cite@opt\@empty
7764 \@ifnextchar [{%
7765 \@tempswatrue
7766 \@citedatax@opt
7767 }{%
7768 \@tempswafalse

```

```

7769 \citedatax[]%
7770 }%
7771 }%

```

\citedatax@opt

```

7772 \def\citedatax@opt[#1]{%
7773 \def\cite@opt{, #1}%
7774 \citedatax[{#1}]%
7775 }%

7776 }{}

```

## 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.

```

7777 \ltx@ifclassloaded{slides}{%
7778 \def\Hy@SlidesFormatOptionalPage#1{(#1)}%
7779 \def\Hy@PageAnchorSlidesPlain{%
7780 \advance\c@page\ltx@one
7781 \edef\Hy@TempPageAnchor{%
7782 \noexpand\hyper@@anchor{%
7783 page.\the\c@slide.\the\c@overlay.\the\c@note%
7784 \ifnum\c@page=\ltx@one
7785 \else
7786 .\the\c@page
7787 \fi
7788 }%
7789 }%
7790 \advance\c@page-\ltx@one
7791 }%
7792 \def\Hy@PageAnchorSlide{%
7793 \advance\c@page\ltx@one
7794 \ifnum\c@page>\ltx@one
7795 \ltx@ifundefined{theHpage}{%
7796 \protected@edef\Hy@TheSlideOptionalPage{%
7797 \Hy@SlidesFormatOptionalPage{theHpage}%
7798 }%
7799 }{%
7800 \protected@edef\Hy@TheSlideOptionalPage{%
7801 \Hy@SlidesFormatOptionalPage{theHpage}%
7802 }%
7803 }%
7804 \else
7805 \def\Hy@TheSlideOptionalPage{}%
7806 \fi
7807 \advance\c@page-\ltx@one
7808 \pdfstringdef\@the@H@page{%
7809 \csname
7810 the%
7811 \ltx@ifundefined{theH\Hy@SlidesPage}{H}%
7812 \Hy@SlidesPage

```

```

7813 \endcsname
7814 \Hy@TheSlideOptionalPage
7815 }%
7816 \ltx@gobblethree
7817 }%
7818 \def\Hy@SlidesPage{slide}%
7819 \g@addto@macro\slide{%
7820 \def\Hy@SlidesPage{slide}%
7821 }%
7822 \g@addto@macro\overlay{%
7823 \def\Hy@SlidesPage{overlay}%
7824 }%
7825 \g@addto@macro\note{%
7826 \def\Hy@SlidesPage{note}%
7827 }%
7828 }{%
7829 \def\Hy@PageAnchorSlidesPlain{}%
7830 \def\Hy@PageAnchorSlide{}%
7831 }
7832 \def\Hy@EveryPageAnchor{%
7833 \Hy@DistillerDestFix
7834 \ifHy@pageanchor
7835 \ifHy@hypertextnames
7836 \ifHy@plainpages
7837 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\the\c@page}}%
7838 \Hy@PageAnchorSlidesPlain
7839 \else
7840 \begingroup
7841 \let\@number\@firstofone
7842 \Hy@unicodedefalse
7843 \Hy@PageAnchorSlide
7844 \pdfstringdef\@the@H@page{\thepage}%
7845 \endgroup
7846 \EdefUnescapeString\@the@H@page{\@the@H@page}%
7847 \def\Hy@TempPageAnchor{\hyper@@anchor{page.\@the@H@page}}%
7848 \fi
7849 \else
7850 \Hy@GlobalStepCount\Hy@pagecounter
7851 \def\Hy@TempPageAnchor{%
7852 \hyper@@anchor{page.\the\Hy@pagecounter}%
7853 }%
7854 \fi
7855 \vbox to 0pt{%
7856 \kern\voffset
7857 \kern\topmargin
7858 \kern-1bp\relax
7859 \hbox to 0pt{%
7860 \kern\hoffset
7861 \kern\ifodd\value{page}%
7862 \oddsidemargin
7863 \else
7864 \evensidemargin
7865 \fi
7866 \kern-1bp\relax
7867 \Hy@TempPageAnchor\relax
7868 \hss
7869 }%

```

```

7870     \vss
7871   }%
7872 \fi
7873 }
7874 \g@addto@macro\Hy@EveryPageBoxHook{%
7875   \Hy@EveryPageAnchor
7876 }

```

## 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.

```

7877 \def\addcontentsline#1#2#3{% toc extension, type, tag
7878   \begingroup
7879     \let\label\@gobble
7880     \ifx\@currentHref\@empty
7881       \Hy@Warning{%
7882         No destination for bookmark of \string\addcontentsline,%
7883         \MessageBreak destination is added%
7884       }%
7885     \phantomsection
7886   \fi
7887   \expandafter\ifx\csname toplevel@#2\endcsname\relax
7888     \begingroup
7889       \def\Hy@tempa{#1}%
7890       \ifx\Hy@tempa\Hy@bookmarkstype
7891         \Hy@WarningNoLine{%
7892           bookmark level for unknown #2 defaults to 0%
7893         }%
7894       \else
7895         \Hy@Info{bookmark level for unknown #2 defaults to 0}%
7896       \fi
7897     \endgroup
7898     \expandafter\gdef\csname toplevel@#2\endcsname{0}%
7899   \fi
7900   \edef\Hy@toplevel{\csname toplevel@#2\endcsname}%
7901   \Hy@writebookmark{\csname the#2\endcsname}%
7902     {#3}%
7903     {\@currentHref}%
7904     {\Hy@toplevel}%
7905     {#1}%
7906   \ifHy@verbose
7907     \begingroup
7908       \def\Hy@tempa{#3}%
7909       \@onelevel@sanitize\Hy@tempa
7910       \let\temp@online\on@line
7911       \let\on@line\@empty
7912       \Hy@Info{%
7913         bookmark\temp@online:\MessageBreak
7914         thecounter {\csname the#2\endcsname}\MessageBreak
7915         text {\Hy@tempa}\MessageBreak
7916         reference {\@currentHref}\MessageBreak
7917         toplevel {\Hy@toplevel}\MessageBreak
7918         type {#1}%
7919       }%

```

```

7920 \endgroup
7921 \fi
7922 \addtocontents{#1}{%
7923 \protect\contentsline{#2}{#3}{\thepage}{\@currentHref}%
7924 }%
7925 \endgroup
7926 }
7927 \def\contentsline#1#2#3#4{%
7928 \ifx\\#4\\%
7929 \csname l@#1\endcsname{#2}{#3}%
7930 \else
7931 \ifcase\Hy@linktoc % none
7932 \csname l@#1\endcsname{#2}{#3}%
7933 \or % section
7934 \csname l@#1\endcsname{%
7935 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7936 }{#3}%
7937 \or % page
7938 \csname l@#1\endcsname{{#2}}{%
7939 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7940 }%
7941 \else % all
7942 \csname l@#1\endcsname{%
7943 \hyper@linkstart{link}{#4}{#2}\hyper@linkend
7944 }{%
7945 \hyper@linkstart{link}{#4}{#3}\hyper@linkend
7946 }%
7947 \fi
7948 \fi
7949 }
7950 \</package>
7951 \<*check>
7952 \checklatex
7953 \checkcommand\def\addcontentsline#1#2#3{%
7954 \addtocontents{#1}{\protect\contentsline{#2}{#3}{\thepage}}%
7955 }
7956 \checkcommand\def\contentsline#1{\csname l@#1\endcsname}
7957 \</check>
7958 \<*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.

```

7959 \let\H@definecounter\@definecounter
7960 \def\@definecounter#1{%
7961 \H@definecounter{#1}%
7962 \expandafter\def\csname theH#1\endcsname{\arabic{#1}}%
7963 }

```

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.

```

7964 \let\H@newctr\@newctr
7965 \def\@newctr#1[#2]{%
7966 \H@newctr#1[#2]%
7967 \expandafter\def\csname theH#1\endcsname{%

```

```

7968 \csname the\@ifundefined{theH#2}{H}#2\endcsname.\arabic{#1}%
7969 }%
7970 }

```

## 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.

```

7971 \@ifpackageloaded{amsmath}{%
7972 \def\Hy@make@anchor{%
7973 \Hy@MakeCurrentHrefAuto{AMS}%
7974 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
7975 }%
7976 \def\Hy@make@df@tag@@#1{%
7977 \gdef\df@tag{%
7978 \maketag@@@{\Hy@make@anchor#1}%
7979 \def\@currentlabel{#1}%
7980 }%
7981 }%
7982 \def\Hy@make@df@tag@@@#1{%
7983 \gdef\df@tag{%
7984 \tagform@{\Hy@make@anchor#1}%
7985 \toks@{\xp{p@equation{#1}}}%
7986 \edef\@currentlabel{\the\toks@}%
7987 }%
7988 }%
7989 \let\HyOrg@make@df@tag@@\make@df@tag@@
7990 \let\HyOrg@make@df@tag@@@\make@df@tag@@@
7991 \let\make@df@tag@@\Hy@make@df@tag@@
7992 \let\make@df@tag@@@\Hy@make@df@tag@@@
7993 }{}

```

Only play with `\seteqlebal` if we are using pdf $\text{\TeX}$ . Other drivers cause problems; requested by Michael Downes (AMS).

```

7994 \@ifpackagewith{hyperref}{pdf $\text{\TeX}$ }{%
7995 \let\H@seteqlabel\@seteqlabel
7996 \def\@seteqlabel#1{%
7997 \H@seteqlabel{#1}%
7998 \xdef\@currentHref{AMS.\the\Hy@linkcounter}%
7999 \Hy@raisedlink{%
8000 \hyper@anchorstart{\@currentHref}\hyper@anchorend
8001 }%
8002 }%
8003 }{}

```

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.

```
8004 \let\HyOrg@addtoreset\@addtoreset
8005 \def\@addtoreset#1#2{%
8006   \HyOrg@addtoreset{#1}{#2}%
8007   \expandafter\edef\csname theH#1\endcsname{%
8008     \expandafter\noexpand
8009       \csname the\@ifundefined{theH#2}{H#2\endcsname
8010         .\noexpand\the\noexpand\value{#1}%
8011       }%
8012 }
```

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

```
8013 \</package>
8014 \< *check>
8015 \checkpackage{amsmath}[1999/12/14 - 2000/06/06]
8016 \checkcommand\newcommand{\numberwithin}[3][\arabic]{%
8017   \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8018     \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8019       \@addtoreset{#2}{#3}%
8020       \@xp\xdef\csname the#2\endcsname{%
8021         \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8022       }%
8023     }%
8024   }%
8025 }%
8026 \< /check>
8027 \< *package>
8028 \@ifpackageloaded{amsmath}{%
8029   \@ifpackagelater{amsmath}[1999/12/14]{%
8030     \renewcommand*\numberwithin[3][\arabic]{%
8031       \@ifundefined{c@#2}{\@nocounterr{#2}}{%
8032         \@ifundefined{c@#3}{\@nocnterr{#3}}{%
8033           \HyOrg@addtoreset{#2}{#3}%
8034           \@xp\xdef\csname the#2\endcsname{%
8035             \@xp\@nx\csname the#3\endcsname .\@nx#1{#2}%
8036           }%
8037           \@xp\xdef\csname theH#2\endcsname{%
8038             \@xp\@nx
8039             \csname the\@ifundefined{theH#3}{H#3\endcsname
8040               .\@nx#1{#2}%
8041             }%
8042           }%
8043         }%
8044       }%
8045     }%
8046     \Hy@WarningNoLine{%
8047       \string\numberwithin\space of package 'amsmath' %
8048       only fixed\MessageBreak
8049       for version 2000/06/06 v2.12 or newer%
```

```

8050 }%
8051 }%
8052 }{}

```

## 42 Included figures

Simply intercept the low level graphics package macro.

```

8053 \ifHy@hyperfigures
8054 \let\Hy@Gin@setfile\Gin@setfile
8055 \def\Gin@setfile#1#2#3{%
8056 \hyperimage{#3}{\Hy@Gin@setfile{#1}{#2}{#3}}%
8057 }%
8058 \fi
8059 \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.

```

8060 \ifHy@hyperindex
8061 \def\HyInd@ParenLeft{({}%
8062 \def\HyInd@ParenRight{)}}%
8063 \def\hyperindexformat#1#2{%
8064 \let\HyOrg@hyperpage\hyperpage
8065 \let\hyperpage\@firstofone
8066 #1{\HyOrg@hyperpage{#2}}%
8067 \let\hyperpage\HyOrg@hyperpage
8068 }%
8069 \Hy@nextfalse
8070 \@ifpackageloaded{multind}{\Hy@nexttrue}{}%
8071 \@ifpackageloaded{index}{\Hy@nexttrue}{}%
8072 \@ifpackageloaded{amsmidx}{\Hy@nexttrue}{}%
8073 \begingroup
8074 \lccode'\|=\expandafter'\HyInd@EncapChar\relax
8075 \lccode'\|/\|=\relax
8076 \lowercase{\endgroup
8077 \ifHy@next
8078 \let\HyInd@org@wrindex\@wrindex
8079 \def\@wrindex#1#2{\HyInd@@wrindex{#1}{#2}||}%
8080 \def\HyInd@@wrindex#1#2|#3|#4\\{%
8081 \ifx\\#3\\%
8082 \HyInd@org@wrindex{#1}{#2|hyperpage}%
8083 \else
8084 \HyInd@@@wrindex{#1}{#2}#3\\%
8085 \fi
8086 }%
8087 \def\HyInd@@@wrindex#1#2#3#4\\{%

```



```

8088 \def\Hy@temp@A{#3}%
8089 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8090 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8091 \relax
8092 \HyInd@org@wrindex{#1}{%
8093 #2|hyperindexformat{/#3#4}%
8094 }%
8095 \else
8096 \ifx\\#4\\%
8097 \ifx\Hy@temp@A\HyInd@ParenRight
8098 \HyInd@org@wrindex{#1}{#2|#3}%
8099 \else
8100 \HyInd@org@wrindex{#1}{#2|#3hyperpage}%
8101 \fi
8102 \else
8103 \HyInd@org@wrindex{#1}{%
8104 #2|#3hyperindexformat{/#4}%
8105 }%
8106 \fi
8107 \fi
8108 }%
8109 \else
8110 \def\@wrindex#1{\@wrindex#1||\}%
8111 \def\@wrindex#1|#2|#3\{\%
8112 \if@filesw
8113 \ifx\\#2\\%
8114 \protected@write\@indexfile{\%
8115 \string\indexentry{#1|hyperpage}{\thepage}%
8116 }%
8117 \else
8118 \HyInd@@@wrindex{#1}#2\}%
8119 \fi
8120 \fi
8121 \endgroup
8122 \@esphack
8123 }%
8124 \def\HyInd@@@wrindex#1#2#3\{\%
8125 \def\Hy@temp@A{#2}%
8126 \ifcase0\ifx\Hy@temp@A\HyInd@ParenLeft 1\fi
8127 \ifx\Hy@temp@A\HyInd@ParenRight 1\fi
8128 \relax
8129 \protected@write\@indexfile{\%
8130 \string\indexentry{
8131 #1|hyperindexformat{/#2#3}%
8132 }{\thepage}%
8133 }%
8134 \else
8135 \ifx\\#3\\%
8136 \ifx\Hy@temp@A\HyInd@ParenRight
8137 \protected@write\@indexfile{\%
8138 \string\indexentry{#1|#2}{\thepage}%
8139 }%
8140 \else
8141 \protected@write\@indexfile{\%
8142 \string\indexentry{#1|#2hyperpage}{\thepage}%
8143 }%
8144 \fi

```

```

8145     \else
8146     \protected@write\@indexfile{}\{%
8147     \string\indexentry{%
8148     #1|#2hyperindexformat{/#3}%
8149     }\the page}%
8150     }%
8151     \fi
8152     \fi
8153     }%
8154     \fi
8155     }%
8156     \fi
8157 \Hy@DisableOption{hyperindex}
8158 \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.

```

8159 \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.

```

8160 \def\hyperpage#1{%
8161   \HyInd@hyperpage#1\nohyperpage{}\@nil
8162 }
8163 \def\HyInd@hyperpage#1\nohyperpage#2#3\@nil{%
8164   \HyInd@@hyperpage{#1}%
8165   #2%
8166   \def\Hy@temp{#3}%
8167   \ifx\Hy@temp\@empty
8168   \else
8169     \ltx@ReturnAfterFi{%
8170       \HyInd@hyperpage#3\@nil
8171     }%
8172   \fi
8173 }
8174 \def\HyInd@@hyperpage#1{\@hyperpage#1----\}
8175 \def\@hyperpage#1--#2--#3\{\%
8176   \ifx\#2\%
8177     \@commahyperpage{#1}%
8178   \else
8179     \HyInd@pagelink{#1}--\HyInd@pagelink{#2}%
8180   \fi
8181 }
8182 \def\@commahyperpage#1{\@commahyperpage#1, ,\}
8183 \def\@commahyperpage#1, #2,#3\{\%
8184   \ifx\#2\%
8185     \HyInd@pagelink{#1}%
8186   \else
8187     \HyInd@pagelink{#1}, \HyInd@pagelink{#2}%
8188   \fi
8189 }

```

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

```

8190 \def\HyInd@pagelink#1{%
8191   \begingroup
8192   \toks@={}%

```

```

8193 \HyInd@removespaces#1 \@nil
8194 \endgroup
8195 }
8196 \def\HyInd@removespaces#1 #2\@nil{%
8197 \toks@=\expandafter{\the\toks@#1}%
8198 \ifx\#2\%
8199 \edef\x{\the\toks@}%
8200 \ifx\x\@empty
8201 \else
8202 \hyperlink{page.\the\toks@}{\the\toks@}%
8203 \fi
8204 \else
8205 \ltx@ReturnAfterFi{%
8206 \HyInd@removespaces#2\@nil
8207 }%
8208 \fi
8209 }

```

## 44 Compatibility with foiltex

```

8210 \@ifclassloaded{foils}{%
8211 \providecommand*\ext@table{lot}%
8212 \providecommand*\ext@figure{lof}%
8213 }{}

```

## 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)).

```

8214 \@ifclassloaded{seminar}{%
8215 \Hy@seminarslidestrue
8216 \providecommand\theHslide{\arabic{slide}}%
8217 }{%
8218 \Hy@seminarslidesfalse
8219 }
8220 \@ifpackageloaded{slidesec}{%
8221 \providecommand\theHslidesection {\arabic{slidesection}}%
8222 \providecommand\theHslidesubsection{%
8223 \theHslidesection.\arabic{slidesubsection}}%
8224 }%
8225 \def\slide@heading[#1]#2{%
8226 \H@refstepcounter{slidesection}%
8227 \@addtoreset{slidesubsection}{slidesection}%
8228 \addtocontents{los}{%
8229 \protect\l@slide{\the\c@slidesection}{\ignorespaces#1}%
8230 {\@SCTR}{slideheading.\theslidesection}}%
8231 }%
8232 \def\Hy@tempa{#2}%
8233 \ifx\Hy@tempa\@empty
8234 \else
8235 {%
8236 \edef\@currentlabel{%
8237 \csname p@slidesection\endcsname\theslidesection
8238 }%
8239 \makeslideheading{#2}%
8240 }%

```

```

8241 \fi
8242 \gdef\theslideheading{#1}%
8243 \gdef\theslidesubheading{}%
8244 \ifHy@bookmarksnumbered
8245 \def\Hy@slidetitle{\theslidesection\space #1}%
8246 \else
8247 \def\Hy@slidetitle{#1}%
8248 \fi
8249 \ifHy@hypertexnames
8250 \ifHy@naturalnames
8251 \hyper@@anchor{slideheading.\theslidesection}{\relax}%
8252 \Hy@writebookmark
8253 {\theslidesection}%
8254 {\Hy@slidetitle}%
8255 {slideheading.\theslidesection}%
8256 {1}%
8257 {toc}%
8258 \else
8259 \hyper@@anchor{slideheading.\theHslidesection}{\relax}%
8260 \Hy@writebookmark
8261 {\theslidesection}%
8262 {\Hy@slidetitle}%
8263 {slideheading.\theHslidesection}%
8264 {1}%
8265 {toc}%
8266 \fi
8267 \else
8268 \Hy@GlobalStepCount\Hy@linkcounter
8269 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
8270 \Hy@writebookmark
8271 {\theslidesection}%
8272 {\Hy@slidetitle}%
8273 {slideheading.\the\Hy@linkcounter}%
8274 {1}%
8275 {toc}%
8276 \fi
8277 }%
8278 \def\slide@subheading[#1]#2{%
8279 \H@refstepcounter{slidesubsection}%
8280 \addtocontents{los}{%
8281 \protect\l@subslide{\the\c@slidesubsection}{\ignorespaces#1}%
8282 {\@SCTR}{slideheading.\theslidesubsection}%
8283 }%
8284 \def\Hy@tempa{#2}%
8285 \ifx\Hy@tempa\@empty
8286 \else
8287 {%
8288 \edef\@currentlabel{%
8289 \csname p@slidesubsection\endcsname\theslidesubsection
8290 }%
8291 \makeslidesubheading{#2}%
8292 }%
8293 \fi
8294 \gdef\theslidesubheading{#1}%
8295 \ifHy@bookmarksnumbered
8296 \def\Hy@slidetitle{\theslidesubsection\space #1}%
8297 \else

```

```

8298 \def\Hy@slidetitle{#1}%
8299 \fi
8300 \ifHy@hypertextnames
8301 \ifHy@naturalnames
8302 \hyper@@anchor{slideheading.\theslidesubsection}{\relax}%
8303 \Hy@writebookmark
8304 {\theslidesubsection}%
8305 {\Hy@slidetitle}%
8306 {slideheading.\theslidesubsection}%
8307 {2}%
8308 {toc}%
8309 \else
8310 \hyper@@anchor{slideheading.\theHslidesubsection}{\relax}%
8311 \Hy@writebookmark
8312 {\theslidesubsection}%
8313 {\Hy@slidetitle}%
8314 {slideheading.\theHslidesubsection}%
8315 {2}%
8316 {toc}%
8317 \fi
8318 \else
8319 \Hy@GlobalStepCount\Hy@linkcounter
8320 \hyper@@anchor{slideheading.\the\Hy@linkcounter}{\relax}%
8321 \Hy@writebookmark
8322 {\theslidesubsection}%
8323 {\Hy@slidetitle}%
8324 {slideheading.\the\Hy@linkcounter}%
8325 {1}%
8326 {toc}%
8327 \fi
8328 }%
8329 \providecommand*\listslidenamelist{List of Slides}%
8330 \def\listofslides{%
8331 \section*{%
8332 \listslidenamelist
8333 \@mkboth{%
8334 \expandafter\MakeUppercase\listslidenamelist
8335 }{%
8336 \expandafter\MakeUppercase\listslidenamelist
8337 }%
8338 }%
8339 \def\l@slide##1##2##3##4{%
8340 \slide@undottedcline{%
8341 \slidenumberline{##3}{\hyperlink{##4}{##2}}}%
8342 }{}%
8343 }%
8344 \let\l@subslide\l@slide
8345 \@startlos
8346 }%
8347 \def\slide@contents{%
8348 \def\l@slide##1##2##3##4{%
8349 \slide@ccline{\slidenumberline{##3}{\hyperlink{##4}{##2}}}{##3}%
8350 }%
8351 \let\l@subslide\@gobblefour
8352 \@startlos
8353 }%
8354 \def\Slide@contents{%

```

```

8355 \def\l@slide##1##2##3##4{%
8356 \ifcase\lslide@flag
8357 \message{##1 ** \the\c@slidesection}%
8358 \ifnum##1>\c@slidesection
8359 \def\lslide@flag{1}%
8360 {%
8361 \large
8362 \slide@cline{%
8363 \slidenumberline{$\rightarrow\bullet$}%
8364 {\hyperlink{##4}{##2}}}%
8365 }{##3}%
8366 }%
8367 \else
8368 {%
8369 \large
8370 \slide@cline{%
8371 \slidenumberline{$\surd\;\bullet$}%
8372 {\hyperlink{##4}{##2}}}%
8373 }{##3}%
8374 }%
8375 \fi
8376 \or
8377 \def\lslide@flag{2}%
8378 {%
8379 \large
8380 \slide@cline{%
8381 \slidenumberline{$\bullet$}%
8382 {\hyperlink{##4}{##2}}}%
8383 }{##3}%
8384 }%
8385 \or
8386 {%
8387 \large
8388 \slide@cline{%
8389 \slidenumberline{$\bullet$}%
8390 {\hyperlink{##4}{##2}}}%
8391 }{##3}%
8392 }%
8393 \fi
8394 }%
8395 \def\l@subslide##1##2##3##4{%
8396 \ifnum\lslide@flag=1 %
8397 \@undottedtocline{2}{3.8em}{3.2em}{\hyperlink{##4}{##2}}{}}%
8398 \fi
8399 }%
8400 \def\lslide@flag{0}%
8401 \@startlos
8402 }%
8403 }-}

```

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.)

```

8404 \ifHy@texht
8405 \expandafter\endinput
8406 \fi
8407 \let\real@setref\@setref
8408 \def\@setref#1#2#3{% curname, extract group, refname

```

```

8409 \ifx#1\relax
8410   \protect\G@refundefinedtrue
8411   \nfss@text{\reset@font\bfseries ??}%
8412   \@latex@warning{%
8413     Reference ‘#3’ on page \thepage \space undefined%
8414   }%
8415 \else
8416   \expandafter\Hy@setref@link#1\@empty\@empty\@nil{#2}%
8417 \fi
8418 }

```

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

```

8419 \def\Hy@setref@link#1#2#3#4#5#6\@nil#7{%
8420   \begingroup
8421   \toks0={\hyper@@link{#5}{#4}}%
8422   \toks1=\expandafter{#7{#1}{#2}{#3}{#4}{#5}}%
8423   \edef\x{\endgroup
8424     \the\toks0 {\the\toks1 }%
8425   }%
8426   \x
8427 }
8428 \def\@pagesetref#1#2#3{% csname, extract macro, ref
8429   \ifx#1\relax
8430     \protect\G@refundefinedtrue
8431     \nfss@text{\reset@font\bfseries ??}%
8432     \@latex@warning{%
8433       Reference ‘#3’ on page \thepage \space undefined%
8434     }%
8435   \else
8436     \protect\hyper@@link
8437     {\expandafter\@fifthoffive#1}%
8438     {page.\expandafter\@secondoffive#1}%
8439     {\expandafter\@secondoffive#1}%
8440   \fi
8441 }
8442 </package>
8443 <*check>
8444 \checklatex
8445 \checkcommand\def\@setref#1#2#3{%
8446   \ifx#1\relax
8447     \protect\G@refundefinedtrue
8448     \nfss@text{\reset@font\bfseries ??}%
8449     \@latex@warning{%
8450       Reference ‘#3’ on page \thepage \space undefined%
8451     }%
8452   \else
8453     \expandafter#2#1\null
8454   \fi
8455 }
8456 </check>
8457 <*package>

```

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

```

8458 \def\HyRef@StarSetRef#1{%
8459   \begingroup
8460   \Hy@safe@activestru

```

```

8461 \edef\x{#1}%
8462 \@onelevel@sanitize\x
8463 \edef\x{\endgroup
8464 \noexpand\HyRef@@StarSetRef
8465 \expandafter\noexpand\csname r@\x\endcsname{\x}%
8466 }%
8467 \x
8468 }
8469 \def\HyRef@@StarSetRef#1#2#3{%
8470 \ifx#1\@undefined
8471 \let#1\relax
8472 \fi
8473 \real@setref#1#3{#2}%
8474 }
8475 \def\@refstar#1{%
8476 \HyRef@StarSetRef{#1}\@firstoffive
8477 }
8478 \def\@pagerefstar#1{%
8479 \HyRef@StarSetRef{#1}\@secondoffive
8480 }
8481 \def\@namerefstar#1{%
8482 \HyRef@StarSetRef{#1}\@thirdoffive
8483 }
8484 \Hy@AtBeginDocument{%
8485 \ifpackageloaded{varioref}{%
8486 \def\@Refstar#1{%
8487 \HyRef@StarSetRef{#1}\HyRef@MakeUppercaseFirstOfFive
8488 }%
8489 \def\HyRef@MakeUppercaseFirstOfFive#1#2#3#4#5{%
8490 \MakeUppercase#1%
8491 }%
8492 \DeclareRobustCommand*\Ref}{%
8493 \@ifstar\@Refstar\HyRef@Ref
8494 }%
8495 \def\HyRef@Ref#1{%
8496 \hyperref[{#1}]{\Ref*{#1}}%
8497 }%
8498 \def\Vr@f#1{%
8499 \leavevmode\unskip\vref@space
8500 \hyperref[{#1}]{%
8501 \Ref*{#1}%
8502 \let\vref@space\nobreakspace
8503 \@vpageref[\unskip]{#1}%
8504 }%
8505 }%
8506 \def\vr@f#1{%
8507 \leavevmode\unskip\vref@space
8508 \begingroup
8509 \let\T@pageref\@pagerefstar
8510 \hyperref[{#1}]{%
8511 \ref*{#1}%
8512 \vpageref[\unskip]{#1}%
8513 }%
8514 \endgroup
8515 }%
8516 }{}%
8517 }

```



```

8518 \DeclareRobustCommand*\autopageref}{%
8519   \@ifstar{%
8520     \HyRef@autopagerefname\pageref*%
8521   }\HyRef@autopageref
8522 }
8523 \def\HyRef@autopageref#1{%
8524   \hyperref[{#1}]{\HyRef@autopagerefname\pageref*{#1}}%
8525 }
8526 \def\HyRef@autopagerefname{%
8527   \ltx@ifundefined{pageautorefname}{%
8528     \ltx@ifundefined{pagename}{%
8529       \Hy@Warning{No autoref name for 'page'}%
8530     }{%
8531       \pagename\nobreakspace
8532     }%
8533   }{%
8534     \pageautorefname\nobreakspace
8535   }%
8536 }

```

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

```

8537 \DeclareRobustCommand*\autoref}{%
8538   \leavevmode
8539   \@ifstar{\HyRef@autoref\@gobbletwo}{\HyRef@autoref\hyper@@link}%
8540 }
8541 \def\HyRef@autoref#1#2{%
8542   \begingroup
8543     \Hy@safe@activestrue
8544     \expandafter\HyRef@autosetref\csname r@#2\endcsname{#2}{#1}%
8545   \endgroup
8546 }
8547 \def\HyRef@autosetref#1#2#3{% link command, csname, refname
8548   \HyRef@ShowKeysRef{#2}%
8549   \ifcase 0\ifx#1\relax 1\fi\ifx#1\Hy@varioref@undefined 1\fi\relax
8550   \edef\HyRef@thisref{%
8551     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8552   }%
8553   \expandafter\HyRef@testreftype\HyRef@thisref.\.%
8554   \Hy@safe@activesfalse
8555   #3{%
8556     \expandafter\@fifthoffive#1\@empty\@empty\@empty
8557   }{%
8558     \expandafter\@fourthoffive#1\@empty\@empty\@empty
8559   }{%
8560     \HyRef@currentHtag
8561     \expandafter\@firstoffive#1\@empty\@empty\@empty
8562     \null
8563   }%
8564   \else
8565     \protect\G@refundefinedtrue
8566     \nfss@text{\reset@font\bfseries ??}%
8567     \@latex@warning{%
8568       Reference ‘#2’ on page \thepage\space undefined%
8569     }%
8570   \fi
8571 }
8572 \def\HyRef@testreftype#1.#2\{\%

```

```

8573 \ltx@ifundefined{#1autorefname}{%
8574   \ltx@ifundefined{#1name}{%
8575     \HyRef@StripStar#1\\*\\\@nil{#1}%
8576     \ltx@ifundefined{\HyRef@name autorefname}{%
8577       \ltx@ifundefined{\HyRef@name name}{%
8578         \def\HyRef@currentHtag{%
8579           \Hy@Warning{No autoref name for '#1'}%
8580         }%
8581         \edef\HyRef@currentHtag{%
8582           \expandafter\noexpand\csname\HyRef@name name\endcsname
8583           \noexpand~%
8584         }%
8585       }%
8586     }%
8587     \edef\HyRef@currentHtag{%
8588       \expandafter\noexpand
8589       \csname\HyRef@name autorefname\endcsname
8590       \noexpand~%
8591     }%
8592   }%
8593 }%
8594 \edef\HyRef@currentHtag{%
8595   \expandafter\noexpand\csname#1name\endcsname
8596   \noexpand~%
8597 }%
8598 }%
8599 }%
8600 \edef\HyRef@currentHtag{%
8601   \expandafter\noexpand\csname#1autorefname\endcsname
8602   \noexpand~%
8603 }%
8604 }%
8605 }
8606 \def\HyRef@StripStar#1*\\#2\@nil#3{%
8607   \def\HyRef@name{#2}%
8608   \ifx\HyRef@name\HyRef@CaseStar
8609     \def\HyRef@name{#1}%
8610   \else
8611     \def\HyRef@name{#3}%
8612   \fi
8613 }
8614 \def\HyRef@CaseStar{*\\}
8615 \def\HyRef@currentHtag{}

```

Support for package showkeys.

\HyRef@showKeysRef

```

8616 \let\HyRef@showKeysRef\@gobble
8617 \def\HyRef@showKeysInit{%
8618   \begingroup\expandafter\expandafter\expandafter\endgroup
8619   \expandafter\ifx\csname SK@@label\endcsname\relax
8620   \else
8621     \ifx\SK@ref\@empty
8622     \else
8623       \def\HyRef@showKeysRef{%
8624         \SK@\SK@@ref
8625       }%
8626     \fi

```

```

8627 \fi
8628 }
8629 \@ifpackageloaded{showkeys}{%
8630 \HyRef@ShowKeysInit
8631 }{%
8632 \Hy@AtBeginDocument{%
8633 \@ifpackageloaded{showkeys}{%
8634 \HyRef@ShowKeysInit
8635 }{}%
8636 }%
8637 }

```

Defaults for the names that `\autoref` uses.

```

8638 \providecommand*\AMSautorefname{\equationautorefname}
8639 \providecommand*\Hfootnoteautorefname{\footnoteautorefname}
8640 \providecommand*\Itemautorefname{\itemautorefname}
8641 \providecommand*\itemautorefname{item}
8642 \providecommand*\equationautorefname{Equation}
8643 \providecommand*\footnoteautorefname{footnote}
8644 \providecommand*\itemautorefname{item}
8645 \providecommand*\figureautorefname{Figure}
8646 \providecommand*\tableautorefname{Table}
8647 \providecommand*\partautorefname{Part}
8648 \providecommand*\appendixautorefname{Appendix}
8649 \providecommand*\chapterautorefname{chapter}
8650 \providecommand*\sectionautorefname{section}
8651 \providecommand*\subsectionautorefname{subsection}
8652 \providecommand*\subsubsectionautorefname{subsubsection}
8653 \providecommand*\paragraphautorefname{paragraph}
8654 \providecommand*\subparagraphautorefname{subparagraph}
8655 \providecommand*\FancyVerbLineautorefname{line}
8656 \providecommand*\theoremautorefname{Theorem}
8657 \providecommand*\pageautorefname{page}
8658 \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 pdfTeX offers `\pdfescapestring`.

```

8659 <*pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>
8660 \begingroup\expandafter\expandafter\expandafter\endgroup
8661 \expandafter\ifx\csname pdf@escapestring\endcsname\relax
8662 \begingroup
8663 \catcode'\| =0 %
8664 \makeother\| %
8665 |@firstofone{|endgroup
8666 |def|Hy@pstringdef#1#2{%
8667 |begingroup
8668 |edef~{|string~}%

```

```

8669 |xdef\Hy@gtemp{#2}%
8670 |endgroup
8671 |let#1\Hy@gtemp
8672 |@onelevel@sanitize#1%
8673 |edef#1{|expandafter\Hy@ExchangeBackslash#1\|@nil}%
8674 |edef#1{|expandafter\Hy@ExchangeLeftParenthesis#1(|@nil}%
8675 |edef#1{|expandafter\Hy@ExchangeRightParenthesis#1)|@nil}%
8676 }%
8677 |def\Hy@ExchangeBackslash#1\#2|@nil{%
8678 #1%
8679 |ifx|\#2|\%%
8680 |else
8681 \\\%
8682 |ltx@ReturnAfterFi{%
8683 |Hy@ExchangeBackslash#2|@nil
8684 }%
8685 |fi
8686 }%
8687 }%
8688 \def\Hy@ExchangeLeftParenthesis#1(#2\@nil{%
8689 #1%
8690 \ifx\#2\%%
8691 \else
8692 \@backslashchar(%
8693 \ltx@ReturnAfterFi{%
8694 \Hy@ExchangeLeftParenthesis#2\@nil
8695 }%
8696 |fi
8697 }%
8698 \def\Hy@ExchangeRightParenthesis#1)#2\@nil{%
8699 #1%
8700 \ifx\#2\%%
8701 \else
8702 \@backslashchar)%
8703 \ltx@ReturnAfterFi{%
8704 \Hy@ExchangeRightParenthesis#2\@nil
8705 }%
8706 |fi
8707 }%
8708 \else
8709 \def\Hy@pstringdef#1#2{%
8710 \begingroup
8711 \edef~{\string~}%
8712 \xdef\Hy@gtemp{\pdf@escapestring{#2}}%
8713 \endgroup
8714 \let#1\Hy@gtemp
8715 }%
8716 |fi
8717 </pdfTeX | dvipdfm | xetex | vtex | pdfmarkbase | dviwindo>

```

## 46.2 pdfTeX

```

8718 <*pdfTeX>
8719 \providecommand*\XR@ext}{pdf}
8720 \Hy@setbreaklinks{true}
8721 \def\HyPat@ObjRef{%
8722 [0-9]*[1-9][0-9]* 0 R%

```

8723 }

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

```
8724 \let\Hy@pdfminorversion\relax
8725 \begingroup\expandafter\expandafter\expandafter\endgroup
8726 \expandafter\ifx\csname pdfminorversion\endcsname\relax
8727 \begingroup\expandafter\expandafter\expandafter\endgroup
8728 \expandafter\ifx\csname pdfoptionpdfminorversion\endcsname\relax
8729 \else
8730 \def\Hy@pdfminorversion{\pdfoptionpdfminorversion}%
8731 \fi
8732 \else
8733 \def\Hy@pdfminorversion{\pdfminorversion}%
8734 \fi
8735 \@ifundefined{Hy@pdfminorversion}{%
8736 \PackageInfo{hyperref}{%
8737 PDF version is not set, because pdfTeX is too old (<1.10a)%
8738 }%
8739 }{%
8740 \ifHy@ocgcolorlinks
8741 \ifnum\Hy@pdfminorversion<5 %
8742 \kvsetkeys{Hyp}{pdfversion=1.5}%
8743 \fi
8744 \fi
8745 \ifHy@setpdfversion
8746 \ifnum\Hy@pdfminorversion=\Hy@pdfversion\relax
8747 \else
8748 \Hy@pdfminorversion=\Hy@pdfversion\relax
8749 \fi
8750 \PackageInfo{hyperref}{%
8751 \expandafter\string\Hy@pdfminorversion
8752 :=\number\Hy@pdfversion\space
8753 }%
8754 \fi
8755 \edef\Hy@pdfversion{\number\Hy@pdfminorversion}%
8756 }
8757 \Hy@DisableOption{pdfversion}%

8758 \ifHy@ocgcolorlinks
8759 \pdf@ifdraftmode{}{%
8760 \immediate\pdfobj{%
8761 <<%
8762 /Type/OCG%
8763 /Name(View)%
8764 /Usage<<%
8765 /Print<<%
8766 /PrintState/OFF%
8767 >>%
8768 /View<<%
8769 /ViewState/ON%
8770 >>%
8771 >>%
```

```

8772     >>%
8773 }%
8774 \edef\OBJ@OCG@view{\the\pdfastobj\space 0 R}%
8775 \immediate\pdfobj{%
8776   <<%
8777     /Type/OCG%
8778     /Name(Print)%
8779     /Usage<<%
8780       /Print<<%
8781         /PrintState/ON%
8782     >>%
8783     /View<<%
8784       /ViewState/OFF%
8785     >>%
8786   >>%
8787 >>%
8788 }%
8789 \edef\OBJ@OCG@print{\the\pdfastobj\space 0 R}%
8790 \immediate\pdfobj{%
8791   [%
8792     \OBJ@OCG@view\space\OBJ@OCG@print
8793   ]%
8794 }%
8795 \edef\OBJ@OCGs{\the\pdfastobj\space 0 R}%
8796 \pdfcatalog{%
8797   /OCProperties<<%
8798     /OCGs \OBJ@OCGs
8799     /D<<%
8800       /OFF[\OBJ@OCG@print]%
8801       /AS[%
8802         <<%
8803           /Event/View%
8804           /OCGs \OBJ@OCGs
8805           /Category[/View]%
8806         >>%
8807         <<%
8808           /Event/Print%
8809           /OCGs \OBJ@OCGs
8810           /Category[/Print]%
8811         >>%
8812         <<%
8813           /Event/Export%
8814           /OCGs \OBJ@OCGs
8815           /Category[/Print]%
8816         >>%
8817       ]%
8818     >>%
8819   >>%
8820 }%
8821 \begingroup
8822 \edef\x{\endgroup
8823   \pdfpageresources{%
8824     /Properties<<%
8825       /OCView \OBJ@OCG@view
8826       /OCPrint \OBJ@OCG@print
8827     >>%
8828   }%

```

```

8829 }%
8830 \x
8831 }%
8832 \Hy@AtBeginDocument{%
8833   \def\Hy@colorlink#1{%
8834     \begingroup
8835     \ifHy@ocgcolorlinks
8836       \def\Hy@ocgcolor{#1}%
8837       \setbox0=\hbox\bgroup\color@begingroup
8838     \else
8839       \HyColor@UseColor#1%
8840     \fi
8841   }%
8842   \def\Hy@endcolorlink{%
8843     \ifHy@ocgcolorlinks
8844       \color@endgroup\egroup
8845     \mbox{%
8846       \pdfliteral page{/OC/OCPrint BDC}%
8847       \rlap{\copy0}%
8848       \pdfliteral page{EMC/OC/OCView BDC}%
8849     \begingroup
8850       \expandafter\HyColor@UseColor\Hy@ocgcolor
8851     \box0 %
8852     \endgroup
8853     \pdfliteral page{EMC}%
8854   }%
8855   \fi
8856 \endgroup
8857 }%
8858 }%
8859 \else
8860 \Hy@DisableOption{ocgcolorlinks}%
8861 \fi

```

First, allow for some changes and additions to pdftex syntax:

```

8862 \def\setpdfinkmargin#1{\pdfinkmargin#1}
8863 \ifx\pdfstartlink\@undefined% less than version 14
8864   \let\pdfstartlink\pdfannotlink
8865   \let\pdfinkmargin\@tempdima
8866   \let\pdfxform\pdfform
8867   \let\pdflastxform\pdflastform
8868   \let\pdfrefxform\pdfrefform
8869 \else
8870   \pdfinkmargin1pt %
8871 \fi

```

First set up the default linking

```
8872 \providecommand*\@pdfview{XYZ}
```

First define the anchors:

```

8873 \Hy@WrapperDef\new@pdfink#1{%
8874   \ifhmode
8875     \@savsf\spacefactor
8876   \fi
8877   \Hy@SaveLastskip
8878   \Hy@VerboseAnchor{#1}%
8879   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
8880   \Hy@DestName\Hy@pstringDest\@pdfview
8881   \Hy@RestoreLastskip

```

```

8882 \ifhmode
8883   \spacefactor\@savsf
8884 \fi
8885 }
8886 \let\pdf@endanchor\@empty

```

`\Hy@DestName` Wrap the call of `\pdfdest` name in `\Hy@DestName`. Then it can easier be caught by package `hypdestopt`.

```

8887 \def\Hy@DestName#1#2{%
8888   \pdfdest name{#1}#2\relax
8889 }

```

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.

```

8890 \providecommand*\@pdfborder{0 0 1}
8891 \providecommand*\@pdfborderstyle{}
8892 \def\Hy@undefinedname{UNDEFINED}
8893 \def\find@pdflink#1#2{%
8894   \leavevmode
8895   \protected@edef\Hy@testname{#2}%
8896   \ifx\Hy@testname\@empty
8897     \Hy@Warning{%
8898       Empty destination name,\MessageBreak
8899       using '\Hy@undefinedname'%
8900     }%
8901     \let\Hy@testname\Hy@undefinedname
8902   \else
8903     \Hy@pstringdef\Hy@testname{%
8904       \expandafter\HyperDestNameFilter\expandafter{\Hy@testname}%
8905     }%
8906   \fi
8907   \Hy@StartlinkName{%
8908     \ifHy@pdfa /F 4\fi
8909     \Hy@setpdfborder
8910     \ifx\@pdfhighlight\@empty
8911       \else
8912         /H\@pdfhighlight
8913       \fi
8914       \ifx\CurrentBorderColor\relax
8915       \else
8916         /C[\CurrentBorderColor]%
8917       \fi
8918     }\Hy@testname
8919     \expandafter\Hy@colorlink\csname @#1color\endcsname
8920   }
8921   \def\Hy@StartlinkName#1#2{%
8922     \pdfstartlink attr{#1}goto name{#2}\relax
8923   }
8924   \def\close@pdflink{%
8925     \Hy@endcolorlink
8926     \Hy@VerboselinkStop
8927   \pdfendlink
8928   }
8929   \def\hyper@anchor#1{%
8930     \new@pdflink{#1}\anchor@spot\pdf@endanchor

```



```

8931 }
8932 \def\hyper@anchorstart#1{%
8933 \new@pdfink{#1}%
8934 \Hy@activeanchortrue
8935 }
8936 \def\hyper@anchorend{%
8937 \pdf@endanchor
8938 \Hy@activeanchorfalse
8939 }
8940 \def\hyper@linkstart#1#2{%
8941 \Hy@VerboseLinkStart{#1}{#2}%
8942 \ltx@ifundefined{@#1bordercolor}{%
8943 \let\CurrentBorderColor\relax
8944 }{%
8945 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8946 }%
8947 \find@pdfink{#1}{#2}%
8948 }
8949 \def\hyper@linkend{\close@pdfink}
8950 \def\hyper@link#1#2#3{%
8951 \Hy@VerboseLinkStart{#1}{#2}%
8952 \ltx@ifundefined{@#1bordercolor}{%
8953 \let\CurrentBorderColor\relax
8954 }{%
8955 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
8956 }%
8957 \find@pdfink{#1}{#2}#3\Hy@xspace@end
8958 \close@pdfink
8959 }
8960 \let\CurrentBorderColor\@linkbordercolor
8961 \def\hyper@linkurl#1#2{%
8962 \begingroup
8963 \Hy@pstringdef\Hy@pstringURI{#2}%
8964 \hyper@chars
8965 \leavevmode
8966 \pdfstartlink
8967 attr{%
8968 \Hy@setpdfborder
8969 \ifx\@pdfhighlight\@empty
8970 \else
8971 /H\@pdfhighlight
8972 \fi
8973 \ifx\@urlbordercolor\relax
8974 \else
8975 /C[\@urlbordercolor]%
8976 \fi
8977 }%
8978 user{%
8979 /Subtype/Link%
8980 \ifHy@pdfa /F 4\fi
8981 /A<<%
8982 /Type/Action%
8983 /S/URI%
8984 /URI(\Hy@pstringURI)%
8985 \ifHy@href@cismap
8986 /IsMap true%
8987 \fi

```

```

8988     \Hy@href@nextactionraw
8989     >>%
8990   }%
8991   \relax
8992   \Hy@colorlink\@urlcolor#1\Hy@xspace@end
8993   \close@pdflink
8994 \endgroup
8995 }
8996 \def\hyper@linkfile#1#2#3{% anchor text, filename, linkname
8997   \begingroup
8998   \def\Hy@pstringF{#2}%
8999   \Hy@CleanupFile\Hy@pstringF
9000   \Hy@pstringdef\Hy@pstringF\Hy@pstringF
9001   \Hy@pstringdef\Hy@pstringD{#3}%
9002   \Hy@MakeRemoteAction
9003   \leavevmode
9004   \pdfstartlink
9005   attr{%
9006     \Hy@setpdfborder
9007     \ifx\@pdfhighlight\@empty
9008     \else
9009       /H\@pdfhighlight
9010     \fi
9011     \ifx\@filebordercolor\relax
9012     \else
9013       /C[\@filebordercolor]%
9014     \fi
9015   }%
9016   user {%
9017     /Subtype/Link%
9018     \ifHy@pdfa /F 4\fi
9019     /A<<%
9020     /F(\Hy@pstringF)%
9021     /S/GoToR%
9022     \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}

```

```

9023     \ifx\#3\%
9024     /D[\Hy@href@page\@pdfremotestartview]%
9025     \else
9026     /D(\Hy@pstringD)%
9027     \fi
9028     \Hy@href@nextactionraw
9029     >>%
9030   }%
9031   \relax
9032   \Hy@colorlink\@filecolor#1\Hy@xspace@end

```

```

9033 \close@pdflink
9034 \endgroup
9035 }
9036 \def\@hyper@launch run:#1\\#2#3{% filename, anchor text linkname
9037 \begingroup
9038 \Hy@pstringdef\Hy@pstringF{#1}%
9039 \Hy@pstringdef\Hy@pstringP{#3}%
9040 \leavevmode
9041 \pdfstartlink
9042 attr{%
9043 \Hy@setpdfborder
9044 \ifx\@pdfhighlight\@empty
9045 \else
9046 /H\@pdfhighlight
9047 \fi
9048 \ifx\@runbordercolor\relax
9049 \else
9050 /C[\@runbordercolor]%
9051 \fi
9052 }%
9053 user {%
9054 /Subtype/Link%
9055 \ifHy@pdfa /F 4\fi
9056 /A<<%
9057 /F(\Hy@pstringF)%
9058 /S/Launch%
9059 \Hy@SetNewWindow
9060 \ifx\\#3\\%
9061 \else
9062 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
9063 \fi
9064 \Hy@href@nextactionraw
9065 >>%
9066 }%
9067 \relax
9068 \Hy@colorlink\@runcolor#2\Hy@xspace@end
9069 \close@pdflink
9070 \endgroup
9071 }

```

\@pdfproducer

```

9072 \ifx\@pdfproducer\relax
9073 \begingroup\expandafter\expandafter\expandafter\endgroup
9074 \expandafter\ifx\csname luatexversion\endcsname\relax
9075 \def\@pdfproducer{pdfTeX}%
9076 \ifx\eTeXversion\@undefined
9077 \else
9078 \ifx\eTeXversion\relax
9079 \else
9080 \ifnum\eTeXversion>0 %
9081 \def\@pdfproducer{pdfTeX}%
9082 \fi
9083 \fi
9084 \fi
9085 \ifx\pdfTeXversion\@undefined
9086 \else
9087 \ifnum\pdfTeXversion<100 %

```

```

9088     \edef\@pdfproducer{%
9089         \@pdfproducer
9090         \the\pdfTeXversion.\pdfTeXrevision
9091     }%
9092 \else
9093     \ifnum\pdfTeXversion<130 %
9094         \edef\@pdfproducer{%
9095             \@pdfproducer-%
9096             \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
9097             \expandafter\@cdr\the\pdfTeXversion\@empty\@nil
9098             \pdfTeXrevision
9099         }%
9100     \else
9101         \ifnum\pdfTeXversion<140 %
9102             \else
9103                 \def\@pdfproducer{pdfTeX}%
9104             \fi
9105             \edef\@pdfproducer{%
9106                 \@pdfproducer-%
9107                 \expandafter\@car\the\pdfTeXversion\@empty\@nil.%
9108                 \expandafter\@cdr\the\pdfTeXversion\@empty\@nil.%
9109                 \pdfTeXrevision
9110             }%
9111         \fi
9112     \fi
9113 \fi
9114 \else
9115     \begingroup
9116         \count@=\luatexversion
9117         \divide\count@ by 100 %
9118         \edef\x{\the\count@}%
9119         \count@=-\x\relax
9120         \multiply\count@ by 100 %
9121         \advance\count@ by \luatexversion
9122         \edef\x{\endgroup
9123             \def\noexpand\@pdfproducer{%
9124                 LuaTeX-\x.\the\count@.\luatexrevision
9125             }%
9126         }%
9127     \x
9128 \fi
9129 \fi

```

\PDF@SetupDox

```

9130 \def\PDF@SetupDoc{%
9131     \ifx\@pdfpagescrop\@empty
9132     \else
9133         \edef\process@me{%
9134             \pdfpagesattr={%
9135                 /CropBox[\@pdfpagescrop]%
9136                 \expandafter\ifx\expandafter\\\the\pdfpagesattr\\%
9137                 \else
9138                     ^^J\the\pdfpagesattr
9139                 \fi
9140             }%
9141         }%
9142         \process@me
9143     \fi

```

```

9144 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
9145 \pdfcatalog{%
9146 /PageMode/\@pdfpagemode
9147 \ifx\@baseurl\@empty
9148 \else
9149 /URI<</Base(\Hy@pstringB)>>%
9150 \fi
9151 }%
9152 \ifx\@pdfstartpage\@empty
9153 \else
9154 \ifx\@pdfstartview\@empty
9155 \else
9156 openaction goto page\@pdfstartpage{\@pdfstartview}%
9157 \fi
9158 \fi
9159 \edef\Hy@temp{%
9160 \ifHy@pdftoolbar\else /HideToolbar true\fi
9161 \ifHy@pdfmenubar\else /HideMenubar true\fi
9162 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9163 \ifHy@pdffitwindow /FitWindow true\fi
9164 \ifHy@pdfcenterwindow /CenterWindow true\fi
9165 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9166 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9167 \Hy@UseNameKey{Direction}\@pdfdirection
9168 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9169 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9170 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9171 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9172 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9173 \Hy@UseNameKey{Duplex}\@pdfduplex
9174 \ifx\@pdfpicktraybypdfsize\@empty
9175 \else
9176 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9177 \fi
9178 \ifx\@pdfprintpagerange\@empty
9179 \else
9180 /PrintPageRange[\@pdfprintpagerange]%
9181 \fi
9182 \ifx\@pdfnumcopies\@empty
9183 \else
9184 /NumCopies \@pdfnumcopies
9185 \fi
9186 }%
9187 \pdfcatalog{%
9188 \ifx\Hy@temp\@empty
9189 \else
9190 /ViewerPreferences<<\Hy@temp>>%
9191 \fi
9192 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9193 \ifx\@pdflang\@empty
9194 \else
9195 /Lang(\@pdflang)%
9196 \fi
9197 }%
9198 }

```

\PDF@FinishDoc

```

9199 \def\PDF@FinishDoc{%
9200   \pdf@ifdraftmode{}{%
9201     \Hy@UseMaketitleInfos
9202     \HyInfo@GenerateAddons
9203     \pdfinfo{%
9204       /Author(\@pdfauthor)%
9205       /Title(\@pdftitle)%
9206       /Subject(\@pdfsubject)%
9207       /Creator(\@pdfcreator)%
9208       \ifx\@pdfcreationdate\@empty
9209       \else
9210         /CreationDate(\@pdfcreationdate)%
9211       \fi
9212       \ifx\@pdfmoddate\@empty
9213       \else
9214         /ModDate(\@pdfmoddate)%
9215       \fi
9216       \ifx\@pdfproducer\relax
9217       \else
9218         /Producer(\@pdfproducer)%
9219       \fi
9220       /Keywords(\@pdfkeywords)%
9221       \ifx\@pdftrapped\@empty
9222       \else
9223         /Trapped/\@pdftrapped
9224       \fi
9225       \HyInfo@Addons
9226     }%
9227   }%
9228   \Hy@DisableOption{pdfauthor}%
9229   \Hy@DisableOption{pdftitle}%
9230   \Hy@DisableOption{pdfsubject}%
9231   \Hy@DisableOption{pdfcreator}%
9232   \Hy@DisableOption{pdfcreationdate}%
9233   \Hy@DisableOption{pdfmoddate}%
9234   \Hy@DisableOption{pdfproducer}%
9235   \Hy@DisableOption{pdfkeywords}%
9236   \Hy@DisableOption{pdftrapped}%
9237   \Hy@DisableOption{pdfinfo}%
9238 }

```

`\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`.

```

9239 \def\hyper@pagetransition{%
9240   \ifx\@pdfpagetransition\relax
9241   \else
9242     \expandafter\Hy@RemoveTransPageAttr
9243     \the\pdfpageattr^^J/Trans{}>>\END
9244     \ifx\@pdfpagetransition\@empty
9245     \else
9246       \edef\@processme{%
9247         \global\pdfpageattr{%
9248           \the\pdfpageattr
9249           ^^J/Trans << /S /\@pdfpagetransition\space >>%
9250         }%
9251       }%

```

```

9252   \@processme
9253   \fi
9254 \fi
9255 }

```

`\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.

```

9256 \gdef\Hy@RemoveTransPageAttr#1^^J/Trans#2#3>>#4\END{%
9257   \ifx\#2\%
9258     \global\pdfpageattr{#1}%
9259   \else
9260     \Hy@RemoveTransPageAttr#1#4\END
9261   \fi
9262 }

```

`\hyper@pageduration` `\@pdfpageduration` is initialized with `\relax`. So it indicates, if option `pdfpage-duration` is used. First previous `/Dur` entries are removed. If a new `/Dur` key exists, it is appended to `\pdfpageattr`.

```

9263 \def\hyper@pageduration{%
9264   \ifx\@pdfpageduration\relax
9265   \else
9266     \expandafter
9267     \Hy@RemoveDurPageAttr\the\pdfpageattr^^J/Dur{} \END
9268     \ifx\@pdfpageduration\@empty
9269     \else
9270       \edef\@processme{%
9271         \global\pdfpageattr{%
9272           \the\pdfpageattr
9273           ^^J/Dur \@pdfpageduration\space
9274         }%
9275       }%
9276       \@processme
9277     \fi
9278   \fi
9279 }

```

`\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.

```

9280 \gdef\Hy@RemoveDurPageAttr#1^^J/Dur#2#3 #4\END{%
9281   \ifx\#2\%
9282     \global\pdfpageattr{#1}%
9283   \else
9284     \Hy@RemoveDurPageAttr#1#4\END
9285   \fi
9286 }

```

`\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).

```

9287 \def\hyper@pagehidden{%
9288   \ifHy@useHidKey

```

```

9289 \expandafter
9290 \Hy@RemoveHidPageAttr\the\pdfpageattr^^J/Hid{} \END
9291 \ifHy@pdfpagehidden
9292 \edef\@processme{%
9293 \global\pdfpageattr{%
9294 \the\pdfpageattr
9295 ^^J/Hid true % SPACE
9296 }%
9297 }%
9298 \@processme
9299 \fi
9300 \fi
9301 }

```

`\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.

```

9302 \gdef\Hy@RemoveHidPageAttr#1^^J/Hid#2#3 #4\END{%
9303 \ifx\#2\%
9304 \global\pdfpageattr{#1}%
9305 \else
9306 \Hy@RemoveHidPageAttr#1#4\END
9307 \fi
9308 }

9309 \pdf@ifdraftmode{}{%
9310 \g@addto@macro\Hy@EveryPageHook{%
9311 \hyper@pagetransition
9312 \hyper@pageduration
9313 \hyper@pagehidden
9314 }%
9315 }

```

Also XeTeX support `\pdfpagewidth` and `\pdfpageheight`, but it does not provide `\pdfhorigin` and `\pdfvorigin`.

```

9316 \pdfifx{pdf}
9317 \ifx\pdfifx\pdfifx
9318 \Hy@AtBeginDocument{%
9319 \ifHy@setpagesize
9320 \expandafter\@firstofone
9321 \else
9322 \expandafter\@gobble
9323 \fi
9324 {%
9325 \@ifclassloaded{seminar}{%
9326 \pdfifx{pdf}
9327 \setlength{\pdfhorigin}{1truein}%
9328 \setlength{\pdfvorigin}{1truein}%
9329 \pdfifx{pdf}
9330 \ifportrait
9331 \ifdim\paperwidth=\z@
9332 \else
9333 \setlength{\pdfpagewidth}{\strip@pt\paperwidth truept}%
9334 \fi
9335 \ifdim\paperheight=\z@
9336 \else
9337 \setlength{\pdfpageheight}{\strip@pt\paperheight truept}%

```



```

9338     \fi
9339   \else
9340     \ifdim\paperheight=\z@
9341     \else
9342       \setlength{\pdfpagewidth}{\strip@pt\paperheight truept}%
9343     \fi
9344     \ifdim\paperwidth=\z@
9345     \else
9346       \setlength{\pdfpageheight}{\strip@pt\paperwidth truept}%
9347     \fi
9348   \fi
9349 }{%
9350   \ltx@ifundefined{stockwidth}{%
9351     \ifdim\paperwidth>\z@
9352       \setlength{\pdfpagewidth}{\paperwidth}%
9353     \fi
9354     \ifdim\paperheight>\z@
9355       \setlength{\pdfpageheight}{\paperheight}%
9356     \fi
9357   }{%
9358     \ifdim\stockwidth>\z@
9359       \setlength{\pdfpagewidth}{\stockwidth}%
9360     \fi
9361     \ifdim\stockheight>\z@
9362       \setlength{\pdfpageheight}{\stockheight}%
9363     \fi
9364   }%
9365 }%
9366 }%
9367 \Hy@DisableOption{setpagesize}%
9368 }
9369 </pdfTeX | xetex>
9370 < *pdfTeX>
9371 \def\Acrobatmenu#1#2{%
9372   \Hy@Acrobatmenu{#1}{#2}{%
9373     \leavevmode
9374     \pdfstartlink
9375     attr{%
9376       \Hy@setpdfborder
9377       \ifx\@pdfhighlight\@empty
9378       \else
9379         /H\@pdfhighlight
9380       \fi
9381       \ifx\@menubordercolor\relax
9382       \else
9383         /C[\@menubordercolor]%
9384       \fi
9385     }%
9386     user{%
9387       /Subtype/Link%
9388       \ifHy@pdfa /F 4\fi
9389       /A<<%
9390       /S/Named%
9391       /N/#1%
9392       \Hy@href@nextactionraw
9393     >>%
9394   }%

```

```

9395     \relax
9396     \Hy@colorlink\@menucolor#2%
9397     \close@pdflink
9398 }%
9399 }

```

#### 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`.

```

9400 \def\Hy@FixNotFirstPage{%
9401   \gdef\Hy@FixNotFirstPage{%
9402     \setbox\AtBeginShipoutBox=\hbox{%
9403       \copy\AtBeginShipoutBox
9404     }%
9405   }%
9406 }
9407 \AtBeginShipout{\Hy@FixNotFirstPage}
9408 \</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 used to communicate to the *dvi* viewer the full (URL) location of the current document so that files specified by relative URL's may be retrieved correctly.

The *href* and *name* commands must be paired with an *end* command later in the TeX file — the TeX commands between the two ends of a pair form an *anchor* in the document. In the case of an *href* command, the *anchor* is to be highlighted in the *dvi* viewer, and when clicked on will cause the scene to shift to the destination specified by *href\_string*. The *anchor* associated with a *name* command represents a possible location to which other hypertext links may refer, either as local references (of the form `href="#name_string"` with the *name\_string* identical to the one in the *name* command) or as part of a URL (of the form `URL#name_string`). Here *href\_string* is a valid URL or local identifier, while *name\_string* could be

any string at all: the only caveat is that “” characters should be escaped with a backslash (\), and if it looks like a URL name it may cause problems.

```

9409 (*hypertext)
9410 \providecommand*\XR@ext}{dvi}
9411 \let\PDF@FinishDoc\ltx@empty
9412 \def\PDF@SetupDoc{%
9413   \ifx\@baseurl\@empty
9414   \else
9415     \special{html:<base href="\@baseurl">}%
9416   \fi
9417 }
9418 \Hy@WrapperDef\hyper@anchor#1{%
9419   \Hy@SaveLastskip
9420   \Hy@VerboseAnchor{#1}%
9421   \begingroup
9422     \let\protect=\string
9423     \hyper@chars
9424     \special{html:<a name=%
9425       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9426   \endgroup
9427   \Hy@activeanchortrue
9428   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9429   \special{html:</a>}%
9430   \Hy@activeanchorfalse
9431   \Hy@RestoreLastskip
9432 }
9433 \Hy@WrapperDef\hyper@anchorstart#1{%
9434   \Hy@SaveLastskip
9435   \Hy@VerboseAnchor{#1}%
9436   \begingroup
9437     \hyper@chars
9438     \special{html:<a name=%
9439       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
9440   \endgroup
9441   \Hy@activeanchortrue
9442 }
9443 \def\hyper@anchorend{%
9444   \special{html:</a>}%
9445   \Hy@activeanchorfalse
9446   \Hy@RestoreLastskip
9447 }
9448 \def\@urltype{url}
9449 \def\hyper@linkstart#1#2{%
9450   \Hy@VerboseLinkStart{#1}{#2}%
9451   \expandafter\Hy@colorlink\csname @#1color\endcsname
9452   \def\Hy@tempa{#1}%
9453   \ifx\Hy@tempa\@urltype
9454     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
9455   \else
9456     \begingroup
9457       \hyper@chars
9458       \special{html:<a href=%
9459         \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>}%
9460     \endgroup
9461   \fi
9462 }
9463 \def\hyper@linkend{%

```

```

9464 \special{html:</a>}}%
9465 \Hy@endcolorlink
9466 }
9467 \def\hyper@linkfile#1#2#3{%
9468 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
9469 }
9470 \def\hyper@linkurl#1#2{%

```

If we want to raise up the final link `\special`, we need to get its height; ask me why L<sup>A</sup>T<sub>E</sub>X constructs make this totally foul up, and make us revert to basic T<sub>E</sub>X. I do not know.

```

9471 \leavevmode
9472 \ifHy@raiselinks
9473 \Hy@SaveSpaceFactor
9474 \Hy@SaveSavedSpaceFactor
9475 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9476 \Hy@RestoreSavedSpaceFactor
9477 \@linkdim\dp\@tempboxa
9478 \lower\@linkdim\hbox{%
9479 \hyper@chars
9480 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9481 }%
9482 \Hy@colorlink\@urlcolor
9483 \Hy@RestoreSpaceFactor
9484 #1%
9485 \Hy@SaveSpaceFactor
9486 \@linkdim\ht\@tempboxa

```

Because of the interaction with the 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).

```

9487 \advance\@linkdim by -6.5\p@
9488 \raise\@linkdim\hbox{\special{html:</a>}}}%
9489 \Hy@endcolorlink
9490 \Hy@RestoreSpaceFactor
9491 \else
9492 \begingroup
9493 \hyper@chars
9494 \special{html:<a href=\hyper@quote#2\hyper@quote>}}%
9495 \Hy@colorlink\@urlcolor#1\Hy@xspace@end
9496 \special{html:</a>}}%
9497 \Hy@endcolorlink
9498 \endgroup
9499 \fi
9500 }

```

Very poor implementation of `\hyper@link` without considering #1.

```

9501 \def\hyper@link#1#2#3{%
9502 \Hy@VerboseLinkStart{#1}{#2}%
9503 \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}}%
9504 }
9505 \def\hyper@image#1#2{%
9506 \begingroup
9507 \hyper@chars
9508 \special{html:<img src=\hyper@quote#1\hyper@quote>}}%
9509 \endgroup
9510 }
9511 </hypertex>

```

9512  $\langle *dviwindo \rangle$

## 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,  $\text{\LaTeX}$  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.

```
9513 \providecommand*\XR@ext\{dvi}
9514 \providecommand*\wwwbrowser{c:\string\netscape\string\netscape}
9515 \Hy@WrapperDef\hyper@anchor#1{%
9516   \Hy@SaveLastskip
9517   \Hy@VerboseAnchor{#1}%
9518   \begingroup
9519     \let\protect=\string
9520     \special{mark: #1}%
9521   \endgroup
9522   \Hy@activeanchortrue
9523   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
9524   \Hy@activeanchorfalse
9525   \Hy@RestoreLastskip
9526 }
9527 \Hy@WrapperDef\hyper@anchorstart#1{%
9528   \Hy@SaveLastskip
9529   \Hy@VerboseAnchor{#1}%
9530   \special{mark: #1}%
9531   \Hy@activeanchortrue
9532 }
9533 \def\hyper@anchorend{%
9534   \Hy@activeanchorfalse
9535   \Hy@RestoreLastskip
9536 }
9537 \def\hyper@linkstart#1#2{%
9538   \Hy@VerboseLinkStart{#1}{#2}%
9539   \expandafter\Hy@colorlink\csname @#1color\endcsname
9540   \special{button: %
9541     10000000 %
9542     \number\baselineskip\space
9543     #2%
9544   }%
9545 }
9546 \def\hyper@linkend{%
9547   \Hy@endcolorlink
9548 }
9549 \def\hyper@link#1#2#3{%
9550   \Hy@VerboseLinkStart{#1}{#2}%
9551   \leavevmode
9552   \ifHy@raiselinks
9553     \Hy@SaveSpaceFactor
```

```

9554 \Hy@SaveSavedSpaceFactor
9555 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#3}%
9556 \Hy@RestoreSavedSpaceFactor
9557 \@linkdim\dp\@tempboxa
9558 \lower\@linkdim\hbox{%
9559 \special{button: %
9560 \number\wd\@tempboxa\space
9561 \number\ht\@tempboxa\space
9562 #2%
9563 }%
9564 \expandafter\Hy@colorlink\csname @#1color\endcsname
9565 \Hy@RestoreSpaceFactor
9566 #3\Hy@xspace@end
9567 \Hy@SaveSpaceFactor
9568 \Hy@endcolorlink
9569 }%
9570 \@linkdim\ht\@tempboxa
9571 \advance\@linkdim by -6.5\p@
9572 \raise\@linkdim\hbox{}%
9573 \Hy@RestoreSpaceFactor
9574 \else
9575 \special{button: %
9576 \number\wd\@tempboxa\space
9577 \number\ht\@tempboxa\space
9578 #2%
9579 }%
9580 \expandafter\Hy@colorlink\csname @#1color\endcsname
9581 #3\Hy@xspace@end
9582 \Hy@endcolorlink
9583 \fi
9584 }
9585 \def\hyper@linkurl#1#2{%
9586 \begingroup
9587 \hyper@chars
9588 \leavevmode
9589 \ifHy@raiselinks
9590 \Hy@SaveSpaceFactor
9591 \Hy@SaveSavedSpaceFactor
9592 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9593 \Hy@RestoreSavedSpaceFactor
9594 \@linkdim\dp\@tempboxa
9595 \lower\@linkdim\hbox{%
9596 \special{button: %
9597 \number\wd\@tempboxa\space
9598 \number\ht\@tempboxa\space
9599 launch: \wwwbrowser\space
9600 #2%
9601 }%
9602 \Hy@colorlink\@urlcolor
9603 \Hy@RestoreSpaceFactor
9604 #1\Hy@xspace@end
9605 \Hy@SaveSpaceFactor
9606 \Hy@endcolorlink
9607 }%
9608 \@linkdim\ht\@tempboxa
9609 \advance\@linkdim by -6.5\p@
9610 \raise\@linkdim\hbox{}%

```

```

9611 \Hy@RestoreSpaceFactor
9612 \else
9613 \special{button: %
9614 \number\wd\@tempboxa\space
9615 \number\ht\@tempboxa\space
9616 launch: \wwwbrowser\space
9617 #2%
9618 }%
9619 \Hy@colorlink\@urlcolor
9620 #1\Hy@xspace@end
9621 \Hy@endcolorlink
9622 \fi
9623 \endgroup
9624 }
9625 \def\hyper@linkfile#1#2#3{%
9626 \begingroup
9627 \hyper@chars
9628 \leavevmode
9629 \ifHy@raiselinks
9630 \Hy@SaveSpaceFactor
9631 \Hy@SaveSavedSpaceFactor
9632 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
9633 \Hy@RestoreSavedSpaceFactor
9634 \@linkdim\dp\@tempboxa
9635 \lower\@linkdim\hbox{%
9636 \special{button: %
9637 \number\wd\@tempboxa\space
9638 \number\ht\@tempboxa\space
9639 #3,%
9640 file: #2%
9641 }%
9642 \Hy@colorlink\@filecolor
9643 \Hy@RestoreSpaceFactor
9644 #1\Hy@xspace@end
9645 \Hy@SaveSpaceFactor
9646 \Hy@endcolorlink
9647 }%
9648 \@linkdim\ht\@tempboxa
9649 \advance\@linkdim by -6.5\p@
9650 \raise\@linkdim\hbox{}%
9651 \Hy@RestoreSpaceFactor
9652 \else
9653 \special{button: %
9654 \number\wd\@tempboxa\space
9655 \number\ht\@tempboxa\space
9656 #3,%
9657 file: #2%
9658 }%
9659 \Hy@colorlink\@filecolor
9660 #1\Hy@xspace@end
9661 \Hy@endcolorlink
9662 \fi
9663 \endgroup
9664 }
9665 \ifx\@pdfproducer\relax
9666 \def\@pdfproducer{dviwindo + Distiller}%
9667 \fi

```

```

9668 \HyInfo@AddonUnsupportedtrue
9669 \def\PDF@FinishDoc{%
9670   \Hy@UseMaketitleInfos
9671   \HyInfo@TrappedUnsupported
9672   \special{PDF: Keywords \@pdfkeywords}%
9673   \special{PDF: Title \@pdftitle}%
9674   \special{PDF: Creator \@pdfcreator}%
9675   \ifx\@pdfcreationdate\@empty
9676   \else
9677     \special{PDF: CreationDate \@pdfcreationdate}%
9678   \fi
9679   \ifx\@pdfmoddate\@empty
9680   \else
9681     \special{PDF: ModDate \@pdfmoddate}%
9682   \fi
9683   \special{PDF: Author \@pdfauthor}%
9684   \ifx\@pdfproducer\relax
9685   \else
9686     \special{PDF: Producer \@pdfproducer}%
9687   \fi
9688   \special{PDF: Subject \@pdfsubject}%
9689   \Hy@DisableOption{pdfauthor}%
9690   \Hy@DisableOption{pdftitle}%
9691   \Hy@DisableOption{pdfsubject}%
9692   \Hy@DisableOption{pdfcreator}%
9693   \Hy@DisableOption{pdfcreationdate}%
9694   \Hy@DisableOption{pdfmoddate}%
9695   \Hy@DisableOption{pdfproducer}%
9696   \Hy@DisableOption{pdfkeywords}%
9697   \Hy@DisableOption{pdftrapped}%
9698   \Hy@DisableOption{pdfinfo}%
9699 }
9700 \def\PDF@SetupDoc{%
9701   \ifx\@baseurl\@empty
9702   \else
9703     \special{PDF: Base \@baseurl}%
9704   \fi
9705   \ifx\@pdfpagescrop\@empty\else
9706     \special{PDF: BBox \@pdfpagescrop}%
9707   \fi
9708   \def\Hy@temp{}%
9709   \ifx\@pdfstartpage\@empty
9710   \else
9711     \ifx\@pdfstartview\@empty
9712     \else
9713       \edef\Hy@temp{%
9714         ,Page=\@pdfstartpage
9715         ,View=\@pdfstartview
9716       }%
9717     \fi
9718   \fi
9719   \edef\Hy@temp{%
9720     \noexpand\pdfmark{%
9721       pdfmark=/DOCVIEW,%
9722       PageMode=/\@pdfpagemode
9723     }%
9724   }%

```



```

9725 }%
9726 \Hy@temp
9727 \ifx\@pdfpagescrop\@empty
9728 \else
9729 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
9730 \fi
9731 \edef\Hy@temp{%
9732 \ifHy@pdftoolbar\else /HideToolbar true\fi
9733 \ifHy@pdfmenubar\else /HideMenubar true\fi
9734 \ifHy@pdfwindowui\else /HideWindowUI true\fi
9735 \ifHy@pdffitwindow /FitWindow true\fi
9736 \ifHy@pdfcenterwindow /CenterWindow true\fi
9737 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
9738 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
9739 \Hy@UseNameKey{Direction}\@pdfdirection
9740 \Hy@UseNameKey{ViewArea}\@pdfviewarea
9741 \Hy@UseNameKey{ViewClip}\@pdfviewclip
9742 \Hy@UseNameKey{PrintArea}\@pdfprintarea
9743 \Hy@UseNameKey{PrintClip}\@pdfprintclip
9744 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
9745 \Hy@UseNameKey{Duplex}\@pdfduplex
9746 \ifx\@pdfpicktraybypdfsize\@empty
9747 \else
9748 /PickTrayByPDFSize \@pdfpicktraybypdfsize
9749 \fi
9750 \ifx\@pdfprintpagerange\@empty
9751 \else
9752 /PrintPageRange[\@pdfprintpagerange]%
9753 \fi
9754 \ifx\@pdfnumcopies\@empty
9755 \else
9756 /NumCopies \@pdfnumcopies
9757 \fi
9758 }%
9759 \pdfmark{pdfmark=/PUT,%
9760 Raw={%
9761 \string{Catalog\string}<<%
9762 \ifx\Hy@temp\@empty
9763 \else
9764 /ViewerPreferences<<\Hy@temp>>%
9765 \fi
9766 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
9767 \ifx\@pdflang\@empty
9768 \else
9769 /Lang(\@pdflang)%
9770 \fi
9771 >>%
9772 }%
9773 }%
9774 }
9775 </dviwindo>
9776 <*\dvipdfm | xetex>

```

## 46.5 dvipdfm/xetex dvi to PDF converter

Provided by Mark Wicks (mwicks@kettering.edu)

```
9777 \providecommand*\XR@ext}{pdf}
```

```

9778 \Hy@setbreaklinks{true}
9779 \def\HyPat@ObjRef{%
9780   @[\^ ]+}%
9781 }
9782 \newsavebox{\pdfm@box}
9783 \def\@pdfm@mark#1{\special{pdf:#1}}
9784 \Hy@WrapperDef\@pdfm@dest#1{%
9785   \Hy@SaveLastskip
9786   \Hy@VerboseAnchor{#1}%
9787   \begin{group}
9788     \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
9789     \def\x{XYZ}%
9790     \ifx\x\@pdfview
9791       \def\x{XYZ @xpos @ypos null}%
9792     \else
9793       \def\x{FitH}%
9794       \ifx\x\@pdfview
9795         \def\x{FitH @ypos}%
9796       \else
9797         \def\x{FitBH}%
9798         \ifx\x\@pdfview
9799           \def\x{FitBH @ypos}%
9800         \else
9801           \def\x{FitV}%
9802           \ifx\x\@pdfview
9803             \def\x{FitV @xpos}%
9804           \else
9805             \def\x{FitBV}%
9806             \ifx\x\@pdfview
9807               \def\x{FitBV @xpos}%
9808             \else
9809               \def\x{Fit}%
9810               \ifx\x\@pdfview
9811                 \let\x\@pdfview
9812               \else
9813                 \def\x{FitB}%
9814                 \ifx\x\@pdfview
9815                   \let\x\@pdfview
9816                 \else
9817                   \def\x{FitR}%
9818                   \ifx\x\@pdfview
9819                     \Hy@Warning{'pdfview=FitR' is not supported}%
9820                     \def\x{XYZ @xpos @ypos null}%
9821                   \else
9822                     \@onelevel@sanitize\@pdfview
9823                     \Hy@Warning{%
9824                       Unknown value '\@pdfview' for pdfview%
9825                     }%
9826                     \def\x{XYZ @xpos @ypos null}%
9827                   \fi
9828                 \fi
9829               \fi
9830             \fi
9831           \fi
9832         \fi
9833       \fi
9834     \fi

```

```

9835 \pdfmark{dest (\Hy@pstringDest) [@thispage /\x]}%
9836 \endgroup
9837 \Hy@RestoreLastskip
9838 }
9839 \providecommand*\pdfview{XYZ}
9840 \providecommand*\pdfborder{0 0 1}
9841 \providecommand*\pdfborderstyle{}
9842 \def\hyper@anchor#1{%
9843 \pdfmark{dest{#1}}%
9844 }
9845 \def\hyper@anchorstart#1{%
9846 \Hy@activeanchortrue
9847 \pdfmark{dest{#1}}%
9848 }
9849 \def\hyper@anchorend{%
9850 \Hy@activeanchorfalse
9851 }
9852 \newcounter{Hy@AnnotLevel}
9853 \ifHy@ocgcolorlinks
9854 \def\OBJ@OCG@view{@OCG@view}%
9855 \pdfmark{%
9856 obj \OBJ@OCG@view <<%
9857 /Type/OCG%
9858 /Name(View)%
9859 /Usage<<%
9860 /Print<<%
9861 /PrintState/OFF%
9862 >>%
9863 /View<<%
9864 /ViewState/ON%
9865 >>%
9866 >>%
9867 >>%
9868 }%
9869 \pdfmark{close \OBJ@OCG@view}%
9870 \def\OBJ@OCG@print{@OCG@print}%
9871 \pdfmark{%
9872 obj \OBJ@OCG@print <<%
9873 /Type/OCG%
9874 /Name(Print)%
9875 /Usage<<%
9876 /Print<<%
9877 /PrintState/ON%
9878 >>%
9879 /View<<%
9880 /ViewState/OFF%
9881 >>%
9882 >>%
9883 >>%
9884 }%
9885 \pdfmark{close \OBJ@OCG@print}%
9886 \def\OBJ@OCGs{@OCGs}%
9887 \pdfmark{%
9888 obj \OBJ@OCGs [%
9889 \OBJ@OCG@view\space\OBJ@OCG@print
9890 ]%
9891 }%

```

```

9892 \@pdfm@mark{close \OBJ@OCGs}%
9893 \@pdfm@mark{%
9894   put @catalog <<%
9895     /OCProperties<<%
9896     /OCGs \OBJ@OCGs
9897     /D<<%
9898     /OFF[\OBJ@OCG@print]%
9899     /AS[%
9900       <<%
9901         /Event/View%
9902         /OCGs \OBJ@OCGs
9903         /Category[/View]%
9904       >>%
9905       <<%
9906         /Event/Print%
9907         /OCGs \OBJ@OCGs
9908         /Category[/Print]%
9909       >>%
9910       <<%
9911         /Event/Export%
9912         /OCGs \OBJ@OCGs
9913         /Category[/Print]%
9914       >>%
9915     ]%
9916   >>%
9917 >>%
9918 >>%
9919 }%
9920 \@AtBeginShipout{%
9921   \setbox\AtBeginShipoutBox=\hbox{%
9922     \copy\AtBeginShipoutBox
9923     \@pdfm@mark{%
9924       put @resources <<%
9925         /Properties<<%
9926         /OCView \OBJ@OCG@view
9927         /OCPrint \OBJ@OCG@print
9928       >>%
9929       >>%
9930     }%
9931   }%
9932 }%
9933 \@Hy@AtBeginDocument{%
9934   \def\Hy@colorlink#1{%
9935     \begingroup
9936     \ifHy@ocgcolorlinks
9937       \def\Hy@ocgcolor{#1}%
9938       \setbox0=\hbox\bgroup\color@begingroup
9939     \else
9940       \HyColor@UseColor#1%
9941     \fi
9942   }%
9943   \def\Hy@endcolorlink{%
9944     \ifHy@ocgcolorlinks
9945       \color@endgroup\egroup
9946     \mbox{%
9947       \@pdfm@mark{content /OC/OCPrint BDC}%
9948       \rlap{\copy0}%

```

```

9949      \@pdfm@mark{content EMC/OC/OCView BDC}%
9950      \begingroup
9951      \expandafter\HyColor@UseColor\Hy@ocgcolor
9952      \box0 %
9953      \endgroup
9954      \@pdfm@mark{content EMC}%
9955      }%
9956      \fi
9957      \endgroup
9958      }%
9959      }%
9960      \else
9961      \Hy@DisableOption{ocgcolorlinks}%
9962      \fi

9963      \def\Hy@BeginAnnot#1{%
9964      \stepcounter{Hy@AnnotLevel}%
9965      \ifnum\value{Hy@AnnotLevel}=\@ne
9966      #1%
9967      \fi
9968      }
9969      \def\Hy@endAnnot{%
9970      \ifnum\value{Hy@AnnotLevel}=\@ne
9971      \Hy@endcolorlink
9972      \@pdfm@mark{eann}%
9973      \fi
9974      \addtocounter{Hy@AnnotLevel}\m@ne
9975      }

9976      \def\Hy@undefinedname{UNDEFINED}
9977      \def\hyper@linkstart#1#2{%
9978      \Hy@VerboseLinkStart{#1}{#2}%
9979      \leavevmode
9980      \Hy@BeginAnnot{%
9981      \protected@edef\Hy@testname{#2}%
9982      \ifx\Hy@testname\@empty
9983      \Hy@Warning{%
9984      Empty destination name,\MessageBreak
9985      using '\Hy@undefinedname'%
9986      }%
9987      \let\Hy@testname\Hy@undefinedname
9988      \else
9989      \Hy@pstringdef\Hy@testname{%
9990      \expandafter\HyperDestNameFilter\expandafter{%
9991      \Hy@testname
9992      }%
9993      }%
9994      \fi
9995      \@pdfm@mark{%
9996      bann<<%
9997      /Type/Annot%
9998      /Subtype/Link%
9999      \ifHy@pdfa /F 4\fi
10000      \Hy@setpdfborder
10001      \expandafter\ifx\csname @#1bordercolor\endcsname\relax
10002      \else
10003      /C[\csname @#1bordercolor\endcsname]%
10004      \fi
10005      /A<<%

```

```

10006      /S/GoTo%
10007      /D(\Hy@testname)%
10008      \Hy@href@nextactionraw
10009      >>%
10010      >>%
10011      }%
10012      \expandafter\Hy@colorlink\csname @#1color\endcsname
10013      }%
10014      }
10015      \def\hyper@linkend{\Hy@EndAnnot}%
10016      \def\hyper@link#1#2#3{%
10017      \hyper@linkstart{#1}{#2}#3\Hy@xspace@end\hyper@linkend
10018      }
10019      \def\hyper@linkfile#1#2#3{%
10020      \leavevmode
10021      \Hy@BeginAnnot{%
10022      \def\Hy@pstringF{#2}%
10023      \Hy@CleanupFile\Hy@pstringF
10024      \Hy@pstringdef\Hy@pstringF\Hy@pstringF
10025      \Hy@pstringdef\Hy@pstringD{#3}%
10026      \Hy@MakeRemoteAction
10027      \@pdfm@mark{%
10028      bann<<%
10029      /Type/Annot%
10030      /Subtype/Link%
10031      \ifHy@pdfa /F 4\fi
10032      \Hy@setpdfborder
10033      \ifx\@filebordercolor\relax
10034      \else
10035      /C[\@filebordercolor]%
10036      \fi
10037      /A<<%
10038      /S/GoToR%
10039      /F(\Hy@pstringF)%
10040      /D%
10041      \ifx\#3\%
10042      [\Hy@href@page\@pdfremotestartview]%
10043      \else
10044      (\Hy@pstringD)%
10045      \fi
10046      \Hy@SetNewWindow
10047      \Hy@href@nextactionraw
10048      >>%
10049      >>%
10050      }%
10051      \Hy@colorlink\@filecolor
10052      }%
10053      #1\Hy@xspace@end
10054      \Hy@EndAnnot
10055      }
10056      \def\@hyper@launch run:#1\#2#3{% filename, anchor text linkname
10057      \leavevmode
10058      \Hy@BeginAnnot{%
10059      \Hy@pstringdef\Hy@pstringF{#1}%
10060      \Hy@pstringdef\Hy@pstringP{#3}%
10061      \@pdfm@mark{%
10062      bann<<%

```

```

10063      /Type/Annot%
10064      /Subtype/Link%
10065      \ifHy@pdfa /F 4\fi
10066      \Hy@setpdfborder
10067      \ifx\@runbordercolor\relax
10068      \else
10069      /C[\@runbordercolor]%
10070      \fi
10071      /A<<%
10072      /F(\Hy@pstringF)%
10073      /S/Launch%
10074      \Hy@SetNewWindow
10075      \ifx\#3\%
10076      \else
10077      /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
10078      \fi
10079      \Hy@href@nextactionraw
10080      >>%
10081      >>%
10082      }%
10083      \Hy@colorlink\@runcolor
10084      }%
10085      #2\Hy@xspace@end
10086      \Hy@EndAnnot
10087      }
10088      \def\hyper@linkurl#1#2{%
10089      \leavevmode
10090      \Hy@BeginAnnot{%
10091      \Hy@pstringdef\Hy@pstringURI{#2}%
10092      \@pdfm@mark{%
10093      bann<<%
10094      /Type/Annot%
10095      /Subtype/Link%
10096      \ifHy@pdfa /F 4\fi
10097      \Hy@setpdfborder
10098      \ifx\@urlbordercolor\relax
10099      \else
10100      /C[\@urlbordercolor]%
10101      \fi
10102      /A<<%
10103      /S/URI%
10104      /URI(\Hy@pstringURI)%
10105      \ifHy@href@ismap
10106      /IsMap true%
10107      \fi
10108      \Hy@href@nextactionraw
10109      >>%
10110      >>%
10111      }%
10112      \Hy@colorlink\@urlcolor
10113      }%
10114      #1\Hy@xspace@end
10115      \Hy@EndAnnot
10116      }
10117      \def\Acrobatmenu#1#2{%
10118      \Hy@Acrobatmenu{#1}{#2}{%
10119      \Hy@BeginAnnot{%

```

```

10120 \pdfmark{
10121   bann<<
10122   /Type/Annot
10123   /Subtype/Link
10124   \ifHy@pdfa /F 4\fi
10125   /A<<
10126   /S/Named
10127   /N/#1
10128   \Hy@href@nextactionraw
10129   >>
10130   \Hy@setpdfborder
10131   \ifx\@menubordercolor\relax
10132     \relax
10133     /C[\@menubordercolor]%
10134   \fi
10135   >>
10136 }%
10137 \Hy@colorlink\@menucolor
10138 }%
10139 #2\Hy@xspace@end
10140 \Hy@endAnnot
10141 }%
10142 }
10143 \ifx\@pdfproducer\relax
10144 \def\@pdfproducer{dvi.pdfm}%

```

Detect XeTeX. However, but xdvipdfmx will overwrite it in the final PDF file.

```

10145 \begingroup\expandafter\expandafter\expandafter\endgroup
10146 \expandafter\ifx\csname XeTeXversion\endcsname\relax
10147 \else
10148 \edef\@pdfproducer{XeTeX \the\XeTeXversion\XeTeXrevision}%
10149 \fi
10150 \fi
10151 \def\PDF@FinishDoc{
10152   \Hy@UseMaketitleInfos
10153   \HyInfo@GenerateAddons
10154   \pdfmark{
10155     docinfo<<
10156     /Title(\pdftitle)%
10157     /Subject(\pdfsubject)%
10158     /Creator(\pdfcreator)%
10159     \ifx\@pdfcreationdate\empty
10160     \else
10161       /CreationDate(\@pdfcreationdate)%
10162     \fi
10163     \ifx\@pdfmoddate\empty
10164     \else
10165       /ModDate(\@pdfmoddate)%
10166     \fi
10167     /Author(\pdfauthor)%
10168     \ifx\@pdfproducer\relax
10169     \else
10170       /Producer(\@pdfproducer)%
10171     \fi
10172     /Keywords(\pdfkeywords)%
10173     \ifx\@pdftrapped\empty
10174     \else
10175       /Trapped/\@pdftrapped

```



```

10176     \fi
10177     \HyInfo@Addons
10178     >>%
10179 }%
10180 \Hy@DisableOption{pdfauthor}%
10181 \Hy@DisableOption{pdftitle}%
10182 \Hy@DisableOption{pdfsubject}%
10183 \Hy@DisableOption{pdfcreator}%
10184 \Hy@DisableOption{pdfcreationdate}%
10185 \Hy@DisableOption{pdfmoddate}%
10186 \Hy@DisableOption{pdfproducer}%
10187 \Hy@DisableOption{pdfkeywords}%
10188 \Hy@DisableOption{pdftrapped}%
10189 \Hy@DisableOption{pdfinfo}%
10190 }

10191 \def\PDF@SetupDoc{%
10192   \edef\Hy@temp{%
10193     \ifHy@pdftoolbar\else /HideToolbar true\fi
10194     \ifHy@pdfmenubar\else /HideMenubar true\fi
10195     \ifHy@pdfwindowui\else /HideWindowUI true\fi
10196     \ifHy@pdfwindow /FitWindow true\fi
10197     \ifHy@pdfcenterwindow /CenterWindow true\fi
10198     \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10199     \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10200     \Hy@UseNameKey{Direction}\@pdfdirection
10201     \Hy@UseNameKey{ViewArea}\@pdfviewarea
10202     \Hy@UseNameKey{ViewClip}\@pdfviewclip
10203     \Hy@UseNameKey{PrintArea}\@pdfprintarea
10204     \Hy@UseNameKey{PrintClip}\@pdfprintclip
10205     \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10206     \Hy@UseNameKey{Duplex}\@pdfduplex
10207     \ifx\@pdfpicktraybypdfsize\@empty
10208       \else
10209         /PickTrayByPDFSize \@pdfpicktraybypdfsize
10210       \fi
10211     \ifx\@pdfprintpagerange\@empty
10212       \else
10213         /PrintPageRange[\@pdfprintpagerange]%
10214       \fi
10215     \ifx\@pdfnumcopies\@empty
10216       \else
10217         /NumCopies \@pdfnumcopies
10218       \fi
10219   }%
10220   \Hy@pstringdef\Hy@pstringB{\@baseurl}%
10221   \@pdfm@mark{%
10222     docview<<%
10223     \ifx\@pdfstartpage\@empty
10224     \else
10225       \ifx\@pdfstartview\@empty
10226       \else
10227         /OpenAction[@page\@pdfstartpage\@pdfstartview]%
10228       \fi
10229     \fi
10230     \ifx\@baseurl\@empty
10231     \else
10232       /URI<</Base(\Hy@pstringB)>>%

```

```

10233 \fi
10234 /PageMode/\@pdfpagemode
10235 \ifx\Hy@temp\@empty
10236 \else
10237 /ViewerPreferences<<\Hy@temp>>%
10238 \fi
10239 \Hy@UseNameKey{PageLayout}\@pdfpagelayout
10240 \ifx\@pdflang\@empty
10241 \else
10242 /Lang(\@pdflang)%
10243 \fi
10244 >>%
10245 }%
10246 \ifx\@pdfpagescrop\@empty
10247 \else
10248 \@pdfm@mark{put @pages <</CropBox[\@pdfpagescrop]>>}}%
10249 \fi
10250 }
10251 </dvipdfm | xetex>
10252 (*dvipdfm | xetex)

```

\hyper@pagetransition

```

10253 \def\hyper@pagetransition{%
10254 \ifx\@pdfpagetransition\relax
10255 \else
10256 \ifx\@pdfpagetransition\@empty
10257 \else
10258 \special{pdf:put @thispage %
10259 <</Trans<</S/\@pdfpagetransition>>>>%
10260 }%
10261 \fi
10262 \fi
10263 }

```

\hyper@pageduration

```

10264 \def\hyper@pageduration{%
10265 \ifx\@pdfpageduration\relax
10266 \else
10267 \ifx\@pdfpageduration\@empty
10268 \else
10269 \special{pdf:put @thispage %
10270 <</Dur \@pdfpageduration>>>%
10271 }%
10272 \fi
10273 \fi
10274 }

```

\hyper@pagehidden

```

10275 \def\hyper@pagehidden{%
10276 \ifHy@useHidKey
10277 \special{pdf:put @thispage %
10278 <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
10279 }%
10280 \fi
10281 }

10282 \g@addto@macro\Hy@EveryPageBoxHook{%

```

```

10283 \hyper@pagetransition
10284 \hyper@pageduration
10285 \hyper@pagehidden
10286 }
10287 </dvipdfm | xetex>

```

XeTeX uses pdfTeX's method `\pdfpagewidth` and `\pdfpageheight` for setting the paper size.

```

10288 <*dvipdfm>
10289 \AtBeginShipoutFirst{%
10290   \ifHy@setpagesize
10291     \begingroup
10292       \@ifundefined{stockwidth}{%
10293         \ifdim\paperwidth>\z@
10294           \ifdim\paperheight>\z@
10295             \special{papersize=\the\paperwidth,\the\paperheight}%
10296           \fi
10297         \fi
10298       }{%
10299         \ifdim\stockwidth>\z@
10300           \ifdim\stockheight>\z@
10301             \special{papersize=\the\stockwidth,\the\stockheight}%
10302           \fi
10303         \fi
10304       }%
10305     \endgroup
10306   \fi
10307   \Hy@DisableOption{setpagesize}%
10308 }
10309 </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.

```

10310 <*vtexhtml>
10311 \providecommand*\XR@ext}{htm}
10312 \RequirePackage{vtexhtml}
10313 \newif\if@Localurl
10314 \let\PDF@FinishDoc\ltx@empty
10315 \def\PDF@SetupDoc{%
10316   \ifx\@baseurl\@empty
10317     \else
10318       \special{!direct <base href="\@baseurl">}%
10319     \fi
10320 }
10321 \def\@urltype{url}
10322 \def\hyper@link#1#2#3{%
10323   \Hy@VerboseLinkStart{#1}{#2}%
10324   \leavevmode
10325   \special{!direct <a href=%
10326     \hyper@quote\hyper@hash\HyperDestNameFilter{#2}\hyper@quote>}%
10327   #3\Hy@xspace@end
10328   \special{!direct </a>}%
10329 }
10330 \def\hyper@linkurl#1#2{%
10331   \begingroup

```

```

10332 \hyper@chars
10333 \leavevmode
10334 \MathBSuppress=1\relax
10335 \special{!direct <a href=%
10336 \hyper@quote\HyperDestNameFilter{#2}\hyper@quote>}}%
10337 #1\Hy@xspace@end
10338 \MathBSuppress=0\relax
10339 \special{!direct </a>}}%
10340 \endgroup
10341 }
10342 \def\hyper@linkfile#1#2#3{%
10343 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
10344 }
10345 \def\hyper@linkstart#1#2{%
10346 \Hy@VerboseLinkStart{#1}{#2}%
10347 \def\Hy@tempa{#1}\ifx\Hy@tempa\@urltype
10348 \@Localurltrue
10349 \special{!direct <a href=\hyper@quote#2\hyper@quote>}}%
10350 \else
10351 \@Localurlfalse
10352 \begingroup
10353 \hyper@chars
10354 \special{!aref \HyperDestNameFilter{#2}}}%
10355 \endgroup
10356 \fi
10357 }
10358 \def\hyper@linkend{%
10359 \if@Localurl
10360 \special{!endaref}}%
10361 \else
10362 \special{!direct </a>}}%
10363 \fi
10364 }
10365 \Hy@WrapperDef\hyper@anchorstart#1{%
10366 \Hy@SaveLastskip
10367 \Hy@VerboseAnchor{#1}%
10368 \begingroup
10369 \hyper@chars
10370 \special{!aname #1}}%
10371 \special{!direct <a name=%
10372 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}}%
10373 \endgroup
10374 \Hy@activeanchortrue
10375 }
10376 \def\hyper@anchorend{%
10377 \special{!direct </a>}}%
10378 \Hy@activeanchorfalse
10379 \Hy@RestoreLastskip
10380 }
10381 \Hy@WrapperDef\hyper@anchor#1{%
10382 \Hy@SaveLastskip
10383 \Hy@VerboseAnchor{#1}%
10384 \begingroup
10385 \let\protect=\string
10386 \hyper@chars
10387 \leavevmode
10388 \special{!aname #1}}%

```

```

10389 \special{!direct <a name=%
10390 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
10391 \endgroup
10392 \Hy@activeanchortrue
10393 \bgroup\anchor@spot\egroup
10394 \special{!direct </a>}%
10395 \Hy@activeanchorfalse
10396 \Hy@RestoreLastskip
10397 }
10398 \def\@Form[#1]{%
10399 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10400 }
10401 \let\@endForm\ltx@empty
10402 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
10403 \Hy@Message{Sorry, TeXpider does not yet support FORM gauges}%
10404 }
10405 \def\@TextField[#1]#2{% parameters, label
10406 \Hy@Message{Sorry, TeXpider does not yet support FORM text fields}%
10407 }
10408 \def\@CheckBox[#1]#2{% parameters, label
10409 \Hy@Message{Sorry, TeXpider does not yet support FORM checkboxes}%
10410 }
10411 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
10412 \Hy@Message{Sorry, TeXpider does not yet support FORM choice menus}%
10413 }
10414 \def\@PushButton[#1]#2{% parameters, label
10415 \Hy@Message{Sorry, TeXpider does not yet support FORM pushbuttons}%
10416 }
10417 \def\@Reset[#1]#2{%
10418 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10419 }
10420 \def\@Submit[#1]#2{%
10421 \Hy@Message{Sorry, TeXpider does not yet support FORMs}%
10422 }
10423 </vtexhtml>
10424 <*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.

```

10425 \ifx\mediaheight\@undefined
10426 \else
10427 \ifx\mediaheight\relax
10428 \else
10429 \ifHy@setpagesize
10430 \providecommand*\VTeXInitMediaSize{%
10431 \ltx@ifundefined{stockwidth}{%
10432 \ifdim\paperheight>0pt %
10433 \setlength\mediaheight\paperheight
10434 \fi
10435 \ifdim\paperheight>0pt %
10436 \setlength\mediawidth\paperwidth
10437 \fi
10438 }{%
10439 \ifdim\stockheight>0pt %
10440 \setlength\mediaheight\stockheight
10441 \fi

```

```

10442         \ifdim\stockwidth>0pt %
10443             \setlength\mediawidth\stockwidth
10444         \fi
10445     }%
10446 }%
10447 \Hy@AtBeginDocument{\VTeXInitMediaSize}%
10448 \fi
10449 \Hy@DisableOption{setpagesize}%
10450 \fi
10451 \fi

Older versions of VTeX require xyz in lower case.

10452 \providecommand*\@pdfview{xyz}
10453 \providecommand*\@pdfborder{0 0 1}
10454 \providecommand*\@pdfborderstyle{}
10455 \let\CurrentBorderColor\@linkbordercolor
10456 \Hy@WrapperDef\hyper@anchor#1{%
10457     \Hy@SaveLastskip
10458     \Hy@VerboseAnchor{#1}%
10459     \begingroup
10460         \let\protect=\string
10461         \hyper@chars
10462         \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10463     \endgroup
10464     \Hy@activeanchortrue
10465     \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
10466     \Hy@activeanchorfalse
10467     \Hy@RestoreLastskip
10468 }
10469 \Hy@WrapperDef\hyper@anchorstart#1{%
10470     \Hy@SaveLastskip
10471     \Hy@VerboseAnchor{#1}%
10472     \begingroup
10473         \hyper@chars
10474         \special{!aname \HyperDestNameFilter{#1};\@pdfview}%
10475     \endgroup
10476     \Hy@activeanchortrue
10477 }
10478 \def\hyper@anchorend{%
10479     \Hy@activeanchorfalse
10480     \Hy@RestoreLastskip
10481 }
10482 \def\@urltype{url}
10483 \def\Hy@undefinedname{UNDEFINED}
10484 \def\hyper@linkstart#1#2{%
10485     \Hy@VerboseLinkStart{#1}{#2}%
10486     \Hy@pstringdef\Hy@pstringURI{#2}%
10487     \expandafter\Hy@colorlink\csname @#1color\endcsname
10488     \ltx@ifundefined{@#1bordercolor}{%
10489         \let\CurrentBorderColor\relax
10490     }{%
10491         \edef\CurrentBorderColor{%
10492             \csname @#1bordercolor\endcsname
10493         }%
10494     }%
10495     \def\Hy@tempa{#1}%
10496     \ifx\Hy@tempa\@urltype
10497         \special{!%

```

```

10498   aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10499     \ifHy@href@ismap
10500       /IsMap true%
10501     \fi
10502     \Hy@href@nextactionraw
10503   >,%
10504   a=<%
10505     \ifHy@pdfa /F 4\fi
10506     \Hy@setpdfborder
10507     \ifx\CurrentBorderColor\relax
10508     \else
10509       /C [\CurrentBorderColor]%
10510     \fi
10511   >%
10512 }%
10513 \else
10514   \protected@edef\Hy@testname{#2}%
10515   \ifx\Hy@testname\@empty
10516     \Hy@Warning{%
10517       Empty destination name,\MessageBreak
10518       using '\Hy@undefinedname'%
10519     }%
10520     \let\Hy@testname\Hy@undefinedname
10521   \fi
10522   \special{!%
10523     aref \expandafter\HyperDestNameFilter
10524       \expandafter{\Hy@testname};%
10525     a=<%
10526       \ifHy@pdfa /F 4\fi
10527       \Hy@setpdfborder
10528       \ifx\CurrentBorderColor\relax
10529       \else
10530         /C [\CurrentBorderColor]%
10531       \fi
10532     >%
10533   }%
10534 \fi
10535 }
10536 \def\hyper@linkend{%
10537   \special{!endaref}%
10538   \Hy@endcolorlink
10539 }
10540 \def\hyper@linkfile#1#2#3{%
10541   \leavevmode
10542   \def\Hy@pstringF{#2}%
10543   \Hy@CleanupFile\Hy@pstringF
10544   \special{!%
10545     aref <%
10546       \ifnum\Hy@VTeXversion>753 \ifHy@pdfnewwindow n\fi\fi
10547     f=\Hy@pstringF>#3;%
10548     a=<%
10549       \ifHy@pdfa /F 4\fi
10550       \Hy@setpdfborder
10551       \ifx\@filebordercolor\relax
10552       \else
10553         /C [\@filebordercolor]%
10554       \fi

```

```

10555 >%
10556 }%
10557 \Hy@colorlink\@filecolor
10558 #1\Hy@xspace@end
10559 \Hy@endcolorlink
10560 \special{!endaref}%
10561 }
10562 \def\hyper@linkurl#1#2{%
10563 \begingroup
10564 \Hy@pstringdef\Hy@pstringURI{#2}%
10565 \hyper@chars
10566 \leavevmode
10567 \special{!%
10568   aref <u=/Type/Action/S/URI/URI(\Hy@pstringURI)%
10569   \ifHy@href@ismap
10570     /IsMap true%
10571   \fi
10572   \Hy@href@nextactionraw
10573   >;%
10574   a=<%
10575   \ifHy@pdfa /F 4\fi
10576   \Hy@setpdfborder
10577   \ifx\@urlbordercolor\relax
10578   \else
10579     /C [\@urlbordercolor]%
10580   \fi
10581   >%
10582 }%
10583 \Hy@colorlink\@urlcolor
10584 #1\Hy@xspace@end
10585 \Hy@endcolorlink
10586 \special{!endaref}%
10587 \endgroup
10588 }
10589 \def\hyper@link#1#2#3{%
10590 \Hy@VerboseLinkStart{#1}{#2}%
10591 \ltx@ifundefined{@#1bordercolor}{%
10592 \let\CurrentBorderColor\relax
10593 }{%
10594 \edef\CurrentBorderColor{\csname @#1bordercolor\endcsname}%
10595 }%
10596 \leavevmode
10597 \protected@edef\Hy@testname{#2}%
10598 \ifx\Hy@testname\@empty
10599 \Hy@Warning{%
10600   Empty destination name,\MessageBreak
10601   using '\Hy@undefinedname'%
10602 }%
10603 \let\Hy@testname\Hy@undefinedname
10604 \fi
10605 \special{!%
10606   aref \expandafter\HyperDestNameFilter
10607   \expandafter{\Hy@testname};%
10608   a=<%
10609   \ifHy@pdfa /F 4\fi
10610   \Hy@setpdfborder
10611   \ifx\CurrentBorderColor\relax

```



```

10612 \else
10613 /C [\CurrentBorderColor]%
10614 \fi
10615 >%
10616 }%
10617 \expandafter
10618 \Hy@colorlink\csname @#1color\endcsname
10619 #3\Hy@xspace@end
10620 \Hy@endcolorlink
10621 \special{!endaref}%
10622 }
10623 \def\hyper@image#1#2{%
10624 \hyper@linkurl{#2}{#1}%
10625 }
10626 \def\@hyper@launch run:#1\\#2#3{%
10627 \Hy@pstringdef\Hy@pstringF{#1}%
10628 \Hy@pstringdef\Hy@pstringP{#3}%
10629 \leavevmode
10630 \special{!aref %
10631 <u=%
10632 /Type/Action%
10633 /S/Launch%
10634 /F(\Hy@pstringF)%
10635 \Hy@SetNewWindow
10636 \ifx\\#3\\%
10637 \else
10638 /Win<</F(\Hy@pstringF)/P(\Hy@pstringP)>>%
10639 \fi
10640 \Hy@href@nextactionraw
10641 >:%
10642 a=<%
10643 \ifHy@pdfa /F 4\fi
10644 \Hy@setpdfborder
10645 \ifx\@runbordercolor\relax
10646 \else
10647 /C[\@runbordercolor]%
10648 \fi
10649 >%
10650 }%
10651 \Hy@colorlink\@runcolor
10652 #2\Hy@xspace@end
10653 \Hy@endcolorlink
10654 \special{!endaref}%
10655 }
10656 \def\Acrobatmenu#1#2{%
10657 \Hy@Acrobatmenu{#1}{#2}{%
10658 \special{!%
10659 aref <u=/S /Named /N /#1>:%
10660 a=<%
10661 \ifHy@pdfa /F 4\fi
10662 \Hy@setpdfborder
10663 \ifx\@menubordercolor\relax
10664 \else
10665 /C[\@menubordercolor]%
10666 \fi
10667 >%
10668 }%

```

```

10669 \Hy@colorlink\@menucolor
10670 #2\Hy@xspace@end
10671 \Hy@endcolorlink
10672 \special{!endaref}%
10673 }%
10674 }

```

The following code (transition effects) is made by Alex Kostin.

The code below makes sense for VTeX 7.02 or later.

Please never use \@ifundefined{VTeXversion}{..}{..} *globally*.

```

10675 \ifnum\Hy@VTeXversion<702 %
10676 \else
10677 \def\hyper@pagetransition{%
10678 \ifx\@pdfpagetransition\relax
10679 \else
10680 \ifx\@pdfpagetransition\@empty

```

Standard incantation.

1. Does an old entry have to be deleted? 2. If 1=yes, how to delete?

```

10681 \else
10682 \hvtex@parse@trans\@pdfpagetransition
10683 \fi
10684 \fi
10685 }%

```

I have to write an “honest” parser to convert raw PDF code into VTeX \special. (AVK)

Syntax of VTeX \special{!trans <transition\_effect>}:</p>
</div>

```

<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:

```

10686 \def\hvtex@trans@effect@Blinds{\def\hvtex@trans@code{B}}%
10687 \def\hvtex@trans@effect@Box{\def\hvtex@trans@code{X}}%
10688 \def\hvtex@trans@effect@Dissolve{\def\hvtex@trans@code{D}}%
10689 \def\hvtex@trans@effect@Glitter{\def\hvtex@trans@code{G}}%
10690 \def\hvtex@trans@effect@Split{\def\hvtex@trans@code{S}}%
10691 \def\hvtex@trans@effect@Wipe{\def\hvtex@trans@code{W}}%
10692 \def\hvtex@trans@effect@R{\def\hvtex@trans@code{R}}%

```

Optional parameters:

```

10693 \def\hvtex@par@dimension{/Dm}%
10694 \def\hvtex@par@direction{/Di}%
10695 \def\hvtex@par@duration{/D}%
10696 \def\hvtex@par@motion{/M}%

```

234

Tokenizer:

```
10697 \def\hvtex@gettoken{%
10698   \expandafter\hvtex@gettoken@\hvtex@buffer\@nil
10699 }%
```

Notice that tokens in the input buffer must be space delimited.

```
10700 \def\hvtex@gettoken@#1 #2\@nil{%
10701   \edef\hvtex@token{#1}%
10702   \edef\hvtex@buffer{#2}%
10703 }%
10704 \def\hvtex@parse@trans#1{%
```

Initializing code:

```
10705 \let\hvtex@trans@code\@empty
10706 \let\hvtex@param@dimension\@empty
10707 \let\hvtex@param@direction\@empty
10708 \let\hvtex@param@duration\@empty
10709 \let\hvtex@param@motion\@empty
10710 \edef\hvtex@buffer{#1\space}%
```

First token is the PDF transition name without escape.

```
10711 \hvtex@gettoken
10712 \ifx\hvtex@token\@empty
```

Leading space(s)?

```
10713 \ifx\hvtex@buffer\@empty
```

The buffer is empty, nothing to do.

```
10714 \else
10715   \hvtex@gettoken
10716 \fi
10717 \fi
10718 \csname hvtex@trans@effect@\hvtex@token\endcsname
```

Now is time to parse optional parameters.

```
10719 \hvtex@trans@params
10720 }%
```

Reentrantable macro to parse optional parameters.

```
10721 \def\hvtex@trans@params{%
10722   \ifx\hvtex@buffer\@empty
10723   \else
10724     \hvtex@gettoken
10725     \let\hvtex@trans@par\hvtex@token
10726     \ifx\hvtex@buffer\@empty
10727     \else
10728       \hvtex@gettoken
10729       \ifx\hvtex@trans@par\hvtex@par@duration
```

/D is the effect duration in seconds. V<sub>TEX</sub> special takes it in milliseconds.

```
10730 \let\hvtex@param@duration\hvtex@token
10731 \else \ifx\hvtex@trans@par\hvtex@par@motion
```

/M can be either /I or /O

```
10732 \expandafter\edef\expandafter\hvtex@param@motion
10733 \expandafter{\expandafter\@gobble\hvtex@token}%
10734 \else \ifx\hvtex@trans@par\hvtex@par@dimension
```

/Dm can be either /H or /V

```
10735 \expandafter\edef\expandafter\hvtex@param@dimension
10736 \expandafter{\expandafter\@gobble\hvtex@token}%
10737 \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).

```

10738     \let\hvtex@param@direction\hvtex@token
10739     \fi\fi\fi\fi
10740     \fi
10741     \fi
10742     \ifx\hvtex@buffer\@empty
10743     \let\next\hvtex@produce@trans
10744     \else
10745     \let\next\hvtex@trans@params
10746     \fi
10747     \next
10748 }%
```

Merge <transition\_effect> and issue the special when possible. Too lazy to validate optional parameters.

```

10749 \def\hvtex@produce@trans{%
10750 \let\vtex@trans@special\@empty
10751 \if S\hvtex@trans@code
10752 \edef\vtex@trans@special{\hvtex@trans@code
10753 \hvtex@param@dimension\hvtex@param@motion}%
10754 \else\if B\hvtex@trans@code
10755 \edef\vtex@trans@special{%
10756 \hvtex@trans@code\hvtex@param@dimension
10757 }%
10758 \else\if X\hvtex@trans@code
10759 \edef\vtex@trans@special{%
10760 \hvtex@trans@code\hvtex@param@motion
10761 }%
10762 \else\if W\hvtex@trans@code
10763 \edef\vtex@trans@special{%
10764 \hvtex@trans@code\hvtex@param@direction
10765 }%
10766 \else\if D\hvtex@trans@code
10767 \let\vtex@trans@special\hvtex@trans@code
10768 \else\if R\hvtex@trans@code
10769 \let\vtex@trans@special\hvtex@trans@code
10770 \else\if G\hvtex@trans@code
10771 \edef\vtex@trans@special{%
10772 \hvtex@trans@code\hvtex@param@direction
10773 }%
10774 \fi\fi\fi\fi\fi\fi
10775 \ifx\vtex@trans@special\@empty
10776 \else
10777 \ifx\hvtex@param@duration\@empty
10778 \else
10779 \setlength{\dimen@}{\hvtex@param@duration\p}%
```

I'm not guilty of possible overflow.

```

10780 \multiply\dimen@\@m
10781 \edef\vtex@trans@special{%
10782 \vtex@trans@special,\strip@pt\dimen@
10783 }%
10784 \fi
```

And all the mess is just for this.

```

10785 \special{!trans \vtex@trans@special}%
10786 \fi
```

```

10787 }%
10788 \def\hyper@pageduration{%
10789 \ifx\@pdfpageduration\relax
10790 \else
10791 \ifx\@pdfpageduration\@empty
10792 \special{!duration-}%
10793 \else
10794 \special{!duration \@pdfpageduration}%
10795 \fi
10796 \fi
10797 }%
10798 \def\hyper@pagehidden{%
10799 \ifHy@useHidKey
10800 \special{!hidden\ifHy@pdfpagehidden +\else -\fi}%
10801 \fi
10802 }%
10803 \g@addto@macro\Hy@EveryPageBoxHook{%
10804 \hyper@pagetransition
10805 \hyper@pageduration
10806 \hyper@pagehidden
10807 }%
10808 \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

```

10809 \ifx\@pdfproducer\relax
10810 \def\@pdfproducer{VTeX}%
10811 \ifnum\Hy@VTeXversion>\z@
10812 \count@\VTeXversion
10813 \divide\count@ 100 %
10814 \edef\@pdfproducer{\@pdfproducer\space v\the\count@}%
10815 \multiply\count@ -100 %
10816 \advance\count@\VTeXversion
10817 \edef\@pdfproducer{%
10818 \@pdfproducer
10819 .\ifnum\count@<10 0\fi\the\count@
10820 \ifx\VTeXOS\@undefined\else
10821 \ifnum\VTeXOS>0 %
10822 \ifnum\VTeXOS<6 %
10823 \space(%
10824 \ifcase\VTeXOS
10825 \or Windows\or Linux\or OS/2\or MacOS\or MacOS/X%
10826 \fi
10827 )%
10828 \fi
10829 \fi
10830 \fi
10831 ,\space
10832 \ifnum\OpMode=\@ne PDF\else PS\fi

```

```

10833 \space backend%
10834 \ifx\gexmode\@undefined\else
10835 \ifnum\gexmode>\z@\space with GeX\fi
10836 \fi
10837 }%
10838 \fi
10839 \fi

```

Current `!pdfinfo` key syntax:

Key	Field	Type
<b>a</b>	<b>Author</b>	String
<b>b</b>	<b>CropBox</b>	String
<b>c</b>	<b>Creator</b>	String
<b>k</b>	<b>Keywords</b>	String
<b>l</b>	<b>PageLayout</b>	PS
<b>p</b>	<b>PageMode</b>	PS
<b>r</b>	<b>Producer</b>	String
<b>s</b>	<b>Subject</b>	String
<b>t</b>	<b>Title</b>	String
<b>u</b>	<b>URI</b>	PS
<b>v</b>	<b>ViewPreferences</b>	PS

Note: PS objects that are dicts are in `<<...>>` (yuck; no choice).

```

10840 \def\PDF@SetupDoc{%
10841 \ifx\@pdfpagescrop\@empty
10842 \else
10843 \special{!pdfinfo b=<\@pdfpagescrop>}%
10844 \fi
10845 \ifx\@pdfstartpage\@empty
10846 \else
10847 \ifx\@pdfstartview\@empty
10848 \else
10849 \special{!onopen Page\@pdfstartpage}%
10850 \fi
10851 \fi
10852 \special{!pdfinfo p=</\@pdfpagemode>}%
10853 \ifx\@baseurl\@empty
10854 \else
10855 \special{!pdfinfo u=<<</Base (\@baseurl)>>>}%
10856 \fi
10857 \special{!pdfinfo v=<<<%
10858 \ifHy@pdftoolbar\else /HideToolbar true\fi
10859 \ifHy@pdfmenubar\else /HideMenubar true\fi
10860 \ifHy@pdfwindowui\else /HideWindowUI true\fi
10861 \ifHy@pdffitwindow /FitWindow true\fi
10862 \ifHy@pdfcenterwindow /CenterWindow true\fi
10863 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
10864 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
10865 \Hy@UseNameKey{Direction}\@pdfdirection
10866 \Hy@UseNameKey{ViewArea}\@pdfviewarea
10867 \Hy@UseNameKey{ViewClip}\@pdfviewclip
10868 \Hy@UseNameKey{PrintArea}\@pdfprintarea
10869 \Hy@UseNameKey{PrintClip}\@pdfprintclip
10870 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
10871 \Hy@UseNameKey{Duplex}\@pdfduplex
10872 \ifx\@pdfpicktraybypdfsize\@empty
10873 \else
10874 /PickTrayByPDFSize \@pdfpicktraybypdfsize

```

```

10875 \fi
10876 \ifx\@pdfprintpagerange\@empty
10877 \else
10878 /PrintPageRange[\@pdfprintpagerange]%
10879 \fi
10880 \ifx\@pdfnumcopies\@empty
10881 \else
10882 /NumCopies \@pdfnumcopies
10883 \fi
10884 >>>}%
10885 \ifx\@pdfpagelayout\@empty
10886 \else
10887 \special{!pdfinfo l=</\@pdfpagelayout\space>}%
10888 \fi
10889 }%
10890 \HyInfo@AddonUnsupportedtrue
10891 \def\PDF@FinishDoc{%
10892 \Hy@UseMaketitleInfos
10893 \HyInfo@TrappedUnsupported
10894 \special{!pdfinfo a=<\@pdfauthor>}%
10895 \special{!pdfinfo t=<\@pdftitle>}%
10896 \special{!pdfinfo s=<\@pdfsubject>}%
10897 \special{!pdfinfo c=<\@pdfcreator>}%
10898 \ifx\@pdfproducer\relax
10899 \else
10900 \special{!pdfinfo r=<\@pdfproducer>}%
10901 \fi
10902 \special{!pdfinfo k=<\@pdfkeywords>}%
10903 \Hy@DisableOption{pdfauthor}%
10904 \Hy@DisableOption{pdftitle}%
10905 \Hy@DisableOption{pdfsubject}%
10906 \Hy@DisableOption{pdfcreator}%
10907 \Hy@DisableOption{pdfcreationdate}%
10908 \Hy@DisableOption{pdfmoddate}%
10909 \Hy@DisableOption{pdfproducer}%
10910 \Hy@DisableOption{pdfkeywords}%
10911 \Hy@DisableOption{pdftrapped}%
10912 \Hy@DisableOption{pdfinfo}%
10913 }
10914 \</vtx>

```

## 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.

```

10915 \dviwindo\def\literalps@out#1{\special{ps:#1}}%
10916 \package\providecommand*\Hy@DistillerDestFix{}
10917 \<*pdfmark | dviwindo>
10918 \def\Hy@DistillerDestFix{%

```

```

10919 \begingroup
10920 \let\x\literalps@out
The fix has to be passed unchanged through GeX, if VTeX in PostScript mode
with GeX is used.
10921 \ifnum \@ifundefined{OpMode}{0}{%
10922     \@ifundefined{gexmode}{0}{%
10923         \ifnum\gexmode>0 \OpMode\else 0\fi
10924     }>1 %
10925     \def\x##1{%
10926         \immediate\special{!=##1}%
10927     }%
10928 \fi
10929 \x{%
10930     /product where{%
10931         pop %
10932         product(Distiller)search{%
10933             pop pop pop %
10934             version(.)search{%
10935                 exch pop exch pop%
10936                 (3011)eq{%
10937                     gsave %
10938                     newpath 0 0 moveto closepath clip%
10939                     /Courier findfont 10 scalefont setfont %
10940                     72 72 moveto(.)show %
10941                     grestore%
10942                 }if%
10943             }{pop}ifelse%
10944         }{pop}ifelse%
10945     }if%
10946 }%
10947 \endgroup
10948 }
10949 </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

```

```

10950 <*pdfmark>
10951 \Hy@breaklinks@unsupported
10952 \def\HyPat@ObjRef{%
10953     \{[~{}]+\}%
10954 }
10955 \Hy@WrapperDef\hyper@anchor#1{%
10956     \Hy@SaveLastskip

```



```

10957 \Hy@VerboseAnchor{#1}%
10958 \begingroup
10959 \pdfmark[\anchor@spot]{%
10960   pdfmark=/DEST,%
10961   linktype=anchor,%
10962   View=/\@pdfview \@pdfviewparams,%
10963   DestAnchor={#1}%
10964 }%
10965 \endgroup
10966 \Hy@RestoreLastskip
10967 }
10968 \ltx@ifundefined{hyper@anchorstart}{\endinput}
10969 \Hy@WrapperDef\hyper@anchorstart#1{%
10970   \Hy@SaveLastskip
10971   \Hy@VerboseAnchor{#1}%
10972   \literalps@out{H.S}%
10973   \Hy@AllowHyphens
10974   \xdef\hyper@currentanchor{#1}%
10975   \Hy@activeanchortrue
10976 }
10977 \def\hyper@anchorend{%
10978   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.A}%
10979   \pdfmark{%
10980     pdfmark=/DEST,%
10981     linktype=anchor,%
10982     View=/\@pdfview \@pdfviewparams,%
10983     DestAnchor=\hyper@currentanchor,%
10984   }%
10985   \Hy@activeanchorfalse
10986   \Hy@RestoreLastskip
10987 }
10988 \def\hyper@linkstart#1#2{%
10989   \Hy@VerboseLinkStart{#1}{#2}%
10990   \ifHy@breaklinks
10991   \else
10992     \leavevmode
10993     \ifmmode
10994       \def\Hy@LinkMath{$}%
10995     \else
10996       \let\Hy@LinkMath\ltx@empty
10997     \fi
10998     \Hy@SaveSpaceFactor
10999     \hbox\bgroup
11000     \Hy@RestoreSpaceFactor
11001     \Hy@LinkMath
11002   \fi
11003   \expandafter\Hy@colorlink\csname @#1color\endcsname
11004   \literalps@out{H.S}%
11005   \Hy@AllowHyphens
11006   \xdef\hyper@currentanchor{#2}%
11007   \gdef\hyper@currentlinktype{#1}%
11008 }
11009 \def\hyper@linkend{%
11010   \literalps@out{\strip@pt@and@otherjunk\baselineskip\space H.L}%
11011   \ltx@ifundefined{@\hyper@currentlinktype bordercolor}{%
11012     \let\Hy@tempcolor\relax
11013   }{%

```

```

11014 \edef\Hy@tempcolor{%
11015 \csname @\hyper@currentlinktype bordercolor\endcsname
11016 }%
11017 }%
11018 \pdfmark{%
11019 pdfmark=/ANN,%
11020 linktype=link,%
11021 Subtype=/Link,%
11022 PDFAFlags=4,%
11023 Dest=\hyper@currentanchor,%
11024 AcroHighlight=\@pdfhighlight,%
11025 Border=\@pdfborder,%
11026 BorderStyle=\@pdfborderstyle,%
11027 Color=\Hy@tempcolor,%
11028 Raw=H.B%
11029 }%
11030 \Hy@endcolorlink
11031 \ifHy@breaklinks
11032 \else
11033 \Hy@LinkMath
11034 \Hy@SaveSpaceFactor
11035 \egroup
11036 \Hy@RestoreSpaceFactor
11037 \fi
11038 }

```

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.

```

11039 \begingroup
11040 \catcode'P=12 %
11041 \catcode'T=12 %
11042 \lowercase{\endgroup
11043 \gdef\rem@ptetc#1.#2PT#3!{#1\ifnum#2>\z@.#2\fi}%
11044 }
11045 \def\strip@pt@and@otherjunk#1{\expandafter\rem@ptetc\the#1!}

```

`\hyper@pagetransition`

```

11046 \def\hyper@pagetransition{%
11047 \ifx\@pdfpagetransition\relax
11048 \else
11049 \ifx\@pdfpagetransition\@empty
11050 % 1. Does an old entry have to be deleted?
11051 % 2. If 1=yes, how to delete?
11052 \else
11053 \pdfmark{%
11054 pdfmark=/PUT,%
11055 Raw={%
11056 \string{ThisPage\string}%
11057 <</Trans << /S /\@pdfpagetransition\space >> >>%
11058 }%
11059 }%
11060 \fi
11061 \fi
11062 }

```

`\hyper@pageduration`

```

11063 \def\hyper@pageduration{%
11064   \ifx\@pdfpageduration\relax
11065   \else
11066     \ifx\@pdfpageduration\@empty
11067       % 1. Does an old entry have to be deleted?
11068       % 2. If 1=yes, how to delete?
11069     \else
11070       \pdfmark{%
11071         pdfmark=/PUT,%
11072         Raw={%
11073           \string{ThisPage\string}%
11074           <</Dur \@pdfpageduration>>%
11075         }%
11076       }%
11077     \fi
11078   \fi
11079 }

```

\hyper@pagehidden

```

11080 \def\hyper@pagehidden{%
11081   \ifHy@useHidKey
11082   \pdfmark{%
11083     pdfmark=/PUT,%
11084     Raw={%
11085       \string{ThisPage\string}%
11086       <</Hid \ifHy@pdfpagehidden true\else false\fi>>%
11087     }%
11088   }%
11089   \fi
11090 }

11091 \g@addto@macro\Hy@EveryPageBoxHook{%
11092   \hyper@pagetransition
11093   \hyper@pageduration
11094   \hyper@pagehidden
11095 }

11096 \def\hyper@image#1#2{%
11097   \hyper@linkurl{#2}{#1}%
11098 }
11099 \def\Hy@undefinedname{UNDEFINED}
11100 \def\hyper@link#1#2#3{%
11101   \Hy@VerboseLinkStart{#1}{#2}%
11102   \ltx@ifundefined{@#1bordercolor}{%
11103     \let\Hy@tempcolor\relax
11104   }{%
11105     \edef\Hy@tempcolor{\csname @#1bordercolor\endcsname}%
11106   }%
11107   \begingroup
11108   \protected@edef\Hy@testname{#2}%
11109   \ifx\Hy@testname\@empty
11110     \Hy@Warning{%
11111       Empty destination name,\MessageBreak
11112       using '\Hy@undefinedname'%
11113     }%
11114     \let\Hy@testname\Hy@undefinedname
11115   \fi
11116   \pdfmark[{#3}]%

```

```

11117     Color=\Hy@tempcolor,%
11118     linktype={#1},%
11119     AcroHighlight=\@pdfhighlight,%
11120     Border=\@pdfborder,%
11121     BorderStyle=\@pdfborderstyle,%
11122     pdfmark=/ANN,%
11123     Subtype=/Link,%
11124     PDFAFlags=4,%
11125     Dest=\Hy@testname
11126 }%
11127 \endgroup
11128 }
11129 \newtoks\pdf@docset
11130 \def\PDF@FinishDoc{%
11131   \Hy@UseMaketitleInfos
11132   \HyInfo@GenerateAddons
11133   \let\Hy@temp\@empty
11134   \ifx\@pdfcreationdate\@empty
11135   \else
11136     \def\Hy@temp{CreationDate=\@pdfcreationdate,}%
11137   \fi
11138   \ifx\@pdfmoddate\@empty
11139   \else
11140     \expandafter\def\expandafter\Hy@temp\expandafter{%
11141       \Hy@temp
11142       ModDate=\@pdfmoddate,%
11143     }%
11144   \fi
11145   \ifx\@pdfproducer\relax
11146   \else
11147     \expandafter\def\expandafter\Hy@temp\expandafter{%
11148       \Hy@temp
11149       Producer=\@pdfproducer,%
11150     }%
11151   \fi
11152   \expandafter
11153   \pdfmark\expandafter{%
11154     \Hy@temp
11155     pdfmark=/DOCINFO,%
11156     Title=\@pdftitle,%
11157     Subject=\@pdfsubject,%
11158     Creator=\@pdfcreator,%
11159     Author=\@pdfauthor,%
11160     Keywords=\@pdfkeywords,%
11161     Trapped=\@pdftrapped
11162   }%
11163   \ifx\HyInfo@Addons\@empty
11164   \else
11165     \pdfmark{%
11166       pdfmark=/DOCINFO,%
11167       Raw={\HyInfo@Addons}%
11168     }%
11169   \fi
11170   \Hy@DisableOption{pdfauthor}%
11171   \Hy@DisableOption{pdftitle}%
11172   \Hy@DisableOption{pdfsubject}%
11173   \Hy@DisableOption{pdfcreator}%

```

```

11174 \Hy@DisableOption{pdfcreationdate}%
11175 \Hy@DisableOption{pdfmoddate}%
11176 \Hy@DisableOption{pdfproducer}%
11177 \Hy@DisableOption{pdfkeywords}%
11178 \Hy@DisableOption{pdftrapped}%
11179 \Hy@DisableOption{pdfinfo}%
11180 }
11181 \def\PDF@SetupDoc{%
11182 \def\Hy@temp{}%
11183 \ifx\@pdfstartpage\@empty
11184 \else
11185 \ifx\@pdfstartview\@empty
11186 \else
11187 \edef\Hy@temp{%
11188 ,Page=\@pdfstartpage
11189 ,View=\@pdfstartview
11190 }%
11191 \fi
11192 \fi
11193 \edef\Hy@temp{%
11194 \noexpand\pdfmark{%
11195 pdfmark=/DOCVIEW,%
11196 PageMode=/\@pdfpagemode
11197 \Hy@temp
11198 }%
11199 }%
11200 \Hy@temp
11201 \ifx\@pdfpagescrop\@empty
11202 \else
11203 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%
11204 \fi
11205 \edef\Hy@temp{%
11206 \ifHy@pdftoolbar\else /HideToolbar true\fi
11207 \ifHy@pdfmenubar\else /HideMenubar true\fi
11208 \ifHy@pdfwindowui\else /HideWindowUI true\fi
11209 \ifHy@pdffitwindow /FitWindow true\fi
11210 \ifHy@pdfcenterwindow /CenterWindow true\fi
11211 \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
11212 \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
11213 \Hy@UseNameKey{Direction}\@pdfdirection
11214 \Hy@UseNameKey{ViewArea}\@pdfviewarea
11215 \Hy@UseNameKey{ViewClip}\@pdfviewclip
11216 \Hy@UseNameKey{PrintArea}\@pdfprintarea
11217 \Hy@UseNameKey{PrintClip}\@pdfprintclip
11218 \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
11219 \Hy@UseNameKey{Duplex}\@pdfduplex
11220 \ifx\@pdfpicktraybypdfsize\@empty
11221 \else
11222 /PickTrayByPDFSize \@pdfpicktraybypdfsize
11223 \fi
11224 \ifx\@pdfprintpagerange\@empty
11225 \else
11226 /PrintPageRange[\@pdfprintpagerange]%
11227 \fi
11228 \ifx\@pdfnumcopies\@empty
11229 \else
11230 /NumCopies \@pdfnumcopies

```

```

11231 \fi
11232 }%
11233 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
11234 \pdfmark{%
11235   pdfmark=/PUT,%
11236   Raw={%
11237     \string{Catalog\string}<<%
11238     \ifx\Hy@temp\@empty
11239     \else
11240       /ViewerPreferences<<\Hy@temp>>%
11241     \fi
11242     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
11243     \ifx\@pdflang\@empty
11244     \else
11245       /Lang(\@pdflang)%
11246     \fi
11247     \ifx\@baseurl\@empty
11248     \else
11249       /URI<</Base(\Hy@pstringB)>>%
11250     \fi
11251   >>%
11252 }%
11253 }%
11254 }
11255 \</pdfmark>
11256 \<*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.

```

11257 \newif\ifHy@pdfmarkerror
11258 \def\pdfmark{\@ifnextchar{\pdfmark@}{\pdfmark@[]}}
11259 \def\pdfmark@[#1]#2{%
11260   \Hy@pdfmarkerrorfalse
11261   \edef\@processme{\noexpand\pdf@toks={\the\pdf@defaulttoks}}%
11262   \@processme
11263   \let\pdf@type\relax
11264   \kvsetkeys{PDF}{#2}%
11265   \ifHy@pdfmarkerror
11266   \else
11267     \ifx\pdf@type\relax
11268       \Hy@WarningNoLine{no pdfmark type specified in #2!!}%
11269       \ifx\#1\%
11270       \else
11271         \pdf@rect{#1}%
11272       \fi
11273     \else
11274       \ifx\#1\%
11275       \literalps@out{%
11276         [\the\pdf@toks\space\pdf@type\space pdfmark%
11277       ]%
11278     \else
11279       \ltx@ifundefined{@\pdf@linktype color}{%
11280         \Hy@colorlink\@linkcolor

```

```

11281      }{%
11282        \expandafter\Hy@colorlink
11283          \csname @\pdf@linktype color\endcsname
11284      }%
11285      \pdf@rect{#1}%
11286      \literalps@out{%
11287        [\the\pdf@toks\space\pdf@type\space pdfmark%
11288      }%
11289      \Hy@endcolorlink
11290    \fi
11291  \fi
11292  \fi
11293 }

```

The complicated bit is working out the right enclosing rectangle of some piece of  $\text{\TeX}$  text, needed by the `/Rect` key. This solution originates with Toby Thain ([toby@netspace.net.au](mailto:toby@netspace.net.au)).

For the case `breaklinks` is enabled, I have added two hooks, the first one for package `setouterhbox`, it provides a hopefully better method without setting the text twice.

```
\usepackage[hyperref]{setouterhbox}
```

With the second hook, also you can set the text twice, e.g.:

```

\long\def\Hy@setouterhbox#1#2{\long\def\my@temp{#2}}
\def\Hy@breaklinksunhbox#1{\my@temp}

```

```

11294 \newsavebox{\pdf@box}
11295 \providecommand*{\Hy@setouterhbox}{\sbox}
11296 \providecommand*{\Hy@breaklinksunhbox}{\unhbox}
11297 \def\Hy@DEST{/DEST}
11298 \def\pdf@rect#1{%
11299   \begingroup
11300     \chardef\x=1 %
11301     \def\Hy@temp{#1}%
11302     \ifx\Hy@temp\ltx@empty
11303       \chardef\x=0 %
11304     \else
11305       \def\y{\anchor@spot}%
11306       \ifx\Hy@temp\y
11307         \def\y{\relax}%
11308         \ifx\anchor@spot\y
11309           \chardef\x=0 %
11310         \fi
11311       \fi
11312     \fi
11313   \expandafter\endgroup
11314   \ifcase\x
11315     \literalps@out{H.S}%
11316     \literalps@out{H.R}%
11317   \else
11318     \leavevmode
11319     \Hy@SaveSpaceFactor
11320     \ifmmode
11321       \def\Hy@LinkMath{$}%
11322     \else
11323       \let\Hy@LinkMath\ltx@empty
11324     \fi

```

```

11325 \ifHy@breaklinks
11326 \Hy@setouterhbox\pdf@box{%
11327 \Hy@RestoreSpaceFactor
11328 \Hy@LinkMath
11329 \Hy@AllowHyphens#1\Hy@xspace@end
11330 \Hy@LinkMath
11331 \Hy@SaveSpaceFactor
11332 }%
11333 \else
11334 \sbox\pdf@box{%
11335 \Hy@RestoreSpaceFactor
11336 \Hy@LinkMath
11337 #1\Hy@xspace@end
11338 \Hy@LinkMath
11339 \Hy@SaveSpaceFactor
11340 }%
11341 \fi
11342 \dimen@ht\pdf@box
11343 \ifdim\dp\pdf@box=\z@
11344 \literalps@out{H.S}%
11345 \else
11346 \lower\dp\pdf@box\hbox{\literalps@out{H.S}}%
11347 \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...).

```

11348 \ifHy@breaklinks
11349 \ifhmode
11350 \Hy@breaklinksunhbox\pdf@box
11351 \else
11352 \box\pdf@box
11353 \fi
11354 \else
11355 \expandafter\box\pdf@box
11356 \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

11357 \ifdim\dimen@=\z@
11358 \literalps@out{H.R}%
11359 \else
11360 \raise\dimen@\hbox{\literalps@out{H.R}}%
11361 \fi
11362 \Hy@RestoreSpaceFactor
11363 \fi
11364 \ifx\pdf@type\Hy@DEST
11365 \else
11366 \pdf@addtoksx{H.B}%
11367 \fi
11368 }

```

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.

```

11369 \newtoks\pdf@toks

```



```

11370 \newtoks\pdf@defaulttoks
11371 \pdf@defaulttoks={} %
11372 \def\pdf@addtoks#1#2{%
11373   \edef\@processme{\pdf@toks{\the\pdf@toks/#2 #1}} %
11374   \@processme
11375 }
11376 \def\pdf@addtoksx#1{%
11377   \edef\@processme{\pdf@toks{\the\pdf@toks\space #1}} %
11378   \@processme
11379 }
11380 \def\PDFdefaults#1{%
11381   \pdf@defaulttoks={#1} %
11382 }

```

This is the list of allowed keys. See the Acrobat manual for an explanation.

```

11383 % what is the type of pdfmark?
11384 \define@key{PDF}{pdfmark}{\def\pdf@type{#1}}
11385 % what is the link type?
11386 \define@key{PDF}{linktype}{\def\pdf@linktype{#1}}
11387 \def\pdf@linktype{link}
11388 % parameter is a stream of PDF
11389 \define@key{PDF}{Raw}{\pdf@addtoksx{#1}}
11390 % parameter is a name
11391 \define@key{PDF}{Action}{\pdf@addtoks{#1}{Action}}
11392 % parameter is a array
11393 \define@key{PDF}{Border}{%
11394   \edef\Hy@temp{#1}%
11395   \ifx\Hy@temp\@empty
11396   \else
11397     \pdf@addtoks{[#1]\Hy@BorderArrayPatch}{Border}% hash-ok
11398   \fi
11399 }
11400 \let\Hy@BorderArrayPatch\@empty
11401 % parameter is a dictionary
11402 \define@key{PDF}{BorderStyle}{%
11403   \edef\Hy@temp{#1}%
11404   \ifx\Hy@temp\@empty
11405   \else
11406     \pdf@addtoks{<<#1>>}{BS}%
11407   \fi
11408 }
11409 % parameter is a array
11410 \define@key{PDF}{Color}{%
11411   \ifx\relax#1\relax
11412   \else
11413     \pdf@addtoks{[#1]}{Color}% hash-ok
11414   \fi
11415 }
11416 % parameter is a string
11417 \define@key{PDF}{Contents}{\pdf@addtoks{(#1)}{Contents}}
11418 % parameter is a integer
11419 \define@key{PDF}{Count}{\pdf@addtoks{#1}{Count}}
11420 % parameter is a array
11421 \define@key{PDF}{CropBox}{\pdf@addtoks{[#1]}{CropBox}} % hash-ok
11422 % parameter is a string
11423 \define@key{PDF}{DOSFile}{\pdf@addtoks{(#1)}{DOSFile}}
11424 % parameter is a string or file
11425 \define@key{PDF}{DataSource}{\pdf@addtoks{(#1)}{DataSource}}

```

```

11426 % parameter is a destination
11427 \define@key{PDF}{Dest}{%
11428   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11429   \ifx\Hy@pstringDest\@empty
11430     \Hy@pdfmarkerrortrue
11431     \Hy@Warning{Destination with empty name ignored}%
11432   \else
11433     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11434   \fi
11435 }
11436 \define@key{PDF}{DestAnchor}{%
11437   \Hy@pstringdef\Hy@pstringDest{\HyperDestNameFilter{#1}}%
11438   \ifx\Hy@pstringDest\@empty
11439     \Hy@pdfmarkerrortrue
11440     \Hy@Warning{Destination with empty name ignored}%
11441   \else
11442     \pdf@addtoks{(\Hy@pstringDest) cvn}{Dest}%
11443   \fi
11444 }
11445 % parameter is a string
11446 \define@key{PDF}{Dir}{\pdf@addtoks{(#1)}{Dir}}
11447 % parameter is a string
11448 \define@key{PDF}{File}{\pdf@addtoks{(#1)}{File}}
11449 % parameter is a int
11450 \define@key{PDF}{Flags}{\pdf@addtoks{#1}{Flags}}
11451 \define@key{PDF}{PDFAFlags}{%
11452   \ifHy@pdfa
11453     \pdf@addtoks{#1}{F}%
11454   \fi
11455 }
11456 % parameter is a name
11457 \define@key{PDF}{AcroHighlight}{%
11458   \begingroup
11459     \edef\x{#1}%
11460     \expandafter\endgroup\ifx\x\@empty
11461       \else
11462         \pdf@addtoks{#1}{H}%
11463       \fi
11464 }
11465 % parameter is a string
11466 \define@key{PDF}{ID}{\pdf@addtoks{[#1]}{ID}}% hash-ok
11467 % parameter is a string
11468 \define@key{PDF}{MacFile}{\pdf@addtoks{(#1)}{MacFile}}
11469 % parameter is a string
11470 \define@key{PDF}{ModDate}{\pdf@addtoks{(#1)}{ModDate}}
11471 % parameter is a string
11472 \define@key{PDF}{Op}{\pdf@addtoks{(#1)}{Op}}
11473 % parameter is a Boolean
11474 \define@key{PDF}{Open}{\pdf@addtoks{#1}{Open}}
11475 % parameter is a integer or name
11476 \define@key{PDF}{Page}{\pdf@addtoks{#1}{Page}}
11477 % parameter is a name
11478 \define@key{PDF}{PageMode}{\pdf@addtoks{#1}{PageMode}}
11479 % parameter is a string
11480 \define@key{PDF}{Params}{\pdf@addtoks{(#1)}{Params}}
11481 % parameter is a array
11482 \define@key{PDF}{Rect}{\pdf@addtoks{[#1]}{Rect}}% hash-ok

```

```

11483 % parameter is a integer
11484 \define@key{PDF}{SrcPg}{\pdf@addtoks{#1}{SrcPg}}
11485 % parameter is a name
11486 \define@key{PDF}{Subtype}{\pdf@addtoks{#1}{Subtype}}
11487 % parameter is a string
11488 \define@key{PDF}{Title}{\pdf@addtoks{#1}{Title}}
11489 % parameter is a string
11490 \define@key{PDF}{Unix}{\pdf@addtoks{#1}{Unix}}
11491 % parameter is a string
11492 \define@key{PDF}{UnixFile}{\pdf@addtoks{#1}{UnixFile}}
11493 % parameter is an array
11494 \define@key{PDF}{View}{\pdf@addtoks{#1}{View}}% hash-ok
11495 % parameter is a string
11496 \define@key{PDF}{WinFile}{\pdf@addtoks{#1}{WinFile}}

These are the keys used in the DOCINFO section.

11497 \define@key{PDF}{Author}{\pdf@addtoks{#1}{Author}}
11498 \define@key{PDF}{Creator}{\pdf@addtoks{#1}{Creator}}
11499 \define@key{PDF}{CreationDate}{\pdf@addtoks{#1}{CreationDate}}
11500 \define@key{PDF}{ModDate}{\pdf@addtoks{#1}{ModDate}}
11501 \define@key{PDF}{Producer}{\pdf@addtoks{#1}{Producer}}
11502 \define@key{PDF}{Subject}{\pdf@addtoks{#1}{Subject}}
11503 \define@key{PDF}{Keywords}{\pdf@addtoks{#1}{Keywords}}
11504 \define@key{PDF}{ModDate}{\pdf@addtoks{#1}{ModDate}}
11505 \define@key{PDF}{Base}{\pdf@addtoks{#1}{Base}}
11506 \define@key{PDF}{URI}{\pdf@addtoks{#1}{URI}}
11507 \define@key{PDF}{Trapped}{%
11508   \edef\Hy@temp{#1}%
11509   \ifx\Hy@temp\@empty
11510     \else
11511       \pdf@addtoks{/#1}{Trapped}%
11512     \fi
11513 }
11514
11515 </pdfmarkbase>
11516 <*pdfmark>
11517 \def\Acrobatmenu#1#2{%
11518   \Hy@Acrobatmenu{#1}{#2}{%
11519     \pdfmark{#2}{%
11520       linktype=menu,%
11521       pdfmark=/ANN,%
11522       AcroHighlight=\@pdfhighlight,%
11523       Border=\@pdfborder,%
11524       BorderStyle=\@pdfborderstyle,%
11525       Action={<< /Subtype /Named /N /#1 >>},%
11526       Subtype=/Link,%
11527       PDFAFlags=4%
11528     }%
11529   }%
11530 }

```

And now for some useful examples:

```

11531 \def\PDFNextPage{\@ifnextchar{\PDFNextPage@}{\PDFNextPage@[]}}
11532 \def\PDFNextPage@[#1]#2{%
11533   \pdfmark{#2}{%
11534     #1,%
11535     Border=\@pdfborder,%
11536     BorderStyle=\@pdfborderstyle,%

```

```

11537   Color=.2 .1 .5,%
11538   pdfmark=/ANN,%
11539   Subtype=/Link,%
11540   PDFAFlags=4,%
11541   Page=/Next%
11542 }%
11543 }
11544 \def\PDFPreviousPage{%
11545   \@ifnextchar[{\PDFPreviousPage@}{\PDFPreviousPage@[]}%
11546 }
11547 \def\PDFPreviousPage@[#1]#2{%
11548   \pdfmark[#{#2}]{%
11549     #1,%
11550     Border=\@pdfborder,%
11551     BorderStyle=\@pdfborderstyle,%
11552     Color=.4 .4 .1,%
11553     pdfmark=/ANN,%
11554     Subtype=/Link,%
11555     PDFAFlags=4,%
11556     Page=/Prev%
11557   }%
11558 }
11559 \def\PDFOpen#1{%
11560   \pdfmark{#1,pdfmark=/DOCVIEW}%
11561 }

```

This will only work if you use Distiller 2.1 or higher.

```

11562 \def\hyper@linkurl#1#2{%
11563   \begingroup
11564     \Hy@pstringdef\Hy@pstringURI{#2}%
11565     \hyper@chars
11566     \leavevmode
11567     \pdfmark[#{#1}]{%
11568       pdfmark=/ANN,%
11569       linktype=url,%
11570       AcroHighlight=\@pdfhighlight,%
11571       Border=\@pdfborder,%
11572       BorderStyle=\@pdfborderstyle,%
11573       Color=\@urlbordercolor,%
11574       Action={<<%
11575         /Subtype/URI%
11576         /URI(\Hy@pstringURI)%
11577         \ifHy@href@ismap
11578           /IsMap true%
11579         \fi
11580       >>},%
11581       Subtype=/Link,%
11582       PDFAFlags=4%
11583     }%
11584   \endgroup
11585 }
11586 \def\hyper@linkfile#1#2#3{%
11587   \begingroup
11588     \def\Hy@pstringF{#2}%
11589     \Hy@CleanupFile\Hy@pstringF
11590     \Hy@pstringdef\Hy@pstringF\Hy@pstringF
11591     \Hy@pstringdef\Hy@pstringD{#3}%
11592     \Hy@MakeRemoteAction

```

```

11593 \leavevmode
11594 \pdfmark[{#1}]{%
11595 pdfmark=/ANN,%
11596 Subtype=/Link,%
11597 PDFAFlags=4,%
11598 AcroHighlight=\@pdfhighlight,%
11599 Border=\@pdfborder,%
11600 BorderStyle=\@pdfborderstyle,%
11601 linktype=file,%
11602 Color=\@filebordercolor,%
11603 Action={%
11604 <<%
11605 /S/GoToR%
11606 \Hy@SetNewWindow
11607 /F(\Hy@pstringF)%
11608 /D%
11609 \ifx\#3\%
11610 [\Hy@href@page\@pdfremotestartview]%
11611 \else
11612 (\Hy@pstringD)cvn%
11613 \fi
11614 \Hy@href@nextactionraw
11615 >>%
11616 }%
11617 }%
11618 \endgroup
11619 }
11620 \def\@hyper@launch run:#1\#2#3{%
11621 \begingroup
11622 \Hy@pstringdef\Hy@pstringF{#1}%
11623 \Hy@pstringdef\Hy@pstringP{#3}%
11624 \leavevmode
11625 \pdfmark[{#2}]{%
11626 pdfmark=/ANN,%
11627 Subtype=/Link,%
11628 PDFAFlags=4,%
11629 AcroHighlight=\@pdfhighlight,%
11630 Border=\@pdfborder,%
11631 BorderStyle=\@pdfborderstyle,%
11632 linktype=run,%
11633 Color=\@runbordercolor,%
11634 Action={%
11635 <<%
11636 /S/Launch%
11637 \Hy@SetNewWindow
11638 /F(\Hy@pstringF)%
11639 \ifx\#3\%
11640 \else
11641 /Win<</P(\Hy@pstringP)/F(\Hy@pstringF)>>%
11642 \fi
11643 \Hy@href@nextactionraw
11644 >>%
11645 }%
11646 }%
11647 \endgroup
11648 }
11649 \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.

```

11650 (*dvips)
11651 \providecommand*\XR@ext}{pdf}
11652 \let\Hy@raisedlink\ltx@empty
11653 \def\litalps@out#1{\special{ps:SDict begin #1 end}}%
11654 \def\headerps@out#1{\special{! #1}}%
11655 \input{pdfmark.def}%
11656 \ifx\@pdfproducer\relax
11657   \def\@pdfproducer{dvips + Distiller}%
11658 \fi
11659 \providecommand*\@pdfborder{0 0 1}
11660 \providecommand*\@pdfborderstyle{}
11661 \providecommand*\@pdfview{XYZ}
11662 \providecommand*\@pdfviewparams{ H.V}
11663 \def\Hy@BorderArrayPatch{BorderArrayPatch}
11664 \g@addto@macro\Hy@FirstPageHook{%
11665   \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.

```

11666   /DvipsToPDF{72.27 mul Resolution div} def%
11667   /PDFToDvips{72.27 div Resolution mul} def%
11668   /BPToDvips{72 div Resolution mul}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.

```

11669   /BorderArrayPatch{%
11670     [exch{%
11671       dup dup type/integertype eq exch type/realtype eq or%
11672       {BPToDvips}if%
11673     }forall]%
11674   }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.

```

11675   /HyperBorder {1 PDFToDvips} def%
11676   /H.V {pdf@hoff pdf@voff null} def%
11677   /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

```

11678 /H.S {%
11679   currentpoint %
11680   HyperBorder add /pdf@lly exch def %
11681   dup DvipsToPDF 72 add /pdf@hoff exch def %
11682   HyperBorder sub /pdf@llx exch def%
11683 } def%
```

The calculation of upper left  $y$  is done without raising the point in  $\text{\TeX}$ , by simply adding on the current `\baselineskip` to the current  $y$ . This is usually too much, so we remove a notional 2 points.

We have to see what the current `baselineskip` is, and convert it to the dvips coordinate system.

Argument: `baselineskip` in pt. The  $x$  and  $y$  coordinates of the current point, minus the `baselineskip`

```

11684 /H.L {%
11685   2 sub dup%
11686   /HyperBasePt exch def %
11687   PDFToDvips /HyperBaseDvips exch def %
11688   currentpoint %
11689   HyperBaseDvips sub /pdf@ury exch def%
11690   /pdf@urx exch def%
11691 } def%
11692 /H.A {%
11693   H.L %
11694 % | /pdf@voff| = the distance from the top of the page to a point
11695 % | \baselineskip| above the current point in PDF coordinates
11696   currentpoint exch pop %
11697   vsize 72 sub exch DvipsToPDF %
11698   HyperBasePt sub % baseline skip
11699   sub /pdf@voff exch def%
11700 } def%
11701 /H.R {%
11702   currentpoint %
11703   HyperBorder sub /pdf@ury exch def %
11704   HyperBorder add /pdf@urx exch def %
11705 % | /pdf@voff| = the distance from the top of the page to the current point, in
11706 % PDF coordinates
11707   currentpoint exch pop vsize 72 sub %
11708   exch DvipsToPDF sub /pdf@voff exch def%
11709 } def%
11710 }%
11711 }
11712 \AtBeginShipoutFirst{%
11713   \ifHy@setpagesize
11714     \begingroup
11715       \@ifundefined{stockwidth}{%
11716         \ifdim\paperwidth>\z@
11717           \ifdim\paperheight>\z@
11718             \special{papersize=\the\paperwidth,\the\paperheight}%
11719           \fi
11720         \fi
11721       }{%
11722         \ifdim\stockwidth>\z@
11723           \ifdim\stockheight>\z@
11724             \special{papersize=\the\stockwidth,\the\stockheight}%

```

```

11725     \fi
11726     \fi
11727   }%
11728 \endgroup
11729 \fi
11730 \Hy@DisableOption{setpagesize}%
11731 }
11732 </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.

```

11733 < *vtexpdfmark>
11734 \providecommand*\XR@ext}{pdf}
11735 \let\Hy@raisedlink\ltx@empty
11736 \def\literals@out#1{\special{pS:#1}}%
11737 \def\headerps@out#1{\immediate\special{pS:#1}}%
11738 \input{pdfmark.def}%
11739 \ifx\@pdfproducer\relax
11740   \ifnum\OpMode=\@one
11741     \def\@pdfproducer{VTeX}%
11742   \else
11743     \def\@pdfproducer{VTeX + Distiller}%
11744   \fi
11745 \fi
11746 \providecommand*\@pdfborder{0 0 1}
11747 \providecommand*\@pdfborderstyle{}
11748 \providecommand*\@pdfview{XYZ}
11749 \providecommand*\@pdfviewparams{ H.V}
11750 \g@addto@macro\Hy@FirstPageHook{%
11751   \headerps@out{%
11752     /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.

```

11753   /HyperBorder {1} def%
11754   /H.V {pdf@hoff pdf@voff null} def%
11755   /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:  $\text{pdf@lly} = Y_c - \text{HyperBorder}$ ,  $\text{pdf@hoff} = X_c + 72$ ,  $\text{pdf@llx} = X_c - \text{HyperBorder}$

```

11756   /H.S {%
11757     currentpoint %
11758     HyperBorder sub%
11759     /pdf@lly exch def %
11760     dup 72 add /pdf@hoff exch def %
11761     HyperBorder sub%
11762     /pdf@llx exch def%
11763   } def%

```

The  $x$  and  $y$  coordinates of the current point, minus the `\baselineskip`:  $\text{pdf@ury} = Y_c + \text{HyperBasePt} + \text{HyperBorder}$ ,  $\text{pdf@urx} = X_c + \text{HyperBorder}$

```

11764   /H.L {%

```



```

11765      2 sub%
11766      /HyperBasePt exch def %
11767      currentpoint %
11768      HyperBasePt add HyperBorder add%
11769      /pdf@ury exch def %
11770      HyperBorder add%
11771      /pdf@urx exch def%
11772    } def%
11773    /H.A {%
11774      H.L %
11775      currentpoint exch pop %
11776      vsize 72 sub exch %
11777      HyperBasePt add add%
11778      /pdf@voff exch def%
11779    } def%
pdf@ury =  $Y_c$  + HyperBorder, pdf@urx =  $X_c$  + HyperBorder
11780    /H.R {%
11781      currentpoint %
11782      HyperBorder add%
11783      /pdf@ury exch def %
11784      HyperBorder add%
11785      /pdf@urx exch def %
11786      currentpoint exch pop vsize 72 sub add%
11787      /pdf@voff exch def%
11788    } def%
11789  }%
11790 }
11791 </vtxpdfmark>

```

## 46.11 Textures

```

11792 <*textures>
11793 \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.

```

11794 \begingroup
11795   \obeylines %
11796   \gdef\Hy@ps@CR{\noexpand
11797   }%
11798 \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`.

```
11799 \def\literalps@out#1{%
11800   \special{postscript 0 0 transform}%
11801   \special{rawpostscript itransform moveto\Hy@ps@CR #1}%
11802 }%
11803 %
```

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.

```
11804 \def\headerps@out#1{%
11805   \special{%
11806     prepostscript TeXdict begin\Hy@ps@CR
11807       #1\Hy@ps@CR
11808     end%
11809   }%
11810 }%
11811 %
```

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.

```
11812 \g@addto@macro\Hy@FirstPageHook{%
11813   \headerps@out{%
11814     /betterpdfmark {%
11815       systemdict begin %
11816         dup /BP eq%
11817         {cleartomark gsave nulldevice []%
11818         {dup /EP eq%
11819           {cleartomark cleartomark grestore}%
11820           {cleartomark}%
11821           ifelse%
11822         }ifelse %
11823       end%
11824     }def\Hy@ps@CR
11825     ___pdfmark___ not{/pdfmark /betterpdfmark load def}if%
11826   }% end of \headerps@out
11827 }% end of \AtBeginShipoutFirst
11828 %
11829 \input{pdfmark.def}%
11830 %
11831 \ifx\@pdfproducer\relax
11832   \def\@pdfproducer{Textures + Distiller}%
11833 \fi
11834 \providecommand*\@pdfborder{0 0 1}
11835 \providecommand*\@pdfborderstyle{}
11836 \providecommand*\@pdfview{XYZ}
11837 \providecommand*\@pdfviewparams{ H.V}
11838 %
```

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  $\text{\TeX}$ .

```
11839 \Hy@AtBeginDocument{%
```

11840 \headerps@out{%  
 Textures lives in normal points, I think. So conversion from one coordinate system  
 to another involves doing nothing.

```

11841 /vsize {\Hy@pageheight} def%
11842 /DvipsToPDF {} def%
11843 /PDFToDvips {} def%
11844 /BPToDvips {} def%
11845 /HyperBorder { 1 PDFToDvips } def\Hy@ps@CR
11846 /H.V {pdf@hoff pdf@voff null} def\Hy@ps@CR
11847 /H.B {/Rect[pdf@llx pdf@lly pdf@urx pdf@ury]} def\Hy@ps@CR
11848 /H.S {%
11849   currentpoint %
11850   HyperBorder add /pdf@lly exch def %
11851   dup DvipsToPDF 72 add /pdf@hoff exch def %
11852   HyperBorder sub /pdf@llx exch def%
11853 } def\Hy@ps@CR
11854 /H.L {%
11855   2 sub %
11856   PDFToDvips /HyperBase exch def %
11857   currentpoint %
11858   HyperBase sub /pdf@ury exch def%
11859   /pdf@urx exch def%
11860 } def\Hy@ps@CR
11861 /H.A {%
11862   H.L %
11863   currentpoint exch pop %
11864   vsize 72 sub exch DvipsToPDF %
11865   HyperBase sub % baseline skip
11866   sub /pdf@voff exch def%
11867 } def\Hy@ps@CR
11868 /H.R {%
11869   currentpoint %
11870   HyperBorder sub /pdf@ury exch def %
11871   HyperBorder add /pdf@urx exch def %
11872   currentpoint exch pop vsize 72 sub %
11873   exch DvipsToPDF sub /pdf@voff exch def%
11874 } def\Hy@ps@CR
11875 }%
11876 }

11877 \Hy@AtBeginDocument{%
11878   \ifHy@colorlinks
11879     \headerps@out{/PDFBorder{/Border [0 0 0]}def}%
11880   \fi
11881 }
```

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.

```

11882 \expandafter\let\expandafter\keepPDF@SetupDoc
11883   \csname PDF@SetupDoc\endcsname
11884 \def\PDF@SetupDoc{%
11885   \ifx\@baseurl\@empty
11886   \else
11887     \special{html:<base href="\@baseurl">}%
11888   \fi
11889   \keepPDF@SetupDoc
```

```

11890 }
11891 \Hy@WrapperDef\hyper@anchor#1{%
11892   \Hy@SaveLastskip
11893   \Hy@VerboseAnchor{#1}%
11894   \begingroup
11895     \let\protect=\string
11896     \special{html:<a name=%
11897       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11898   \endgroup
11899   \Hy@activeanchortrue
11900   \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
11901   \special{html:</a>}%
11902   \Hy@activeanchorfalse
11903   \Hy@RestoreLastskip
11904 }
11905 \Hy@WrapperDef\hyper@anchorstart#1{%
11906   \Hy@SaveLastskip
11907   \Hy@VerboseAnchor{#1}%
11908   \begingroup
11909     \hyper@chars
11910     \special{html:<a name=%
11911       \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
11912   \endgroup
11913   \Hy@activeanchortrue
11914 }
11915 \def\hyper@anchorend{%
11916   \special{html:</a>}%
11917   \Hy@activeanchorfalse
11918   \Hy@RestoreLastskip
11919 }
11920 \def\@urltype{url}
11921 \def\hyper@linkstart#1#2{%
11922   \Hy@VerboseLinkStart{#1}{#2}%
11923   \expandafter\Hy@colorlink\csname @#1color\endcsname
11924   \def\Hy@tempa{#1}%
11925   \ifx\Hy@tempa\@urltype
11926     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11927   \else
11928     \begingroup
11929       \hyper@chars
11930       \special{%
11931         html:<a href=%
11932           \hyper@quote\#\HyperDestNameFilter{#2}\hyper@quote>%
11933       }%
11934     \endgroup
11935   \fi
11936 }
11937 \def\hyper@linkend{%
11938   \special{html:</a>}%
11939   \Hy@endcolorlink
11940 }
11941 \def\hyper@linkfile#1#2#3{%
11942   \hyper@linkurl{#1}{%
11943     \Hy@linkfileprefix#2\ifx\\#3\\else\##3\fi
11944   }%
11945 }
11946 \def\hyper@linkurl#1#2{%

```

```

11947 \leavevmode
11948 \ifHy@raiselinks
11949   \Hy@SaveSpaceFactor
11950   \Hy@SaveSavedSpaceFactor
11951   \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
11952   \Hy@RestoreSavedSpaceFactor
11953   \@linkdim\dp\@tempboxa
11954   \lower\@linkdim\hbox{%
11955     \hyper@chars
11956     \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11957   }%
11958   \Hy@colorlink\@urlcolor
11959   \Hy@RestoreSpaceFactor
11960   #1\Hy@xspace@end
11961   \Hy@SaveSpaceFactor
11962   \@linkdim\ht\@tempboxa
11963   \advance\@linkdim by -6.5\p@
11964   \raise\@linkdim\hbox{\special{html:</a>}}%
11965   \Hy@endcolorlink
11966   \Hy@RestoreSpaceFactor
11967 \else
11968   \begingroup
11969   \hyper@chars
11970   \special{html:<a href=\hyper@quote#2\hyper@quote>}%
11971   \Hy@colorlink\@urlcolor#1\Hy@xspace@end
11972   \special{html:</a>}%
11973   \Hy@endcolorlink
11974 \endgroup
11975 \fi
11976 }

```

Very poor implementation of \hyper@link without considering #1.

```

11977 \def\hyper@link#1#2#3{%
11978   \Hy@VerboseLinkStart{#1}{#2}%
11979   \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}%
11980 }
11981 \def\hyper@image#1#2{%
11982   \begingroup
11983   \hyper@chars
11984   \special{html:<img src=\hyper@quote#1\hyper@quote>}%
11985   \endgroup
11986 }
11987 </textures>

```

## 46.12 dvipsone

```

11988 % \subsection{dvipsone driver}
11989 % Over-ride the default setup macro in pdfmark driver to use Y\&Y
11990 % |\special| commands.
11991 (*dvipsone)
11992 \providecommand*\XR@ext{pdf}
11993 \let\Hy@raisedlink\ltx@empty
11994 \providecommand*\@pdfborder{0 0 1}
11995 \providecommand*\@pdfborderstyle{}
11996 \def\literalps@out#1{\special{ps:#1}}%
11997 \def\headerps@out#1{\special{headertext=#1}}%
11998 \input{pdfmark.def}%
11999 \ifx\@pdfproducer\relax

```

```

12000 \def\@pdfproducer{dvipsone + Distiller}%
12001 \fi
12002 \HyInfo@AddonUnsupportedtrue
12003 \def\PDF@FinishDoc{%
12004 \Hy@UseMaketitleInfos
12005 \HyInfo@TrappedUnsupported
12006 \special{PDF: Keywords \@pdfkeywords}%
12007 \special{PDF: Title \@pdftitle}%
12008 \special{PDF: Creator \@pdfcreator}%
12009 \ifx\@pdfcreationdate\@empty
12010 \else
12011 \special{PDF: CreationDate \@pdfcreationdate}%
12012 \fi
12013 \ifx\@pdfmoddate\@empty
12014 \else
12015 \special{PDF: ModDate \@pdfmoddate}%
12016 \fi
12017 \special{PDF: Author \@pdfauthor}%
12018 \ifx\@pdfproducer\relax
12019 \else
12020 \special{PDF: Producer \@pdfproducer}%
12021 \fi
12022 \special{PDF: Subject \@pdfsubject}%
12023 \Hy@DisableOption{pdfauthor}%
12024 \Hy@DisableOption{pdftitle}%
12025 \Hy@DisableOption{pdfsubject}%
12026 \Hy@DisableOption{pdfcreator}%
12027 \Hy@DisableOption{pdfcreationdate}%
12028 \Hy@DisableOption{pdfmoddate}%
12029 \Hy@DisableOption{pdfproducer}%
12030 \Hy@DisableOption{pdfkeywords}%
12031 \Hy@DisableOption{pdftrapped}%
12032 \Hy@DisableOption{pdfinfo}%
12033 }
12034 \def\PDF@SetupDoc{%
12035 \def\Hy@temp{}%
12036 \ifx\@pdfstartpage\@empty
12037 \else
12038 \ifx\@pdfstartview\@empty
12039 \else
12040 \edef\Hy@temp{%
12041 ,Page=\@pdfstartpage
12042 ,View=\@pdfstartview
12043 }%
12044 \fi
12045 \fi
12046 \edef\Hy@temp{%
12047 \noexpand\pdfmark{%
12048 pdfmark=/DOCVIEW,%
12049 PageMode=/\@pdfpagemode
12050 \Hy@temp
12051 }%
12052 }%
12053 \Hy@temp
12054 \ifx\@pdfpagescrop\@empty
12055 \else
12056 \pdfmark{pdfmark=/PAGES,CropBox=\@pdfpagescrop}%

```

```

12057 \fi
12058 \edef\Hy@temp{%
12059   \ifHy@pdftoolbar\else /HideToolbar true\fi
12060   \ifHy@pdfmenubar\else /HideMenubar true\fi
12061   \ifHy@pdfwindowui\else /HideWindowUI true\fi
12062   \ifHy@pdfwindow /FitWindow true\fi
12063   \ifHy@pdfcenterwindow /CenterWindow true\fi
12064   \ifHy@pdfdisplaydoctitle /DisplayDocTitle true\fi
12065   \Hy@UseNameKey{NonFullScreenPageMode}\@pdfnonfullscreenpagemode
12066   \Hy@UseNameKey{Direction}\@pdfdirection
12067   \Hy@UseNameKey{ViewArea}\@pdfviewarea
12068   \Hy@UseNameKey{ViewClip}\@pdfviewclip
12069   \Hy@UseNameKey{PrintArea}\@pdfprintarea
12070   \Hy@UseNameKey{PrintClip}\@pdfprintclip
12071   \Hy@UseNameKey{PrintScaling}\@pdfprintscaling
12072   \Hy@UseNameKey{Duplex}\@pdfduplex
12073   \ifx\@pdfpicktraybypdfsize\@empty
12074   \else
12075     /PickTrayByPDFSize \@pdfpicktraybypdfsize
12076   \fi
12077   \ifx\@pdfprintpagerange\@empty
12078   \else
12079     /PrintPageRange[\@pdfprintpagerange]%
12080   \fi
12081   \ifx\@pdfnumcopies\@empty
12082   \else
12083     /NumCopies \@pdfnumcopies
12084   \fi
12085 }%
12086 \Hy@pstringdef\Hy@pstringB{\@baseurl}%
12087 \pdfmark{%
12088   pdfmark=/PUT,%
12089   Raw={%
12090     \string{Catalog\string}<<%
12091     \ifx\Hy@temp\@empty
12092     \else
12093       /ViewerPreferences<<\Hy@temp>>%
12094     \fi
12095     \Hy@UseNameKey{PageLayout}\@pdfpagelayout
12096     \ifx\@pdflang\@empty
12097     \else
12098       /Lang(\@pdflang)%
12099     \fi
12100     \ifx\@baseurl\@empty
12101     \else
12102       /URI<</Base(\Hy@pstringB)>>%
12103     \fi
12104     >>%
12105   }%
12106 }%
12107 }
12108 \providecommand*\@pdfview{XYZ}
12109 \providecommand*\@pdfviewparams{ %
12110   gsave revscl currentpoint grestore %
12111   72 add exch pop null exch null%
12112 }
12113 \def\Hy@BorderArrayPatch{BorderArrayPatch}

```

These are called at the start and end of unboxed links; their job is to leave available PS variables called `pdf@llx pdf@lly pdf@urx pdf@ury`, which are the coordinates of the bounding rectangle of the link, and `pdf@hoff pdf@voff` which are the PDF page offsets. These latter are currently not used in the dvipsone setup. The Rect pair are called at the LL and UR corners of a box known to  $\TeX$ .

```
12114 \g@addto@macro\Hy@FirstPageHook{%
12115   \headerps@out{%
```

dvipsone lives in scaled points; does this mean 65536 or 65781?

```
12116   /DvipsToPDF { 65781 div } def%
12117   /PDFToDvips { 65781 mul } def%
12118   /BPToDvips{65781 mul}def%
12119   /HyperBorder { 1 PDFToDvips } def%
12120   /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.

```
12121   /BorderArrayPatch{%
12122     [exch{%
12123       dup dup type/integertype eq exch type/realtype eq or%
12124       {BPToDvips}if%
12125     }forall]%
12126   }def%
12127   /H.S {%
12128     currentpoint %
12129     HyperBorder add /pdf@lly exch def %
12130     dup DvipsToPDF 72 add /pdf@hoff exch def %
12131     HyperBorder sub /pdf@llx exch def%
12132   } def%
12133   /H.L {%
12134     2 sub %
12135     PDFToDvips /HyperBase exch def %
12136     currentpoint %
12137     HyperBase sub /pdf@ury exch def%
12138     /pdf@urx exch def%
12139   } def%
12140   /H.A {%
12141     H.L %
12142     currentpoint exch pop %
12143     HyperBase sub % baseline skip
12144     DvipsToPDF /pdf@voff exch def%
12145   } def%
12146   /H.R {%
12147     currentpoint %
12148     HyperBorder sub /pdf@ury exch def %
12149     HyperBorder add /pdf@urx exch def %
12150     currentpoint exch pop DvipsToPDF /pdf@voff exch def%
12151   } def%
12152 }%
12153 }
12154 </dvipsone>
```

## 46.13 TeX4ht

```
12155 <*tex4ht>
12156 \providecommand*\XR@ext>{html}
12157 \let\Hy@raisedlink\ltx@empty
12158 \@ifpackageloaded{tex4ht}{%
```



```

12159 \Hy@InfoNoLine{tex4ht is already loaded}%
12160 }{%
12161 \RequirePackage[hhtex]{tex4ht}%
12162 }
12163 \hyperlinkfileprefix{}
12164 \let\PDF@FinishDoc\ltx@empty
12165 \def\PDF@SetupDoc{%
12166 \ifx\@baseurl\@empty
12167 \else
12168 \special{t4ht=<base href="\@baseurl">}%
12169 \fi
12170 }
12171 \Hy@WrapperDef\hyper@anchor#1{%
12172 \Hy@SaveLastskip
12173 \Hy@VerboseAnchor{#1}%
12174 \begingroup
12175 \let\protect=\string
12176 \special{t4ht=<a name=%
12177 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12178 \endgroup
12179 \Hy@activeanchortrue
12180 \Hy@colorlink\@anchorcolor\anchor@spot\Hy@endcolorlink
12181 \special{t4ht=</a>}%
12182 \Hy@activeanchorfalse
12183 \Hy@RestoreLastskip
12184 }
12185 \Hy@WrapperDef\hyper@anchorstart#1{%
12186 \Hy@SaveLastskip
12187 \Hy@VerboseAnchor{#1}%
12188 \begingroup
12189 \hyper@chars\special{t4ht=<a name=%
12190 \hyper@quote\HyperDestNameFilter{#1}\hyper@quote>}%
12191 \endgroup
12192 \Hy@activeanchortrue
12193 }
12194 \def\hyper@anchorend{%
12195 \special{t4ht=</a>}%
12196 \Hy@activeanchorfalse
12197 \Hy@RestoreLastskip
12198 }
12199 \def\@urltype{url}
12200 \def\hyper@linkstart#1#2{%
12201 \Hy@VerboseLinkStart{#1}{#2}%
12202 \expandafter\Hy@colorlink\csname @#1color\endcsname
12203 \def\Hy@tempa{#1}%
12204 \ifx\Hy@tempa\@urltype
12205 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12206 \else
12207 \begingroup
12208 \hyper@chars
12209 \special{t4ht=<a href=%
12210 \hyper@quote\#HyperDestNameFilter{#2}\hyper@quote>}%
12211 \endgroup
12212 \fi
12213 }
12214 \def\hyper@linkend{%
12215 \special{t4ht=</a>}%

```

```

12216 \Hy@endcolorlink
12217 }
12218 \def\hyper@linkfile#1#2#3{%
12219 \hyper@linkurl{#1}{\Hy@linkfileprefix#2\ifx\\#3\\\else\##3\fi}%
12220 }
12221 \def\hyper@linkurl#1#2{%
12222 \leavevmode
12223 \ifHy@raiselinks
12224 \Hy@SaveSpaceFactor
12225 \Hy@SaveSavedSpaceFactor
12226 \sbox\@tempboxa{\Hy@RestoreSpaceFactor#1}%
12227 \Hy@RestoreSavedSpaceFactor
12228 \@linkdim\dp\@tempboxa
12229 \lower\@linkdim\hbox{%
12230 \begingroup
12231 \hyper@chars
12232 \special{%
12233 t4ht=<a href=\hyper@quote#2\hyper@quote>%
12234 }%
12235 \endgroup
12236 }%
12237 \Hy@colorlink\@urlcolor
12238 \Hy@RestoreSpaceFactor
12239 #1\Hy@xspace@end
12240 \Hy@SaveSpaceFactor
12241 \Hy@endcolorlink
12242 \@linkdim\ht\@tempboxa
12243 \advance\@linkdim by -6.5\p@
12244 \raise\@linkdim\hbox{\special{t4ht=</a>}}%
12245 \Hy@RestoreSpaceFactor
12246 \else
12247 \begingroup
12248 \hyper@chars
12249 \special{t4ht=<a href=\hyper@quote#2\hyper@quote>}%
12250 \Hy@colorlink\@urlcolor
12251 #1\Hy@xspace@end
12252 \Hy@endcolorlink
12253 \special{t4ht=</a>}%
12254 \endgroup
12255 \fi
12256 }

```

Poor implementation of \hyper@link without considering #1.

```

12257 \def\hyper@link#1#2#3{%
12258 \Hy@VerboseLinkStart{#1}{#2}%
12259 \hyper@linkurl{#3}{\# \Hy@HyperDestNameFilter{#2}}%
12260 }
12261 \def\hyper@image#1#2{%
12262 \begingroup
12263 \hyper@chars
12264 \special{t4ht=<img src=\hyper@quote#1\hyper@quote>}%
12265 \endgroup
12266 }
12267 \let\autoref\ref
12268 \ifx \rEfLiNK \UnDef
12269 \def\rEfLiNK #1#2{#2}%
12270 \fi
12271 \let\backref\ltx@gobble

```

Fix for tex4ht.

```
12272 \AtBeginDocument{%
12273   \expandafter\let\expandafter\Hy@OrgMakeLabel\csname Make:Label\endc-
      sname
12274   \expandafter\def\csname Make:Label\endcsname#1#2{%
12275     \ifhmode
12276       \Hy@SaveSpaceFactor
12277     \else
12278       \global\Hy@SavedSpaceFactor=1000 %
12279     \fi
12280     \Hy@OrgMakeLabel{#1}{%
12281       \Hy@RestoreSpaceFactor
12282       #2\Hy@xspace@end%
12283       \Hy@SaveSpaceFactor
12284     }%
12285     \Hy@RestoreSpaceFactor
12286   }%
12287 }
12288 </tex4ht>
12289 <*tex4htcfg>
12290 \IfFileExists{\jobname.cfg}{\endinput}{}
12291 \Preamble{html}
12292   \begin{document}%
12293 \EndPreamble
12294 \def\TeX{\TeX}
12295 \def\OMEGA{\Omega}
12296 \def\LaTeX{\LaTeX}
12297 \def\LaTeXe{\LaTeX2e}
12298 \def\eTeX{e-TeX}
12299 \def\MF{Metafont}
12300 \def\MP{MetaPost}
12301 </tex4htcfg>
```

## 47 Driver-specific form support

### 47.1 pdfmarks

```
12302 <*pdfmark>
12303 \long\def\@Form[#1]{%
12304   \g@addto@macro\Hy@FirstPageHook{%
12305     \headerps@out{%
12306 [%
12307   /_objdef{pdfDocEncoding}%
12308   /type/dict%
12309   /OBJ pdfmark%
12310 [%
12311     {pdfDocEncoding}%
12312     <<%
12313       /Type/Encoding%
12314       /Differences[%
12315         24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring%
12316         /tilde %
12317         39/quotesingle %
12318         96/grave %
12319         128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
12320         /fraction/guilsinglleft/guilsinglright/minus/perthousand%
12321         /quotedblbase/quotedblleft/quotedblright/quoteleft%
12322         /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron%
```

12323 /Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %  
12324 164/currency %  
12325 166/brokenbar %  
12326 168/dieresis/copyright/ordfeminine %  
12327 172/logicalnot/.notdef/registered/macron/degree/plusminus%  
12328 /twosuperior/threesuperior/acute/mu %  
12329 183/periodcentered/cedilla/onesuperior/ordmasculine %  
12330 188/onequarter/onehalf/threequarters %  
12331 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%  
12332 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%  
12333 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%  
12334 /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%  
12335 /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%  
12336 /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%  
12337 /ccedilla/egrave/eacute/ecircumflex/edieresis/igrave%  
12338 /iacute/icircumflex/idieresis/eth/ntilde/ograde/oacute%  
12339 /ocircumflex/otilde/odieresis/divide/oslash/ugrave/uacute%  
12340 /ucircumflex/udieresis/yacute/thorn/ydieresis%  
12341 ]%  
12342 >>%  
12343 /PUT pdfmark%  
12344 [%  
12345 /\_\_objdef{ZaDb}%  
12346 /type/dict%  
12347 /OBJ pdfmark%  
12348 [%  
12349 {ZaDb}%  
12350 <<%  
12351 /Type/Font%  
12352 /Subtype/Type1%  
12353 /Name/ZaDb%  
12354 /BaseFont/ZapfDingbats%  
12355 >>%  
12356 /PUT pdfmark%  
12357 [%  
12358 /\_\_objdef{Helv}%  
12359 /type/dict%  
12360 /OBJ pdfmark%  
12361 [%  
12362 {Helv}%  
12363 <<%  
12364 /Type/Font%  
12365 /Subtype/Type1%  
12366 /Name/Helv%  
12367 /BaseFont/Helvetica%  
12368 /Encoding{pdfDocEncoding}%  
12369 >>%  
12370 /PUT pdfmark%  
12371 [%  
12372 /\_\_objdef{aform}%  
12373 /type/dict%  
12374 /OBJ pdfmark%  
12375 [%  
12376 /\_\_objdef{afields}%  
12377 /type/array%  
12378 /OBJ pdfmark%  
12379 {%

```

12380 [%
12381   /BBox[0 0 100 100]%
12382   /_objdef{Check}%
12383   /BP pdfmark %
12384   1 0 0 setrgbcolor%
12385   /ZapfDingbats 80 selectfont %
12386   20 20 moveto%
12387   (4)show%
12388   [/EP pdfmark%
12389   [%
12390     /BBox[0 0 100 100]%
12391     /_objdef{Cross}%
12392     /BP pdfmark %
12393     1 0 0 setrgbcolor%
12394     /ZapfDingbats 80 selectfont %
12395     20 20 moveto%
12396     (8)show%
12397     [/EP pdfmark%
12398     [%
12399       /BBox[0 0 250 100]%
12400       /_objdef{Submit}%
12401       /BP pdfmark %
12402       0.6 setgray %
12403       0 0 250 100 rectfill %
12404       1 setgray %
12405       2 2 moveto %
12406       2 98 lineto %
12407       248 98 lineto %
12408       246 96 lineto %
12409       4 96 lineto %
12410       4 4 lineto %
12411       fill %
12412       0.34 setgray %
12413       248 98 moveto %
12414       248 2 lineto %
12415       2 2 lineto %
12416       4 4 lineto %
12417       246 4 lineto %
12418       246 96 lineto %
12419       fill%
12420       /Helvetica 76 selectfont %
12421       0 setgray %
12422       8 22.5 moveto%
12423       (Submit)show%
12424       [/EP pdfmark%
12425       [%
12426         /BBox[0 0 250 100]%
12427         /_objdef{SubmitP}%
12428         /BP pdfmark %
12429         0.6 setgray %
12430         0 0 250 100 rectfill %
12431         0.34 setgray %
12432         2 2 moveto %
12433         2 98 lineto %
12434         248 98 lineto %
12435         246 96 lineto %
12436         4 96 lineto %

```

```

12437 4 4 lineto %
12438 fill %
12439 1 setgray %
12440 248 98 moveto %
12441 248 2 lineto %
12442 2 2 lineto %
12443 4 4 lineto %
12444 246 4 lineto %
12445 246 96 lineto %
12446 fill%
12447 /Helvetica 76 selectfont %
12448 0 setgray %
12449 10 20.5 moveto%
12450 (Submit)show%
12451 [/EP pdfmark%
12452 } ?pdfmark%
12453 [%
12454 {aform}%
12455 <<%
12456 /Fields{afields}%
12457 /DR<<%
12458 /Font<<%
12459 /ZaDb{ZaDb}%
12460 /Helv{Helv}%
12461 >>%
12462 >>%
12463 /DA(/Helv 10 Tf 0 g)%
12464 /CO{corder}%
12465 \ifHy@pdfa
12466 \else
12467 \ifHyField@NeedAppearances
12468 /NeedAppearances true%
12469 \fi
12470 \fi
12471 >>%
12472 /PUT pdfmark%
12473 [%
12474 {Catalog}%
12475 <<%
12476 /AcroForm{aform}%
12477 >>%
12478 /PUT pdfmark%
12479 [%
12480 /__objdef{corder}%
12481 /type/array%
12482 /OBJ pdfmark% dps
12483 }}%
12484 \kvsetkeys{Form}{#1}%
12485 }
12486 \let\@endForm\ltx@empty
12487 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12488 \Hy@Message{Sorry, pdfmark drivers do not support FORM gauges}%
12489 }
12490 \def\@TextField[#1]#2{% parameters, label
12491 \def\Fld@name{#2}%
12492 \let\Fld@default\ltx@empty
12493 \let\Fld@value\@empty

```

```

12494 \def\Fld@width{\DefaultWidthofText}%
12495 \def\Fld@height{%
12496   \ifFld@multiline
12497     \DefaultHeightofTextMultiline
12498   \else
12499     \DefaultHeightofText
12500   \fi
12501 }%
12502 \begingroup
12503   \expandafter\HyField@SetKeys\expandafter{%
12504     \DefaultOptionsofText,#1%
12505   }%
12506   \HyField@FlagsText
12507   \ifFld@hidden\def\Fld@width{1sp}\fi
12508   \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12509   \LayoutTextField{#2}{%
12510     \leavevmode
12511     \Hy@escapeform\PDFForm@Text
12512     \pdfmark{\MakeTextField{\Fld@width}{\Fld@height}}{%
12513       pdfmark=/ANN,Raw={\PDFForm@Text}%
12514     }%
12515   }%
12516 \endgroup
12517 }
12518 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12519   \def\Fld@name{#2}%
12520   \let\Fld@default\relax
12521   \let\Fld@value\relax
12522   \def\Fld@width{\DefaultWidthofChoiceMenu}%
12523   \def\Fld@height{\DefaultHeightofChoiceMenu}%
12524   \begingroup
12525     \Fld@menulength=0 %
12526     \@tempdima\z@
12527     \@for\@curropt:=#3\do{%
12528       \expandafter\Fld@checkequals\@curropt==\\%
12529       \Hy@StepCount\Fld@menulength
12530       \settowidth{\@tempdimb}{\@currDisplay}%
12531       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
12532     }%
12533     \advance\@tempdima by 15\p@
12534     \begingroup
12535       \HyField@SetKeys{#1}%
12536     \edef\x{\endgroup
12537       \noexpand\expandafter
12538       \noexpand\HyField@SetKeys
12539       \noexpand\expandafter{%
12540         \expandafter\noexpand\csname DefaultOptionsof%
12541           \ifFld@radio
12542             Radio%
12543           \else
12544             \ifFld@combo
12545               \ifFld@popdown
12546                 PopdownBox%
12547               \else
12548                 ComboBox%
12549             \fi
12550           \else

```

```

12551         ListBox%
12552     \fi
12553 \fi
12554 \endcsname
12555 }%
12556 }\x
12557 \HyField@SetKeys{#1}%
12558 \ifFld@hidden\def\Fld@width{1sp}\fi
12559 \ifx\Fld@value\relax
12560     \let\Fld@value\Fld@default
12561 \fi
12562 \LayoutChoiceField{#2}{%
12563     \ifFld@radio
12564         \HyField@FlagsRadioButton
12565         \@@Radio{#3}%
12566     \else
12567         \begingroup
12568         \HyField@FlagsChoice
12569         \ifdim\Fld@width<\@tempdima
12570             \ifdim\@tempdima<1cm\@tempdima1cm\fi
12571             \edef\Fld@width{\the\@tempdima}%
12572         \fi
12573         \ifFld@combo
12574         \else
12575             \@tempdima=\the\Fld@menulength\Fld@charsize
12576             \advance\@tempdima by \Fld@borderwidth bp %
12577             \advance\@tempdima by \Fld@borderwidth bp %
12578             \edef\Fld@height{\the\@tempdima}%
12579         \fi
12580         \@@ListBox{#3}%
12581     \endgroup
12582 \fi
12583 }%
12584 \endgroup
12585 }
12586 \def\@@Radio#1{%
12587     \Fld@listcount=0 %
12588     \EdefEscapeName\Fld@default{\Fld@default}%
12589     \@for\@curropt:=#1\do{%
12590         \expandafter\Fld@checkequals\@curropt==\%
12591         \EdefEscapeName\@currValue{\@currValue}%
12592         \Hy@StepCount\Fld@listcount
12593         \@currDisplay\space
12594         \Hy@escapeform\PDFForm@Radio
12595         \pdfmark[\MakeRadioField{\Fld@width}{\Fld@height}]{%
12596             pdfmark=/ANN,%
12597             Raw={%
12598                 \PDFForm@Radio /AP <</N <</\@currValue\space {Check}>> >>%
12599             }%
12600         } % deliberate space between radio buttons
12601     }%
12602 }
12603 \newcount\Fld@listcount
12604 \def\@@ListBox#1{%
12605     \HyField@PDFChoices{#1}%
12606     \Hy@escapeform\PDFForm@List
12607     \pdfmark[\MakeChoiceField{\Fld@width}{\Fld@height}]{%

```



```

12608 pdfmark=/ANN,Raw={\PDFForm@List}%
12609 }%
12610 }
12611 \def\@PushButton[#1]#2{% parameters, label
12612 \def\Fld@name{#2}%
12613 \begingroup
12614 \expandafter\HyField@SetKeys\expandafter{%
12615 \DefaultOptionsofPushButton,#1%
12616 }%
12617 \ifHy@pdfa
12618 \Hy@Error{%
12619 PDF/A: Push button with JavaScript is prohibited%
12620 }\@ehc
12621 \LayoutPushButtonField{%
12622 \leavevmode
12623 \MakeButtonField{#2}%
12624 }%
12625 \else
12626 \HyField@FlagsPushButton
12627 \ifFld@hidden\def\Fld@width{1sp}\fi
12628 \LayoutPushButtonField{%
12629 \leavevmode
12630 \Hy@escapeform\PDFForm@Push
12631 \pdfmark[\MakeButtonField{#2}]{%
12632 pdfmark=/ANN,Raw={\PDFForm@Push}%
12633 }%
12634 }%
12635 \fi
12636 \endgroup
12637 }
12638 \def\@Submit[#1]#2{%
12639 \def\Fld@width{\DefaultWidthofSubmit}%
12640 \def\Fld@height{\DefaultHeightofSubmit}%
12641 \begingroup
12642 \expandafter\HyField@SetKeys\expandafter{%
12643 \DefaultOptionsofSubmit,#1%
12644 }%
12645 \HyField@FlagsPushButton
12646 \HyField@FlagsSubmit
12647 \ifFld@hidden\def\Fld@width{1sp}\fi
12648 \Hy@escapeform\PDFForm@Submit
12649 \pdfmark[\MakeButtonField{#2}]{%
12650 pdfmark=/ANN,%
12651 Raw={\PDFForm@Submit /AP << /N {Submit} /D {SubmitP} >>}%
12652 }%
12653 \endgroup
12654 }
12655 \def\@Reset[#1]#2{%
12656 \def\Fld@width{\DefaultWidthofReset}%
12657 \def\Fld@height{\DefaultHeightofReset}%
12658 \begingroup
12659 \expandafter\HyField@SetKeys\expandafter{%
12660 \DefaultOptionsofReset,#1%
12661 }%
12662 \leavevmode
12663 \ifHy@pdfa
12664 \Hy@Error{%

```

```

12665     PDF/A: Reset action is prohibited%
12666   }\@ehc
12667   \MakeButtonField{#2}%
12668 \else
12669   \HyField@FlagsPushButton
12670   \ifFld@hidden\def\Fld@width{1sp}\fi
12671   \Hy@escapeform\PDFForm@Reset
12672   \pdfmark{\MakeButtonField{#2}}{%
12673     pdfmark=/ANN,Raw={\PDFForm@Reset}%
12674   }%
12675 \fi
12676 \endgroup
12677 }%
12678 \def\@CheckBox[#1]#2{% parameters, label
12679 \def\Fld@name{#2}%
12680 \def\Fld@default{0}%
12681 \begingroup
12682 \def\Fld@width{\DefaultWidthofCheckBox}%
12683 \def\Fld@height{\DefaultHeightofCheckBox}%
12684 \expandafter\HyField@SetKeys\expandafter{%
12685   \DefaultOptionsofCheckBox,#1%
12686 }%
12687 \HyField@FlagsCheckBox
12688 \ifFld@hidden\def\Fld@width{1sp}\fi
12689 \LayoutCheckField{#2}{%
12690   \leavevmode
12691   \Hy@escapeform\PDFForm@Check
12692   \pdfmark{\MakeCheckField{\Fld@width}{\Fld@height}}{%
12693     pdfmark=/ANN,Raw={\PDFForm@Check}%
12694   }%
12695 }%
12696 \endgroup
12697 }
12698 \pdfmark>

```

## 47.2 HyperTeX

```

12699 \hypertex>
12700 \def\@Form[#1]{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12701 \let\@endForm\ltx@empty
12702 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12703 \Hy@Message{Sorry, HyperTeX does not support FORM gauges}%
12704 }
12705 \def\@TextField[#1]#2{% parameters, label
12706 \Hy@Message{Sorry, HyperTeX does not support FORM text fields}%
12707 }
12708 \def\@CheckBox[#1]#2{% parameters, label
12709 \Hy@Message{Sorry, HyperTeX does not support FORM checkboxes}%
12710 }
12711 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12712 \Hy@Message{Sorry, HyperTeX does not support FORM choice menus}%
12713 }
12714 \def\@PushButton[#1]#2{% parameters, label
12715 \Hy@Message{Sorry, HyperTeX does not support FORM pushbuttons}%
12716 }
12717 \def\@Reset[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12718 \def\@Submit[#1]#2{\Hy@Message{Sorry, HyperTeX does not support FORMs}}
12719 \hypertex>

```

## 47.3 TeX4ht

```

12720 \def\@Form[#1]{%
12721   \kvsetkeys{Form}{#1}%
12722   \HCode{<form action="\Form@action" method="\Form@method">}%
12723 }
12724 \def\@endForm{\HCode{</form>}}
12725 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12726   \Hy@Message{Sorry, TeX4ht does not support gauges}%
12727 }
12728 \def\@TextField[#1]#2{% parameters, label
12729   \let\Hy@reserved@a\@empty
12730   \def\Fld@name{#2}%
12731   \let\Fld@default\tx@empty
12732   \bgroup
12733     \Field@toks={ }%
12734     \kvsetkeys{Field}{#1}%
12735     \HCode{<label for="\Fld@name">#2</label>}%
12736     \ifFld@password
12737       \@@PasswordField
12738     \else
12739       \@@TextField
12740     \fi
12741   \egroup
12742 }
12743 \def\@@PasswordField{%
12744   \HCode{%
12745     <input type="password" %
12746       id="\Fld@name" %
12747       name="\Fld@name" %
12748       \ifFld@hidden type="hidden" \fi
12749       value="\Fld@default" %
12750       \the\Field@toks
12751     >%
12752   }%
12753 }
12754 \def\@@TextField{%
12755   \ifFld@multiline
12756     \HCode{<textarea %
12757       \ifFld@readonly readonly \fi
12758       id="\Fld@name" %
12759       name="\Fld@name" %
12760       \ifFld@hidden type="hidden" \fi
12761       \the\Field@toks>%
12762     }%
12763     \Fld@default
12764     \HCode{</textarea>}%
12765   \else
12766     \HCode{<input type="text" %
12767       \ifFld@readonly readonly \fi
12768       id="\Fld@name" %
12769       name="\Fld@name" %
12770       \ifFld@hidden type="hidden" \fi
12771       value="\Fld@default" %
12772       \the\Field@toks>%
12773     }%
12774   \fi
12775 }

```

```

12776 }
12777 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
12778 \def\Fld@name{#2}%
12779 \let\Fld@default\ltx@empty
12780 \let\Hy@reserved@a\relax
12781 \begingroup
12782 \expandafter\Fld@findlength#3\\%
12783 \Field@toks={ }%
12784 \kvsetkeys{Field}{#1}%
12785 #2%
12786 \ifFld@radio
12787 \expandafter\@@Radio#3\\%
12788 \else
12789 \expandafter\@@Menu#3\\%
12790 \fi
12791 \endgroup
12792 }
12793 \def\Fld@findlength#1\\{%
12794 \Fld@menulength=0 %
12795 \@for\@curropt:=#1\do{\Hy@StepCount\Fld@menulength}%
12796 }
12797 \def\@@Menu#1\\{%
12798 \HCode{<select size="\the\Fld@menulength" %
12799 name="\Fld@name" %
12800 \the\Field@toks>%
12801 }%
12802 \@for\@curropt:=#1\do{%
12803 \expandafter\Fld@checkequals\@curropt==\\%
12804 \HCode{<option %
12805 \ifx\@curropt\Fld@default selected \fi
12806 value="\@currValue">\@currDisplay</option>%
12807 }%
12808 }%
12809 \HCode{</select>}%
12810 }
12811 \def\@@Radio#1\\{%
12812 \@for\@curropt:=#1\do{%
12813 \expandafter\Fld@checkequals\@curropt==\\%
12814 \HCode{<input type="radio" %
12815 \ifx\@curropt\Fld@default checked \fi
12816 name="\Fld@name" %
12817 value="\@currValue" %
12818 \the\Field@toks>%
12819 }%
12820 \@currDisplay
12821 }%
12822 }
12823 \def\@PushButton[#1]#2{% parameters, label
12824 \def\Fld@name{#2}%
12825 \bgroup
12826 \Field@toks={ }%
12827 \kvsetkeys{Field}{#1}%
12828 \HCode{<input type="button" %
12829 name="\Fld@name" %
12830 value="#2" %
12831 \the\Field@toks>%
12832 }%

```

```

12833 \HCode{</button>}%
12834 \egroup
12835 }
12836 \def\@Submit[#1]#2{%
12837 \HCode{<button type="submit">#2</button>}%
12838 }
12839 \def\@Reset[#1]#2{%
12840 \HCode{<button type="reset">#2</button>}%
12841 }
12842 \def\@CheckBox[#1]#2{% parameters, label
12843 \let\Hy@reserved@a\@empty
12844 \def\Fld@name{#2}%
12845 \def\Fld@default{0}%
12846 \bgroup
12847 \Field@toks={ }%
12848 \kvsetkeys{Field}{#1}%
12849 \HCode{<input type="checkbox" %
12850 \ifFld@checked checked \fi
12851 \ifFld@disabled disabled \fi
12852 \ifFld@readonly readonly \fi
12853 name="\Fld@name" %
12854 \ifFld@hidden type="hidden" \fi
12855 value="\Fld@default" %
12856 \the\Field@toks>%
12857 #2%
12858 }%
12859 \egroup
12860 }
12861 </tex4ht>

```

## 47.4 pdfTeX

```

12862 (*pdfTeX)
12863 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
12864 \Hy@Message{Sorry, pdfTeX does not support FORM gauges}%
12865 }
12866 \def\MakeFieldObject#1#2{\sbox0{#1}%
12867 \immediate\pdfxform0 %
12868 \expandafter\edef\csname #2Object\endcsname{%
12869 \the\pdflastxform\space 0 R%
12870 }%
12871 % \hbox to 0pt{\hskip-\maxdimen{\pdfrefxform \the\pdflastxform}}}%
12872 }%
12873 \let\HyField@afields\ltx@empty
12874 \begingroup\expandafter\expandafter\expandafter\endgroup
12875 \expandafter\ifx\csname pdflastlink\endcsname\relax
12876 \let\HyField@AddToFields\relax
12877 \PackageInfo{hyperref}{%
12878 You need pdfTeX 1.40.0 for setting the /Fields entry.%
12879 \MessageBreak
12880 Adobe Reader/Acrobat accepts an empty /Field array,%
12881 \MessageBreak
12882 but other PDF viewers might complain%
12883 }%
12884 \else
12885 \let\HyField@AuxAddToFields\ltx@gobble
12886 \def\HyField@AfterAuxOpen{\Hy@AtBeginDocument}%
12887 \Hy@AtBeginDocument{%

```

```

12888 \if@filesw
12889 \immediate\write\@mainaux{%
12890 \string\providecommand\string\HyField@AuxAddToFields[1]{}%
12891 }%
12892 \fi
12893 \let\HyField@AfterAuxOpen\@firstofone
12894 \def\HyField@AuxAddToFields#1{%
12895 \xdef\HyField@afields{%
12896 \ifx\HyField@afields\@empty
12897 \else
12898 \HyField@afields
12899 \space
12900 \fi
12901 #1 0 R%
12902 }%
12903 }%
12904 }%
12905 \def\HyField@AddToFields{%
12906 \expandafter\HyField@@AddToFields\expandafter{%
12907 \the\pdfastlink
12908 }%
12909 }%
12910 \def\HyField@@AddToFields#1{%
12911 \HyField@AfterAuxOpen{%
12912 \if@filesw
12913 \write\@mainaux{%
12914 \string\HyField@AuxAddToFields{#1}%
12915 }%
12916 \fi
12917 }%
12918 }%
12919 \fi
12920 \def\@Form[#1]{%
12921 \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
12922 \kvsetkeys{Form}{#1}%
12923 \pdf@ifdraftmode{}{%
12924 \Hy@FormObjects
12925 \ifnum\pdfTeXversion>13 %
12926 \pdfrefobj\OBJ\pdfdocencoding
12927 \pdfrefobj\OBJ@ZaDb
12928 \pdfrefobj\OBJ@Helv
12929 \fi
12930 \AtVeryEndDocument{%
12931 \immediate\pdfobj{%
12932 <<%
12933 /Fields[\HyField@afields]%
12934 /DR<<%
12935 /Font<<%
12936 /ZaDb \OBJ@ZaDb\space 0 R%
12937 /Helv \OBJ@Helv\space 0 R%
12938 >>%
12939 >>%
12940 /DA(/Helv 10 Tf 0 g)%
12941 \ifHy@pdfa
12942 \else
12943 \ifHyField@NeedAppearances
12944 /NeedAppearances true%

```

```

12945         \fi
12946     \fi
12947     >>%
12948 }%
12949 \edef\OBJ@acroform{\the\pdfflastobj}%
12950 \pdfcatalog{/AcroForm \OBJ@acroform\space 0 R}%
12951 }%
12952 }%
12953 \MakeFieldObject{%

Same as \ding{123} of package pifont.
12954 \begingroup
12955 \fontfamily{pzd}%
12956 \fontencoding{U}%
12957 \fontseries{m}%
12958 \fontshape{n}%
12959 \selectfont
12960 \char123 %
12961 \endgroup
12962 }{Ding}%
12963 \MakeFieldObject{%
12964 \fbox{\textcolor{yellow}{\textsf{Submit}}}%
12965 }{Submit}%
12966 \MakeFieldObject{%
12967 \fbox{\textcolor{yellow}{\textsf{SubmitP}}}%
12968 }{SubmitP}%
12969 }
12970 \let\@endForm\ltx@empty
12971 \def\@TextField[#1]#2{% parameters, label
12972 \def\Fld@name{#2}%
12973 \let\Fld@default\ltx@empty
12974 \let\Fld@value\@empty
12975 \def\Fld@width{\DefaultWidthofText}%
12976 \def\Fld@height{%
12977 \ifFld@multiline
12978 \DefaultHeightofTextMultiline
12979 \else
12980 \DefaultHeightofText
12981 \fi
12982 }%
12983 \begingroup
12984 \expandafter\HyField@SetKeys\expandafter{%
12985 \DefaultOptionsofText,#1%
12986 }%
12987 \PDFForm@Name
12988 \HyField@FlagsText
12989 \ifFld@hidden\def\Fld@width{1sp}\fi
12990 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
12991 \LayoutTextField{#2}%
12992 \leavevmode
12993 \Hy@escapeform\PDFForm@Text
12994 \pdfstartlink user {\PDFForm@Text}\relax
12995 \MakeTextField{\Fld@width}{\Fld@height}\pdfendlink
12996 \HyField@AddToFields
12997 }%
12998 \endgroup
12999 }
13000 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices

```

```

13001 \def\Fld@name{#2}%
13002 \let\Fld@default\relax
13003 \let\Fld@value\relax
13004 \def\Fld@width{\DefaultWidthofChoiceMenu}%
13005 \def\Fld@height{\DefaultHeightofChoiceMenu}%
13006 \begingroup
13007 \Fld@menulength=0 %
13008 \@tempdima\z@
13009 \@for\@curropt:=#3\do{%
13010 \expandafter\Fld@checkequals\@curropt==\%
13011 \Hy@StepCount\Fld@menulength
13012 \settowidth{\@tempdimb}{\@currDisplay}%
13013 \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13014 }%
13015 \advance\@tempdima by 15\p@
13016 \begingroup
13017 \HyField@SetKeys{#1}%
13018 \edef\x{\endgroup
13019 \noexpand\expandafter
13020 \noexpand\HyField@SetKeys
13021 \noexpand\expandafter{%
13022 \expandafter\noexpand\csname DefaultOptionsof%
13023 \ifFld@radio
13024 Radio%
13025 \else
13026 \ifFld@combo
13027 \ifFld@popdown
13028 PopdownBox%
13029 \else
13030 ComboBox%
13031 \fi
13032 \else
13033 ListBox%
13034 \fi
13035 \fi
13036 \endcsname
13037 }%
13038 }\x
13039 \HyField@SetKeys{#1}%
13040 \PDFForm@Name
13041 \ifFld@hidden\def\Fld@width{1sp}\fi
13042 \ifx\Fld@value\relax
13043 \let\Fld@value\Fld@default
13044 \fi
13045 \LayoutChoiceField{#2}{%
13046 \ifFld@radio
13047 \HyField@FlagsRadioButton
13048 \@@Radio{#3}%
13049 \else
13050 \begingroup
13051 \HyField@FlagsChoice
13052 \ifdim\Fld@width<\@tempdima
13053 \ifdim\@tempdima<1cm\@tempdima1cm\fi
13054 \edef\Fld@width{\the\@tempdima}%
13055 \fi
13056 \ifFld@combo
13057 \else

```



```

13058      \@tempdima=\the\Fld@menulength\Fld@charsize
13059      \advance\@tempdima by \Fld@borderwidth bp %
13060      \advance\@tempdima by \Fld@borderwidth bp %
13061      \edef\Fld@height{\the\@tempdima}%
13062      \fi
13063      \@@ListBox{#3}%
13064    \endgroup
13065  \fi
13066 }%
13067 \endgroup
13068 }
13069 \def\@@Radio#1{%
13070   \Fld@listcount=0 %
13071   \EdefEscapeName\Fld@default{\Fld@default}%
13072   \@for\@curropt:=#1\do{%
13073     \expandafter\Fld@checkequals\@curropt==\%
13074     \EdefEscapeName\@currValue{\@currValue}%
13075     \Hy@StepCount\Fld@listcount
13076     \@currDisplay\space
13077     \leavevmode
13078     \Hy@escapeform\PDFForm@Radio
13079     \pdfstartlink user {%
13080       \PDFForm@Radio
13081       /AP<<%
13082       /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.

```

13083     /\@currValue\space \DingObject
13084     >>%
13085     >>%
13086   }%
13087   \relax
13088   \MakeRadioField{\Fld@width}{\Fld@height}\pdfendlink
13089   \ifnum\Fld@listcount=1 %
13090     \HyField@AddToFields
13091   \fi
13092   \space % deliberate space between radio buttons
13093 }%
13094 }
13095 \newcount\Fld@listcount
13096 \def\@@ListBox#1{%
13097   \HyField@PDFChoices{#1}%
13098   \leavevmode
13099   \Hy@escapeform\PDFForm@List
13100   \pdfstartlink user {\PDFForm@List}\relax
13101   \MakeChoiceField{\Fld@width}{\Fld@height}%
13102   \pdfendlink
13103   \HyField@AddToFields
13104 }
13105 \def\@PushButton[#1]#2{% parameters, label
13106   \def\Fld@name{#2}%
13107   \begingroup
13108     \expandafter\HyField@SetKeys\expandafter{%
13109       \DefaultOptionsofPushButton,#1%
13110     }%
13111   \PDFForm@Name

```

```

13112 \ifHy@pdfa
13113 \Hy@Error{%
13114   PDF/A: Push button with JavaScript is prohibited%
13115 } \@ehc
13116 \LayoutPushButtonField{%
13117   \leavevmode
13118   \MakeButtonField{#2}%
13119 }%
13120 \else
13121 \HyField@FlagsPushButton
13122 \ifFld@hidden\def\Fld@width{1sp}\fi
13123 \LayoutPushButtonField{%
13124   \leavevmode
13125   \Hy@escapeform\PDFForm@Push
13126   \pdfstartlink user {\PDFForm@Push}\relax
13127   \MakeButtonField{#2}%
13128   \pdfendlink
13129   \HyField@AddToFields
13130 }%
13131 \fi
13132 \endgroup
13133 }
13134 \def\@Submit[#1]#2{%
13135   \def\Fld@width{\DefaultWidthofSubmit}%
13136   \def\Fld@height{\DefaultHeightofSubmit}%
13137   \begingroup
13138     \expandafter\HyField@SetKeys\expandafter{%
13139       \DefaultOptionsofSubmit,#1%
13140     }%
13141     \HyField@FlagsPushButton
13142     \HyField@FlagsSubmit
13143     \ifFld@hidden\def\Fld@width{1sp}\fi
13144     \leavevmode
13145     \Hy@escapeform\PDFForm@Submit
13146     \pdfstartlink user {%
13147       \PDFForm@Submit
13148       /AP<</N \SubmitObject/D \SubmitPObject>>%
13149     }%
13150     \relax
13151     \MakeButtonField{#2}%
13152     \pdfendlink
13153     \HyField@AddToFields
13154   \endgroup
13155 }
13156 \def\@Reset[#1]#2{%
13157   \def\Fld@width{\DefaultWidthofReset}%
13158   \def\Fld@height{\DefaultHeightofReset}%
13159   \begingroup
13160     \expandafter\HyField@SetKeys\expandafter{%
13161       \DefaultOptionsofReset,#1%
13162     }%
13163     \leavevmode
13164     \ifHy@pdfa
13165       \Hy@Error{%
13166         PDF/A: Reset action is prohibited%
13167       } \@ehc
13168       \MakeButtonField{#2}%

```

```

13169 \else
13170 \HyField@FlagsPushButton
13171 \ifFld@hidden\def\Fld@width{1sp}\fi
13172 \Hy@escapeform\PDFForm@Reset
13173 \pdfstartlink user {\PDFForm@Reset}\relax
13174 \MakeButtonField{#2}%
13175 \pdfendlink
13176 \HyField@AddToFields
13177 \fi
13178 \endgroup
13179 }
13180 \def\@CheckBox[#1]#2{% parameters, label
13181 \def\Fld@name{#2}%
13182 \def\Fld@default{0}%
13183 \begingroup
13184 \def\Fld@width{\DefaultWidthofCheckBox}%
13185 \def\Fld@height{\DefaultHeightofCheckBox}%
13186 \expandafter\HyField@SetKeys\expandafter{%
13187 \DefaultOptionsofCheckBox,#1%
13188 }%
13189 \PDFForm@Name
13190 \HyField@FlagsCheckBox
13191 \ifFld@hidden\def\Fld@width{1sp}\fi
13192 \LayoutCheckBox{#2}{%
13193 \leavevmode
13194 \Hy@escapeform\PDFForm@Check
13195 \pdfstartlink user {\PDFForm@Check}\relax
13196 \MakeCheckField{\Fld@width}{\Fld@height}%
13197 \pdfendlink
13198 \HyField@AddToFields
13199 }%
13200 \endgroup
13201 }
13202 \def\Hy@FormObjects{%
13203 \pdfobj {%
13204 <<%
13205 /Type/Encoding%
13206 /Differences[%
13207 24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek%
13208 /ring/tilde %
13209 39/quotesingle %
13210 96/grave %
13211 128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13212 /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13213 /quotedblbase/quotedblleft/quotedblright/quoteleft%
13214 /quoteright/quotesinglbase/trademark/fi/fl/Lslash/OE%
13215 /Scaron/Ydieresis/Zcaron/dotlessi/lslash/oe/scaron/zcaron %
13216 164/currency %
13217 166/brokenbar %
13218 168/dieresis/copyright/ordfeminine %
13219 172/logicalnot/.notdef/registered/macron/degree/plusminus%
13220 /twosuperior/threesuperior/acute/mu %
13221 183/periodcentered/cedilla/onesuperior/ordmasculine %
13222 188/onequarter/onehalf/threequarters %
13223 192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13224 /Ccedilla/Egrave/Eacute/Ecircumflex/Edieresis/Igrave%
13225 /Iacute/Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute%

```

```

13226      /Ocircumflex/Otilde/Odieresis/multiply/Oslash/Ugrave%
13227      /Uacute/Ucircumflex/Udieresis/Yacute/Thorn/germandbls%
13228      /agrave/aacute/acircumflex/atilde/adieresis/aring/ae%
13229      /cedilla/egrave/eacute/ecircumflex/edieresis/igrave%
13230      /iacute/icircumflex/idieresis/eth/ntilde/ograve/oacute%
13231      /ocircumflex/otilde/odieresis/divide/oslash/ugrave%
13232      /uacute/ucircumflex/udieresis/yacute/thorn/ydieresis%
13233  }%
13234  >>%
13235 }%
13236 \xdef\OBJ@pdfdocencoding{\the\pdflastobj}%
13237 \pdfobj{%
13238 <<%
13239   /Type/Font%
13240   /Subtype/Type1%
13241   /Name/ZaDb%
13242   /BaseFont/ZapfDingbats%
13243  >>%
13244 }%
13245 \xdef\OBJ@ZaDb{\the\pdflastobj}%
13246 \pdfobj{%
13247 <<%
13248   /Type/Font%
13249   /Subtype/Type1%
13250   /Name/Helv%
13251   /BaseFont/Helvetica%
13252   /Encoding \OBJ@pdfdocencoding\space 0 R%
13253  >>%
13254 }%
13255 \xdef\OBJ@Helv{\the\pdflastobj}%
13256 \global\let\Hy@FormObjects\relax
13257 }
13258 </pdfTeX>

```

## 47.5 dvipdfm, xetex

D. P. Story adapted the pdf $\TeX$  forms part for dvipdfm, of which version 0.12.7b or higher is required because of a bug.

```
13259 <*dvipdfm | xetex>
```

\@Gauge

```

13260 \def\@Gauge[#1]#2#3#4{% parameters, label, minimum, maximum
13261 \Hy@Message{Sorry, dvipdfm/XeTeX does not support FORM gauges}%
13262 }

```

\@Form

```

13263 \def\@Form[#1]{%
13264   \@ifundefined{textcolor}{\let\textcolor\@gobble}{}%
13265   \kvsetkeys{Form}{#1}%
13266   \Hy@FormObjects
13267   \@pdfm@mark{obj @afields []}%
13268   \@pdfm@mark{obj @corder []}%
13269   \@pdfm@mark{%
13270     obj @aform <<%
13271     /Fields @afields%
13272     /DR<<%
13273     /Font<<%
13274     /ZaDb @OBJZaDb%

```

```

13275      /Helv @OBJHelv%
13276      >>%
13277      >>%
13278      /DA(/Helv 10 Tf 0 g)%
13279      /CO @corder%
13280      \ifHy@pdfa
13281      \else
13282      \ifHyField@NeedAppearances
13283      /NeedAppearances true%
13284      \fi
13285      \fi
13286      >>%
13287      }%
13288      \@pdfm@mark{put @catalog <</AcroForm @aform>>}%
13289      }

```

\@endForm

```

13290 \let\@endForm\ltx@empty

```

\dvipdfm@setdim \dvipdfm@setdim sets dimensions for ann using \pdfm@box.

```

13291 \def\dvipdfm@setdim{%
13292   height \the\ht\pdfm@box\space
13293   width \the\wd\pdfm@box\space
13294   depth \the\dp\pdfm@box\space
13295 }

```

\HyField@AnnotCount

```

13296 \newcount\HyField@AnnotCount
13297 \HyField@AnnotCount=\z@

```

\HyField@AdvanceAnnotCount

```

13298 \def\HyField@AdvanceAnnotCount{%
13299   \global\advance\HyField@AnnotCount\@ne
13300 }

```

\HyField@TheAnnotCount

```

13301 \def\HyField@TheAnnotCount{%
13302   \the\HyField@AnnotCount
13303 }

```

\@TextField

```

13304 \def\@TextField[#1]#2{% parameters, label
13305   \def\Fld@name{#2}%
13306   \let\Fld@default\ltx@empty
13307   \let\Fld@value\@empty
13308   \def\Fld@width{\DefaultWidthofText}%
13309   \def\Fld@height{%
13310     \ifFld@multiline
13311       \DefaultHeightofTextMultiline
13312     \else
13313       \DefaultHeightofText
13314     \fi
13315   }%
13316   \begingroup
13317   \expandafter\HyField@SetKeys\expandafter{%
13318     \DefaultOptionsofText,#1%
13319   }%

```

```

13320 \PDFForm@Name
13321 \HyField@FlagsText
13322 \ifFld@hidden\def\Fld@width{1sp}\fi
13323 \ifx\Fld@value\@empty\def\Fld@value{\Fld@default}\fi
13324 \setbox\pdfm@box=\hbox{%
13325   \MakeTextField{\Fld@width}{\Fld@height}%
13326 }%
13327 \HyField@AdvanceAnnotCount
13328 \LayoutTextField{#2}{%
13329   \leavevmode
13330   \Hy@escapeform\PDFForm@Text
13331   \@pdfm@mark{%
13332     ann @text\HyField@TheAnnotCount\space
13333     \dvi pdfm@setdim << \PDFForm@Text >>%
13334   }%
13335 }%
13336 \unhbox\pdfm@box
13337 \@pdfm@mark{put @afields @text\HyField@TheAnnotCount}%
13338 % record in @afields array
13339 \endgroup
13340 }

```

\@ChoiceMenu

```

13341 \def\@ChoiceMenu[#1]#2#3{% parameters, label, choices
13342   \def\Fld@name{#2}%
13343   \let\Fld@default\relax
13344   \let\Fld@value\relax
13345   \def\Fld@width{\DefaultWidthofChoiceMenu}%
13346   \def\Fld@height{\DefaultHeightofChoiceMenu}%
13347   \begingroup
13348     \Fld@menulength=0 %
13349     \@tempdima\z@
13350     \@for\@curropt:=#3\do{%
13351       \expandafter\Fld@checkequals\@curropt==\%
13352       \Hy@StepCount\Fld@menulength
13353       \settowidth{\@tempdimb}{\@currDisplay}%
13354       \ifdim\@tempdimb>\@tempdima\@tempdima\@tempdimb\fi
13355     }%
13356     \advance\@tempdima by 15\p@
13357     \begingroup
13358       \HyField@SetKeys{#1}%
13359     \edef\x{\endgroup
13360       \noexpand\expandafter
13361       \noexpand\HyField@SetKeys
13362       \noexpand\expandafter{%
13363         \expandafter\noexpand\csname DefaultOptionsof%
13364           \ifFld@radio
13365             Radio%
13366           \else
13367             \ifFld@combo
13368               \ifFld@popdown
13369                 PopdownBox%
13370               \else
13371                 ComboBox%
13372             \fi
13373           \else
13374             ListBox%
13375           \fi

```

```

13376      \fi
13377      \endcsname
13378    }%
13379  }\x
13380  \HyField@SetKeys{#1}%
13381  \PDFForm@Name
13382  \ifFld@hidden\def\Fld@width{1sp}\fi
13383  \ifx\Fld@value\relax
13384    \let\Fld@value\Fld@default
13385  \fi
13386  \LayoutChoiceField{#2}{%
13387    \ifFld@radio
13388      \HyField@FlagsRadioButton
13389      \@@Radio{#3}%
13390    \else
13391      \begingroup
13392        \HyField@FlagsChoice
13393        \ifdim\Fld@width<\@tempdima
13394          \ifdim\@tempdima<1cm\@tempdima1cm\fi
13395          \edef\Fld@width{\the\@tempdima}%
13396        \fi
13397        \ifFld@combo
13398        \else
13399          \@tempdima=\the\Fld@menulength\Fld@charsize
13400          \advance\@tempdima by \Fld@borderwidth bp %
13401          \advance\@tempdima by \Fld@borderwidth bp %
13402          \edef\Fld@height{\the\@tempdima}%
13403        \fi
13404        \@@ListBox{#3}%
13405      \endgroup
13406    \fi
13407  }%
13408  \endgroup
13409 }

\@@Radio
13410 \def\@@Radio#1{%
13411   \Fld@listcount=0 %
13412   \EdefEscapeName\Fld@default{\Fld@default}%
13413   \setbox\pdfm@box=\hbox{%
13414     \MakeRadioField{\Fld@width}{\Fld@height}%
13415   }%
13416   \@for\@curropt:=#1\do{%
13417     \expandafter\Fld@checkequals\@curropt==\%
13418     \EdefEscapeName\@currValue{\@currValue}%
13419     \Hy@StepCount\Fld@listcount
13420     \@currDisplay\space
13421     \leavevmode
13422     \Hy@escapeform\PDFForm@Radio
13423     \ifnum\Fld@listcount=1 %
13424       \HyField@AdvanceAnnotCount
13425     \fi
13426     \@pdfm@mark{%
13427       ann %
13428       \ifnum\Fld@listcount=1 %
13429         @radio\HyField@TheAnnotCount%
13430       \space
13431     \fi

```

```

13432 \dviPDFForm@setdim
13433 <<%
13434 \PDFForm@Radio
13435 /AP<</N<</\@currValue /null>>>>%
13436 >>%
13437 }%
13438 \unhcopy\pdfm@box\space% deliberate space between radio buttons
13439 \ifnum\Fld@listcount=1 %
13440 \@pdfm@mark{%
13441 put @afields @radio\HyField@TheAnnotCount
13442 }%
13443 \fi
13444 }%
13445 }

\Fld@listcount
13446 \newcount\Fld@listcount

\@@ListBox
13447 \def\@@ListBox#1{%
13448 \HyField@PDFChoices{#1}%
13449 \setbox\pdfm@box=\hbox{%
13450 \MakeChoiceField{\Fld@width}{\Fld@height}%
13451 }%
13452 \leavevmode
13453 \Hy@escapeform\PDFForm@List
13454 \HyField@AdvanceAnnotCount
13455 \@pdfm@mark{%
13456 ann @list\HyField@TheAnnotCount\space
13457 \dviPDFForm@setdim
13458 <<\PDFForm@List>>%
13459 }%
13460 \unhbox\pdfm@box
13461 \@pdfm@mark{put @afields @list\HyField@TheAnnotCount}%
13462 }

\@PushButton
13463 \def\@PushButton[#1]#2{% parameters, label
13464 \def\Fld@name{#2}%
13465 \begingroup
13466 \expandafter\HyField@SetKeys\expandafter{%
13467 \DefaultOptionsofPushButton,#1%
13468 }%
13469 \PDFForm@Name
13470 \ifHy@pdfa
13471 \Hy@Error{%
13472 PDF/A: Push button with JavaScript is prohibited%
13473 }\@ehc
13474 \LayoutPushButtonField{%
13475 \leavevmode
13476 \MakeButtonField{#2}%
13477 }%
13478 \else
13479 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13480 \HyField@FlagsPushButton
13481 \ifFld@hidden\def\Fld@width{1sp}\fi
13482 \HyField@AdvanceAnnotCount

```



```

13483 \LayoutPushButtonField{%
13484 \leavevmode
13485 \Hy@escapeform\PDFForm@Push
13486 \@pdfm@mark{%
13487 ann @push\HyField@TheAnnotCount\space
13488 \dvi pdfm@setdim
13489 <<\PDFForm@Push>>%
13490 }%
13491 }%
13492 \unhbox\pdfm@box
13493 \@pdfm@mark{put @afields @push\HyField@TheAnnotCount}%
13494 \fi
13495 \endgroup
13496 }

\@Submit
13497 \def\@Submit[#1]#2{%
13498 \def\Fld@width{\DefaultWidthofSubmit}%
13499 \def\Fld@height{\DefaultHeightofSubmit}%
13500 \begingroup
13501 \expandafter\HyField@SetKeys\expandafter{%
13502 \DefaultOptionsofSubmit,#1%
13503 }%
13504 \HyField@FlagsPushButton
13505 \HyField@FlagsSubmit
13506 \ifFld@hidden\def\Fld@width{1sp}\fi
13507 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13508 \leavevmode
13509 \Hy@escapeform\PDFForm@Submit
13510 \HyField@AdvanceAnnotCount
13511 \@pdfm@mark{%
13512 ann @submit\HyField@TheAnnotCount\space
13513 \dvi pdfm@setdim
13514 <<\PDFForm@Submit>>%
13515 }%
13516 \unhbox\pdfm@box%
13517 \@pdfm@mark{put @afields @submit\HyField@TheAnnotCount}%
13518 \endgroup
13519 }

\@Reset
13520 \def\@Reset[#1]#2{%
13521 \def\Fld@width{\DefaultWidthofReset}%
13522 \def\Fld@height{\DefaultHeightofReset}%
13523 \begingroup
13524 \expandafter\HyField@SetKeys\expandafter{%
13525 \DefaultOptionsofReset,#1%
13526 }%
13527 \leavevmode
13528 \ifHy@pdfa
13529 \Hy@Error{%
13530 PDF/A: Reset action is prohibited%
13531 }\@ehc
13532 \MakeButtonField{#2}%
13533 \else
13534 \HyField@FlagsPushButton
13535 \ifFld@hidden\def\Fld@width{1sp}\fi

```

```

13536 \setbox\pdfm@box=\hbox{\MakeButtonField{#2}}%
13537 \Hy@escapeform\PDFForm@Reset
13538 \HyField@AdvanceAnnotCount
13539 \@pdfm@mark{%
13540   ann @reset\HyField@TheAnnotCount\space
13541   \dvipdfm@setdim
13542   <<\PDFForm@Reset>>%
13543 }%
13544 \unhbox\pdfm@box
13545 \@pdfm@mark{put @afields @reset\HyField@TheAnnotCount}%
13546 \fi
13547 \endgroup
13548 }

```

#### \@CheckBox

```

13549 \def\@CheckBox[#1]#2{% parameters, label
13550 \def\Fld@name{#2}%
13551 \def\Fld@default{0}%
13552 \begingroup
13553 \def\Fld@width{\DefaultWidthofCheckBox}%
13554 \def\Fld@height{\DefaultHeightofCheckBox}%
13555 \expandafter\HyField@SetKeys\expandafter{%
13556   \DefaultOptionsofCheckBox,#1%
13557 }%
13558 \PDFForm@Name
13559 \HyField@FlagsCheckBox
13560 \ifFld@hidden\def\Fld@width{1sp}\fi
13561 \setbox\pdfm@box=\hbox{%
13562   \MakeCheckField{\Fld@width}{\Fld@height}%
13563 }%
13564 \HyField@AdvanceAnnotCount
13565 \LayoutCheckField{#2}{%
13566   \leavevmode
13567   \Hy@escapeform\PDFForm@Check
13568   \@pdfm@mark{%
13569     ann @check\HyField@TheAnnotCount\space
13570     \dvipdfm@setdim
13571     <<\PDFForm@Check>>%
13572   }%
13573   \unhbox\pdfm@box
13574   \@pdfm@mark{put @afields @check\HyField@TheAnnotCount}%
13575 }%
13576 \endgroup
13577 }

13578 \def\Hy@FormObjects{%
13579 \@pdfm@mark{obj @OBJpdfdocencoding%
13580 <<%
13581 /Type/Encoding%
13582 /Differences[%
13583   24/breve/caron/circumflex/dotaccent/hungarumlaut/ogonek/ring/tilde %
13584   39/quotesingle %
13585   96/grave %
13586   128/bullet/dagger/daggerdbl/ellipsis/emdash/endash/florin%
13587   /fraction/guilsinglleft/guilsinglright/minus/perthousand%
13588   /quotedblbase/quotedblleft/quotedblright/quoteleft/quoteright%
13589   /quotesinglbase/trademark/fi/fl/Lslash/OE/Scaron/Ydieresis%
13590   /Zcaron/dotlessi/lslash/oe/scaron/zcaron %

```

```

13591      164/currency %
13592      166/brokenbar %
13593      168/dieresis/copyright/ordfeminine %
13594      172/logicalnot/.notdef/registered/macron/degree/plusminus%
13595      /twosuperior/threesuperior/acute/mu %
13596      183/periodcentered/cedilla/onesuperior/ordmasculine %
13597      188/onequarter/onehalf/threequarters %
13598      192/Agrave/Aacute/Acircumflex/Atilde/Adieresis/Aring/AE%
13599      /Ccedilla/Egrave/Eacute/ECircumflex/Edieresis/Igrave/Iacute%
13600      /Icircumflex/Idieresis/Eth/Ntilde/Ograve/Oacute/OCircumflex%
13601      /Otilde/Odieresis/multiply/Oslash/Ugrave/Uacute/UCircumflex%
13602      /Udieresis/Yacute/Thorn/germandbls/agrave/aacute/acircumflex%
13603      /atilde/adieresis/aring/ae/ccedilla/egrave/eacute%
13604      /ecircumflex/edieresis/igrave/iacute/icircumflex/idieresis%
13605      /eth/ntilde/ograde/oacute/ocircumflex/otilde/odieresis%
13606      /divide/oslash/ugrave/uacute/ucircumflex/udieresis/yacute%
13607      /thorn/ydieresis%
13608      ]%
13609      >>%
13610      }%
13611      \@pdfm@mark{obj @OBJZaDb%
13612      <<%
13613      /Type/Font%
13614      /Subtype/Type1%
13615      /Name/ZaDb%
13616      /BaseFont/ZapfDingbats%
13617      >>%
13618      }%
13619      \@pdfm@mark{obj @OBJHelv%
13620      <<%
13621      /Type/Font%
13622      /Subtype/Type1%
13623      /Name/Helv%
13624      /BaseFont/Helvetica%
13625      /Encoding @OBJpdfdocencoding%
13626      >>%
13627      }%
13628      \global\let\Hy@FormObjects\relax
13629      }
13630      </dvipdfm | xetex>

```

## 47.6 Common forms part

```

13631      (*pdfform)

\Hy@escapestring
13632      \begingroup\expandafter\expandafter\expandafter\endgroup
13633      \expandafter\ifx\csname pdfescapestring\endcsname\relax
13634      \let\Hy@escapestring\@firstofone
13635      \def\Hy@escapeform#1{%
13636      \ifHy@pdfescapeform
13637      \def\Hy@escapestring##1{%
13638      \noexpand\Hy@escapestring{\noexpand##1}%
13639      }%
13640      \edef\Hy@temp{#1}%
13641      \expandafter\Hy@@@escapeform\Hy@temp\Hy@escapestring{}\@nil
13642      \def\Hy@escapestring##1{%
13643      \@ifundefined{Hy@esc@string##1}{%

```

```

13644      ##1%
13645      \ThisShouldNotHappen
13646    }{%
13647      \csname Hy@esc@\string##1\endcsname
13648    }%
13649  }%
13650  \else
13651    \let\Hy@escapestring\@firstofone
13652  \fi
13653 }%
13654 \def\Hy@@escapeform#1\Hy@escapestring#2#3\@nil{%
13655   \ifx\#3\%
13656   \else
13657     \expandafter
13658     \Hy@pstringdef\csname Hy@esc@\string#2\endcsname{#2}%
13659     \ltx@ReturnAfterFi{%
13660       \Hy@@escapeform#3\@nil
13661     }%
13662   \fi
13663 }%
13664 \else
13665   \def\Hy@escapeform#1{%
13666     \ifHy@pdfescapeform
13667       \let\Hy@escapestring\pdfescapestring
13668     \else
13669       \let\Hy@escapestring\@firstofone
13670     \fi
13671   }%
13672   \Hy@escapeform{}%
13673 \fi

```

\PDFForm@Name

```

13674 \def\PDFForm@Name{%
13675   \PDFForm@@Name\Fld@name
13676   \ifx\Fld@altname\relax
13677   \else
13678     \PDFForm@@Name\Fld@altname
13679   \fi
13680   \ifx\Fld@mappingname\relax
13681   \else
13682     \PDFForm@@Name\Fld@mappingname
13683   \fi
13684 }

```

\PDFForm@@Name

```

13685 \def\PDFForm@@Name#1{%
13686   \begingroup
13687   \ifnum\Hy@pdfversion<5 % implementation note 117, PDF spec 1.7
13688     \ifHy@unicode
13689       \Hy@unicodetrue
13690     \fi
13691   \fi
13692   \Hy@Ps@XeTeXBigCharstrue
13693   \pdfstringdef\Hy@gtemp#1%
13694 \endgroup
13695 \let#1\Hy@gtemp
13696 }

```

\Fld@additionalactions

```
13697 \def\Fld@@additionalactions{%
```

K input (keystroke) format

```
13698 \ifx\Fld@keystroke@code\@empty
```

```
13699 \else
```

```
13700 /K<</S/JavaScript/JS(\Hy@escapestring{\Fld@keystroke@code})>>%
```

```
13701 \fi
```

F display format

```
13702 \ifx\Fld@format@code\@empty
```

```
13703 \else
```

```
13704 /F<</S/JavaScript/JS(\Hy@escapestring{\Fld@format@code})>>%
```

```
13705 \fi
```

V validation

```
13706 \ifx\Fld@validate@code\@empty
```

```
13707 \else
```

```
13708 /V<</S/JavaScript/JS(\Hy@escapestring{\Fld@validate@code})>>%
```

```
13709 \fi
```

C calculation

```
13710 \ifx\Fld@calculate@code\@empty
```

```
13711 \else
```

```
13712 /C<</S/JavaScript/JS(\Hy@escapestring{\Fld@calculate@code})>>%
```

```
13713 \fi
```

Fo receiving the input focus

```
13714 \ifx\Fld@onfocus@code\@empty
```

```
13715 \else
```

```
13716 /Fo<</S/JavaScript/JS(\Hy@escapestring{\Fld@onfocus@code})>>%
```

```
13717 \fi
```

Bl loosing the input focus (blurred)

```
13718 \ifx\Fld@onblur@code\@empty
```

```
13719 \else
```

```
13720 /Bl<</S/JavaScript/JS(\Hy@escapestring{\Fld@onblur@code})>>%
```

```
13721 \fi
```

D pressing the mouse button (down)

```
13722 \ifx\Fld@onmousedown@code\@empty
```

```
13723 \else
```

```
13724 /D<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmousedown@code})>>%
```

```
13725 \fi
```

U releasing the mouse button (up)

```
13726 \ifx\Fld@onmouseup@code\@empty
```

```
13727 \else
```

```
13728 /U<</S/JavaScript/JS(\Hy@escapestring{\Fld@onmouseup@code})>>%
```

```
13729 \fi
```

E cursor enters the annotation's active area.

```
13730 \ifx\Fld@onenter@code\@empty
```

```
13731 \else
```

```
13732 /E<</S/JavaScript/JS(\Hy@escapestring{\Fld@onenter@code})>>%
```

```
13733 \fi
```

X cursor exits the annotation's active area.

```
13734 \ifx\Fld@onexit@code\@empty
```

```
13735 \else
```

```
13736 /X<</S/JavaScript/JS(\Hy@escapestring{\Fld@onexit@code})>>%
```

```

13737 \fi
13738 }
13739 \def\Fld@additionalactions{%
13740 \if-\Fld@@additionalactions-%
13741 \else
13742 \ifHy@pdfa
13743 \else
13744 /AA<<\Fld@@additionalactions>>%
13745 \fi
13746 \fi
13747 }

```

#### \Fld@annotnames

```

13748 \def\Fld@annotnames{%
13749 /T(\Fld@name)%
13750 \ifx\Fld@altname\relax
13751 \else
13752 /TU(\Fld@altname)%
13753 \fi
13754 \ifx\Fld@mappingname\relax
13755 \else
13756 /TM(\Fld@mappingname)%
13757 \fi
13758 }

```

#### \PDFForm@Check

```

13759 \def\PDFForm@Check{%
13760 /Subtype/Widget%
13761 \Fld@annotflags
13762 \Fld@annotnames
13763 /FT/Btn%
13764 \Fld@flags
13765 /Q \Fld@align
13766 /BS<</W \Fld@borderwidth /S/\Fld@borderstyle>>%
13767 /MK<<%
13768 \ifnum\Fld@rotation=\z@
13769 \else
13770 /R \Fld@rotation
13771 \fi
13772 \ifx\Fld@bordercolor\relax
13773 \else
13774 /BC[\Fld@bordercolor]%
13775 \fi
13776 \ifx\Fld@bcolor\relax
13777 \else
13778 /BG[\Fld@bcolor]%
13779 \fi
13780 /CA(\Hy@escapestring{\Fld@cbsymbol})%
13781 >>%
13782 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13783 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13784 /H/P%
13785 \ifFld@checked /V/Yes\else /V/Off\fi
13786 \Fld@additionalactions
13787 }

```

#### \PDFForm@Push

```

13788 \ifHy@pdfa
13789 \else
13790 \def\PDFForm@Push{%
13791 /Subtype/Widget%
13792 \Fld@annotflags
13793 \Fld@annotnames
13794 /FT/Btn%
13795 \Fld@flags
13796 /H/P%
13797 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13798 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13799 \ifx\Fld@bordercolor\relax\else 1\fi
13800 \space
13801 \else
13802 /MK<<%
13803 \ifnum\Fld@rotation=\z@
13804 \else
13805 /R \Fld@rotation
13806 \fi
13807 \ifx\Fld@bordercolor\relax
13808 \else
13809 /BC[\Fld@bordercolor]%
13810 \fi
13811 >>%
13812 \fi
13813 /A<</S/JavaScript/JS(\Hy@escapestring{\Fld@onclick@code})>>%
13814 \Fld@additionalactions
13815 }%
13816 \fi

```

\PDFForm@List

```

13817 \def\PDFForm@List{%
13818 /Subtype/Widget%
13819 \Fld@annotflags
13820 \Fld@annotnames
13821 /FT/Ch%
13822 \Fld@flags
13823 /Q \Fld@align
13824 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13825 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13826 \ifx\Fld@bordercolor\relax\else 1\fi
13827 \ifx\Fld@bcolor\relax \else 1\fi
13828 \space
13829 \else
13830 /MK<<%
13831 \ifnum\Fld@rotation=\z@
13832 \else
13833 /R \Fld@rotation
13834 \fi
13835 \ifx\Fld@bordercolor\relax
13836 \else
13837 /BC[\Fld@bordercolor]%
13838 \fi
13839 \ifx\Fld@bcolor\relax
13840 \else
13841 /BG[\Fld@bcolor]%
13842 \fi
13843 >>%

```

```

13844 \fi
13845 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13846 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13847 \Fld@choices
13848 \Fld@additionalactions
13849 }

```

#### \PDFForm@Radio

```

13850 \def\PDFForm@Radio{%
13851 /Subtype/Widget%
13852 \Fld@annotflags
13853 \Fld@annotnames
13854 /FT/Btn%
13855 \Fld@flags
13856 /H/P%
13857 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13858 /MK<<%
13859 \ifnum\Fld@rotation=\z@
13860 \else
13861 /R \Fld@rotation
13862 \fi
13863 \ifx\Fld@bordercolor\relax
13864 \else
13865 /BC[\Fld@bordercolor]%
13866 \fi
13867 \ifx\Fld@bcolor\relax
13868 \else
13869 /BG[\Fld@bcolor]%
13870 \fi
13871 /CA(\Fld@radiosymbol)%
13872 >>%
13873 /DA(/ZaDb \strip@pt\Fld@charsize\space Tf%
13874 \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13875 \ifx\@currValue\Fld@default
13876 /V/\Fld@default
13877 /DV/\Fld@default
13878 \else
13879 /V/Off%
13880 /DV/Off%
13881 \fi
13882 \Fld@additionalactions
13883 }

```

#### \PDFForm@Text

```

13884 \def\PDFForm@Text{%
13885 /Subtype/Widget%
13886 \Fld@annotflags
13887 \Fld@annotnames
13888 /FT/Tx%
13889 \Fld@flags
13890 /Q \Fld@align
13891 /BS<</W \Fld@borderwidth\space /S /\Fld@borderstyle>>%
13892 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13893 \ifx\Fld@bordercolor\relax\else 1\fi
13894 \ifx\Fld@bcolor\relax \else 1\fi
13895 \space
13896 \else

```



```

13897 /MK<<%
13898   \ifnum\Fld@rotation=\z@
13899   \else
13900     /R \Fld@rotation
13901   \fi
13902   \ifx\Fld@bordercolor\relax
13903   \else
13904     /BC[\Fld@bordercolor]%
13905   \fi
13906   \ifx\Fld@bcolor\relax
13907   \else
13908     /BG[\Fld@bcolor]%
13909   \fi
13910   >>%
13911 \fi
13912 /DA(/Helv \strip@pt\Fld@charsize\space Tf%
13913   \ifx\Fld@color\@empty\else\space\Fld@color\fi)%
13914 /DV(\Hy@escapestring{\Fld@default})%
13915 /V(\Hy@escapestring{\Fld@value})%
13916 \Fld@additionalactions
13917 \ifnum\Fld@maxlen>\z@/MaxLen \Fld@maxlen \fi
13918 }

```

\PDFForm@Submit

```

13919 \def\PDFForm@Submit{%
13920 /Subtype/Widget%
13921 \Fld@annotflags
13922 \Fld@annotnames
13923 /FT/Btn%
13924 \Fld@flags
13925 /H/P%
13926 /BS<</W \Fld@borderwidth/S\Fld@borderstyle>>%
13927 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13928   \ifx\Fld@bordercolor\relax\else 1\fi
13929   \space
13930 \else
13931 /MK<<%
13932   \ifnum\Fld@rotation=\z@
13933   \else
13934     /R \Fld@rotation
13935   \fi
13936   \ifx\Fld@bordercolor\relax
13937   \else
13938     /BC[\Fld@bordercolor]%
13939   \fi
13940   >>%
13941 \fi
13942 /A<<%
13943 /S/SubmitForm%
13944 /F<<%
13945 /FS/URL%
13946 /F(\Hy@escapestring{\Form@action})%
13947 >>%
13948 \Fld@submitflags
13949 >>%
13950 \Fld@additionalactions
13951 }

```

\PDFForm@Reset

```

13952 \ifHy@pdfa
13953 \else
13954 \def\PDFForm@Reset{%
13955 /Subtype/Widget%
13956 \Fld@annotflags
13957 \Fld@annotnames
13958 /FT/Btn%
13959 \Fld@flags
13960 /H/P%
13961 /DA(/Helv \strip@pt\Fld@charsize\space Tf 0 0 1 rg)%
13962 \ifcase0\ifnum\Fld@rotation=\z@ \else 1\fi
13963 \ifx\Fld@bordercolor\relax\else 1\fi
13964 \space
13965 \else
13966 /MK<<%
13967 \ifnum\Fld@rotation=\z@
13968 \else
13969 /R \Fld@rotation
13970 \fi
13971 \ifx\Fld@bordercolor\relax
13972 \else
13973 /BC[\Fld@bordercolor]%
13974 \fi
13975 % /CA (Clear)
13976 % /AC (Done)
13977 >>%
13978 \fi
13979 /BS<</W \Fld@borderwidth/S/\Fld@borderstyle>>%
13980 /A<</S/ResetForm>>%
13981 \Fld@additionalactions
13982 }%
13983 \fi

13984 \end{pdfform}
13985 \end{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`

```

13986 \def\phantomsection{%
13987 \Hy@MakeCurrentHrefAuto{section*}%
13988 \Hy@raisedlink{\hyper@anchorstart{\@currentHref}\hyper@anchorend}%
13989 }
13990 \end{package}

```

### 48.1 Bookmarks

13991  $\langle$ \*outlines $\rangle$

This section was written by Heiko Oberdiek; the code replaces an earlier version by David Carlisle.

The first part of bookmark code is in section 6. Further documentation is available as paper and slides of the talk, that Heiko Oberdiek has given at the EuroTeX'99 meeting in Heidelberg. See `paper.pdf` and `slides.pdf` in the `doc` directory of `hyperref`.

When using the right-to-left typesetting based on  $\varepsilon$ -TeX, the order of the `\BOOKMARK` commands written to the `\@outlinefile` could appear wrong, because of mis-feature of  $\varepsilon$ -TeX's implementation (that it processes the shipped out lines left-to-right, instead of the order in which they appear in the document). The wrong order will appear when the file contains two bookmarks on the same line typeset right-to-left.

To work around this problem, the `bookmark@seq@number` counter is used to write the bookmark's sequential number into a comment in the `\@outlinefile`, which could be used to post-process it to achieve the proper ordering of `\BOOKMARK` commands in that file.

```
13992 \def\Hy@writebookmark#1#2#3#4#5{%
13993   % section number, text, label, level, file
13994   \ifx\WriteBookmarks\relax%
13995   \else
13996     \ifnum#4>\Hy@bookmarksdepth\relax
13997     \else
13998       \@@writetorep{#1}{#2}{#3}{#4}{#5}%
13999     \fi
14000   \fi
14001 }
14002 \def\Hy@currentbookmarklevel{0}
14003 \def\Hy@numberline#1{#1 }
14004 \def\@@writetorep#1#2#3#4#5{%
14005   \begingroup
14006     \edef\Hy@tempa{#5}%
14007     \ifx\Hy@tempa\Hy@bookmarkstype
14008       \edef\Hy@level{#4}%
14009       \ifx\Hy@levelcheck Y%
14010         \@tempcnta\Hy@level\relax
14011         \advance\@tempcnta by -1 %
14012         \ifnum\Hy@currentbookmarklevel<\@tempcnta
14013           \advance\@tempcnta by -\Hy@currentbookmarklevel\relax
14014           \advance\@tempcnta by 1 %
14015           \Hy@Warning{%
14016             Difference (\the\@tempcnta) between bookmark levels is %
14017             greater \MessageBreak than one, level fixed%
14018           }%
14019           \@tempcnta\Hy@currentbookmarklevel
14020           \advance\@tempcnta by 1 %
14021           \edef\Hy@level{\the\@tempcnta}%
14022         \fi
14023       \else
14024         \global\let\Hy@levelcheck Y%
14025       \fi
14026       \global\let\Hy@currentbookmarklevel\Hy@level
14027       \@tempcnta\Hy@level\relax
14028       \expandafter\xdef\csname Parent\Hy@level\endcsname{#3}%
14029       \advance\@tempcnta by -1 %
14030       \edef\Hy@tempa{#3}%
```

```

14031 \edef\Hy@tempb{\csname Parent\the\@tempcnta\endcsname}%
14032 \ifx\Hy@tempa\Hy@tempb
14033   \Hy@Warning{%
14034     The anchor of a bookmark and its parent's must not%
14035     \MessageBreak be the same. Added a new anchor%
14036   }%
14037   \phantomsection
14038 \fi
14039 \ifHy@bookmarksnumbered
14040   \let\numberline\Hy@numberline
14041   \let\booknumberline\Hy@numberline
14042   \let\partnumberline\Hy@numberline
14043   \let\chapternumberline\Hy@numberline
14044 \else
14045   \let\numberline\@gobble
14046   \let\booknumberline\@gobble
14047   \let\partnumberline\@gobble
14048   \let\chapternumberline\@gobble
14049 \fi
14050 \HyPsd@XeTeXBigCharstrue
14051 \pdfstringdef\Hy@tempa{#2}%
14052 \HyPsd@SanitizeForOutFile\Hy@tempa
14053 \if@filesw
14054   \stepcounter{bookmark@seq@number}%
14055   \@ifundefined{@outlinefile}{%
14056     }{%
14057       \protected@write{@outlinefile}{%
14058         \protect\BOOKMARK
14059         [\Hy@level][\@bookmarkopenstatus{\Hy@level}]{#3}%
14060         {\Hy@tempa}{\Hy@tempb}%
14061         \@percentchar\space\thebookmark@seq@number
14062       }%
14063     }%
14064   \fi
14065 \fi
14066 \endgroup
14067 }
14068 \newcounter{bookmark@seq@number}

14069 \begingroup
14070 \lccode'('= '{%
14071 \lccode')='}%
14072 \lccode'1=\z@
14073 \lccode'2=\z@
14074 \lccode'3=\z@
14075 \lccode'5=\z@
14076 \lccode'7=\z@
14077 \lccode'\#=\z@
14078 \lccode'\='=\z@
14079 \lccode'\{=\z@
14080 \lccode'\}=\z@
14081 \lowercase{%
14082 \endgroup
14083 \def\HyPsd@SanitizeForOutFile#1{%
14084   \@onelevel@sanitize\Hy@tempa
14085   \escapechar'\%
14086   \edef\Hy@tempa{%
14087     \expandafter\HyPsd@SanitizeOut@BraceLeft\Hy@tempa(\@nil

```

```

14088 }%
14089 \edef\Hy@tempa{%
14090   \expandafter\HyPsd@SanitizeOut@BraceRight\Hy@tempa)\@nil
14091 }%
14092 }%
14093 \def\HyPsd@SanitizeOut@BraceLeft#1(#2\@nil{%
14094   #1%
14095   \ifx\#2\%
14096     \expandafter\ltx@gobble
14097   \else
14098     \expandafter\ltx@firstofone
14099   \fi
14100   {%
14101     \string\173%
14102     \HyPsd@SanitizeOut@BraceLeft#2\@nil
14103   }%
14104 }%
14105 \def\HyPsd@SanitizeOut@BraceRight#1)#2\@nil{%
14106   #1%
14107   \ifx\#2\%
14108     \expandafter\ltx@gobble
14109   \else
14110     \expandafter\ltx@firstofone
14111   \fi
14112   {%
14113     \string\175%
14114     \HyPsd@SanitizeOut@BraceRight#2\@nil
14115   }%
14116 }%
14117 }

```

In the call of `\BOOKMARK` the braces around `#4` are omitted, because it is not likely, that the level number contains `]`.

```

14118 \newcommand{\currentpdfbookmark}{%
14119   \pdfbookmark[\Hy@currentbookmarklevel]%
14120 }
14121 \newcommand{\subpdfbookmark}{%
14122   \@tempcnta\Hy@currentbookmarklevel
14123   \Hy@StepCount\@tempcnta
14124   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]%
14125 }
14126 \newcommand{\belowpdfbookmark}[2]{%
14127   \@tempcnta\Hy@currentbookmarklevel
14128   \Hy@StepCount\@tempcnta
14129   \expandafter\pdfbookmark\expandafter[\the\@tempcnta]{#1}{#2}%
14130   \advance\@tempcnta by -1 %
14131   \xdef\Hy@currentbookmarklevel{\the\@tempcnta}%
14132 }

```

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.

```

14133 \renewcommand\pdfbookmark[3][0]{%
14134   \Hy@writebookmark}{#2}{#3.#1}{#1}{toc}%
14135   \hyper@anchorstart{#3.#1}\hyper@anchorend
14136 }
14137 \def\BOOKMARK{%

```

```

14138 \@ifnextchar[{\@BOOKMARK}{\@@BOOKMARK[1][-]}%
14139 }
14140 \def\@BOOKMARK[#1]{%
14141 \@ifnextchar[{\@BOOKMARK[#1]}{\@@BOOKMARK[#1][-]}%
14142 }

```

The macros for calculating structure of outlines are derived from those by Petr Olsak used in the texinfopdf macros.

#### 48.1.1 Rerun warning

`\Hy@OutlineRerunCheck`

```

14143 \RequirePackage{rerunfilecheck}[2009/12/10]
14144 \def\Hy@OutlineRerunCheck{%
14145 \RerunFileCheck{\jobname.out}{%
14146 \immediate\closeout\@outlinefile
14147 }{%
14148 Rerun to get outlines right\MessageBreak
14149 or use package 'bookmark'%
14150 }%
14151 }

```

#### 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 by Taco Hoekwater ([taco.hoekwater@wkap.nl](mailto:taco.hoekwater@wkap.nl)). The problem is that VTEX, with its close integration of the PDF backend, does look at the contents of bookmarks, escaping `\` and the like.

```

14152 (*vtex)
14153 \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.

```

14154 \begingroup
14155 \catcode'\'=12 %
14156 \ifnum\Hy@VTeXversion<650 %
14157 \catcode'\ "=12 %
14158 \gdef\hv@pdf@char#1#2#3{%
14159 \char
14160 \ifcase'#1#2#3 %
14161 "00\or"01\or"02\or"03\or"04\or"05\or"06\or"07%
14162 \or"08\or"09\or"0A\or"0B\or"0C\or"0D\or"0E\or"0F%
14163 \or"10\or"11\or"12\or"13\or"14\or"15\or"16\or"17%
14164 \or"18\or"19\or"1A\or"1B\or"1C\or"1D\or"1E\or"1F%
14165 \or"20\or"21\or"22\or"23\or"24\or"25\or"26\or"27%
14166 \or"28\or"29\or"2A\or"2B\or"2C\or"2D\or"2E\or"2F%
14167 \or"30\or"31\or"32\or"33\or"34\or"35\or"36\or"37%
14168 \or"38\or"39\or"3A\or"3B\or"3C\or"3D\or"3E\or"3F%
14169 \or"40\or"41\or"42\or"43\or"44\or"45\or"46\or"47%
14170 \or"48\or"49\or"4A\or"4B\or"4C\or"4D\or"4E\or"4F%
14171 \or"50\or"51\or"52\or"53\or"54\or"55\or"56\or"57%
14172 \or"58\or"59\or"5A\or"5B\or"5C\or"5D\or"5E\or"5F%
14173 \or"60\or"61\or"62\or"63\or"64\or"65\or"66\or"67%
14174 \or"68\or"69\or"6A\or"6B\or"6C\or"6D\or"6E\or"6F%
14175 \or"70\or"71\or"72\or"73\or"74\or"75\or"76\or"77%
14176 \or"78\or"79\or"7A\or"7B\or"7C\or"7D\or"7E\or"7F%
14177 \or"80\or"81\or"82\or"83\or"84\or"85\or"86\or"87%

```

```

14178 \or"88\or"89\or"8A\or"8B\or"8C\or"8D\or"8E\or"8F%
14179 \or"90\or"91\or"92\or"93\or"94\or"95\or"96\or"97%
14180 \or"98\or"99\or"9A\or"9B\or"9C\or"9D\or"9E\or"9F%
14181 \or"A0\or"A1\or"A2\or"A3\or"A4\or"A5\or"A6\or"A7%
14182 \or"A8\or"A9\or"AA\or"AB\or"AC\or"AD\or"AE\or"AF%
14183 \or"B0\or"B1\or"B2\or"B3\or"B4\or"B5\or"B6\or"B7%
14184 \or"B8\or"B9\or"BA\or"BB\or"BC\or"BD\or"BE\or"BF%
14185 \or"C0\or"C1\or"C2\or"C3\or"C4\or"C5\or"C6\or"C7%
14186 \or"C8\or"C9\or"CA\or"CB\or"CC\or"CD\or"CE\or"CF%
14187 \or"D0\or"D1\or"D2\or"D3\or"D4\or"D5\or"D6\or"D7%
14188 \or"D8\or"D9\or"DA\or"DB\or"DC\or"DD\or"DE\or"DF%
14189 \or"E0\or"E1\or"E2\or"E3\or"E4\or"E5\or"E6\or"E7%
14190 \or"E8\or"E9\or"EA\or"EB\or"EC\or"ED\or"EE\or"EF%
14191 \or"F0\or"F1\or"F2\or"F3\or"F4\or"F5\or"F6\or"F7%
14192 \or"F8\or"F9\or"FA\or"FB\or"FC\or"FD\or"FE\or"FF%
14193 \fi
14194 }%
14195 \else
14196 \gdef\hv@pdf@char{\char'}%
14197 \fi
14198 \endgroup

```

\@@BOOKMARK

```

14199 \def\@@BOOKMARK[#1][#2]#3#4#5{%
14200 \expandafter\edef\csname @count@#3\endcsname{%
14201 \the\@serial@counter
14202 }%
14203 \edef\@mycount{\the\@serial@counter}%
14204 \Hy@StepCount\@serial@counter
14205 \edef\@parcount{%
14206 \expandafter\ifx\csname @count@#5\endcsname\relax
14207 0%
14208 \else
14209 \csname @count@#5\endcsname
14210 \fi
14211 }%
14212 \immediate\special{%
14213 !outline \HyperDestNameFilter{#3};p=\@parcount,i=\@mycount,%
14214 s=\ifx#2-c\else o\fi,t=#4%
14215 }%
14216 }%

```

\ReadBookmarks

```

14217 \def\ReadBookmarks{%
14218 \begingroup
14219 \def\0{\hv@pdf@char 0}%
14220 \def\1{\hv@pdf@char 1}%
14221 \def\2{\hv@pdf@char 2}%
14222 \def\3{\hv@pdf@char 3}%
14223 \def\({}%
14224 \def\)}%
14225 \def\do##1{%
14226 \ifnum\catcode'##1=\active
14227 \@makeother##1%
14228 \else
14229 \ifnum\catcode'##1=6 %
14230 \@makeother##1%

```

```

14231     \fi
14232     \fi
14233 }%
14234 \dospecials
14235 \Hy@safe@activetrue
14236 \InputIfFileExists{\jobname.out}{-}{-}%
14237 \endgroup
14238 \ifx\WriteBookmarks\relax
14239 \else
14240 \if@filesw
14241 \newwrite\@outlinefile
14242 \Hy@OutlineRerunCheck
14243 \immediate\openout\@outlinefile=\jobname.out\relax
14244 \ifHy@typexml
14245 \immediate\write\@outlinefile{<relaxxml>\relax}%
14246 \fi
14247 \fi
14248 \fi
14249 }

14250 </vtex>
14251 <!*vtex>
14252 \def\ReadBookmarks{%
14253 \pdf@ifdraftmode{-}{-}%
14254 \begingroup
14255 \def\do##1{%
14256 \ifnum\catcode'##1=\active
14257 \@makeother##1%
14258 \else
14259 \ifnum\catcode'##1=6 %
14260 \@makeother##1%
14261 \fi
14262 \fi
14263 }%
14264 \dospecials
14265 \Hy@safe@activetrue
14266 \escapechar='\%
14267 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14268 \calc@bm@number{##5}%
14269 }%
14270 \InputIfFileExists{\jobname.out}{-}{-}%
14271 \ifx\WriteBookmarks\relax
14272 \global\let\WriteBookmarks\relax
14273 \fi
14274 \def\@@BOOKMARK[##1][##2]##3##4##5{%
14275 \def\Hy@temp{##4}%
14276 <*pdfTeX>
14277 \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14278 \Hy@OutlineName{}\Hy@pstringName{%
14279 ##2\check@bm@number{##3}%
14280 }{%
14281 \expandafter\strip@prefix\meaning\Hy@temp
14282 }%
14283 </pdfTeX>
14284 <*pdfmark>
14285 \pdfmark{%
14286 pdfmark=/OUT,%
14287 Count={##2\check@bm@number{##3}},%

```



```

14288     Dest={##3},%
14289     Title=\expandafter\strip@prefix\meaning\Hy@temp
14290 }%
14291 \pdfmark>
14292 (*dvipdfm|xetex)
14293   \Hy@pstringdef\Hy@pstringName{\HyperDestNameFilter{##3}}%
14294   \@pdfm@mark{%
14295     outline \ifHy@DvipdfmxOutlineOpen
14296       [%
14297       \ifnum##21>\z@
14298       \else
14299       -%
14300       \fi
14301       ] %
14302       \fi
14303       ##1<<%
14304       /Title(\expandafter\strip@prefix\meaning\Hy@temp)%
14305       /A<<%
14306       /S/GoTo%
14307       /D(\Hy@pstringName)%
14308       >>%
14309       >>%
14310     }%
14311 \dvipdfm|xetex)
14312 }%
14313 \begingroup
14314   \def\WriteBookmarks{0}%
14315   \InputIfFileExists{\jobname.out}{\{}}{}%
14316 \endgroup
14317 %{\escapechar\m@ne\InputIfFileExists{\jobname.out}{\{}}{}}%
14318 \endgroup
14319 }%
14320 \ifx\WriteBookmarks\relax
14321 \else
14322   \if@filesw
14323     \newwrite\@outlinefile
14324     \Hy@OutlineRerunCheck
14325     \immediate\openout\@outlinefile=\jobname.out\relax
14326     \ifHy@typexml
14327       \immediate\write\@outlinefile{<relaxxml>\relax}%
14328     \fi
14329   \fi
14330 \fi
14331 }
14332 (*pdfTeX)
14333 \def\Hy@OutlineName#1#2#3#4{%
14334   \pdfoutline goto name{#2}count#3{#4}%
14335 }
14336 \pdfTeX)
14337 \def\check@bm@number#1{%
14338   \expandafter\ifx\csname B_#1\endcsname\relax
14339     0%
14340   \else
14341     \csname B_#1\endcsname
14342   \fi
14343 }
14344 \def\calc@bm@number#1{%

```

```

14345 \@tempcnta=\check@bm@number{#1}\relax
14346 \advance\@tempcnta by 1 %
14347 \expandafter\xdef\csname B_#1\endcsname{\the\@tempcnta}%
14348 }
14349 \</!vtex>

14350 \ifHy@implicit
14351 \else
14352 \expandafter\endinput
14353 \fi

14354 \</outlines>
14355 \<*outlines | hypertex>

14356 \newlength\Hy@SectionHShift
14357 \def\Hy@SectionAnchorHref#1{%
14358 \ifx\protect\@typeset@protect
14359 \Hy@@@SectionAnchor{#1}%
14360 \fi
14361 }
14362 \DeclareRobustCommand*{\Hy@@@SectionAnchor}[1]{%
14363 \leavevmode
14364 \hbox to 0pt{%
14365 \kern-\Hy@SectionHShift
14366 \Hy@raisedlink{%
14367 \hyper@anchorstart{#1}\hyper@anchorend
14368 }%
14369 \hss
14370 }%
14371 }
14372 \let\H@old@ssect\@ssect
14373 \def\@ssect#1#2#3#4#5{%
14374 \Hy@MakeCurrentHrefAuto{section*}%
14375 \setlength{\Hy@SectionHShift}{#1}%
14376 \begingroup
14377 \toks@{\H@old@ssect{#1}{#2}{#3}{#4}}%
14378 \toks\tw@\expandafter{%
14379 \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14380 #5%
14381 }%
14382 \edef\x{\endgroup
14383 \the\toks@{\the\toks\tw@}}%
14384 }\x
14385 }
14386 \let\H@old@schapter\@schapter
14387 \def\@schapter#1{%
14388 \begingroup
14389 \let\@mkboth\@gobbletwo
14390 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14391 \Hy@raisedlink{%
14392 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14393 }%
14394 \endgroup
14395 \H@old@schapter{#1}%
14396 }

```

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:

```

14397 \ltx@ifundefined{@chapter}{%
14398   \let\Hy@org@chapter\@chapter
14399   \def\@chapter{%
14400     \def\Hy@next{%
14401       \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14402       \Hy@raisedlink{%
14403         \hyper@anchorstart{\@currentHref}\hyper@anchorend
14404       }%
14405     }%
14406     \ifnum\c@secnumdepth>\m@ne
14407       \ltx@ifundefined{if@mainmatter}%
14408       \iftrue{\csname if@mainmatter\endcsname}%
14409       \let\Hy@next\relax
14410     \fi
14411   \fi
14412   \Hy@next
14413   \Hy@org@chapter
14414 }%
14415 }

14416 \let\H@old@part\@part
14417 \begingroup\expandafter\expandafter\expandafter\endgroup
14418 \expandafter\ifx\csname chapter\endcsname\relax
14419   \let\Hy@secnum@part\z@
14420 \else
14421   \let\Hy@secnum@part\m@ne
14422 \fi
14423 \def\@part{%
14424   \ifnum\Hy@secnum@part>\c@secnumdepth
14425     \phantomsection
14426   \fi
14427   \H@old@part
14428 }

14429 \let\H@old@spart\@spart
14430 \def\@spart#1{%
14431   \Hy@MakeCurrentHrefAuto{part*}%
14432   \Hy@raisedlink{%
14433     \hyper@anchorstart{\@currentHref}\hyper@anchorend
14434   }%
14435   \H@old@spart{#1}%
14436 }

14437 \let\H@old@sect\@sect
14438 \def\@sect#1#2#3#4#5#6[#7]#8{%
14439   \ifnum #2>\c@secnumdepth
14440     \expandafter\@firstoftwo
14441   \else
14442     \expandafter\@secondoftwo
14443   \fi
14444   {%
14445     \Hy@MakeCurrentHrefAuto{section*}%
14446     \setlength{\Hy@SectionHShift}{#3}%
14447     \begingroup
14448       \toks@{\H@old@sect{#1}{#2}{#3}{#4}{#5}{#6}{[#7]}}%
14449       \toks\tw@\expandafter{%
14450         \expandafter\Hy@SectionAnchorHref\expandafter{\@currentHref}%
14451         #8%
14452       }%
14453     \edef\x{\endgroup

```

```

14454 \the\toks@{\the\toks\tw@}%
14455 }\x
14456 }{%
14457 \H@old@ssect{#1}{#2}{#3}{#4}{#5}{#6}{#7}{#8}%
14458 }%
14459 }

14460 </outlines | hypertex>
14461 <*outlines>

14462 \expandafter\def\csname Parent-4\endcsname{}
14463 \expandafter\def\csname Parent-3\endcsname{}
14464 \expandafter\def\csname Parent-2\endcsname{}
14465 \expandafter\def\csname Parent-1\endcsname{}
14466 \expandafter\def\csname Parent0\endcsname{}
14467 \expandafter\def\csname Parent1\endcsname{}
14468 \expandafter\def\csname Parent2\endcsname{}
14469 \expandafter\def\csname Parent3\endcsname{}
14470 \expandafter\def\csname Parent4\endcsname{}
14471 </outlines>

```

## 49 Compatibility with koma-script classes

```

14472 <*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.

```

14473 \def\Hy@tempa{%
14474 \def\@addchap[##1]##2{%
14475 \typeout{##2}%
14476 \if@twoside
14477 \mkboth{##1}{}%
14478 \else
14479 \mkboth{}{##1}%
14480 \fi
14481 \addtocontents{lof}{\protect\addvspace{10\p@}}%
14482 \addtocontents{lot}{\protect\addvspace{10\p@}}%
14483 \Hy@MakeCurrentHrefAuto{\Hy@chapapp*}%
14484 \Hy@raisedlink{%
14485 \hyper@anchorstart{\@currentHref}\hyper@anchorend
14486 }%
14487 \if@twocolumn
14488 \topnewpage[\@makeschapterhead{##2}]%
14489 \else
14490 \makeschapterhead{##2}%
14491 \afterheading
14492 \fi
14493 \addcontentsline{toc}{chapter}{##1}%
14494 }%
14495 }
14496 \ifclassloaded{scrbook}{%
14497 \@ifclasslater{scrbook}{2001/01/01}{%
14498 \let\Hy@tempa\@empty
14499 }{}}%
14500 }{%
14501 \@ifclassloaded{scrreprt}{%

```

```

14502 \ifclasslater{scrreprt}{2001/01/01}{%
14503 \let\Hy@tempa\@empty
14504 }{}%
14505 }{}%
14506 \let\Hy@tempa\@empty
14507 }%
14508 }%
14509 \Hy@tempa
14510 </outlines | hypertex>

```

## 50 Encoding definition files for encodings of PDF strings

This was contributed by Heiko Oberdiek.

### 50.1 PD1 encoding

```

14511 <*pd1enc>
14512 \DeclareFontEncoding{PD1}{}{}

```

Accents

```

14513 \DeclareTextAccent{'}{PD1}{\textasciigrave}
14514 \DeclareTextAccent{'}{PD1}{\textacute}
14515 \DeclareTextAccent{^}{PD1}{\textasciicircum}
14516 \DeclareTextAccent{~}{PD1}{\texttilde}
14517 \DeclareTextAccent{"}{PD1}{\textasciidieresis}
14518 \DeclareTextAccent{r}{PD1}{\textring}
14519 \DeclareTextAccent{v}{PD1}{\textasciicaron}
14520 \DeclareTextAccent{.}{PD1}{\textdotaccent}
14521 \DeclareTextAccent{c}{PD1}{\textcedilla}
14522 \DeclareTextAccent{=}{PD1}{\textasciimacron}
14523 \DeclareTextAccent{b}{PD1}{\textmacronbelow}
14524 \DeclareTextAccent{d}{PD1}{\textdotbelow}
14525 \DeclareTextCompositeCommand{'}{PD1}{\@empty}{\textasciigrave}
14526 \DeclareTextCompositeCommand{'}{PD1}{\@empty}{\textacute}
14527 \DeclareTextCompositeCommand{^}{PD1}{\@empty}{\textasciicircum}
14528 \DeclareTextCompositeCommand{~}{PD1}{\@empty}{\texttilde}
14529 \DeclareTextCompositeCommand{"}{PD1}{\@empty}{\textasciidieresis}
14530 \DeclareTextCompositeCommand{r}{PD1}{\@empty}{\textring}
14531 \DeclareTextCompositeCommand{v}{PD1}{\@empty}{\textasciicaron}
14532 \DeclareTextCompositeCommand{.}{PD1}{\@empty}{\textdotaccent}
14533 \DeclareTextCompositeCommand{c}{PD1}{\@empty}{\textcedilla}
14534 \DeclareTextCompositeCommand{=}{PD1}{\@empty}{\textasciimacron}
14535 \DeclareTextCompositeCommand{b}{PD1}{\@empty}{\textmacronbelow}
14536 \DeclareTextCompositeCommand{d}{PD1}{\@empty}{\textdotbelow}
14537 \DeclareTextCompositeCommand{'}{PD1}{\ }{\textasciigrave}
14538 \DeclareTextCompositeCommand{'}{PD1}{\ }{\textacute}
14539 \DeclareTextCompositeCommand{^}{PD1}{\ }{\textasciicircum}
14540 \DeclareTextCompositeCommand{~}{PD1}{\ }{\texttilde}
14541 \DeclareTextCompositeCommand{"}{PD1}{\ }{\textasciidieresis}
14542 \DeclareTextCompositeCommand{r}{PD1}{\ }{\textring}
14543 \DeclareTextCompositeCommand{v}{PD1}{\ }{\textasciicaron}
14544 \DeclareTextCompositeCommand{.}{PD1}{\ }{\textdotaccent}
14545 \DeclareTextCompositeCommand{c}{PD1}{\ }{\textcedilla}
14546 \DeclareTextCompositeCommand{=}{PD1}{\ }{\textasciimacron}
14547 \DeclareTextCompositeCommand{b}{PD1}{\ }{\textmacronbelow}
14548 \DeclareTextCompositeCommand{d}{PD1}{\ }{\textdotbelow}

```

```

14549 \DeclareTextCommand{\k}{PD1}[1]{\TextSymbolUnavailable{\k{#1}}#1}
14550 \DeclareTextCommand{\t}{PD1}[1]{\TextSymbolUnavailable{\t{#1}}#1}
14551 \DeclareTextCommand{\newtie}{PD1}[1]{%
14552   \TextSymbolUnavailable{\newtie{#1}}#1%
14553 }

```

Special white space escape characters not for use in bookmarks but for other PDF strings.

```

14554 % U+0009 (CHARACTER TABULATION)
14555 \DeclareTextCommand{\textHT}{PD1}{\011}% U+0009
14556 % U+000A (LINE FEED)
14557 \DeclareTextCommand{\textLF}{PD1}{\012}% U+000A
14558 % U+000D (CARRIAGE RETURN)
14559 \DeclareTextCommand{\textCR}{PD1}{\015}% U+000D

```

Accent glyph names

```

14560 % U+02D8 BREVE; breve
14561 \DeclareTextCommand{\textasciibreve}{PD1}{\030}% U+02D8
14562 % U+02C7 CARON; caron
14563 \DeclareTextCommand{\textasciicaron}{PD1}{\031}% U+02C7
14564 % U+02C6 MODIFIER LETTER CIRCUMFLEX ACCENT; circumflex
14565 \DeclareTextCommand{\textcircumflex}{PD1}{\032}% U+02C6
14566 % U+02D9 DOT ABOVE; dotaccent
14567 \DeclareTextCommand{\textdotaccent}{PD1}{\033}% U+02D9
14568 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut
14569 \DeclareTextCommand{\texthungarumlaut}{PD1}{\034}% U+02DD
14570 % U+02DB OGONEK; ogonek
14571 \DeclareTextCommand{\textogonek}{PD1}{\035}% U+02DB
14572 % U+02DA RING ABOVE; ring
14573 \DeclareTextCommand{\textring}{PD1}{\036}% U+02DA
14574 % U+02DC SMALL TILDE; ilde, *tilde
14575 \DeclareTextCommand{\texttilde}{PD1}{\037}% U+02DC

```

\040: U+0020 SPACE; \*space, spacehackarabic

\041: U+0021 EXCLAMATION MARK; exclam

```

14576 % U+0022 QUOTATION MARK; quotedbl
14577 \DeclareTextCommand{\textquotedbl}{PD1}{\string"}% \042 U+0022
14578 % U+0023 NUMBER SIGN; numbersign
14579 \DeclareTextCommand{\textnumbersign}{PD1}{\043}% U+0023
14580 % U+0024 DOLLAR SIGN; dollar
14581 \DeclareTextCommand{\textdollar}{PD1}{\044}% U+0024
14582 % U+0025 PERCENT SIGN; percent
14583 \DeclareTextCommand{\textpercent}{PD1}{\045}% U+0025
14584 % U+0026 AMPERSAND; ampersand
14585 \DeclareTextCommand{\textampersand}{PD1}{\046}% U+0026

```

\047: U+0027 APOSTROPHE; quotesingle

```

14586 % U+0028 LEFT PARENTHESIS; parenleft
14587 \DeclareTextCommand{\textparenleft}{PD1}{\string\(% \050 U+0028
14588 % U+0029 RIGHT PARENTHESIS; parenright
14589 \DeclareTextCommand{\textparenright}{PD1}{\string\)% \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

```

14590 % U+002E FULL STOP; period
14591 \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  
 14592 % U+003C LESS-THAN SIGN; less  
 14593 \DeclareTextCommand{\textless}{PD1}{<}% \074 U+003C  
 \075: U+003D EQUALS SIGN; equal  
 14594 % U+003E GREATER-THAN SIGN; greater  
 14595 \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  
 14596 % U+005C REVERSE SOLIDUS; backslash  
 14597 \DeclareTextCommand{\textbackslash}{PD1}{\134}% U+005C  
 \135: U+005D RIGHT SQUARE BRACKET; bracketright  
 14598 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 14599 \DeclareTextCommand{\textasciicircum}{PD1}{\136}% U+005E  
 14600 % U+005F LOW LINE; underscore  
 14601 \DeclareTextCommand{\textunderscore}{PD1}{\137}% U+005F  
 14602 \DeclareTextCommand{\textmacronbelow}{PD1}{\137}% U+005F  
 14603 % U+0060 GRAVE ACCENT; grave  
 14604 \DeclareTextCommand{\textasciigrave}{PD1}{\140}% U+0060  
 \141: U+0061 LATIN SMALL LETTER A; a  
 ...  
 \150: U+0068 LATIN SMALL LETTER H; h  
 14605 % U+0069 LATIN SMALL LETTER I; i  
 14606 \DeclareTextCompositeCommand{.}{PD1}{i}{i}% \151 U+0069  
 \152: U+006A LATIN SMALL LETTER J; j  
 ...  
 \172: U+007A LATIN SMALL LETTER Z; z  
 14607 % U+007B LEFT CURLY BRACKET; braceleft  
 14608 \DeclareTextCommand{\textbraceleft}{PD1}{\173}% U+007B  
 14609 % U+007C VERTICAL LINE; \*bar, verticalbar  
 14610 \DeclareTextCommand{\textbar}{PD1}{|}% U+007C  
 14611 % U+007D RIGHT CURLY BRACKET; braceright  
 14612 \DeclareTextCommand{\textbraceright}{PD1}{\175}% U+007D  
 14613 % U+007E TILDE; asciitilde  
 14614 \DeclareTextCommand{\textasciitilde}{PD1}{\176}% U+007E  
 Slot \177 (0x7F) is undefined in PDFDocEncoding.  
 14615 % U+2022 BULLET; bullet  
 14616 \DeclareTextCommand{\textbullet}{PD1}{\200}% U+2022  
 14617 % U+2020 DAGGER; dagger  
 14618 \DeclareTextCommand{\textdagger}{PD1}{\201}% U+2020  
 14619 % U+2021 DOUBLE DAGGER; daggerdbl  
 14620 \DeclareTextCommand{\textdaggerdbl}{PD1}{\202}% U+2021  
 14621 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 14622 \DeclareTextCommand{\textellipsis}{PD1}{\203}% U+2026  
 14623 % U+2014 EM DASH; emdash  
 14624 \DeclareTextCommand{\textemdash}{PD1}{\204}% U+2014

14625 % U+2013 EN DASH; endash  
14626 \DeclareTextCommand{\textendash}{PD1}{\205}% U+2013  
14627 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
14628 \DeclareTextCommand{\textflorin}{PD1}{\206}% U+0192  
14629 % U+2044 FRACTION SLASH; fraction  
14630 \DeclareTextCommand{\textfractionsolidus}{PD1}{\207}% U+2044  
14631 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
inglleft  
14632 \DeclareTextCommand{\guilsinglleft}{PD1}{\210}% U+2039  
14633 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guils-  
inglright  
14634 \DeclareTextCommand{\guilsinglright}{PD1}{\211}% U+203A  
14635 % U+2212 MINUS SIGN; minus  
14636 \DeclareTextCommand{\textminus}{PD1}{\212}% U+2212  
14637 % U+2030 PER MILLE SIGN; perthousand  
14638 \DeclareTextCommand{\textperthousand}{PD1}{\213}% U+2030  
14639 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
14640 \DeclareTextCommand{\quotedblbase}{PD1}{\214}% U+201E  
14641 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
14642 \DeclareTextCommand{\textquotedblleft}{PD1}{\215}% U+201C  
14643 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
14644 \DeclareTextCommand{\textquotedblright}{PD1}{\216}% U+201D  
14645 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
14646 \DeclareTextCommand{\textquoteleft}{PD1}{\217}% U+2018  
14647 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
14648 \DeclareTextCommand{\textquoteright}{PD1}{\220}% U+2019  
14649 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
14650 \DeclareTextCommand{\quotesinglbase}{PD1}{\221}% U+201A  
14651 % U+2122 TRADE MARK SIGN; trademark  
14652 \DeclareTextCommand{\texttrademark}{PD1}{\222}% U+2122  
14653 % U+FB01 LATIN SMALL LIGATURE FI; fi  
14654 \DeclareTextCommand{\textfi}{PD1}{\223}% U+FB01  
14655 % U+FB02 LATIN SMALL LIGATURE FL; fl  
14656 \DeclareTextCommand{\textfl}{PD1}{\224}% U+FB02  
14657 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash  
14658 \DeclareTextCommand{\L}{PD1}{\225}% U+0141  
14659 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
14660 \DeclareTextCommand{\OE}{PD1}{\226}% U+0152  
14661 % U+0160 LATIN CAPITAL LETTER S WITH CARON; Scaron  
14662 \DeclareTextCompositeCommand{\v}{PD1}{S}{\227}% U+0160  
14663 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
14664 \DeclareTextCompositeCommand{\"}{PD1}{Y}{\230}% U+0178  
14665 \DeclareTextCommand{\IJ}{PD1}{\230}  
14666 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
14667 \DeclareTextCompositeCommand{\v}{PD1}{Z}{\231}% U+017D  
14668 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
14669 \DeclareTextCommand{\i}{PD1}{\232}% U+0131  
14670 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash  
14671 \DeclareTextCommand{\l}{PD1}{\233}% U+0142  
14672 % U+0153 LATIN SMALL LIGATURE OE; oe  
14673 \DeclareTextCommand{\oe}{PD1}{\234}% U+0153  
14674 % U+0161 LATIN SMALL LETTER S WITH CARON; scaron  
14675 \DeclareTextCompositeCommand{\v}{PD1}{s}{\235}% U+0161  
14676 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
14677 \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.



14678 % U+20AC EURO SIGN; \*Euro, euro  
 14679 \DeclareTextCommand{\texteuro}{PD1}{\240}% U+20AC  
 14680 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 14681 \DeclareTextCommand{\textexclamdown}{PD1}{\241}% U+00A1  
 14682 % U+00A2 CENT SIGN; cent  
 14683 \DeclareTextCommand{\textcent}{PD1}{\242}% U+00A2  
 14684 % U+00A3 POUND SIGN; sterling  
 14685 \DeclareTextCommand{\textsterling}{PD1}{\243}% U+00A3  
 14686 % U+00A4 CURRENCY SIGN; currency  
 14687 \DeclareTextCommand{\textcurrency}{PD1}{\244}% U+00A4  
 14688 % U+00A5 YEN SIGN; yen  
 14689 \DeclareTextCommand{\textyen}{PD1}{\245}% U+00A5  
 14690 % U+00A6 BROKEN BAR; brokenbar  
 14691 \DeclareTextCommand{\textbrokenbar}{PD1}{\246}% U+00A6  
 14692 % U+00A7 SECTION SIGN; section  
 14693 \DeclareTextCommand{\textsection}{PD1}{\247}% U+00A7  
 14694 % U+00A8 DIAERESIS; dieresis  
 14695 \DeclareTextCommand{\textasciidieresis}{PD1}{\250}% U+00A8  
 14696 % U+00A9 COPYRIGHT SIGN; copyright  
 14697 \DeclareTextCommand{\textcopyright}{PD1}{\251}% U+00A9  
 14698 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 14699 \DeclareTextCommand{\textordfeminine}{PD1}{\252}% U+00AA  
 14700 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
     motleft  
 14701 \DeclareTextCommand{\guillemotleft}{PD1}{\253}% U+00AB  
 14702 % U+00AC NOT SIGN; logicalnot  
 14703 \DeclareTextCommand{\textlogicalnot}{PD1}{\254}% U+00AC  
 14704 \DeclareTextCommand{\textlnot}{PD1}{\254}% logical not  
 No glyph \255 in PDFDocEncoding.  
 14705 % U+00AE REGISTERED SIGN; registered  
 14706 \DeclareTextCommand{\textregistered}{PD1}{\256}% U+00AE  
 14707 % U+00AF MACRON; \*macron, overscore  
 14708 \DeclareTextCommand{\textasciimacron}{PD1}{\257}% U+00AF  
 14709 % U+00B0 DEGREE SIGN; degree  
 14710 \DeclareTextCommand{\textdegree}{PD1}{\260}% U+00B0  
 14711 % U+00B1 PLUS-MINUS SIGN; plusminus  
 14712 \DeclareTextCommand{\textplusminus}{PD1}{\261}% U+00B1  
 14713 % U+00B2 SUPERScript TWO; twosuperior  
 14714 \DeclareTextCommand{\texttwosuperior}{PD1}{\262}% U+00B2  
 14715 % U+00B3 SUPERScript THREE; threesuperior  
 14716 \DeclareTextCommand{\textthreesuperior}{PD1}{\263}% U+00B3  
 14717 % U+00B4 ACUTE ACCENT; acute  
 14718 \DeclareTextCommand{\textacute}{PD1}{\264}% U+00B4  
 14719 % U+00B5 MICRO SIGN; mu, mu1  
 14720 \DeclareTextCommand{\textmu}{PD1}{\265}% U+00B5  
 14721 % U+00B6 PILCROW SIGN; paragraph  
 14722 \DeclareTextCommand{\textparagraph}{PD1}{\266}% U+00B6  
 14723 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
 14724 \DeclareTextCommand{\textperiodcentered}{PD1}{\267}% U+00B7  
 14725 % U+00B8 CEDILLA; cedilla  
 14726 \DeclareTextCommand{\textcedilla}{PD1}{\270}% U+00B8  
 14727 % U+00B9 SUPERScript ONE; onesuperior  
 14728 \DeclareTextCommand{\textonesuperior}{PD1}{\271}% U+00B9  
 14729 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
 14730 \DeclareTextCommand{\textordmasculine}{PD1}{\272}% U+00BA  
 14731 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
     motright

14732 \DeclareTextCommand{\guillemotright}{PD1}{\273}% U+00BB  
14733 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
14734 \DeclareTextCommand{\textonequarter}{PD1}{\274}% U+00BC  
14735 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
14736 \DeclareTextCommand{\textonehalf}{PD1}{\275}% U+00BD  
14737 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
14738 \DeclareTextCommand{\textthreequarters}{PD1}{\276}% U+00BE  
14739 % U+00BF INVERTED QUESTION MARK; questiondown  
14740 \DeclareTextCommand{\textquestiondown}{PD1}{\277}% U+00BF  
14741 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
14742 \DeclareTextCompositeCommand{\`}{PD1}{A}{\300}% U+00C0  
14743 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
14744 \DeclareTextCompositeCommand{\'}{PD1}{A}{\301}% U+00C1  
14745 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
14746 \DeclareTextCompositeCommand{\^}{PD1}{A}{\302}% U+00C2  
14747 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
14748 \DeclareTextCompositeCommand{\~}{PD1}{A}{\303}% U+00C3  
14749 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
14750 \DeclareTextCompositeCommand{\"}{PD1}{A}{\304}% U+00C4  
14751 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
14752 \DeclareTextCompositeCommand{\r}{PD1}{A}{\305}% U+00C5  
14753 % U+00C6 LATIN CAPITAL LETTER AE; AE  
14754 \DeclareTextCommand{\AE}{PD1}{\306}% U+00C6  
14755 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
14756 \DeclareTextCompositeCommand{\c}{PD1}{C}{\307}% U+00C7  
14757 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
14758 \DeclareTextCompositeCommand{\`}{PD1}{E}{\310}% U+00C8  
14759 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
14760 \DeclareTextCompositeCommand{\'}{PD1}{E}{\311}% U+00C9  
14761 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
14762 \DeclareTextCompositeCommand{\^}{PD1}{E}{\312}% U+00CA  
14763 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
14764 \DeclareTextCompositeCommand{\"}{PD1}{E}{\313}% U+00CB  
14765 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
14766 \DeclareTextCompositeCommand{\`}{PD1}{I}{\314}% U+00CC  
14767 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
14768 \DeclareTextCompositeCommand{\'}{PD1}{I}{\315}% U+00CD  
14769 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
14770 \DeclareTextCompositeCommand{\^}{PD1}{I}{\316}% U+00CE  
14771 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
14772 \DeclareTextCompositeCommand{\"}{PD1}{I}{\317}% U+00CF  
14773 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
14774 \DeclareTextCommand{\DH}{PD1}{\320}% U+00D0  
14775 \DeclareTextCommand{\DJ}{PD1}{\320}% U+00D0  
14776 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
14777 \DeclareTextCompositeCommand{\~}{PD1}{N}{\321}% U+00D1  
14778 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
14779 \DeclareTextCompositeCommand{\`}{PD1}{O}{\322}% U+00D2  
14780 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
14781 \DeclareTextCompositeCommand{\'}{PD1}{O}{\323}% U+00D3  
14782 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
14783 \DeclareTextCompositeCommand{\^}{PD1}{O}{\324}% U+00D4  
14784 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
14785 \DeclareTextCompositeCommand{\~}{PD1}{O}{\325}% U+00D5  
14786 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
14787 \DeclareTextCompositeCommand{\"}{PD1}{O}{\326}% U+00D6  
14788 % U+00D7 MULTIPLICATION SIGN; multiply

14789 \DeclareTextCommand{\textmultiply}{PD1}{\327}% U+00D7  
14790 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
14791 \DeclareTextCommand{\O}{PD1}{\330}% U+00D8  
14792 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
14793 \DeclareTextCompositeCommand{\'}{PD1}{U}{\331}% U+00D9  
14794 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
14795 \DeclareTextCompositeCommand{\'}{PD1}{U}{\332}% U+00DA  
14796 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
14797 \DeclareTextCompositeCommand{\^}{PD1}{U}{\333}% U+00DB  
14798 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
14799 \DeclareTextCompositeCommand{\"}{PD1}{U}{\334}% U+00DC  
14800 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
14801 \DeclareTextCompositeCommand{\'}{PD1}{Y}{\335}% U+00DD  
14802 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
14803 \DeclareTextCommand{\TH}{PD1}{\336}% U+00DE  
14804 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
14805 \DeclareTextCommand{\ss}{PD1}{\337}% U+00DF  
14806 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
14807 \DeclareTextCompositeCommand{\'}{PD1}{a}{\340}% U+00E0  
14808 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
14809 \DeclareTextCompositeCommand{\'}{PD1}{a}{\341}% U+00E1  
14810 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
14811 \DeclareTextCompositeCommand{\^}{PD1}{a}{\342}% U+00E2  
14812 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
14813 \DeclareTextCompositeCommand{\~}{PD1}{a}{\343}% U+00E3  
14814 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
14815 \DeclareTextCompositeCommand{\"}{PD1}{a}{\344}% U+00E4  
14816 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
14817 \DeclareTextCompositeCommand{\r}{PD1}{a}{\345}% U+00E5  
14818 % U+00E6 LATIN SMALL LETTER AE; ae  
14819 \DeclareTextCommand{\ae}{PD1}{\346}% U+00E6  
14820 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
14821 \DeclareTextCompositeCommand{\c}{PD1}{c}{\347}% U+00E7  
14822 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
14823 \DeclareTextCompositeCommand{\'}{PD1}{e}{\350}% U+00E8  
14824 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
14825 \DeclareTextCompositeCommand{\'}{PD1}{e}{\351}% U+00E9  
14826 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
14827 \DeclareTextCompositeCommand{\^}{PD1}{e}{\352}% U+00EA  
14828 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
14829 \DeclareTextCompositeCommand{\"}{PD1}{e}{\353}% U+00EB  
14830 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
14831 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354}% U+00EC  
14832 \DeclareTextCompositeCommand{\'}{PD1}{i}{\354}% U+00EC  
14833 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
14834 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
14835 \DeclareTextCompositeCommand{\'}{PD1}{i}{\355}% U+00ED  
14836 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
14837 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14838 \DeclareTextCompositeCommand{\^}{PD1}{i}{\356}% U+00EE  
14839 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
14840 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14841 \DeclareTextCompositeCommand{\"}{PD1}{i}{\357}% U+00EF  
14842 % U+00F0 LATIN SMALL LETTER ETH; eth  
14843 \DeclareTextCommand{\dh}{PD1}{\360}% U+00F0  
14844 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
14845 \DeclareTextCompositeCommand{\~}{PD1}{n}{\361}% U+00F1

14846 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
 14847 \DeclareTextCompositeCommand{\'}{PD1}{o}{\362}% U+00F2  
 14848 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
 14849 \DeclareTextCompositeCommand{\'}{PD1}{o}{\363}% U+00F3  
 14850 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
 14851 \DeclareTextCompositeCommand{\'}{PD1}{o}{\364}% U+00F4  
 14852 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
 14853 \DeclareTextCompositeCommand{\'}{PD1}{o}{\365}% U+00F5  
 14854 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
 14855 \DeclareTextCompositeCommand{\'}{PD1}{o}{\366}% U+00F6  
 14856 % U+00F7 DIVISION SIGN; divide  
 14857 \DeclareTextCommand{\textdivide}{PD1}{\367}% U+00F7  
 14858 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
 14859 \DeclareTextCommand{\o}{PD1}{\370}% U+00F8  
 14860 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
 14861 \DeclareTextCompositeCommand{\'}{PD1}{u}{\371}% U+00F9  
 14862 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
 14863 \DeclareTextCompositeCommand{\'}{PD1}{u}{\372}% U+00FA  
 14864 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
 14865 \DeclareTextCompositeCommand{\'}{PD1}{u}{\373}% U+00FB  
 14866 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
 14867 \DeclareTextCompositeCommand{\'}{PD1}{u}{\374}% U+00FC  
 14868 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
 14869 \DeclareTextCompositeCommand{\'}{PD1}{y}{\375}% U+00FD  
 14870 % U+00FE LATIN SMALL LETTER THORN; thorn  
 14871 \DeclareTextCommand{\th}{PD1}{\376}% U+00FE  
 14872 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
 14873 \DeclareTextCompositeCommand{\'}{PD1}{y}{\377}% U+00FF  
 14874 \DeclareTextCommand{\ij}{PD1}{\377}% U+00FF

Glyphs that consist of several characters.

14875 \DeclareTextCommand{\SS}{PD1}{SS}  
 14876 \DeclareTextCommand{\textcelsius}{PD1}{\textdegree C}

Aliases (german.sty)

14877 \DeclareTextCommand{\textglqq}{PD1}{\quotedblbase}  
 14878 \DeclareTextCommand{\textgrqq}{PD1}{\textquotedblleft}  
 14879 \DeclareTextCommand{\textglq}{PD1}{\quotesinglbase}  
 14880 \DeclareTextCommand{\textgrq}{PD1}{\textquoteleft}  
 14881 \DeclareTextCommand{\textflqq}{PD1}{\guillemotleft}  
 14882 \DeclareTextCommand{\textfrqq}{PD1}{\guillemotright}  
 14883 \DeclareTextCommand{\textflq}{PD1}{\guilsinglleft}  
 14884 \DeclareTextCommand{\textfrq}{PD1}{\guilsinglright}

Aliases (math names)

14885 \DeclareTextCommand{\textneg}{PD1}{\textlogicalnot}  
 14886 \DeclareTextCommand{\texttimes}{PD1}{\textmultiply}  
 14887 \DeclareTextCommand{\textdiv}{PD1}{\textdivide}  
 14888 \DeclareTextCommand{\textpm}{PD1}{\textplusminus}  
 14889 \DeclareTextCommand{\textcdot}{PD1}{\textperiodcentered}  
 14890 \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).

14891 \DeclareTextCompositeCommand{\k}{PD1}{a}{a}% aogonek  
 14892 \DeclareTextCompositeCommand{\'}{PD1}{c}{c}% cacute  
 14893 \DeclareTextCompositeCommand{\k}{PD1}{e}{e}% eogonek  
 14894 \DeclareTextCompositeCommand{\'}{PD1}{n}{n}% nacute  
 14895 \DeclareTextCompositeCommand{\'}{PD1}{s}{s}% sacute

```

14896 \DeclareTextCompositeCommand{\'}{PD1}{z}{z}% zacute
14897 \DeclareTextCompositeCommand{\.}{PD1}{z}{z}% zdot
14898 \DeclareTextCompositeCommand{\k}{PD1}{A}{A}% Aogonek
14899 \DeclareTextCompositeCommand{\'}{PD1}{C}{C}% Cacute
14900 \DeclareTextCompositeCommand{\k}{PD1}{E}{E}% Eogonek
14901 \DeclareTextCompositeCommand{\'}{PD1}{N}{N}% Nacute
14902 \DeclareTextCompositeCommand{\'}{PD1}{S}{S}% Sacute
14903 \DeclareTextCompositeCommand{\'}{PD1}{Z}{Z}% Zacute
14904 \DeclareTextCompositeCommand{\.}{PD1}{Z}{Z}% Zdot
14905 </pdlenc>

```

## 50.2 PU encoding

```

14906 <*puenc>
14907 \DeclareFontEncoding{PU}{-}{-}

```

### 50.2.1 NFSS2 accents

```

14908 % U+0300 COMBINING GRAVE ACCENT; gravecmb, *gravecomb
14909 \DeclareTextCommand{\`}{PU}[1]{#1\83\000}% U+0300
14910 % U+0301 COMBINING ACUTE ACCENT; acutecmb, *acutecomb
14911 \DeclareTextCommand{\'}{PU}[1]{#1\83\001}% U+0301
14912 % U+0302 COMBINING CIRCUMFLEX ACCENT; circumflexcmb
14913 \DeclareTextCommand{\^}{PU}[1]{#1\83\002}% U+0302
14914 % U+0303 COMBINING TILDE; tildecmb, *tildecomb
14915 \DeclareTextCommand{\~}{PU}[1]{#1\83\003}% U+0303
14916 % U+0304 COMBINING MACRON; macroncmb
14917 \DeclareTextCommand{\=}{PU}[1]{#1\83\004}% U+0304
14918 % U+0306 COMBINING BREVE; brevecmb
14919 \DeclareTextCommand{\u}{PU}[1]{#1\83\006}% U+0306
14920 \DeclareTextCommand{\U}{PU}[1]{#1\83\006}% U+0306
14921 % U+0307 COMBINING DOT ABOVE; dotaccentcmb
14922 \DeclareTextCommand{\.}{PU}[1]{#1\83\007}% U+0307
14923 % U+0308 COMBINING DIAERESIS; dieresiscmb
14924 \DeclareTextCommand{\"}{PU}[1]{#1\83\010}% U+0308
14925 % U+030A COMBINING RING ABOVE; ringcmb
14926 \DeclareTextCommand{\r}{PU}[1]{#1\83\012}% U+030A
14927 % U+030B COMBINING DOUBLE ACUTE ACCENT; hungarumlautcmb
14928 \DeclareTextCommand{\H}{PU}[1]{#1\83\013}% U+030B
14929 % U+030C COMBINING CARON; caroncmb
14930 \DeclareTextCommand{\v}{PU}[1]{#1\83\014}% U+030C
14931 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb
14932 \DeclareTextCommand{\G}{PU}[1]{#1\83\017}% U+030F
14933 \DeclareTextCommand{\C}{PU}[1]{#1\83\017}% U+030F
14934 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb
14935 \DeclareTextCommand{\newtie}{PU}[1]{#1\83\021}% U+0311
14936 % U+0323 COMBINING DOT BELOW; dotbelowcmb, *dotbelowcomb
14937 \DeclareTextCommand{\d}{PU}[1]{#1\83\043}% U+0323
14938 % U+0331 COMBINING MACRON BELOW; macronbelowcmb
14939 \DeclareTextCommand{\b}{PU}[1]{#1\83\061}% U+0331
14940 % U+0327 COMBINING CEDILLA; cedillacmb
14941 \DeclareTextCommand{\c}{PU}[1]{#1\83\047}% U+0327
14942 % U+0328 COMBINING OGONEK; ogonekcmb
14943 \DeclareTextCommand{\k}{PU}[1]{#1\83\050}% U+0328
14944 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-
    blecmb
14945 \DeclareTextCommand{\t}{PU}[1]{#1\83\141}% U+0361
14946 % U+20DD COMBINING ENCLOSING CIRCLE
14947 \DeclareTextCommand{\textcircled}{PU}[1]{#1\9040\335}% U+20DD

```

`\@empty` is an artefact of the NFSS2 machinery, it gets inserted for empty arguments and spaces.

```

14948 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textasciigrave}
14949 \DeclareTextCompositeCommand{\'}{PU}{\@empty}{\textacute}
14950 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\textasciicircum}
14951 \DeclareTextCompositeCommand{\~}{PU}{\@empty}{\texttilde}
14952 \DeclareTextCompositeCommand{\"}{PU}{\@empty}{\textasciidieresis}
14953 \DeclareTextCompositeCommand{\r}{PU}{\@empty}{\textstring}
14954 \DeclareTextCompositeCommand{\v}{PU}{\@empty}{\textasciicaron}
14955 \DeclareTextCompositeCommand{\.}{PU}{\@empty}{\textdotaccent}
14956 \DeclareTextCompositeCommand{\c}{PU}{\@empty}{\textcedilla}
14957 \DeclareTextCompositeCommand{\u}{PU}{\@empty}{\textasciibreve}
14958 \DeclareTextCompositeCommand{\G}{PU}{\@empty}{\textdoublegrave}
14959 \DeclareTextCompositeCommand{\=}{PU}{\@empty}{\textasciimacron}
14960 \DeclareTextCompositeCommand{\H}{PU}{\@empty}{\texthungarumlaut}
14961 \DeclareTextCompositeCommand{\k}{PU}{\@empty}{\textogonek}
14962 \DeclareTextCompositeCommand{\b}{PU}{\@empty}{\textmacronbelow}
14963 \DeclareTextCompositeCommand{\d}{PU}{\@empty}{\textdotbelow}
14964 \DeclareTextCompositeCommand{\t}{PU}{\@empty}{\texttie}
14965 \DeclareTextCompositeCommand{\newtie}{PU}{\@empty}{\textnewtie}
14966 \DeclareTextCompositeCommand{\textcircled}{PU}{\@empty}{\textbigcircle}

14967 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textasciigrave}
14968 \DeclareTextCompositeCommand{\'}{PU}{\ }{\textacute}
14969 \DeclareTextCompositeCommand{\~}{PU}{\ }{\textasciicircum}
14970 \DeclareTextCompositeCommand{\~}{PU}{\ }{\texttilde}
14971 \DeclareTextCompositeCommand{\"}{PU}{\ }{\textasciidieresis}
14972 \DeclareTextCompositeCommand{\r}{PU}{\ }{\textstring}
14973 \DeclareTextCompositeCommand{\v}{PU}{\ }{\textasciicaron}
14974 \DeclareTextCompositeCommand{\.}{PU}{\ }{\textdotaccent}
14975 \DeclareTextCompositeCommand{\c}{PU}{\ }{\textcedilla}
14976 \DeclareTextCompositeCommand{\u}{PU}{\ }{\textasciibreve}
14977 \DeclareTextCompositeCommand{\G}{PU}{\ }{\textdoublegrave}
14978 \DeclareTextCompositeCommand{\=}{PU}{\ }{\textasciimacron}
14979 \DeclareTextCompositeCommand{\H}{PU}{\ }{\texthungarumlaut}
14980 \DeclareTextCompositeCommand{\k}{PU}{\ }{\textogonek}
14981 \DeclareTextCompositeCommand{\b}{PU}{\ }{\textmacronbelow}
14982 \DeclareTextCompositeCommand{\d}{PU}{\ }{\textdotbelow}
14983 \DeclareTextCompositeCommand{\t}{PU}{\ }{\texttie}
14984 \DeclareTextCompositeCommand{\newtie}{PU}{\ }{\textnewtie}
14985 \DeclareTextCompositeCommand{\textcircled}{PU}{\ }{\textbigcircle}

```

Accents for capitals (see encoding TS1)

```

14986 \DeclareTextCommand{\capitalcedilla}{PU}[1]{\c{#1}}
14987 \DeclareTextCommand{\capitalogonek}{PU}[1]{\k{#1}}
14988 \DeclareTextCommand{\capitalgrave}{PU}[1]{\`{#1}}
14989 \DeclareTextCommand{\capitalacute}{PU}[1]{\'{#1}}
14990 \DeclareTextCommand{\capitalcircumflex}{PU}[1]{\^{#1}}
14991 \DeclareTextCommand{\capitaltilde}{PU}[1]{\~{#1}}
14992 \DeclareTextCommand{\capitaldieresis}{PU}[1]{\">{#1}}
14993 \DeclareTextCommand{\capitalhungarumlaut}{PU}[1]{\H{#1}}
14994 \DeclareTextCommand{\capitalring}{PU}[1]{\r{#1}}
14995 \DeclareTextCommand{\capitalcaron}{PU}[1]{\v{#1}}
14996 \DeclareTextCommand{\capitalbreve}{PU}[1]{\u{#1}}
14997 \DeclareTextCommand{\capitalmacron}{PU}[1]{\={#1}}
14998 \DeclareTextCommand{\capitaldotaccent}{PU}[1]{\.\{#1}}
14999 \DeclareTextCommand{\capitaltie}{PU}[1]{\t{#1}}
15000 \DeclareTextCommand{\capitalnewtie}{PU}[1]{\newtie{#1}}

```

### 50.2.2 Basic Latin: U+0000 to U+007F

Special white space escape characters.

```
15001 % U+0009 (CHARACTER TABULATION)
15002 \DeclareTextCommand{\textHT}{PU}{\80\011}% U+0009
15003 % U+000A (LINE FEED)
15004 \DeclareTextCommand{\textLF}{PU}{\80\012}% U+000A
15005 % U+000D (CARRIAGE RETURN)
15006 \DeclareTextCommand{\textCR}{PU}{\80\015}% U+000D

\80\040: U+0020 SPACE; space, spacehackarabic
\80\041: U+0021 EXCLAMATION MARK; exclam

15007 % U+0022 QUOTATION MARK; quotedbl
15008 \DeclareTextCommand{\textquotedbl}{PU}{\string"}% \80\042 U+0022
15009 % U+0023 NUMBER SIGN; numbersign
15010 \DeclareTextCommand{\textnumbersign}{PU}{\80\043}% U+0023
15011 % U+0024 DOLLAR SIGN; dollar
15012 \DeclareTextCommand{\textdollar}{PU}{\80\044}% U+0024
15013 % U+0025 PERCENT SIGN; percent
15014 \DeclareTextCommand{\textpercent}{PU}{\80\045}% U+0025
15015 % U+0026 AMPERSAND; ampersand
15016 \DeclareTextCommand{\textampersand}{PU}{\80\046}% U+0026
15017 % U+0027 APOSTROPHE; quotesingle
15018 \DeclareTextCommand{\textquotesingle}{PU}{\80\047}% U+0027
15019 % U+0028 LEFT PARENTHESIS; parenleft
15020 \DeclareTextCommand{\textparenleft}{PU}{\80\050}% U+0028
15021 % U+0029 RIGHT PARENTHESIS; parenright
15022 \DeclareTextCommand{\textparenright}{PU}{\80\051}% U+0029
15023 % U+002A ASTERISK; asterisk
15024 \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

15025 % U+003C LESS-THAN SIGN; less
15026 \DeclareTextCommand{\textless}{PU}{<}% \80\074 U+003C

\80\075: U+003D EQUALS SIGN; equal

15027 % U+003E GREATER-THAN SIGN; greater
15028 \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

15029 % U+005C REVERSE SOLIDUS; backslash
15030 \DeclareTextCommand{\textbackslash}{PU}{\80\134}% U+005C

\80\135: U+005D RIGHT SQUARE BRACKET; bracketright
```

15031 % U+005E CIRCUMFLEX ACCENT; asciicircum  
 15032 \DeclareTextCommand{\textasciicircum}{PU}{\80\136}% U+005E  
 15033 % U+005F LOW LINE; underscore  
 15034 \DeclareTextCommand{\textunderscore}{PU}{\80\137}% U+005F  
 15035 % U+0060 GRAVE ACCENT; grave  
 15036 \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  
 15037 % U+0069 LATIN SMALL LETTER I; i  
 15038 \DeclareTextCompositeCommand{\.}{PU}{i}{i} % \80\151 U+0069  
 15039 \DeclareTextCompositeCommand{\.}{PU}{i}{i}% \80\151 U+0069  
 \80\152: U+006A LATIN SMALL LETTER J; j  
 ...  
 \80\172: U+007A LATIN SMALL LETTER Z; z  
 15040 % U+007B LEFT CURLY BRACKET; braceleft  
 15041 \DeclareTextCommand{\textbraceleft}{PU}{\80\173}% U+007B  
 15042 % U+007C VERTICAL LINE; \*bar, verticalbar  
 15043 \DeclareTextCommand{\textbar}{PU}{|}% \80\174 U+007C  
 15044 % U+007D RIGHT CURLY BRACKET; braceright  
 15045 \DeclareTextCommand{\textbraceright}{PU}{\80\175}% U+007D  
 15046 % U+007E TILDE; asciitilde  
 15047 \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  
 15048 % U+00A1 INVERTED EXCLAMATION MARK; exclamdown  
 15049 \DeclareTextCommand{\textexclamdown}{PU}{\80\241}% U+00A1  
 15050 % U+00A2 CENT SIGN; cent  
 15051 \DeclareTextCommand{\textcent}{PU}{\80\242}% U+00A2  
 15052 % U+00A3 POUND SIGN; sterling  
 15053 \DeclareTextCommand{\textsterling}{PU}{\80\243}% U+00A3  
 15054 % U+00A4 CURRENCY SIGN; currency  
 15055 \DeclareTextCommand{\textcurrency}{PU}{\80\244}% U+00A4  
 15056 % U+00A5 YEN SIGN; yen  
 15057 \DeclareTextCommand{\textyen}{PU}{\80\245}% U+00A5  
 15058 % U+00A6 BROKEN BAR; brokenbar  
 15059 \DeclareTextCommand{\textbrokenbar}{PU}{\80\246}% U+00A6  
 15060 % U+00A7 SECTION SIGN; section  
 15061 \DeclareTextCommand{\textsection}{PU}{\80\247}% U+00A7  
 15062 % U+00A8 DIAERESIS; dieresis  
 15063 \DeclareTextCommand{\textasciidieresis}{PU}{\80\250}% U+00A8  
 15064 % U+00A9 COPYRIGHT SIGN; copyright  
 15065 \DeclareTextCommand{\textcopyright}{PU}{\80\251}% U+00A9  
 15066 % U+00AA FEMININE ORDINAL INDICATOR; ordfeminine  
 15067 \DeclareTextCommand{\textordfeminine}{PU}{\80\252}% U+00AA  
 15068 % U+00AB LEFT-POINTING DOUBLE ANGLE QUOTATION MARK; guillemotleft  
 15069 \DeclareTextCommand{\guillemotleft}{PU}{\80\253}% U+00AB  
 15070 % U+00AC NOT SIGN; logicalnot  
 15071 \DeclareTextCommand{\textlogicalnot}{PU}{\80\254}% U+00AC  
 15072 \DeclareTextCommand{\textlnot}{PU}{\80\254}% U+00AC  
 \80\255: U+00AD SOFT HYPHEN; sfthyphen, softthyphen  
 15073 % U+00AE REGISTERED SIGN; registered



15074 \DeclareTextCommand{\textregistered}{PU}{\80\256}% U+00AE  
15075 % U+00AF MACRON; \*macron, overscore  
15076 \DeclareTextCommand{\textasciimacron}{PU}{\80\257}% U+00AF  
15077 % U+00B0 DEGREE SIGN; degree  
15078 \DeclareTextCommand{\textdegree}{PU}{\80\260}% U+00B0  
15079 % U+00B1 PLUS-MINUS SIGN; plusminus  
15080 \DeclareTextCommand{\textplusminus}{PU}{\80\261}% U+00B1  
15081 % U+00B2 SUPERSCRIPT TWO; twosuperior  
15082 \DeclareTextCommand{\texttwosuperior}{PU}{\80\262}% U+00B2  
15083 % U+00B3 SUPERSCRIPT THREE; threesuperior  
15084 \DeclareTextCommand{\textthreesuperior}{PU}{\80\263}% U+00B3  
15085 % U+00B4 ACUTE ACCENT; acute  
15086 \DeclareTextCommand{\textacute}{PU}{\80\264}% U+00B4  
15087 \DeclareTextCommand{\textasciiacute}{PU}{\80\264}% U+00B4  
15088 % U+00B5 MICRO SIGN; mu, mul  
15089 \DeclareTextCommand{\textmu}{PU}{\80\265}% U+00B5  
15090 % U+00B6 PILCROW SIGN; paragraph  
15091 \DeclareTextCommand{\textparagraph}{PU}{\80\266}% U+00B6  
15092 % U+00B7 MIDDLE DOT; middot, \*periodcentered  
15093 \DeclareTextCommand{\textperiodcentered}{PU}{\80\267}% U+00B7  
15094 % U+00B8 CEDILLA; cedilla  
15095 \DeclareTextCommand{\textcedilla}{PU}{\80\270}% U+00B8  
15096 % U+00B9 SUPERSCRIPT ONE; onesuperior  
15097 \DeclareTextCommand{\textonesuperior}{PU}{\80\271}% U+00B9  
15098 % U+00BA MASCULINE ORDINAL INDICATOR; ordmasculine  
15099 \DeclareTextCommand{\textordmasculine}{PU}{\80\272}% U+00BA  
15100 % U+00BB RIGHT-POINTING DOUBLE ANGLE QUOTATION MARK; guille-  
motright  
15101 \DeclareTextCommand{\guillemotright}{PU}{\80\273}% U+00BB  
15102 % U+00BC VULGAR FRACTION ONE QUARTER; onequarter  
15103 \DeclareTextCommand{\textonequarter}{PU}{\80\274}% U+00BC  
15104 % U+00BD VULGAR FRACTION ONE HALF; onehalf  
15105 \DeclareTextCommand{\textonehalf}{PU}{\80\275}% U+00BD  
15106 % U+00BE VULGAR FRACTION THREE QUARTERS; threequarters  
15107 \DeclareTextCommand{\textthreequarters}{PU}{\80\276}% U+00BE  
15108 % U+00BF INVERTED QUESTION MARK; questiondown  
15109 \DeclareTextCommand{\textquestiondown}{PU}{\80\277}% U+00BF  
15110 % U+00C0 LATIN CAPITAL LETTER A WITH GRAVE; Agrave  
15111 \DeclareTextCompositeCommand{\`}{PU}{A}{\80\300}% U+00C0  
15112 % U+00C1 LATIN CAPITAL LETTER A WITH ACUTE; Aacute  
15113 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}% U+00C1  
15114 % U+00C2 LATIN CAPITAL LETTER A WITH CIRCUMFLEX; Acircumflex  
15115 \DeclareTextCompositeCommand{\^}{PU}{A}{\80\302}% U+00C2  
15116 % U+00C3 LATIN CAPITAL LETTER A WITH TILDE; Atilde  
15117 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}% U+00C3  
15118 % U+00C4 LATIN CAPITAL LETTER A WITH DIAERESIS; Adieresis  
15119 \DeclareTextCompositeCommand{\\"}{PU}{A}{\80\304}% U+00C4  
15120 % U+00C5 LATIN CAPITAL LETTER A WITH RING ABOVE; Aring  
15121 \DeclareTextCompositeCommand{\r}{PU}{A}{\80\305}% U+00C5  
15122 % U+00C6 LATIN CAPITAL LETTER AE; AE  
15123 \DeclareTextCommand{\AE}{PU}{\80\306}% U+00C6  
15124 % U+00C7 LATIN CAPITAL LETTER C WITH CEDILLA; Ccedilla  
15125 \DeclareTextCompositeCommand{\c}{PU}{C}{\80\307}% U+00C7  
15126 % U+00C8 LATIN CAPITAL LETTER E WITH GRAVE; Egrave  
15127 \DeclareTextCompositeCommand{\`}{PU}{E}{\80\310}% U+00C8  
15128 % U+00C9 LATIN CAPITAL LETTER E WITH ACUTE; Eacute  
15129 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}% U+00C9

15130 % U+00CA LATIN CAPITAL LETTER E WITH CIRCUMFLEX; Ecircumflex  
15131 \DeclareTextCompositeCommand{\^}{PU}{E}{\80\312}% U+00CA  
15132 % U+00CB LATIN CAPITAL LETTER E WITH DIAERESIS; Edieresis  
15133 \DeclareTextCompositeCommand{\"}{PU}{E}{\80\313}% U+00CB  
15134 % U+00CC LATIN CAPITAL LETTER I WITH GRAVE; Igrave  
15135 \DeclareTextCompositeCommand{\' }{PU}{I}{\80\314}% U+00CC  
15136 % U+00CD LATIN CAPITAL LETTER I WITH ACUTE; Iacute  
15137 \DeclareTextCompositeCommand{\' }{PU}{I}{\80\315}% U+00CD  
15138 % U+00CE LATIN CAPITAL LETTER I WITH CIRCUMFLEX; Icircumflex  
15139 \DeclareTextCompositeCommand{\^}{PU}{I}{\80\316}% U+00CE  
15140 % U+00CF LATIN CAPITAL LETTER I WITH DIAERESIS; Idieresis  
15141 \DeclareTextCompositeCommand{\"}{PU}{I}{\80\317}% U+00CF  
15142 % U+00D0 LATIN CAPITAL LETTER ETH; Eth  
15143 \DeclareTextCompositeCommand{\DH}{PU}{\80\320}% U+00D0  
15144 % U+00D1 LATIN CAPITAL LETTER N WITH TILDE; Ntilde  
15145 \DeclareTextCompositeCommand{\~}{PU}{N}{\80\321}% U+00D1  
15146 % U+00D2 LATIN CAPITAL LETTER O WITH GRAVE; Ograve  
15147 \DeclareTextCompositeCommand{\' }{PU}{O}{\80\322}% U+00D2  
15148 % U+00D3 LATIN CAPITAL LETTER O WITH ACUTE; Oacute  
15149 \DeclareTextCompositeCommand{\' }{PU}{O}{\80\323}% U+00D3  
15150 % U+00D4 LATIN CAPITAL LETTER O WITH CIRCUMFLEX; Ocircumflex  
15151 \DeclareTextCompositeCommand{\^}{PU}{O}{\80\324}% U+00D4  
15152 % U+00D5 LATIN CAPITAL LETTER O WITH TILDE; Otilde  
15153 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}% U+00D5  
15154 % U+00D6 LATIN CAPITAL LETTER O WITH DIAERESIS; Odieresis  
15155 \DeclareTextCompositeCommand{\"}{PU}{O}{\80\326}% U+00D6  
15156 % U+00D7 MULTIPLICATION SIGN; multiply  
15157 \DeclareTextCommand{\textmultiply}{PU}{\80\327}% U+00D7  
15158 % U+00D8 LATIN CAPITAL LETTER O WITH STROKE; Oslash  
15159 \DeclareTextCommand{\O}{PU}{\80\330}% U+00D8  
15160 % U+00D9 LATIN CAPITAL LETTER U WITH GRAVE; Ugrave  
15161 \DeclareTextCompositeCommand{\' }{PU}{U}{\80\331}% U+00D9  
15162 % U+00DA LATIN CAPITAL LETTER U WITH ACUTE; Uacute  
15163 \DeclareTextCompositeCommand{\' }{PU}{U}{\80\332}% U+00DA  
15164 % U+00DB LATIN CAPITAL LETTER U WITH CIRCUMFLEX; Ucircumflex  
15165 \DeclareTextCompositeCommand{\^}{PU}{U}{\80\333}% U+00DB  
15166 % U+00DC LATIN CAPITAL LETTER U WITH DIAERESIS; Udieresis  
15167 \DeclareTextCompositeCommand{\"}{PU}{U}{\80\334}% U+00DC  
15168 % U+00DD LATIN CAPITAL LETTER Y WITH ACUTE; Yacute  
15169 \DeclareTextCompositeCommand{\' }{PU}{Y}{\80\335}% U+00DD  
15170 % U+00DE LATIN CAPITAL LETTER THORN; Thorn  
15171 \DeclareTextCommand{\TH}{PU}{\80\336}% U+00DE  
15172 % U+00DF LATIN SMALL LETTER SHARP S; germandbls  
15173 \DeclareTextCommand{\ss}{PU}{\80\337}% U+00DF  
15174 % U+00E0 LATIN SMALL LETTER A WITH GRAVE; agrave  
15175 \DeclareTextCompositeCommand{\' }{PU}{a}{\80\340}% U+00E0  
15176 % U+00E1 LATIN SMALL LETTER A WITH ACUTE; aacute  
15177 \DeclareTextCompositeCommand{\' }{PU}{a}{\80\341}% U+00E1  
15178 % U+00E2 LATIN SMALL LETTER A WITH CIRCUMFLEX; acircumflex  
15179 \DeclareTextCompositeCommand{\^}{PU}{a}{\80\342}% U+00E2  
15180 % U+00E3 LATIN SMALL LETTER A WITH TILDE; atilde  
15181 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}% U+00E3  
15182 % U+00E4 LATIN SMALL LETTER A WITH DIAERESIS; adieresis  
15183 \DeclareTextCompositeCommand{\"}{PU}{a}{\80\344}% U+00E4  
15184 % U+00E5 LATIN SMALL LETTER A WITH RING ABOVE; aring  
15185 \DeclareTextCompositeCommand{\r}{PU}{a}{\80\345}% U+00E5  
15186 % U+00E6 LATIN SMALL LETTER AE; ae

15187 \DeclareTextCommand{\ae}{PU}{\80\346}% U+00E6  
15188 % U+00E7 LATIN SMALL LETTER C WITH CEDILLA; ccedilla  
15189 \DeclareTextCompositeCommand{\c}{PU}{c}{\80\347}% U+00E7  
15190 % U+00E8 LATIN SMALL LETTER E WITH GRAVE; egrave  
15191 \DeclareTextCompositeCommand{\`}{PU}{e}{\80\350}% U+00E8  
15192 % U+00E9 LATIN SMALL LETTER E WITH ACUTE; eacute  
15193 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}% U+00E9  
15194 % U+00EA LATIN SMALL LETTER E WITH CIRCUMFLEX; ecircumflex  
15195 \DeclareTextCompositeCommand{\^}{PU}{e}{\80\352}% U+00EA  
15196 % U+00EB LATIN SMALL LETTER E WITH DIAERESIS; edieresis  
15197 \DeclareTextCompositeCommand{\"}{PU}{e}{\80\353}% U+00EB  
15198 % U+00EC LATIN SMALL LETTER I WITH GRAVE; igrave  
15199 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\354}% U+00EC  
15200 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}% U+00EC  
15201 % U+00ED LATIN SMALL LETTER I WITH ACUTE; iacute  
15202 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}% U+00ED  
15203 \DeclareTextCompositeCommand{\`}{PU}{i}{\80\355}% U+00ED  
15204 % U+00EE LATIN SMALL LETTER I WITH CIRCUMFLEX; icircumflex  
15205 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15206 \DeclareTextCompositeCommand{\^}{PU}{i}{\80\356}% U+00EE  
15207 % U+00EF LATIN SMALL LETTER I WITH DIAERESIS; idieresis  
15208 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15209 \DeclareTextCompositeCommand{\"}{PU}{i}{\80\357}% U+00EF  
15210 % U+00F0 LATIN SMALL LETTER ETH; eth  
15211 \DeclareTextCommand{\dh}{PU}{\80\360}% U+00F0  
15212 % U+00F1 LATIN SMALL LETTER N WITH TILDE; ntilde  
15213 \DeclareTextCompositeCommand{\~}{PU}{n}{\80\361}% U+00F1  
15214 % U+00F2 LATIN SMALL LETTER O WITH GRAVE; ograve  
15215 \DeclareTextCompositeCommand{\`}{PU}{o}{\80\362}% U+00F2  
15216 % U+00F3 LATIN SMALL LETTER O WITH ACUTE; oacute  
15217 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}% U+00F3  
15218 % U+00F4 LATIN SMALL LETTER O WITH CIRCUMFLEX; ocircumflex  
15219 \DeclareTextCompositeCommand{\^}{PU}{o}{\80\364}% U+00F4  
15220 % U+00F5 LATIN SMALL LETTER O WITH TILDE; otilde  
15221 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}% U+00F5  
15222 % U+00F6 LATIN SMALL LETTER O WITH DIAERESIS; odieresis  
15223 \DeclareTextCompositeCommand{\"}{PU}{o}{\80\366}% U+00F6  
15224 % U+00F7 DIVISION SIGN; divide  
15225 \DeclareTextCommand{\textdivide}{PU}{\80\367}% U+00F7  
15226 % U+00F8 LATIN SMALL LETTER O WITH STROKE; oslash  
15227 \DeclareTextCommand{\o}{PU}{\80\370}% U+00F8  
15228 % U+00F9 LATIN SMALL LETTER U WITH GRAVE; ugrave  
15229 \DeclareTextCompositeCommand{\`}{PU}{u}{\80\371}% U+00F9  
15230 % U+00FA LATIN SMALL LETTER U WITH ACUTE; uacute  
15231 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}% U+00FA  
15232 % U+00FB LATIN SMALL LETTER U WITH CIRCUMFLEX; ucircumflex  
15233 \DeclareTextCompositeCommand{\^}{PU}{u}{\80\373}% U+00FB  
15234 % U+00FC LATIN SMALL LETTER U WITH DIAERESIS; udieresis  
15235 \DeclareTextCompositeCommand{\"}{PU}{u}{\80\374}% U+00FC  
15236 % U+00FD LATIN SMALL LETTER Y WITH ACUTE; yacute  
15237 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}% U+00FD  
15238 % U+00FE LATIN SMALL LETTER THORN; thorn  
15239 \DeclareTextCommand{\th}{PU}{\80\376}% U+00FE  
15240 % U+00FF LATIN SMALL LETTER Y WITH DIAERESIS; ydieresis  
15241 \DeclareTextCompositeCommand{\"}{PU}{y}{\80\377}% U+00FF

#### 50.2.4 Latin Extended-A: U+0080 to U+017F

15242 % U+0100 LATIN CAPITAL LETTER A WITH MACRON; Amacron  
15243 \DeclareTextCompositeCommand{\=}{PU}{A}{\81\000}% U+0100  
15244 % U+0101 LATIN SMALL LETTER A WITH MACRON; amacron  
15245 \DeclareTextCompositeCommand{\=}{PU}{a}{\81\001}% U+0101  
15246 % U+0102 LATIN CAPITAL LETTER A WITH BREVE; Abreve  
15247 \DeclareTextCompositeCommand{\u}{PU}{A}{\81\002}% U+0102  
15248 % U+0103 LATIN SMALL LETTER A WITH BREVE; abreve  
15249 \DeclareTextCompositeCommand{\u}{PU}{a}{\81\003}% U+0103  
15250 % U+0104 LATIN CAPITAL LETTER A WITH OGONEK; Aogonek  
15251 \DeclareTextCompositeCommand{\k}{PU}{A}{\81\004}% U+0104  
15252 % U+0105 LATIN SMALL LETTER A WITH OGONEK; aogonek  
15253 \DeclareTextCompositeCommand{\k}{PU}{a}{\81\005}% U+0105  
15254 % U+0106 LATIN CAPITAL LETTER C WITH ACUTE; Cacute  
15255 \DeclareTextCompositeCommand{\'}{PU}{C}{\81\006}% U+0106  
15256 % U+0107 LATIN SMALL LETTER C WITH ACUTE; cacute  
15257 \DeclareTextCompositeCommand{\'}{PU}{c}{\81\007}% U+0107  
15258 % U+0108 LATIN CAPITAL LETTER C WITH CIRCUMFLEX; Ccircumflex  
15259 \DeclareTextCompositeCommand{\^}{PU}{C}{\81\010}% U+0108  
15260 % U+0109 LATIN SMALL LETTER C WITH CIRCUMFLEX; ccircumflex  
15261 \DeclareTextCompositeCommand{\^}{PU}{c}{\81\011}% U+0109  
15262 % U+010A LATIN CAPITAL LETTER C WITH DOT ABOVE; Cdot, Cdotaccent  
15263 \DeclareTextCompositeCommand{\.}{PU}{C}{\81\012}% U+010A  
15264 % U+010B LATIN SMALL LETTER C WITH DOT ABOVE; cdot, cdotaccent  
15265 \DeclareTextCompositeCommand{\.}{PU}{c}{\81\013}% U+010B  
15266 % U+010C LATIN CAPITAL LETTER C WITH CARON; Ccaron  
15267 \DeclareTextCompositeCommand{\v}{PU}{C}{\81\014}% U+010C  
15268 % U+010D LATIN SMALL LETTER C WITH CARON; ccaron  
15269 \DeclareTextCompositeCommand{\v}{PU}{c}{\81\015}% U+010D  
15270 % U+010E LATIN CAPITAL LETTER D WITH CARON; Dcaron  
15271 \DeclareTextCompositeCommand{\v}{PU}{D}{\81\016}% U+010E  
15272 % U+010F LATIN SMALL LETTER D WITH CARON; dcaron  
15273 \DeclareTextCompositeCommand{\v}{PU}{d}{\81\017}% U+010F  
15274 % U+0110 LATIN CAPITAL LETTER D WITH STROKE; Dcroat, Dslash  
15275 \DeclareTextCommand{\DJ}{PU}{\81\020}% U+0110  
15276 % U+0111 LATIN SMALL LETTER D WITH STROKE; dcroat, dmacron  
15277 \DeclareTextCommand{\dj}{PU}{\81\021}% U+0111  
15278 % U+0112 LATIN CAPITAL LETTER E WITH MACRON; Emacron  
15279 \DeclareTextCompositeCommand{\=}{PU}{E}{\81\022}% U+0112  
15280 % U+0113 LATIN SMALL LETTER E WITH MACRON; emacron  
15281 \DeclareTextCompositeCommand{\=}{PU}{e}{\81\023}% U+0113  
15282 % U+0114 LATIN CAPITAL LETTER E WITH BREVE; Ebreve  
15283 \DeclareTextCompositeCommand{\u}{PU}{E}{\81\024}% U+0114  
15284 % U+0115 LATIN SMALL LETTER E WITH BREVE; ebreve  
15285 \DeclareTextCompositeCommand{\u}{PU}{e}{\81\025}% U+0115  
15286 % U+0116 LATIN CAPITAL LETTER E WITH DOT ABOVE; Edot, Edotaccent  
15287 \DeclareTextCompositeCommand{\.}{PU}{E}{\81\026}% U+0116  
15288 % U+0117 LATIN SMALL LETTER E WITH DOT ABOVE; edot, edotaccent  
15289 \DeclareTextCompositeCommand{\.}{PU}{e}{\81\027}% U+0117  
15290 % U+0118 LATIN CAPITAL LETTER E WITH OGONEK; Eogonek  
15291 \DeclareTextCompositeCommand{\k}{PU}{E}{\81\030}% U+0118  
15292 % U+0119 LATIN SMALL LETTER E WITH OGONEK; eogonek  
15293 \DeclareTextCompositeCommand{\k}{PU}{e}{\81\031}% U+0119  
15294 % U+011A LATIN CAPITAL LETTER E WITH CARON; Ecaron  
15295 \DeclareTextCompositeCommand{\v}{PU}{E}{\81\032}% U+011A  
15296 % U+011B LATIN SMALL LETTER E WITH CARON; ecaron

15297 \DeclareTextCompositeCommand{\v}{PU}{e}{\81\033}% U+011B  
15298 % U+011C LATIN CAPITAL LETTER G WITH CIRCUMFLEX; Gcircumflex  
15299 \DeclareTextCompositeCommand{\^}{PU}{G}{\81\034}% U+011C  
15300 % U+011D LATIN SMALL LETTER G WITH CIRCUMFLEX; gcircumflex  
15301 \DeclareTextCompositeCommand{\^}{PU}{g}{\81\035}% U+011D  
15302 % U+011E LATIN CAPITAL LETTER G WITH BREVE; Gbreve  
15303 \DeclareTextCompositeCommand{\u}{PU}{G}{\81\036}% U+011E  
15304 % U+011F LATIN SMALL LETTER G WITH BREVE; gbreve  
15305 \DeclareTextCompositeCommand{\u}{PU}{g}{\81\037}% U+011F  
15306 % U+0120 LATIN CAPITAL LETTER G WITH DOT ABOVE; Gdot, Gdotac-  
cent  
15307 \DeclareTextCompositeCommand{\.}{PU}{G}{\81\040}% U+0120  
15308 % U+0121 LATIN SMALL LETTER G WITH DOT ABOVE; gdot, gdotaccent  
15309 \DeclareTextCompositeCommand{\.}{PU}{g}{\81\041}% U+0121  
15310 % U+0122 LATIN CAPITAL LETTER G WITH CEDILLA; Gcedilla, Gcom-  
maaccent  
15311 \DeclareTextCompositeCommand{\c}{PU}{G}{\81\042}% U+0122  
15312 % U+0123 LATIN SMALL LETTER G WITH CEDILLA; gcedilla, gcommaaccent  
15313 \DeclareTextCompositeCommand{\c}{PU}{g}{\81\043}% U+0123  
15314 % U+0124 LATIN CAPITAL LETTER H WITH CIRCUMFLEX; Hcircumflex  
15315 \DeclareTextCompositeCommand{\^}{PU}{H}{\81\044}% U+0124  
15316 % U+0125 LATIN SMALL LETTER H WITH CIRCUMFLEX; hcircumflex  
15317 \DeclareTextCompositeCommand{\^}{PU}{h}{\81\045}% U+0125  
15318 % U+0126 LATIN CAPITAL LETTER H WITH STROKE; Hbar  
15319 \DeclareTextCommand{\textHslash}{PU}{\81\046}% U+0126  
15320 % U+0127 LATIN SMALL LETTER H WITH STROKE; hbar  
15321 \DeclareTextCommand{\texthslash}{PU}{\81\047}% U+0127  
15322 % U+0128 LATIN CAPITAL LETTER I WITH TILDE; Itilde  
15323 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}% U+0128  
15324 % U+0129 LATIN SMALL LETTER I WITH TILDE; itilde  
15325 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}% U+0129  
15326 \DeclareTextCompositeCommand{\~}{PU}{\i}{\81\051}% U+0129  
15327 % U+012A LATIN CAPITAL LETTER I WITH MACRON; Imacron  
15328 \DeclareTextCompositeCommand{\=}{PU}{I}{\81\052}% U+012A  
15329 % U+012B LATIN SMALL LETTER I WITH MACRON; imacron  
15330 \DeclareTextCompositeCommand{\=}{PU}{i}{\81\053}% U+012B  
15331 \DeclareTextCompositeCommand{\=}{PU}{\i}{\81\053}% U+012B  
15332 % U+012C LATIN CAPITAL LETTER I WITH BREVE; Ibreve  
15333 \DeclareTextCompositeCommand{\u}{PU}{I}{\81\054}% U+012C  
15334 % U+012D LATIN SMALL LETTER I WITH BREVE; ibreve  
15335 \DeclareTextCompositeCommand{\u}{PU}{i}{\81\055}% U+012D  
15336 \DeclareTextCompositeCommand{\u}{PU}{\i}{\81\055}% U+012D  
15337 % U+012E LATIN CAPITAL LETTER I WITH OGONEK; Iogonek  
15338 \DeclareTextCompositeCommand{\k}{PU}{I}{\81\056}% U+012E  
15339 % U+012F LATIN SMALL LETTER I WITH OGONEK; iogonek  
15340 \DeclareTextCompositeCommand{\k}{PU}{i}{\81\057}% U+012F  
15341 \DeclareTextCompositeCommand{\k}{PU}{\i}{\81\057}% U+012F  
15342 % U+0130 LATIN CAPITAL LETTER I WITH DOT ABOVE; Idot, Idotaccent  
15343 \DeclareTextCompositeCommand{\.}{PU}{I}{\81\060}% U+0130  
15344 % U+0131 LATIN SMALL LETTER DOTLESS I; dotlessi  
15345 \DeclareTextCommand{\i}{PU}{\81\061}% U+0131  
15346 % U+0132 LATIN CAPITAL LIGATURE IJ; IJ  
15347 \DeclareTextCommand{\IJ}{PU}{\81\062}% U+0132  
15348 % U+0133 LATIN SMALL LIGATURE IJ; ij  
15349 \DeclareTextCommand{\ij}{PU}{\81\063}% U+0133  
15350 % U+0134 LATIN CAPITAL LETTER J WITH CIRCUMFLEX; Jcircumflex  
15351 \DeclareTextCompositeCommand{\^}{PU}{J}{\81\064}% U+0134

```

15352 % U+0135 LATIN SMALL LETTER J WITH CIRCUMFLEX; jcircumflex
15353 \DeclareTextCompositeCommand{\~}{PU}{j}{\81\065}% U+0135
15354 \DeclareTextCompositeCommand{\^}{PU}{j}{\81\065}% U+0135
15355 % U+0136 LATIN CAPITAL LETTER K WITH CEDILLA; Kcedilla, Kcommaac-
cent
15356 \DeclareTextCompositeCommand{\c}{PU}{K}{\81\066}% U+0136
15357 % U+0137 LATIN SMALL LETTER K WITH CEDILLA; kcedilla, kcommaaccent
15358 \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`.

```

15359 % U+0138 LATIN SMALL LETTER KRA; kgreenlandic
15360 \DeclareTextCommand{\textkra}{PU}{\81\070}% U+0138
15361 % U+0139 LATIN CAPITAL LETTER L WITH ACUTE; Lacute
15362 \DeclareTextCompositeCommand{\'}{PU}{L}{\81\071}% U+0139
15363 % U+013A LATIN SMALL LETTER L WITH ACUTE; lacute
15364 \DeclareTextCompositeCommand{\'}{PU}{l}{\81\072}% U+013A
15365 % U+013B LATIN CAPITAL LETTER L WITH CEDILLA; Lcedilla, Lcommaac-
cent
15366 \DeclareTextCompositeCommand{\c}{PU}{L}{\81\073}% U+013B
15367 % U+013C LATIN SMALL LETTER L WITH CEDILLA; lcedilla, lcommaaccent
15368 \DeclareTextCompositeCommand{\c}{PU}{l}{\81\074}% U+013C
15369 % U+013D LATIN CAPITAL LETTER L WITH CARON; Lcaron
15370 \DeclareTextCompositeCommand{\v}{PU}{L}{\81\075}% U+013D
15371 % U+013E LATIN SMALL LETTER L WITH CARON; lcaron
15372 \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`.

```

15373 % U+013F LATIN CAPITAL LETTER L WITH MIDDLE DOT; Ldot, Ldotac-
cent
15374 \DeclareTextCompositeCommand{\.}{PU}{L}{\81\077}% U+013F
15375 % U+0140 LATIN SMALL LETTER L WITH MIDDLE DOT; ldot, ldotaccent
15376 \DeclareTextCompositeCommand{\.}{PU}{l}{\81\100}% U+0140
15377 % U+0141 LATIN CAPITAL LETTER L WITH STROKE; Lslash
15378 \DeclareTextCommand{\L}{PU}{\81\101}% U+0141
15379 % U+0142 LATIN SMALL LETTER L WITH STROKE; lslash
15380 \DeclareTextCommand{\l}{PU}{\81\102}% U+0142
15381 % U+0143 LATIN CAPITAL LETTER N WITH ACUTE; Nacute
15382 \DeclareTextCompositeCommand{\'}{PU}{N}{\81\103}% U+0143
15383 % U+0144 LATIN SMALL LETTER N WITH ACUTE; nacute
15384 \DeclareTextCompositeCommand{\'}{PU}{n}{\81\104}% U+0144
15385 % U+0145 LATIN CAPITAL LETTER N WITH CEDILLA; Ncedilla, Ncommaac-
cent
15386 \DeclareTextCompositeCommand{\c}{PU}{N}{\81\105}% U+0145
15387 % U+0146 LATIN SMALL LETTER N WITH CEDILLA; ncedilla, ncommaaccent
15388 \DeclareTextCompositeCommand{\c}{PU}{n}{\81\106}% U+0146
15389 % U+0147 LATIN CAPITAL LETTER N WITH CARON; Ncaron
15390 \DeclareTextCompositeCommand{\v}{PU}{N}{\81\107}% U+0147
15391 % U+0148 LATIN SMALL LETTER N WITH CARON; ncaron
15392 \DeclareTextCompositeCommand{\v}{PU}{n}{\81\110}% U+0148
15393 % U+0149 LATIN SMALL LETTER N PRECEDED BY APOSTROPHE; napos-
trophe, quoterightn
15394 \DeclareTextCommand{\textnapostrophe}{PU}{\81\111}% U+0149
15395 % U+014A LATIN CAPITAL LETTER ENG; Eng
15396 \DeclareTextCommand{\NG}{PU}{\81\112}% U+014A

```

15397 % U+014B LATIN SMALL LETTER ENG; eng  
 15398 \DeclareTextCommand{\ng}{PU}{\81\113}% U+014B  
 15399 % U+014C LATIN CAPITAL LETTER O WITH MACRON; Omacron  
 15400 \DeclareTextCompositeCommand{\=}{PU}{O}{\81\114}% U+014C  
 15401 % U+014D LATIN SMALL LETTER O WITH MACRON; omacron  
 15402 \DeclareTextCompositeCommand{\=}{PU}{o}{\81\115}% U+014D  
 15403 % U+014E LATIN CAPITAL LETTER O WITH BREVE; Obreve  
 15404 \DeclareTextCompositeCommand{\u}{PU}{O}{\81\116}% U+014E  
 15405 % U+014F LATIN SMALL LETTER O WITH BREVE; obreve  
 15406 \DeclareTextCompositeCommand{\u}{PU}{o}{\81\117}% U+014F  
 15407 % U+0150 LATIN CAPITAL LETTER O WITH DOUBLE ACUTE; Odblac-  
 cute, Ohungarumlaut  
 15408 \DeclareTextCompositeCommand{\H}{PU}{O}{\81\120}% U+0150  
 15409 % U+0151 LATIN SMALL LETTER O WITH DOUBLE ACUTE; odbla-  
 cute, ohungarumlaut  
 15410 \DeclareTextCompositeCommand{\H}{PU}{o}{\81\121}% U+0151  
 15411 % U+0152 LATIN CAPITAL LIGATURE OE; OE  
 15412 \DeclareTextCommand{\OE}{PU}{\81\122}% U+0152  
 15413 % U+0153 LATIN SMALL LIGATURE OE; oe  
 15414 \DeclareTextCommand{\oe}{PU}{\81\123}% U+0153  
 15415 % U+0154 LATIN CAPITAL LETTER R WITH ACUTE; Racute  
 15416 \DeclareTextCompositeCommand{\'}{PU}{R}{\81\124}% U+0154  
 15417 % U+0155 LATIN SMALL LETTER R WITH ACUTE; racute  
 15418 \DeclareTextCompositeCommand{\'}{PU}{r}{\81\125}% U+0155  
 15419 % U+0156 LATIN CAPITAL LETTER R WITH CEDILLA; Rcedilla, Rcommaac-  
 cent  
 15420 \DeclareTextCompositeCommand{\c}{PU}{R}{\81\126}% U+0156  
 15421 % U+0157 LATIN SMALL LETTER R WITH CEDILLA; rcedilla, rcommaaccent  
 15422 \DeclareTextCompositeCommand{\c}{PU}{r}{\81\127}% U+0157  
 15423 % U+0158 LATIN CAPITAL LETTER R WITH CARON; Rcaron  
 15424 \DeclareTextCompositeCommand{\v}{PU}{R}{\81\130}% U+0158  
 15425 % U+0159 LATIN SMALL LETTER R WITH CARON; rcaron  
 15426 \DeclareTextCompositeCommand{\v}{PU}{r}{\81\131}% U+0159  
 15427 % U+015A LATIN CAPITAL LETTER S WITH ACUTE; Sacute  
 15428 \DeclareTextCompositeCommand{\'}{PU}{S}{\81\132}% U+015A  
 15429 % U+015B LATIN SMALL LETTER S WITH ACUTE; sacute  
 15430 \DeclareTextCompositeCommand{\'}{PU}{s}{\81\133}% U+015B  
 15431 % U+015C LATIN CAPITAL LETTER S WITH CIRCUMFLEX; Scircumflex  
 15432 \DeclareTextCompositeCommand{\^}{PU}{S}{\81\134}% U+015C  
 15433 % U+015D LATIN SMALL LETTER S WITH CIRCUMFLEX; scircumflex  
 15434 \DeclareTextCompositeCommand{\^}{PU}{s}{\81\135}% U+015D  
 15435 % U+015E LATIN CAPITAL LETTER S WITH CEDILLA; Scedilla  
 15436 \DeclareTextCompositeCommand{\c}{PU}{S}{\81\136}% U+015E  
 15437 % U+015F LATIN SMALL LETTER S WITH CEDILLA; scedilla  
 15438 \DeclareTextCompositeCommand{\c}{PU}{s}{\81\137}% U+015F  
 15439 % U+0160 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
 15440 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\140}% U+0160  
 15441 % U+0161 LATIN SMALL LETTER T WITH CARON; tcaron  
 15442 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\141}% U+0161  
 15443 % U+0162 LATIN CAPITAL LETTER T WITH CEDILLA; Tcedilla, Tcommaac-  
 cent  
 15444 \DeclareTextCompositeCommand{\c}{PU}{T}{\81\142}% U+0162  
 15445 % U+0163 LATIN SMALL LETTER T WITH CEDILLA; tcedilla, tcommaaccent  
 15446 \DeclareTextCompositeCommand{\c}{PU}{t}{\81\143}% U+0163  
 15447 % U+0164 LATIN CAPITAL LETTER T WITH CARON; Tcaron  
 15448 \DeclareTextCompositeCommand{\v}{PU}{T}{\81\144}% U+0164  
 15449 % U+0165 LATIN SMALL LETTER T WITH CARON; tcaron

15450 \DeclareTextCompositeCommand{\v}{PU}{t}{\81\145}% U+0165  
15451 % U+0166 LATIN CAPITAL LETTER T WITH STROKE; Tbar  
15452 \DeclareTextCommand{\textTslash}{PU}{\81\146}% U+0166  
15453 % U+0167 LATIN SMALL LETTER T WITH STROKE; tbar  
15454 \DeclareTextCommand{\texttslash}{PU}{\81\147}% U+0167  
15455 % U+0168 LATIN CAPITAL LETTER U WITH TILDE; Utilde  
15456 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}% U+0168  
15457 % U+0169 LATIN SMALL LETTER U WITH TILDE; utilde  
15458 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}% U+0169  
15459 % U+016A LATIN CAPITAL LETTER U WITH MACRON; Umacron  
15460 \DeclareTextCompositeCommand{\=}{PU}{U}{\81\152}% U+016A  
15461 % U+016B LATIN SMALL LETTER U WITH MACRON; umacron  
15462 \DeclareTextCompositeCommand{\=}{PU}{u}{\81\153}% U+016B  
15463 % U+016C LATIN CAPITAL LETTER U WITH BREVE; Ubreve  
15464 \DeclareTextCompositeCommand{\u}{PU}{U}{\81\154}% U+016C  
15465 % U+016D LATIN SMALL LETTER U WITH BREVE; ubreve  
15466 \DeclareTextCompositeCommand{\u}{PU}{u}{\81\155}% U+016D  
15467 % U+016E LATIN CAPITAL LETTER U WITH RING ABOVE; Uring  
15468 \DeclareTextCompositeCommand{\r}{PU}{U}{\81\156}% U+016E  
15469 % U+016F LATIN SMALL LETTER U WITH RING ABOVE; uring  
15470 \DeclareTextCompositeCommand{\r}{PU}{u}{\81\157}% U+016F  
15471 % U+0170 LATIN CAPITAL LETTER U WITH DOUBLE ACUTE; Udbla-  
cute, Uhungarumlaut  
15472 \DeclareTextCompositeCommand{\H}{PU}{U}{\81\160}% U+0170  
15473 % U+0171 LATIN SMALL LETTER U WITH DOUBLE ACUTE; udbla-  
cute, uhungarumlaut  
15474 \DeclareTextCompositeCommand{\H}{PU}{u}{\81\161}% U+0171  
15475 % U+0172 LATIN CAPITAL LETTER U WITH OGONEK; Uogonek  
15476 \DeclareTextCompositeCommand{\k}{PU}{U}{\81\162}% U+0172  
15477 % U+0173 LATIN SMALL LETTER U WITH OGONEK; uogonek  
15478 \DeclareTextCompositeCommand{\k}{PU}{u}{\81\163}% U+0173  
15479 % U+0174 LATIN CAPITAL LETTER W WITH CIRCUMFLEX; Wcircumflex  
15480 \DeclareTextCompositeCommand{\^}{PU}{W}{\81\164}% U+0174  
15481 % U+0175 LATIN SMALL LETTER W WITH CIRCUMFLEX; wcircumflex  
15482 \DeclareTextCompositeCommand{\^}{PU}{w}{\81\165}% U+0175  
15483 % U+0176 LATIN CAPITAL LETTER Y WITH CIRCUMFLEX; Ycircumflex  
15484 \DeclareTextCompositeCommand{\^}{PU}{Y}{\81\166}% U+0176  
15485 % U+0177 LATIN SMALL LETTER Y WITH CIRCUMFLEX; ycircumflex  
15486 \DeclareTextCompositeCommand{\^}{PU}{y}{\81\167}% U+0177  
15487 % U+0178 LATIN CAPITAL LETTER Y WITH DIAERESIS; Ydieresis  
15488 \DeclareTextCompositeCommand{\"}{PU}{Y}{\81\170}% U+0178  
15489 % U+0179 LATIN CAPITAL LETTER Z WITH ACUTE; Zacute  
15490 \DeclareTextCompositeCommand{\'}{PU}{Z}{\81\171}% U+0179  
15491 % U+017A LATIN SMALL LETTER Z WITH ACUTE; zacute  
15492 \DeclareTextCompositeCommand{\'}{PU}{z}{\81\172}% U+017A  
15493 % U+017B LATIN CAPITAL LETTER Z WITH DOT ABOVE; Zdot, Zdotaccent  
15494 \DeclareTextCompositeCommand{\.}{PU}{Z}{\81\173}% U+017B  
15495 % U+017C LATIN SMALL LETTER Z WITH DOT ABOVE; zdot, zdotaccent  
15496 \DeclareTextCompositeCommand{\.}{PU}{z}{\81\174}% U+017C  
15497 % U+017D LATIN CAPITAL LETTER Z WITH CARON; Zcaron  
15498 \DeclareTextCompositeCommand{\v}{PU}{Z}{\81\175}% U+017D  
15499 % U+017E LATIN SMALL LETTER Z WITH CARON; zcaron  
15500 \DeclareTextCompositeCommand{\v}{PU}{z}{\81\176}% U+017E  
15501 % U+017F LATIN SMALL LETTER LONG S; longs, slong  
15502 \DeclareTextCommand{\textlong}{PU}{\81\177}% U+017F

## 50.2.5 Latin Extended-B: U+0180 to U+024F



15503 % U+0192 LATIN SMALL LETTER F WITH HOOK; florin  
15504 \DeclareTextCommand{\textflorin}{PU}{\81\222}% U+0192  
15505 % U+01CD LATIN CAPITAL LETTER A WITH CARON; Acaron  
15506 \DeclareTextCompositeCommand{\v}{PU}{A}{\81\315}% U+01CD  
15507 % U+01CE LATIN SMALL LETTER A WITH CARON; acaron  
15508 \DeclareTextCompositeCommand{\v}{PU}{a}{\81\316}% U+01CE  
15509 % U+01CF LATIN CAPITAL LETTER I WITH CARON; Icaron  
15510 \DeclareTextCompositeCommand{\v}{PU}{I}{\81\317}% U+01CF  
15511 % U+01D0 LATIN SMALL LETTER I WITH CARON; icaron  
15512 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
15513 \DeclareTextCompositeCommand{\v}{PU}{i}{\81\320}% U+01D0  
15514 % U+01D1 LATIN CAPITAL LETTER O WITH CARON; Ocaron  
15515 \DeclareTextCompositeCommand{\v}{PU}{O}{\81\321}% U+01D1  
15516 % U+01D2 LATIN SMALL LETTER O WITH CARON; ocaron  
15517 \DeclareTextCompositeCommand{\v}{PU}{o}{\81\322}% U+01D2  
15518 % U+01D3 LATIN CAPITAL LETTER U WITH CARON; Ucaron  
15519 \DeclareTextCompositeCommand{\v}{PU}{U}{\81\323}% U+01D3  
15520 % U+01D4 LATIN SMALL LETTER U WITH CARON; ucaron  
15521 \DeclareTextCompositeCommand{\v}{PU}{u}{\81\324}% U+01D4  
15522 % U+01E4 LATIN CAPITAL LETTER G WITH STROKE; Gstroke  
15523 \DeclareTextCommand{\textGslash}{PU}{\81\344}% U+01E4  
15524 % U+01E5 LATIN SMALL LETTER G WITH STROKE; gstroke  
15525 \DeclareTextCommand{\textgslash}{PU}{\81\345}% U+01E5  
15526 % U+01E6 LATIN CAPITAL LETTER G WITH CARON; Gcaron  
15527 \DeclareTextCompositeCommand{\v}{PU}{G}{\81\346}% U+01E6  
15528 % U+01E7 LATIN SMALL LETTER G WITH CARON; gcaron  
15529 \DeclareTextCompositeCommand{\v}{PU}{g}{\81\347}% U+01E7  
15530 % U+01E8 LATIN CAPITAL LETTER K WITH CARON; Kcaron  
15531 \DeclareTextCompositeCommand{\v}{PU}{K}{\81\350}% U+01E8  
15532 % U+01E9 LATIN SMALL LETTER K WITH CARON; kcaron  
15533 \DeclareTextCompositeCommand{\v}{PU}{k}{\81\351}% U+01E9  
15534 % U+01EA LATIN CAPITAL LETTER O WITH OGONEK; Oogonek  
15535 \DeclareTextCompositeCommand{\k}{PU}{O}{\81\352}% U+01EA  
15536 % U+01EB LATIN SMALL LETTER O WITH OGONEK; oogonek  
15537 \DeclareTextCompositeCommand{\k}{PU}{o}{\81\353}% U+01EB  
15538 % U+01F0 LATIN SMALL LETTER J WITH CARON; jcaron  
15539 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15540 \DeclareTextCompositeCommand{\v}{PU}{j}{\81\360}% U+01F0  
15541 % U+01F4 LATIN CAPITAL LETTER G WITH ACUTE; Gacute  
15542 \DeclareTextCompositeCommand{\'}{PU}{G}{\81\364}% U+01F4  
15543 % U+01F5 LATIN SMALL LETTER G WITH ACUTE; gacute  
15544 \DeclareTextCompositeCommand{\'}{PU}{g}{\81\365}% U+01F5  
15545 % U+01F8 LATIN CAPITAL LETTER N WITH GRAVE  
15546 \DeclareTextCompositeCommand{\`}{PU}{N}{\81\370}% U+01F8  
15547 % U+01F9 LATIN SMALL LETTER N WITH GRAVE  
15548 \DeclareTextCompositeCommand{\`}{PU}{n}{\81\371}% U+01F9  
15549 % U+01FC LATIN CAPITAL LETTER AE WITH ACUTE; AEacute  
15550 \DeclareTextCompositeCommand{\'}{PU}{\AE}{\81\374}% U+01FC  
15551 % U+01FD LATIN SMALL LETTER AE WITH ACUTE; aeacute  
15552 \DeclareTextCompositeCommand{\'}{PU}{\ae}{\81\375}% U+01FD  
15553 % U+01FE LATIN CAPITAL LETTER O WITH STROKE AND ACUTE; \*Oslashacute, Ostrokeacute  
15554 \DeclareTextCompositeCommand{\'}{PU}{\O}{\81\376}% U+01FE  
15555 % U+01FF LATIN SMALL LETTER O WITH STROKE AND ACUTE; \*oslashacute, ostrokeacute  
15556 \DeclareTextCompositeCommand{\'}{PU}{\o}{\81\377}% U+01FF  
15557 % U+0200 LATIN CAPITAL LETTER A WITH DOUBLE GRAVE; Adblgrave

15558 \DeclareTextCompositeCommand{\G}{PU}{A}{\82\000}% U+0200  
 15559 % U+0201 LATIN SMALL LETTER A WITH DOUBLE GRAVE; adblgrave  
 15560 \DeclareTextCompositeCommand{\G}{PU}{a}{\82\001}% U+0201  
 15561 % U+0204 LATIN CAPITAL LETTER E WITH DOUBLE GRAVE; Edblgrave  
 15562 \DeclareTextCompositeCommand{\G}{PU}{E}{\82\004}% U+0204  
 15563 % U+0205 LATIN SMALL LETTER E WITH DOUBLE GRAVE; edblgrave  
 15564 \DeclareTextCompositeCommand{\G}{PU}{e}{\82\005}% U+0205  
 15565 % U+0208 LATIN CAPITAL LETTER I WITH DOUBLE GRAVE; idblgrave  
 15566 \DeclareTextCompositeCommand{\G}{PU}{I}{\82\010}% U+0208  
 15567 % U+0209 LATIN SMALL LETTER I WITH DOUBLE GRAVE; idblgrave  
 15568 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
 15569 \DeclareTextCompositeCommand{\G}{PU}{i}{\82\011}% U+0209  
 15570 % U+020C LATIN CAPITAL LETTER O WITH DOUBLE GRAVE; Odblgrave  
 15571 \DeclareTextCompositeCommand{\G}{PU}{O}{\82\014}% U+020C  
 15572 % U+020D LATIN SMALL LETTER O WITH DOUBLE GRAVE; odblgrave  
 15573 \DeclareTextCompositeCommand{\G}{PU}{o}{\82\015}% U+020D  
 15574 % U+0210 LATIN CAPITAL LETTER R WITH DOUBLE GRAVE; Rdblgrave  
 15575 \DeclareTextCompositeCommand{\G}{PU}{R}{\82\020}% U+0210  
 15576 % U+0211 LATIN SMALL LETTER R WITH DOUBLE GRAVE; rdblgrave  
 15577 \DeclareTextCompositeCommand{\G}{PU}{r}{\82\021}% U+0211  
 15578 % U+0214 LATIN CAPITAL LETTER U WITH DOUBLE GRAVE; Udblgrave  
 15579 \DeclareTextCompositeCommand{\G}{PU}{U}{\82\024}% U+0214  
 15580 % U+0215 LATIN SMALL LETTER U WITH DOUBLE GRAVE; udblgrave  
 15581 \DeclareTextCompositeCommand{\G}{PU}{u}{\82\025}% U+0215  
 15582 % U+021E LATIN CAPITAL LETTER H WITH CARON  
 15583 \DeclareTextCompositeCommand{\v}{PU}{H}{\82\036}% U+021E  
 15584 % U+021F LATIN SMALL LETTER H WITH CARON  
 15585 \DeclareTextCompositeCommand{\v}{PU}{h}{\82\037}% U+021F  
 15586 % U+0226 LATIN CAPITAL LETTER A WITH DOT ABOVE  
 15587 \DeclareTextCompositeCommand{\.}{PU}{A}{\82\046}% U+0226  
 15588 % U+0227 LATIN SMALL LETTER A WITH DOT ABOVE  
 15589 \DeclareTextCompositeCommand{\.}{PU}{a}{\82\047}% U+0227  
 15590 % U+0228 LATIN CAPITAL LETTER E WITH CEDILLA  
 15591 \DeclareTextCompositeCommand{\c}{PU}{E}{\82\050}% U+0228  
 15592 % U+0229 LATIN SMALL LETTER E WITH CEDILLA  
 15593 \DeclareTextCompositeCommand{\c}{PU}{e}{\82\051}% U+0229  
 15594 % U+022E LATIN CAPITAL LETTER O WITH DOT ABOVE  
 15595 \DeclareTextCompositeCommand{\.}{PU}{O}{\82\056}% U+022E  
 15596 % U+022F LATIN SMALL LETTER O WITH DOT ABOVE  
 15597 \DeclareTextCompositeCommand{\.}{PU}{o}{\82\057}% U+022F  
 15598 % U+0232 LATIN CAPITAL LETTER Y WITH MACRON  
 15599 \DeclareTextCompositeCommand{\=}{PU}{Y}{\82\062}% U+0232  
 15600 % U+0233 LATIN SMALL LETTER Y WITH MACRON  
 15601 \DeclareTextCompositeCommand{\=}{PU}{y}{\82\063}% U+0233  
 15602 % U+0237 LATIN SMALL LETTER DOTLESS J  
 15603 \DeclareTextCommand{\j}{PU}{\82\067}% U+0237

## 50.2.6 Spacing Modifier Letters: U+02B0 to U+02FF

15604 % U+02C7 CARON; caron  
 15605 \DeclareTextCommand{\textasciicaron}{PU}{\82\307}% U+02C7  
 15606 % U+02D8 BREVE; breve  
 15607 \DeclareTextCommand{\textasciibreve}{PU}{\82\330}% U+02D8  
 15608 % U+02D9 DOT ABOVE; dotaccent  
 15609 \DeclareTextCommand{\textdotaccent}{PU}{\82\331}% U+02D9  
 15610 % U+02DA RING ABOVE; ring  
 15611 \DeclareTextCommand{\textring}{PU}{\82\332}% U+02DA  
 15612 % U+02DB OGONEK; ogonek

15613 \DeclareTextCommand{\textogonek}{PU}{\82\333}% U+02DB  
 15614 % U+02DC SMALL TILDE; ilde, \*tilde  
 15615 \DeclareTextCommand{\texttilde}{PU}{\82\334}% U+02DC  
 15616 % U+02DD DOUBLE ACUTE ACCENT; hungarumlaut  
 15617 \DeclareTextCommand{\texthungarumlaut}{PU}{\82\335}% U+02DD  
 15618 \DeclareTextCommand{\textacutedbl}{PU}{\texthungarumlaut}% U+02DD  
 15619 % U+02F5 MODIFIER LETTER MIDDLE DOUBLE GRAVE ACCENT  
 15620 \DeclareTextCommand{\textgravedbl}{PU}{\82\365}% U+02F5  
 15621 % U+02F7 MODIFIER LETTER LOW TILDE  
 15622 \DeclareTextCommand{\texttildelow}{PU}{\82\367}% U+02F7

### 50.2.7 Combining Diacritical Marks: U+0300 to U+036F

15623 % U+030F COMBINING DOUBLE GRAVE ACCENT; dblgravecmb  
 15624 \DeclareTextCommand{\textdoublegrave}{PU}{\83\017}% U+030F  
 15625 % U+0311 COMBINING INVERTED BREVE; breveinvertedcmb  
 15626 \DeclareTextCommand{\textnewtie}{PU}{\83\021}% U+0311  
 15627 % U+0323 COMBINING DOT BELOW; dotbelowcmb, \*dotbelowcmb  
 15628 \DeclareTextCommand{\textdotbelow}{PU}{\83\043}% U+0323  
 15629 % U+0331 COMBINING MACRON BELOW; macronbelowcmb  
 15630 \DeclareTextCommand{\textmacronbelow}{PU}{\83\061}% U+0331  
 15631 % U+0361 COMBINING DOUBLE INVERTED BREVE; breveinverteddou-  
 blecmb  
 15632 \DeclareTextCommand{\texttie}{PU}{\83\141}% U+0361

### 50.2.8 Greek and Coptic: U+0370 to U+03FF

15633 % U+0374 GREEK NUMERAL SIGN; numeralsigngreek  
 15634 \DeclareTextCommand{\textnumeralsigngreek}{PU}{\83\164}% U+0374  
 15635 % U+0375 GREEK LOWER NUMERAL SIGN; numeralsignlowergreek  
 15636 \DeclareTextCommand{\textnumeralsignlowergreek}{PU}{\83\165}% U+0375  
 15637 % U+0386 GREEK CAPITAL LETTER ALPHA WITH TONOS; Alphatonos  
 15638 \DeclareTextCompositeCommand{\'}{PU}{\textAlpha}{\83\206}% U+0386  
 15639 % U+0388 GREEK CAPITAL LETTER EPSILON WITH TONOS; Epsilontonos  
 15640 \DeclareTextCompositeCommand{\'}{PU}{\textEpsilon}{\83\210}% U+0388  
 15641 % U+0389 GREEK CAPITAL LETTER ETA WITH TONOS; Etatonos  
 15642 \DeclareTextCompositeCommand{\'}{PU}{\textEta}{\83\211}% U+0389  
 15643 % U+038A GREEK CAPITAL LETTER IOTA WITH TONOS; Iotatonos  
 15644 \DeclareTextCompositeCommand{\'}{PU}{\textIota}{\83\212}% U+038A  
 15645 % U+038C GREEK CAPITAL LETTER OMICRON WITH TONOS; Omi-  
 cronos  
 15646 \DeclareTextCompositeCommand{\'}{PU}{\textOmicron}{\83\214}% U+038C  
 15647 % U+038E GREEK CAPITAL LETTER UPSILON WITH TONOS; Upsilonontonos  
 15648 \DeclareTextCompositeCommand{\'}{PU}{\textUpsilon}{\83\216}% U+038E  
 15649 % U+038F GREEK CAPITAL LETTER OMEGA WITH TONOS; Omegatonos  
 15650 \DeclareTextCompositeCommand{\'}{PU}{\textOmega}{\83\217}% U+038F  
 15651 % U+0390 GREEK SMALL LETTER IOTA WITH DIALYTIKA AND TONOS; io-  
 tadiesistonos  
 15652 \DeclareTextCompositeCommand{\'}{PU}{\textIotadiesis}{\83\220}% U+0390  
 15653 % U+0391 GREEK CAPITAL LETTER ALPHA; Alpha  
 15654 \DeclareTextCommand{\textAlpha}{PU}{\83\221}% U+0391  
 15655 % U+0392 GREEK CAPITAL LETTER BETA; Beta  
 15656 \DeclareTextCommand{\textBeta}{PU}{\83\222}% U+0392  
 15657 % U+0393 GREEK CAPITAL LETTER GAMMA; Gamma  
 15658 \DeclareTextCommand{\textGamma}{PU}{\83\223}% U+0393  
 15659 % U+0394 GREEK CAPITAL LETTER DELTA; Deltagreek, \*Delta  
 15660 \DeclareTextCommand{\textDelta}{PU}{\83\224}% U+0394  
 15661 % U+0395 GREEK CAPITAL LETTER EPSILON; Epsilon  
 15662 \DeclareTextCommand{\textEpsilon}{PU}{\83\225}% U+0395

15663 % U+0396 GREEK CAPITAL LETTER ZETA; Zeta  
15664 \DeclareTextCommand{\textZeta}{PU}{\83\226}% U+0396  
15665 % U+0397 GREEK CAPITAL LETTER ETA; Eta  
15666 \DeclareTextCommand{\textEta}{PU}{\83\227}% U+0397  
15667 % U+0398 GREEK CAPITAL LETTER THETA; Theta  
15668 \DeclareTextCommand{\textTheta}{PU}{\83\230}% U+0398  
15669 % U+0399 GREEK CAPITAL LETTER IOTA; Iota  
15670 \DeclareTextCommand{\textIota}{PU}{\83\231}% U+0399  
15671 % U+039A GREEK CAPITAL LETTER KAPPA; Kappa  
15672 \DeclareTextCommand{\textKappa}{PU}{\83\232}% U+039A  
15673 % U+039B GREEK CAPITAL LETTER LAMDA; Lambda  
15674 \DeclareTextCommand{\textLambda}{PU}{\83\233}% U+039B  
15675 % U+039C GREEK CAPITAL LETTER MU; Mu  
15676 \DeclareTextCommand{\textMu}{PU}{\83\234}% U+039C  
15677 % U+039D GREEK CAPITAL LETTER NU; Nu  
15678 \DeclareTextCommand{\textNu}{PU}{\83\235}% U+039D  
15679 % U+039E GREEK CAPITAL LETTER XI; Xi  
15680 \DeclareTextCommand{\textXi}{PU}{\83\236}% U+039E  
15681 % U+039F GREEK CAPITAL LETTER OMICRON; Omicron  
15682 \DeclareTextCommand{\textOmicron}{PU}{\83\237}% U+039F  
15683 % U+03A0 GREEK CAPITAL LETTER PI; Pi  
15684 \DeclareTextCommand{\textPi}{PU}{\83\240}% U+03A0  
15685 % U+03A1 GREEK CAPITAL LETTER RHO; Rho  
15686 \DeclareTextCommand{\textRho}{PU}{\83\241}% U+03A1  
15687 % U+03A3 GREEK CAPITAL LETTER SIGMA; Sigma  
15688 \DeclareTextCommand{\textSigma}{PU}{\83\243}% U+03A3  
15689 % U+03A4 GREEK CAPITAL LETTER TAU; Tau  
15690 \DeclareTextCommand{\textTau}{PU}{\83\244}% U+03A4  
15691 % U+03A5 GREEK CAPITAL LETTER UPSILON; Upsilon  
15692 \DeclareTextCommand{\textUpsilon}{PU}{\83\245}% U+03A5  
15693 % U+03A6 GREEK CAPITAL LETTER PHI; Phi  
15694 \DeclareTextCommand{\textPhi}{PU}{\83\246}% U+03A6  
15695 % U+03A7 GREEK CAPITAL LETTER CHI; Chi  
15696 \DeclareTextCommand{\textChi}{PU}{\83\247}% U+03A7  
15697 % U+03A8 GREEK CAPITAL LETTER PSI; Psi  
15698 \DeclareTextCommand{\textPsi}{PU}{\83\250}% U+03A8  
15699 % U+03A9 GREEK CAPITAL LETTER OMEGA; Omegagreek, \*Omega  
15700 \DeclareTextCommand{\textOmega}{PU}{\83\251}% U+03A9  
15701 % U+03AA GREEK CAPITAL LETTER IOTA WITH DIALYTIKA; Iotadieresis  
15702 \DeclareTextCommand{\textIotadieresis}{PU}{\83\252}% U+03AA  
15703 \DeclareTextCompositeCommand{"}{PU}{\textIota}{\83\252}% U+03AA  
15704 % U+03AB GREEK CAPITAL LETTER UPSILON WITH DIALYTIKA; Up-  
silondieresis  
15705 \DeclareTextCompositeCommand{"}{PU}{\textUpsilon}{\83\253}% U+03AB  
15706 % U+03AC GREEK SMALL LETTER ALPHA WITH TONOS; alphanos  
15707 \DeclareTextCompositeCommand{'}{PU}{\textalpha}{\83\254}% U+03AC  
15708 % U+03AD GREEK SMALL LETTER EPSILON WITH TONOS; epsilon  
15709 \DeclareTextCompositeCommand{'}{PU}{\textepsilon}{\83\255}% U+03AD  
15710 % U+03AE GREEK SMALL LETTER ETA WITH TONOS; etanos  
15711 \DeclareTextCompositeCommand{'}{PU}{\texteta}{\83\256}% U+03AE  
15712 % U+03AF GREEK SMALL LETTER IOTA WITH TONOS; iotanos  
15713 \DeclareTextCompositeCommand{'}{PU}{\textiota}{\83\257}% U+03AF  
15714 % U+03B0 GREEK SMALL LETTER UPSILON WITH DIALYTIKA AND TONOS; up-  
silondieresis  
15715 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\260}% U+03B0  
15716 % U+03B1 GREEK SMALL LETTER ALPHA; alpha  
15717 \DeclareTextCommand{\textalpha}{PU}{\83\261}% U+03B1

15718 % U+03B2 GREEK SMALL LETTER BETA; beta  
15719 \DeclareTextCommand{\textbeta}{PU}{\83\262}% U+03B2  
15720 % U+03B3 GREEK SMALL LETTER GAMMA; gamma  
15721 \DeclareTextCommand{\textgamma}{PU}{\83\263}% U+03B3  
15722 % U+03B4 GREEK SMALL LETTER DELTA; delta  
15723 \DeclareTextCommand{\textdelta}{PU}{\83\264}% U+03B4  
15724 % U+03B5 GREEK SMALL LETTER EPSILON; epsilon  
15725 \DeclareTextCommand{\textepsilon}{PU}{\83\265}% U+03B5  
15726 % U+03B6 GREEK SMALL LETTER ZETA; zeta  
15727 \DeclareTextCommand{\textzeta}{PU}{\83\266}% U+03B6  
15728 % U+03B7 GREEK SMALL LETTER ETA; eta  
15729 \DeclareTextCommand{\texteta}{PU}{\83\267}% U+03B7  
15730 % U+03B8 GREEK SMALL LETTER THETA; theta  
15731 \DeclareTextCommand{\texttheta}{PU}{\83\270}% U+03B8  
15732 % U+03B9 GREEK SMALL LETTER IOTA; iota  
15733 \DeclareTextCommand{\textiota}{PU}{\83\271}% U+03B9  
15734 % U+03BA GREEK SMALL LETTER KAPPA; kappa  
15735 \DeclareTextCommand{\textkappa}{PU}{\83\272}% U+03BA  
15736 % U+03BB GREEK SMALL LETTER LAMDA; lambda  
15737 \DeclareTextCommand{\textlambda}{PU}{\83\273}% U+03BB  
15738 % U+03BC GREEK SMALL LETTER MU; mugreek, \*mu  
15739 \DeclareTextCommand{\textmugreek}{PU}{\83\274}% U+03BC  
15740 % U+03BD GREEK SMALL LETTER NU; nu  
15741 \DeclareTextCommand{\textnu}{PU}{\83\275}% U+03BD  
15742 % U+03BE GREEK SMALL LETTER XI; xi  
15743 \DeclareTextCommand{\textxi}{PU}{\83\276}% U+03BE  
15744 % U+03BF GREEK SMALL LETTER OMICRON; omicron  
15745 \DeclareTextCommand{\textomicron}{PU}{\83\277}% U+03BF  
15746 % U+03C0 GREEK SMALL LETTER PI; pi  
15747 \DeclareTextCommand{\textpi}{PU}{\83\300}% U+03C0  
15748 % U+03C1 GREEK SMALL LETTER RHO; rho  
15749 \DeclareTextCommand{\textrho}{PU}{\83\301}% U+03C1  
15750 % U+03C2 GREEK SMALL LETTER FINAL SIGMA; \*sigma1, sigmafinal  
15751 \DeclareTextCommand{\textvarsigma}{PU}{\83\302}% U+03C2  
15752 % U+03C3 GREEK SMALL LETTER SIGMA; sigma  
15753 \DeclareTextCommand{\textsigma}{PU}{\83\303}% U+03C3  
15754 % U+03C4 GREEK SMALL LETTER TAU; tau  
15755 \DeclareTextCommand{\texttau}{PU}{\83\304}% U+03C4  
15756 % U+03C5 GREEK SMALL LETTER UPSILON; upsilon  
15757 \DeclareTextCommand{\textupsilon}{PU}{\83\305}% U+03C5  
15758 % U+03C6 GREEK SMALL LETTER PHI; phi  
15759 \DeclareTextCommand{\textphi}{PU}{\83\306}% U+03C6  
15760 % U+03C7 GREEK SMALL LETTER CHI; chi  
15761 \DeclareTextCommand{\textchi}{PU}{\83\307}% U+03C7  
15762 % U+03C8 GREEK SMALL LETTER PSI; psi  
15763 \DeclareTextCommand{\textpsi}{PU}{\83\310}% U+03C8  
15764 % U+03C9 GREEK SMALL LETTER OMEGA; omega  
15765 \DeclareTextCommand{\textomega}{PU}{\83\311}% U+03C9  
15766 % U+03CA GREEK SMALL LETTER IOTA WITH DIALYTIKA; iotadieresis  
15767 \DeclareTextCompositeCommand{"}{PU}{\textiota}{\83\312}% U+03CA  
15768 % U+03CB GREEK SMALL LETTER UPSILON WITH DIALYTIKA; up-  
silondieresis  
15769 \DeclareTextCompositeCommand{"}{PU}{\textupsilon}{\83\313}% U+03CB  
15770 % U+03CC GREEK SMALL LETTER OMICRON WITH TONOS; omicrontonos  
15771 \DeclareTextCompositeCommand{'}{PU}{\textomicron}{\83\314}% U+03CC  
15772 % U+03CD GREEK SMALL LETTER UPSILON WITH TONOS; upsilontonos  
15773 \DeclareTextCommand{\textupsilonacute}{PU}{\83\315}% U+03CD

15774 \DeclareTextCompositeCommand{\'}{PU}{\textupsilon}{\83\315}% U+03CD  
 15775 % U+03CE GREEK SMALL LETTER OMEGA WITH TONOS; omegatonos  
 15776 \DeclareTextCompositeCommand{\'}{PU}{\textomega}{\83\316}% U+03CE  
 15777 % U+03DA GREEK LETTER STIGMA; Stigmagreek  
 15778 \DeclareTextCommand{\textStigmagreek}{PU}{\83\332}% U+03DA  
 15779 % U+03DB GREEK SMALL LETTER STIGMA  
 15780 \DeclareTextCommand{\textstigmagreek}{PU}{\83\333}% U+03DB  
 15781 % U+03DC GREEK LETTER DIGAMMA; Digammagreek  
 15782 \DeclareTextCommand{\textDigammagreek}{PU}{\83\334}% U+03DC  
 15783 % U+03DD GREEK SMALL LETTER DIGAMMA  
 15784 \DeclareTextCommand{\textdigammagreek}{PU}{\83\335}% U+03DD  
 15785 % U+03DE GREEK LETTER KOPPA; Koppagreek  
 15786 \DeclareTextCommand{\textKoppagreek}{PU}{\83\336}% U+03DE  
 15787 % U+03DF GREEK SMALL LETTER KOPPA  
 15788 \DeclareTextCommand{\textkoppagreek}{PU}{\83\337}% U+03DF  
 15789 % U+03E0 GREEK LETTER SAMPI; Sampigreek  
 15790 \DeclareTextCommand{\textSampigreek}{PU}{\83\340}% U+03E0  
 15791 % U+03E1 GREEK SMALL LETTER SAMPI  
 15792 \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.

15793 % U+0400 CYRILLIC CAPITAL LETTER IE WITH GRAVE  
 15794 \DeclareTextCompositeCommand{\'}{PU}{\CYRE}{\84\000}% U+0400  
 15795 % U+0401 CYRILLIC CAPITAL LETTER IO; Iocyrillic, \*afii10023  
 15796 \DeclareTextCommand{\CYRYO}{PU}{\84\001}% U+0401  
 15797 \DeclareTextCompositeCommand{\"}{PU}{\CYRE}{\84\001}% ???  
 15798 % U+0402 CYRILLIC CAPITAL LETTER DJE; Djecyrillic, \*afii10051  
 15799 \DeclareTextCommand{\CYRDJE}{PU}{\84\002}% U+0402  
 15800 % U+0403 CYRILLIC CAPITAL LETTER GJE; Gjecyrillic, \*afii10052  
 15801 \DeclareTextCompositeCommand{\'}{PU}{\CYRG}{\84\003}% U+0403  
 15802 % U+0404 CYRILLIC CAPITAL LETTER UKRAINIAN IE; Ecyrillic, \*afii10053  
 15803 \DeclareTextCommand{\CYRIE}{PU}{\84\004}% U+0404  
 15804 % U+0405 CYRILLIC CAPITAL LETTER DZE; Dzecyrillic, \*afii10054  
 15805 \DeclareTextCommand{\CYRDZE}{PU}{\84\005}% U+0405  
 15806 % U+0406 CYRILLIC CAPITAL LETTER BYELORUSSIAN-UKRAINIAN I; Icyrillic, \*afii10055  
 15807 \DeclareTextCommand{\CYRII}{PU}{\84\006}% U+0406  
 15808 % U+0407 CYRILLIC CAPITAL LETTER YI; Yicyrillic, \*afii10056  
 15809 \DeclareTextCommand{\CYRYI}{PU}{\84\007}% U+0407  
 15810 \DeclareTextCompositeCommand{\"}{PU}{\CYRII}{\84\007}% U+0407  
 15811 % U+0408 CYRILLIC CAPITAL LETTER JE; Jecyrillic, \*afii10057  
 15812 \DeclareTextCommand{\CYRJE}{PU}{\84\010}% U+0408  
 15813 % U+0409 CYRILLIC CAPITAL LETTER LJE; Ljecyrillic, \*afii10058  
 15814 \DeclareTextCommand{\CYRLJE}{PU}{\84\011}% U+0409  
 15815 % U+040A CYRILLIC CAPITAL LETTER NJE; Njecyrillic, \*afii10059  
 15816 \DeclareTextCommand{\CYRNJE}{PU}{\84\012}% U+040A  
 15817 % U+040B CYRILLIC CAPITAL LETTER TSHE; Tshecyrillic, \*afii10060  
 15818 \DeclareTextCommand{\CYRTSHE}{PU}{\84\013}% U+040B  
 15819 % U+040C CYRILLIC CAPITAL LETTER KJE; Kjecyrillic, \*afii10061  
 15820 \DeclareTextCompositeCommand{\'}{PU}{\CYRK}{\84\014}% U+040C  
 15821 % U+040D CYRILLIC CAPITAL LETTER I WITH GRAVE  
 15822 \DeclareTextCompositeCommand{\'}{PU}{\CYRI}{\84\015}% U+040D  
 15823 % U+040E CYRILLIC CAPITAL LETTER SHORT U; Ushortcyrillic, \*afii10062  
 15824 \DeclareTextCommand{\CYRUSHRT}{PU}{\84\016}% U+040E  
 15825 \DeclareTextCompositeCommand{\U}{PU}{\CYRU}{\84\016}% U+040E

15826 % U+040F CYRILLIC CAPITAL LETTER DZHE; Dzhecyrillic, \*afii10145  
 15827 \DeclareTextCommand{\CYRDZHE}{PU}{\84\017}% U+040F  
 15828 % U+0410 CYRILLIC CAPITAL LETTER A; Acyrillic, \*afii10017  
 15829 \DeclareTextCommand{\CYRA}{PU}{\84\020}% U+0410  
 15830 % U+0411 CYRILLIC CAPITAL LETTER BE; Becyrillic, \*afii10018  
 15831 \DeclareTextCommand{\CYRB}{PU}{\84\021}% U+0411  
 15832 % U+0412 CYRILLIC CAPITAL LETTER VE; Vecyrillic, \*afii10019  
 15833 \DeclareTextCommand{\CYRV}{PU}{\84\022}% U+0412  
 15834 % U+0413 CYRILLIC CAPITAL LETTER GHE; Gecyrillic, \*afii10020  
 15835 \DeclareTextCommand{\CYRG}{PU}{\84\023}% U+0413  
 15836 % U+0414 CYRILLIC CAPITAL LETTER DE; Decyrillic, \*afii10021  
 15837 \DeclareTextCommand{\CYRD}{PU}{\84\024}% U+0414  
 15838 % U+0415 CYRILLIC CAPITAL LETTER IE; Iecyrillic, \*afii10022  
 15839 \DeclareTextCommand{\CYRE}{PU}{\84\025}% U+0415  
 15840 % U+0416 CYRILLIC CAPITAL LETTER ZHE; Zhecyrillic, \*afii10024  
 15841 \DeclareTextCommand{\CYRZH}{PU}{\84\026}% U+0416  
 15842 % U+0417 CYRILLIC CAPITAL LETTER ZE; Zecyrillic, \*afii10025  
 15843 \DeclareTextCommand{\CYRZ}{PU}{\84\027}% U+0417  
 15844 % U+0418 CYRILLIC CAPITAL LETTER I; Iicyrillic, \*afii10026  
 15845 \DeclareTextCommand{\CYRI}{PU}{\84\030}% U+0418  
 15846 % U+0419 CYRILLIC CAPITAL LETTER SHORT I; Iishortcyrillic, \*afii10027  
 15847 \DeclareTextCommand{\CYRISHRT}{PU}{\84\031}% U+0419  
 15848 \DeclareTextCompositeCommand{\U}{PU}{\CYRI}{\84\031}% U+0419  
 15849 % U+041A CYRILLIC CAPITAL LETTER KA; Kacyrillic, \*afii10028  
 15850 \DeclareTextCommand{\CYRK}{PU}{\84\032}% U+041A  
 15851 % U+041B CYRILLIC CAPITAL LETTER EL; Elcyrillic, \*afii10029  
 15852 \DeclareTextCommand{\CYRL}{PU}{\84\033}% U+041B  
 15853 % U+041C CYRILLIC CAPITAL LETTER EM; Emcyrillic, \*afii10030  
 15854 \DeclareTextCommand{\CYRM}{PU}{\84\034}% U+041C  
 15855 % U+041D CYRILLIC CAPITAL LETTER EN; Encyrillic, \*afii10031  
 15856 \DeclareTextCommand{\CYRN}{PU}{\84\035}% U+041D  
 15857 % U+041E CYRILLIC CAPITAL LETTER O; Ocyrillic, \*afii10032  
 15858 \DeclareTextCommand{\CYRO}{PU}{\84\036}% U+041E  
 15859 % U+041F CYRILLIC CAPITAL LETTER PE; Pecyrillic, \*afii10033  
 15860 \DeclareTextCommand{\CYRP}{PU}{\84\037}% U+041F  
 15861 % U+0420 CYRILLIC CAPITAL LETTER ER; Ercyrillic, \*afii10034  
 15862 \DeclareTextCommand{\CYRR}{PU}{\84\040}% U+0420  
 15863 % U+0421 CYRILLIC CAPITAL LETTER ES; Escyrillic, \*afii10035  
 15864 \DeclareTextCommand{\CYRS}{PU}{\84\041}% U+0421  
 15865 % U+0422 CYRILLIC CAPITAL LETTER TE; Tecyrillic, \*afii10036  
 15866 \DeclareTextCommand{\CYRT}{PU}{\84\042}% U+0422  
 15867 % U+0423 CYRILLIC CAPITAL LETTER U; Ucyrillic, \*afii10037  
 15868 \DeclareTextCommand{\CYRU}{PU}{\84\043}% U+0423  
 15869 % U+0424 CYRILLIC CAPITAL LETTER EF; Efcyrillic, \*afii10038  
 15870 \DeclareTextCommand{\CYRF}{PU}{\84\044}% U+0424  
 15871 % U+0425 CYRILLIC CAPITAL LETTER HA; Khacyrillic, \*afii10039  
 15872 \DeclareTextCommand{\CYRH}{PU}{\84\045}% U+0425  
 15873 % U+0426 CYRILLIC CAPITAL LETTER TSE; Tsecyrillic, \*afii10040  
 15874 \DeclareTextCommand{\CYRC}{PU}{\84\046}% U+0426  
 15875 % U+0427 CYRILLIC CAPITAL LETTER CHE; Checyrillic, \*afii10041  
 15876 \DeclareTextCommand{\CYRCH}{PU}{\84\047}% U+0427  
 15877 % U+0428 CYRILLIC CAPITAL LETTER SHA; Shacyrillic, \*afii10042  
 15878 \DeclareTextCommand{\CYRSH}{PU}{\84\050}% U+0428  
 15879 % U+0429 CYRILLIC CAPITAL LETTER SHCHA; Shchacyrillic, \*afii10043  
 15880 \DeclareTextCommand{\CYRSHCH}{PU}{\84\051}% U+0429  
 15881 % U+042A CYRILLIC CAPITAL LETTER HARD SIGN; Hardsigncyrillic, \*afii10044  
 15882 \DeclareTextCommand{\CYRHRDSN}{PU}{\84\052}% U+042A

15883 % U+042B CYRILLIC CAPITAL LETTER YERU; Yericyrillic, \*afii10045  
15884 \DeclareTextCommand{\CYRERY}{PU}{\84\053}% U+042B  
15885 % U+042C CYRILLIC CAPITAL LETTER SOFT SIGN; Softsigncyrillic, \*afii10046  
15886 \DeclareTextCommand{\CYRSFTSN}{PU}{\84\054}% U+042C  
15887 % U+042D CYRILLIC CAPITAL LETTER E; Eversedcyrillic, \*afii10047  
15888 \DeclareTextCommand{\CYREREV}{PU}{\84\055}% U+042D  
15889 % U+042E CYRILLIC CAPITAL LETTER YU; IUcyrillic, \*afii10048  
15890 \DeclareTextCommand{\CYRYU}{PU}{\84\056}% U+042E  
15891 % U+042F CYRILLIC CAPITAL LETTER YA; IAcyrillic, \*afii10049  
15892 \DeclareTextCommand{\CYRYA}{PU}{\84\057}% U+042F  
15893 % U+0430 CYRILLIC SMALL LETTER A; acyrillic, \*afii10065  
15894 \DeclareTextCommand{\cyra}{PU}{\84\060}% U+0430  
15895 % U+0431 CYRILLIC SMALL LETTER BE; \*afii10066, becyrillic  
15896 \DeclareTextCommand{\cyrb}{PU}{\84\061}% U+0431  
15897 % U+0432 CYRILLIC SMALL LETTER VE; \*afii10067, vecyrillic  
15898 \DeclareTextCommand{\cyrv}{PU}{\84\062}% U+0432  
15899 % U+0433 CYRILLIC SMALL LETTER GHE; \*afii10068, gecyrillic  
15900 \DeclareTextCommand{\cyrg}{PU}{\84\063}% U+0433  
15901 % U+0434 CYRILLIC SMALL LETTER DE; \*afii10069, decyrillic  
15902 \DeclareTextCommand{\cyrd}{PU}{\84\064}% U+0434  
15903 % U+0435 CYRILLIC SMALL LETTER IE; \*afii10070, iecyrillic  
15904 \DeclareTextCommand{\cyre}{PU}{\84\065}% U+0435  
15905 % U+0436 CYRILLIC SMALL LETTER ZHE; \*afii10072, zhecyrillic  
15906 \DeclareTextCommand{\cyrz}{PU}{\84\066}% U+0436  
15907 % U+0437 CYRILLIC SMALL LETTER ZE; \*afii10073, zecyrillic  
15908 \DeclareTextCommand{\cyrz}{PU}{\84\067}% U+0437  
15909 % U+0438 CYRILLIC SMALL LETTER I; \*afii10074, iicyrillic  
15910 \DeclareTextCommand{\cyri}{PU}{\84\070}% U+0438  
15911 % U+0439 CYRILLIC SMALL LETTER SHORT I; \*afii10075, iishortcyrillic  
15912 \DeclareTextCommand{\cyrishrt}{PU}{\84\071}% U+0439  
15913 \DeclareTextCompositeCommand{\U}{PU}{\cyri}{\84\071}% U+0439  
15914 % U+043A CYRILLIC SMALL LETTER KA; \*afii10076, kacyrillic  
15915 \DeclareTextCommand{\cyrk}{PU}{\84\072}% U+043A  
15916 % U+043B CYRILLIC SMALL LETTER EL; \*afii10077, elcyrillic  
15917 \DeclareTextCommand{\cyrl}{PU}{\84\073}% U+043B  
15918 % U+043C CYRILLIC SMALL LETTER EM; \*afii10078, emcyrillic  
15919 \DeclareTextCommand{\cyrm}{PU}{\84\074}% U+043C  
15920 % U+043D CYRILLIC SMALL LETTER EN; \*afii10079, encyrillic  
15921 \DeclareTextCommand{\cyrn}{PU}{\84\075}% U+043D  
15922 % U+043E CYRILLIC SMALL LETTER O; \*afii10080, ocyrillic  
15923 \DeclareTextCommand{\cyro}{PU}{\84\076}% U+043E  
15924 % U+043F CYRILLIC SMALL LETTER PE; \*afii10081, pecyrillic  
15925 \DeclareTextCommand{\cyrp}{PU}{\84\077}% U+043F  
15926 % U+0440 CYRILLIC SMALL LETTER ER; \*afii10082, ercyrillic  
15927 \DeclareTextCommand{\cyrr}{PU}{\84\100}% U+0440  
15928 % U+0441 CYRILLIC SMALL LETTER ES; \*afii10083, escyrillic  
15929 \DeclareTextCommand{\cyrs}{PU}{\84\101}% U+0441  
15930 % U+0442 CYRILLIC SMALL LETTER TE; \*afii10084, tecyrillic  
15931 \DeclareTextCommand{\cyrt}{PU}{\84\102}% U+0442  
15932 % U+0443 CYRILLIC SMALL LETTER U; \*afii10085, ucyrillic  
15933 \DeclareTextCommand{\cyru}{PU}{\84\103}% U+0443  
15934 % U+0444 CYRILLIC SMALL LETTER EF; \*afii10086, efcyrillic  
15935 \DeclareTextCommand{\cyrf}{PU}{\84\104}% U+0444  
15936 % U+0445 CYRILLIC SMALL LETTER HA; \*afii10087, khacyrillic  
15937 \DeclareTextCommand{\cyrh}{PU}{\84\105}% U+0445  
15938 % U+0446 CYRILLIC SMALL LETTER TSE; \*afii10088, tsecyrillic  
15939 \DeclareTextCommand{\cyrc}{PU}{\84\106}% U+0446



15940 % U+0447 CYRILLIC SMALL LETTER CHE; \*afii10089, checyrillic  
 15941 \DeclareTextCommand{\cyrch}{PU}{\84\107}% U+0447  
 15942 % U+0448 CYRILLIC SMALL LETTER SHA; \*afii10090, shacyrillic  
 15943 \DeclareTextCommand{\cyrsh}{PU}{\84\110}% U+0448  
 15944 % U+0449 CYRILLIC SMALL LETTER SHCHA; \*afii10091, shchacyrillic  
 15945 \DeclareTextCommand{\cyrshch}{PU}{\84\111}% U+0449  
 15946 % U+044A CYRILLIC SMALL LETTER HARD SIGN; \*afii10092, hardsigncyril-  
 lic  
 15947 \DeclareTextCommand{\cyrhrdsn}{PU}{\84\112}% U+044A  
 15948 % U+044B CYRILLIC SMALL LETTER YERU; \*afii10093, yericyrillic  
 15949 \DeclareTextCommand{\cyrery}{PU}{\84\113}% U+044B  
 15950 % U+044C CYRILLIC SMALL LETTER SOFT SIGN; \*afii10094, softsigncyrillic  
 15951 \DeclareTextCommand{\cyrstsn}{PU}{\84\114}% U+044C  
 15952 % U+044D CYRILLIC SMALL LETTER E; \*afii10095, ereversedcyrillic  
 15953 \DeclareTextCommand{\cyrrev}{PU}{\84\115}% U+044D  
 15954 % U+044E CYRILLIC SMALL LETTER YU; \*afii10096, iucyrillic  
 15955 \DeclareTextCommand{\cyryu}{PU}{\84\116}% U+044E  
 15956 % U+044F CYRILLIC SMALL LETTER YA; \*afii10097, iacyrillic  
 15957 \DeclareTextCommand{\cyrya}{PU}{\84\117}% U+044F  
 15958 % U+0450 CYRILLIC SMALL LETTER IE WITH GRAVE  
 15959 \DeclareTextCompositeCommand{\'}{PU}{\cyre}{\84\120}% U+0450  
 15960 % U+0451 CYRILLIC SMALL LETTER IO; \*afii10071, iocyrillic  
 15961 \DeclareTextCommand{\cyryo}{PU}{\84\121}% U+0451  
 15962 \DeclareTextCompositeCommand{\"}{PU}{\cyre}{\84\121}% U+0451  
 15963 % U+0452 CYRILLIC SMALL LETTER DJE; \*afii10099, djecyrillic  
 15964 \DeclareTextCommand{\cyrdje}{PU}{\84\122}% U+0452  
 15965 % U+0453 CYRILLIC SMALL LETTER GJE; \*afii10100, gjecyrillic  
 15966 \DeclareTextCompositeCommand{\'}{PU}{\cyrg}{\84\123}% U+0453  
 15967 % U+0454 CYRILLIC SMALL LETTER UKRAINIAN IE; \*afii10101, ecyrillic  
 15968 \DeclareTextCommand{\cyrie}{PU}{\84\124}% U+0454  
 15969 % U+0455 CYRILLIC SMALL LETTER DZE; \*afii10102, dzecyrillic  
 15970 \DeclareTextCommand{\cyrdze}{PU}{\84\125}% U+0455  
 15971 % U+0456 CYRILLIC SMALL LETTER BYELORUSSIAN-UKRAINIAN I; \*afii10103, icyril-  
 lic  
 15972 \DeclareTextCommand{\cyrii}{PU}{\84\126}% U+0456  
 15973 % U+0457 CYRILLIC SMALL LETTER YI; \*afii10104, yicyrillic  
 15974 \DeclareTextCommand{\cyryi}{PU}{\84\127}% U+0457  
 15975 \DeclareTextCompositeCommand{\"}{PU}{\cyrii}{\84\127}% U+0457  
 15976 % U+0458 CYRILLIC SMALL LETTER JE; \*afii10105, jecyrillic  
 15977 \DeclareTextCommand{\cyrje}{PU}{\84\130}% U+0458  
 15978 % U+0459 CYRILLIC SMALL LETTER LJE; \*afii10106, ljecyrillic  
 15979 \DeclareTextCommand{\cyrkje}{PU}{\84\131}% U+0459  
 15980 % U+045A CYRILLIC SMALL LETTER NJE; \*afii10107, njecyrillic  
 15981 \DeclareTextCommand{\cyrnje}{PU}{\84\132}% U+045A  
 15982 % U+045B CYRILLIC SMALL LETTER TSHE; \*afii10108, tshecyrillic  
 15983 \DeclareTextCommand{\cyrtshe}{PU}{\84\133}% U+045B  
 15984 % U+045C CYRILLIC SMALL LETTER KJE; \*afii10109, kjecyrillic  
 15985 \DeclareTextCompositeCommand{\'}{PU}{\cyrk}{\84\134}% U+045C  
 15986 % U+045D CYRILLIC SMALL LETTER I WITH GRAVE  
 15987 \DeclareTextCompositeCommand{\'}{PU}{\cyri}{\84\135}% U+045D  
 15988 % U+045E CYRILLIC SMALL LETTER SHORT U; \*afii10110, ushortcyrillic  
 15989 \DeclareTextCommand{\cyrushrt}{PU}{\84\136}% U+045E  
 15990 \DeclareTextCompositeCommand{\U}{PU}{\curu}{\84\136}% U+045E  
 15991 % U+045F CYRILLIC SMALL LETTER DZHE; \*afii10193, dzhecyrillic  
 15992 \DeclareTextCommand{\cyrdzhe}{PU}{\84\137}% U+045F  
 15993 % U+0460 CYRILLIC CAPITAL LETTER OMEGA; Omegacyrillic  
 15994 \DeclareTextCommand{\CYROMEGA}{PU}{\84\140}% U+0460

15995 % U+0461 CYRILLIC SMALL LETTER OMEGA; omegacyrillic  
15996 \DeclareTextCommand{\cyromega}{PU}{\84\141}% U+0461  
15997 % U+0462 CYRILLIC CAPITAL LETTER YAT; Yatcyrillic, \*afii10146  
15998 \DeclareTextCommand{\CYRYAT}{PU}{\84\142}% U+0462  
15999 % U+0463 CYRILLIC SMALL LETTER YAT; \*afii10194, yatcyrillic  
16000 \DeclareTextCommand{\cyryat}{PU}{\84\143}% U+0463  
16001 % U+0464 CYRILLIC CAPITAL LETTER IOTIFIED E; Eiotifiedcyrillic  
16002 \DeclareTextCommand{\CYRIOTE}{PU}{\84\144}% U+0464  
16003 % U+0465 CYRILLIC SMALL LETTER IOTIFIED E; eiotifiedcyrillic  
16004 \DeclareTextCommand{\cyriote}{PU}{\84\145}% U+0465  
16005 % U+0466 CYRILLIC CAPITAL LETTER LITTLE YUS; Yuslittleyrillic  
16006 \DeclareTextCommand{\CYRLYUS}{PU}{\84\146}% U+0466  
16007 % U+0467 CYRILLIC SMALL LETTER LITTLE YUS; yuslittleyrillic  
16008 \DeclareTextCommand{\cyrlyus}{PU}{\84\147}% U+0467  
16009 % U+0468 CYRILLIC CAPITAL LETTER IOTIFIED LITTLE YUS; Yuslittlei-  
otifiedcyrillic  
16010 \DeclareTextCommand{\CYRIOTLYUS}{PU}{\84\150}% U+0468  
16011 % U+0469 CYRILLIC SMALL LETTER IOTIFIED LITTLE YUS; yuslittlei-  
otifiedcyrillic  
16012 \DeclareTextCommand{\cyriotlyus}{PU}{\84\151}% U+0469  
16013 % U+046A CYRILLIC CAPITAL LETTER BIG YUS; Yusbigcyrillic  
16014 \DeclareTextCommand{\CYRBYUS}{PU}{\84\152}% U+046A  
16015 % U+046B CYRILLIC SMALL LETTER BIG YUS; yusbigcyrillic  
16016 \DeclareTextCommand{\cyrbyus}{PU}{\84\153}% U+046B  
16017 % U+046C CYRILLIC CAPITAL LETTER IOTIFIED BIG YUS; Yusbigiotified-  
cyrillic  
16018 \DeclareTextCommand{\CYRIOTBYUS}{PU}{\84\154}% U+046C  
16019 % U+046D CYRILLIC SMALL LETTER IOTIFIED BIG YUS; yusbigiotified-  
cyrillic  
16020 \DeclareTextCommand{\cyriotbyus}{PU}{\84\155}% U+046D  
16021 % U+046E CYRILLIC CAPITAL LETTER KSI; Ksicyrillic  
16022 \DeclareTextCommand{\CYRKSI}{PU}{\84\156}% U+046E  
16023 % U+046F CYRILLIC SMALL LETTER KSI; ksicyrillic  
16024 \DeclareTextCommand{\cyrksi}{PU}{\84\157}% U+046F  
16025 % U+0470 CYRILLIC CAPITAL LETTER PSI; Psicyrillic  
16026 \DeclareTextCommand{\CYRPSI}{PU}{\84\160}% U+0470  
16027 % U+0471 CYRILLIC SMALL LETTER PSI; psicyrillic  
16028 \DeclareTextCommand{\cyrpsi}{PU}{\84\161}% U+0471  
16029 % U+0472 CYRILLIC CAPITAL LETTER FITA; Fitacyrillic, \*afii10147  
16030 \DeclareTextCommand{\CYRFITA}{PU}{\84\162}% U+0472  
16031 % U+0473 CYRILLIC SMALL LETTER FITA; \*afii10195, fitacyrillic  
16032 \DeclareTextCommand{\cyrfita}{PU}{\84\163}% U+0473  
16033 % U+0474 CYRILLIC CAPITAL LETTER IZHITSA; Izhitsacyrillic, \*afii10148  
16034 \DeclareTextCommand{\CYRIZH}{PU}{\84\164}% U+0474  
16035 % U+0475 CYRILLIC SMALL LETTER IZHITSA; \*afii10196, izhitsacyrillic  
16036 \DeclareTextCommand{\cyrizh}{PU}{\84\165}% U+0475  
16037 % U+0476 CYRILLIC CAPITAL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
CENT; Izhitsadblgravecyrillic  
16038 \DeclareTextCompositeCommand{\C}{PU}{\CYRIZH}{\84\166}% U+0476  
16039 % U+0477 CYRILLIC SMALL LETTER IZHITSA WITH DOUBLE GRAVE AC-  
CENT; izhitsadblgravecyrillic  
16040 \DeclareTextCompositeCommand{\C}{PU}{\cyrizh}{\84\167}% U+0477  
16041 % U+0478 CYRILLIC CAPITAL LETTER UK; Ukcyrillic  
16042 \DeclareTextCommand{\CYRUK}{PU}{\84\170}% U+0478  
16043 % U+0479 CYRILLIC SMALL LETTER UK; ukcyrillic  
16044 \DeclareTextCommand{\cyruk}{PU}{\84\171}% U+0479

16045 % U+047A CYRILLIC CAPITAL LETTER ROUND OMEGA; Omegaroundcyrillic  
 16046 \DeclareTextCommand{\CYROMEGARND}{PU}{\84\172}% U+047A  
 16047 % U+047B CYRILLIC SMALL LETTER ROUND OMEGA; omegaroundcyrillic  
 16048 \DeclareTextCommand{\cyromegarnd}{PU}{\84\173}% U+047B  
 16049 % U+047C CYRILLIC CAPITAL LETTER OMEGA WITH TITLO; Omegatitlocyrillic  
 16050 \DeclareTextCommand{\CYROMEGATITLO}{PU}{\84\174}% U+047C  
 16051 % U+047D CYRILLIC SMALL LETTER OMEGA WITH TITLO; omegatitlocyrillic  
 16052 \DeclareTextCommand{\cyromegatitlo}{PU}{\84\175}% U+047D  
 16053 % U+047E CYRILLIC CAPITAL LETTER OT; Otcyrillic  
 16054 \DeclareTextCommand{\CYROT}{PU}{\84\176}% U+047E  
 16055 % U+047F CYRILLIC SMALL LETTER OT; otcyrillic  
 16056 \DeclareTextCommand{\cyrot}{PU}{\84\177}% U+047F  
 16057 % U+0480 CYRILLIC CAPITAL LETTER KOPPA; Koppacyrillic  
 16058 \DeclareTextCommand{\CYRKOPPA}{PU}{\84\200}% U+0480  
 16059 % U+0481 CYRILLIC SMALL LETTER KOPPA; koppacyrillic  
 16060 \DeclareTextCommand{\cyrkoppa}{PU}{\84\201}% U+0481  
 16061 % U+0482 CYRILLIC THOUSANDS SIGN; thousandcyrillic  
 16062 \DeclareTextCommand{\cyrthousands}{PU}{\84\202}% U+0482  
 \84\203: U+0483 COMBINING CYRILLIC TITLO; titlocyrillicmb  
 \84\204: U+0484 COMBINING CYRILLIC PALATALIZATION; palatalizationcyrillicmb  
 \84\205: U+0485 COMBINING CYRILLIC DASIA PNEUMATA; dasiapneumatacyrillicmb  
 \84\206: U+0486 COMBINING CYRILLIC PSILI PNEUMATA; psilipneumatacyrillicmb  
 \84\207: U+0487 COMBINING CYRILLIC POKRYTIE  
 \84\210: U+0488 COMBINING CYRILLIC HUNDRED THOUSANDS SIGN  
 \84\211: U+0489 COMBINING CYRILLIC MILLIONS SIGN  
 16063 % U+048A CYRILLIC CAPITAL LETTER SHORT I WITH TAIL  
 16064 \DeclareTextCommand{\CYRISHRTDSC}{PU}{\84\212}% U+048A  
 16065 % U+048B CYRILLIC SMALL LETTER SHORT I WITH TAIL  
 16066 \DeclareTextCommand{\cyrishrtdsc}{PU}{\84\213}% U+048B  
 16067 % U+048C CYRILLIC CAPITAL LETTER SEMISOFT SIGN  
 16068 \DeclareTextCommand{\CYRSEMISFTSN}{PU}{\84\214}% U+048C  
 16069 % U+048D CYRILLIC SMALL LETTER SEMISOFT SIGN  
 16070 \DeclareTextCommand{\cyrsemisftsn}{PU}{\84\215}% U+048D  
 16071 % U+048E CYRILLIC CAPITAL LETTER ER WITH TICK  
 16072 \DeclareTextCommand{\CYRRTICK}{PU}{\84\216}% U+048E  
 16073 % U+048F CYRILLIC SMALL LETTER ER WITH TICK  
 16074 \DeclareTextCommand{\cyrrtick}{PU}{\84\217}% U+048F  
 16075 % U+0490 CYRILLIC CAPITAL LETTER GHE WITH UPTURN; Gheupturncyrillic, \*afii10050  
 16076 \DeclareTextCommand{\CYRGUP}{PU}{\84\220}% U+0490  
 16077 % U+0491 CYRILLIC SMALL LETTER GHE WITH UPTURN; \*afii10098, gheupturncyrillic  
 16078 \DeclareTextCommand{\cyrgup}{PU}{\84\221}% U+0491  
 16079 % U+0492 CYRILLIC CAPITAL LETTER GHE WITH STROKE; Ghestrokecyrillic  
 16080 \DeclareTextCommand{\CYRGHCRS}{PU}{\84\222}% U+0492  
 16081 % U+0493 CYRILLIC SMALL LETTER GHE WITH STROKE; ghestrokecyrillic  
 16082 \DeclareTextCommand{\cyrghcrs}{PU}{\84\223}% U+0493  
 16083 % U+0494 CYRILLIC CAPITAL LETTER GHE WITH MIDDLE HOOK; Ghemiddlehookcyrillic

16084 \DeclareTextCommand{\CYRGHK}{PU}{\84\224}% U+0494  
 16085 % U+0495 CYRILLIC SMALL LETTER GHE WITH MIDDLE HOOK; ghemiddlehookcyrillic  
 16086 \DeclareTextCommand{\cyrghk}{PU}{\84\225}% U+0495  
 16087 % U+0496 CYRILLIC CAPITAL LETTER ZHE WITH DESCENDER; Zhedescendercyrillic  
 16088 \DeclareTextCommand{\CYRZHDSC}{PU}{\84\226}% U+0496  
 16089 % U+0497 CYRILLIC SMALL LETTER ZHE WITH DESCENDER; zhedescendercyrillic  
 16090 \DeclareTextCommand{\cyrzhdsc}{PU}{\84\227}% U+0497  
 16091 % U+0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER; Zedescendercyrillic  
 16092 \DeclareTextCommand{\CYRZDSC}{PU}{\84\230}% U+0498  
 16093 \DeclareTextCompositeCommand{\c}{PU}{\CYRZ}{\84\230}% U+0498  
 16094 % U+0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER; zedescendercyrillic  
 16095 \DeclareTextCommand{\cyrzdsc}{PU}{\84\231}% U+0499  
 16096 \DeclareTextCompositeCommand{\c}{PU}{\cyrz}{\84\231}% U+0499  
 16097 % U+049A CYRILLIC CAPITAL LETTER KA WITH DESCENDER; Kadescendercyrillic  
 16098 \DeclareTextCommand{\CYRKDSC}{PU}{\84\232}% U+049A  
 16099 % U+049B CYRILLIC SMALL LETTER KA WITH DESCENDER; kadescendercyrillic  
 16100 \DeclareTextCommand{\cyrkdsc}{PU}{\84\233}% U+049B  
 16101 % U+049C CYRILLIC CAPITAL LETTER KA WITH VERTICAL STROKE; Kaver-ticalstrokecyrillic  
 16102 \DeclareTextCommand{\CYRKVCRS}{PU}{\84\234}% U+049C  
 16103 % U+049D CYRILLIC SMALL LETTER KA WITH VERTICAL STROKE; kaver-ticalstrokecyrillic  
 16104 \DeclareTextCommand{\cyrkvcrs}{PU}{\84\235}% U+049D  
 16105 % U+049E CYRILLIC CAPITAL LETTER KA WITH STROKE; Kastrokecyrillic  
 16106 \DeclareTextCommand{\CYRKHCRS}{PU}{\84\236}% U+049E  
 16107 % U+049F CYRILLIC SMALL LETTER KA WITH STROKE; kastrokecyrillic  
 16108 \DeclareTextCommand{\cyrkhcrs}{PU}{\84\237}% U+049F  
 16109 % U+04A0 CYRILLIC CAPITAL LETTER BASHKIR KA; Kabashkircyrillic  
 16110 \DeclareTextCommand{\CYRKBEAK}{PU}{\84\240}% U+04A0  
 16111 % U+04A1 CYRILLIC SMALL LETTER BASHKIR KA; kabashkircyrillic  
 16112 \DeclareTextCommand{\cyrkbeak}{PU}{\84\241}% U+04A1  
 16113 % U+04A2 CYRILLIC CAPITAL LETTER EN WITH DESCENDER; Endescendercyrillic  
 16114 \DeclareTextCommand{\CYRNDSC}{PU}{\84\242}% U+04A2  
 16115 % U+04A3 CYRILLIC SMALL LETTER EN WITH DESCENDER; endescendercyrillic  
 16116 \DeclareTextCommand{\cyrndsc}{PU}{\84\243}% U+04A3  
 16117 % U+04A4 CYRILLIC CAPITAL LIGATURE EN GHE; Enghecyrillic  
 16118 \DeclareTextCommand{\CYRNG}{PU}{\84\244}% U+04A4  
 16119 % U+04A5 CYRILLIC SMALL LIGATURE EN GHE; enghecyrillic  
 16120 \DeclareTextCommand{\cyrng}{PU}{\84\245}% U+04A5  
 16121 % U+04A6 CYRILLIC CAPITAL LETTER PE WITH MIDDLE HOOK; Pemiddlehookcyrillic  
 16122 \DeclareTextCommand{\CYRPHK}{PU}{\84\246}% U+04A6  
 16123 % U+04A7 CYRILLIC SMALL LETTER PE WITH MIDDLE HOOK; pemiddlehookcyrillic  
 16124 \DeclareTextCommand{\cyrphk}{PU}{\84\247}% U+04A7  
 16125 % U+04A8 CYRILLIC CAPITAL LETTER ABKHASIAN HA; Haabkhasiancyrillic  
 16126 \DeclareTextCommand{\CYRABHHA}{PU}{\84\250}% U+04A8

16127 % U+04A9 CYRILLIC SMALL LETTER ABKHASIAN HA; haabkhasiancyrillic  
16128 \DeclareTextCommand{\cyrahha}{PU}{\84\251}% U+04A9  
16129 % U+04AA CYRILLIC CAPITAL LETTER ES WITH DESCENDER; Esdescendercyrillic  
16130 \DeclareTextCommand{\CYRSDSC}{PU}{\84\252}% U+04AA  
16131 \DeclareTextCompositeCommand{\CYRSDSC}{PU}{\CYRS}{\84\252}% U+04AA  
16132 % U+04AB CYRILLIC SMALL LETTER ES WITH DESCENDER; esdescendercyrillic  
16133 \DeclareTextCommand{\cyrsdsc}{PU}{\84\253}% U+04AB  
16134 \DeclareTextCompositeCommand{\k}{PU}{\cyrs}{\84\253}% U+04AB  
16135 % U+04AC CYRILLIC CAPITAL LETTER TE WITH DESCENDER; Tedescendercyrillic  
16136 \DeclareTextCommand{\CYRTDSC}{PU}{\84\254}% U+04AC  
16137 % U+04AD CYRILLIC SMALL LETTER TE WITH DESCENDER; tedescendercyrillic  
16138 \DeclareTextCommand{\cyrt dsc}{PU}{\84\255}% U+04AD  
16139 % U+04AE CYRILLIC CAPITAL LETTER STRAIGHT U; Ustraightcyrillic  
16140 \DeclareTextCommand{\CYRY}{PU}{\84\256}% U+04AE  
16141 % U+04AF CYRILLIC SMALL LETTER STRAIGHT U; ustraightcyrillic  
16142 \DeclareTextCommand{\cyry}{PU}{\84\257}% U+04AF  
16143 % U+04B0 CYRILLIC CAPITAL LETTER STRAIGHT U WITH STROKE; Ustraightstrokecyrillic  
16144 \DeclareTextCommand{\CYRYHCRS}{PU}{\84\260}% U+04B0  
16145 % U+04B1 CYRILLIC SMALL LETTER STRAIGHT U WITH STROKE; ustraightstrokecyrillic  
16146 \DeclareTextCommand{\cyryhcrs}{PU}{\84\261}% U+04B1  
16147 % U+04B2 CYRILLIC CAPITAL LETTER HA WITH DESCENDER; Hadesdescendercyrillic  
16148 \DeclareTextCommand{\CYRHDSC}{PU}{\84\262}% U+04B2  
16149 % U+04B3 CYRILLIC SMALL LETTER HA WITH DESCENDER; hadescendercyrillic  
16150 \DeclareTextCommand{\cyrhdsc}{PU}{\84\263}% U+04B3  
16151 % U+04B4 CYRILLIC CAPITAL LIGATURE TE TSE; Tetsecyrillic  
16152 \DeclareTextCommand{\CYRTETSE}{PU}{\84\264}% U+04B4  
16153 % U+04B5 CYRILLIC SMALL LIGATURE TE TSE; tetsecyrillic  
16154 \DeclareTextCommand{\cyrtetse}{PU}{\84\265}% U+04B5  
16155 % U+04B6 CYRILLIC CAPITAL LETTER CHE WITH DESCENDER; Chedescendercyrillic  
16156 \DeclareTextCommand{\CYRCHRDSC}{PU}{\84\266}% U+04B6  
16157 % U+04B7 CYRILLIC SMALL LETTER CHE WITH DESCENDER; chedescendercyrillic  
16158 \DeclareTextCommand{\cyrchrdsc}{PU}{\84\267}% U+04B7  
16159 % U+04B8 CYRILLIC CAPITAL LETTER CHE WITH VERTICAL STROKE; Chev-  
verticalstrokecyrillic  
16160 \DeclareTextCommand{\CYRCHVCRS}{PU}{\84\270}% U+04B8  
16161 % U+04B9 CYRILLIC SMALL LETTER CHE WITH VERTICAL STROKE; chev-  
verticalstrokecyrillic  
16162 \DeclareTextCommand{\cyrchvcrs}{PU}{\84\271}% U+04B9  
16163 % U+04BA CYRILLIC CAPITAL LETTER SHHA; Shhacyrillic  
16164 \DeclareTextCommand{\CYRSHHA}{PU}{\84\272}% U+04BA  
16165 % U+04BB CYRILLIC SMALL LETTER SHHA; shhacyrillic  
16166 \DeclareTextCommand{\cyrshha}{PU}{\84\273}% U+04BB  
16167 % U+04BC CYRILLIC CAPITAL LETTER ABKHASIAN CHE; Cheabkhasian-  
cyrillic  
16168 \DeclareTextCommand{\CYRABHCH}{PU}{\84\274}% U+04BC  
16169 % U+04BD CYRILLIC SMALL LETTER ABKHASIAN CHE; cheabkhasiancyrillic

16170 \DeclareTextCommand{\cyrabhch}{PU}{\84\275}% U+04BD  
16171 % U+04BE CYRILLIC CAPITAL LETTER ABKHASIAN CHE WITH DESCEN-  
DER; Chedescenderabkhasiancyrillic  
16172 \DeclareTextCommand{\CYRABHCHDSC}{PU}{\84\276}% U+04BE  
16173 \DeclareTextCompositeCommand{\k}{PU}{\CYRABHCH}{\84\276}% U+04BE  
16174 % U+04BF CYRILLIC SMALL LETTER ABKHASIAN CHE WITH DESCEN-  
DER; chedescenderabkhasiancyrillic  
16175 \DeclareTextCommand{\cyrabhchdsc}{PU}{\84\277}% U+04BF  
16176 \DeclareTextCompositeCommand{\k}{PU}{\cyrabhch}{\84\277}% U+04BF  
16177 % U+04C0 CYRILLIC LETTER PALOCHKA; palochkacyrillic  
16178 \DeclareTextCommand{\CYRpalochka}{PU}{\84\300}% U+04C0  
16179 % U+04C1 CYRILLIC CAPITAL LETTER ZHE WITH BREVE; Zhebrevecyrillic  
16180 \DeclareTextCompositeCommand{\U}{PU}{\CYRZH}{\84\301}% U+04C1  
16181 % U+04C2 CYRILLIC SMALL LETTER ZHE WITH BREVE; zhebrevecyrillic  
16182 \DeclareTextCompositeCommand{\U}{PU}{\cyrzh}{\84\302}% U+04C2  
16183 % U+04C3 CYRILLIC CAPITAL LETTER KA WITH HOOK; Kahookcyrillic  
16184 \DeclareTextCommand{\CYRKHK}{PU}{\84\303}% U+04C3  
16185 % U+04C4 CYRILLIC SMALL LETTER KA WITH HOOK; kahookcyrillic  
16186 \DeclareTextCommand{\cyrkhk}{PU}{\84\304}% U+04C4  
16187 % U+04C5 CYRILLIC CAPITAL LETTER EL WITH TAIL  
16188 \DeclareTextCommand{\CYRLDSC}{PU}{\84\305}% U+04C5  
16189 % U+04C6 CYRILLIC SMALL LETTER EL WITH TAIL  
16190 \DeclareTextCommand{\cyrlldsc}{PU}{\84\306}% U+04C6  
16191 % U+04C7 CYRILLIC CAPITAL LETTER EN WITH HOOK; Enhookcyrillic  
16192 \DeclareTextCommand{\CYRNHK}{PU}{\84\307}% U+04C7  
16193 % U+04C8 CYRILLIC SMALL LETTER EN WITH HOOK; enhookcyrillic  
16194 \DeclareTextCommand{\cyrnhk}{PU}{\84\310}% U+04C8  
16195 % U+04CB CYRILLIC CAPITAL LETTER KHAKASSIAN CHE; Chekhakas-  
siancyrillic  
16196 \DeclareTextCommand{\CYRCHLDSC}{PU}{\84\313}% U+04CB  
16197 % U+04CC CYRILLIC SMALL LETTER KHAKASSIAN CHE; chekhakassian-  
cyrillic  
16198 \DeclareTextCommand{\cyrchldsc}{PU}{\84\314}% U+04CC  
16199 % U+04CD CYRILLIC CAPITAL LETTER EM WITH TAIL  
16200 \DeclareTextCommand{\CYRMDSC}{PU}{\84\315}% U+04CD  
16201 % U+04CE CYRILLIC SMALL LETTER EM WITH TAIL  
16202 \DeclareTextCommand{\cyrmdsc}{PU}{\84\316}% U+04CE  
\84\317: U+04CF CYRILLIC SMALL LETTER PALOCHKA  
16203 % U+04D0 CYRILLIC CAPITAL LETTER A WITH BREVE; Abrevecyrillic  
16204 \DeclareTextCompositeCommand{\U}{PU}{\CYRA}{\84\320}% U+04D0  
16205 % U+04D1 CYRILLIC SMALL LETTER A WITH BREVE; abrevecyrillic  
16206 \DeclareTextCompositeCommand{\U}{PU}{\cyra}{\84\321}% U+04D1  
16207 % U+04D2 CYRILLIC CAPITAL LETTER A WITH DIAERESIS; Adieresiscyril-  
lic  
16208 \DeclareTextCompositeCommand{\"}{PU}{\CYRA}{\84\322}% U+04D2  
16209 % U+04D3 CYRILLIC SMALL LETTER A WITH DIAERESIS; adieresiscyrillic  
16210 \DeclareTextCompositeCommand{\"}{PU}{\cyra}{\84\323}% U+04D3  
16211 % U+04D4 CYRILLIC CAPITAL LIGATURE A IE; Aiecyrillic  
16212 \DeclareTextCommand{\CYRAE}{PU}{\84\324}% U+04D4  
16213 % U+04D5 CYRILLIC SMALL LIGATURE A IE; aiecyrillic  
16214 \DeclareTextCommand{\cyrae}{PU}{\84\325}% U+04D5  
16215 % U+04D6 CYRILLIC CAPITAL LETTER IE WITH BREVE; Iebrevecyrillic  
16216 \DeclareTextCompositeCommand{\U}{PU}{\CYRE}{\84\326}% U+04D6  
16217 % U+04D7 CYRILLIC SMALL LETTER IE WITH BREVE; iebrevecyrillic  
16218 \DeclareTextCompositeCommand{\U}{PU}{\cyre}{\84\327}% U+04D7  
16219 % U+04D8 CYRILLIC CAPITAL LETTER SCHWA; Schwacyrillic  
16220 \DeclareTextCommand{\CYRSCHWA}{PU}{\84\330}% U+04D8

16221 % U+04D9 CYRILLIC SMALL LETTER SCHWA; \*afii10846, schwacyrillic  
 16222 \DeclareTextCommand{\cyrschwa}{PU}{\84\331}% U+04D9  
 16223 % U+04DA CYRILLIC CAPITAL LETTER SCHWA WITH DIAERESIS; Schwadiere-  
 siscyrillic  
 16224 \DeclareTextCompositeCommand{"}{PU}{\CYRSCHWA}{\84\332}% U+04DA  
 16225 % U+04DB CYRILLIC SMALL LETTER SCHWA WITH DIAERESIS; schwadiere-  
 siscyrillic  
 16226 \DeclareTextCompositeCommand{"}{PU}{\cyrschwa}{\84\333}% U+04DB  
 16227 % U+04DC CYRILLIC CAPITAL LETTER ZHE WITH DIAERESIS; Zhediere-  
 siscyrillic  
 16228 \DeclareTextCompositeCommand{"}{PU}{\CYRZH}{\84\334}% U+04DC  
 16229 % U+04DD CYRILLIC SMALL LETTER ZHE WITH DIAERESIS; zhedieresis-  
 cyrillic  
 16230 \DeclareTextCompositeCommand{"}{PU}{\cyrzh}{\84\335}% U+04DD  
 16231 % U+04DE CYRILLIC CAPITAL LETTER ZE WITH DIAERESIS; Zedieresis-  
 cyrillic  
 16232 \DeclareTextCompositeCommand{"}{PU}{\CYRZ}{\84\336}% U+04DE  
 16233 % U+04DF CYRILLIC SMALL LETTER ZE WITH DIAERESIS; zedieresiscyril-  
 lic  
 16234 \DeclareTextCompositeCommand{"}{PU}{\cyrz}{\84\337}% U+04DF  
 16235 % U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE; Dzeabkhasian-  
 cyrillic  
 16236 \DeclareTextCommand{\CYRABHDZE}{PU}{\84\340}% U+04E0  
 16237 % U+04E1 CYRILLIC SMALL LETTER ABKHASIAN DZE; dzeabkhasiancyril-  
 lic  
 16238 \DeclareTextCommand{\cyrabhdze}{PU}{\84\341}% U+04E1  
 16239 % U+04E2 CYRILLIC CAPITAL LETTER I WITH MACRON; Imacroncyrillic  
 16240 \DeclareTextCompositeCommand{=}{PU}{\CYRI}{\84\342}% U+04E2  
 16241 % U+04E3 CYRILLIC SMALL LETTER I WITH MACRON; imacroncyrillic  
 16242 \DeclareTextCompositeCommand{=}{PU}{\cyri}{\84\343}% U+04E3  
 16243 % U+04E4 CYRILLIC CAPITAL LETTER I WITH DIAERESIS; Idieresiscyrillic  
 16244 \DeclareTextCompositeCommand{"}{PU}{\CYRI}{\84\344}% U+04E4  
 16245 % U+04E5 CYRILLIC SMALL LETTER I WITH DIAERESIS; idieresiscyrillic  
 16246 \DeclareTextCompositeCommand{"}{PU}{\cyri}{\84\345}% U+04E5  
 16247 % U+04E6 CYRILLIC CAPITAL LETTER O WITH DIAERESIS; Odieresiscyril-  
 lic  
 16248 \DeclareTextCompositeCommand{"}{PU}{\CYRO}{\84\346}% U+04E6  
 16249 % U+04E7 CYRILLIC SMALL LETTER O WITH DIAERESIS; odieresiscyrillic  
 16250 \DeclareTextCompositeCommand{"}{PU}{\cyro}{\84\347}% U+04E7  
 16251 % U+04E8 CYRILLIC CAPITAL LETTER BARRED O; Obarredcyrillic  
 16252 \DeclareTextCommand{\CYROTLD}{PU}{\84\350}% U+04E8  
 16253 % U+04E9 CYRILLIC SMALL LETTER BARRED O; obarredcyrillic  
 16254 \DeclareTextCommand{\cyrotld}{PU}{\84\351}% U+04E9  
 16255 % U+04EA CYRILLIC CAPITAL LETTER BARRED O WITH DIAERE-  
 SIS; Obarreddieresiscyrillic  
 16256 \DeclareTextCompositeCommand{"}{PU}{\CYROTLD}{\84\352}% U+04EA  
 16257 % U+04EB CYRILLIC SMALL LETTER BARRED O WITH DIAERESIS; obarred-  
 dieresiscyrillic  
 16258 \DeclareTextCompositeCommand{"}{PU}{\cyrotld}{\84\353}% U+04EB  
 16259 % U+04EC CYRILLIC CAPITAL LETTER E WITH DIAERESIS  
 16260 \DeclareTextCompositeCommand{"}{PU}{\CYREREV}{\84\354}% U+04EC  
 16261 % U+04ED CYRILLIC SMALL LETTER E WITH DIAERESIS  
 16262 \DeclareTextCompositeCommand{"}{PU}{\cyreref}{\84\355}% U+04ED  
 16263 % U+04EE CYRILLIC CAPITAL LETTER U WITH MACRON; Umacroncyrillic  
 16264 \DeclareTextCompositeCommand{=}{PU}{\CYRU}{\84\356}% U+04EE  
 16265 % U+04EF CYRILLIC SMALL LETTER U WITH MACRON; umacroncyrillic  
 16266 \DeclareTextCompositeCommand{=}{PU}{\cyru}{\84\357}% U+04EF

16267 % U+04F0 CYRILLIC CAPITAL LETTER U WITH DIAERESIS; Udiereiscyrillic  
 16268 \DeclareTextCompositeCommand{\"}{PU}{\CYRU}{\84\360}% U+04F0  
 16269 % U+04F1 CYRILLIC SMALL LETTER U WITH DIAERESIS; udiereiscyrillic  
 16270 \DeclareTextCompositeCommand{\"}{PU}{\cyru}{\84\361}% U+04F1  
 16271 % U+04F2 CYRILLIC CAPITAL LETTER U WITH DOUBLE ACUTE; Uhun-  
 garumlautcyrillic  
 16272 \DeclareTextCompositeCommand{\H}{PU}{\CYRU}{\84\362}% U+04F2  
 16273 % U+04F3 CYRILLIC SMALL LETTER U WITH DOUBLE ACUTE; uhun-  
 garumlautcyrillic  
 16274 \DeclareTextCompositeCommand{\H}{PU}{\cyru}{\84\363}% U+04F3  
 16275 % U+04F4 CYRILLIC CAPITAL LETTER CHE WITH DIAERESIS; Chediere-  
 siscyrillic  
 16276 \DeclareTextCompositeCommand{\"}{PU}{\CYRCH}{\84\364}% U+04F4  
 16277 % U+04F5 CYRILLIC SMALL LETTER CHE WITH DIAERESIS; chedieresiscyrillic  
 16278 \DeclareTextCompositeCommand{\"}{PU}{\cyrch}{\84\365}% U+04F5  
 16279 % U+04F6 CYRILLIC CAPITAL LETTER GHE WITH DESCENDER  
 16280 \DeclareTextCommand{\CYRGDSC}{PU}{\84\366}% U+04F6  
 16281 % U+04F7 CYRILLIC SMALL LETTER GHE WITH DESCENDER  
 16282 \DeclareTextCommand{\cyrgdsc}{PU}{\84\367}% U+04F7  
 16283 % U+04F8 CYRILLIC CAPITAL LETTER YERU WITH DIAERESIS; Yerudiere-  
 siscyrillic  
 16284 \DeclareTextCompositeCommand{\"}{PU}{\CYRERY}{\84\370}% U+04F8  
 16285 % U+04F9 CYRILLIC SMALL LETTER YERU WITH DIAERESIS; yerudieresiscyrillic  
 16286 \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  
 16287 % U+04FC CYRILLIC CAPITAL LETTER HA WITH HOOK  
 16288 \DeclareTextCommand{\CYRHHK}{PU}{\84\374}% U+04FC  
 16289 % U+04FD CYRILLIC SMALL LETTER HA WITH HOOK  
 16290 \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

16291 % U+0E3F THAI CURRENCY SYMBOL BAHT; bahtthai  
 16292 \DeclareTextCommand{\textbaht}{PU}{\9016\077}% U+0E3F

#### 50.2.11 Latin Extended Additional: U+1E00 to U+1EFF

16293 % U+1E02 LATIN CAPITAL LETTER B WITH DOT ABOVE; Bdotaccent  
 16294 \DeclareTextCompositeCommand{\.}{PU}{B}{\9036\002}% U+1E02  
 16295 % U+1E03 LATIN SMALL LETTER B WITH DOT ABOVE; bdotaccent  
 16296 \DeclareTextCompositeCommand{\.}{PU}{b}{\9036\003}% U+1E03  
 16297 % U+1E06 LATIN CAPITAL LETTER B WITH LINE BELOW; Blinebelow  
 16298 \DeclareTextCompositeCommand{\b}{PU}{B}{\9036\006}% U+1E06  
 16299 % U+1E07 LATIN SMALL LETTER B WITH LINE BELOW; blinebelow  
 16300 \DeclareTextCompositeCommand{\b}{PU}{b}{\9036\007}% U+1E07  
 16301 % U+1E0A LATIN CAPITAL LETTER D WITH DOT ABOVE; Ddotaccent  
 16302 \DeclareTextCompositeCommand{\.}{PU}{D}{\9036\012}% U+1E0A  
 16303 % U+1E0B LATIN SMALL LETTER D WITH DOT ABOVE; ddotaccent  
 16304 \DeclareTextCompositeCommand{\.}{PU}{d}{\9036\013}% U+1E0B



16305 % U+1E0E LATIN CAPITAL LETTER D WITH LINE BELOW; Dlinebelow  
16306 \DeclareTextCompositeCommand{\b}{PU}{D}{\9036\016}% U+1E0E  
16307 % U+1E0F LATIN SMALL LETTER D WITH LINE BELOW; dlinebelow  
16308 \DeclareTextCompositeCommand{\b}{PU}{d}{\9036\017}% U+1E0F  
16309 % U+1E10 LATIN CAPITAL LETTER D WITH CEDILLA; Dcedilla  
16310 \DeclareTextCompositeCommand{\c}{PU}{D}{\9036\020}% U+1E10  
16311 % U+1E11 LATIN SMALL LETTER D WITH CEDILLA; dcedilla  
16312 \DeclareTextCompositeCommand{\c}{PU}{d}{\9036\021}% U+1E11  
16313 % U+1E1E LATIN CAPITAL LETTER F WITH DOT ABOVE; Fdotaccent  
16314 \DeclareTextCompositeCommand{\.}{PU}{F}{\9036\036}% U+1E1E  
16315 % U+1E1F LATIN SMALL LETTER F WITH DOT ABOVE; fdotaccent  
16316 \DeclareTextCompositeCommand{\.}{PU}{f}{\9036\037}% U+1E1F  
16317 % U+1E20 LATIN CAPITAL LETTER G WITH MACRON; Gmacron  
16318 \DeclareTextCompositeCommand{=} {PU}{G}{\9036\040}% U+1E20  
16319 % U+1E21 LATIN SMALL LETTER G WITH MACRON; gmacron  
16320 \DeclareTextCompositeCommand{=} {PU}{g}{\9036\041}% U+1E21  
16321 % U+1E22 LATIN CAPITAL LETTER H WITH DOT ABOVE; Hdotaccent  
16322 \DeclareTextCompositeCommand{\.}{PU}{H}{\9036\042}% U+1E22  
16323 % U+1E23 LATIN SMALL LETTER H WITH DOT ABOVE; hdotaccent  
16324 \DeclareTextCompositeCommand{\.}{PU}{h}{\9036\043}% U+1E23  
16325 % U+1E26 LATIN CAPITAL LETTER H WITH DIAERESIS; Hdieresis  
16326 \DeclareTextCompositeCommand{"} {PU}{H}{\9036\046}% U+1E26  
16327 % U+1E27 LATIN SMALL LETTER H WITH DIAERESIS; hdieresis  
16328 \DeclareTextCompositeCommand{"} {PU}{h}{\9036\047}% U+1E27  
16329 % U+1E28 LATIN CAPITAL LETTER H WITH CEDILLA; Hcedilla  
16330 \DeclareTextCompositeCommand{\c}{PU}{H}{\9036\050}% U+1E28  
16331 % U+1E29 LATIN SMALL LETTER H WITH CEDILLA; hcedilla  
16332 \DeclareTextCompositeCommand{\c}{PU}{h}{\9036\051}% U+1E29  
16333 % U+1E30 LATIN CAPITAL LETTER K WITH ACUTE; Kacute  
16334 \DeclareTextCompositeCommand{\'} {PU}{K}{\9036\060}% U+1E30  
16335 % U+1E31 LATIN SMALL LETTER K WITH ACUTE; kacute  
16336 \DeclareTextCompositeCommand{\'} {PU}{k}{\9036\061}% U+1E31  
16337 % U+1E34 LATIN CAPITAL LETTER K WITH LINE BELOW; Klinebelow  
16338 \DeclareTextCompositeCommand{\b}{PU}{K}{\9036\064}% U+1E34  
16339 % U+1E35 LATIN SMALL LETTER K WITH LINE BELOW; klinebelow  
16340 \DeclareTextCompositeCommand{\b}{PU}{k}{\9036\065}% U+1E35  
16341 % U+1E3A LATIN CAPITAL LETTER L WITH LINE BELOW; Llinebelow  
16342 \DeclareTextCompositeCommand{\b}{PU}{L}{\9036\072}% U+1E3A  
16343 % U+1E3B LATIN SMALL LETTER L WITH LINE BELOW; llinebelow  
16344 \DeclareTextCompositeCommand{\b}{PU}{l}{\9036\073}% U+1E3B  
16345 % U+1E3E LATIN CAPITAL LETTER M WITH ACUTE; Macute  
16346 \DeclareTextCompositeCommand{\'} {PU}{M}{\9036\076}% U+1E3E  
16347 % U+1E3F LATIN SMALL LETTER M WITH ACUTE; macute  
16348 \DeclareTextCompositeCommand{\'} {PU}{m}{\9036\077}% U+1E3F  
16349 % U+1E40 LATIN CAPITAL LETTER M WITH DOT ABOVE; Mdotaccent  
16350 \DeclareTextCompositeCommand{\.}{PU}{M}{\9036\100}% U+1E40  
16351 % U+1E41 LATIN SMALL LETTER M WITH DOT ABOVE; mdotaccent  
16352 \DeclareTextCompositeCommand{\.}{PU}{m}{\9036\101}% U+1E41  
16353 % U+1E44 LATIN CAPITAL LETTER N WITH DOT ABOVE; Ndotaccent  
16354 \DeclareTextCompositeCommand{\.}{PU}{N}{\9036\104}% U+1E44  
16355 % U+1E45 LATIN SMALL LETTER N WITH DOT ABOVE; ndotaccent  
16356 \DeclareTextCompositeCommand{\.}{PU}{n}{\9036\105}% U+1E45  
16357 % U+1E48 LATIN CAPITAL LETTER N WITH LINE BELOW; Nlinebelow  
16358 \DeclareTextCompositeCommand{\b}{PU}{N}{\9036\110}% U+1E48  
16359 % U+1E49 LATIN SMALL LETTER N WITH LINE BELOW; nlinebelow  
16360 \DeclareTextCompositeCommand{\b}{PU}{n}{\9036\111}% U+1E49  
16361 % U+1E54 LATIN CAPITAL LETTER P WITH ACUTE; Pacute

16362 \DeclareTextCompositeCommand{\'}{PU}{P}{\9036\124}% U+1E54  
16363 % U+1E55 LATIN SMALL LETTER P WITH ACUTE; pacute  
16364 \DeclareTextCompositeCommand{\'}{PU}{p}{\9036\125}% U+1E55  
16365 % U+1E56 LATIN CAPITAL LETTER P WITH DOT ABOVE; Pdotaccent  
16366 \DeclareTextCompositeCommand{\.}{PU}{P}{\9036\126}% U+1E56  
16367 % U+1E57 LATIN SMALL LETTER P WITH DOT ABOVE; pdotaccent  
16368 \DeclareTextCompositeCommand{\.}{PU}{p}{\9036\127}% U+1E57  
16369 % U+1E58 LATIN CAPITAL LETTER R WITH DOT ABOVE; Rdotaccent  
16370 \DeclareTextCompositeCommand{\.}{PU}{R}{\9036\130}% U+1E58  
16371 % U+1E59 LATIN SMALL LETTER R WITH DOT ABOVE; rdotaccent  
16372 \DeclareTextCompositeCommand{\.}{PU}{r}{\9036\131}% U+1E59  
16373 % U+1E5E LATIN CAPITAL LETTER R WITH LINE BELOW; Rlinebelow  
16374 \DeclareTextCompositeCommand{\b}{PU}{R}{\9036\136}% U+1E5E  
16375 % U+1E5F LATIN SMALL LETTER R WITH LINE BELOW; rlinebelow  
16376 \DeclareTextCompositeCommand{\b}{PU}{r}{\9036\137}% U+1E5F  
16377 % U+1E60 LATIN CAPITAL LETTER S WITH DOT ABOVE; Sdotaccent  
16378 \DeclareTextCompositeCommand{\.}{PU}{S}{\9036\140}% U+1E60  
16379 % U+1E61 LATIN SMALL LETTER S WITH DOT ABOVE; sdotaccent  
16380 \DeclareTextCompositeCommand{\.}{PU}{s}{\9036\141}% U+1E61  
16381 % U+1E6E LATIN CAPITAL LETTER T WITH LINE BELOW; Tlinebelow  
16382 \DeclareTextCompositeCommand{\b}{PU}{T}{\9036\156}% U+1E6E  
16383 % U+1E6F LATIN SMALL LETTER T WITH LINE BELOW; tlinebelow  
16384 \DeclareTextCompositeCommand{\b}{PU}{t}{\9036\157}% U+1E6F  
16385 % U+1E7C LATIN CAPITAL LETTER V WITH TILDE; Vtilde  
16386 \DeclareTextCompositeCommand{\~}{PU}{V}{\9036\174}% U+1E7C  
16387 % U+1E7D LATIN SMALL LETTER V WITH TILDE; vtilde  
16388 \DeclareTextCompositeCommand{\~}{PU}{v}{\9036\175}% U+1E7D  
16389 % U+1E80 LATIN CAPITAL LETTER W WITH GRAVE; Wgrave  
16390 \DeclareTextCompositeCommand{\`}{PU}{W}{\9036\200}% U+1E80  
16391 % U+1E81 LATIN SMALL LETTER W WITH GRAVE; wgrave  
16392 \DeclareTextCompositeCommand{\`}{PU}{w}{\9036\201}% U+1E81  
16393 % U+1E82 LATIN CAPITAL LETTER W WITH ACUTE; Wacute  
16394 \DeclareTextCompositeCommand{\'}{PU}{W}{\9036\202}% U+1E82  
16395 % U+1E83 LATIN SMALL LETTER W WITH ACUTE; wacute  
16396 \DeclareTextCompositeCommand{\'}{PU}{w}{\9036\203}% U+1E83  
16397 % U+1E84 LATIN CAPITAL LETTER W WITH DIAERESIS; Wdieresis  
16398 \DeclareTextCompositeCommand{\"}{PU}{W}{\9036\204}% U+1E84  
16399 % U+1E85 LATIN SMALL LETTER W WITH DIAERESIS; wdieresis  
16400 \DeclareTextCompositeCommand{\"}{PU}{w}{\9036\205}% U+1E85  
16401 % U+1E86 LATIN CAPITAL LETTER W WITH DOT ABOVE; Wdotaccent  
16402 \DeclareTextCompositeCommand{\.}{PU}{W}{\9036\206}% U+1E86  
16403 % U+1E87 LATIN SMALL LETTER W WITH DOT ABOVE; wdotaccent  
16404 \DeclareTextCompositeCommand{\.}{PU}{w}{\9036\207}% U+1E87  
16405 % U+1E8A LATIN CAPITAL LETTER X WITH DOT ABOVE; Xdotaccent  
16406 \DeclareTextCompositeCommand{\.}{PU}{X}{\9036\212}% U+1E8A  
16407 % U+1E8B LATIN SMALL LETTER X WITH DOT ABOVE; xdotaccent  
16408 \DeclareTextCompositeCommand{\.}{PU}{x}{\9036\213}% U+1E8B  
16409 % U+1E8C LATIN CAPITAL LETTER X WITH DIAERESIS; Xdieresis  
16410 \DeclareTextCompositeCommand{\"}{PU}{X}{\9036\214}% U+1E8C  
16411 % U+1E8D LATIN SMALL LETTER X WITH DIAERESIS; xdieresis  
16412 \DeclareTextCompositeCommand{\"}{PU}{x}{\9036\215}% U+1E8D  
16413 % U+1E8E LATIN CAPITAL LETTER Y WITH DOT ABOVE; Ydotaccent  
16414 \DeclareTextCompositeCommand{\.}{PU}{Y}{\9036\216}% U+1E8E  
16415 % U+1E8F LATIN SMALL LETTER Y WITH DOT ABOVE; ydotaccent  
16416 \DeclareTextCompositeCommand{\.}{PU}{y}{\9036\217}% U+1E8F  
16417 % U+1E90 LATIN CAPITAL LETTER Z WITH CIRCUMFLEX; Zcircumflex  
16418 \DeclareTextCompositeCommand{\^}{PU}{Z}{\9036\220}% U+1E90

16419 % U+1E91 LATIN SMALL LETTER Z WITH CIRCUMFLEX; zcircumflex  
 16420 \DeclareTextCompositeCommand{\~}{PU}{z}{\9036\221}% U+1E91  
 16421 % U+1E94 LATIN CAPITAL LETTER Z WITH LINE BELOW; Zlinebelow  
 16422 \DeclareTextCompositeCommand{\b}{PU}{Z}{\9036\224}% U+1E94  
 16423 % U+1E95 LATIN SMALL LETTER Z WITH LINE BELOW; zlinebelow  
 16424 \DeclareTextCompositeCommand{\b}{PU}{z}{\9036\225}% U+1E95  
 16425 % U+1E96 LATIN SMALL LETTER H WITH LINE BELOW; hlinebelow  
 16426 \DeclareTextCompositeCommand{\b}{PU}{h}{\9036\226}% U+1E96  
 16427 % U+1E97 LATIN SMALL LETTER T WITH DIAERESIS; tdieresis  
 16428 \DeclareTextCompositeCommand{\"}{PU}{t}{\9036\227}% U+1E97  
 16429 % U+1E98 LATIN SMALL LETTER W WITH RING ABOVE; wring  
 16430 \DeclareTextCompositeCommand{\r}{PU}{w}{\9036\230}% U+1E98  
 16431 % U+1E99 LATIN SMALL LETTER Y WITH RING ABOVE; yring  
 16432 \DeclareTextCompositeCommand{\r}{PU}{y}{\9036\231}% U+1E99  
 16433 % U+1E9B LATIN SMALL LETTER LONG S WITH DOT ABOVE; slongdo-  
 taccent  
 16434 \DeclareTextCompositeCommand{\.}{PU}{\textlongs}{\9036\233}% U+1E9B  
 16435 % U+1EBC LATIN CAPITAL LETTER E WITH TILDE; Etilde  
 16436 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}% U+1EBC  
 16437 % U+1EBD LATIN SMALL LETTER E WITH TILDE; etilde  
 16438 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}% U+1EBD  
 16439 % U+1EF2 LATIN CAPITAL LETTER Y WITH GRAVE; Ygrave  
 16440 \DeclareTextCompositeCommand{\`}{PU}{Y}{\9036\362}% U+1EF2  
 16441 % U+1EF3 LATIN SMALL LETTER Y WITH GRAVE; ygrave  
 16442 \DeclareTextCompositeCommand{\`}{PU}{y}{\9036\363}% U+1EF3  
 16443 % U+1EF8 LATIN CAPITAL LETTER Y WITH TILDE; Ytilde  
 16444 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}% U+1EF8  
 16445 % U+1EF9 LATIN SMALL LETTER Y WITH TILDE; ytilde  
 16446 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}% U+1EF9

### 50.2.12 General Punctuation: U+2000 to U+206F

16447 % U+200C ZERO WIDTH NON-JOINER; \*afii61664, zerowidthnonjoiner  
 16448 \DeclareTextCommand{\textcompwordmark}{PU}{\9040\014}% U+200C  
 16449 % U+2013 EN DASH; endash  
 16450 \DeclareTextCommand{\textendash}{PU}{\9040\023}% U+2013  
 16451 % U+2014 EM DASH; emdash  
 16452 \DeclareTextCommand{\textemdash}{PU}{\9040\024}% U+2014  
 16453 % U+2016 DOUBLE VERTICAL LINE; dblverticalbar  
 16454 \DeclareTextCommand{\textbardbl}{PU}{\9040\026}% U+2016  
 16455 % U+2018 LEFT SINGLE QUOTATION MARK; quoteleft  
 16456 \DeclareTextCommand{\textquoteleft}{PU}{\9040\030}% U+2018  
 16457 % U+2019 RIGHT SINGLE QUOTATION MARK; quoteright  
 16458 \DeclareTextCommand{\textquoteright}{PU}{\9040\031}% U+2019  
 16459 % U+201A SINGLE LOW-9 QUOTATION MARK; quotesinglbase  
 16460 \DeclareTextCommand{\quotesinglbase}{PU}{\9040\032}% U+201A  
 16461 % U+201C LEFT DOUBLE QUOTATION MARK; quotedblleft  
 16462 \DeclareTextCommand{\textquotedblleft}{PU}{\9040\034}% U+201C  
 16463 % U+201D RIGHT DOUBLE QUOTATION MARK; quotedblright  
 16464 \DeclareTextCommand{\textquotedblright}{PU}{\9040\035}% U+201D  
 16465 % U+201E DOUBLE LOW-9 QUOTATION MARK; quotedblbase  
 16466 \DeclareTextCommand{\quotedblbase}{PU}{\9040\036}% U+201E  
 16467 % U+2020 DAGGER; dagger  
 16468 \DeclareTextCommand{\textdagger}{PU}{\9040\040}% U+2020  
 16469 % U+2021 DOUBLE DAGGER; daggerdbl  
 16470 \DeclareTextCommand{\textdaggerdbl}{PU}{\9040\041}% U+2021  
 16471 % U+2022 BULLET; bullet  
 16472 \DeclareTextCommand{\textbullet}{PU}{\9040\042}% U+2022

16473 % U+2026 HORIZONTAL ELLIPSIS; ellipsis  
 16474 \DeclareTextCommand{\textellipsis}{PU}{\9040\046}% U+2026  
 16475 % U+2030 PER MILLE SIGN; perthousand  
 16476 \DeclareTextCommand{\textperthousand}{PU}{\9040\060}% U+2030  
 16477 % U+2031 PER TEN THOUSAND SIGN  
 16478 \DeclareTextCommand{\textpertenthousand}{PU}{\9040\061}% U+2031  
 16479 % U+2039 SINGLE LEFT-POINTING ANGLE QUOTATION MARK; guil-  
 lingleft  
 16480 \DeclareTextCommand{\guilsingleft}{PU}{\9040\071}% U+2039  
 16481 % U+203A SINGLE RIGHT-POINTING ANGLE QUOTATION MARK; guils-  
 ingright  
 16482 \DeclareTextCommand{\guilsingright}{PU}{\9040\072}% U+203A  
 16483 % U+203B REFERENCE MARK; referencemark  
 16484 \DeclareTextCommand{\textreferencemark}{PU}{\9040\073}% U+203B  
 16485 % U+203D INTERROBANG  
 16486 \DeclareTextCommand{\textinterrobang}{PU}{\9040\075}% U+203D  
 16487 % U+2044 FRACTION SLASH; fraction  
 16488 \DeclareTextCommand{\textfractionsolidus}{PU}{\9040\104}% U+2044  
 16489 % U+2045 LEFT SQUARE BRACKET WITH QUILL  
 16490 \DeclareTextCommand{\textlquill}{PU}{\9040\105}% U+2045  
 16491 % U+2046 RIGHT SQUARE BRACKET WITH QUILL  
 16492 \DeclareTextCommand{\textrquill}{PU}{\9040\106}% U+2046  
 16493 % U+2052 COMMERCIAL MINUS SIGN  
 16494 \DeclareTextCommand{\textdiscount}{PU}{\9040\122}% U+2052

### 50.2.13 Superscripts and Subscripts: U+2070 to U+209F

16495 % U+2070 SUPERSCRIPT ZERO; zerosuperior  
 16496 \DeclareTextCommand{\textzerosuperior}{PU}{\9040\160}% U+2070  
 16497 % U+2074 SUPERSCRIPT FOUR; foursuperior  
 16498 \DeclareTextCommand{\textfoursuperior}{PU}{\9040\164}% U+2074  
 16499 % U+2075 SUPERSCRIPT FIVE; fivesuperior  
 16500 \DeclareTextCommand{\textfivesuperior}{PU}{\9040\165}% U+2075  
 16501 % U+2076 SUPERSCRIPT SIX; sixsuperior  
 16502 \DeclareTextCommand{\textsixsuperior}{PU}{\9040\166}% U+2076  
 16503 % U+2077 SUPERSCRIPT SEVEN; sevensuperior  
 16504 \DeclareTextCommand{\textsevensuperior}{PU}{\9040\167}% U+2077  
 16505 % U+2078 SUPERSCRIPT EIGHT; eightsuperior  
 16506 \DeclareTextCommand{\texteightsuperior}{PU}{\9040\170}% U+2078  
 16507 % U+2079 SUPERSCRIPT NINE; ninesuperior  
 16508 \DeclareTextCommand{\textninesuperior}{PU}{\9040\171}% U+2079  
 16509 % U+207A SUPERSCRIPT PLUS SIGN; plussuperior  
 16510 \DeclareTextCommand{\textplussuperior}{PU}{\9040\172}% U+207A  
 16511 % U+207B SUPERSCRIPT MINUS  
 16512 \DeclareTextCommand{\textminussuperior}{PU}{\9040\173}  
 16513 % U+207C SUPERSCRIPT EQUALS SIGN; equalsuperior  
 16514 \DeclareTextCommand{\textequalsuperior}{PU}{\9040\174}  
 16515 % U+207D SUPERSCRIPT LEFT PARENTHESIS; parenleftsuperior  
 16516 \DeclareTextCommand{\textparenleftsuperior}{PU}{\9040\175}  
 16517 % U+207E SUPERSCRIPT RIGHT PARENTHESIS; parenrightsuperior  
 16518 \DeclareTextCommand{\textparenrightsuperior}{PU}{\9040\176}  
 16519 % U+207F SUPERSCRIPT LATIN SMALL LETTER N; nsuperior  
 16520 \DeclareTextCommand{\textnsuperior}{PU}{\9040\177}  
 16521 % U+2080 SUBSCRIPT ZERO; zeroinferior  
 16522 \DeclareTextCommand{\textzeroinferior}{PU}{\9040\200}% U+2080  
 16523 % U+2081 SUBSCRIPT ONE; oneinferior  
 16524 \DeclareTextCommand{\textoneinferior}{PU}{\9040\201}% U+2081  
 16525 % U+2082 SUBSCRIPT TWO; twoinferior

16526 \DeclareTextCommand{\texttwoinferior}{PU}{\9040\202}% U+2082  
 16527 % U+2083 SUBSCRIPT THREE; threeinferior  
 16528 \DeclareTextCommand{\textthreeinferior}{PU}{\9040\203}% U+2083  
 16529 % U+2084 SUBSCRIPT FOUR; fourinferior  
 16530 \DeclareTextCommand{\textfourinferior}{PU}{\9040\204}% U+2084  
 16531 % U+2085 SUBSCRIPT FIVE; fiveinferior  
 16532 \DeclareTextCommand{\textfiveinferior}{PU}{\9040\205}% U+2085  
 16533 % U+2086 SUBSCRIPT SIX; sixinferior  
 16534 \DeclareTextCommand{\textsixinferior}{PU}{\9040\206}% U+2086  
 16535 % U+2087 SUBSCRIPT SEVEN; seveninferior  
 16536 \DeclareTextCommand{\textseveninferior}{PU}{\9040\207}% U+2087  
 16537 % U+2088 SUBSCRIPT EIGHT; eightinferior  
 16538 \DeclareTextCommand{\texteightinferior}{PU}{\9040\210}% U+2088  
 16539 % U+2089 SUBSCRIPT NINE; nineinferior  
 16540 \DeclareTextCommand{\textnineinferior}{PU}{\9040\211}% U+2089  
 16541 % U+208D SUBSCRIPT LEFT PARENTHESIS; parenleftinferior  
 16542 \DeclareTextCommand{\textparenleftinferior}{PU}{\9040\215}% U+208D  
 16543 % U+208E SUBSCRIPT RIGHT PARENTHESIS; parenrightinferior  
 16544 \DeclareTextCommand{\textparenrightinferior}{PU}{\9040\216}% U+208E

#### 50.2.14 Currency Symbols: U+20A0 to U+20CF

16545 % U+20A1 COLON SIGN; \*colonmonetary, colonsign  
 16546 \DeclareTextCommand{\textcolonmonetary}{PU}{\9040\241}% U+20A1  
 16547 % U+20A4 LIRA SIGN; afii08941, \*lira  
 16548 \DeclareTextCommand{\textlira}{PU}{\9040\244}% U+20A4  
 16549 % U+20A6 NAIRA SIGN  
 16550 \DeclareTextCommand{\textnaira}{PU}{\9040\246}% U+20A6  
 16551 % U+20A7 PESETA SIGN; peseta  
 16552 \DeclareTextCommand{\textpeseta}{PU}{\9040\247}% U+20A7  
 16553 % U+20A9 WON SIGN; won  
 16554 \DeclareTextCommand{\textwon}{PU}{\9040\251}% U+20A9  
 16555 % U+20AB DONG SIGN; dong  
 16556 \DeclareTextCommand{\textdong}{PU}{\9040\253}% U+20AB  
 16557 % U+20AC EURO SIGN; \*Euro, euro  
 16558 \DeclareTextCommand{\texteuro}{PU}{\9040\254}% U+20AC  
 16559 % U+20B1 PESO SIGN  
 16560 \DeclareTextCommand{\textpeso}{PU}{\9040\261}% U+20B1  
 16561 % U+20B2 GUARANI SIGN  
 16562 \DeclareTextCommand{\textguarani}{PU}{\9040\262}% U+20B2

#### 50.2.15 Letterlike Symbols: U+2100 to U+214F

16563 % U+2103 DEGREE CELSIUS; centigrade  
 16564 \DeclareTextCommand{\textcelsius}{PU}{\9041\003}% U+2103  
 16565 % U+2116 NUMERO SIGN; \*afii61352, numero  
 16566 \DeclareTextCommand{\textnumero}{PU}{\9041\026}% U+2116  
 16567 % U+2117 SOUND RECORDING COPYRIGHT  
 16568 \DeclareTextCommand{\textcircledP}{PU}{\9041\027}% U+2117  
 16569 % U+211E PRESCRIPTION TAKE; prescription  
 16570 \DeclareTextCommand{\textrecipe}{PU}{\9041\036}% U+211E  
 16571 % U+2120 SERVICE MARK  
 16572 \DeclareTextCommand{\textservicemark}{PU}{\9041\040}% U+2120  
 16573 % U+2122 TRADE MARK SIGN; trademark  
 16574 \DeclareTextCommand{\texttrademark}{PU}{\9041\042}% U+2122  
 16575 % U+2126 OHM SIGN; Ohm, Omega  
 16576 \DeclareTextCommand{\textohm}{PU}{\9041\046}% U+2126  
 16577 % U+2127 INVERTED OHM SIGN  
 16578 \DeclareTextCommand{\textmho}{PU}{\9041\047}% U+2127

16579 % U+212B ANGSTROM SIGN; angstrom  
 16580 \DeclareTextCommand{\textangstrom}{PU}{\9041\053}% U+212B  
 16581 % U+212E ESTIMATED SYMBOL; estimated  
 16582 \DeclareTextCommand{\textestimated}{PU}{\9041\056}% U+212E  
 16583 % U+2135 ALEF SYMBOL; aleph  
 16584 \DeclareTextCommand{\textaleph}{PU}{\9041\065}% U+2135

#### 50.2.16 Arrows: U+2190 to U+21FF

16585 % U+2190 LEFTWARDS ARROW; arrowleft  
 16586 \DeclareTextCommand{\textleftarrow}{PU}{\9041\220}% U+2190  
 16587 % U+2191 UPWARDS ARROW; arrowup  
 16588 \DeclareTextCommand{\textuparrow}{PU}{\9041\221}% U+2191  
 16589 % U+2192 RIGHTWARDS ARROW; arrowright  
 16590 \DeclareTextCommand{\textrightarrow}{PU}{\9041\222}% U+2192  
 16591 % U+2193 DOWNWARDS ARROW; arrowdown  
 16592 \DeclareTextCommand{\textdownarrow}{PU}{\9041\223}% U+2193

#### 50.2.17 Mathematical Operators: U+2200 to U+22FF

16593 % U+2212 MINUS SIGN; minus  
 16594 \DeclareTextCommand{\textminus}{PU}{\9042\022}% U+2212  
 16595 % U+221A SQUARE ROOT; radical  
 16596 \DeclareTextCommand{\textsurd}{PU}{\9042\032}% U+221A

#### 50.2.18 Miscellaneous Technical: U+2300 to U+23FF

16597 % U+2329 LEFT-POINTING ANGLE BRACKET; angleleft  
 16598 \DeclareTextCommand{\textlangle}{PU}{\9043\051}% U+2329  
 16599 % U+232A RIGHT-POINTING ANGLE BRACKET; angleright  
 16600 \DeclareTextCommand{\textrangle}{PU}{\9043\052}% U+232A

#### 50.2.19 Control Pictures: U+2400 to U+243F

16601 % U+2422 BLANK SYMBOL  
 16602 \DeclareTextCommand{\textblank}{PU}{\9044\042}% U+2422  
 16603 % U+2423 OPEN BOX; blank  
 16604 \DeclareTextCommand{\textvisiblespace}{PU}{\9044\043}% U+2423

#### 50.2.20 Enclosed Alphanumerics: U+2460 to U+24FF

16605 % U+2460 CIRCLED DIGIT ONE; onecircle  
 16606 \DeclareTextCompositeCommand{\textcircled}{PU}{1}{\9044\140}% U+2460  
 16607 % U+2461 CIRCLED DIGIT TWO; twocircle  
 16608 \DeclareTextCompositeCommand{\textcircled}{PU}{2}{\9044\141}% U+2461  
 16609 % U+2462 CIRCLED DIGIT THREE; threecircle  
 16610 \DeclareTextCompositeCommand{\textcircled}{PU}{3}{\9044\142}% U+2462  
 16611 % U+2463 CIRCLED DIGIT FOUR; fourcircle  
 16612 \DeclareTextCompositeCommand{\textcircled}{PU}{4}{\9044\143}% U+2463  
 16613 % U+2464 CIRCLED DIGIT FIVE; fivecircle  
 16614 \DeclareTextCompositeCommand{\textcircled}{PU}{5}{\9044\144}% U+2464  
 16615 % U+2465 CIRCLED DIGIT SIX; sixcircle  
 16616 \DeclareTextCompositeCommand{\textcircled}{PU}{6}{\9044\145}% U+2465  
 16617 % U+2466 CIRCLED DIGIT SEVEN; sevenscircle  
 16618 \DeclareTextCompositeCommand{\textcircled}{PU}{7}{\9044\146}% U+2466  
 16619 % U+2467 CIRCLED DIGIT EIGHT; eightcircle  
 16620 \DeclareTextCompositeCommand{\textcircled}{PU}{8}{\9044\147}% U+2467  
 16621 % U+2468 CIRCLED DIGIT NINE; ninecircle  
 16622 \DeclareTextCompositeCommand{\textcircled}{PU}{9}{\9044\150}% U+2468  
 16623 % U+2469 CIRCLED NUMBER TEN; tencircle  
 16624 \DeclareTextCompositeCommand{\textcircled}{PU}{10}{\9044\151}% U+2469  
 16625 % U+246A CIRCLED NUMBER ELEVEN; elevencircle

16626 \DeclareTextCompositeCommand{\textcircled}{PU}{11}{\9044\152}% U+246A  
16627 % U+246B CIRCLED NUMBER TWELVE; twelvecircle  
16628 \DeclareTextCompositeCommand{\textcircled}{PU}{12}{\9044\153}% U+246B  
16629 % U+246C CIRCLED NUMBER THIRTEEN; thirteencircle  
16630 \DeclareTextCompositeCommand{\textcircled}{PU}{13}{\9044\154}% U+246C  
16631 % U+246D CIRCLED NUMBER FOURTEEN; fourteencircle  
16632 \DeclareTextCompositeCommand{\textcircled}{PU}{14}{\9044\155}% U+246D  
16633 % U+246E CIRCLED NUMBER FIFTEEN; fifteencircle  
16634 \DeclareTextCompositeCommand{\textcircled}{PU}{15}{\9044\156}% U+246E  
16635 % U+246F CIRCLED NUMBER SIXTEEN; sixteencircle  
16636 \DeclareTextCompositeCommand{\textcircled}{PU}{16}{\9044\157}% U+246F  
16637 % U+2470 CIRCLED NUMBER SEVENTEEN; seventeencircle  
16638 \DeclareTextCompositeCommand{\textcircled}{PU}{17}{\9044\160}% U+2470  
16639 % U+2471 CIRCLED NUMBER EIGHTEEN; eighteencircle  
16640 \DeclareTextCompositeCommand{\textcircled}{PU}{18}{\9044\161}% U+2471  
16641 % U+2472 CIRCLED NUMBER NINETEEN; nineteencircle  
16642 \DeclareTextCompositeCommand{\textcircled}{PU}{19}{\9044\162}% U+2472  
16643 % U+2473 CIRCLED NUMBER TWENTY; twentycircle  
16644 \DeclareTextCompositeCommand{\textcircled}{PU}{20}{\9044\163}% U+2473  
16645 % U+24B6 CIRCLED LATIN CAPITAL LETTER A; Acircle  
16646 \DeclareTextCompositeCommand{\textcircled}{PU}{A}{\9044\266}% U+24B6  
16647 % U+24B7 CIRCLED LATIN CAPITAL LETTER B; Bcircle  
16648 \DeclareTextCompositeCommand{\textcircled}{PU}{B}{\9044\267}% U+24B7  
16649 % U+24B8 CIRCLED LATIN CAPITAL LETTER C; Ccircle  
16650 \DeclareTextCompositeCommand{\textcircled}{PU}{C}{\9044\270}% U+24B8  
16651 % U+24B9 CIRCLED LATIN CAPITAL LETTER D; Dcircle  
16652 \DeclareTextCompositeCommand{\textcircled}{PU}{D}{\9044\271}% U+24B9  
16653 % U+24BA CIRCLED LATIN CAPITAL LETTER E; Ecircle  
16654 \DeclareTextCompositeCommand{\textcircled}{PU}{E}{\9044\272}% U+24BA  
16655 % U+24BB CIRCLED LATIN CAPITAL LETTER F; Fcircle  
16656 \DeclareTextCompositeCommand{\textcircled}{PU}{F}{\9044\273}% U+24BB  
16657 % U+24BC CIRCLED LATIN CAPITAL LETTER G; Gcircle  
16658 \DeclareTextCompositeCommand{\textcircled}{PU}{G}{\9044\274}% U+24BC  
16659 % U+24BD CIRCLED LATIN CAPITAL LETTER H; Hcircle  
16660 \DeclareTextCompositeCommand{\textcircled}{PU}{H}{\9044\275}% U+24BD  
16661 % U+24BE CIRCLED LATIN CAPITAL LETTER I; Icircle  
16662 \DeclareTextCompositeCommand{\textcircled}{PU}{I}{\9044\276}% U+24BE  
16663 % U+24BF CIRCLED LATIN CAPITAL LETTER J; Jcircle  
16664 \DeclareTextCompositeCommand{\textcircled}{PU}{J}{\9044\277}% U+24BF  
16665 % U+24C0 CIRCLED LATIN CAPITAL LETTER K; Kcircle  
16666 \DeclareTextCompositeCommand{\textcircled}{PU}{K}{\9044\300}% U+24C0  
16667 % U+24C1 CIRCLED LATIN CAPITAL LETTER L; Lcircle  
16668 \DeclareTextCompositeCommand{\textcircled}{PU}{L}{\9044\301}% U+24C1  
16669 % U+24C2 CIRCLED LATIN CAPITAL LETTER M; Mcircle  
16670 \DeclareTextCompositeCommand{\textcircled}{PU}{M}{\9044\302}% U+24C2  
16671 % U+24C3 CIRCLED LATIN CAPITAL LETTER N; Ncircle  
16672 \DeclareTextCompositeCommand{\textcircled}{PU}{N}{\9044\303}% U+24C3  
16673 % U+24C4 CIRCLED LATIN CAPITAL LETTER O; Ocircle  
16674 \DeclareTextCompositeCommand{\textcircled}{PU}{O}{\9044\304}% U+24C4  
16675 % U+24C5 CIRCLED LATIN CAPITAL LETTER P; Pcircle  
16676 \DeclareTextCompositeCommand{\textcircled}{PU}{P}{\9044\305}% U+24C5  
16677 % U+24C6 CIRCLED LATIN CAPITAL LETTER Q; Qcircle  
16678 \DeclareTextCompositeCommand{\textcircled}{PU}{Q}{\9044\306}% U+24C6  
16679 % U+24C7 CIRCLED LATIN CAPITAL LETTER R; Rcircle  
16680 \DeclareTextCompositeCommand{\textcircled}{PU}{R}{\9044\307}% U+24C7  
16681 % U+24C8 CIRCLED LATIN CAPITAL LETTER S; Scircle  
16682 \DeclareTextCompositeCommand{\textcircled}{PU}{S}{\9044\310}% U+24C8

16683 % U+24C9 CIRCLED LATIN CAPITAL LETTER T; Tcircle  
 16684 \DeclareTextCompositeCommand{\textcircled}{PU}{T}{\9044\311}% U+24C9  
 16685 % U+24CA CIRCLED LATIN CAPITAL LETTER U; Ucircle  
 16686 \DeclareTextCompositeCommand{\textcircled}{PU}{U}{\9044\312}% U+24CA  
 16687 % U+24CB CIRCLED LATIN CAPITAL LETTER V; Vcircle  
 16688 \DeclareTextCompositeCommand{\textcircled}{PU}{V}{\9044\313}% U+24CB  
 16689 % U+24CC CIRCLED LATIN CAPITAL LETTER W; Wcircle  
 16690 \DeclareTextCompositeCommand{\textcircled}{PU}{W}{\9044\314}% U+24CC  
 16691 % U+24CD CIRCLED LATIN CAPITAL LETTER X; Xcircle  
 16692 \DeclareTextCompositeCommand{\textcircled}{PU}{X}{\9044\315}% U+24CD  
 16693 % U+24CE CIRCLED LATIN CAPITAL LETTER Y; Ycircle  
 16694 \DeclareTextCompositeCommand{\textcircled}{PU}{Y}{\9044\316}% U+24CE  
 16695 % U+24CF CIRCLED LATIN CAPITAL LETTER Z; Zcircle  
 16696 \DeclareTextCompositeCommand{\textcircled}{PU}{Z}{\9044\317}% U+24CF  
 16697 % U+24D0 CIRCLED LATIN SMALL LETTER A; acircle  
 16698 \DeclareTextCompositeCommand{\textcircled}{PU}{a}{\9044\320}% U+24D0  
 16699 % U+24D1 CIRCLED LATIN SMALL LETTER B; bcircle  
 16700 \DeclareTextCompositeCommand{\textcircled}{PU}{b}{\9044\321}% U+24D1  
 16701 % U+24D2 CIRCLED LATIN SMALL LETTER C; ccircle  
 16702 \DeclareTextCompositeCommand{\textcircled}{PU}{c}{\9044\322}% U+24D2  
 16703 % U+24D3 CIRCLED LATIN SMALL LETTER D; dcircle  
 16704 \DeclareTextCompositeCommand{\textcircled}{PU}{d}{\9044\323}% U+24D3  
 16705 % U+24D4 CIRCLED LATIN SMALL LETTER E; ecircle  
 16706 \DeclareTextCompositeCommand{\textcircled}{PU}{e}{\9044\324}% U+24D4  
 16707 % U+24D5 CIRCLED LATIN SMALL LETTER F; fcircle  
 16708 \DeclareTextCompositeCommand{\textcircled}{PU}{f}{\9044\325}% U+24D5  
 16709 % U+24D6 CIRCLED LATIN SMALL LETTER G; gcircle  
 16710 \DeclareTextCompositeCommand{\textcircled}{PU}{g}{\9044\326}% U+24D6  
 16711 % U+24D7 CIRCLED LATIN SMALL LETTER H; hcircle  
 16712 \DeclareTextCompositeCommand{\textcircled}{PU}{h}{\9044\327}% U+24D7  
 16713 % U+24D8 CIRCLED LATIN SMALL LETTER I; icircle  
 16714 \DeclareTextCompositeCommand{\textcircled}{PU}{i}{\9044\330}% U+24D8  
 16715 % U+24D9 CIRCLED LATIN SMALL LETTER J; jcircle  
 16716 \DeclareTextCompositeCommand{\textcircled}{PU}{j}{\9044\331}% U+24D9  
 16717 % U+24DA CIRCLED LATIN SMALL LETTER K; kcircle  
 16718 \DeclareTextCompositeCommand{\textcircled}{PU}{k}{\9044\332}% U+24DA  
 16719 % U+24DB CIRCLED LATIN SMALL LETTER L; lcircle  
 16720 \DeclareTextCompositeCommand{\textcircled}{PU}{l}{\9044\333}% U+24DB  
 16721 % U+24DC CIRCLED LATIN SMALL LETTER M; mcircle  
 16722 \DeclareTextCompositeCommand{\textcircled}{PU}{m}{\9044\334}% U+24DC  
 16723 % U+24DD CIRCLED LATIN SMALL LETTER N; ncircle  
 16724 \DeclareTextCompositeCommand{\textcircled}{PU}{n}{\9044\335}% U+24DD  
 16725 % U+24DE CIRCLED LATIN SMALL LETTER O; ocircle  
 16726 \DeclareTextCompositeCommand{\textcircled}{PU}{o}{\9044\336}% U+24DE  
 16727 % U+24DF CIRCLED LATIN SMALL LETTER P; pcircle  
 16728 \DeclareTextCompositeCommand{\textcircled}{PU}{p}{\9044\337}% U+24DF  
 16729 % U+24E0 CIRCLED LATIN SMALL LETTER Q; qcircle  
 16730 \DeclareTextCompositeCommand{\textcircled}{PU}{q}{\9044\340}% U+24E0  
 16731 % U+24E1 CIRCLED LATIN SMALL LETTER R; rcircle  
 16732 \DeclareTextCompositeCommand{\textcircled}{PU}{r}{\9044\341}% U+24E1  
 16733 % U+24E2 CIRCLED LATIN SMALL LETTER S; scircle  
 16734 \DeclareTextCompositeCommand{\textcircled}{PU}{s}{\9044\342}% U+24E2  
 16735 % U+24E3 CIRCLED LATIN SMALL LETTER T; tcircle  
 16736 \DeclareTextCompositeCommand{\textcircled}{PU}{t}{\9044\343}% U+24E3  
 16737 % U+24E4 CIRCLED LATIN SMALL LETTER U; ucircle  
 16738 \DeclareTextCompositeCommand{\textcircled}{PU}{u}{\9044\344}% U+24E4  
 16739 % U+24E5 CIRCLED LATIN SMALL LETTER V; vcircle



```

16740 \DeclareTextCompositeCommand{\textcircled}{PU}{v}{\9044\345}% U+24E5
16741 % U+24E6 CIRCLED LATIN SMALL LETTER W; wcircle
16742 \DeclareTextCompositeCommand{\textcircled}{PU}{w}{\9044\346}% U+24E6
16743 % U+24E7 CIRCLED LATIN SMALL LETTER X; xcircle
16744 \DeclareTextCompositeCommand{\textcircled}{PU}{x}{\9044\347}% U+24E7
16745 % U+24E8 CIRCLED LATIN SMALL LETTER Y; ycircle
16746 \DeclareTextCompositeCommand{\textcircled}{PU}{y}{\9044\350}% U+24E8
16747 % U+24E9 CIRCLED LATIN SMALL LETTER Z; zcircle
16748 \DeclareTextCompositeCommand{\textcircled}{PU}{z}{\9044\351}% U+24E9
16749 % U+24EA CIRCLED DIGIT ZERO
16750 \DeclareTextCompositeCommand{\textcircled}{PU}{0}{\9044\352}% U+24EA

```

### 50.2.21 Box Drawing: U+2500 to U+257F

```

16751 % U+25E6 WHITE BULLET; *openbullet, whitebullet
16752 \DeclareTextCommand{\textopenbullet}{PU}{\9045\346}% U+25E6
16753 % U+25EF LARGE CIRCLE; largecircle
16754 \DeclareTextCommand{\textbigcircle}{PU}{\9045\357}% U+25EF

```

### 50.2.22 Miscellaneous Symbols: U+2600 to U+26FF

```

16755 % U+266A EIGHTH NOTE; musicalnote
16756 \DeclareTextCommand{\textmusicalnote}{PU}{\9046\152}% U+266A
16757 % U+26AD MARRIAGE SYMBOL
16758 \DeclareTextCommand{\textmarried}{PU}{\9046\255}% U+26AD
16759 % U+26AE DIVORCE SYMBOL
16760 \DeclareTextCommand{\textdivorced}{PU}{\9046\256}% U+26AE

```

### 50.2.23 Miscellaneous Mathematical Symbols-A: U+27C0 to U+27EF

```

16761 % U+27E6 MATHEMATICAL LEFT WHITE SQUARE BRACKET
16762 \DeclareTextCommand{\textlbrackdbl}{PU}{\9047\346}% U+27E6
16763 % U+27E7 MATHEMATICAL RIGHT WHITE SQUARE BRACKET
16764 \DeclareTextCommand{\textrbrackdbl}{PU}{\9047\347}% U+27E7

```

### 50.2.24 Alphabetic Presentation Forms: U+FB00 to U+FB4F

```

16765 % U+FB01 LATIN SMALL LIGATURE FI; fi
16766 \DeclareTextCommand{\textfi}{PU}{\9373\001}% U+FB01
16767 % U+FB02 LATIN SMALL LIGATURE FL; fl
16768 \DeclareTextCommand{\textfl}{PU}{\9373\002}% U+FB02

```

### 50.2.25 Miscellaneous

```

16769 \DeclareTextCommand{\SS}{PU}{SS}

```

### 50.2.26 Aliases

Aliases (german.sty)

```

16770 \DeclareTextCommand{\textglqq}{PU}{\quotedblbase}
16771 \DeclareTextCommand{\textgrqq}{PU}{\textquotedblleft}
16772 \DeclareTextCommand{\textglq}{PU}{\quotesinglbase}
16773 \DeclareTextCommand{\textgrq}{PU}{\textquoteleft}
16774 \DeclareTextCommand{\textflqq}{PU}{\guillemotleft}
16775 \DeclareTextCommand{\textfrqq}{PU}{\guillemotright}
16776 \DeclareTextCommand{\textflq}{PU}{\guilsinglleft}
16777 \DeclareTextCommand{\textfrq}{PU}{\guilsinglright}

```

Aliases (math names)

```

16778 \DeclareTextCommand{\textneg}{PU}{\textlogicalnot}
16779 \DeclareTextCommand{\texttimes}{PU}{\textmultiply}
16780 \DeclareTextCommand{\textdiv}{PU}{\textdivide}
16781 \DeclareTextCommand{\textpm}{PU}{\textplusminus}
16782 \DeclareTextCommand{\textcdot}{PU}{\textperiodcentered}

```

16783  $\langle$ /puenc $\rangle$

### 50.3 PU encoding, additions for VnT<sub>E</sub>X

This file is provided by Han The Thanh.

16784  $\langle$ \*puvnenc $\rangle$

```
16785 \DeclareTextCommand{\abreve}{PU}{\81\003}
16786 \DeclareTextCommand{\acircumflex}{PU}{\80\342}
16787 \DeclareTextCommand{\dj}{PU}{\81\021}
16788 \DeclareTextCommand{\ecircumflex}{PU}{\80\352}
16789 \DeclareTextCommand{\ocircumflex}{PU}{\80\364}
16790 \DeclareTextCommand{\ohorn}{PU}{\81\241}
16791 \DeclareTextCommand{\uhorn}{PU}{\81\260}
16792 \DeclareTextCommand{\ABREVE}{PU}{\81\002}
16793 \DeclareTextCommand{\ACIRCUMFLEX}{PU}{\80\302}
16794 \DeclareTextCommand{\DJ}{PU}{\81\020}
16795 \DeclareTextCommand{\ECIRCUMFLEX}{PU}{\80\312}
16796 \DeclareTextCommand{\OCIRCUMFLEX}{PU}{\80\324}
16797 \DeclareTextCommand{\OHORN}{PU}{\81\240}
16798 \DeclareTextCommand{\UHORN}{PU}{\81\257}

16799 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\341}
16800 \DeclareTextCompositeCommand{\d}{PU}{a}{\9036\241}
16801 \DeclareTextCompositeCommand{\'}{PU}{a}{\80\340}
16802 \DeclareTextCompositeCommand{\h}{PU}{a}{\9036\243}
16803 \DeclareTextCompositeCommand{\~}{PU}{a}{\80\343}
16804 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\257}
16805 \DeclareTextCompositeCommand{\d}{PU}{\abreve}{\9036\267}
16806 \DeclareTextCompositeCommand{\'}{PU}{\abreve}{\9036\261}
16807 \DeclareTextCompositeCommand{\h}{PU}{\abreve}{\9036\263}
16808 \DeclareTextCompositeCommand{\~}{PU}{\abreve}{\9036\265}
16809 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\245}
16810 \DeclareTextCompositeCommand{\d}{PU}{\acircumflex}{\9036\255}
16811 \DeclareTextCompositeCommand{\'}{PU}{\acircumflex}{\9036\247}
16812 \DeclareTextCompositeCommand{\h}{PU}{\acircumflex}{\9036\251}
16813 \DeclareTextCompositeCommand{\~}{PU}{\acircumflex}{\9036\253}
16814 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\351}
16815 \DeclareTextCompositeCommand{\d}{PU}{e}{\9036\271}
16816 \DeclareTextCompositeCommand{\'}{PU}{e}{\80\350}
16817 \DeclareTextCompositeCommand{\h}{PU}{e}{\9036\273}
16818 \DeclareTextCompositeCommand{\~}{PU}{e}{\9036\275}
16819 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\277}
16820 \DeclareTextCompositeCommand{\d}{PU}{\ecircumflex}{\9036\307}
16821 \DeclareTextCompositeCommand{\'}{PU}{\ecircumflex}{\9036\301}
16822 \DeclareTextCompositeCommand{\h}{PU}{\ecircumflex}{\9036\303}
16823 \DeclareTextCompositeCommand{\~}{PU}{\ecircumflex}{\9036\305}
16824 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\355}
16825 \DeclareTextCompositeCommand{\d}{PU}{i}{\9036\313}
16826 \DeclareTextCompositeCommand{\'}{PU}{i}{\80\354}
16827 \DeclareTextCompositeCommand{\h}{PU}{i}{\9036\311}
16828 \DeclareTextCompositeCommand{\~}{PU}{i}{\81\051}
16829 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\363}
16830 \DeclareTextCompositeCommand{\d}{PU}{o}{\9036\315}
16831 \DeclareTextCompositeCommand{\'}{PU}{o}{\80\362}
16832 \DeclareTextCompositeCommand{\h}{PU}{o}{\9036\317}
16833 \DeclareTextCompositeCommand{\~}{PU}{o}{\80\365}
16834 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\321}
```

16835 \DeclareTextCompositeCommand{\d}{PU}{\ocircumflex}{\9036\331}  
16836 \DeclareTextCompositeCommand{\'}{PU}{\ocircumflex}{\9036\323}  
16837 \DeclareTextCompositeCommand{\h}{PU}{\ocircumflex}{\9036\325}  
16838 \DeclareTextCompositeCommand{\~}{PU}{\ocircumflex}{\9036\327}  
16839 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\333}  
16840 \DeclareTextCompositeCommand{\d}{PU}{\ohorn}{\9036\343}  
16841 \DeclareTextCompositeCommand{\'}{PU}{\ohorn}{\9036\335}  
16842 \DeclareTextCompositeCommand{\h}{PU}{\ohorn}{\9036\337}  
16843 \DeclareTextCompositeCommand{\~}{PU}{\ohorn}{\9036\341}  
16844 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\372}  
16845 \DeclareTextCompositeCommand{\d}{PU}{u}{\9036\345}  
16846 \DeclareTextCompositeCommand{\'}{PU}{u}{\80\371}  
16847 \DeclareTextCompositeCommand{\h}{PU}{u}{\9036\347}  
16848 \DeclareTextCompositeCommand{\~}{PU}{u}{\81\151}  
16849 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\351}  
16850 \DeclareTextCompositeCommand{\d}{PU}{\uhorn}{\9036\361}  
16851 \DeclareTextCompositeCommand{\'}{PU}{\uhorn}{\9036\353}  
16852 \DeclareTextCompositeCommand{\h}{PU}{\uhorn}{\9036\355}  
16853 \DeclareTextCompositeCommand{\~}{PU}{\uhorn}{\9036\357}  
16854 \DeclareTextCompositeCommand{\'}{PU}{y}{\80\375}  
16855 \DeclareTextCompositeCommand{\d}{PU}{y}{\9036\365}  
16856 \DeclareTextCompositeCommand{\'}{PU}{y}{\9036\363}  
16857 \DeclareTextCompositeCommand{\h}{PU}{y}{\9036\367}  
16858 \DeclareTextCompositeCommand{\~}{PU}{y}{\9036\371}  
16859 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\301}  
16860 \DeclareTextCompositeCommand{\d}{PU}{A}{\9036\240}  
16861 \DeclareTextCompositeCommand{\'}{PU}{A}{\80\300}  
16862 \DeclareTextCompositeCommand{\h}{PU}{A}{\9036\242}  
16863 \DeclareTextCompositeCommand{\~}{PU}{A}{\80\303}  
16864 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\256}  
16865 \DeclareTextCompositeCommand{\d}{PU}{\ABREVE}{\9036\266}  
16866 \DeclareTextCompositeCommand{\'}{PU}{\ABREVE}{\9036\260}  
16867 \DeclareTextCompositeCommand{\h}{PU}{\ABREVE}{\9036\262}  
16868 \DeclareTextCompositeCommand{\~}{PU}{\ABREVE}{\9036\264}  
16869 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\244}  
16870 \DeclareTextCompositeCommand{\d}{PU}{\ACIRCUMFLEX}{\9036\254}  
16871 \DeclareTextCompositeCommand{\'}{PU}{\ACIRCUMFLEX}{\9036\246}  
16872 \DeclareTextCompositeCommand{\h}{PU}{\ACIRCUMFLEX}{\9036\250}  
16873 \DeclareTextCompositeCommand{\~}{PU}{\ACIRCUMFLEX}{\9036\252}  
16874 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\311}  
16875 \DeclareTextCompositeCommand{\d}{PU}{E}{\9036\270}  
16876 \DeclareTextCompositeCommand{\'}{PU}{E}{\80\310}  
16877 \DeclareTextCompositeCommand{\h}{PU}{E}{\9036\272}  
16878 \DeclareTextCompositeCommand{\~}{PU}{E}{\9036\274}  
16879 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\276}  
16880 \DeclareTextCompositeCommand{\d}{PU}{\ECIRCUMFLEX}{\9036\306}  
16881 \DeclareTextCompositeCommand{\'}{PU}{\ECIRCUMFLEX}{\9036\300}  
16882 \DeclareTextCompositeCommand{\h}{PU}{\ECIRCUMFLEX}{\9036\302}  
16883 \DeclareTextCompositeCommand{\~}{PU}{\ECIRCUMFLEX}{\9036\304}  
16884 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\315}  
16885 \DeclareTextCompositeCommand{\d}{PU}{I}{\9036\312}  
16886 \DeclareTextCompositeCommand{\'}{PU}{I}{\80\314}  
16887 \DeclareTextCompositeCommand{\h}{PU}{I}{\9036\310}  
16888 \DeclareTextCompositeCommand{\~}{PU}{I}{\81\050}  
16889 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\323}  
16890 \DeclareTextCompositeCommand{\d}{PU}{O}{\9036\314}  
16891 \DeclareTextCompositeCommand{\'}{PU}{O}{\80\322}

```

16892 \DeclareTextCompositeCommand{\h}{PU}{O}{\9036\316}
16893 \DeclareTextCompositeCommand{\~}{PU}{O}{\80\325}
16894 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\320}
16895 \DeclareTextCompositeCommand{\d}{PU}{\OCIRCUMFLEX}{\9036\330}
16896 \DeclareTextCompositeCommand{\'}{PU}{\OCIRCUMFLEX}{\9036\322}
16897 \DeclareTextCompositeCommand{\h}{PU}{\OCIRCUMFLEX}{\9036\324}
16898 \DeclareTextCompositeCommand{\~}{PU}{\OCIRCUMFLEX}{\9036\326}
16899 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\332}
16900 \DeclareTextCompositeCommand{\d}{PU}{\OHORN}{\9036\342}
16901 \DeclareTextCompositeCommand{\'}{PU}{\OHORN}{\9036\334}
16902 \DeclareTextCompositeCommand{\h}{PU}{\OHORN}{\9036\336}
16903 \DeclareTextCompositeCommand{\~}{PU}{\OHORN}{\9036\340}
16904 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\332}
16905 \DeclareTextCompositeCommand{\d}{PU}{U}{\9036\344}
16906 \DeclareTextCompositeCommand{\'}{PU}{U}{\80\331}
16907 \DeclareTextCompositeCommand{\h}{PU}{U}{\9036\346}
16908 \DeclareTextCompositeCommand{\~}{PU}{U}{\81\150}
16909 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\350}
16910 \DeclareTextCompositeCommand{\d}{PU}{\UHORN}{\9036\360}
16911 \DeclareTextCompositeCommand{\'}{PU}{\UHORN}{\9036\352}
16912 \DeclareTextCompositeCommand{\h}{PU}{\UHORN}{\9036\354}
16913 \DeclareTextCompositeCommand{\~}{PU}{\UHORN}{\9036\356}
16914 \DeclareTextCompositeCommand{\'}{PU}{Y}{\80\335}
16915 \DeclareTextCompositeCommand{\d}{PU}{Y}{\9036\364}
16916 \DeclareTextCompositeCommand{\'}{PU}{Y}{\9036\362}
16917 \DeclareTextCompositeCommand{\h}{PU}{Y}{\9036\366}
16918 \DeclareTextCompositeCommand{\~}{PU}{Y}{\9036\370}
16919 </puvnenc>

```

## 50.4 PU encoding, additions for Arabi

This file is provided and maintained by Youssef Jabri.

```

16920 <*puarenc>
16921 \DeclareTextCommand{\hamza}{PU}{\86\041}% 0621;afi57409;ARABIC LET-
TER HAMZA
16922 \DeclareTextCommand{\alefmadda}{PU}{\86\042}% 0622;afi57410;ARABIC LET-
TER ALEF WITH MADDA ABOVE
16923 \DeclareTextCommand{\alefhamza}{PU}{\86\043}% 0623;afi57411;ARABIC LET-
TER ALEF WITH HAMZA ABOVE
16924 \DeclareTextCommand{\wawhamza}{PU}{\86\044}% 0624;afi57412;ARABIC LET-
TER WAW WITH HAMZA ABOVE
16925 \DeclareTextCommand{\aleflowerhamza}{PU}{\86\045}% 0625;afi57413;ARA-
BIC LETTER ALEF WITH HAMZA BELOW
16926 \DeclareTextCommand{\yahamza}{PU}{\86\046}% 0626;afi57414;ARABIC LET-
TER YEH WITH HAMZA ABOVE
16927 \DeclareTextCommand{\alef}{PU}{\86\047}% 0627;afi57415;ARABIC LETTER ALEF
16928 \DeclareTextCommand{\baa}{PU}{\86\050}% 0628;afi57416;ARABIC LETTER BEH
16929 \DeclareTextCommand{\T}{PU}{\86\051}% 0629;afi57417;ARABIC LETTER TEH MARBUTA
16930 \DeclareTextCommand{\taa}{PU}{\86\052}% 062A;afi57418;ARABIC LETTER TEH
16931 \DeclareTextCommand{\thaa}{PU}{\86\053}% 062B;afi57419;ARABIC LET-
TER THEH
16932 \DeclareTextCommand{\jeem}{PU}{\86\054}% 062C;afi57420;ARABIC LET-
TER JEEM
16933 \DeclareTextCommand{\Haa}{PU}{\86\055}% 062D;afi57421;ARABIC LET-
TER HAH

```

16934 \DeclareTextCommand{\kha}{PU}{\86\056}% 062E;afi57422;ARABIC LET-  
TER KHAH

16935 \DeclareTextCommand{\dal}{PU}{\86\057}% 062F;afi57423;ARABIC LETTER DAL

16936 \DeclareTextCommand{\dhal}{PU}{\86\060}% 0630;afi57424;ARABIC LET-  
TER THAL

16937 \DeclareTextCommand{\ra}{PU}{\86\061}% 0631;afi57425;ARABIC LETTER REH

16938 \DeclareTextCommand{\zay}{PU}{\86\062}% 0632;afi57426;ARABIC LETTER ZAIN

16939 \DeclareTextCommand{\seen}{PU}{\86\063}% 0633;afi57427;ARABIC LET-  
TER SEEN

16940 \DeclareTextCommand{\sheen}{PU}{\86\064}% 0634;afi57428;ARABIC LET-  
TER SHEEN

16941 \DeclareTextCommand{\sad}{PU}{\86\065}% 0635;afi57429;ARABIC LETTER SAD

16942 \DeclareTextCommand{\dad}{PU}{\86\066}% 0636;afi57430;ARABIC LETTER DAD

16943 \DeclareTextCommand{\Ta}{PU}{\86\067}% 0637;afi57431;ARABIC LETTER TAH

16944 \DeclareTextCommand{\za}{PU}{\86\070}% 0638;afi57432;ARABIC LETTER ZAH

16945 \DeclareTextCommand{\ayn}{PU}{\86\071}% 0639;afi57433;ARABIC LETTER AIN

16946 \DeclareTextCommand{\ghayn}{PU}{\86\072}% 063A;afi57434;ARABIC LET-  
TER GHAIN

16947 \DeclareTextCommand{\tatweel}{PU}{\86\100}% 0640;afi57440;ARABIC TATWEEL

16948 \DeclareTextCommand{\fa}{PU}{\86\101}% 0641;afi57441;ARABIC LETTER FEH

16949 \DeclareTextCommand{\qaf}{PU}{\86\102}% 0642;afi57442;ARABIC LETTER QAF

16950 \DeclareTextCommand{\kaf}{PU}{\86\103}% 0643;afi57443;ARABIC LETTER KAF

16951 \DeclareTextCommand{\lam}{PU}{\86\104}% 0644;afi57444;ARABIC LETTER LAM

16952 \DeclareTextCommand{\meem}{PU}{\86\105}% 0645;afi57445;ARABIC LET-  
TER MEEM

16953 \DeclareTextCommand{\nun}{PU}{\86\106}% 0646;afi57446;ARABIC LETTER NOON

16954 \DeclareTextCommand{\ha}{PU}{\86\107}% 0647;afi57470;ARABIC LETTER HEH

16955 \DeclareTextCommand{\waw}{PU}{\86\110}% 0648;afi57448;ARABIC LET-  
TER WAW

16956 \DeclareTextCommand{\alefmaqsura}{PU}{\86\111}% 0649;afi57449;ARABIC LET-  
TER ALEF MAKSURA

16957 \DeclareTextCommand{\ya}{PU}{\86\112}% 064A;afi57450;ARABIC LETTER YEH

16958 \DeclareTextCommand{\nasb}{PU}{\86\113}% 064B;afi57451;ARABIC FATHATAN

16959 \DeclareTextCommand{\raff}{PU}{\86\114}% 064C;afi57452;ARABIC DAMMATAN

16960 \DeclareTextCommand{\jarr}{PU}{\86\115}% 064D;afi57453;ARABIC KAS-  
RATAN

16961 \DeclareTextCommand{\fatha}{PU}{\86\116}% 064E;afi57454;ARABIC FATHA

16962 \DeclareTextCommand{\damma}{PU}{\86\117}% 064F;afi57455;ARABIC DAMMA

16963 \DeclareTextCommand{\kasra}{PU}{\86\120}% 0650;afi57456;ARABIC KASRA

16964 \DeclareTextCommand{\shadda}{PU}{\86\121}% 0651;afi57457;ARABIC SHADDA

16965 \DeclareTextCommand{\sukun}{PU}{\86\122}% 0652;afi57458;ARABIC SUKUN

Farsi

16966 \DeclareTextCommand{\peh}{PU}{\86\176}% 067E;afi57506;ARABIC LET-  
TER PEH

16967 \DeclareTextCommand{\tcheh}{PU}{\86\206}% 0686;afi57507;ARABIC LET-  
TER TCHEH

16968 \DeclareTextCommand{\jeh}{PU}{\86\230}% 0698;afi57508;ARABIC LETTER JEH

16969 \DeclareTextCommand{\farsikaf}{PU}{\86\251}% 06A9???;afi????;FARSI LET-  
TER KAF

16970 \DeclareTextCommand{\gaf}{PU}{\86\257}% 06AF;afi57509;ARABIC LETTER GAF

16971 \DeclareTextCommand{\farsiya}{PU}{\86\314}% 06CC;afi????;FARSI LET-  
TER YEH

16972 \DeclareTextCommand{\ZWNJ}{PU}{\9040\014}% 200C;ZWNJ%

16973 \DeclareTextCommand{\noboundary}{PU}{\86\325}% 200D;ZWJ

16974 \puarenc)

## 51 End of file hycheck.tex

```
16975 \*check>  
16976 \typeout{}  
16977 \begin{document}  
16978 \end{document}  
16979 \</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	15430, 15490, 15492, 15542,
\” 202, 227, 3173, 14157, 14517,		15544, 15550, 15552, 15554,
14529, 14541, 14664, 14750,		15556, 15638, 15640, 15642,
14764, 14772, 14787, 14799,		15644, 15646, 15648, 15650,
14815, 14829, 14840, 14841,		15652, 15707, 15709, 15711,
14855, 14867, 14873, 14924,		15713, 15771, 15774, 15776,
14952, 14971, 14992, 15119,		15801, 15820, 15966, 15985,
15133, 15141, 15155, 15167,		16334, 16336, 16346, 16348,
15183, 15197, 15208, 15209,		16362, 16364, 16394, 16396,
15223, 15235, 15241, 15488,		16799, 16804, 16809, 16814,
15703, 15705, 15715, 15767,		16819, 16824, 16829, 16834,
15769, 15797, 15810, 15962,		16839, 16844, 16849, 16854,
15975, 16208, 16210, 16224,		16859, 16864, 16869, 16874,
16226, 16228, 16230, 16232,		16879, 16884, 16889, 16894,
16234, 16244, 16246, 16248,		16899, 16904, 16909, 16914
16250, 16256, 16258, 16260,	\( . 190, 215, 322, 756, 759, 761,	
16262, 16268, 16270, 16276,	2063, 14223, 14587	
16278, 16284, 16286, 16326,	\) . 191, 216, 323, 728, 734, 737,	
16328, 16398, 16400, 16410,	2064, 14224, 14589	
16412, 16428	\* . . . . . 325	
\# . 547, 2146, 2147, 4602, 4613,	\+ . . . . . 200, 225, 326	
4615, 4631, 4663, 4723,	\- . . . . . 201, 226	
8677, 8679, 9459, 9468,	\. 198, 223, 319, 1222, 3515, 3926,	
9503, 10343, 11932, 11943,	14520, 14532, 14544, 14606,	
11979, 12210, 12219, 12259,	14897, 14904, 14922, 14955,	
14077	14974, 14998, 15038, 15039,	
\\$ 184, 209, 321, 548, 4604, 4722	15263, 15265, 15287, 15289,	
\% . 549, 2061, 2121, 2122, 4601,	15307, 15309, 15343, 15374,	
4610, 4612, 4664, 8679	15376, 15494, 15496, 15587,	
\& . . . 185, 210, 550, 4605, 4616,	15589, 15595, 15597, 16294,	
4618, 11989	16296, 16302, 16304, 16314,	
\’ . . . 203, 228, 3113, 3127, 3168,	16316, 16322, 16324, 16350,	
3170, 3171, 3172, 3173,	16352, 16354, 16356, 16366,	
3178, 3179, 3181, 3186,	16368, 16370, 16372, 16378,	
3192, 3196, 3197, 3200,	16380, 16402, 16404, 16406,	
3243, 3244, 3249, 3250,	16408, 16414, 16416, 16434	
3251, 3252, 3253, 3254,	\/. 194, 219, 670, 671, 672, 739,	
3255, 3256, 3258, 3262,	1846, 8075	
3275, 14155, 14514, 14526,	\: . . . . . 189, 214	
14538, 14744, 14760, 14768,	\; . . . . . 199, 224, 8371	
14781, 14795, 14801, 14809,	\< . . . . . 196, 221	
14825, 14834, 14835, 14849,	\= . . . 167, 173, 180, 183, 14522,	
14863, 14869, 14892, 14894,	14534, 14546, 14917, 14959,	
14895, 14896, 14899, 14901,	14978, 14997, 15243, 15245,	
14902, 14903, 14911, 14949,	15279, 15281, 15328, 15330,	
14968, 14989, 15113, 15129,	15331, 15400, 15402, 15460,	
15137, 15149, 15163, 15169,	15462, 15599, 15601, 16240,	
15177, 15193, 15202, 15203,	16242, 16264, 16266, 16318,	
15217, 15231, 15237, 15255,	16320	
15257, 15362, 15364, 15382,	\> . . . . . 197, 222	
15384, 15416, 15418, 15428,	\? . . . . . 327	
	\@ . . . . . 3164	
		\@@@ . . . . . 2377
		\@@BOOKMARK 14138, 14141,
		14199, 14267, 14274
		\@@Listbox 12580, 12604, 13063,
		13096, 13404, 13447
		\@@Menu . . . . . 12789, 12797
		\@@PasswordField . 12738, 12744
		\@@Radio . 12565, 12586, 12787,
		12811, 13048, 13069, 13389,
		13410
		\@@TextField . . . . 12740, 12755
		\@@commahyperpage 8182, 8183
		\@@hyper@creadexternallink . . .
		. . . . . 4914, 4916
		\@@hyperref . . . . . 4825, 4826
		\@@latextohtmlX . . . 2992, 5062
		\@@wrindex . . . . . 8110, 8111
		\@@writetorep . . . . 13998, 14004
		\@Alph . . . . . 6707, 6709
		\@BIBLABEL . 7547, 7553, 7559
		\@BOOKMARK . . 14138, 14140
		\@CITE . . . . . 7624, 7632
		\@CITEX . . . . . 7626
		\@CheckBox 5859, 10408, 12678,
		12708, 12842, 13180, 13549
		\@ChoiceMenu . . . . 5856, 10411,
		12518, 12711, 12777, 13000,
		13341
		\@Form . . . . 5520, 10398, 12303,
		12700, 12721, 12920, 13263
		\@Gauge . . . 5865, 10402, 12487,
		12702, 12726, 12863, 13260
		\@Localurllfalse . . . . . 10351
		\@Localurlltrue . . . . . 10348
		\@M . . . 1128, 2434, 4709, 7160
		\@MM . . . . . 7310
		\@PackageError . . . . . 263
		\@PackageInfo . . . . . 266
		\@PackageInfoNoLine . . . . 267
		\@PackageWarning . . . . . 264
		\@PackageWarningNoLine . . 265
		\@PushButton . . . . 5862, 10414,
		12611, 12714, 12823, 13105,
		13463
		\@Refstar . . . . . 8486, 8493
		\@Reset . . . . 5871, 10417, 12655,
		12717, 12839, 13156, 13520
		\@Roman . . . . . 632
		\@SCTR . . . . . 8230, 8282
		\@SetMaxRnhefLabel . . . . 7621
		\@Submit . . 5868, 10420, 12638,
		12718, 12836, 13134, 13497

<code>\@TextField</code> . 5853, 10405, 12490, 12705, 12729, 12971, <u>13304</u>	<code>\@clubpenalty</code> . . . . . 7162	<code>\@filebordercolor</code> 3558, 4015, 9011, 9013, 10033, 10035, 10551, 10553, 11602
<code>\@addchap</code> . . . . . 14474	<code>\@commahyperpage</code> . 8177, 8182	<code>\@filecolor</code> 3484, 3496, 9032, 9642, 9659, 10051, 10557
<code>\@addtoreset</code> . 8004, 8005, 8019, 8227	<code>\@ctrerr</code> . . . . . 6681, 6690	<code>\@firstoffive</code> . . 4537, 4546, 8476, 8561
<code>\@afterheading</code> . . . . . 14491	<code>\@currDisplay</code> . . . . 5608, 12530, 12593, 12806, 12820, 13012, 13076, 13353, 13420	<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, 6700, 6712, 6779, 7414, 7495, 7636, 7659, 7841, 8065, 9320, 12893, 13634, 13651, 13669
<code>\@alph</code> . . . . . 6703, 6705	<code>\@currValue</code> . . 5610, 5612, 12591, 12598, 12806, 12817, 13074, 13083, 13418, 13435, 13875	<code>\@firstoftwo</code> 641, 922, 1090, 1762, 6049, 14440
<code>\@anchorcolor</code> 3494, 9428, 9523, 10465, 11900, 12180	<code>\@currentHlabel</code> . . . . . <u>6753</u>	<code>\@fnsymbol</code> . . . . . 6701
<code>\@arabic</code> 1098, 1103, 1107, 6702	<code>\@currentHref</code> 2379, 5961, 6639, 6733, 6735, 6744, 6746, 6753, 6834, 6836, 6846, 6897, 6908, 6910, 6949, 6968, 6972, 6981, 7007, 7097, 7128, 7153, 7226, 7236, 7238, 7239, 7295, 7323, 7421, 7447, 7451, 7466, 7468, 7696, 7880, 7903, 7916, 7923, 7974, 7998, 8000, 13988, 14379, 14392, 14403, 14433, 14450, 14485	<code>\@footnotemark</code> 7169, 7232, 7250, 7332, 7344, 7346, 7358, 7359, 7389, 7391
<code>\@auxout</code> 2371, 4872, 6079, 6081, 6792, 6820, 7567, 7582, 7598, 7608, 7638, 7661, 7687, 7693, 7717	<code>\@currentlabel</code> 6876, 7313, 7689, 7696, 7979, 7986, 8236, 8288	<code>\@footnotetext</code> . . . . . . . 7168, 7175, 7209, 7249, 7345, 7347, 7361, 7362, 7382
<code>\@backslashchar</code> . . . . . 852, 855, 858, 1352, 2023, 2027, 2030, 2168, 2185, 2191, 2195, 2203, 4626, 8692, 8702	<code>\@currentlabelname</code> . 2369, 7227, 7296, 7324, 7426	<code>\@for</code> . . . 3534, 5128, 7633, 7656, 12527, 12589, 12795, 12802, 12812, 13009, 13072, 13350, 13416
<code>\@baseurl</code> 3501, 3503, 4972, 9144, 9147, 9413, 9415, 9701, 9703, 10220, 10230, 10316, 10318, 10853, 10855, 11233, 11247, 11885, 11887, 12086, 12100, 12166, 12168	<code>\@currentlabstr</code> . . . . 2368, 2376	<code>\@fourthoffive</code> 4540, 4860, 8551, 8558
<code>\@begintheorem</code> 7064, 7067, 7092, 7099, 7123, 7130	<code>\@curropt</code> . 12527, 12528, 12589, 12590, 12795, 12802, 12803, 12805, 12812, 12813, 12815, 13009, 13010, 13072, 13073, 13350, 13351, 13416, 13417	<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, 7053, 7079, 7112, 7403, 7492, 7879, 8616, 9322, 10733, 10736, 12921, 13264, 14045, 14046, 14047, 14048
<code>\@bibitem</code> . . . . . 7574, 7605	<code>\@dblarg</code> . . . . . 7416, 7497	<code>\@gobblefour</code> . . . 577, 680, 1248, 1249, 1250, 3711, 8351
<code>\@biblabel</code> . . . . . 7547, 7594	<code>\@definecounter</code> . . . . 7959, 7960	<code>\@gobbleopt</code> . . . . . 6060, 6062
<code>\@bookmarkopenstatus</code> . . 4426, 4443, 14059	<code>\@ehc</code> . . 2739, 2850, 2875, 2908, 2946, 2953, 2964, 2970, 4151, 4771, 4936, 5232, 5356, 5552, 5585, 5795, 5844, 12620, 12666, 13115, 13167, 13473, 13531	<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, 7402, 7491	
<code>\@bsphack</code> . . . . 2364, 4865, 7691	<code>\@endForm</code> . 5521, 10401, 12486, 12701, 12725, 12970, <u>13290</u>	
<code>\@capstartfalse</code> . . . . . 7441	<code>\@endpary</code> . . 7062, 7088, 7119	
<code>\@caption</code> 7406, 7418, 7461, 7497, 7499	<code>\@eqnncr</code> . . . . . 6991	
<code>\@capytype</code> 2373, 7401, 7405, 7409, 7416, 7423, 7465, 7490, 7494, 7497	<code>\@eqnstarfalse</code> . . . . . 6963, 6994	
<code>\@car</code> . . . 1634, 1650, 1668, 1688, 3434, 5138, 9096, 9107	<code>\@eqnstartrue</code> . . . . . 6991	
<code>\@cdr</code> . . . . . 9097, 9108	<code>\@eqnswtrue</code> . . . . . 6924, 6933	
<code>\@chapter</code> . . . . . 14398, 14399	<code>\@esphack</code> 2385, 4876, 7701, 8122	
<code>\@cite</code> . . 7624, 7655, 7752, 7758	<code>\@extra@b@citeb</code> . . . . . . . 7532, 7535, 7552, 7557, 7577, 7625, 7647, 7663, 7670	
<code>\@cite@opt</code> 7753, 7759, 7763, 7773	<code>\@extra@b@info</code> . 7531, 7534, 7538	
<code>\@citea</code> . 7627, 7634, 7635, 7654, 7657, 7658	<code>\@fifthoffive</code> . . 4111, 4541, 4859, 8437, 8556	
<code>\@citeb</code> . 7633, 7636, 7638, 7640, 7644, 7647, 7656, 7659, 7661, 7663, 7667, 7670		
<code>\@citebordercolor</code> . . 3557, 4017		
<code>\@citecolor</code> . . . . . 3495		
<code>\@citedata@opt</code> 7754, 7760, <u>7762</u>		
<code>\@citedatax</code> . . . . . 7769, 7774		
<code>\@citedatax@opt</code> . . . 7766, <u>7772</u>		
<code>\@citeseppen</code> . . . . . 7751, 7757		
<code>\@citex</code> . . . . . 7653		



6056, 6060, 8539, 14389	\@inmathwarn . . . . . 541, 542	\@one 1097, 2758, 2896, 4414, 4741,
\@charvarditem . . . . . 7706, 7708	\@inpend@undefined@ . . . . 2223	9965, 9970, 10832, 11740,
\@hyper@anchor . . . . . 5022, 5023	\@labels . . . . . 7157	13299
\@hyper@itemfalse . . . . . 6582, 6600,	\@latex@ . . . . . 6163, 6164	\@newctr . . . . . 7964, 7965
6614	\@latex@error . . . . . 7402, 7491	\@newl@bel . . . . . 6126, 7534
\@hyper@itemtrue . . . . . 6583	\@latex@warning . . . . . 4852, 7643,	\@newlistfalse . . . . . 7138
\@hyper@launch . . . . . 4942, 4951,	7666, 8412, 8432, 8449, 8567	\@nil 293, 310, 486, 490, 495, 499,
9036, 10056, 10626, 11620	\@lbibitem . . . . . 7548, 7593	514, 1546, 1549, 1557, 1634,
\@hyper@linkfile . . . . . 4923, 4926,	\@linkbordercolor . . . . . 3559, 4012,	1652, 1670, 1686, 1688,
4930, 4962	8960, 10455	1691, 1694, 1697, 2232,
\@hyper@readexternallink 4917,	\@linkcolor . . . . . 3493, 11280	2234, 2250, 2252, 3434,
4921	\@linkdim 469, 9477, 9478, 9486,	4648, 4652, 4657, 4989,
\@hyperdef . . . . . 4833, 4834	9487, 9488, 9557, 9558,	4997, 5003, 5005, 5138,
\@hyperpage . . . . . 8174, 8175	9570, 9571, 9572, 9594,	5739, 5742, 5761, 6151,
\@hyperref . . . . . 4814, 4825	9595, 9608, 9609, 9610,	6154, 6161, 6163, 6164,
\@ifclasslater . . . . . 14497, 14502	9634, 9635, 9648, 9649,	6269, 6317, 6318, 6320,
\@ifclassloaded 2356, 4568, 6764,	9650, 11953, 11954, 11962,	6343, 6360, 6414, 6416,
6801, 7616, 8210, 8214,	11963, 11964, 12228, 12229,	6892, 6901, 6903, 6915,
9325, 14496, 14501	12242, 12243, 12244	8161, 8163, 8170, 8193,
\@ifnextchar . . . . . 12, 88, 103, 123,	\@listctr . . . . . 7583, 7609	8196, 8206, 8416, 8419,
674, 4716, 4814, 4833, 4884,	\@m . . . . . 1111, 7635, 7658, 10780	8575, 8606, 8688, 8694,
5520, 5853, 5856, 5859,	\@mainaux . . . . . 6077, 6078, 6509,	8698, 8704, 9096, 9097,
5862, 5865, 5868, 5871,	6517, 12889, 12913	9107, 9108, 10698, 10700,
6060, 6132, 6141, 7348,	\@makecaption 7442, 7444, 7510	13641, 13654, 13660, 14087,
7366, 7706, 7764, 11258,	\@makefnmark . . . . . 7241, 7394	14090, 14093, 14102, 14105,
11531, 11545, 14138, 14141	\@makefnmark . . . . . 7314	14114
\@ifpackagelater 238, 984, 2387,	\@makefnmark . . . . . 7314	\@nobreakfalse . . . . . 6123, 7160
6755, 8029	\@makefnmark . . . . . 7314	\@nocnterr . . . . . 8018, 8032
\@ifpackageloaded . . . . . 500, 882,	\@makefnmark . . . . . 7314	\@nocounterr . . . . . 8017, 8031
983, 2359, 2791, 3411, 3415,	\@makefnmark . . . . . 7314	\@noparitemfalse . . . . . 7139
4073, 4256, 6623, 6754,	\@makefnmark . . . . . 7314	\@number . . . . . 6700, 6779, 7841
6767, 6829, 6862, 6866,	\@makefnmark . . . . . 7314	\@nx . . . . . 8021, 8035, 8038, 8040
6886, 6920, 7047, 7246,	\@makefnmark . . . . . 7314	\@onelevel@sanitize . . . . . 2557, 2561,
7262, 7302, 7462, 7676,	\@makefnmark . . . . . 7314	2773, 3433, 4128, 4158,
7749, 7971, 8028, 8070,	\@makefnmark . . . . . 7314	4179, 4682, 4984, 4987,
8071, 8072, 8220, 8485,	\@makefnmark . . . . . 7314	5000, 5014, 5228, 5464,
8629, 8633, 12158	\@makefnmark . . . . . 7314	5548, 6370, 6372, 6740,
\@ifpackagewith 3293, 4074, 7994	\@makefnmark . . . . . 7314	7909, 8462, 9822, 14084
\@ifstar . . . . . 66, 4563, 4566, 4575,	\@makefnmark . . . . . 7314	\@oparg . . . . . 7064, 7067, 7092, 7099,
4579, 5996, 6000, 6066,	\@makefnmark . . . . . 7314	7123, 7130
6070, 8493, 8519, 8539	\@makefnmark . . . . . 7314	\@outlinefile 14057, 14146, 14241,
\@ifundefined 34, 361, 901, 909,	\@makefnmark . . . . . 7314	14243, 14245, 14323, 14325,
925, 928, 2653, 2721, 2805,	\@makefnmark . . . . . 7314	14327
3311, 3347, 3355, 3362,	\@makefnmark . . . . . 7314	\@pagerefstar . . . . . 4566, 8478, 8509
3384, 3432, 4041, 5227,	\@makefnmark . . . . . 7314	\@pagesetref . . . . . 8428
5547, 6479, 6592, 6627,	\@makefnmark . . . . . 7314	\@parboxrestore 7312, 7434, 7505
6632, 6868, 6889, 6890,	\@makefnmark . . . . . 7314	\@parcount . . . . . 14205, 14213
6943, 6974, 7002, 7039,	\@makefnmark . . . . . 7314	\@part . . . . . 14416, 14423
7407, 7425, 7541, 7624,	\@makefnmark . . . . . 7314	\@pdfauthor . . . . . 3727, 4020, 9204,
7640, 7663, 7968, 8009,	\@makefnmark . . . . . 7314	9683, 10167, 10894, 11159,
8017, 8018, 8031, 8032,	\@makefnmark . . . . . 7314	12017
8039, 8735, 10292, 10921,	\@makefnmark . . . . . 7314	\@pdfborder . . . . .
10922, 11715, 12921, 13264,	\@makefnmark . . . . . 7314	. . . . . 3376, 3572, 3573, 3574,
13643, 14055	\@makefnmark . . . . . 7314	3581, 3585, 3608, 3610,
\@indexfile . . . . . 8114, 8129, 8137,	\@makefnmark . . . . . 7314	4509, 8890, 9840, 10453,
8141, 8146	\@makefnmark . . . . . 7314	11025, 11120, 11523, 11535,
\@inlabelfalse . . . . . 7141	\@makefnmark . . . . . 7314	

11550, 11571, 11599, 11630,  
 11659, 11746, 11834, 11994  
 \@pdfborderstyle . . . 3377, 3589,  
 3590, 3591, 3600, 3604,  
 3612, 3614, 4510, 5710,  
 8891, 9841, 10454, 11026,  
 11121, 11524, 11536, 11551,  
 11572, 11600, 11631, 11660,  
 11747, 11835, 11995  
 \@pdfcreationdate . . . . .  
 . . 3744, 4023, 9208, 9210,  
 9675, 9677, 10159, 10161,  
 11134, 11136, 12009, 12011  
 \@pdfcreator . 3739, 4022, 9207,  
 9674, 10158, 10897, 11158,  
 12008  
 \@pdfdirection 9167, 9739, 10200,  
 10865, 11213, 12066  
 \@pdfduplex . 9173, 9745, 10206,  
 10871, 11219, 12072  
 \@pdfhighlight . . . . .  
 . . 3564, 4018, 8910, 8912,  
 8971, 9007, 9009, 9044,  
 9046, 9377, 9379, 11024,  
 11119, 11522, 11570, 11598,  
 11629  
 \@pdfhighlight 8969  
 \@pdfkeywords 3763, 4026, 9220,  
 9672, 10172, 10902, 11160,  
 12006  
 \@pdflang 4004, 4033, 9193, 9195,  
 9767, 9769, 10240, 10242,  
 11243, 11245, 12096, 12098  
 \@pdfm@dest . . 9784, 9843, 9847  
 \@pdfm@mark 6497, 9783, 9835,  
 9855, 9869, 9871, 9885,  
 9887, 9892, 9893, 9923,  
 9947, 9949, 9954, 9972,  
 9995, 10027, 10061, 10092,  
 10120, 10154, 10221, 10248,  
 13267, 13268, 13269, 13288,  
 13331, 13337, 13426, 13440,  
 13455, 13461, 13486, 13493,  
 13511, 13517, 13539, 13545,  
 13568, 13574, 13579, 13611,  
 13619, 14294  
 \@pdfmoddate . . . . .  
 . . 3750, 4024, 9212, 9214,  
 9679, 9681, 10163, 10165,  
 11138, 11142, 12013, 12015  
 \@pdfnonfullscreenpagemode . . .  
 . 9166, 9738, 10199, 10864,  
 11212, 12065  
 \@pdfnumcopies 9182, 9184, 9754,  
 9756, 10215, 10217, 10880,  
 10882, 11228, 11230, 12081,  
 12083  
 \@pdfpageduration . 3511, 9264,  
 9268, 9273, 10265, 10267,  
 10270, 10789, 10791, 10794,  
 11064, 11066, 11074  
 \@pdfpagelayout . . . 9192, 9766,  
 10239, 10885, 10887, 11242,  
 12095  
 \@pdfpagemode 4244, 4245, 4439,  
 4440, 4449, 4450, 9146,  
 9722, 10234, 10852, 11196,  
 12049  
 \@pdfpagescrop 3958, 4028, 9131,  
 9135, 9705, 9706, 9727,  
 9729, 10246, 10248, 10841,  
 10843, 11201, 11203, 12054,  
 12056  
 \@pdfpagetransition . 3507, 9240,  
 9244, 9249, 10254, 10256,  
 10259, 10678, 10680, 10682,  
 11047, 11049, 11057  
 \@pdfpicktraybypdfsize . . . . .  
 . . 9174, 9176, 9746, 9748,  
 10207, 10209, 10872, 10874,  
 11220, 11222, 12073, 12075  
 \@pdfprintarea 9170, 9742, 10203,  
 10868, 11216, 12069  
 \@pdfprintclip 9171, 9743, 10204,  
 10869, 11217, 12070  
 \@pdfprintpagerange . . . . .  
 . . 3679, 4032, 9178, 9180,  
 9750, 9752, 10211, 10213,  
 10876, 10878, 11224, 11226,  
 12077, 12079  
 \@pdfprintscaling . . 9172, 9744,  
 10205, 10870, 11218, 12071  
 \@pdfproducer 3733, 4021, 9072,  
 9216, 9218, 9665, 9666,  
 9684, 9686, 10143, 10144,  
 10148, 10168, 10170, 10809,  
 10810, 10814, 10817, 10818,  
 10898, 10900, 11145, 11149,  
 11656, 11657, 11739, 11741,  
 11743, 11831, 11832, 11999,  
 12000, 12018, 12020  
 \@pdfremotestartview . . . . .  
 . . 3930, 3932, 3933, 3934,  
 3945, 3949, 3951, 3952,  
 3954, 4030, 9024, 10042,  
 11610  
 \@pdfstartpage . . . . .  
 . . 3913, 3915, 4031, 9152,  
 9156, 9709, 9714, 10223,  
 10227, 10845, 10849, 11183,  
 11188, 12036, 12041  
 \@pdfstartview . . . . .  
 . . 3920, 3922, 4029, 9154,  
 9156, 9711, 9715, 10225,  
 10227, 10847, 11185, 11189,  
 12038, 12042  
 \@pdfsubject . 3757, 4025, 9206,  
 9688, 10157, 10896, 11157,  
 12022  
 \@pdftempa . . . 4928, 4929, 4932  
 \@pdftempwordfile . 4919, 4929  
 \@pdftempwordrun . 4920, 4932  
 \@pdftitle 3721, 4019, 9205, 9673,  
 10156, 10895, 11156, 12007  
 \@pdftrapped 3768, 3771, 3774,  
 3783, 3792, 4027, 9221,  
 9223, 10173, 10175, 11161  
 \@pdfview . . . 3894, 8872, 8880,  
 9790, 9794, 9798, 9802,  
 9806, 9810, 9811, 9814,  
 9815, 9818, 9822, 9824,  
 9839, 10452, 10462, 10474,  
 10962, 10982, 11661, 11748,  
 11836, 12108  
 \@pdfviewarea 9168, 9740, 10201,  
 10866, 11214, 12067  
 \@pdfviewclip 9169, 9741, 10202,  
 10867, 11215, 12068  
 \@pdfviewparams . . 3896, 3898,  
 10962, 10982, 11662, 11749,  
 11837, 12109  
 \@percentchar 4611, 4612, 4664,  
 14061  
 \@processme . 5596, 5597, 9246,  
 9252, 9270, 9276, 9292,  
 9298, 11261, 11262, 11373,  
 11374, 11377, 11378  
 \@protected@testopt . . . . . 677  
 \@protected@testopt@xargs . 678  
 \@refstar . . . . . 4563, 8475  
 \@runbordercolor . . . 3561, 4016,  
 9048, 9050, 10067, 10069,  
 10645, 10647, 11633  
 \@runcolor . . . 3499, 9068, 10083,  
 10651  
 \@safe@activesfalse . . 630, 4543  
 \@safe@activetrue . . . 629, 4542  
 \@savsf . . . . . 8875, 8883  
 \@schapter . . . . . 14386, 14387  
 \@secondoffive 4112, 4538, 4551,  
 8438, 8439, 8479  
 \@secondoftwo . . . . . 617, 620,  
 920, 1093, 1620, 1760, 4111,  
 4112, 14442  
 \@sect . . . . . 14437, 14438  
 \@seqncr . . . . . 6991  
 \@serial@counter . 14153, 14201,  
 14203, 14204  
 \@seteqlabel . . . . . 7995, 7996  
 \@setminipage . . . . . 7436, 7507

<code>\@setref</code> . 4546, 4551, 8407, 8408, 8445	<code>\@topsep</code> . . . . . 7061, 7087, 7118	14909, 14948, 14967, 14988,
<code>\@sharp</code> . . . . . 6892, 6898	<code>\@topsepadd</code> . . 7062, 7088, 7119	15111, 15127, 15135, 15147,
<code>\@skiphyperreffalse</code> . 6601, 7563, 7575	<code>\@typeset@protect</code> . . . . . 14358	15161, 15175, 15191, 15199,
<code>\@skiphyperreftrue</code> . 7549, 7575	<code>\@undefined</code> . . . . . 374, 377, 683, 3284, 6050, 6085, 6098, 6110, 6332, 6350, 6395, 7401, 7464, 7476, 7481, 7490, 8470, 8863, 9076, 9085, 10425, 10820, 10834	15200, 15215, 15229, 15546, 15548, 15794, 15822, 15959, 15987, 16390, 16392, 16440, 16442, 16801, 16806, 16811, 16816, 16821, 16826, 16831, 16836, 16841, 16846, 16851, 16856, 16861, 16866, 16871, 16876, 16881, 16886, 16891, 16896, 16901, 16906, 16911, 16916
<code>\@spaces</code> . . . . . 270	<code>\@undottedtocline</code> . . . . . 8397	<code>\l</code> . . . . . 188, 213, 324, 1969, 2062, 2103, 3073, 4056, 8074, 8663, 8673
<code>\@spart</code> . . . . . 14429, 14430	<code>\@unprocessedoptions</code> . . . . 4389	<code>\~</code> . . . . . 551, 1266, 2211, 3185, 3193, 3194, 3195, 4172, 4624, 14516, 14528, 14540, 14748, 14777, 14785, 14813, 14845, 14853, 14915, 14951, 14970, 14991, 15117, 15145, 15153, 15181, 15213, 15221, 15323, 15325, 15326, 15456, 15458, 16386, 16388, 16436, 16438, 16444, 16446, 16803, 16808, 16813, 16818, 16823, 16828, 16833, 16838, 16843, 16848, 16853, 16858, 16863, 16868, 16873, 16878, 16883, 16888, 16893, 16898, 16903, 16908, 16913, 16918
<code>\@ssect</code> . . . . . 14372, 14373	<code>\@urlbordercolor</code> 3562, 4013, 8973, 8975, 10098, 10100, 10577, 10579, 11573	<b>Numbers</b>
<code>\@startlos</code> . . . . 8345, 8352, 8401	<code>\@urlcolor</code> 3497, 8992, 9482, 9495, 9602, 9619, 10112, 10583, 11958, 11971, 12237, 12250	<code>\3</code> . 528, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1426, 1427, 1428, 1429, 1430, 1431, 1432, 1433, 2325, 14222, 14742, 14744, 14746, 14748, 14750, 14752, 14754, 14756, 14758, 14760, 14762, 14764, 14766, 14768, 14770, 14772, 14774, 14775, 14777, 14779, 14781, 14783, 14785, 14787, 14789, 14791, 14793, 14795, 14797, 14799, 14801, 14803, 14805, 14807, 14809, 14811, 14813, 14815, 14817, 14819, 14821, 14823, 14825, 14827, 14829, 14831, 14832, 14834, 14835, 14837, 14838, 14840, 14841, 14843, 14845, 14847, 14849, 14851, 14853, 14855, 14857, 14859, 14861, 14863, 14865, 14867, 14869, 14871, 14873, 14874, 14947, 15111, 15113, 15115, 15117, 15119, 15121, 15123,
<code>\@starttoc</code> . . . . . 6111	<code>\@xsf</code> . . 7234, 7243, 7393, 7395	
<code>\@tempa</code> 7063, 7064, 7067, 7069, 7091, 7098, 7102, 7122, 7129, 7133, 7264, 7268, 7271, 7283	<code>\@xfootnote</code> . . . . . 7366	
<code>\@tempb</code> . . . . . 7019, 7023	<code>\@xfootnotemark</code> . . . 7181, 7384	
<code>\@tempboxa</code> . 9475, 9477, 9486, 9555, 9557, 9560, 9561, 9570, 9576, 9577, 9592, 9594, 9597, 9598, 9608, 9614, 9615, 9632, 9634, 9637, 9638, 9648, 9654, 9655, 11951, 11953, 11962, 12226, 12228, 12242	<code>\@xfootnotenext</code> . . . 7170, 7377	
<code>\@tempcnta</code> 14010, 14011, 14012, 14013, 14014, 14016, 14019, 14020, 14021, 14027, 14029, 14031, 14122, 14123, 14124, 14127, 14128, 14129, 14130, 14131, 14345, 14346, 14347	<code>\@xp</code> . . . 7985, 8020, 8021, 8034, 8035, 8037, 8038	
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402	<code>\l</code> 192, 217, 320, 3578, 3596, 4783	
<code>\@tempdimb</code> 12530, 12531, 13012, 13013, 13353, 13354	<code>\{</code> . . 328, 350, 544, 2063, 10953, 14079	
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402	<code>\}</code> . . 329, 355, 545, 2064, 10953, 14080	
<code>\@tempdimb</code> 12530, 12531, 13012, 13013, 13353, 13354	<code>\]</code> . . . . . 193, 218	
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402	<code>\^</code> . . . . . 186, 211, 318, 2161, 2162, 3191, 4599, 4600, 4608, 14515, 14527, 14539, 14746, 14762, 14770, 14783, 14797, 14811, 14827, 14837, 14838, 14851, 14865, 14913, 14950, 14969, 14990, 15115, 15131, 15139, 15151, 15165, 15179, 15195, 15205, 15206, 15219, 15233, 15259, 15261, 15299, 15301, 15315, 15317, 15351, 15353, 15354, 15432, 15434, 15480, 15482, 15484, 15486, 16418, 16420	
<code>\@tempdimb</code> 12530, 12531, 13012, 13013, 13353, 13354	<code>\_</code> 187, 212, 552, 4603, 4620, 4621	
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402	<code>\'</code> . . . . . 166, 172, 179, 182, 3127, 3261, 3264, 3266, 3274, 14078, 14513, 14525, 14537, 14742, 14758, 14766, 14779, 14793, 14807, 14823, 14831, 14832, 14847, 14861,	
<code>\@tempdimb</code> 12530, 12531, 13012, 13013, 13353, 13354		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12576, 12577, 12578, 13008, 13013, 13015, 13052, 13053, 13054, 13058, 13059, 13060, 13061, 13349, 13354, 13356, 13393, 13394, 13395, 13399, 13400, 13401, 13402		
<code>\@tempdima</code> . . . . . 2437, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 8865, 12526, 12531, 12533, 12569, 12570, 12571, 12575, 12		

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, 15175, 15177, 15179,  
 15181, 15183, 15185, 15187,  
 15189, 15191, 15193, 15195,  
 15197, 15199, 15200, 15202,  
 15203, 15205, 15206, 15208,  
 15209, 15211, 15213, 15215,  
 15217, 15219, 15221, 15223,  
 15225, 15227, 15229, 15231,  
 15233, 15235, 15237, 15239,  
 15241, 15506, 15508, 15510,  
 15512, 15513, 15515, 15517,  
 15519, 15521, 15523, 15525,  
 15527, 15529, 15531, 15533,  
 15535, 15537, 15539, 15540,  
 15542, 15544, 15546, 15548,  
 15550, 15552, 15554, 15556,  
 15605, 15607, 15609, 15611,  
 15613, 15615, 15617, 15620,  
 15622, 15747, 15749, 15751,  
 15753, 15755, 15757, 15759,  
 15761, 15763, 15765, 15767,  
 15769, 15771, 15773, 15774,  
 15776, 15778, 15780, 15782,  
 15784, 15786, 15788, 15790,  
 15792, 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, 16266, 16268, 16270,  
 16272, 16274, 16276, 16278,  
 16280, 16282, 16284, 16286,  
 16288, 16290, 16440, 16442,  
 16444, 16446, 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, 16744, 16746, 16748,  
 16750, 16752, 16754, 16762,

\9

16764, 16786, 16788, 16789,  
 16793, 16795, 16796, 16799,  
 16801, 16803, 16814, 16816,  
 16820, 16821, 16822, 16823,  
 16824, 16825, 16826, 16827,  
 16829, 16830, 16831, 16832,  
 16833, 16834, 16835, 16836,  
 16837, 16838, 16839, 16840,  
 16841, 16842, 16843, 16844,  
 16845, 16846, 16847, 16849,  
 16850, 16851, 16852, 16853,  
 16854, 16855, 16856, 16857,  
 16858, 16859, 16861, 16863,  
 16874, 16876, 16880, 16881,  
 16882, 16883, 16884, 16885,  
 16886, 16887, 16889, 16890,  
 16891, 16892, 16893, 16894,  
 16895, 16896, 16897, 16898,  
 16899, 16900, 16901, 16902,  
 16903, 16904, 16905, 16906,  
 16907, 16909, 16910, 16911,  
 16912, 16913, 16914, 16915,  
 16916, 16917, 16918, 16971,  
 16973  
 531, 1330, 1333, 1364,  
 2253, 2268, 2277, 2305,  
 2325, 14947, 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,

\sq

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,  
 16744, 16746, 16748, 16750,  
 16752, 16754, 16756, 16758,  
 16760, 16762, 16764, 16766,  
 16768, 16800, 16802, 16804,  
 16805, 16806, 16807, 16808,  
 16809, 16810, 16811, 16812,  
 16813, 16815, 16817, 16818,  
 16819, 16820, 16821, 16822,  
 16823, 16825, 16827, 16830,  
 16832, 16834, 16835, 16836,  
 16837, 16838, 16839, 16840,  
 16841, 16842, 16843, 16845,  
 16847, 16849, 16850, 16851,  
 16852, 16853, 16855, 16856,  
 16857, 16858, 16860, 16862,  
 16864, 16865, 16866, 16867,  
 16868, 16869, 16870, 16871,  
 16872, 16873, 16875, 16877,  
 16878, 16879, 16880, 16881,  
 16882, 16883, 16885, 16887,  
 16890, 16892, 16894, 16895,  
 16896, 16897, 16898, 16899,  
 16900, 16901, 16902, 16903,  
 16905, 16907, 16909, 16910,  
 16911, 16912, 16913, 16915,  
 16916, 16917, 16918, 16972  
 331,  
 662, 3208, 3211, 3926, 7635,  
 7658, 14537, 14538, 14539,  
 14540, 14541, 14542, 14543,

14544, 14545, 14546, 14547,  
14548, 14967, 14968, 14969,  
14970, 14971, 14972, 14973,  
14974, 14975, 14976, 14977,  
14978, 14979, 14980, 14981,  
14982, 14983, 14984, 14985

## A

\ABREVE . 16792, 16864, 16865,  
16866, 16867, 16868  
\abreve ... 16785, 16804, 16805,  
16806, 16807, 16808  
\AccFancyVerbLineautorefname .  
..... 3235  
\Accfootnoteautorefname .. 3215  
\Acctheoremautorefname .. 3239  
\ACIRCUMFLEX 16793, 16869,  
16870, 16871, 16872, 16873  
\acircumflex 3266, 16786, 16809,  
16810, 16811, 16812, 16813  
\Acrobatmenu 2408, 4108, 6047,  
9371, 10117, 10656, 11517  
\active .. 1244, 1251, 4600, 4601,  
4602, 4603, 4604, 4605,  
4608, 4610, 4613, 4621,  
14226, 14256  
\add@accent ..... 543  
\addcontentsline ... 7430, 7501,  
7877, 7882, 7953, 14493  
\addtocontents 7922, 7954, 8228,  
8280, 14481, 14482  
\addtocounter 6776, 6799, 6808,  
6819, 6823, 7041, 9974  
\addvspace ..... 14481, 14482  
\adl@LT@array ..... 6890  
\advance ..... 467,  
468, 1265, 4749, 5088, 5416,  
5462, 5894, 5895, 5898,  
5899, 6242, 6250, 6287,  
7780, 7790, 7793, 7807,  
9121, 9487, 9571, 9609,  
9649, 10816, 11963, 12243,  
12533, 12576, 12577, 13015,  
13059, 13060, 13299, 13356,  
13400, 13401, 14011, 14013,  
14014, 14020, 14029, 14130,  
14346  
\AE ..... 14754, 15123, 15550  
\ae ..... 14819, 15187, 15552  
\afterassignment ... 1858, 1864,  
1870, 5671  
\AfterBeginDocument . 361, 375  
\aftergroup ..... 7317  
\alef ..... 16927  
\alefhamza ..... 16923  
\aleflowerhamza ..... 16925  
\alefmadda ..... 16922  
\alefmaqsurah ..... 16956

\Alph ..... 6336, 6661  
\alph ..... 6337, 7012, 7043  
\AMSautorefname ..... 8638  
\anchor@spot . 5027, 5040, 5047,  
5053, 5055, 8930, 9428,  
9523, 10393, 10465, 10959,  
11305, 11308, 11900, 12180  
\appendix ..... 6653, 6665  
\appendixautorefname .....  
.. 3083, 3101, 3119, 3137,  
3155, 3173, 3191, 3223,  
3224, 3249, 3267, 8648  
\arabic . 6333, 6557, 6560, 6563,  
6564, 6565, 6567, 6568,  
6569, 6570, 6572, 6573,  
6574, 6575, 6576, 6577,  
6580, 6590, 6591, 6633,  
6783, 7962, 7968, 8016,  
8030, 8216, 8221, 8223  
\AtBeginDocument .. 362, 6083,  
6880, 12272  
\AtBeginShipout 6195, 9407, 9920  
\AtBeginShipoutBox 6199, 6202,  
9402, 9403, 9921, 9922  
\AtBeginShipoutFirst ... 6206,  
10289, 11712, 11827  
\AtEndDocument ..... 6097  
\AtEndOfPackage ..... 372  
\AtVeryEndDocument ... 6435,  
12930  
\author ..... 6131, 6141  
\autopageref ..... 4243, 8518  
\autoref . 652, 4242, 8537, 12267  
\ayn ..... 16945

## B

\b . 883, 887, 893, 14523, 14535,  
14547, 14939, 14962, 14981,  
16298, 16300, 16306, 16308,  
16338, 16340, 16342, 16344,  
16358, 16360, 16374, 16376,  
16382, 16384, 16422, 16424,  
16426  
\baa ..... 16928  
\back@none ... 3018, 3028, 3041  
\back@page ..... 3020, 3033  
\back@section 3019, 3025, 3031,  
3037  
\back@slide ..... 3021, 3030  
\backcite ..... 7695  
\backref ..... 7726, 12271  
\baselineskip . 2411, 5907, 5908,  
5909, 5910, 5911, 5912,  
9542, 10978, 11010, 11695  
\bbl@cite@choice ..... 7542  
\BeforeTeXIVht ..... 2857  
\begin ..... 615, 12292, 16977

\belowpdfbookmark .... 14126  
\bfseries . 593, 7641, 7664, 8411,  
8431, 8448, 8566  
\bgroup .. 671, 4716, 7304, 7316,  
8837, 9938, 10393, 10999,  
12733, 12825, 12846  
\bibtex . 7533, 7539, 7543, 7568,  
7583, 7599, 7609  
\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 ... 14058, 14137  
\booknumberline .. 14041, 14046  
\box ... 5901, 6202, 8851, 9952,  
11352, 11355  
\bullet .. 8363, 8371, 8381, 8389

## C

\C ..... 14933, 16038, 16040  
\c ..... 884, 888,  
894, 3185, 3193, 3194, 3195,  
6154, 6161, 14521, 14533,  
14545, 14756, 14821, 14941,  
14956, 14975, 14986, 15125,  
15189, 15311, 15313, 15356,  
15358, 15366, 15368, 15386,  
15388, 15420, 15422, 15436,  
15438, 15444, 15446, 15591,  
15593, 16093, 16096, 16310,  
16312, 16330, 16332  
\c@footnote .. 7183, 7266, 7274,  
7386  
\c@Hy@tempcnt ... 4734, 4735,  
4741, 4749  
\c@note ..... 7783  
\c@overlay ..... 7783  
\c@page . 6242, 6250, 6267, 6287,  
6288, 6292, 6304, 6306,  
6311, 6318, 6320, 6322,  
6351, 7780, 7784, 7786,  
7790, 7793, 7794, 7807, 7837  
\c@secnumdepth . 14406, 14424,  
14439  
\c@slide ..... 7783  
\c@slidesection 8229, 8357, 8358  
\c@slidesubsection ..... 8281  
\c@tocdepth ..... 3425, 3430  
\calc@bm@number . 14268, 14344  
\calculate@pdfview . 3890, 3893  
\capitalacute ..... 14989  
\capitalbreve ..... 14996



<code>\capitalcaron</code> . . . . .	14995	<code>\CJK@hundred</code> . . . . .	1513	3228, 3229, 3230, 3231,
<code>\capitalcedilla</code> . . . . .	14986	<code>\CJK@hundredmillion</code> . . . .	1476	3232, 3233, 3234, 3235,
<code>\capitalcircumflex</code> . . . . .	14990	<code>\CJK@ignorespaces</code> . . . . .	1246	3236, 3237, 3238, 3239, 3240
<code>\capitaldieresis</code> . . . . .	14992	<code>\CJK@kern</code> . . . . .	1234	<code>\CYRA</code> . . . 15829, 16204, 16208
<code>\capitaldotaccent</code> . . . . .	14998	<code>\CJK@minus</code> . . . . .	1438	<code>\cyra</code> . . . 3205, 3212, 3214, 3219,
<code>\capitalgrave</code> . . . . .	14988	<code>\CJK@nine</code> . . . 1447, 1451, 1564		3222, 3227, 3228, 3234,
<code>\capitalhungarumlaut</code> . . .	14993	<code>\CJK@null</code> . . . . .	1540	3238, 15894, 16206, 16210
<code>\capitalmacron</code> . . . . .	14997	<code>\CJK@one</code> . . . . 1446, 1448, 1563		<code>\CYRABHCH</code> . . . . 16168, 16173
<code>\capitalnewtie</code> . . . . .	15000	<code>\CJK@punctchar</code> . . . . .	1249	<code>\cyrabhch</code> . . . . . 16170, 16176
<code>\capitalogonek</code> . . . . .	14987	<code>\CJK@punctcharx</code> . . . . .	1250	<code>\CYRABHCHDSC</code> . . . . 16172
<code>\capitalring</code> . . . . .	14994	<code>\CJK@seven</code> . . 1447, 1450, 1564		<code>\cyrabhchdsc</code> . . . . . 16175
<code>\capitaltie</code> . . . . .	14999	<code>\CJK@six</code> . . . . 1447, 1450, 1564		<code>\CYRABHDZE</code> . . . . . 16236
<code>\capitaltilde</code> . . . . .	14991	<code>\CJK@ten</code> 1448, 1449, 1450, 1451,	1528	<code>\cyrabhdze</code> . . . . . 16238
<code>\caption</code> 7400, 7402, 7489, 7491		<code>\CJK@tentousand</code> . 1461, 1482		<code>\CYRABHHA</code> . . . . . 16126
<code>\catcode</code> . . . . . 172, 173, 184,		<code>\CJK@thousand</code> . . . . . 1498		<code>\cyrabhha</code> . . . . . 16128
185, 186, 187, 206, 809, 810,		<code>\CJK@three</code> . . . 1446, 1449, 1563		<code>\CYRAE</code> . . . . . 16212
944, 1244, 1251, 1969, 1970,		<code>\CJK@two</code> . . . . 1446, 1448, 1563		<code>\cyrae</code> . . . . . 16214
2103, 2104, 2160, 2161,		<code>\CJK@zero</code> . . 1446, 1464, 1481,		<code>\CYRB</code> . . . . . 15831
2162, 4459, 4461, 4599,		1485, 1501, 1516, 1538		<code>\cyrb</code> . . . . . 3219, 15896
4600, 4601, 4602, 4603,		<code>\CJKdigits</code> . . . . . 1323		<code>\CYRBYUS</code> . . . . . 16014
4604, 4605, 4608, 4610,		<code>\CJKkern</code> . . . . . 1235		<code>\cyrbyus</code> . . . . . 16016
4613, 4621, 4631, 4722,		<code>\CJKnumber</code> . . . . . 1322		<code>\CYRC</code> . . . . . 15874
4723, 8663, 11040, 11041,		<code>\close@pdfink</code> 8924, 8949, 8958,		<code>\cyr</code> . . . . . 15939
14155, 14157, 14226, 14229,		8993, 9033, 9069, 9397		<code>\CYRCH</code> . . . . . 15876, 16276
14256, 14259		<code>\closeout</code> . . . . . 6077, 14146		<code>\cyrch</code> . 3211, 3212, 3220, 15941,
<code>\cf@encoding</code> . . . . . 1569		<code>\clubpenalty</code> . . . . . 7160, 7162		16278
<code>\chapterautorefname</code> 3084, 3102,		<code>\codeof</code> . . . . . 7717		<code>\CYRCHLDSC</code> . . . . . 16196
3120, 3138, 3156, 3174,		<code>\color@begingroup</code> . . 8837, 9938		<code>\cyrchldsc</code> . . . . . 16198
3192, 3221, 3250, 3268, 8649		<code>\color@endgroup</code> . . . 8844, 9945		<code>\CYRCHRDSC</code> . . . . . 16156
<code>\chapternumberline</code> 14043, 14048		<code>\columnwidth</code> . . . . . 7311		<code>\cyrchrdsc</code> . . . . . 16158
<code>\char</code> . . . . . 12960, 14159, 14196		<code>\comma@entry</code> 5457, 5464, 5466		<code>\CYRCHVCRS</code> . . . . . 16160
<code>\chardef</code> . . . . . 275,		<code>\comma@parse</code> . . . . . 5456		<code>\cyrchvcrs</code> . . . . . 16162
308, 2643, 2644, 2645, 2646,		<code>\contentsline</code> . 6086, 6087, 6099,		<code>\CYRD</code> . . . . . 15837
2896, 2898, 4384, 4414,		7923, 7927, 7954, 7956		<code>\cyrd</code> . . . 3208, 3211, 3222, 3227,
11300, 11303, 11309		<code>\copy</code> . . . 8847, 9403, 9922, 9948		3228, 15902
<code>\check@bmc@number</code> . . . . 14279,		<code>\count@</code> . 848, 850, 851, 854, 857,		<code>\CYRDJE</code> . . . . . 15799
14287, 14337, 14345		860, 863, 1263, 1264, 1265,		<code>\cyrdje</code> . . . . . 15964
<code>\CheckBox</code> . . . . . 5858		1266, 1859, 3441, 3442,		<code>\CYRDZE</code> . . . . . 15805
<code>\CheckCommand</code> . . . . . 7263		3447, 3448, 5087, 5088,		<code>\cyrdze</code> . . . . . 15970
<code>\checkcommand</code> . . . . .		5103, 5399, 5414, 5416,		<code>\CYRDZHE</code> . . . . . 15827
42, 6818, 7377, 7384, 7391,		5440, 5462, 5478, 9116,		<code>\cyrdzhe</code> . . . . . 15992
7489, 7499, 7593, 7605,		9117, 9118, 9119, 9120,		<code>\CYRE</code> . . . 15794, 15797, 15839,
7953, 7956, 8016, 8445		9121, 9124, 10812, 10813,		16216
<code>\checklatex</code> . 4, 7376, 7488, 7592,		10814, 10815, 10816, 10819		<code>\cyre</code> 3205, 3211, 3212, 3225, 3237,
7952, 8444		<code>\CurrentBorderColor</code> . . . . .		3238, 3239, 15904, 15959,
<code>\checkpackage</code> . . . 9, 6817, 8015		. . 8914, 8916, 8943, 8945,		15962, 16218
<code>\ChoiceBox</code> . . . . . 5466		8953, 8955, 8960, 10455,		<code>\cyreref</code> . . . . . 16262
<code>\ChoiceMenu</code> . . . . . 5855		10489, 10491, 10507, 10509,		<code>\CYREREV</code> . . . . . 15888, 16260
<code>\citation</code> . . . . . 7638, 7661, 7687		10528, 10530, 10592, 10594,		<code>\cyrerev</code> . . . . . 15953
<code>\citeauthoryear</code> . . . . 7753, 7759		10611, 10613		<code>\CYRERY</code> . . . . . 15884, 16284
<code>\citeN</code> . . . . . 7750		<code>\currentpdfbookmark</code> . . . 14118		<code>\cyrery</code> 3203, 3205, 15949, 16286
<code>\CJK@char</code> . . . . . 1247		<code>\curu</code> . . . . . 15990		<code>\CYRF</code> . . . . . 15870
<code>\CJK@charx</code> . . . . . 1248		<code>\cyr</code> 631, 3203, 3205, 3208, 3211,		<code>\cyrf</code> . . . . . 15935
<code>\CJK@CJK</code> . . . . . 1236		3214, 3215, 3216, 3217,		<code>\CYRFITA</code> . . . . . 16030
<code>\CJK@eight</code> . . . 1447, 1450, 1564		3218, 3219, 3220, 3221,		<code>\cyrfita</code> . . . . . 16032
<code>\CJK@five</code> . . . . 1447, 1449, 1564		3222, 3223, 3225, 3227,		<code>\CYRG</code> . . . . . 15801, 15835
<code>\CJK@four</code> . . . . 1446, 1449, 1563				<code>\cyrg</code> . . . . . 3221, 15900, 15966

\CYRGDSC	16280	\CYRL	15852	\CYRS	15864, 16131
\cyrgdsc	16282	\cyr1	3219, 3221, 3223, 3225, 15917	\cyr5	3208, 3211, 3214, 3215, 3218, 3233, 3234, 3235, 3236, 3240, 15929, 16134
\CYRGHCRS	16080	\CYRLDSC	16188	\CYRSCHWA	16220, 16224
\cyrghcrs	16082	\cyrldsc	16190	\cyrschwa	16222, 16226
\CYRGHK	16084	\CYRLJE	15814	\CYRSDSC	16130, 16131
\cyrghk	16086	\cyr1je	15979	\cyrsdsc	16133
\CYRGUP	16076	\CYRLYUS	16006	\CYRSEMISFTSN	16068
\cyrgup	16078	\cyrlyus	16008	\cyrsemisftsn	16070
\CYRH	15872	\CYRM	15854	\CYRSFTSN	15886
\cyrh	15937	\cyrm	3208, 3212, 3238, 3239, 15919	\cyrstfn	15951
\CYRHDSC	16148	\CYRMDSC	16200	\CYRSH	15878
\cyrhdsc	16150	\cyrmdsc	16202	\cyrsh	15943
\CYRHHK	16288	\CYRN	15856	\CYRSHCH	15880
\cyrhhk	16290	\cyrn	3205, 3211, 3212, 3214, 3215, 3217, 3225, 3231, 3232, 15921	\cyrshch	15945
\CYRHRDSN	15882	\CYRNDSC	16114	\CYRSHHA	16164
\cyrhrdsn	15947	\cyrndsc	16116	\cyrshha	16166
\CYRI	15822, 15845, 15848, 16240, 16244	\CYRNG	16118	\CYRT	15866
\cyri	3205, 3208, 3212, 3218, 3223, 3225, 15910, 15913, 15987, 16242, 16246	\cyrng	16120	\cyr1	3208, 3211, 3217, 3219, 3231, 3232, 3233, 3234, 3235, 3236, 3237, 3238, 3239, 15931
\CYRIE	15803	\CYRNHK	16192	\CYRTDSC	16136
\cyrie	15968	\cyrnhk	16194	\cyrtdsc	16138
\CYRII	15807, 15810	\CYRNJE	15816	\CYRTETSE	16152
\cyrii	15972, 15975	\cyrnje	15981	\cyr1etse	16154
\CYRIOTBYUS	16018	\CYRO	15858, 16248	\cyrthousands	16062
\cyriotbyus	16020	\cyro	3208, 3211, 3214, 3215, 3225, 3234, 3235, 3237, 3238, 3239, 15923, 16250	\CYRTSHE	15818
\CYRIOTE	16002	\CYROMEGA	15994	\cyrtshe	15983
\cyriote	16004	\cyromega	15996	\CYRU	15825, 15868, 16264, 16268, 16272
\CYRIOTLYUS	16010	\CYROMEGARND	16046	\cyr1	3215, 3217, 3231, 3232, 3235, 3239, 15933, 16266, 16270, 16274
\cyriotlyus	16012	\cyromegarnd	16048	\CYRUK	16042
\CYRISHRT	15847	\CYROMEGATITLO	16050	\cyruk	16044
\cyrishrt	15912	\cyromegatitlo	16052	\CYRUSHRT	15824
\CYRISHRTDSC	16064	\CYROT	16054	\cyrushrt	15989
\cyrishrtdsc	16066	\cyrot	16056	\CYRV	15833
\CYRIZH	16034, 16038	\CYROTLD	16252, 16256	\cyr1v	3203, 3205, 15898
\cyrizh	16036, 16040	\cyrotld	16254, 16258	\CYRY	16140
\CYRJE	15812	\CYRP	15860	\cyr1	16142
\cyrje	15977	\cyrp	3208, 3211, 3212, 3216, 3217, 3223, 3225, 3229, 3230, 3231, 3232, 15925	\CYRYA	15892
\CYRK	15820, 15850	\CYRpalochka	16178	\cyr1a	15957
\cyrk	3214, 3215, 3217, 3231, 3232, 3234, 3235, 3236, 15915, 15985	\CYRPHK	16122	\CYRYAT	15998
\CYRKBEAK	16110	\cyrphk	16124	\cyr1at	16000
\cyrkbeak	16112	\CYRPSI	16026	\CYRYHCRS	16144
\CYRKDSC	16098	\cyrpsi	16028	\cyr1hcrs	16146
\cyrkdsc	16100	\CYRR	15862	\CYRYI	15809
\CYRKHCRS	16106	\cyr1	3203, 3205, 3208, 3211, 3212, 3218, 3222, 3223, 3225, 3227, 3228, 3233, 3234, 3235, 3236, 3237, 3238, 3239, 15927	\cyr1i	15974
\cyrkhcrs	16108	\CYRRTICK	16072	\CYRYO	15796
\CYRKHK	16184	\cyr1rtick	16074	\cyr1o	15961
\cyrkhk	16186			\CYRYU	15890
\CYRKOPPA	16058			\cyr1u	15955
\cyrkoppa	16060			\CYRZ	15843, 16093, 16232
\CYRKSI	16022				
\cyrksi	16024				
\CYRKVCRS	16102				
\cyrkvcrs	16104				

\cyrz . . . . .	3222, 3227, 3228, 15908, 16096, 16234	\DefaultHeightofCheckBox . . . . .	5907, 12683, 13185, 13554	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, 11384, 11386, 11389, 11391, 11393, 11402, 11410, 11417, 11419, 11421, 11423, 11425, 11427, 11436, 11446, 11448, 11450, 11451, 11457, 11466, 11468, 11470, 11472, 11474, 11476, 11478, 11480, 11482, 11484, 11486, 11488, 11490, 11492, 11494, 11496, 11497, 11498, 11499, 11500, 11501, 11502, 11503, 11504, 11505, 11506, 11507	
\CYRZDSC . . . . .	16092	\DefaultHeightofChoiceMenu . . . . .	5909, 12523, 13005, 13346	\df@tag . . . . .	7977, 7983
\cyrzdsc . . . . .	16095	\DefaultHeightofReset . . . . .	5905, 12657, 13158, 13522	\DH . . . . .	14774, 15143
\CYRZH . . . . .	15841, 16180, 16228	\DefaultHeightofSubmit . . . . .	5903, 12640, 13136, 13499	\dh . . . . .	14843, 15211
\cyrzh . . . . .	3205, 3225, 15906, 16182, 16230	\DefaultHeightofText . . . . .	5911, 12499, 12980, 13313	\dhal . . . . .	16936
\CYRZHDSC . . . . .	16088	\DefaultHeightofTextMultiline . . . . .	5912, 12497, 12978, 13311	\dimen@ . . . . .	506, 507, 511, 1865, 1933, 1934, 1937, 1939, 4042, 4043, 4045, 4052, 4053, 5672, 5681, 5684, 5697, 10779, 10780, 10782, 11342, 11357, 11360
\cyrzhdsc . . . . .	16090	\DefaultOptionsofCheckBox . . . . .	5917, 12685, 13187, 13556	\dimexpr . . . . .	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>		\DefaultOptionsofComboBox . . . . .	5920	\ding . . . . .	5739, 5742
\d . . . . .	885, 889, 895, 3263, 3267, 3269, 3270, 3271, 3272, 3273, 3275, 14524, 14536, 14548, 14937, 14963, 14982, 16800, 16805, 16810, 16815, 16820, 16825, 16830, 16835, 16840, 16845, 16850, 16855, 16860, 16865, 16870, 16875, 16880, 16885, 16890, 16895, 16900, 16905, 16910, 16915	\DefaultOptionsofListBox . . . . .	5919	\DingObject . . . . .	13083
\dad . . . . .	16942	\DefaultOptionsofPopdownBox . . . . .	5921	\discretionary . . . . .	673
\dal . . . . .	16935	\DefaultOptionsofPushButton . . . . .	5916, 12615, 13109, 13467	\divide . . . . .	9117, 10813
\damma . . . . .	16962	\DefaultOptionsofRadio . . . . .	5922	\DJ . . . . .	3275, 14775, 15275, 16794
\declare@shorthand . . . . .	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	\DefaultOptionsofReset . . . . .	5915, 12660, 13161, 13525	\dj . . . . .	3272, 3273, 15277, 16787
\DeclareFontEncoding . . . . .	14512, 14907	\DefaultOptionsofSubmit . . . . .	5914, 12643, 13139, 13502	\do . . . . .	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,
\DeclareFontFamily . . . . .	905, 913, 2725	\DefaultOptionsofText . . . . .	5918, 12504, 12985, 13318		
\DeclareFontShape . . . . .	906, 914, 2726	\DefaultWidthofCheckBox . . . . .	5908, 12682, 13184, 13553		
\DeclareFontSubstitution . . . . .	907, 915, 2727	\DefaultWidthofChoiceMenu . . . . .	5910, 12522, 13004, 13345		
\DeclareLocalOptions . . . . .	4070	\DefaultWidthofReset . . . . .	5906, 12656, 13157, 13521		
\DeclareRobustCommand . . . . .	4562, 4565, 4574, 4578, 4713, 4800, 4802, 4804, 4813, 5852, 5855, 5858, 5861, 5864, 5867, 5870, 5995, 5999, 6065, 6069, 8492, 8518, 8537, 14362	\DefaultWidthofSubmit . . . . .	5904, 12639, 13135, 13498		
\DeclareTextAccent . . . . .	14513, 14514, 14515, 14516, 14517, 14518, 14519, 14520, 14521, 14522, 14523, 14524	\DefaultWidthofText . . . . .	5913, 12494, 12975, 13308		
\DeclareVoidOption . . . . .	2854, 2868, 2878, 2883, 2888, 2901, 2911, 2916, 2921, 2927, 2956, 2973, 2980, 2985, 2990, 2995, 3344, 3352, 3360, 3370	\define@key . . . . .	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,  
7023, 7633, 7656, 12527,  
12589, 12795, 12802, 12812,  
13009, 13072, 13350, 13416,  
14225, 14255  
\documentclass ..... 2  
\dospecials ..... 14234, 14264  
\dots ..... 555  
\dp 5897, 5900, 7309, 9477, 9557,  
9594, 9634, 11343, 11346,  
11953, 12228, 13294  
\dth@counter . 7089, 7090, 7120,  
7121, 7148  
\dth@everypar ..... 7136  
\dvipdfm@setdim 13291, 13333,  
13432, 13457, 13488, 13513,  
13541, 13570

## E

\ECIRCUMFLEX 16795, 16879,  
16880, 16881, 16882, 16883  
\ecircumflex 16788, 16819, 16820,  
16821, 16822, 16823  
\EdefEscapeHex ..... 828  
\EdefEscapeName .. 3829, 3873,  
12588, 12591, 13071, 13074,  
13412, 13418  
\EdefEscapeString .... 782, 792  
\EdefUnescapeName ..... 3830  
\EdefUnescapeString . 777, 7846  
\egroup . 672, 8844, 9945, 10393,  
11035, 12742, 12834, 12859  
\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, 9243,  
9256, 9260, 9267, 9280,  
9284, 9290, 9302, 9306  
\end ..... 616, 16978  
\endeqnarray .. 6965, 6987, 6994  
\endequation ..... 6919, 6953  
\endForm ..... 5521  
\endinput . 64, 2865, 2940, 4239,  
4344, 8405, 10968, 12290,  
14352  
\endlinechar ..... 4598

\endNoHyper ..... 6029  
\EndPreamble ..... 12293  
\endsubeqnarray ... 6998, 7009  
\eqnarray .... 6964, 6966, 6991  
\equal ..... 7714  
\equation 6918, 6927, 6931, 6940  
\equationautorefname .....  
.. 3077, 3095, 3113, 3131,  
3149, 3167, 3185, 3203,  
3204, 3243, 3261, 8638, 8642  
\errmessage ..... 3307  
\es@roman ..... 632  
\es@save@dot ..... 1222  
\escapechar 524, 833, 4186, 7016,  
14085, 14266, 14317  
\eTeX ..... 564, 12298  
\etex@unexpanded .. 1797, 1804  
\eTeXversion .. 9076, 9078, 9080  
\evensidemargin ..... 7864  
\everypar ..... 7162  
\ExecuteOptions 4057, 4058, 4062  
\ext@figure ..... 8212  
\ext@table ..... 8211  
\extra@b@citeb ..... 7640  
\extrasvietnam ..... 3353  
\extrasvietnamese ..... 3345

## F

\fa ..... 16948  
\FancyVerbLineautorefname ...  
.. 3090, 3108, 3126, 3144,  
3162, 3180, 3198, 3233,  
3236, 3256, 3274, 8655  
\farsikaf ..... 16969  
\farsiya ..... 16971  
\fatha ..... 16961  
\fbox ..... 12964, 12967  
\Field@addtoks 5595, 5626, 5629,  
5814, 5837  
\Field@boolkey 5082, 5170, 5589,  
5619, 5622  
\Field@toks .. 5593, 5594, 5596,  
12734, 12751, 12762, 12773,  
12783, 12800, 12818, 12826,  
12831, 12847, 12856  
\Field@Width ..... 5506, 5652  
\figureautorefname . 3080, 3098,  
3116, 3134, 3152, 3170,  
3188, 3218, 3246, 3264, 8645  
\filename@area ..... 4968  
\filename@base ..... 4968  
\filename@ext 4965, 4966, 4968,  
4969  
\filename@parse ..... 4964  
\find@pdfink .. 8893, 8947, 8957  
\Fld@additionalactions . 13697,  
13740, 13744

\Fld@C@DingDef 5739, 5742, 5761  
\Fld@additionalactions .. 13697,  
13786, 13814, 13848, 13882,  
13916, 13950, 13981  
\Fld@align ... 5510, 5726, 13765,  
13823, 13890  
\Fld@altname 5642, 5644, 13676,  
13678, 13750, 13752  
\Fld@annotflags .... 5289, 5291,  
13761, 13792, 13819, 13852,  
13886, 13921, 13956  
\Fld@annotnames 13748, 13762,  
13793, 13820, 13853, 13887,  
13922, 13957  
\Fld@bcolor .. 5512, 5768, 13776,  
13778, 13839, 13841, 13867,  
13869, 13894, 13906, 13908  
\fid@bcolor ..... 13827  
\Fld@bordercolor ... 5513, 5771,  
13772, 13774, 13799, 13807,  
13809, 13826, 13835, 13837,  
13863, 13865, 13893, 13902,  
13904, 13928, 13936, 13938,  
13963, 13971, 13973  
\Fld@bordersep .... 5514, 5720  
\Fld@borderstyle .....  
.. 5516, 5704, 5705, 5706,  
5716, 13766, 13797, 13824,  
13857, 13891, 13926, 13979  
\Fld@borderwidth .....  
.. 5515, 5667, 5891, 5894,  
5895, 5898, 5899, 12576,  
12577, 13059, 13060, 13400,  
13401, 13766, 13797, 13824,  
13857, 13891, 13926, 13979  
\Fld@calculate@code 5779, 13710,  
13712  
\Fld@cbsymbol 5517, 5732, 13780  
\Fld@charsize 5507, 5508, 5664,  
12575, 13058, 13399, 13782,  
13845, 13873, 13912, 13961  
\Fld@checkedfalse ..... 5503  
\Fld@checkequals . 5607, 12528,  
12590, 12803, 12813, 13010,  
13073, 13351, 13417  
\Fld@choices .....  
.. 5396, 5404, 5406, 5410,  
5419, 5427, 5432, 5480,  
5482, 5490, 5491, 13847  
\Fld@color ... 5511, 5774, 13783,  
13846, 13874, 13913  
\Fld@default . 5421, 5424, 5426,  
5723, 12492, 12508, 12520,  
12560, 12588, 12680, 12732,  
12750, 12764, 12772, 12779,  
12805, 12815, 12845, 12855,  
12973, 12990, 13002, 13043,

13071, 13182, 13306, 13323,  
 13343, 13384, 13412, 13551,  
 13875, 13876, 13877, 13914  
 \Fld@DingDef . 5732, 5735, 5737  
 \Fld@disabledfalse . . . . . 5504  
 \Fld@export . 5234, 5237, 5244,  
 5536  
 \Fld@findlength . . . 12782, 12793  
 \Fld@flags 5303, 5305, 5316, 5318,  
 5332, 5334, 5364, 5366,  
 5389, 5391, 13764, 13795,  
 13822, 13855, 13889, 13924,  
 13959  
 \Fld@format@code . 5777, 13702,  
 13704  
 \Fld@getmethodfalse . . . . . 5556  
 \Fld@getmethodtrue . . . . . 5558  
 \Fld@height . 5661, 12495, 12512,  
 12523, 12578, 12595, 12607,  
 12640, 12657, 12683, 12692,  
 12976, 12995, 13005, 13061,  
 13088, 13101, 13136, 13158,  
 13185, 13196, 13309, 13325,  
 13346, 13402, 13414, 13450,  
 13499, 13522, 13554, 13562  
 \Fld@hiddenfalse . . . . . 5192  
 \Fld@hiddentrue . . . . . 5193  
 \Fld@invisiblefalse . . . . . 5188  
 \Fld@invisibletrue . . . . . 5189  
 \Fld@keystroke@code . . . . 5780,  
 13698, 13700  
 \Fld@listcount . . . 12587, 12592,  
 12603, 13070, 13075, 13089,  
 13095, 13411, 13419, 13423,  
 13428, 13439, 13446  
 \Fld@loc . . . . . 5616  
 \Fld@mappingname . 5646, 5648,  
 13680, 13682, 13754, 13756  
 \Fld@maxlen . 5509, 5655, 13917  
 \Fld@menulength . . 5505, 5658,  
 12525, 12529, 12575, 12794,  
 12795, 12798, 13007, 13011,  
 13058, 13348, 13352, 13399  
 \Fld@name . 5640, 12491, 12519,  
 12612, 12679, 12731, 12736,  
 12747, 12748, 12759, 12760,  
 12769, 12770, 12778, 12799,  
 12816, 12824, 12829, 12844,  
 12853, 12972, 13001, 13106,  
 13181, 13305, 13342, 13464,  
 13550, 13675, 13749  
 \Fld@norotatefalse . . . . . 5205  
 \Fld@norotatetrue . . . . . 5204  
 \Fld@noviewfalse . . . . . 5208  
 \Fld@noviewtrue . . . . . 5209  
 \Fld@nozoomfalse . . . . . 5201  
 \Fld@nozoomtrue . . . . . 5200  
 \Fld@onblur@code . 5782, 13718,  
 13720  
 \Fld@onclick@code . 5776, 5848,  
 13813  
 \Fld@onenter@code 5785, 13730,  
 13732  
 \Fld@onexit@code . 5786, 13734,  
 13736  
 \Fld@onfocus@code 5781, 13714,  
 13716  
 \Fld@onmousedown@code 5783,  
 13722, 13724  
 \Fld@onmouseup@code . . 5784,  
 13726, 13728  
 \Fld@printfalse . . . . . 5197  
 \Fld@printtrue . . . . . 5196  
 \Fld@radiosymbol . . 5518, 5735,  
 13871  
 \Fld@rotation 5519, 5765, 13768,  
 13770, 13798, 13803, 13805,  
 13825, 13831, 13833, 13859,  
 13861, 13892, 13898, 13900,  
 13927, 13932, 13934, 13962,  
 13967, 13969  
 \Fld@submitflags . . . 5271, 5273,  
 13948  
 \Fld@temp . . 5738, 5740, 5743,  
 5744, 5753, 5754  
 \Fld@validate@code 5778, 13706,  
 13708  
 \Fld@value 5422, 5429, 5431, 5729,  
 12493, 12508, 12521, 12559,  
 12560, 12974, 12990, 13003,  
 13042, 13043, 13307, 13323,  
 13344, 13383, 13384, 13915  
 \Fld@width . 5651, 12494, 12507,  
 12512, 12522, 12558, 12569,  
 12571, 12595, 12607, 12627,  
 12639, 12647, 12656, 12670,  
 12682, 12688, 12692, 12975,  
 12989, 12995, 13004, 13041,  
 13052, 13054, 13088, 13101,  
 13122, 13135, 13143, 13157,  
 13171, 13184, 13191, 13196,  
 13308, 13322, 13325, 13345,  
 13382, 13393, 13395, 13414,  
 13450, 13481, 13498, 13506,  
 13521, 13535, 13553, 13560,  
 13562  
 \float@caption . . . . . 7410, 7470  
 \float@makebox . . . . 7472, 7473  
 \floatingpenalty . . . . . 7310  
 \flq . . . . . 639  
 \flqq . . . . . 637  
 \fmtname . . . . . 7  
 \fmtversion . . . . . 7  
 \fontencoding . . . 532, 536, 571,  
 12956  
 \fontfamily . . . . . 572, 12955  
 \fontseries 573, 7056, 7082, 7113,  
 12957  
 \fontshape . . . . 574, 4525, 12958  
 \fontsize . . . . . 575  
 \footins . . . . . 7304  
 \footnote . . . . . 5058  
 \footnoteautorefname . . . . .  
 . . 3078, 3096, 3114, 3132,  
 3150, 3168, 3186, 3207,  
 3210, 3244, 3262, 8639, 8643  
 \footnotesep . . . . . 7308, 7315  
 \footnotesize . . . . . 604, 7306  
 \footnotetext . . . . . 7266  
 \footref . . . . . 7334, 7335  
 \foreignlanguage . . . . . 620  
 \Form . . . . . 5520  
 \Form@action 5530, 12723, 13946  
 \Form@boolkey . . . . . 5524  
 \Form@htmlfalse . . . 5523, 5542  
 \Form@htmltrue . . . . . 5535  
 \Form@method 5554, 5562, 12723  
 \frq . . . . . 640  
 \frqq . . . . . 638  
 \futurelet . . . . . 692, 1588  
 \FV@SetLineNo . . . . . 6757  
 \FV@StepLineNo . . . 6756, 6758,  
 6759  

## G

 \G . . 14932, 14958, 14977, 15558,  
 15560, 15562, 15564, 15566,  
 15568, 15569, 15571, 15573,  
 15575, 15577, 15579, 15581  
 \g@addto@macro . . . 6209, 6381,  
 7542, 7819, 7822, 7825,  
 7874, 9310, 10282, 10803,  
 11091, 11664, 11750, 11812,  
 12114, 12304  
 \G@refundefinedtrue 4851, 7642,  
 7665, 8410, 8430, 8447, 8565  
 \gaf . . . . . 16970  
 \Gauge . . . . . 5864  
 \GenericError . . . . . 680, 3711  
 \GenericInfo . . . . . 682, 3709  
 \GenericWarning . 269, 681, 3710  
 \getpagerefnumber . . . . . 6871  
 \getrefbykeydefault . 6827, 6828  
 \gexmode . 10834, 10835, 10923  
 \ghayn . . . . . 16946  
 \Gin@setfile . . . . . 8054, 8055  
 \glossary . . . . . 646  
 \glq . . . . . 635  
 \glqq . . . . . 633  
 \Greeknumeral . . . . . 1086

<code>\greeknumeral</code> . . . . .	1085	<code>\harvardcite</code> . . . . .	7680, 7717	<code>\hvtex@par@dimension</code> . .	10693, 10734
<code>\grq</code> . . . . .	636	<code>\harvarditem</code> . . . . .	7705	<code>\hvtex@par@direction</code> . . .	10694, 10737
<code>\grqq</code> . . . . .	634	<code>\hbox</code> . . . . .	1857, 1863, 1869, 2441, 3440, 3446, 5003, 5005, 5652, 5885, 5886, 5887, 5888, 7670, 7859, 8837, 9402, 9478, 9488, 9558, 9572, 9595, 9610, 9635, 9650, 9921, 9938, 10999, 11346, 11360, 11954, 11964, 12229, 12244, 12871, 13324, 13413, 13449, 13479, 13507, 13536, 13561, 14364	<code>\hvtex@par@duration</code> . . . .	10695, 10729
<code>\guillemotleft</code> 1055, 14701, 14881, 15069, 16774		<code>\hc@currentHref</code> . . . . .	7421	<code>\hvtex@par@motion</code> 10696, 10731	
<code>\guillemotright</code> . . . . .	1056, 14732, 14882, 15101, 16775	<code>\HCode</code> . . . . .	12723, 12725, 12736, 12745, 12757, 12765, 12767, 12798, 12804, 12809, 12814, 12828, 12833, 12837, 12840, 12849	<code>\hvtex@param@dimension</code> 10706, 10735, 10753, 10756	
<code>\guilsinglleft</code> 14632, 14883, 16480, 16776		<code>\headerps@out</code> . . . . .	6482, 11654, 11665, 11737, 11751, 11804, 11813, 11826, 11840, 11879, 11997, 12115, 12305	<code>\hvtex@param@direction</code> .	10707, 10738, 10764, 10772
<code>\guilsinglright</code> . . . . .	14634, 14884, 16482, 16777	<code>\hfill</code> . . . . .	5885, 5886, 5887, 5888, 7561, 7594	<code>\hvtex@param@duration</code> .	10708, 10730, 10777, 10779
<b>H</b>					
<code>\H</code> . . . . .	14928, 14960, 14979, 14993, 15408, 15410, 15472, 15474, 16272, 16274	<code>\Hfootnoteautorefname</code> . . .	8639	<code>\hvtex@param@motion</code> . .	10709, 10732, 10753, 10760
<code>\h</code> . . . . .	3265, 16802, 16807, 16812, 16817, 16822, 16827, 16832, 16837, 16842, 16847, 16852, 16857, 16862, 16867, 16872, 16877, 16882, 16887, 16892, 16897, 16902, 16907, 16912, 16917	<code>\hhyperref</code> . . . . .	5063	<code>\hvtex@parse@trans</code> 10682, 10704	
<code>\H@@footnotemark</code> .	7169, 7186, 7250, 7339, 7346, 7358, 7369	<code>\hoffset</code> . . . . .	7860	<code>\hvtex@produce@trans</code> . . .	10743, 10749
<code>\H@@footnotetext</code> . . . . .	7168, 7178, 7210, 7249, 7288, 7347, 7361, 7369	<code>\hphantom</code> . . . . .	614	<code>\hvtex@token</code> . . . . .	10701, 10712, 10718, 10725, 10730, 10733, 10736, 10738
<code>\H@mpfootnotetext</code> 7176, 7188, 7190, 7251		<code>\href</code> 647, 4713, 5057, 5058, 6055		<code>\hvtex@trans@code</code> 10686, 10687, 10688, 10689, 10690, 10691, 10692, 10705, 10751, 10752, 10754, 10756, 10758, 10760, 10762, 10764, 10766, 10767, 10768, 10769, 10770, 10772	
<code>\H@definecounter</code> . .	7959, 7961	<code>\href@</code> . . . . .	4716, 4719, 4724	<code>\hvtex@trans@effect@Blinds</code> . . . . .	10686
<code>\H@endeqnarray</code> . . .	6965, 6988	<code>\href@split</code> . . . . .	4724, 4725	<code>\hvtex@trans@effect@Box</code> 10687	
<code>\H@endequation</code> . . .	6919, 6959	<code>\hsize</code> . . . . .	7311	<code>\hvtex@trans@effect@Dissolve</code> . . . . .	10688
<code>\H@endsubeqnarray</code> .	6998, 7010	<code>\hskip</code> . . . . .	1868, 1946, 2482, 2483, 4710, 5891, 12871	<code>\hvtex@trans@effect@Glitter</code> . . . . .	10689
<code>\H@eqnarray</code> . . . . .	6964, 6969	<code>\hspace</code> . . . . .	643, 7720, 7721	<code>\hvtex@trans@effect@R</code> . .	10692
<code>\H@equation</code> . . . . .	6918, 6942	<code>\hss</code> . . . . .	7868, 14369	<code>\hvtex@trans@effect@Split</code> 10690	
<code>\H@item</code> 6578, 6584, 7550, 7575		<code>\ht</code> 5893, 5896, 9486, 9561, 9570, 9577, 9598, 9608, 9615, 9638, 9648, 9655, 11342, 11962, 12242, 13292		<code>\hvtex@trans@effect@Wipe</code> 10691	
<code>\H@newctr</code> . . . . .	7964, 7966	<code>\htmladdimg</code> . . . . .	5056	<code>\hvtex@trans@par</code> 10725, 10729, 10731, 10734, 10737	
<code>\H@old@part</code> . . . . .	14416, 14427	<code>\htmladdnormallink</code> . . . . .	5057	<code>\hvtex@trans@params</code> . . .	10719, 10721, 10745
<code>\H@old@schapter</code> . .	14386, 14395	<code>\htmladdnormallinkfoot</code> . . .	5058	<code>\Hy@@CleanupFile</code> .	5003, 5005
<code>\H@old@ssect</code> 14437, 14448, 14457		<code>\htmlref</code> . . . . .	5059	<code>\Hy@@DefNameKey</code> .	2584, 2586
<code>\H@old@spart</code> . . . .	14429, 14435	<code>\Huge</code> . . . . .	601	<code>\Hy@@escapeform</code> 13641, 13654, 13660	
<code>\H@old@ssect</code> . . . .	14372, 14377	<code>\huge</code> . . . . .	605	<code>\Hy@@SectionAnchor</code> . . . .	14359, 14362
<code>\H@refstepcounter</code> . .	6595, 6605, 6758, 6882, 6895, 6941, 7095, 7126, 7405, 8226, 8279	<code>\Hurl</code> . . . . .	4799, 4801, 4803	<code>\Hy@@temp</code> . . . . .	3470, 3472, 5788, 5790
<code>\H@seteqlabel</code> . . . .	7995, 7997	<code>\hv@pdf@char</code> . . . . .	14154, 14219, 14220, 14221, 14222	<code>\Hy@@VersionCheck</code> . .	291, 310
<code>\H@subeqnarray</code> . . .	6997, 7001	<code>\hvtex@buffer</code> . . . . .	10698, 10702, 10710, 10713, 10722, 10726, 10742	<code>\Hy@abspage</code> .	6229, 6315, 6431, 6508
<code>\ha</code> . . . . .	16954	<code>\hvtex@gettoken</code> .	10697, 10711, 10715, 10724, 10728	<code>\Hy@Acrobatmenu</code> . .	4124, 4165, 9372, 10118, 10657, 11518
<code>\Haa</code> . . . . .	16933	<code>\hvtex@gettoken@</code> .	10698, 10700	<code>\Hy@activeanchorfalse</code> . . . . .	4596, 8938, 9430, 9445, 9524, 9534, 9850, 10378,
<code>\halign</code> . . . . .	655				
<code>\hamza</code> . . . . .	16921				
<code>\HAR@checkcitations</code> . . . . .	7730				
<code>\HAR@citetoaux</code> . . . . .	7686				
<code>\HAR@tempa</code> 7731, 7732, 7733, 7734, 7735, 7736					

10395, 10466, 10479, 10985, 11902, 11917, 12182, 12196	3420, 3423, 3464, 3467, 3528, 3688, 3960, 3963, 3966, 3969, 3972, 3975, 3978, 3986, 4007, 4010, 6449	\Hy@DisableOption . . . . . .. 2540, 4117, 4118, 4119, 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, 7373, 8059, 8157, 8158, 8757, 8860, 9228, 9229, 9230, 9231, 9232, 9233, 9234, 9235, 9236, 9237, 9367, 9689, 9690, 9691, 9692, 9693, 9694, 9695, 9696, 9697, 9698, 9961, 10180, 10181, 10182, 10183, 10184, 10185, 10186, 10187, 10188, 10189, 10307, 10449, 10903, 10904, 10905, 10906, 10907, 10908, 10909, 10910, 10911, 10912, 11170, 11171, 11172, 11173, 11174, 11175, 11176, 11177, 11178, 11179, 11730, 12023, 12024, 12025, 12026, 12027, 12028, 12029, 12030, 12031, 12032
\Hy@activeanchortrue . . . . . .. 8934, 9427, 9441, 9522, 9531, 9846, 10374, 10392, 10464, 10476, 10975, 11899, 11913, 12179, 12192	\Hy@BorderArrayPatch .. 11397, 11400, 11663, 12113	\Hy@DistillerDestFix . . . . . 7833, 10916, 10918
\Hy@ActiveCarriageReturn 4632, 4635	\Hy@breaklinks@unsupported .. ..... 2678, 10951	\Hy@draftfalse . . . . . 393
\Hy@AllowHyphens 4706, 10973, 11005, 11329	\Hy@breaklinksfalse . . . . . 434	\Hy@drafttrue . . . . . 394
\Hy@AlphNoErr 6654, 6667, 6669	\Hy@breaklinksunhbox .. 11296, 11350	\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 . . . . . .. 4836, 4838, 4841, 4843, 4867, 4869, 4873, 4878, 4880	\Hy@CatcodeWrapper . . . 4454, 4513, 4557, 4586	\Hy@dth@currentHref 7097, 7128, 7153
\Hy@appendixstring 6649, 6671	\Hy@chapapp 6650, 6671, 6697, 14390, 14401, 14483	\Hy@dviErrMsg . . . 2825, 2827, 2830, 2836, 2849
\Hy@AtBeginDocument . . . 364, 994, 2730, 2790, 2861, 2936, 2992, 3382, 4039, 4082, 4097, 4235, 4241, 4340, 4493, 4583, 5963, 6074, 6515, 6763, 7677, 8484, 8632, 8832, 9318, 9933, 10447, 11839, 11877, 12886, 12887	\Hy@chapterstring .. 6645, 6647, 6650, 6696	\Hy@dviModetrue .. 2834, 2839
\Hy@AtBeginDocumentHook 365, 370, 376, 377	\Hy@CheckOptionValue . 2554, 2591	\Hy@dviopdfmxOutlineOpentrue ..... 4415, 4422
\Hy@AtEndOfPackage . . . 367, 891, 2357, 3346, 3354, 3361, 4223, 4249, 4255, 4445	\Hy@CJKbookmarksfalse . . . 436	
\Hy@AtEndOfPackageHook 368, 371, 373, 374	\Hy@cjkpu . . . . 1257, 1259, 1280	
\Hy@author . . . . . 6143, 6147	\Hy@CleanupFile . . . 5001, 8999, 10023, 10543, 11589	
\Hy@babelnormalise 4814, 4816	\Hy@colorlink . . . . . .. 3374, 4517, 4525, 4529, 8833, 8919, 8992, 9032, 9068, 9396, 9428, 9451, 9482, 9495, 9523, 9539, 9564, 9580, 9602, 9619, 9642, 9659, 9934, 10012, 10051, 10083, 10112, 10137, 10465, 10487, 10557, 10583, 10618, 10651, 10669, 11003, 11280, 11282, 11900, 11923, 11958, 11971, 12180, 12202, 12237, 12250	
\Hy@backout . 4592, 6014, 6018, 7516	\Hy@colorlinksfalse . . . . . 3371	
\Hy@backreffalse 430, 3042, 3064, 4247	\Hy@ColorList . . . . 3533, 3534	
\Hy@backreftrue 3035, 3039, 3061	\Hy@CounterExists . 6543, 6556, 6559	
\Hy@BeginAnnot . . . 9963, 9980, 10021, 10058, 10090, 10119	\Hy@currentbookmarklevel 14002, 14012, 14013, 14019, 14026, 14119, 14122, 14127, 14131	
\Hy@bibcite . . . . . 7539, 7543	\Hy@debugfalse . . . . . 426	
\Hy@bookmarksdepth . . . 3425, 3430, 3442, 3448, 13996	\Hy@debugtrue . . . . . 425	
\Hy@bookmarksnumberedfalse . ..... 431	\Hy@defaultbp . . . . 5667, 5669	
\Hy@bookmarksopenfalse .. 432	\Hy@defaultbpAux . 5671, 5676, 5690	
\Hy@bookmarkstrue . . . . . 433	\Hy@defaultdriver .. 4329, 4354, 4364, 4375	
\Hy@bookmarkstype 3460, 3462, 7890, 14007	\Hy@DefFormAction 5528, 5530	
\Hy@boolkey . . . . . .. 2511, 2603, 2606, 2609, 2630, 2633, 2636, 2667, 2670, 2673, 2690, 2694, 2697, 2700, 2703, 2706, 2709, 2712, 3013, 3016, 3071, 3368, 3380, 3395,	\Hy@DefNameKey .. 2583, 3565, 3617, 3625, 3633, 3637, 3644, 3651, 3658, 3665, 3669, 3674, 3681, 3995	

<code>\Hy@EndAnnot</code> . . . 9969, 10015, 10054, 10086, 10115, 10140	<code>\Hy@float@currentHref</code> . . 7464, 7466, 7468, 7476, 7479, 7481	<code>\Hy@linkfileprefix</code> . . 3504, 4953, 9468, 10343, 11943, 12219
<code>\Hy@endcolorlink</code> . . 3375, 4521, 4526, 4530, 8842, 8925, 9428, 9465, 9489, 9497, 9523, 9547, 9568, 9582, 9606, 9621, 9646, 9661, 9943, 9971, 10465, 10538, 10559, 10585, 10620, 10653, 10671, 11030, 11289, 11900, 11939, 11965, 11973, 12180, 12216, 12241, 12252	<code>\Hy@footnote@currentHref</code> . . . . . 5962, 7198, 7203, 7218, 7223, 7226, 7238, 7240, 7279, 7320, 7323	<code>\Hy@LinkMath</code> . . 10994, 10996, 11001, 11033, 11321, 11323, 11328, 11330, 11336, 11338
<code>\Hy@EndWrap</code> 4455, 4457, 4458, 4491	<code>\Hy@FormObjects</code> 12924, 13202, 13256, 13266, 13578, 13628	<code>\Hy@linktoc</code> . 2638, 2640, 2648, 2650, 2660, 7931
<code>\Hy@Error</code> . . . . . 263, 279, 285, 299, 2734, 2847, 2872, 2905, 2943, 2950, 2961, 2967, 4149, 4767, 4934, 5229, 5353, 5549, 5581, 5793, 5842, 12618, 12664, 13113, 13165, 13471, 13529	<code>\Hy@frenchlinksfalse</code> . . . . . 3373	<code>\Hy@linktoc@call</code> . . . . . 2646
<code>\Hy@Escapeform</code> . 12511, 12594, 12606, 12630, 12648, 12671, 12691, 12993, 13078, 13099, 13125, 13145, 13172, 13194, 13330, 13422, 13453, 13485, 13509, 13537, 13567, 13635, 13665, 13672	<code>\Hy@Gin@setfile</code> . . . 8054, 8056	<code>\Hy@linktoc@none</code> . . . . . 2643
<code>\Hy@Escapestring</code> 13632, 13700, 13704, 13708, 13712, 13716, 13720, 13724, 13728, 13732, 13736, 13780, 13813, 13914, 13915, 13946	<code>\Hy@GlobalStepCount</code> 468, 6315, 6727, 6750, 7850, 8268, 8319	<code>\Hy@linktoc@page</code> . . 2638, 2645, 2648
<code>\Hy@EveryPageAnchor</code> . . 7832, 7875	<code>\Hy@gtmp</code> . . . . . 806, 807, 4187, 4193, 4195, 5426, 5427, 5431, 5432, 5443, 5457, 7255, 7260, 8712, 8714, 13693, 13695	<code>\Hy@linktoc@section</code> 2640, 2644, 2650
<code>\Hy@EveryPageBoxHook</code> . . . . . 6193, 6197, 6201, 7874, 10282, 10803, 11091	<code>\Hy@href</code> . . . . . 4716, 4718	<code>\Hy@linktocpagefalse</code> . . . . . 444
<code>\Hy@EveryPageHook</code> 6192, 6196, 6381, 9310	<code>\Hy@href@nextactionraw</code> . . . . . 4753, 4776, 4778, 4779, 4781, 4786, 4790, 4792, 8988, 9028, 9064, 9392, 10008, 10047, 10079, 10108, 10128, 10502, 10572, 10640, 11614, 11643	<code>\Hy@localanchornamefalse</code> . . 445
<code>\Hy@ExchangeLeftParenthesis</code> . . . . . 8688, 8694	<code>\Hy@href@page</code> 4731, 4733, 4737, 4738, 4740, 4747, 4750, 9024, 10042, 11610	<code>\Hy@LT@currentHref</code> 6897, 6908
<code>\Hy@ExchangeRightParenthesis</code> . . . . . 8698, 8704	<code>\Hy@hyperfiguresfalse</code> . . . . . 438	<code>\Hy@LT@footnotetext</code> 7278, 7287
<code>\Hy@false</code> 2405, 2521, 3027, 3063, 5578	<code>\Hy@hyperfootnotetrue</code> . . . 440	<code>\Hy@make@anchor</code> . 7972, 7978, 7984
<code>\Hy@finalfalse</code> . . . . . 394	<code>\Hy@hyperindextrue</code> . . . . . 441	<code>\Hy@make@df@tag@@</code> 7976, 7991
<code>\Hy@finaltrue</code> . . . . . 393	<code>\Hy@hypertexnamesfalse</code> . . 2361	<code>\Hy@make@df@tag@@@</code> . . 7982, 7992
<code>\Hy@FirstPage</code> . . . . . 4135	<code>\Hy@hypertexnametrue</code> . . . 442	<code>\Hy@MakeCurrentHref</code> . . 6738, 6751
<code>\Hy@FirstPageHook</code> . . . . . 6194, 6207, 6209, 6480, 6481, 11664, 11750, 11812, 12114, 12304	<code>\Hy@ifStringEndsWith</code> . . 4969, 4981	<code>\Hy@MakeCurrentHrefAuto</code> 6749, 6831, 7973, 13987, 14374, 14390, 14401, 14431, 14445, 14483
<code>\Hy@FixNotFirstPage</code> 9400, 9401, 9407	<code>\Hy@implicitttrue</code> . . . . . 443	<code>\Hy@MakeRemoteAction</code> . 4736, 9002, 10026, 11592
<code>\Hy@float@caption</code> . . 7411, 7461, 7463	<code>\Hy@info</code> . . . . . 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, 7617, 7678, 7895, 7912	<code>\Hy@maketitle@end</code> . 7350, 7355, 7357
	<code>\Hy@info@noLine</code> 267, 4230, 4232, 12159	<code>\Hy@maketitle@optarg</code> 7348, 7353
	<code>\Hy@LastPage</code> . . . . . 4138	<code>\Hy@Match</code> . . . . . 314, 316, 3004, 3514, 3574, 3591, 3934, 4781, 5706
	<code>\Hy@level</code> . 14008, 14010, 14021, 14026, 14027, 14028, 14059	<code>\Hy@MaybeStopNow</code> 2926, 4063, 4066
	<code>\Hy@levelcheck</code> . . . 14009, 14024	<code>\Hy@Message</code> . . . . . 268, 2860, 2935, 4234, 4339, 4383, 10399, 10403, 10406, 10409, 10412, 10415, 10418, 10421, 12488, 12700, 12703, 12706, 12709, 12712, 12715, 12717, 12718, 12727, 12864, 13261
	<code>\Hy@linkcounter</code> . . . . . 472, 474, 6727, 6728, 6750, 6751, 7998, 8268, 8269, 8273, 8319, 8320, 8324	<code>\Hy@naturalnamesfalse</code> . . . . 447
		<code>\Hy@nestingfalse</code> . . . . . 448
		<code>\Hy@newline@author</code> . . . . . 6186
		<code>\Hy@newline@title</code> . . . . . 6185
		<code>\Hy@next</code> . . . 6331, 6341, 6346, 14400, 14409, 14412
		<code>\Hy@nextfalse</code> . . . . . 4167, 8069
		<code>\Hy@NextPage</code> . . . . . 4129
		<code>\Hy@nexttrue</code> 4168, 4169, 4170, 8070, 8071, 8072
		<code>\Hy@number</code> . . 3903, 3907, 3915



\Hy@numberline . 14003, 14040, 14041, 14042, 14043  
\Hy@ObsoletePaperOption 2612, 2620  
\Hy@ocgcolor 8836, 8850, 9937, 9951  
\Hy@ocgcolorlinksfalse 3372, 4501  
\Hy@org@chapter . 14398, 14413  
\Hy@OrgMakeLabel 12273, 12280  
\Hy@OutlineName . 14278, 14333  
\Hy@OutlineRerunCheck . 14143, 14242, 14324  
\Hy@PageAnchorSlide . . . 7792, 7830, 7843  
\Hy@PageAnchorSlidesPlain 7779, 7829, 7838  
\Hy@pageanchortrue . . . . . 451  
\Hy@pagecounter 473, 475, 6789, 7850, 7852  
\Hy@pageheight . . . 4053, 11752, 11841  
\Hy@param . . 6695, 6696, 6697, 6724, 6728  
\Hy@pdfafalse . . . . . 466  
\Hy@pdfcenterwindowfalse . 435  
\Hy@pdfdisplaydoctitlefalse . 465  
\Hy@pdfencoding@pdfdoc . 2785  
\Hy@pdfescapeformfalse . . . 437  
\Hy@pdffitwindowfalse . . . . 439  
\Hy@pdfmarkerrorfalse . . 11260  
\Hy@pdfmarkerrortrue . . 11430, 11439  
\Hy@pdfmenubartrue . . . . . 446  
\Hy@pdfminorversion . . . . .  
. . 8724, 8730, 8733, 8741, 8746, 8748, 8751, 8755  
\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, 8746, 8748, 8752, 8755, 13687  
\Hy@pdfwindowittrue . . . . . 464  
\Hy@plainpagesfalse . . . . . 455  
\Hy@PrevPage . . . . . 4132  
\Hy@ps@CR 11794, 11801, 11806, 11807, 11824, 11845, 11846, 11847, 11853, 11860, 11867, 11874  
\Hy@pstringB 9144, 9149, 10220, 10232, 11233, 11249, 12086, 12102  
\Hy@pstringD 9001, 9026, 10025, 10044, 11591, 11612  
\Hy@pstringdef . . . . .  
. . 8659, 8879, 8903, 8963, 9000, 9001, 9038, 9039, 9144, 9788, 9989, 10024, 10025, 10059, 10060, 10091, 10220, 10486, 10564, 10627, 10628, 11233, 11428, 11437, 11564, 11590, 11591, 11622, 11623, 12086, 13658, 14277, 14293  
\Hy@pstringDest 8879, 8880, 9788, 9835, 11428, 11429, 11433, 11437, 11438, 11442  
\Hy@pstringF . . . . .  
. . 8998, 8999, 9000, 9020, 9038, 9057, 9062, 10022, 10023, 10024, 10039, 10059, 10072, 10077, 10542, 10543, 10547, 10627, 10634, 10638, 11588, 11589, 11590, 11607, 11622, 11638, 11641  
\Hy@pstringName 14277, 14278, 14293, 14307  
\Hy@pstringP 9039, 9062, 10060, 10077, 10628, 10638, 11623, 11641  
\Hy@pstringURI . . . 8963, 8984, 10091, 10104, 10486, 10498, 10564, 10568, 11564, 11576  
\Hy@PutCatalog 6377, 6385, 6497  
\Hy@raisedlink 2429, 6638, 6833, 6854, 6855, 6856, 6859, 6909, 6949, 6954, 6957, 6980, 7150, 7201, 7221, 7292, 7318, 7449, 7527, 7551, 7556, 7576, 7974, 7999, 11652, 11735, 11993, 12157, 13988, 14366, 14391, 14402, 14432, 14484  
\Hy@raiselinksfalse . . 456, 7679  
\Hy@RemoveDurPageAttr 9267, 9280  
\Hy@RemoveHidPageAttr 9290, 9302  
\Hy@RemovePercentCr . . 4648, 4652, 4657  
\Hy@RemoveTransPageAttr 9242, 9256  
\Hy@reserved@a 4883, 6967, 7000, 12730, 12780, 12843  
\Hy@RestoreCatcodes 205, 4059, 4390  
\Hy@RestoreLastskip . . . . .  
. . 2450, 8881, 9431, 9446, 9525, 9535, 9837, 10379, 10396, 10467, 10480, 10966, 10986, 11903, 11918, 12183, 12197  
\Hy@RestoreSavedSpaceFactor . . . 2425, 9476, 9556, 9593, 9633, 11952, 12227  
\Hy@RestoreSpaceFactor . . . . .  
. . 2416, 2442, 2447, 9475, 9483, 9490, 9555, 9565, 9573, 9592, 9603, 9611, 9632, 9643, 9651, 11000, 11036, 11327, 11335, 11362, 11951, 11959, 11966, 12226, 12238, 12245, 12281, 12285  
\Hy@ReturnAfterElseFiFiEnd . . . . . 478, 1831  
\Hy@ReturnAfterFiFiEnd . 477, 1823, 1837, 1915, 1922  
\Hy@ReturnEnd . 476, 477, 478, 1843, 1927  
\Hy@safe@activesfalse 479, 4547, 4552, 4897, 8554  
\Hy@safe@activestrue . . . . .  
. . 479, 4176, 4545, 4550, 4628, 4665, 4673, 4701, 4818, 4889, 8460, 8543, 14235, 14265  
\Hy@saved@currentHref . . 7236, 7239  
\Hy@saved@footnotemark 7344, 7359  
\Hy@saved@footnotetext . 7345, 7362  
\Hy@saved@hook . . . 6171, 6181  
\Hy@saved@refstepcounter 6622, 6883  
\Hy@SavedSpaceFactor . . . . .  
. . 2412, 2414, 2419, 2420, 2426, 12278  
\Hy@SaveLastskip . . . . .  
. . 2450, 8877, 9419, 9434, 9516, 9528, 9785, 10366, 10382, 10457, 10470, 10956, 10970, 11892, 11906, 12172, 12186  
\Hy@SaveSavedSpaceFactor . . . . .  
. . 2424, 9474, 9554, 9591, 9631, 11950, 12225  
\Hy@SaveSpaceFactor . . . . .  
. . 2413, 2433, 2444, 9473,

9485, 9553, 9567, 9590,	3544, 3554, 3557, 3558,	5575, 5578, 5582, 6321,
9605, 9630, 9645, 10998,	3559, 3560, 3561, 3562,	6323, 6361, 6363, 6508,
11034, 11319, 11331, 11339,	3572, 3585, 3589, 3604,	6510, 7018, 7020, 7021,
11949, 11961, 12224, 12240,	3766, 3767, 3770, 3773,	7024, 7025, 7026, 7406,
12276, 12283	3776, 3801, 3809, 3810,	7411, 7416, 7889, 7890,
\Hy@scanauthor . . . 6141, 6146	3811, 3812, 3813, 3814,	7908, 7909, 7915, 8232,
\Hy@scanoptauthor . 6141, 6142	3815, 3816, 3817, 3981,	8233, 8284, 8285, 9452,
\Hy@scanopttitle . . . 6132, 6133	3982, 4156, 4160, 4161,	9453, 10347, 10495, 10496,
\Hy@scantitle . . . . . 6132, 6137	4162, 4163, 4262, 4264,	11924, 11925, 12203, 12204,
\Hy@secnum@part 14419, 14421,	4269, 4271, 4274, 4288,	14006, 14007, 14030, 14032,
14424	4290, 4295, 4297, 4304,	14051, 14052, 14060, 14084,
\Hy@SectionAnchorHref . . 657,	4306, 4311, 4313, 4316,	14086, 14087, 14089, 14090,
14357, 14379, 14450	4376, 4377, 5126, 5130,	14473, 14498, 14503, 14506,
\Hy@SectionHShift 14356, 14365,	5131, 5142, 5226, 5227,	14509
14375, 14446	5228, 5230, 5234, 5546,	\Hy@tempb . . 6322, 6323, 6362,
\Hy@seminarslidesfalse . . . 8218	5547, 5548, 5550, 5554,	6363, 14031, 14032, 14060
\Hy@seminarssidetrue . . . . 8215	5555, 5704, 5716, 5787,	\Hy@tempcolor . . 11012, 11014,
\Hy@setbreaklinks . . 2675, 2679,	5803, 5804, 5805, 5806,	11027, 11103, 11105, 11117
2691, 8720, 9778	5807, 5808, 5809, 5810,	\Hy@TempPageAnchor . . 7781,
\Hy@SetCatcodes 181, 231, 4061	5812, 5818, 5824, 5825,	7837, 7847, 7851, 7867
\Hy@SetNewWindow 3989, 9022,	5826, 5827, 5828, 5829,	\Hy@Test@Alph . . . . 6684, 6707
9059, 10046, 10074, 10635,	5830, 5831, 5832, 5833,	\Hy@Test@alph . . . . 6675, 6703
11606, 11637	5834, 6272, 6275, 6284,	\Hy@testname . . . . .
\Hy@setouterhbox . 11295, 11326	6286, 6290, 6294, 6338,	. . 8895, 8896, 8901, 8903,
\Hy@setpagesizetrue . . . . . 457	6340, 6783, 6786, 6789,	8904, 8918, 9981, 9982,
\Hy@setpdfborder . . . . .	6795, 6921, 6927, 7048,	9987, 9989, 9991, 10007,
. . 3607, 8909, 8968, 9006,	7071, 7328, 7334, 8166,	10514, 10515, 10520, 10524,
9043, 9376, 10000, 10032,	8167, 9159, 9188, 9190,	10597, 10598, 10603, 10607,
10066, 10097, 10130, 10506,	9708, 9713, 9719, 9723,	11108, 11109, 11114, 11125
10527, 10550, 10576, 10610,	9726, 9731, 9762, 9764,	\Hy@texhtfalse . . . . . 458
10644, 10662	10192, 10235, 10237, 11133,	\Hy@texhttrue . . . . . 2855, 4258
\Hy@setpdfversiontrue . . . . 2811	11136, 11140, 11141, 11147,	\Hy@TheSlideOptionalPage 7796,
\Hy@setref@link . . . . 8416, 8419	11148, 11154, 11182, 11187,	7800, 7805, 7814
\Hy@SlidesFormatOptionalPage	11193, 11197, 11200, 11205,	\Hy@title . . . . . 6134, 6138
. 6245, 7778, 7797, 7801	11238, 11240, 11301, 11302,	\Hy@toclevel . . 7900, 7904, 7917
\Hy@SlidesPage 6252, 7811, 7812,	11306, 11394, 11395, 11403,	\Hy@true 2404, 2517, 2519, 3057,
7818, 7820, 7823, 7826	11404, 11508, 11509, 12035,	3059, 5575
\Hy@slidetitle 8245, 8247, 8254,	12040, 12046, 12050, 12053,	\Hy@typexmlfalse . . . . . 460
8262, 8272, 8296, 8298,	12058, 12091, 12093, 13640,	\Hy@undefinedname . . . . .
8305, 8313, 8323	13641, 14275, 14281, 14289,	. . 8892, 8899, 8901, 9976,
\Hy@StartlinkName . 8907, 8921	14304	9985, 9987, 10483, 10518,
\Hy@StepCount 467, 6292, 12529,	\Hy@temp@A . . . . . 718,	10520, 10601, 10603, 11099,
12592, 12795, 13011, 13075,	719, 1815, 1817, 1828, 1830,	11112, 11114
13352, 13419, 14123, 14128,	1835, 1836, 1839, 3802,	\Hy@unicodfalse . . . . 461, 785,
14204	3804, 8088, 8089, 8090,	795, 2741, 2742, 2750, 3743,
\Hy@stoppedearlyfalse 4068, 6542	8097, 8125, 8126, 8127, 8136	3749, 6785, 7842, 13689
\Hy@stoppedearlytrue 4065, 6539	\Hy@temp@B . . . . . 1816, 1817	\Hy@unicodetrue . . . 2742, 6442,
\Hy@StringLocalhost 4999, 5000,	\Hy@tempa . . 2512, 2514, 2516,	6456
5015	2517, 2519, 2521, 2523,	\Hy@usehidkeyfalse . . . . 3526
\Hy@tabularx@hook 7248, 7256	2526, 2529, 2530, 3023,	\Hy@usehidkeytrue . . . . 3530
\Hy@temp . . . . . 687,	3024, 3025, 3027, 3028,	\Hy@UseMaketitleInfos . . 6187,
694, 809, 881, 982, 985, 993,	3030, 3031, 3033, 3037,	9201, 9670, 10152, 10892,
994, 2618, 2623, 2624, 2625,	3041, 3052, 3054, 3056,	11131, 12004
2626, 2627, 2628, 3469,	3057, 3059, 3063, 4634,	\Hy@UseMaketitleString . 6168,
3478, 3479, 3480, 3481,	4635, 4646, 4650, 4819,	6188, 6189
3482, 3483, 3484, 3534,	4823, 4888, 4891, 4900,	\Hy@UseNameKey . . . . .
3535, 3536, 3539, 3541,	4902, 5533, 5534, 5574,	. . 2596, 9166, 9167, 9168,

9169, 9170, 9171, 9172, 9173, 9192, 9738, 9739, 9740, 9741, 9742, 9743, 9744, 9745, 9766, 10199, 10200, 10201, 10202, 10203, 10204, 10205, 10206, 10239, 10864, 10865, 10866, 10867, 10868, 10869, 10870, 10871, 11212, 11213, 11214, 11215, 11216, 11217, 11218, 11219, 11242, 12065, 12066, 12067, 12068, 12069, 12070, 12071, 12072, 12095	... 265, 2613, 2681, 2795, 3489, 3550, 3694, 3794, 4046, 4115, 4266, 4275, 4292, 4308, 4317, 6115, 6217, 6408, 6522, 6770, 7891, 8046, 11268	\HyC@getDate ..... 12, 14 \HyC@meaning ..... 152, 160 \HyC@nc@default .... 103, 105 \HyC@nc@noot 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, 8839, 8850, 9940, 9951 \HyField@@AddToFields . 12906, 12910 \HyField@@PDFChoices . 5421, 5422, 5437 \HyField@@SetFlag . 5116, 5118 \HyField@@UseFlag . 5106, 5108 \HyField@AddToFields .. 12876, 12905, 12996, 13090, 13103, 13129, 13153, 13176, 13198 \HyField@AdvanceAnnotCount . ..... 13298, 13327, 13424, 13454, 13482, 13510, 13538, 13564 \HyField@afields . 12873, 12895, 12896, 12898, 12933 \HyField@AfterAuxOpen . 12886, 12893, 12911 \HyField@AnnotCount .. 13296, 13299, 13302 \HyField@AuxAddToFields ..... 12885, 12890, 12894, 12914 \HyField@FlagsAnnot 5276, 5295, 5309, 5322, 5338, 5370
\Hy@varioref@refstepcounter ... ..... 6874, 6881 \Hy@varioref@undefined . 6865, 6869, 8549 \Hy@VerboseAnchor ..... .. 4698, 8878, 9420, 9435, 9517, 9529, 9786, 10367, 10383, 10458, 10471, 10957, 10971, 11893, 11907, 12173, 12187 \Hy@verbosefalse ..... 426, 463 \Hy@VerboseGlobalTemp 4674, 4675, 4676, 4677, 4681 \Hy@VerboseLinkInfo 4681, 4682, 4685, 4692 \Hy@VerboseLinkStart ..... ..... 4670, 8941, 8951, 9450, 9502, 9538, 9550, 9978, 10323, 10346, 10485, 10590, 10989, 11101, 11922, 11978, 12201, 12258 \Hy@VerboseLinkStop 4686, 8926 \Hy@verbosetrue ..... 425 \Hy@VersionCheck .. 276, 4387 \Hy@VersionChecked .. 275, 308, 4384, 4386 \Hy@vt@PutCatalog 6414, 6416 \Hy@VTeXversion .. 6394, 6406, 10546, 10675, 10811, 14156 \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, 7881, 8529, 8579, 8897, 9819, 9823, 9983, 10516, 10599, 11110, 11431, 11440, 14015, 14033 \Hy@WarningNoLine .....	\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, 8873, 9418, 9433, 9515, 9527, 9784, 10365, 10381, 10456, 10469, 10955, 10969, 11891, 11905, 12171, 12185 \Hy@writebookmark 2409, 7901, 8252, 8260, 8270, 8303, 8311, 8321, 13992, 14134 \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, 8957, 8992, 9032, 9068, 9495, 9566, 9581, 9604, 9620, 9644, 9660, 10017, 10053, 10085, 10114, 10139, 10327, 10337, 10558, 10584, 10619, 10652, 10670, 11329, 11337, 11960, 11971, 12239, 12251, 12282 \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	



\HyField@FlagsCheckBox	<a href="#">5308</a> , 12687, 13190, 13559	5249, 5250, 5251, 5252, 5253, 5256, 5257, 5258, 5259, 5262, 5263, 5264, 5267, 5278, 5279, 5280, 5281, 5282, 5283, 5284, 5285, 5286, 5297, 5298, 5299, 5311, 5312, 5313, 5324, 5325, 5326, 5327, 5329, 5340, 5341, 5342, 5343, 5344, 5345, 5346, 5347, 5358, 5361, 5372, 5373, 5374, 5375, 5377, 5379, 5380, 5383, 5386	\HyLang@afrikaans	3076
\HyField@FlagsChoice	... <a href="#">5369</a> , 12568, 13051, 13392		\HyLang@DeclareLang	... 3292, 3321, 3322, 3323, 3324, 3325, 3326, 3327, 3328, 3329, 3330, 3331, 3332, 3333, 3334, 3335, 3336, 3337, 3338, 3339, 3340, 3341, 3342, 3343
\HyField@FlagsPushButton	<a href="#">5294</a> , 12626, 12645, 12669, 13121, 13141, 13170, 13480, 13504, 13534		\HyLang@english	3094
\HyField@FlagsRadioButton	... <a href="#">5321</a> , 12564, 13047, 13388		\HyLang@french	3112
\HyField@FlagsSubmit	.. <a href="#">5242</a> , 12646, 13142, 13505		\HyLang@german	3130
\HyField@FlagsText	<a href="#">5337</a> , 12506, 12988, 13321		\HyLang@italian	3148
\HyField@NeedAppearancesfalse	... 5566, 5579	\HyInd@@@wrindex	\HyLang@magyar	3166
\HyField@NeedAppearancetrue	... 5569, 5572, 5576	8118, 8124	\HyLang@portuges	3184
\HyField@NewBitsetFlag	.. 5074, <a href="#">5077</a> , <a href="#">5085</a>	\HyInd@@hyperpage	\HyLang@russian	3202
\HyField@NewFlag	.. <a href="#">5072</a> , 5148, 5149, 5150, 5151, 5152, 5153, 5154, 5155, 5156, 5157, 5158, 5159, 5160, 5161, 5162, 5163, 5164, 5165, 5166, 5167, 5172, 5173, 5174, 5175, 5176, 5177, 5178, 5179, 5180, 5213, 5215, 5216, 5218, 5219, 5221, 5222, 5223, 5224	8164, 8174	\HyLang@spanish	3242
\HyField@NewFlagOnly	.. <a href="#">5076</a> , 5214, 5217, 5220	\HyInd@@wrindex	\HyLang@vietnamese	3260, 3345, 3353
\HyField@NewOption	<a href="#">5073</a> , <a href="#">5079</a>	8074	\HyLinguex@OrgB	... 883, 887
\HyField@PDFAFlagWarning	.. 5182, 5190, 5194, 5198, 5202, 5206, 5210	\HyInd@hyperpage	\HyLinguex@OrgC	... 884, 888
\HyField@PDFChoices	.. <a href="#">5394</a> , 12605, 13097, 13448	8161, 8163, 8170	\HyLinguex@OrgD	... 885, 889
\HyField@PrintFlags	... 5123, 5269, 5287, 5301, 5314, 5330, 5362, 5387	\HyInd@Org@wrindex	\HyLinguex@Restore	... 886, 899, 903, 911, 2723
\HyField@SetFlag	.. <a href="#">5115</a> , 5255, 5261, 5266, 5300, 5328	8078, 8082, 8092, 8098, 8100, 8103	\HyOpt@CheckDvi	... 2843, 2879, 2884, 2889, 2912, 2917, 2922, 2974, 2981, 2986, 2991, 2996
\HyField@SetKeys	.. <a href="#">5498</a> , 12503, 12535, 12538, 12557, 12614, 12642, 12659, 12684, 12984, 13017, 13020, 13039, 13108, 13138, 13160, 13186, 13317, 13358, 13361, 13380, 13466, 13501, 13524, 13555	\HyInd@pagelink	\HyOpt@DriverFallback	.. 3000, 3003, 3004, 3008, 4353, 4358
\HyField@TheAnnotCount	<a href="#">13301</a> , 13332, 13337, 13429, 13441, 13456, 13461, 13487, 13493, 13512, 13517, 13540, 13545, 13569, 13574	8187, 8190	\HyOpt@DriverType	4326, 4328, 4355, 4365, 4367, 4383
\HyField@UseFlag	... 5105, 5246, 5247, 5248,	\HyInd@ParenLeft	\HyOrg@addtoreset	8004, 8006, 8033
		8126	\HyOrg@appendix	.. 6653, 6672
		\HyInd@ParenRight	\HyOrg@author	6131, 6144, 6148
		8062, 8090, 8097, 8127, 8136	\HyOrg@float@makebox	.. 7472, 7474
		\HyInd@removespaces	\HyOrg@hyperpage	8064, 8066, 8067
		8193, 8196, 8206	\HyOrg@languageshorthands	953, 967, 978, 988
		\HyInfo@AddonHandler	\HyOrg@make@df@tag@@	.. 7989
		3820, 3823	\HyOrg@make@df@tag@@@	7990
		\HyInfo@AddonList	\HyOrg@maketitle	.. 7342, 7349, 7354
		3847, 3848, 3882, 3889	\HyOrg@subequations	7035, 7042
		\HyInfo@Addons	\HyOrg@title	.. 6130, 6135, 6139
		9225, 10177, 11163, 11167	\HyOrg@TX@endtabularx	.. 7247
		\HyInfo@AddonUnsupportedtrue	\HyOrg@url	... 4798
		... 9668, 10890, 12002	\HyPat@NonNegativeReal	... 3575, 3576, 3577, 3578, 3594, 3596, 3925, 3935, 3936, 3937, 3939, 3940, 3941
		\HyInfo@do	\HyPat@ObjRef	4782, 4783, 4796, 8721, 9779, 10952
		3822, 3849, 3872	\hyper@Canchor	4099, 4808, 4810, 4841, 4843, 4878, 4880,
		\HyInfo@GenerateAddons		
		9202, 10153, 11132		
		\HyInfo@Key		
		... 3830, 3831, 3839, 3844, 3849, 3852, 3859, 3873, 3877		
		\HyInfo@KeyEscaped		
		3829, 3830		
		\HyInfo@trapped@false		
		.. 3770, 3789		
		\HyInfo@trapped@true		
		3767, 3788		
		\HyInfo@trapped@unknown		
		3773, 3790		
		\HyInfo@TrappedUnsupported		
		.. 3791, 3795, 9671, 10893, 12005		
		\HyInfo@Value		
		... 3843, 3845		
		\HyLang@addto		
		3278, 3294, 3312, 3345, 3353		

5022, 6004, 6019, 6035,  
 7197, 7202, 7217, 7222,  
 7290, 7293, 7319, 7447,  
 7450, 7478, 7782, 7837,  
 7847, 7852, 8251, 8259,  
 8269, 8302, 8310, 8320  
 \hyper@C@link . 4668, 4726, 4831,  
 4859, 4883, 7535, 7681,  
 7682, 7683, 7731, 7733,  
 7735, 8421, 8436, 8539  
 \hyper@C@normalise . 4637, 4641,  
 4645  
 \hyper@C@anchor 5049, 6007, 6021,  
 6085, 6098, 8929, 9418,  
 9515, 9842, 10381, 10456,  
 10955, 11891, 12171  
 \hyper@C@anchorend . . . . .  
 . . 4088, 4095, 4102, 5991,  
 6009, 6023, 6038, 6639,  
 6835, 6910, 6955, 6957,  
 6981, 7007, 7154, 7529,  
 7554, 7557, 7577, 7710,  
 7974, 8000, 8936, 9443,  
 9533, 9849, 10376, 10478,  
 10977, 11915, 12194, 13988,  
 14135, 14367, 14392, 14403,  
 14433, 14485  
 \hyper@C@anchorstart . . . . .  
 . . 4101, 5991, 6008, 6022,  
 6037, 6639, 6834, 6910,  
 6949, 6981, 7007, 7151,  
 7527, 7552, 7557, 7577,  
 7710, 7974, 8000, 8932,  
 9433, 9527, 9845, 10365,  
 10469, 10969, 11905, 12185,  
 13988, 14135, 14367, 14392,  
 14403, 14433, 14485  
 \hyper@C@chars . . . . .  
 . . 4662, 8964, 9423, 9437,  
 9457, 9479, 9493, 9507,  
 9587, 9627, 10332, 10353,  
 10369, 10386, 10461, 10473,  
 10565, 11565, 11909, 11929,  
 11955, 11969, 11983, 12189,  
 12208, 12231, 12248, 12263  
 \hyper@C@currentanchor . . 10974,  
 10983, 11006, 11023  
 \hyper@C@currentlinktype . . 11007,  
 11011, 11015  
 \hyper@C@hash . 4614, 4615, 4663,  
 4945, 4957, 4974, 4977,  
 5958, 10326  
 \hyper@C@image 4804, 4805, 9505,  
 10623, 11096, 11981, 12261  
 \hyper@C@last . . . . . 6105, 6110  
 \hyper@C@link . . . . .  
 . . 4100, 4892, 6005, 6006,  
 6020, 6030, 6036, 8950,  
 9501, 9549, 10016, 10322,  
 10589, 11100, 11977, 12257  
 \hyper@C@link@ . 4107, 4884, 4886,  
 6003, 6017, 6043  
 \hyper@C@linkend 4088, 4095, 4104,  
 6011, 6025, 6040, 7242,  
 7521, 7524, 7935, 7939,  
 7943, 7945, 8949, 9463,  
 9546, 10015, 10017, 10358,  
 10536, 11009, 11937, 12214  
 \hyper@C@linkfile 4106, 4970, 6013,  
 6027, 6042, 8996, 9467,  
 9625, 10019, 10342, 10540,  
 11586, 11941, 12218  
 \hyper@C@linkstart . . . . .  
 . . 4103, 6010, 6024, 6039,  
 7240, 7517, 7524, 7935,  
 7939, 7943, 7945, 8940,  
 9449, 9537, 9977, 10017,  
 10345, 10484, 10988, 11921,  
 12200  
 \hyper@C@linkurl . . . . .  
 . . 4105, 4803, 4945, 4952,  
 4973, 4977, 6012, 6026,  
 6041, 8961, 9468, 9470,  
 9503, 9585, 10088, 10330,  
 10343, 10562, 10624, 11097,  
 11562, 11942, 11946, 11979,  
 12219, 12221, 12259  
 \hyper@C@livelink . . . . 6005, 6030  
 \hyper@C@makecurrent 6635, 6693,  
 6896, 6947, 6978, 7006,  
 7096, 7127, 7237, 7423, 7465  
 \hyper@C@normalise . . 4629, 4633  
 \hyper@C@nat@current . . . . 7518  
 \hyper@C@nat@anchorend . . . 7529  
 \hyper@C@nat@anchorstart . . 7526  
 \hyper@C@nat@linkbreak . . . 7523  
 \hyper@C@nat@linkend . . . . 7520  
 \hyper@C@nat@linkstart . . . . 7515  
 \hyper@C@normalise . . 4057, 4062,  
 4606, 4716, 4719, 4800,  
 4802, 4804, 4825, 5528  
 \hyper@C@pageduration 9263, 9312,  
 10264, 10284, 10788, 10805,  
 11063, 11093  
 \hyper@C@pagehidden . 9287, 9313,  
 10275, 10285, 10798, 10806,  
 11080, 11094  
 \hyper@C@pagetransition 9239, 9311,  
 10253, 10283, 10677, 10804,  
 11046, 11092  
 \hyper@C@quote 5960, 9425, 9439,  
 9454, 9459, 9480, 9494,  
 9508, 10326, 10336, 10349,  
 10372, 10390, 11897, 11911,  
 11926, 11932, 11956, 11970,  
 11984, 12177, 12190, 12205,  
 12210, 12233, 12249, 12264  
 \hyper@C@readexternallink . 4894,  
 4910  
 \hyper@C@refstepcounter . . . 6613,  
 6616, 6624  
 \hyper@C@tilde . 4623, 4624, 4625,  
 5959  
 \hyperbaseurl . 3501, 3502, 6054  
 \hypercalcbp . . . . . 481, 481  
 \hypercalcbpdef . 483, 520, 3922,  
 3932  
 \hyperdef . . . . . 4833, 6056  
 \HyperDestNameFilter . . . . .  
 . . 4038, 4702, 8879, 8904,  
 9425, 9439, 9459, 9503,  
 9788, 9990, 10326, 10336,  
 10354, 10372, 10390, 10462,  
 10474, 10523, 10606, 11428,  
 11437, 11897, 11911, 11932,  
 11979, 12177, 12190, 12210,  
 12259, 14213, 14277, 14293  
 \HyperFirstAtBeginDocument . .  
 . 6082, 6084, 6106, 6109  
 \hypergetpageref . . . . . 6828  
 \hypergetref . . . . . 6827  
 \HyperGlobalCurrentHref 6713,  
 6715, 6723, 6724, 6728,  
 6731, 6735, 6741, 6742, 6746  
 \hyperimage . . 4804, 5056, 8056  
 \hyperindexformat . . . . . 8063  
 \hyperlink . . . 4667, 6057, 8202,  
 8341, 8349, 8364, 8372,  
 8382, 8390, 8397  
 \hyperlinkfileprefix . 3504, 3505,  
 3506, 12163  
 \HyperLocalCurrentHref . . . . .  
 . . 6731, 6733, 6739, 6740,  
 6741, 6742, 6744  
 \hyperpage . . 6063, 8064, 8065,  
 8067, 8160  
 \HyperRaiseLinkDefault . 2411,  
 2438  
 \HyperRaiseLinkHook 2410, 2439  
 \HyperRaiseLinkLength . . 2437,  
 2438, 2441  
 \hyperref 4813, 5063, 5064, 6059,  
 8496, 8500, 8510, 8524  
 \hypersetup . . 2762, 2802, 3330,  
 3806, 4058, 6053  
 \hypertarget . . . . . 4806, 6058  
 \HyPL@C@C@CheckThePage 6342,  
 6360  
 \HyPL@C@C@CheckThePage . 6318,  
 6320  
 \HyPL@Alph . . . . . 6237

\HyPL@alph . . . . .	6238	\HyPsd@@CJKnumber . . . . .	1439, 1441, 1444, 1497, 1512, 1525, 1527, 1531	\HyPsd@CatcodeWarning 1874, 1891, 1894, 1897, 1900, 1956
\HyPL@arabic . . . . .	6234	\HyPsd@@ConvertToUnicode . . . . .	2157	\HyPsd@Char . . . . . 2159
\HyPL@CheckThePage . . . . .	6269, 6317	\HyPsd@@GetNextTwoTokens . . . . .	2155	\HyPsd@CharOctByte . . . . . 2179, 2181, 2184, 2193, 2198
\HyPL@Entry 6510, 6518, 6526, 6528		\HyPsd@@GlyphProcessWarning . . . . .	2015, 2018	\HyPsd@CharSurrogate . . . . . 2173, 2190
\HyPL@EveryPage . . . . .	6257, 6381	\HyPsd@@GreekNum 1101, 1110, 1209, 1213, 1217		\HyPsd@CharTwoByte . . . . . 2171, 2178
\HyPL@Format 6333, 6334, 6335, 6336, 6337, 6349		\HyPsd@@hspace . . . . . 1594, 1595		\HyPsd@CheckCatcodes . . . . . 705, 1851
\HyPL@found 6332, 6339, 6343, 6350, 6360, 6362		\HyPsd@@LetCommand . . . . . 1718, 1739		\HyPsd@CJK@Unicode . . . . . 1321, 1325
\HyPL@Labels 6228, 6372, 6373, 6375, 6377, 6428, 6429, 6521, 6529, 6530		\HyPsd@@nameref . . . . . 1655, 1656		\HyPsd@CJKActiveChars 1261, 1276
\HyPL@LastNumber 6232, 6288, 6311		\HyPsd@@pageref . . . . . 1637, 1638		\HyPsd@CJKdigit . . . . . 1550, 1560
\HyPL@LastPrefix . . . . . 6233, 6282, 6313		\HyPsd@@ProtectSpacesFi 1767, 1771, 1789, 1795, 1800		\HyPsd@CJKdigits . . . . . 1323, 1536
\HyPL@LastType . . . . . 6231, 6273, 6312		\HyPsd@@ref . . . . . 1621, 1622		\HyPsd@CJKhook . . . . . 658, 1232, 1243
\HyPL@page . . . . . 6251, 6260, 6263, 6269, 6278		\HyPsd@@RemoveBraces . . . . . 1813		\HyPsd@CJKhook@bookmarks . . . . . 1238, 1272
\HyPL@Prefix . . . . . 6278, 6280, 6282, 6296, 6299, 6301, 6313, 6327, 6365		\HyPsd@@RemoveBracesFi 1810, 1813		\HyPsd@CJKhook@unicode 1240, 1320
\HyPL@Roman . . . . . 6235		\HyPsd@@RemoveCmdPrefix . . . . . 1972, 1975		\HyPsd@CJKnumber 1322, 1436
\HyPL@roman . . . . . 6236		\HyPsd@@ReplaceFi 2042, 2048, 2053		\HyPsd@CJKnumberFour . . . . . 1454, 1458, 1462, 1475, 1479, 1483, 1489
\HyPL@SetPageLabels . . . . . 6371, 6436, 6524		\HyPsd@@UTFviii@four . . . . . 2262, 2267		\HyPsd@CJKnumberLarge 1467, 1474
\HyPL@SlidesOptionalPage 6244, 6248, 6253		\HyPsd@add@accent . . . . . 543, 1583		\HyPsd@CJKnumberThree 1495, 1499, 1505
\HyPL@SlidesSetPage 6239, 6241, 6261, 6268		\HyPsd@AfterCountRemove . . . . . 1858, 1929		\HyPsd@CJKnumberTwo 1510, 1514, 1520
\HyPL@StorePageLabel . . . . . 6296, 6298, 6368, 6426, 6505		\HyPsd@AfterDimenRemove . . . . . 1864, 1932		\HyPsd@ConvertToUnicode 773, 2105
\HyPL@thisLabel . . . . . 6225, 6227, 6259, 6263, 6264		\HyPsd@AfterSkipRemove 1870, 1944		\HyPsd@DecimalToOctal . . . . . 1253, 1284
\HyPL@Type . . . . . 6266, 6273, 6277, 6295, 6303, 6312, 6326, 6364		\HyPsd@AMScsfix . . . . . 642, 1604, 1606		\HyPsd@DecimalToOctalFirst . . . . . 1327, 1363
\HyPL@Useless . . . . . 6369, 6375		\HyPsd@AppendItalcorr . . . . . 1829, 1836, 1845		\HyPsd@DecimalToOctalSecond . . . . . 1328, 1337, 1400
\HyPsd@@@autoref . . . . . 1676, 1678, 1681		\HyPsd@autoref . . . . . 652, 1673		\HyPsd@DefCommand 688, 689, 690, 691, 1707
\HyPsd@@@CJKdigits . . . . . 1546, 1549, 1557		\HyPsd@autorefname 1685, 1691		\HyPsd@DisableCommands 934, 936
\HyPsd@@@nameref 1658, 1660, 1663		\HyPsd@babel@danicsh . . . . . 997		\HyPsd@DoConvert . . . . . 2107, 2117
\HyPsd@@@pageref . . . . . 1640, 1642, 1645		\HyPsd@babel@dutch . . . . . 1003		\HyPsd@DoEscape . . . . . 2131
\HyPsd@@@ref . . . . . 1624, 1626, 1629		\HyPsd@babel@finnish . . . . . 1009		\HyPsd@doxspace . . . . . 745, 2078
\HyPsd@@@UTFviii@four 2278, 2281		\HyPsd@babel@frenchb . . . . . 1014		\HyPsd@empty . . . . . 730, 732, 736, 737, 739, 747, 754
\HyPsd@@AppendItalcorr . . . . . 1845		\HyPsd@babel@german . . . . . 1019		\HyPsd@end . . . . . 705, 709, 1768, 1771, 1774, 1777, 1780, 1793, 1803, 1810, 1813, 1851, 1859, 1865, 1871, 1916, 1923, 1929, 1932, 1944
\HyPsd@@autoref . . . . . 1673, 1674		\HyPsd@babel@macedonian 1026		\HyPsd@endWithElse 1573, 1582
\HyPsd@@autorefname . . . . . 1694, 1697		\HyPsd@babel@ngerman . . . . . 1032		
\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, 1584, 1591	2785, 6443, 6445, 6462, 6465	2755, 2761, 2773, 2777,
\HyPsd@GlyphProcess 712, 2003, 2016	\HyPsd@pdfencoding@auto 774,	6460, 6461, 6462, 6464,
\HyPsd@GlyphProcessWarning . . . . . 2010, 2014	2755, 2765, 2782, 6445, 6464	6465, 6470
\HyPsd@GobbleFiFi 1575, 1581	\HyPsd@pdfencoding@pdfdoc . . . . . 2748, 2770, 2783	\HyPsd@ToBigChar 834, 835, 844
\HyPsd@GreekNum . 1090, 1093, 1095	\HyPsd@pdfencoding@unicode . . . . . 2752, 2784, 6443, 6461	\HyPsd@ToBigChars . . 787, 826
\HyPsd@Greeknumeral . . 1086, 1092	\HyPsd@PrerenderUnicode . . . . . 3704, 3720, 3726, 3732, 3738, 3756, 3762, 3842	\HyPsd@tocsection . . . . . 1607, 1608, 1609, 1610, 1611, 1612, 1613, 1615
\HyPsd@greeknumeral 1085, 1089	\HyPsd@protected@testopt 677, 678, 1748	\HyPsd@UnescapedString . 779, 828, 829, 835
\HyPsd@GreekNumI 1113, 1139, 1182, 1208	\HyPsd@ProtectSpaces 698, 1765, 1786, 1835	\HyPsd@UnexpandableSpace . . . . . 1590, 1776, 1800, 1935, 1947
\HyPsd@GreekNumII 1117, 1161, 1205, 1212	\HyPsd@ref . . . . . 649, 1621	\HyPsd@unichar . . . 2220, 2287, 2293, 2298
\HyPsd@GreekNumIII . . . 1120, 1184, 1216	\HyPsd@RemoveBraces . . . 700, 1807, 1824, 1832, 1838	\HyPsd@unichar@first@byte 2306, 2326
\HyPsd@GreekNumIV 1129, 1207	\HyPsd@RemoveCmdPrefix 1965, 1971	\HyPsd@unichar@octtwo . 2328, 2336, 2342
\HyPsd@GreekNumV 1132, 1211	\HyPsd@RemoveMask 708, 1774, 1780, 1793, 1803	\HyPsd@unichar@second@byte . . . . . 2314, 2334
\HyPsd@GreekNumVI 1134, 1215	\HyPsd@RemoveSpaceWarning . . . . . 1939, 1951, 1977	\HyPsd@UnicodeReplace- mentCharacter . . . . 2290, 2325
\HyPsd@GreekPatch . 625, 1082, 1084	\HyPsd@ReplaceSpaceWarning . . . . . 1934, 1946, 1990	\HyPsd@utf@viii@undeferr . 539, 2348
\HyPsd@HighA . . . . 1331, 1340	\HyPsd@Rest . . . . .	\HyPsd@UTFviii 533, 2208, 2213
\HyPsd@HighB . . . . 1341, 1346	. . . . 1852, 1912, 1920, 1923, 1930, 1935, 1941, 1947, 1953	\HyPsd@UTFviii@cthree . 2243, 2252
\HyPsd@HighC . . . . 1347, 1350	\HyPsd@RussianPatch 627, 1225	\HyPsd@UTFviii@ctwo . . 2228, 2234
\HyPsd@HighD . . . . 1343, 1355	\HyPsd@SanitizeForOutFile . . . . . 14052, 14083	\HyPsd@UTFviii@ccxliv@def . . . . . 2218, 2224
\HyPsd@href . . . . . 647, 1620	\HyPsd@SanitizeOut@BraceLeft . . . . 14087, 14093, 14102	\HyPsd@UTFviii@ccxliv@undef . . . . . 2217, 2223
\HyPsd@hspace . . . . 643, 1594	\HyPsd@SanitizeOut@BraceRight . . . . 14090, 14105, 14114	\HyPsd@UTFviii@four 2216, 2261
\HyPsd@hspacetest . 1597, 1599, 1602	\HyPsd@SPACEOPTI . 702, 717, 718, 720, 722, 724, 725, 764, 766, 1887, 2089	\HyPsd@UTFviii@three . . 2215, 2242
\HyPsd@ifnextchar 674, 675, 676, 1744	\HyPsd@spaceopti . . . 766, 2034	\HyPsd@UTFviii@two 2214, 2227
\HyPsd@ignorespaces . 656, 943	\HyPsd@SpanishPatch 626, 1219	\HyPsd@Warning . . 1752, 1957, 1978, 1991, 2020, 2026
\HyPsd@InitUnicode . . . . . 908	\HyPsd@String . . . . .	\HyPsd@XeTeXBigCharsfalse . . . . . 801, 815, 820
\HyPsd@inmathwarn . 542, 1567	. . . . 699, 701, 704, 706, 711, 713, 1818, 1819, 1829, 1881, 1882, 1886, 1887, 1902, 1903, 1933, 1945, 2004, 2005	\HyPsd@XeTeXBigCharstrue 814, 823, 3719, 3725, 3731, 3737, 3755, 3761, 3841, 13692, 14050
\HyPsd@ITALCORR . . 666, 670, 1591	\HyPsd@StringSubst . . 714, 716, 722, 728, 731, 734, 737, 756, 759, 761, 2057	\HyPsd@XSPACE 668, 744, 1591
\HyPsd@langshort@system 958, 961	\HyPsd@Subst . . . . . 710, 719, 723, 729, 735, 739, 743, 748, 749, 750, 751, 752, 753, 757,	\HyPsd@xspace . . 742, 744, 745
\HyPsd@LanguageShorthands . . . . . 954, 959, 971		\HyRef@@@StarSetRef 8464, 8469
\HyPsd@LetCommand 692, 693, 1707		\HyRef@autopageref 8521, 8523
\HyPsd@LetUnexpandableSpace . 661, 662, 663, 664, 1587, 1590		
\HyPsd@LoadStringEnc . . 2766, 2786, 2788, 2792, 2794, 6447		
\HyPsd@LoadUnicode 2715, 2720, 2728, 2731, 2733, 2740, 6441		

<code>\HyRef@autopagerefname</code>	8520, 8524, 8526	<code>\if@skiphyperref</code>	6599, 6609	<code>\ifHy@activeanchor</code>	383, 5046
<code>\HyRef@autoref</code>	8539, 8541	<code>\if@twocolumn</code>	14487	<code>\ifHy@backref</code>	384, 4217, 4589, 5938, 7688, 7724
<code>\HyRef@autosetref</code>	8544, 8547	<code>\if@twoside</code>	14476	<code>\ifHy@bookmarks</code>	385, 4437
<code>\HyRef@CaseStar</code>	8608, 8614	<code>\ifcase</code>	332, 1146, 1168, 1191, 1285, 1334, 1356, 1359, 1365, 1401, 1445, 1561, 2256, 2752, 3435, 4386, 5244, 5349, 5478, 5555, 6676, 6685, 7931, 8089, 8126, 8356, 8549, 10824, 11314, 13798, 13825, 13892, 13927, 13962, 14160	<code>\ifHy@bookmarksnumbered</code>	386, 8244, 8295, 14039
<code>\HyRef@currentHtag</code>	8560, 8578, 8581, 8587, 8594, 8600, 8615	<code>\ifcat</code>	1853, 1880, 1885, 1890, 1893, 1896, 1899, 5033, 5035	<code>\ifHy@bookmarksopen</code>	387, 4427
<code>\HyRef@MakeUppercaseFirstOf-Five</code>	8487, 8489	<code>\ifdim</code>	1602, 1933, 1937, 1945, 1949, 2453, 2472, 4043, 4412, 9331, 9335, 9340, 9344, 9351, 9354, 9358, 9361, 10293, 10294, 10299, 10300, 10432, 10435, 10439, 10442, 11343, 11357, 11716, 11717, 11722, 11723, 12531, 12569, 12570, 13013, 13052, 13053, 13354, 13393, 13394	<code>\ifHy@breaklinks</code>	388, 2680, 10990, 11031, 11325, 11348
<code>\HyRef@name</code>	8576, 8577, 8582, 8589, 8607, 8608, 8609, 8611	<code>\ifetex@unexpanded</code>	1759	<code>\ifHy@CJKbookmarks</code>	390, 1237
<code>\HyRef@Ref</code>	8493, 8495	<code>\iffalse</code>	821, 5567	<code>\ifHy@colorlinks</code>	391, 4508, 5943, 11878
<code>\HyRef@ShowKeysInit</code>	8617, 8630, 8634	<code>\ifFileExists</code>	232, 6114, 12290	<code>\ifHy@draft</code>	392, 4098
<code>\HyRef@ShowKeysRef</code>	8548, 8616	<code>\ifFld@checked</code>	5501, 12850, 13785	<code>\ifHy@DviMode</code>	2824, 2844, 3002
<code>\HyRef@StarSetRef</code>	8458, 8476, 8479, 8482, 8487	<code>\ifFld@comb</code>	5348	<code>\ifHy@DvipdfmxOutlineOpen</code>	4410, 14295
<code>\HyRef@StripStar</code>	8575, 8606	<code>\ifFld@combo</code>	5376, 5381, 12544, 12573, 13026, 13056, 13367, 13397	<code>\ifHy@frenchlinks</code>	398, 4524
<code>\HyRef@testrestype</code>	8553, 8572	<code>\ifFld@disabled</code>	5502, 12851	<code>\ifHy@href@ismap</code>	4764, 8985, 10105, 10499, 10569, 11577
<code>\HyRef@thisref</code>	8550, 8553	<code>\ifFld@edit</code>	5382	<code>\ifHy@hyperfigures</code>	396, 4197, 5923, 8053
<code>\HyTmp@found</code>	5448, 5458, 5461	<code>\ifFld@fileselect</code>	5351	<code>\ifHy@hyperfootnotes</code>	399, 7166
<code>\HyTmp@key</code>	5442, 5443	<code>\ifFld@hidden</code>	12507, 12558, 12627, 12647, 12670, 12688, 12749, 12761, 12771, 12854, 12989, 13041, 13122, 13143, 13171, 13191, 13322, 13382, 13481, 13506, 13535, 13560	<code>\ifHy@hyperindex</code>	400, 4207, 5933, 8060
<code>\HyTmp@optitem</code>	5398, 5414, 5441, 5446, 5452, 5473, 5484	<code>\ifFld@multiline</code>	5349, 12496, 12756, 12977, 13310	<code>\ifHy@hypertexnames</code>	401, 6699, 6781, 7835, 8249, 8300
<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, 14350
<code>\HyXeTeX@CheckUnicode</code>	3690, 3701, 3718, 3724, 3730, 3736, 3754, 3760, 3840, 6475	<code>\ifFld@password</code>	5350, 12737	<code>\ifHy@linktocpage</code>	403, 2637, 2647
<b>I</b>					
<code>\i</code>	14669, 14832, 14835, 14838, 14841, 15038, 15200, 15203, 15206, 15209, 15326, 15331, 15336, 15341, 15345, 15512, 15568	<code>\ifFld@radio</code>	12541, 12563, 12786, 13023, 13046, 13364, 13387	<code>\ifHy@localanchorname</code>	404, 6732, 6743
<code>\if</code>	1616, 2398, 6286, 6294, 7024, 7025, 10751, 10754, 10758, 10762, 10766, 10768, 10770, 13740	<code>\ifFld@readonly</code>	12758, 12768, 12852	<code>\ifHy@naturalnames</code>	406, 6711, 8250, 8301
<code>\if@eqnstar</code>	6962, 6970	<code>\ifForm@html</code>	5522	<code>\ifHy@nesting</code>	407, 4202, 4807, 4840, 4877, 5031, 5928, 7191, 7211, 7289, 7446
<code>\if@files</code>	2366, 4871, 6075, 6119, 6506, 6516, 6777, 7564, 7579, 7595, 7607, 7637, 7660, 7687, 7692, 7711, 8112, 12888, 12912, 14053, 14240, 14322	<code>\ifhmode</code>	2414, 2418, 2471, 2480, 4708, 7049, 7073, 7106, 7234, 7243, 7393, 7395, 8874, 8882, 11349, 12275	<code>\ifHy@next</code>	995, 4171, 8077
<code>\if@hyper@item</code>	6598, 6611			<code>\ifHy@ocgcolorlinks</code>	410, 3385, 4494, 4504, 5948, 8740, 8758, 8835, 8843, 9853, 9936, 9944
<code>\if@inlabel</code>	7140			<code>\ifHy@pageanchor</code>	411, 6768, 6780, 6795, 7834
<code>\if@Localurl</code>	10313, 10359			<code>\ifHy@pdfa</code>	429, 4122, 4496, 4933, 5181, 5791, 5840, 5953, 8908, 8980, 9018, 9055, 9388, 9999, 10031, 10065, 10096, 10124, 10505, 10526, 10549, 10575, 10609, 10643, 10661, 11452, 12465, 12617, 12663, 12941, 13112, 13164, 13280, 13470, 13528, 13742, 13788, 13952
<code>\if@mid@expandable</code>	641			<code>\ifHy@pdfcenterwindow</code>	389, 9164, 9736, 10197, 10862, 11210, 12063
<code>\if@minipage</code>	7435, 7506				
<code>\if@nmbrlist</code>	6583				
<code>\if@nobreak</code>	7159				



<code>\ifHy@pdfdisplaydoctitle</code> . .	428, 9165, 9737, 10198, 10863, 11211, 12064	
<code>\ifHy@pdfescapeform</code> 395,	13636, 13666	
<code>\ifHy@pdffitwindow</code> . .	397, 9163, 9735, 10196, 10861, 11209, 12062	
<code>\ifHy@pdfmarkerror</code> 11257,	11265	
<code>\ifHy@pdfmenubar</code> . . .	405, 9161, 9733, 10194, 10859, 11207, 12060	
<code>\ifHy@pdfnewwindow</code> 409,	3992, 10546	
<code>\ifHy@pdfnewwindowset</code> . .	408, 3990	
<code>\ifHy@pdfpagehidden</code> .	413, 3529, 9291, 10278, 10800, 11086	
<code>\ifHy@pdfpagelabels</code> .	412, 6213, 6426, 6504	
<code>\ifHy@pdfstring</code> . .	414, 919, 6603	
<code>\ifHy@pdftoolbar</code> 421,	9160, 9732, 10193, 10858, 11206, 12059	
<code>\ifHy@pdfusetitle</code> . . .	423, 6129	
<code>\ifHy@pdfwindowui</code> . .	427, 9162, 9734, 10195, 10860, 11208, 12061	
<code>\ifHy@plainpages</code> 415,	4212, 6782, 7836	
<code>\ifHy@psize</code> . . . . .	416	
<code>\ifHy@raiselinks</code> 417,	9472, 9552, 9589, 9629, 11948, 12223	
<code>\ifHy@seminarslides</code> . . . . .	418	
<code>\ifHy@setpagesize</code> . . .	419, 9319, 10290, 10429, 11713	
<code>\ifHy@setpdfversion</code> .	2803, 8745	
<code>\ifHy@stoppedearly</code> . . . . .	381	
<code>\ifHy@texht</code> . . . . .	420, 4284, 4536, 4584, 5592, 5624, 5811, 5835, 5991, 8404	
<code>\ifHy@typexml</code> 382,	4222, 4511, 4555, 6076, 14244, 14326	
<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, 13688	
<code>\ifHy@useHidKey</code> . . .	3525, 9288, 10276, 10799, 11081	
<code>\ifHy@verbose</code> .	424, 4671, 4687, 4699, 5124, 7906	
<code>\ifHyField@NeedAppearances</code> . .	5565, 5567, 5570, 12467, 12943, 13282	
<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> . . . . .	10993, 11320	
<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, 6655, 6658, 7784, 7794, 8358, 8396, 8741, 8746, 9080, 9087, 9093, 9101, 9965, 9970, 10546, 10675, 10811, 10819, 10821, 10822, 10832, 10835, 10921, 10923, 11043, 11740, 12925, 13089, 13423, 13428, 13439, 13687, 13768, 13798, 13803, 13825, 13831, 13859, 13892, 13898, 13917, 13927, 13932, 13962, 13967, 13996, 14012, 14156, 14226, 14229, 14256, 14259, 14297, 14406, 14424, 14439	
<code>\ifodd</code> . . . . .	2270, 2275, 7861	
<code>\ifpdf</code> 242,	2826, 2869, 4263, 4330	
<code>\ifpdfstringunicode</code> . . .	534, 537	
<code>\ifportrait</code> . . . . .	9330	
<code>\ifthenelse</code> . . . . .	7714	
<code>\iftrue</code> . . .	824, 1766, 1788, 2052, 5570, 14408	
<code>\ifvmode</code> . . . . .	2430, 2452, 2461	
<code>\ifvoid</code> . . . . .	6903, 6907, 7144	
<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, 6863, 7044, 7325, 7431, 7442, 7445, 7502, 7510, 7572, 7587, 7603, 7612, 7722, 8229, 8281	
<code>\IJ</code> . . . . .	14665, 15347	
<code>\ij</code> . . . . .	14874, 15349	
<code>\immediate</code> . .	6077, 6078, 6079, 6081, 6121, 6419, 6509, 6517, 6792, 6820, 7567, 7582, 7598, 7608, 7638, 7661, 7687, 7717, 8760, 8775, 8790, 10926, 11737, 12867, 12889, 12931, 14146, 14212, 14243, 14245, 14325, 14327	
<code>\incr@eqnum</code> . . . . .	6922, 6935	
<code>\indent</code> . . . . .	7054, 7080	
<code>\index</code> . . . . .	645	
<code>\indexentry</code> . .	8115, 8130, 8138, 8142, 8147	
<code>\input</code> . . . . .	902, 910, 2722, 3348, 3356, 3363, 4385, 11655, 11738, 11829, 11998	
<code>\InputIfFileExists</code> .	4060, 14236, 14270, 14315, 14317	
<code>\inputlineno</code> . . . . .	4678, 5038	
<code>\insert</code> . . . . .	7304	
<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> . .	7307	
<code>\interlinepenalty</code> . . . . .	7307	
<code>\item</code> . . .	6578, 6581, 7594, 7606, 7709	
<code>\Itemautorefname</code> . . . . .	8640	
<code>\itemautorefname</code> . .	3079, 3097, 3115, 3133, 3151, 3169, 3187, 3216, 3217, 3245, 3263, 8640, 8641, 8644	
<code>\itemindent</code> . . . . .	7145	
<code>\itshape</code> . . . . .	595	
<b>J</b>		
<code>\j</code> . . . . .	15354, 15539, 15603	
<code>\jarr</code> . . . . .	16960	
<code>\jeem</code> . . . . .	16932	
<code>\jeh</code> . . . . .	16968	
<code>\jobname</code> . . . .	6078, 6114, 6121, 12290, 14145, 14236, 14243, 14270, 14315, 14317, 14325	
<b>K</b>		
<code>\k</code> . .	14549, 14891, 14893, 14898, 14900, 14943, 14961, 14980, 14987, 15251, 15253, 15291, 15293, 15338, 15340, 15341,	

15476, 15478, 15535, 15537, 16134, 16173, 16176	\LayoutCheckField 5879, 12689, 13192, 13565	\LT@array . . . . . 6888
\kaf . . . . . 16950	\LayoutChoiceField 5876, 12562, 13045, 13386	\LT@foot . . . . . 6903, 6907
\kasra . . . . . 16963	\LayoutPushButtonField . 5882, 12621, 12628, 13116, 13123, 13474, 13483	\LT@p@ftn 7265, 7268, 7272, 7282
\keepPDF@SetupDoc . . . 11882, 11889	\LayoutTextField . 5873, 12509, 12991, 13328	\LT@p@ftntext . . . . 7263, 7270
\kern . . . 1862, 1934, 1939, 1951, 7145, 7856, 7857, 7858, 7860, 7861, 7866, 14365	\lccode . . . . . 350, 355, 850, 1266, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2211, 5751, 8074, 8075, 14070, 14071, 14072, 14073, 14074, 14075, 14076, 14077, 14078, 14079, 14080	\LT@start . . . . . 6905, 6915
\kernel@ifnextchar . . . . . 675	\ldots . . . . . 554	\ltx@backslashchar 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 330
\kha . . . . . 16934	\leavevmode . . . . . 653, 2408, 4108, 4125, 4165, 4938, 6047, 7233, 7392, 7628, 8499, 8507, 8538, 8894, 8965, 9003, 9040, 9373, 9471, 9551, 9588, 9628, 9979, 10020, 10057, 10089, 10324, 10333, 10387, 10541, 10566, 10596, 10629, 10992, 11318, 11566, 11593, 11624, 11947, 12222, 12510, 12622, 12629, 12662, 12690, 12992, 13077, 13098, 13117, 13124, 13144, 13163, 13193, 13329, 13421, 13452, 13475, 13484, 13508, 13527, 13566, 14363	\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, 6954, 9411, 10314, 10401, 10996, 11302, 11323, 11652, 11735, 11993, 12157, 12164, 12486, 12492, 12701, 12732, 12779, 12873, 12970, 12973, 13290, 13306
\KV@href@pdfnewwindow . 4762	\letLtxMacro 5994, 5998, 6064, 6068	\ltx@firstofone 2845, 6109, 14098, 14110
\KV@href@pdfnewwindow@de- fault . . . . . 4763	\limits . . . . . 4654	\ltx@firstoftwo . . . . . 245, 337, 345, 2498, 2505, 4570, 4994, 7192, 7212
\KV@Hyp@draft . . . . . 2611	\listofslides . . . . . 8330	\ltx@GlobalAppendToMacro 937
\KV@Hyp@nolinks . . . . . 2611	\listslidenam 8329, 8332, 8334, 8336	\ltx@gobble . . . . . 272, 2851, 4086, 4093, 4443, 6007, 6008, 6019, 6021, 6022, 6387, 12271, 12885, 14096, 14108
\KV@Hyp@pdfnewwindow . 4762	\literalps@out 2406, 10915, 10920, 10972, 10978, 11004, 11010, 11275, 11286, 11315, 11316, 11344, 11346, 11358, 11360, 11653, 11736, 11799, 11996	\ltx@gobblefour . . . . . 314
\KV@Hyp@pdfnewwindow@de- fault . . . . . 4763	\lower . . 9478, 9558, 9595, 9635, 11346, 11954, 12229	\ltx@gobblethree . . . . . 7816
\kv@key 3826, 3829, 3836, 5401, 5404, 5406, 5410, 5414	\lowercase . . . . . 351, 356, 870, 1267, 2071, 2212, 2513, 3023, 3053, 3766, 3802, 5073, 5074, 5077, 5082, 5106, 5116, 5170, 5226, 5546, 5619, 5622, 5752, 8076, 11042, 14081	\ltx@ifclassloaded . . 6240, 7777
\kv@parse . . . . . 5400	\lslide@flag . . 8356, 8359, 8377, 8396, 8400	\ltx@ifpackagelater . . . . . 348
\kv@parse@normalized 3851, 3858		\ltx@ifpackageloaded . . . . . 1233
\kv@processor@default 3854, 3861		\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, 6666, 6996, 7530, 7795,
\kv@set@family@handler . . 3819		
\kv@value 3824, 5402, 5409, 5410		
\kvsetkeys 2802, 2856, 2976, 3698, 3799, 4123, 4360, 4378, 4495, 5499, 8742, 11264, 12484, 12722, 12735, 12784, 12827, 12848, 12922, 13265		
<b>L</b>		
\L . . . . . 14658, 15378		
\l . . . . . 14671, 15380		
\l@slide . 8229, 8339, 8344, 8348, 8355		
\l@subslide 8281, 8344, 8351, 8395		
\label . . . . . 644, 7879		
\label@hyperref . . . 4847, 4849		
\label@hyperdef . . . . 4833, 4863		
\label@hyperref 4814, 4846, 5060		
\labelsep . . . . . 7721		
\labelwidth . . . . . 7720		
\lam . . . . . 16951		
\language@group . . . . . 623		
\languageshorthands . . 953, 954, 988		
\LARGE . . . . . 602		
\Large . . . . . 603		
\large 606, 8361, 8369, 8379, 8387		
\lastbox . . . . . 7143		
\lastpage@putlabel . . . . . 6763		
\lastskip 2453, 2457, 2464, 2472, 2476, 2483		
\LaTeX . 559, 561, 12296, 12297		
\LaTeXe . . . . . 560, 12297		

8527, 8528, 8573, 8574,  
8576, 8577, 8942, 8952,  
9350, 10431, 10488, 10591,  
10968, 11011, 11102, 11279,  
14397, 14407  
`\ltx@ifundefined` . . . 2497, 2498,  
2541, 7152, 7811  
`\ltx@leftbracechar` . . . . 328, 352  
`\ltx@LocalAppendToMacro` 365,  
368  
`\ltx@one` . . . . .  
244, 6242, 6243, 6250, 7780,  
7784, 7790, 7793, 7794, 7807  
`\ltx@ReturnAfterElseFi` . . . 4636  
`\ltx@ReturnAfterFi` . . . . .  
494, 2009, 4640, 4656, 8169,  
8205, 8693, 8703, 13659  
`\ltx@rightbracechar` . . . 329, 357  
`\ltx@secondoftwo` . 240, 247, 251,  
334, 2497, 2498, 2507, 2509,  
4569, 4570, 4572, 4992,  
7194, 7214  
`\ltx@space` . . . . . 331, 1754  
`\ltx@zero` 2065, 2066, 2067, 2068,  
2069, 2070  
`\luatexrevision` . . . . . 9124  
`\luatexversion` . . . . . 9116, 9121

## M

`\m@ne` . . 4186, 4690, 4749, 5088,  
6808, 7016, 9974, 14317,  
14406, 14421  
`\make@df@tag@@` . . . 7989, 7991  
`\make@df@tag@@@` . . 7990, 7992  
`\make@stripped@name` . . 6628,  
6944, 6975, 7003, 7014  
`\makeatletter` . . . . 3, 933, 6113  
`\MakeButtonField` . 5889, 12623,  
12631, 12649, 12667, 12672,  
13118, 13127, 13151, 13168,  
13174, 13476, 13479, 13507,  
13532, 13536  
`\MakeCheckField` . 5886, 12692,  
13196, 13562  
`\MakeChoiceField` . 5888, 12607,  
13101, 13450  
`\MakeFieldObject` 12866, 12953,  
12963, 12966  
`\MakeLowercase` . . . . . 619  
`\MakeLowercaseUnsupportedIn-`  
`PdfStrings` . . . . . 619  
`\MakeRadioField` . . 5885, 12595,  
13088, 13414  
`\makeslideheading` . . . . . 8239  
`\makeslidesubheading` . . . . 8291  
`\maketag@@@` . . . . . 7978  
`\MakeTextField` . . . 5887, 12512,  
12995, 13325

`\maketitle` . . . . . 7342, 7343  
`\MakeUppercase` 618, 8334, 8336,  
8490  
`\MakeUppercaseUnsupportedIn-`  
`PdfStrings` . . . . . 618  
`\MathBSuppress` . . 10334, 10338  
`\mathclose` . . . . . 6957  
`\mathdisplay` . . . . . 6925, 6934  
`\mathdisplay@push` . 6923, 6932  
`\mathopen` . . . . . 6948, 6979  
`\mathversion` . . . . . 611  
`\maxdimen` . . . . . 3457, 12871  
`\MaybeStopEarly` 471, 2859, 2934,  
4233, 4338, 6537, 6540  
`\mbox` 654, 7641, 7664, 8845, 9946  
`\mddefault` . . . 7056, 7082, 7113  
`\mdseries` . . . . . 594  
`\meaning` . . . . . 62, 153,  
159, 2369, 6153, 6724, 7021,  
14281, 14289, 14304  
`\measuring@false` . . . . . 6623  
`\mediaheight` . . . . 10425, 10427,  
10433, 10440  
`\mediawidth` . . . . 10436, 10443  
`\meem` . . . . . 16952  
`\message` . . . . . 8357  
`\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,  
6771, 7883, 7913, 7914,  
7915, 7916, 7917, 8048,  
8898, 9984, 10517, 10600,  
11111, 12879, 12881, 14017,  
14035, 14148  
`\MF` . . . . . 569, 12299  
`\MP` . . . . . 570, 12300  
`\multiply` . . . 9120, 10780, 10815

## N

`\n` . . . . . 861  
`\name@of@eq` . . . . . 6596, 6626  
`\name@of@slide` . . . . 6597, 6607  
`\nameref` . . . . . 651, 4574, 4578  
`\nasb` . . . . . 16958  
`\netscape` . . . . . 9514  
`\new@ifnextchar` . . . . . 676  
`\new@pdfink` . . 8873, 8930, 8933  
`\new@crefstepcounter` 6917, 6951  
`\newblock` . . . . . 7725  
`\newcommand` . . . . . 4, 9,  
42, 2407, 6051, 6055, 8016,  
14118, 14121, 14126  
`\newcount` . . . . . 472,  
473, 2412, 4734, 5505, 6229,  
12603, 13095, 13296, 13446,  
14153  
`\newcounter` . 6579, 7167, 9852,  
14068  
`\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, 6962,  
10313, 11257  
`\newlabel` 2372, 4873, 6091, 6092,  
6100, 6126, 6793, 6821  
`\newlabelxx` . . . . . 6093, 6094  
`\newlength` . . . . . 14356  
`\newline` . . . . . 557, 6174  
`\newname` 6629, 6945, 6976, 7004,  
7017, 7026  
`\newsavebox` . . . . . 9782, 11294  
`\newtie` . . . 14551, 14552, 14935,  
14965, 14984, 15000  
`\newtoks` 90, 5593, 11129, 11369,  
11370  
`\newwrite` . . 6120, 14241, 14323  
`\next` . . 7715, 7716, 7717, 10743,  
10745, 10747  
`\nfss@text` 8411, 8431, 8448, 8566  
`\NG` . . . . . 15396  
`\ng` . . . . . 15398  
`\noboundary` . . . . . 16973  
`\nobreak` 2454, 2462, 2473, 2481,  
7234, 7393  
`\nobreakspace` . 664, 8502, 8531,  
8534



<code>\noexpand</code> . 22, 93, 95, 108, 116, 169, 171, 172, 173, 176, 206, 839, 941, 1280, 1713, 1730, 1853, 2225, 2460, 2461, 2462, 2465, 2479, 2480, 2481, 2484, 3306, 3308, 3310, 3311, 3312, 3314, 3330, 3536, 3537, 3539, 3884, 4188, 4192, 4193, 4360, 4648, 4821, 4903, 5033, 5035, 5136, 5683, 5696, 6342, 6343, 6352, 6354, 6357, 6482, 6805, 6806, 6808, 6833, 6834, 6835, 6836, 6837, 6845, 6846, 6847, 7020, 7256, 7266, 7274, 7275, 7276, 7278, 7402, 7491, 7566, 7581, 7597, 7782, 8008, 8010, 8464, 8465, 8582, 8583, 8588, 8590, 8595, 8596, 8601, 8602, 9123, 9720, 11194, 11261, 11796, 12047, 12537, 12538, 12539, 12540, 13019, 13020, 13021, 13022, 13360, 13361, 13362, 13363, 13638	2278, 2282, 2283, 2284, 2285, 2294, 2295, 2299, 2300, 2307, 2308, 2312, 2315, 2316, 2317, 2327, 2329, 2330, 2335, 2337, 2338, 2343, 2344, 3904, 4412, 4429, 5094, 6656, 6659, 6701, 6702, 6705, 6709, 8752, 8755, 9542, 9560, 9561, 9576, 9577, 9597, 9598, 9614, 9615, 9637, 9638, 9654, 9655	<code>\oldnewlabel</code> . . 6091, 6096, 6100 <code>\OMEGA</code> . . . . . 12295 <code>\on@line</code> . . . . . 7910, 7911 <code>\openout</code> . . . . 6078, 6121, 14243, 14325 <code>\OpMode</code> 2929, 2932, 2945, 2958, 2963, 10832, 10923, 11740 <code>\or</code> 335, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1170, 1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1193, 1194, 1195, 1196, 1197, 1198, 1199, 1200, 1201, 1286, 1287, 1288, 1289, 1290, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1298, 1299, 1300, 1301, 1302, 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1335, 1357, 1360, 1366, 1367, 1368, 1369, 1370, 1371, 1372, 1373, 1374, 1375, 1376, 1377, 1378, 1379, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1387, 1388, 1389, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1397, 1402, 1403, 1404, 1405, 1406, 1407, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416, 1417, 1418, 1419, 1420, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428, 1429, 1430, 1431, 1432, 1433, 1446, 1447, 1448, 1449, 1450, 1562, 1563, 1564, 5254, 5260, 5265, 5479, 6676, 6677, 6678, 6679, 6685, 6686, 6687, 6688, 7933, 7937, 8376, 8385, 10825, 14161, 14162, 14163, 14164, 14165, 14166, 14167, 14168, 14169, 14170, 14171, 14172, 14173, 14174, 14175, 14176, 14177, 14178, 14179, 14180, 14181, 14182, 14183, 14184, 14185, 14186, 14187, 14188, 14189, 14190, 14191, 14192 <code>\overlay</code> . . . . . 7822
<code>\nofrenchguillemets</code> . . . 683, 685 <code>\NoHy@OrgPageRef</code> 5998, 6000, 6068, 6070 <code>\NoHy@OrgRef</code> 5994, 5996, 6064, 6066 <code>\NoHyper</code> . . . . . 6002 <code>\nohyperpage</code> 6046, 8159, 8161, 8163 <code>\nolinkurl</code> . . . . . 4800 <code>\nolinkurl@</code> . . . . . 4800, 4801 <code>\NomFancyVerbLineautorefname</code> . . . . . 3234 <code>\Nomfootnoteautorefname</code> . 3214 <code>\Nomtheoremautorefname</code> . 3238 <code>\nonumber</code> . . . . . 6991, 6994 <code>\normalfont</code> 589, 7050, 7076, 7109 <code>\normalsize</code> . . . . 607, 7438, 7509 <code>\note</code> . . . . . 7825 <code>\NR@getttitle</code> . . . . . 7428 <code>\null</code> . . . 7706, 7714, 8453, 8562 <code>\number</code> 1114, 1118, 1121, 1129, 1132, 1134, 1439, 1441, 1468, 1469, 2171, 2229, 2230, 2231, 2232, 2236, 2237, 2238, 2239, 2240, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2254, 2255, 2256, 2257, 2258, 2259, 2262, 2264, 2268, 2269, 2271, 2273, 2275,	<code>\numberline</code> . 7431, 7502, 14040, 14045 <code>\numberwithin</code> . . . . . 8013 <code>\numexpr</code> 2236, 2237, 2238, 2240, 2246, 2254, 2255, 2256, 2257, 2258, 2259, 2263, 2265, 2269, 2271, 2273, 2275, 2279, 2282, 2283, 2285, 2294, 2299, 2316, 2330, 2338, 2344, 3908 <code>\nun</code> . . . . . 16953  <b>O</b> <code>\O</code> . . . . . 14791, 15159, 15554 <code>\o</code> . . . . . 14859, 15227, 15556 <code>\obeylines</code> . . . . . 11795 <code>\OBJ@acroform</code> . . . 12949, 12950 <code>\OBJ@Helv</code> 12928, 12937, 13255 <code>\OBJ@OCG@print</code> . . 8789, 8792, 8800, 8826, 9870, 9872, 9885, 9889, 9898, 9927 <code>\OBJ@OCG@view</code> . . . . . . . . 8774, 8792, 8825, 9854, 9856, 9869, 9889, 9926 <code>\OBJ@OCGs</code> . 8795, 8798, 8804, 8809, 8814, 9886, 9888, 9892, 9896, 9902, 9907, 9912 <code>\OBJ@pdfdocencoding</code> . . . 12926, 13236, 13252 <code>\OBJ@ZaDb</code> 12927, 12936, 13245 <code>\OCIRCUMFLEX</code> 16796, 16894, 16895, 16896, 16897, 16898 <code>\ocircumflex</code> 16789, 16834, 16835, 16836, 16837, 16838 <code>\oddsidemargin</code> . . . . . 7862 <code>\OE</code> . . . . . 14660, 15412 <code>\oe</code> . . . . . 14673, 15414 <code>\offinterlineskip</code> . . . . . 6200 <code>\OHORN</code> . . 16797, 16899, 16900, 16901, 16902, 16903 <code>\ohorn</code> 3261, 3268, 16790, 16839, 16840, 16841, 16842, 16843 <code>\oldb</code> . . . . . 893 <code>\oldc</code> . . . . . 894 <code>\oldcontentsline</code> 6086, 6089, 6099 <code>\oldd</code> . . . . . 895	<b>P</b> <code>\P</code> . . . . . 553

<code>\p@</code> 2295, 2300, 5508, 5514, 7058, 7084, 7115, 9487, 9571, 9609, 9649, 10779, 11963, 12243, 12533, 13015, 13356, 14481, 14482	<code>\pdf@docset</code> . . . . . 11129	<u>13952</u>
<code>\p@equation</code> . . . . . 7985	<code>\pdf@endanchor</code> 8886, 8930, 8937	<code>\PDFForm@Submit</code> 12648, 12651, 13145, 13147, 13509, 13514, <u>13919</u>
<code>\PackageError</code> . . . . . 61	<code>\pdf@escapestring</code> . . . . . 8712	<code>\PDFForm@Text</code> . 12511, 12513, 12993, 12994, 13330, 13333, <u>13884</u>
<code>\PackageInfo</code> . 8736, 8750, 12877	<code>\PDF@FinishDoc</code> . . . 2862, 2863, 2937, 2938, 4035, 4110, 4236, 4237, 4341, 4342, 6045, 6210, 6211, <u>9199</u> , 9411, 9669, 10151, 10314, 10891, 11130, 12003, 12164	<code>\pdfhorigin</code> . . . . . 9327
<code>\PackageWarning</code> . . 2806, 5465	<code>\pdf@ifdraftmode</code> . . . . 240, 243, 251, 6386, 8759, 9200, 9309, 12923, 14253	<code>\pdfinfo</code> . . . . . 9203
<code>\pageautorefname</code> . . . . . . . 3092, 3110, 3128, 3146, 3164, 3182, 3200, 3240, 3258, 3276, 8534, 8657	<code>\pdf@linktype</code> . . . 11279, 11283, 11386, 11387	<code>\pdflastform</code> . . . . . 8867
<code>\pagename</code> . . . . . 8531	<code>\pdf@rect</code> . 11271, 11285, 11298	<code>\pdflastlink</code> . . . . . 12907
<code>\pageref</code> . . . . . 650, 4243, 4565, 5998, 5999, 6068, 6069, 6771, 8520, 8524	<code>\PDF@SetupDoc</code> 4034, 4109, 5965, 5966, 6044, 9130, 9412, 9700, 10191, 10315, 10840, 11181, 11884, 12034, 12165	<code>\pdflastobj</code> . . 8774, 8789, 8795, 12949, 13236, 13245, 13255
<code>\paperheight</code> . . . . . . . 4041, 9335, 9337, 9340, 9342, 9354, 9355, 10294, 10295, 10432, 10433, 10435, 11717, 11718	<code>\PDF@SetupDox</code> . . . . . <u>9130</u>	<code>\pdflastxform</code> 8867, 12869, 12871
<code>\paperwidth</code> . . . . . . . 9331, 9333, 9344, 9346, 9351, 9352, 10293, 10295, 10436, 11716, 11718	<code>\pdf@strcmp</code> . . . . . 972	<code>\pdfinkmargin</code> 8862, 8865, 8870
<code>\par</code> 7049, 7074, 7107, 7430, 7458, 7500, 7510, 7708, 7728	<code>\pdf@toks</code> . 11261, 11276, 11287, 11369, 11373, 11377	<code>\pdfliteral</code> . . . 8846, 8848, 8853
<code>\paragraphautorefname</code> . . . . . . . 3088, 3106, 3124, 3142, 3160, 3178, 3196, 3229, 3231, 3254, 3272, 8653	<code>\pdf@type</code> . 11263, 11267, 11276, 11287, 11364, 11384	<code>\pdfm@box</code> . 9782, 13292, 13293, 13294, 13324, 13336, 13413, 13438, 13449, 13460, 13479, 13492, 13507, 13516, 13536, 13544, 13561, 13573
<code>\partautorefname</code> . . 3082, 3100, 3118, 3136, 3154, 3172, 3190, 3220, 3248, 3266, 8647	<code>\pdfannotlink</code> . . . . . 8864	<code>\pdfmark</code> 6500, 9720, 9729, 9759, 10959, 10979, 11018, 11053, 11070, 11082, 11116, 11153, 11165, 11194, 11203, 11234, 11258, 11519, 11533, 11548, 11560, 11567, 11594, 11625, 12047, 12056, 12087, 12512, 12595, 12607, 12631, 12649, 12672, 12692, 14285
<code>\partnumberline</code> . . 14042, 14047	<code>\pdfbookmark</code> 2407, 6050, 6051, 14119, 14124, 14129, 14133	<code>\pdfmark@</code> . . . . . 11258, 11259
<code>\PassOptionsToPackage</code> . . 2977, 3034, 3038, 3060, 4075, 4379	<code>\pdfcatalog</code> . . 6389, 8796, 9145, 9187, 12950	<code>\pdfmatch</code> . . . . . 332
<code>\pdf@addtoks</code> . . . 11372, 11391, 11397, 11406, 11413, 11417, 11419, 11421, 11423, 11425, 11433, 11442, 11446, 11448, 11450, 11453, 11462, 11466, 11468, 11470, 11472, 11474, 11476, 11478, 11480, 11482, 11484, 11486, 11488, 11490, 11492, 11494, 11496, 11497, 11498, 11499, 11500, 11501, 11502, 11503, 11504, 11505, 11506, 11511	<code>\PDFdefaults</code> . . . . . 11380	<code>\pdfminorversion</code> . . . . . 8733
<code>\pdf@addtoks</code> . . 11366, 11376, 11389	<code>\pdfdest</code> . . . . . 8888	<code>\PDFNextPage</code> . . . . . 11531
<code>\pdf@box</code> . . 11294, 11326, 11334, 11342, 11343, 11346, 11350, 11352, 11355	<code>\pdfdraftmode</code> . . . . . 244	<code>\PDFNextPage@</code> . . 11531, 11532
<code>\pdf@defaulttoks</code> . 11261, 11370, 11371, 11381	<code>\pdfendlink</code> . 8927, 12995, 13088, 13102, 13128, 13152, 13175, 13197	<code>\pdfobj</code> 8760, 8775, 8790, 12931, 13203, 13237, 13246
	<code>\pdfescapestring</code> . . . . . 13667	<code>\PDFOpen</code> . . . . . 11559
	<code>\pdfform</code> . . . . . 8866	<code>\pdfoptionpdfminorversion</code> 8730
	<code>\PDFForm@@@Name</code> 13675, 13678, <u>13682</u> , <u>13685</u>	<code>\pdfoutline</code> . . . . . 14334
	<code>\PDFForm@Check</code> 12691, 12693, 13194, 13195, 13567, 13571, <u>13759</u>	<code>\pdfpageattr</code> . 9243, 9247, 9248, 9258, 9267, 9271, 9272, 9282, 9290, 9293, 9294, 9304
	<code>\PDFForm@List</code> . 12606, 12608, 13099, 13100, 13453, 13458, <u>13817</u>	<code>\pdfpageheight</code> 9337, 9346, 9355, 9362
	<code>\PDFForm@Name</code> 12987, 13040, 13111, 13189, 13320, 13381, 13469, 13558, <u>13674</u>	<code>\pdfpageresources</code> . . . . . 8823
	<code>\PDFForm@Push</code> . 12630, 12632, 13125, 13126, 13485, 13489, <u>13788</u>	<code>\pdfpagesattr</code> . 9134, 9136, 9138
	<code>\PDFForm@Radio</code> 12594, 12598, 13078, 13080, 13422, 13434, <u>13850</u>	<code>\pdfpagewidth</code> 9333, 9342, 9352, 9359
	<code>\PDFForm@Reset</code> 12671, 12673, 13172, 13173, 13537, 13542,	<code>\PDFPreviousPage</code> . . . . . 11544
		<code>\PDFPreviousPage@</code> . . . . . 11545, 11547
		<code>\pdfrefform</code> . . . . . 8868
		<code>\pdfrefobj</code> . 12926, 12927, 12928
		<code>\pdfrefxform</code> . . . . . 8868, 12871
		<code>\pdfstartlink</code> . . . . . . . 8863, 8864, 8922, 8966,

9004, 9041, 9374, 12994,  
13079, 13100, 13126, 13146,  
13173, 13195

`\pdfstringdef` . . . . . 522,  
806, 3721, 3727, 3733, 3739,  
3744, 3750, 3757, 3763,  
3843, 5426, 5431, 5457,  
6177, 6278, 6280, 6786,  
7808, 7844, 13693, 14051

`\pdfstringdefDisableCommands` .  
. . . 892, 931, 6048, 6172

`\pdfstringdefPostHook` . 802, 925

`\pdfstringdefPreHook` . 660, 925,  
937, 6171, 6181

`\pdfstringdefWarn` 556, 557, 655,  
940, 1721, 1726, 1745, 1749

`\pdfTeXrevision` 9090, 9098, 9109

`\pdfTeXversion` 9085, 9087, 9090,  
9093, 9096, 9097, 9101,  
9107, 9108, 12925

`\pdfvorigin` . . . . . 9328

`\pdfxform` . . . . . 8866, 12867

`\peh` . . . . . 16966

`\penalty` 1856, 2434, 4709, 7635,  
7658

`\phantom` . . . . . 612

`\phantomsection` . . . 4036, 6052,  
7885, 13986, 14037, 14425

`\Preamble` . . . . . 12291

`\PrerenderUnicode` . . . . . 3712

`\process@me` . 6151, 6163, 6164,  
9133, 9142

`\ProcessKeyvalOptions` . . . 4079

`\protect` . 1854, 4851, 7431, 7502,  
7566, 7581, 7597, 7713,  
7720, 7721, 7923, 7954,  
8229, 8281, 8410, 8430,  
8436, 8447, 8565, 9422,  
9519, 10385, 10460, 11895,  
12175, 14058, 14358, 14481,  
14482

`\protected@edef` . . . . .  
. . . 4888, 6244, 6338, 6876,  
7018, 7038, 7796, 7800,  
8895, 9981, 10514, 10597,  
11108

`\protected@write` . . . 2371, 4872,  
7693, 8114, 8129, 8137,  
8141, 8146, 14057

`\protected@xdef` . . . 7275, 7368

`\providecommand` . . . . .  
. . . 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,  
7012, 7531, 7532, 7547,  
7625, 8211, 8212, 8216,  
8221, 8222, 8329, 8638,  
8639, 8640, 8641, 8642,  
8643, 8644, 8645, 8646,  
8647, 8648, 8649, 8650,  
8651, 8652, 8653, 8654,  
8655, 8656, 8657, 8719,  
8872, 8890, 8891, 9410,  
9513, 9514, 9777, 9839,  
9840, 9841, 10311, 10430,  
10452, 10453, 10454, 10916,  
11295, 11296, 11651, 11659,  
11660, 11661, 11662, 11734,  
11746, 11747, 11748, 11749,  
11793, 11834, 11835, 11836,  
11837, 11992, 11994, 11995,  
12108, 12109, 12156, 12890

`\PushButton` . . . . . 5861

`\put@me@back` 5028, 5041, 5051

**Q**

`\qaf` . . . . . 16949

`\quotedblbase` . . . 14640, 14877,  
16466, 16770

`\quotesinglbase` . . 14650, 14879,  
16460, 16772

**R**

`\r` . . . 864, 14518, 14530, 14542,  
14752, 14817, 14926, 14953,  
14972, 14994, 15121, 15185,  
15468, 15470, 16430, 16432

`\ra` . . . . . 16937

`\raff` . . . . . 16959

`\raise` . . . 2441, 9488, 9572, 9610,  
9650, 11360, 11964, 12244

`\ReadBookmarks` . . . . .  
. . . 4078, 4113, 4250, 4446,  
4586, 14217, 14252

`\real@setref` . . . . . 8407, 8473

`\realfootnote` . . . . . 7365

`\Ref` . . . . . 8492, 8496, 8501

`\ref` 649, 4242, 4562, 5068, 5994,  
5995, 6064, 6065, 7330,  
7337, 8511, 12267

`\ref@one` . . . . . 4827, 4828

`\rEfLiNK` . . . . . 12268, 12269

`\refstepcounter` . . . . .  
. . . 6595, 6602, 6622, 6858,  
6881, 6882, 6883, 6892,  
6917, 6941, 6951, 7066, 7494

`\rem@ptetc` . . . . . 11043, 11045

`\renewcommand` . . . 2363, 7473,  
8030, 14133

`\RequirePackage` . . . . . 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, 10312,  
12161, 14143

`\RerunFileCheck` . . . . . 14145

`\Reset` . . . . . 5870

`\reset@font` . . 7641, 7664, 8411,  
8431, 8448, 8566

`\revtex@checking` . . . . . 7618

`\Rightarrow` . . . . . 8363

`\rlap` . . . . . 8847, 9948

`\rm` . . . . . 600

`\rmfamily` . . . . . 590

`\Roman` . . . . . 6334

`\roman` . . . . . 6335

`\romannumeral` . . . . . 947, 948

`\rule` . . . . . 7315

## S

`\sad` . . . . . 16941

`\sbox` 3708, 5890, 9475, 9555, 9592,  
9632, 11295, 11334, 11951,  
12226, 12866

`\scr@LT@array` . . . . . 6891

`\scriptsize` . . . . . 608

`\scriptstyle` . . . . . 7631

`\scrollmode` . . 1773, 1798, 1808,  
1821, 1913, 2045

`\scshape` . . . . . 596, 7055, 7081

`\section` . . . . . 8331

`\sectionautorefname` 3085, 3103,  
3121, 3139, 3157, 3175,  
3193, 3222, 3251, 3269, 8650

`\seen` . . . . . 16939

`\selectfont` . . . 576, 4525, 12959

`\set@display@protect` . . . . 4177

`\setbox` . . . . . 1857, 1863, 1869,  
3440, 3446, 5652, 6199,  
7143, 8837, 9402, 9921,  
9938, 13324, 13413, 13449,  
13479, 13507, 13536, 13561

`\setcounter` . . . . . 4740

`\setkeys` . . . . . 4715, 4760

`\setlength` . . . . . 506,  
507, 2438, 5664, 9327, 9328,  
9333, 9337, 9342, 9346,  
9352, 9355, 9359, 9362,  
10433, 10436, 10440, 10443,  
10779, 14375, 14446

`\setpdfinkmargin` . . 3891, 3892,  
8862

`\settowidth` 12530, 13012, 13353

`\SetupKeyvalOptions` 2492, 4069



16742, 16744, 16746, 16748, 16750	<code>\textflqq</code> . . . . . 637, 14881, 16774	<code>\textmu</code> . . . . . 1173, 14720, 15089
<code>\textcircledP</code> . . . . . 16568	<code>\textfourinferior</code> . . . . . 16530	<code>\textmugreek</code> . . . . . 15739
<code>\textcircumflex</code> . . . . . 14565	<code>\textfoursuperior</code> . . . . . 16498	<code>\textmultiply</code> . . . . . 14789, 14886, 15157, 16779
<code>\textcolonmonetary</code> . . . . . 16546	<code>\textfractionsolidus</code> 14630, 16488	<code>\textmusicalnote</code> . . . . . 16756
<code>\textcolor</code> . . . 617, 12921, 12964, 12967, 13264	<code>\textfrq</code> . . . . . 640, 14884, 16777	<code>\textnaira</code> . . . . . 16550
<code>\textcompwordmark</code> . . . . . 16448	<code>\textfrqq</code> . . . . . 638, 14882, 16775	<code>\textnapostrophe</code> . . . . . 15394
<code>\textcopyright</code> . . . . . 14697, 15065	<code>\textGamma</code> . . . . . 1150, 15658	<code>\textneg</code> . . . . . 14885, 16778
<code>\textCR</code> . . . . . 14559, 15006	<code>\textgamma</code> . . . . . 1150, 15721	<code>\textnewtie</code> 14965, 14984, 15626
<code>\textcurrency</code> . . . . . 14687, 15055	<code>\textglq</code> . . . . . 635, 14879, 16772	<code>\textnineinferior</code> . . . . . 16540
<code>\textdagger</code> . . . . . 14618, 16468	<code>\textglqq</code> . . . . . 633, 14877, 16770	<code>\textninesuperior</code> . . . . . 16508
<code>\textdaggerdbl</code> . . . . . 14620, 16470	<code>\textgravedbl</code> . . . . . 15620	<code>\textnormal</code> . . . . . 579
<code>\textdegree</code> 14710, 14876, 15078	<code>\textgreater</code> . . . . . 14595, 15028	<code>\textnsuperior</code> . . . . . 16520
<code>\textDelta</code> . . . . . 1151, 15660	<code>\textgrq</code> . . . . . 636, 14880, 16773	<code>\textNu</code> . . . . . 1174, 15678
<code>\textdelta</code> . . . . . 1151, 15723	<code>\textgrqq</code> . . . . . 634, 14878, 16771	<code>\textnu</code> . . . . . 1174, 15741
<code>\textDigammagreek</code> . . . . . 15782	<code>\textGslash</code> . . . . . 15523	<code>\texnumbersign</code> . . . 547, 14579, 15010
<code>\textdigammagreek</code> . . . . . 15784	<code>\textgslash</code> . . . . . 15525	<code>\texnumeralsigngreek</code> . . . 1125, 15634
<code>\textdiscount</code> . . . . . 16494	<code>\textguarani</code> . . . . . 16562	<code>\texnumeralsignlowergreek</code> 1142, 1164, 1187, 15636
<code>\textdiv</code> . . . . . 14887, 16780	<code>\textHslash</code> . . . . . 15319	<code>\textnumero</code> . . . . . 16566
<code>\textdivide</code> 14857, 14887, 15225, 16780	<code>\texthslash</code> . . . . . 15321	<code>\textogonek</code> 14571, 14961, 14980, 15613
<code>\textdivorced</code> . . . . . 16760	<code>\textHT</code> . . . . . 14555, 15002	<code>\textohm</code> . . . . . 16576
<code>\textdollar</code> . . . 548, 14581, 15012	<code>\texhungarumlaut</code> 14569, 14960, 14979, 15617, 15618	<code>\textOmega</code> . 1200, 15650, 15700
<code>\textdong</code> . . . . . 16556	<code>\textinterrobang</code> . . . . . 16486	<code>\textomega</code> . 1200, 15765, 15776
<code>\textdotaccent</code> . . . 14520, 14532, 14544, 14567, 14955, 14974, 15609	<code>\textIota</code> . . . 1170, 15644, 15670, 15703	<code>\textOmicron</code> 1176, 15646, 15682
<code>\textdotbelow</code> . . . 14524, 14536, 14548, 14591, 14963, 14982, 15628	<code>\textiota</code> . . . 1170, 15713, 15733, 15767	<code>\textomicron</code> 1176, 15745, 15771
<code>\textdoublegrave</code> . 14958, 14977, 15624	<code>\textIotadieresis</code> . . 15652, 15702	<code>\textonehalf</code> . . . . . 14736, 15105
<code>\textdownarrow</code> . . . . . 16592	<code>\textit</code> . . . . . 585	<code>\textoneinferior</code> . . . . . 16524
<code>\texeightinferior</code> . . . . . 16538	<code>\textKappa</code> . . . . . 1171, 15672	<code>\textonequarter</code> . . . 14734, 15103
<code>\texightsuperior</code> . . . . . 16506	<code>\textkappa</code> . . . . . 1171, 15735	<code>\textonesuperior</code> . . 14728, 15097
<code>\textellipsis</code> . . . 554, 555, 14622, 16474	<code>\textKoppagreek</code> . . . 1178, 15786	<code>\textopenbullet</code> . . . . . 16752
<code>\textemdash</code> . 748, 14624, 16452	<code>\textkoppagreek</code> . . . 1178, 15788	<code>\textordfeminine</code> . . 14699, 15067
<code>\textendash</code> . 749, 14626, 16450	<code>\textkra</code> . . . . . 15360	<code>\textordmasculine</code> . 14730, 15099
<code>\textEpsilon</code> 1152, 15640, 15662	<code>\textLambda</code> . . . . . 1172, 15674	<code>\textparagraph</code> 553, 14722, 15091
<code>\textepsilon</code> . . . . 562, 565, 1152, 15709, 15725	<code>\textlambda</code> . . . . . 1172, 15737	<code>\textparenleft</code> . 756, 757, 14587, 15020
<code>\textequalssuperior</code> . . . . . 16514	<code>\textlangle</code> . . . . . 16598	<code>\textparenleftinferior</code> . . . . 16542
<code>\textestimated</code> . . . . . 16582	<code>\textlatin</code> . . . . . 621, 6712	<code>\textparenleftsuperior</code> . . . 16516
<code>\textEta</code> . . . 1155, 15642, 15666	<code>\textlbrackdbl</code> . . . . . 16762	<code>\textparenright</code> . . . 14589, 15022
<code>\texteta</code> . . . 1155, 15711, 15729	<code>\textleftarrow</code> . . . . . 16586	<code>\textparenrightinferior</code> . . . 16544
<code>\texteuro</code> . . . . . 14679, 16558	<code>\textless</code> . . . . . 14593, 15026	<code>\textparenrightsuperior</code> . . 16518
<code>\textexclamdown</code> . . . . 752, 1059, 14681, 15049	<code>\textLF</code> . . . . . 14557, 15004	<code>\textpercent</code> . 549, 14583, 15014
<code>\textfi</code> . . . . . 750, 14654, 16766	<code>\textlira</code> . . . . . 16548	<code>\textperiodcentered</code> 14724, 14889, 15093, 16782
<code>\TextField</code> . . . . . 5852	<code>\textlnot</code> . . . . . 14704, 15072	<code>\textpertenthousand</code> . . . . 16478
<code>\textfiveinferior</code> . . . . . 16532	<code>\textlogicalnot</code> . . . 14703, 14885, 15071, 16778	<code>\textperthousand</code> . . 14638, 16476
<code>\textfivesuperior</code> . . . . . 16500	<code>\textlongs</code> . . . . . 15502, 16434	<code>\textpeseta</code> . . . . . 16552
<code>\textfl</code> . . . . . 751, 14656, 16768	<code>\textlquill</code> . . . . . 16490	<code>\textpeso</code> . . . . . 16560
<code>\textflorin</code> . . . . . 14628, 15504	<code>\textmacronbelow</code> 14523, 14535, 14547, 14602, 14962, 14981, 15630	<code>\textPhi</code> . . . . . 1197, 15694
<code>\textflq</code> . . . . . 639, 14883, 16776	<code>\textmarried</code> . . . . . 16758	<code>\textphi</code> . . . . . 1197, 15759
	<code>\textmd</code> . . . . . 584	<code>\textPi</code> . . . . . 1177, 15684
	<code>\textmho</code> . . . . . 16578	<code>\textpi</code> . . . . . 1177, 15747
	<code>\textminus</code> . . . . . 14636, 16594	<code>\textplusminus</code> . . 14712, 14888, 15080, 16781
	<code>\textminussuperior</code> . . . . 16512	
	<code>\textMu</code> . . . . . 1173, 15676	



<code>\textplussuperior</code> . . . . .	16510	<code>\texttimes</code> . . . . .	14886, 16779	<code>\theHslide</code> . . . . .	8221, 8223, 8259, 8263
<code>\textpm</code> . . . . .	14888, 16781	<code>\texttrademark</code> . . .	14652, 16574	<code>\theHslidesubsection</code> . . . . .	8222, 8310, 8314
<code>\textPsi</code> . . . . .	1199, 15698	<code>\textTslash</code> . . . . .	15452	<code>\theHsubequation</code> . . . . .	7012
<code>\textpsi</code> . . . . .	1199, 15763	<code>\texttslash</code> . . . . .	15454	<code>\theHsubparagraph</code> . . . . .	6575
<code>\textquestiondown</code> . . .	753, 1060, 14740, 15109	<code>\textttt</code> . . . . .	582	<code>\theHsubsection</code> . . .	6572, 6573
<code>\textquotedbl</code> . . . .	14577, 15008	<code>\texttwoinferior</code> . . . . .	16526	<code>\theHsubsubsection</code> . .	6573, 6574
<code>\textquotedblleft</code> . .	14642, 14878, 16462, 16771	<code>\texttwosuperior</code> . .	14714, 15082	<code>\theHtable</code> . . . . .	6565, 6569
<code>\textquotedblright</code> . .	14644, 16464	<code>\textunderscore</code> . . . .	552, 4619, 4620, 4622, 14601, 15034	<code>\theHtheorem</code> . . . . .	6576
<code>\textquoteleft</code> . . .	14646, 14880, 16456, 16773	<code>\textup</code> . . . . .	588	<code>\theHthm</code> . . . . .	6577
<code>\textquoteright</code> . . .	14648, 16458	<code>\textUpsilon</code> . . . . .	1196, 15648, 15692, 15705	<code>\theHy@tempcnt</code> . . . . .	4735, 4743, 4750
<code>\textquotesingle</code> . . . . .	15018	<code>\textupsilon</code> . . . . .	1196, 15757, 15769, 15774	<code>\thelisting</code> . . . . .	3416
<code>\texttriangle</code> . . . . .	16600	<code>\textupsilonacute</code> . .	15715, 15773	<code>\thelstlisting</code> . . . . .	3412
<code>\texttrbrackdbl</code> . . . .	16764	<code>\textvarsigma</code> . . . . .	15751	<code>\thempfn</code> . . . . .	7173, 7276, 7368, 7380
<code>\textrecipe</code> . . . . .	16570	<code>\textvisiblespace</code> . . . . .	16604	<code>\theoremautorefname</code> . . . . .	3091, 3109, 3127, 3145, 3163, 3181, 3199, 3237, 3257, 3275, 8656
<code>\textreferencemark</code> . . . . .	16484	<code>\textwon</code> . . . . .	16554	<code>\thepage</code> . . . . .	2374, 4853, 6219, 6245, 6260, 6786, 6794, 6821, 7644, 7667, 7696, 7797, 7844, 7923, 7954, 8115, 8132, 8138, 8142, 8149, 8413, 8433, 8450, 8568
<code>\textregistered</code> . . . .	14706, 15074	<code>\textXi</code> . . . . .	1175, 15680	<code>\theslideheading</code> . . . . .	8242
<code>\textRho</code> . . . . .	1193, 15686	<code>\textxi</code> . . . . .	1175, 15743	<code>\theslidesection</code> . . . . .	8230, 8237, 8245, 8251, 8253, 8255, 8261, 8271
<code>\textrho</code> . . . . .	1193, 15749	<code>\textyen</code> . . . . .	14689, 15057	<code>\theslidesubheading</code> . .	8243, 8294
<code>\textrightarrow</code> . . . . .	16590	<code>\textzeroinferior</code> . . . . .	16522	<code>\theslidesubsection</code> . . . . .	. . . . .
<code>\textring</code> . . . . .	14518, 14530, 14542, 14573, 14953, 14972, 15611	<code>\textzerosuperior</code> . . . . .	16496	. . . . .	8282, 8289, 8296, 8302, 8304, 8306, 8312, 8322
<code>\textrm</code> . . . . .	580	<code>\textZeta</code> . . . . .	1154, 15664	<code>\This@name</code> . . . . .	6606, 6607, 6625, 6626
<code>\textrquill</code> . . . . .	16492	<code>\textzeta</code> . . . . .	1154, 15727	<code>\thispdfpagelabel</code> . . . . .	6224
<code>\textSampi</code> . . . . .	1201, 15790	<code>\TH</code> . . . . .	14803, 15171	<code>\ThisShouldNotHappen</code> . .	13645
<code>\textsampi</code> . . . . .	1201, 15792	<code>\th</code> . . . . .	14871, 15239	<code>\thm@headfont</code> . . . .	7055, 7081
<code>\textsc</code> . . . . .	586	<code>\thaa</code> . . . . .	16931	<code>\thm@headpunct</code> . . .	7057, 7083, 7114
<code>\textsection</code> . . . . .	14693, 15061	<code>\thebookmark@seq@number</code> . . . . .	14061	<code>\thm@headsep</code> . . . .	7058, 7084, 7115
<code>\textservicemark</code> . . . . .	16572	<code>\theequation</code> . . . . .	6628, 6944, 6975, 7003, 7039	<code>\thm@indent</code> . . . . .	7054, 7080
<code>\textseveninferior</code> . . . . .	16536	<code>\thefootnote</code> . . . . .	7184, 7387	<code>\thm@notefont</code> . . . .	7056, 7082, 7113
<code>\textsevensuperior</code> . . . . .	16504	<code>\theHchapter</code> . . . . .	6567, 6568, 6569, 6570, 6669	<code>\thm@postskip</code> . . . .	7062, 7088, 7119
<code>\textsf</code> . . . . .	581, 12964, 12967	<code>\theHenumi</code> . . . . .	6586	<code>\thm@preskip</code> . . . .	7061, 7087, 7118
<code>\textSigma</code> . . . . .	1194, 15688	<code>\theHenumii</code> . . . . .	6587	<code>\thm@space@setup</code> . .	7059, 7085, 7116
<code>\textsigma</code> . . . . .	1194, 15753	<code>\theHenumiii</code> . . . . .	6588	<code>\thm@swap</code> . . . . .	7053, 7079, 7112
<code>\textsixinferior</code> . . . . .	16534	<code>\theHenumiv</code> . . . . .	6589	<code>\thmheadnl</code> . . . . .	7052, 7078, 7111
<code>\textsixsuperior</code> . . . . .	16502	<code>\theHequation</code> . . . . .	6557, 6629, 6945, 6976, 7004, 7012, 7039, 7043	<code>\tiny</code> . . . . .	610
<code>\textsl</code> . . . . .	587	<code>\theHfigure</code> . . . . .	6564, 6568	<code>\title</code> . . . . .	6130, 6132
<code>\textsterling</code> . . . .	14685, 15053	<code>\theHHfootnote</code> . . . .	6590, 6593	<code>\TMP@EnsureCode</code> . . . . .	. . . . .
<code>\textStigma</code> . . . . .	1153, 15778	<code>\theHHmpfootnote</code> . . . . .	6593	. . . . .	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>\textstigma</code> . . . . .	1153, 15780	<code>\theHitem</code> . . . . .	6580, 6586, 6587, 6588, 6589		
<code>\textsurd</code> . . . . .	16596	<code>\theHlisting</code> . . . . .	3416		
<code>\TextSymbolUnavailable</code> .	14549, 14550, 14552	<code>\theHlstlisting</code> . . . . .	3412		
<code>\textTau</code> . . . . .	1195, 15690	<code>\theHmpfootnote</code> . . . . .	6591		
<code>\texttau</code> . . . . .	1195, 15755	<code>\theHpage</code> . . . . .	7801		
<code>\textTheta</code> . . . . .	1156, 15668	<code>\theHparagraph</code> . . . .	6574, 6575		
<code>\texttheta</code> . . . . .	1156, 15731	<code>\theHparentequation</code> . .	7038, 7043		
<code>\textthreeinferior</code> . . . . .	16528	<code>\theHpart</code> . . . . .	6560		
<code>\textthreequarters</code> . .	14738, 15107	<code>\theHsection</code> . . . . .	6557, 6563, 6570, 6572, 6576, 6577, 6667		
<code>\textthreesuperior</code> . .	14716, 15084	<code>\theHslide</code> . . . . .	8216		
<code>\texttie</code> . . . . .	14964, 14983, 15632				
<code>\texttilde</code> . . . . .	4172, 14516, 14528, 14540, 14575, 14951, 14970, 15615				
<code>\texttildelow</code> . . . . .	15622				

`\tocappendix` ..... 1609  
`\tocchapter` ..... 1608  
`\toclevel@chapter` ..... 3403  
`\toclevel@figure` ..... 3409  
`\toclevel@listing` ..... 3417  
`\toclevel@lstlisting` ..... 3413  
`\toclevel@paragraph` ..... 3407  
`\toclevel@part` ..... 3399, 3401  
`\toclevel@section` ..... 3404  
`\toclevel@subfigure` ..... 2388  
`\toclevel@subparagraph` ... 3408  
`\toclevel@subsection` ..... 3405  
`\toclevel@subsubsection` ... 3406  
`\toclevel@subtable` ..... 2389  
`\toclevel@table` ..... 3410  
`\tocparagraph` ..... 1613  
`\tocpart` ..... 1607  
`\tocsection` ..... 1610  
`\tocsubsection` ..... 1611  
`\tocsubsubsection` ..... 1612  
`\toks` 4892, 4894, 4896, 4900, 4905,  
8421, 8422, 8424, 14378,  
14383, 14449, 14454  
`\toks@` ..... 171, 208, 485, 488,  
491, 509, 510, 832, 839, 871,  
872, 1245, 1268, 1271, 1273,  
1781, 1782, 3287, 3288,  
3290, 3871, 3875, 3876,  
3884, 4180, 4181, 4358,  
4360, 5007, 5012, 5016,  
5020, 6340, 6342, 6428,  
6430, 6480, 6492, 6803,  
6807, 6843, 6848, 7254,  
7257, 7985, 7986, 8192,  
8197, 8199, 8202, 14377,  
14383, 14448, 14454  
`\topmargin` ..... 7857  
`\trivlist` ..... 7051, 7077, 7110  
`\tryhyper@link` .... 4828, 4830  
`\ttfamily` ..... 592  
`\ttl@b` ..... 6854, 6859  
`\ttl@gobblecontents` ..... 6863  
`\ttl@Hy@PatchSaveWrite` . 6837,  
6841  
`\ttl@Hy@Crefstepcounter` ... 6853  
`\ttl@Hy@saveanchor` 6832, 6856  
`\ttl@Hy@SavedCurrentHref` 6836,  
6847  
`\ttl@Hy@steplink` ..... 6830  
`\ttl@savewrite` ..... 6843, 6845  
`\tw@` 14378, 14383, 14449, 14454  
`\TX@endtabularx` .. 7247, 7254,  
7260  
`\typeout` .... 5, 6, 7, 19, 26, 27,  
36, 131, 155, 158, 159, 160,  
5037, 14475, 16976

**U**  
`\U` .. 14920, 15825, 15848, 15913,  
15990, 16180, 16182, 16204,  
16206, 16216, 16218  
`\u` .. 14919, 14957, 14976, 14996,  
15247, 15249, 15283, 15285,  
15303, 15305, 15333, 15335,  
15336, 15404, 15406, 15464,  
15466  
`\UHORN` .. 16798, 16909, 16910,  
16911, 16912, 16913  
`\uhorn` 3261, 3268, 16791, 16849,  
16850, 16851, 16852, 16853  
`\UnDef` ..... 12268  
`\unhbox` ... 7157, 11296, 13336,  
13460, 13492, 13516, 13544,  
13573  
`\unhcopy` ..... 13438  
`\unichar` ..... 2220  
`\Unicode` ..... 1321  
`\unrestored@protected@xdef` 7173,  
7184, 7330, 7337, 7380, 7387  
`\unskip` . 7049, 7074, 7107, 7629,  
8499, 8503, 8507, 8512  
`\upshape` . 598, 7056, 7082, 7113  
`\Url` ..... 4799  
`\url` ..... 4798, 4802  
`\url@` ..... 4802, 4803  
`\use@file` ..... 4968, 4970, 4977  
`\usefont` ..... 577  
`\utf@viii@undeferr` ..... 539  
`\UTFviii@four@octets` 2216, 2225  
`\UTFviii@three@octets` ... 2215  
`\UTFviii@two@octets` ..... 2214  
**V**  
`\v` .. 14519, 14531, 14543, 14662,  
14667, 14675, 14677, 14930,  
14954, 14973, 14995, 15267,  
15269, 15271, 15273, 15295,  
15297, 15370, 15372, 15390,  
15392, 15424, 15426, 15440,  
15442, 15448, 15450, 15498,  
15500, 15506, 15508, 15510,  
15512, 15513, 15515, 15517,  
15519, 15521, 15527, 15529,  
15531, 15533, 15539, 15540,  
15583, 15585  
`\V@@@footnotetext` ..... 7317  
`\V@footnotetext` ..... 7303  
`\value` .. 6243, 6655, 6656, 6658,  
6659, 7583, 7609, 7861,  
8010, 9965, 9970  
`\vbox` .. 5885, 5886, 5887, 5888,  
6199, 7855  
`\vfill` ... 5885, 5886, 5887, 5888  
`\voffset` ..... 7856

`\vpageref` ..... 8512  
`\vphantom` ..... 613  
`\Vr@f` ..... 8498  
`\vr@f` ..... 8506  
`\vref@pagenum` ..... 6867  
`\vref@space` ... 8499, 8502, 8507  
`\vskip` ..... 2463, 2464  
`\vss` ..... 7870  
`\vtex@trans@special` .... 10750,  
10752, 10755, 10759, 10763,  
10767, 10769, 10771, 10775,  
10781, 10782, 10785  
`\VTeXInitMediaSize` 10430, 10447  
`\VTeXOS` . 10820, 10821, 10822,  
10824  
`\VTeXversion` 6395, 6398, 6401,  
10812, 10816

**W**  
`\waw` ..... 16955  
`\wawhamza` ..... 16924  
`\wd` 9560, 9576, 9597, 9614, 9637,  
9654, 13293  
`\write` .. 4690, 6079, 6081, 6509,  
6517, 6792, 6820, 7567,  
7582, 7598, 7608, 7638,  
7661, 7687, 7717, 12889,  
12913, 14245, 14327  
`\WriteBookmarks` .. 4114, 4251,  
4425, 4447, 13994, 14238,  
14271, 14272, 14314, 14320  
`\wwwbrowser` . 9514, 9599, 9616

**X**  
`\x` ..... 21, 25, 92, 98,  
168, 169, 176, 178, 206, 209,  
210, 211, 212, 213, 214, 215,  
216, 217, 218, 219, 220, 221,  
222, 223, 224, 225, 226, 227,  
228, 290, 295, 296, 508, 513,  
834, 837, 841, 846, 878, 945,  
951, 1708, 1736, 2163, 2165,  
2458, 2468, 2477, 2487,  
2556, 2557, 2562, 2578,  
3298, 3301, 3305, 3318,  
3428, 3429, 3432, 3433,  
3434, 3438, 3441, 3447,  
3874, 3880, 3883, 3886,  
4041, 4042, 4047, 4048,  
4127, 4128, 4129, 4132,  
4135, 4138, 4178, 4179,  
4181, 4182, 4359, 4362,  
4689, 4695, 4890, 4901,  
4905, 4908, 4983, 4984,  
4985, 4997, 5008, 5009,  
5010, 5011, 5014, 5015,  
5089, 5103, 5128, 5132,  
5135, 5145, 5682, 5686,

5695, 5699, 6152, 6153,	9777, 10311, 11651, 11734,	1437, 1477, 1490,
6158, 6804, 6811, 6844,	11793, 11992, 12156	1521, 1529, 1602,
6851, 6892, 6901, 6903,	\XR@URL ..... 2400	1863, 1869, 1933,
6915, 8199, 8200, 8423,	\xspace ..... 666, 668	1945, 1949, 2414,
8426, 8461, 8462, 8463,	\xspaceaddeceptions 4088, 4095	2453, 2472, 2753,
8465, 8467, 8822, 8830,		2898, 3440, 3446,
9118, 9119, 9122, 9124,	<b>Y</b>	4421, 6396, 6399,
9127, 9789, 9790, 9791,	\y ..... 295, 297, 301,	7144, 7315, 9331,
9793, 9794, 9795, 9797,	849, 852, 855, 858, 861, 864,	9340, 9344, 9351,
9798, 9799, 9801, 9802,	873, 2558, 2563, 2568, 3434,	9358, 9361, 10293,
9803, 9805, 9806, 9807,	3435, 3436, 3437, 4130,	10299, 10300, 10811,
9809, 9810, 9811, 9813,	4133, 4136, 4139, 4141,	11043, 11343, 11357,
9814, 9815, 9817, 9818,	4147, 4986, 4987, 4988,	11717, 11722, 11723,
9820, 9826, 9835, 10920,	4989, 4997, 6153, 6161,	13008, 13297, 13349,
10925, 10929, 11300, 11303,	6888, 6890, 6891, 6894,	13798, 13803, 13825,
11309, 11314, 11459, 11460,	6901, 11305, 11306, 11307,	13859, 13892, 13898,
12536, 12556, 13018, 13038,	11308	13927, 13932, 13962,
13359, 13379, 14382, 14384,	\ya ..... 16957	14072, 14073, 14074,
14453, 14455	\yahamza ..... 16926	14076, 14077, 14078,
\XeTeXrevision .... 4412, 10148		14080, 14297, 14419
\XeTeXversion .... 4412, 10148	<b>Z</b>	\z@skip .....
\XR@CdURL ..... 2395, 2396	\z 296, 297, 302, 2560, 2561, 2562,	\za .....
\XR@addURL ..... 2395	4989, 4997	\zay .....
\XR@ext 2664, 2665, 4966, 4969,	\z@ ..... 810, 850,	\ZWNJ .....
6393, 8719, 9410, 9513,	972, 1124, 1141, 1163, 1186,	